

Bilingual intonation patterns: Evidence of language change from Turkish-German bilingual children

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ABSTRACT

This article discusses Turkish-German bilingual children's intonation patterns as they relate to processes of contact-induced language change. Bilingual speakers use two distinct rises in both Turkish and German. One rise (L*HH%) resembles a characteristic German rise, while the other (L%H%) resembles a characteristic Turkish rise. The rises pattern pragmatically in ways that are non-normative for both Turkish and German. Although this pattern is not clearly attributable to language interference (either borrowing or shift-induced language change), it is certainly the result of language contact. Fusion is proposed to account for the two-way influence between the two languages. (Language contact, intonation, German, Turkish, Turkish immigrants in Germany)*

INTRODUCTION

In *Languages in contact*, Weinreich 1953 focuses on determining the possibilities and limits of influence by one language on another on the level of an individual speaker (as opposed to a community). Weinreich calls the potential influence of one language on another INTERFERENCE, and he notes that interference is of particular interest to linguists because of its structural implications. The synchronic and diachronic effects of language contact, and specifically of interference, have been widely studied since Weinreich's original work. Thomason & Kaufman 1988, one of the most broadly based theoretical studies of language contact and language change, elaborates on Weinreich's work by positing that interference-based language change may be related to an entire community's (rather than just an individual's) experience of language contact.¹ They propose that if the social circumstances involved in the contact situation are understood, then the nature of the contact – and, hence, the ultimate path of linguistic change – may be understood as well. Writing that “it is the sociolinguistic history of the speakers, and the structure of their languages, that is the primary determinant of the linguistic outcome of language contact” (1988:35), Thomason & Kaufman outline an approach

which applies to both the direction and the extent of the influence, as well as to the kinds of linguistic features that may be affected.

Thomason & Kaufman identify two mechanisms of interference-induced change: *BORROWING* and *INTERFERENCE THROUGH SHIFT*. “Borrowing is the incorporation of foreign features into a group’s native language by the speakers of that language” (1988:37), and interference through shift is said to be the result of “imperfect learning” during the process of a group’s shifting from one language to another (38–9). The two mechanisms function to varying degrees depending on the nature of the contact situation. For instance, Thomason & Kaufman predict that only non-basic lexical items will be borrowed in situations of casual contact with little bilingualism, whereas in situations of long-term contact with strong sociolinguistic pressure from a source-language group, there will be heavy structural (primarily phonological and syntactic) as well as lexical borrowing. The two mechanisms may work simultaneously, as probably occurred in the case of Middle English: English speakers were borrowing lexically and structurally from French at the same time that French speakers were shifting to English, thereby introducing shift-induced interference. Likewise, communities in the process of language shift may produce shift-induced interference in the target language while simultaneously borrowing from the target into the native language, resulting in changes to both linguistic systems. Such a pattern is characteristic of late 20th-century immigrant populations in the United States and western Europe.

Thomason & Kaufman’s analysis of interference relies on a categorical distinction between the different languages that are in contact, and also on the degree to which speakers are “fluent” in those languages. Although their model accounts for a wide range of contact phenomena, the theoretical position that maintains definable boundaries between languages does not capture structures that are not explained through mechanisms based on interference. For instance, bilingual speech communities may develop norms that are related to the languages they speak but that ultimately become independent of those languages (see Romaine 1988, Grosjean 1989, and selected papers in Milroy & Muysken 1995). Although Thomason & Kaufman recognize that it is not always possible to determine whether a particular structure is the result of borrowing or shift-induced interference, they locate the problem thus presented in a lack of sufficient detail about the speech communities and/or the languages as they were spoken before coming into contact. In the case I describe in this article, sufficient detail is available about the communities and the languages in contact; however, there are still intonational structures that are not explainable through interference-based mechanisms.

Some Turkish-German bilinguals produce an intonation pattern that is clearly the result of mixing formally distinct patterns found in Turkish and German. What makes this pattern difficult to categorize as either borrowing or shift-induced interference is the fact that the same pattern occurs in the speakers’ Turkish and in their German, yet is common to neither language. Explaining such a pattern indicates the need to add a third mechanism, which I call

FUSION, to Thomason & Kaufman's model of contact-induced language change. Fusion differs from codeswitching in that it does not constitute movement between two systems but rather represents a new structure altogether. It also differs from the strategies of "convergence" or "compromise" that Thomason & Kaufman discuss (based on data from current situations of bilingualism and/or creolization) because it does not rely on the tendency to utilize what is common to the two languages; instead, it depends critically on exploiting the formal differences between them. Although fusion is probably less common than borrowing, shift-induced interference, or convergence, and although it certainly does not preclude any or all of those strategies, it provides a potent complement to them for explaining linguistic structures that exhibit more complexity than do related structures in the languages in contact. Unlike the mechanisms of interference discussed by Thomason & Kaufman, fusion cannot be a form of interference, because fused structures cannot be linked exclusively to a single linguistic system. As interference-based accounts of contact-induced language change find, the type and frequency of fusion are largely dependent on the sociolinguistic context of language contact. From a typological standpoint, fusion is likely to be found primarily in linguistic subsystems that are deeply context-bound. Prosody – specifically, intonation – is one such subsystem.

There exist few studies of intonation systems in situations of language contact (e.g. Ladd 1996); however, intonation is one of the few linguistic elements that comments simultaneously on grammar, context, and culture (Gumperz 1982, 1992; McLemore 1991, Lefkowitz 1995).² One explanation for this lack of information about intonational change lies with the disparate data sources characteristic of, on the one hand, the acoustic studies generally done on intonational phenomena (e.g. Liberman 1978, Pierrehumbert 1980, Kohler 1987b), and, on the other, the ethnographic and sociolinguistic studies conducted in bilingual communities undergoing contact-induced language change (e.g. certain papers in Milroy and Muysken 1995 and Dorian 1989). These two types of studies differ, for example, in the number of speakers and speech situations typically included.³ Another and perhaps more critical difference is that most studies of intonational phenomena are conducted in experimental, laboratory settings, whereas most studies of language contact rely on observational data that attend to the social aspects of language use – aspects that generally cannot be controlled in the manner characteristic of many acoustic studies. Because these differences may be epistemological as well as methodological, bringing together such divergent strands of research presents a formidable task, which is, nonetheless, crucial for understanding the phenomena at hand. In keeping with the norms of both research paradigms, I rely here on data collected in a controlled setting from a small speaker sample located within a historically and sociopolitically specific community involved in language contact.

In the sections that follow, I examine the intonation patterns of four Turkish-German bilingual children, two German monolingual children, and one Turkish

adult second-language learner of German. The data from the bilingual children present the following three patterns: (i) use of Turkish-like intonation in Turkish and German-like intonation in German; (ii) use of Turkish patterns in both languages; and (iii) use of features of both intonation systems in both languages.⁴ The first two patterns can be explained through the model developed by Thomason & Kaufman as maintenance and interference through shift, respectively; however, the third pattern, in which both systems occur in both languages, is captured through fusion. All three patterns are best understood within the linguistic context of intonation in German and Turkish and within the sociolinguistic context of Turks in Germany.

TURKS IN GERMANY

At the time this research was conducted, there were more than 5 million foreign nationals (constituting 7.3% of the total population) living and working in Germany.⁵ Many of these immigrants came to Germany at the request of the German government during periods of labor shortage after World War II. Germany established labor contracts with the governments of several countries which allowed foreign workers (mostly, but not exclusively, male workers) to come into the country and work for one to three years, after which they would be rotated out and replaced by new workers. The first contract with Turkey was made in 1961, and subsequently an unprecedented number of Turkish workers migrated into Germany (Poliak 1988). The reasons for such a massive movement of workers are manifold, but they lie primarily in economic and political turbulence in Turkey in the 1960s and 1970s. Although many of the workers were recruited from underdeveloped rural areas in Anatolia, some came to escape political and social persecution elsewhere. Most Turkish immigrants undertook a dual migration, first leaving their rural communities for the larger cities of Ankara, Istanbul, Izmir, and Antalya, and then emigrating to Germany (Şen 1993). At the time of this research, the Turkish population in Germany made up 30.3% of the total foreign population, followed by Yugoslavians (13%), Italians (12%) and Greeks (6.1%).⁶ Many Turkish immigrants live in ethnic enclaves in large cities or small industrial towns; like many other immigrant populations, they exhibit both social and linguistic heterogeneity.⁷

Individuals in Turkish-German communities vary widely with respect to their use of Turkish and German (Klein and Dittmar 1979; Röhr-Sendlmeier 1985, 1990; Pfaff 1984, 1990, 1991, 1992). Language contact remains one of the predominant aspects of ethnic Turks' experience of language in Germany, but few Turkish immigrant communities have made the ideological shift from a preference for Turkish to one for German, regardless of their actual linguistic abilities or behavior. There are many potential reasons, both generalizable and idiosyncratic, for the lack of widespread shift from Turkish to German, but the social, legal, and educational realities for Turks in Germany remain among the most

influential. Furthermore, although they are by no means the only group confronted with racism, they remain the ideological focus of much anti-foreigner sentiment in Germany (Şenoçak 1993:13), and many of the programs and policies aimed at Turkish immigrants encourage return to Turkey rather than permanent residence in Germany. Turks represent one of the last large immigrant groups who do not have the legal right to be in Germany as citizens of the European Union. Finally, even though many Turkish families have been in Germany for decades, a strong ideology of return runs through Turkish communities.⁸

As Thomason & Kaufman predict, the social reality for Turks in Germany has resulted in a linguistic situation in which Turks borrow many lexical items and some grammatical structures from German into Turkish while simultaneously producing structures in German that are the likely result of shift-induced interference from Turkish (see Pfaff 1984, 1991, 1992; Queen 1996). Turks of the second and third generations engage in codeswitching as the unmarked norm (Myers-Scotton 1988), and many of them are becoming dominant in German. Most linguistic studies of Turks in Germany center on questions related to codeswitching, second language acquisition, and shift-induced interference. Such studies provide important information about the process and nature of the contact situation, and especially about processes of second-language acquisition. As I show below, however, the intonation patterns found among some young Turkish immigrants provide interesting and compelling evidence that the linguistic outcome of this contact situation cannot be accounted for through a wholly interference-based analysis.

METHODOLOGY

The intonational data are drawn from audio recordings conducted at two elementary schools in central Germany. The recordings were collected over a nine-month period using a combination of participant observation, interviews, and directed conversational tasks. The data discussed in this article all come from the directed conversational task described below. The classroom recordings were part of a year-long ethnographic study of Turkish-German bilinguals which provides the sociolinguistic basis for this analysis.⁹ Of the speakers presented in this analysis, four are ethnically Turkish (Enver, Hüseyin, Gönül, Melek), and two are ethnically German (Dieter, Katja). There are three girls (Gönül, Melek, Katja) and three boys (Enver, Hüseyin, Dieter).¹⁰ The recordings from these six children were chosen primarily because of the nature and quality of the recordings made with them, and because they matched one another with respect to basic demographic features. The children ranged in age from 10 to 12 and came from similar socioeconomic backgrounds. All of the Turkish children were born to parents who had come to Germany as adults, and all of them were bilingual in Turkish and German from birth. Both boys and one girl (Gönül) self-identified as Turkish-dominant; Melek self-identified as fully fluent in both

languages. The Turkish children attended a Turkish-dominant school in a small industrial town, Kleindorf, while the German children attended a multicultural (though German-dominant) school in a working-class neighborhood of a university town, Unistadt. Both schools use German as the medium for education.¹¹

The directed conversations from which the data are drawn involved the collaborative construction of a picture made of geometrical shapes of various sizes and colors. There were nine shapes – three each of squares, circles, and triangles – and all shapes were unique in their size/color combination (for instance, there were two yellow squares, but one was small and the other medium-sized). The shapes were arranged in designs on each of five cards. The participants sat across from each other with a barrier between them. The speaker chose a card with a pre-made picture on it, while the listener was given a blank card and nine loose shapes identical to those on the card. The listener was asked to place the shapes on the blank card according to the instructions given by the primary speaker. The Turkish children each performed the task in both German and Turkish for a total of four turns – two each as speaker and listener. No individual card was used more than once by an individual pair of participants. Similar data were drawn from a Turkish second-language learner as a point of comparison with the bilinguals.

The utterances of the main speaker were digitized using a sampling rate of 10 Khz, and the pitch was extracted using an autocorrelation pitch tracking application developed by Kenneth Whistler of DR.LST Software for Anthony Woodbury.¹² The analysis of the intonational contours was restricted to phrase-final rises; phrases were defined using the criteria of pause structure, syntactic structure, and turn-taking, thus making their specification independent of actual pitch movements. A total of 180 rises, which comprised 49% of the total number of phrase-final contours, was analyzed for this study. Of those, 24 (13%) were produced by the two German monolinguals, and 156 (87%) were produced by the Turkish-German bilinguals. The bilinguals produced 51 rises in German, which account for 41% of the total number of phrases produced in German, and they produced 105 rises in Turkish, which account for 48% of the total number of phrases in Turkish.¹³ Although the bilinguals produced more of the relevant structures in Turkish, they also had proportionally more phrases, and the proportion of phrases that occurred with rises is not significantly different in Turkish. Additionally, although the speakers produced far more rises in Turkish, the frequency with which they produced rises in German is similar to the frequency with which the German monolinguals produced rises.

INTONATION

Intonation offers broad evidence for “the context of lexical stress and pitch accent in phrasal phonology, constituency and configurationality in syntax, syntax-phonology mapping, and the structure of oral discourse” (Woodbury 1988:1). As Woodbury’s statement points out, intonation is embedded in many of the subsys-

tems that make up a language, including those that organize language at the level of discourse. Discourse may refer to aspects of overall discourse organization, discourse function, and/or information flow. Intonation functions in discourse organization largely to help segment the discourse unit into “chunks” (Chafe 1994) or “paragraphs” (Lehiste 1979). The most common discourse functions ascribed to intonation are marking continuity and discontinuity (Bolinger 1986), or marking cohesion and disjunction (Carleton 1996, McLemore 1991). In terms of information flow, intonation has been said to mark given and new information (Halliday 1967), or to mark the difference between foregrounded and backgrounded information (Bolinger 1989). Gumperz (1982, 1992) has shown that intonation plays a critical role in helping listeners figure out “what is going on” in a given speech situation because it provides some of the strongest cues to both grammatical and extragrammatical context (cf. Auer 1995). Intonation is further tied to the emotive aspects of language, a fact that led Dwight Bolinger to describe it as “a half-tamed savage,” and to claim that “to understand the tame or linguistically harnessed half of him, one has to make friends with the wild half” (1978:472).

Much recent intonational research builds on the autosegmental model put forth by Liberman 1978 and Pierrehumbert 1980, which asserts the linearity of intonational phenomena. In this model, two tonal morphemes, H(igh) and L(ow), align with stressed syllables according to the basic principles of autosegmental phonology combined with phonetic rules of interpolation that are language-specific (Pierrehumbert 1980).¹⁴ The intonational phonology consists of accent tones, phrasal tones, and boundary tones. The intonation curves (or tunes) are generated through the sequencing of H and L tones (Pierrehumbert 1980:9). Accent tones can be monotonal or bitonal, and they align with stressed syllabic elements. Phrasal tones occur “shortly after the nuclear accent, regardless of how soon the boundary tone occurs,” whereas boundary tones occur at the end of the phonological or intonational phrase (11).¹⁵ The notational conventions associated with this model include the use of the asterisk to mark accent tones and the percent sign to mark boundary tones.

Few intonational studies have looked at intonation from both cross-linguistic and contact perspectives. De Bot (1986) points out that the primary difficulties for cross-linguistic studies of intonation include incomplete descriptions of intonation systems, lack of acquisitional data regarding intonation, and difficulty in detecting actual differences because of the cross-linguistic prevalence of certain intonation contours (see also Ladd 1996, Hirst & Di Cristo 1998). Not only do we lack cross-linguistic comparisons of intonation; there are also few studies that look at intonation from a bilingual perspective. Those that exist typically consider second-language learners and the processes by which they produce and/or interpret intonational contours with respect to transfer or second-language learning (Backman 1979, Johanson 1978, Berkovitz 1980, Scüffil 1982, Wenk 1986, de Bot 1986, Slembek 1989; see, however, Penfield 1984 for Spanish-English

intonation patterns). Although these perspectives can provide insights into the ways languages differ typologically, or the ways language learners reproduce a second language, they do not provide insight into the results of longer-term linguistic contact. Specifically, studies of intonation patterns as they are found in second-language learners do not account for differences in the production and interpretation of intonation that may be conventionalized in bilingual communities.

One of the few available studies of the intonation patterns of a bilingual community, Cichocki & Lepetit 1986, examines the intonation of French-English bilinguals in Canada. Although the sociolinguistic nature of contact between French and English in Canada differs from that between Turkish and German in Germany, I discuss their study at some length here because it shows bilingual speakers developing prosodic norms that draw on both the languages they speak. Cichocki & Lepetit looked at the rate of declination over a series of sentences read aloud in French by 14 children with varying degrees of French fluency (based on self-reported data).¹⁶ They found that the group of balanced French-English bilinguals were actually leading a change from a French pattern of declination to a more English-like pattern in the production of French. This change was accompanied by other types of changes (in particular, the use of French discourse markers) that were also being introduced by the French-English bilinguals. To account for this pattern, Cichocki & Lepetit suggest that “the French-English group may be insisting on the relative strength of their bilingualism within the community” (245). Although their analysis is only preliminary, it suggests that bilinguals may establish new prosodic norms that are independent of, yet related to, the two languages they speak. The “more English-like” patterns discussed by Cichocki & Lepetit are not identical with the forms produced by the speakers who were English-dominant, nor is it clear that the forms themselves indicate an interlanguage stage within the progression toward normative English patterns. Rather, it appears from their data that the balanced bilinguals produce declination forms that are uniquely drawn from the resources available through the contact between French and English, and that are not clearly attributable to either borrowing or shift-induced interference. Although Cichocki & Lepetit present only data from the French of their participants, their study offers an apparent case of fusion that is quite similar to the pattern I found among Turkish-German bilinguals. Before discussing the details of that pattern, however, I will give a basic overview of the two intonation systems on which the bilinguals draw.

German intonation: An overview

Accented syllables in German are realized through the complex interplay among intensity, length, and fundamental frequency (Uhmann 1991; Kohler 1991, 1987a, 1987b; Féry 1993). Uhmann 1991 shows that the boundary tone generally aligns with the final syllable, and that the final accent tone falls on the final stressed syllable of a phrase. The interpolation between the final accent tone and the boundary tone results in a phrase-final rise characterized by a slight dip that precedes

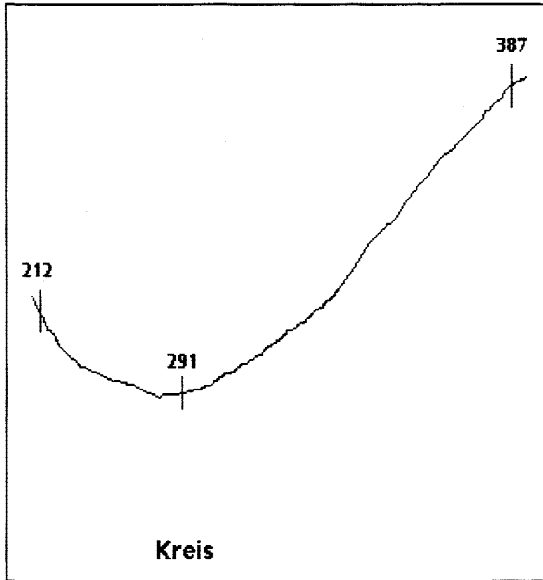


FIGURE 1: Monosyllabic phrase-final rise in German based on the example of *Kreis* 'circle'.

the actual rise. DeLattre et al. write, "The complete pitch pattern takes the shape of a bird singing – where the shape can be fully articulated or only suggested . . . Every continuation patterns shows the dip – this is the most characteristically German part of the contour" (1965:137). Recent work on German intonation further claims that the dipped rise is characteristic for most speakers of Standard German (Kohler 1991, Scüffil 1982, Möbius 1993, Uhmman 1991).¹⁷ The monolingual speakers analyzed in this study were speakers of the Hessian dialect as well as of Standard German; however, their rises conformed in general shape to the specifications outlined by previous research for Standard High German. These monolingual German speakers, Dieter and Katja, produced 24 phrase-final rises in their conversational tasks, with 100% of the rises following the characteristic Standard German dipped rise pattern.

The phrase-final rise generally falls on the final word of the phrase, and the rise aligns with the final stressed vowel. The dip itself makes up 22 to 28% of the total contour and falls either on the stressed vowel or on the unstressed vowel prior to the stressed vowel, depending on the prosodic form of the final word of the phrase. For example, in a word like *Kreis* 'circle' (Fig. 1), the entire contour falls on the vowel, whereas in a word like *daneben* 'next to it' (Fig. 2), the dip begins on the unstressed vowel immediately preceding the stressed vowel (in the

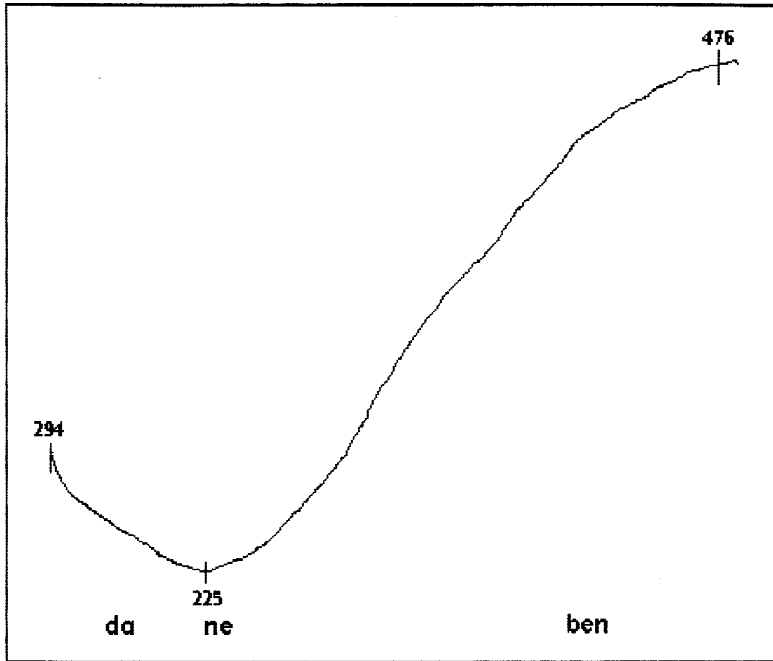


FIGURE 2: Polysyllabic phrase-final rise in German based on the example of *daneben* 'next to it'.

case of *daneben*, the stressed vowel is /e/, and the dip falls on the /a/ of the prefix *da-*. If the dip begins on the syllable preceding the stressed syllable, the dip is often longer both in terms of its relation to the whole contour and in absolute duration.

In Fig. 2, the rise aligns on the stressed syllable *-ne-*, beginning on the nasal segment. It then extends through the entire vowel, peaking at the end of the vowel. Finally, there is a pitch plateau that corresponds with the final (unstressed) syllable *-ben*. The dipped rise pattern is distinctive of High German and is not found in Turkish, as I show below.

Turkish intonation

With the notable exception of Nash 1973, monolingual Turkish intonation has not been well explored in the literature. Phrasal and word stress in Turkish are not very prominent unless there are pragmatic factors (such as emphasis) involved (see Erguvanlı 1984 for a detailed, though not phonetic, account of phrasal stress patterns; also Underhill 1976, Lewis 1967, Kornfilt 1997). Thus, the relation-

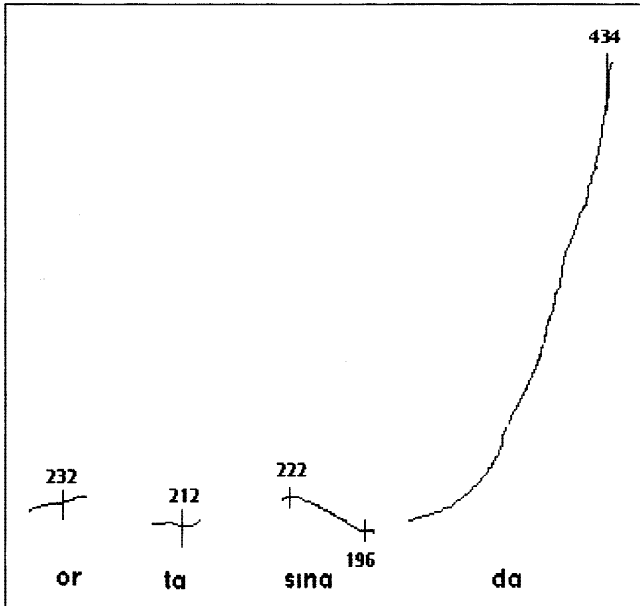


FIGURE 3: Phrase-final rise in Turkish based on the example of *ortasında* 'next to that one'.

ships between stress and pitch are quite different in Turkish and in German. Özen 1985 demonstrates that Turkish further differs from German with respect to intonation because accented syllables in German rely on pitch, amplitude, and length, whereas Turkish accented syllables are achieved primarily with amplitude (96). With respect to pitch, amplitude, and length, Özen claims that German tends to reach higher values for all three than does Turkish (93), and that accent tones and length preclude one another and thus are in complementary distribution in Turkish (98).¹⁸

To compensate for the paucity of descriptive work on Turkish intonation, I recorded an adult Turkish immigrant, Ayşe, who was a second-language learner and who performed the same conversational task as did the bilingual children. The data provided by Ayşe revealed rises that were characterized by a short temporal duration and relatively steep pitch movement (see Fig. 3). Phrase-final rises occur on the final (generally unstressed) syllable of the phrase.

Fig. 3 depicts a canonical Turkish rise in which the major pitch movement occurs at the end of the phrase and shows a significant change in frequency values (230 Hz). Whereas the German rise is characterized by a dip that results from the interpolation between the final accent tone and the boundary tone, the different

patterns of marking stress in Turkish result in a rise that is “sharp” and generated primarily from boundary tones. Ayşe produced a total of 22 rises, 10 of which occurred in German and 12 in Turkish. All of the Turkish rises and eight of the German rises were temporally short and involved a large increase in Hz values, like that shown in Fig. 3.

Tonal specification

As I have shown, two types of rises are available to the bilingual children from the languages they speak: a “sharp” rise characteristic of Turkish, and a “dipped” rise characteristic of German. Relying on previous accounts of German, I have specified the German dipped rise with the representation L*HH% (Uhmann 1991, Féry 1993). This representation captures the fact that the characteristic features of the phrase-final rise in German consist of two tonal specifications: an accent tone and a boundary tone. The German pattern is marked specifically by the occurrence of the rise in conjunction with the final stressed syllable of the phrase.

Because the sharp rise falls on the final syllable of the phrase, regardless of the stress patterns of the phrase, a bitonal accent tone followed by a boundary tone does not specify the Turkish pattern. Instead, the Turkish pattern is best captured through the specification of two boundary tones, L% and H%. Should stress be present on the final syllable, this tonal representation does not rule out a preceding accent tone. The difference between a rise with L%H% preceded by an accent tone and one generated by L*HH% lies primarily in the realization of the accent tone. Accent tones that precede L%H% are not bitonal (they consist primarily of H*); thus, the interpolation between the accent tone and the first boundary tone is abrupt rather than displaying the characteristic dip of L*HH%, as can be seen in Fig. 4.

If we compare Figs. 3 and 4, the difference between the presence and absence of a preceding accent tone becomes clear. In Fig. 4, there is an accent tone (H*) aligned with the initial syllable *or-* that is followed by a sharp movement to the first boundary tone (L%). The proposal for two boundary tones, though unconventional, has also been made for other languages: for Japanese by Pierrehumbert & Beckman 1988, in which two boundary tones are suggested for interrogatives; and for Bengali by Hays & Lahiri 1991.

BILINGUAL INTONATION PATTERNS

The typological differences between Turkish and German make examining their contact of particular interest to theories of contact-induced language change. In addition, because Turkish relies so little on pitch to mark stress, it provides an interesting comparison with German intonation patterns, which rely heavily on pitch to mark stress. Given the nature of the contact situation and the differences between the two systems, interference-based structures would be unsurprising. As I demonstrate below, such interference occurs in the speech of the bilingual children; however, the children also provide evidence of language maintenance

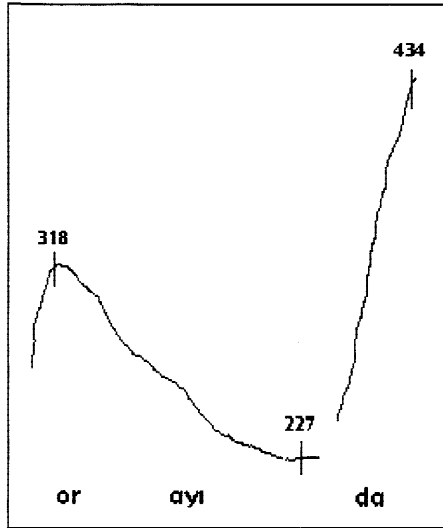


FIGURE 4: L%*H%* precedes a pitch accent based on *orayı da* ‘next to it’.

and fusion in their rise patterns, with cases of fusion relatively more common than cases of the other two types. The cases involving the maintenance of language-specific structures and shift-induced interference are linked to specific morphosyntactic forms – in particular, interrogatives and certain focal constructions. Given the strong co-occurrence patterns between the morphosyntactic and intonational forms found in interrogatives and focal constructions, it appears likely that the morphosyntax determines the intonation of those forms. In the cases where the fused pattern is found, there is no evidence of co-occurrence between specific morphosyntactic and intonational forms.

System maintenance: Interrogatives

Generally, German uses intonation to distinguish interrogatives from declaratives, while Turkish does not do so (Erguvanlı 1984). The fact that Turkish does not distinguish interrogatives based on a final boundary tone does not mean, however, that Turkish does not have any prosodic pattern that marks questions. The data analyzed for this study show a marked intonational pattern that coincides with the Turkish question particle (*-mi*).¹⁹ The particle *-mi* usually follows the constituent being questioned; the neutral position for the particle is clause-final if there is no verb (e.g. *sen mi* ‘You?’), or preceding the morpheme marking person in the verb string if there is a verb (e.g. *geliyor musun?* ‘Are you going?’). This particle co-occurs with an H*L pitch accent that aligns on the syllable preceding the question particle. The peak of this accent is consistently at

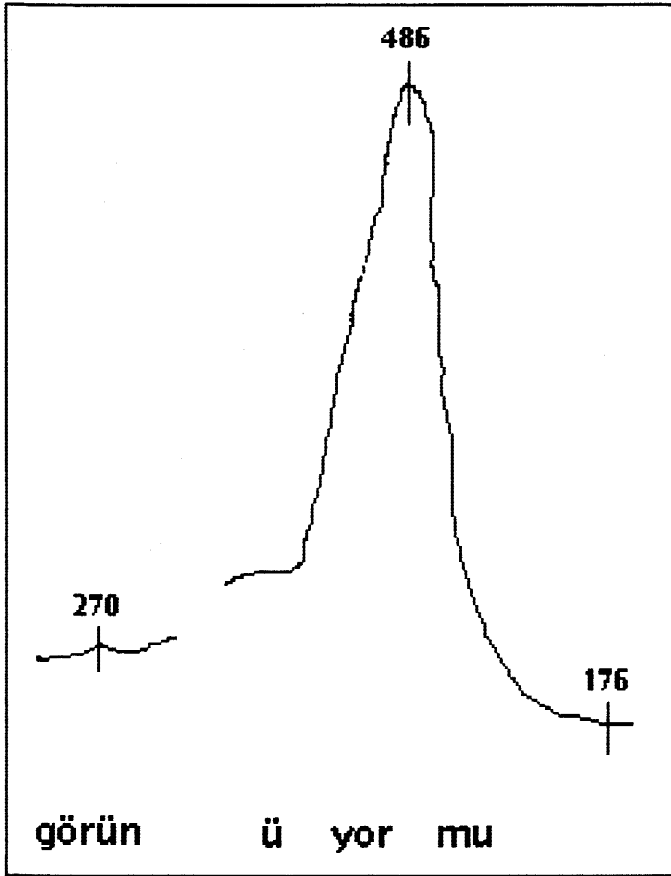


FIGURE 5: Turkish question intonation based on the example of *görünüyor mu?* 'do you see it?'

the top of a speaker's range, and the tonal movement exhibits a clear "spike" with rapid movement to the upper limit of the speaker's pitch range, followed by an immediate fall back to the speaker's baseline pitch. Typically, the fall is shorter in both duration and slope than the rise. As seen in Fig. 5 (*görünüyor mu?* 'do you see it?'), this is a rather striking contour.

In the bilinguals' German data, interrogatives were marked with L*HH%; in the Turkish data, interrogatives were marked prosodically by the alignment of an H*L accent tone with the question particle *-mI*. This pattern represents the maintenance of language-specific structures and is tied to the particular morphosyntactic patterns that govern interrogative formation in the two languages. All the

bilingual speakers exhibited these patterns consistently in both languages. In other words, when they used the Turkish particle, even when it was codeswitched into a German matrix utterance, it occurred with the H*L accent tone. Similarly, in the few instances in which they used a German interrogative (for instance, asking *Was?* ‘what?’ during a Turkish matrix utterance), it occurred with L*HH%. There are 18 interrogatives from the bilingual speakers, which constitute 10% of the data.

System interference: Focal constructions

In addition to the interrogatives, there are marked syntactic constructions for indicating focus in the German and Turkish of the bilingual speakers. For focused elements found among bilingual speakers, any element of a phrase may be postposed. Focus through postposition is a strong marker of Turkish speakers of German and is non-normative from the standpoint of German (though normative for Turkish). In general, German achieves focus by preposing a constituent.

- (1) *Ein blaues Dreieck nimmst du und setzt es oben links in die Ecke.*
 ‘A blue triangle is what you take and you put it in the top left corner.’

This contrasts with the non-focal construction of the same clause:

- (2) *Du nimmst ein blaues Dreieck und setzt es oben links in die Ecke.*
 ‘You take a blue triangle and put it in the top left corner.’

Phrases may also be postposed in German; however, only full constituents may be postposed. In addition, postposition serves a different pragmatic function in that it marks topicalization rather than focus, as the following example demonstrates (Féry 1993):

- (3) *Jetzt nimmst du ein Dreieck, ein Blaues.*
 ‘Now take a triangle, a blue one.’

Turkish achieves both topicalization and focus through the use of postposition; however, it is possible to postpose a single lexeme within a constituent phrase, as well as an entire constituent (Erguvanlı 1984):

- | | | | |
|------------|---------------------------------------|---------------|--------------|
| (4) marked | <i>Adam oğ lan</i> | <i>at-ti</i> | <i>taş-t</i> |
| | ‘man’ ‘boy’ | ‘throw’-PAST | ‘stone’-ACC. |
| unmarked | <i>Adam taş-t</i> | <i>oğ lan</i> | <i>at-ti</i> |
| | ‘man’ ‘stone’-ACC | ‘boy’ | ‘throw’-PAST |
| | ‘The man threw the stone at the boy.’ | | |

The bilingual speakers used postposition for focus in both German and Turkish, as exx. 5–6 show:

- (5) *Üç köşeyi koyacaksın mavi.*
 ‘Take a triangle, blue.’

In ex. 5, as in ex. 4 above, the speaker has postposed the focal element, the color lexeme *mavi* ‘blue’. This construction is normative for Turkish; however, it is

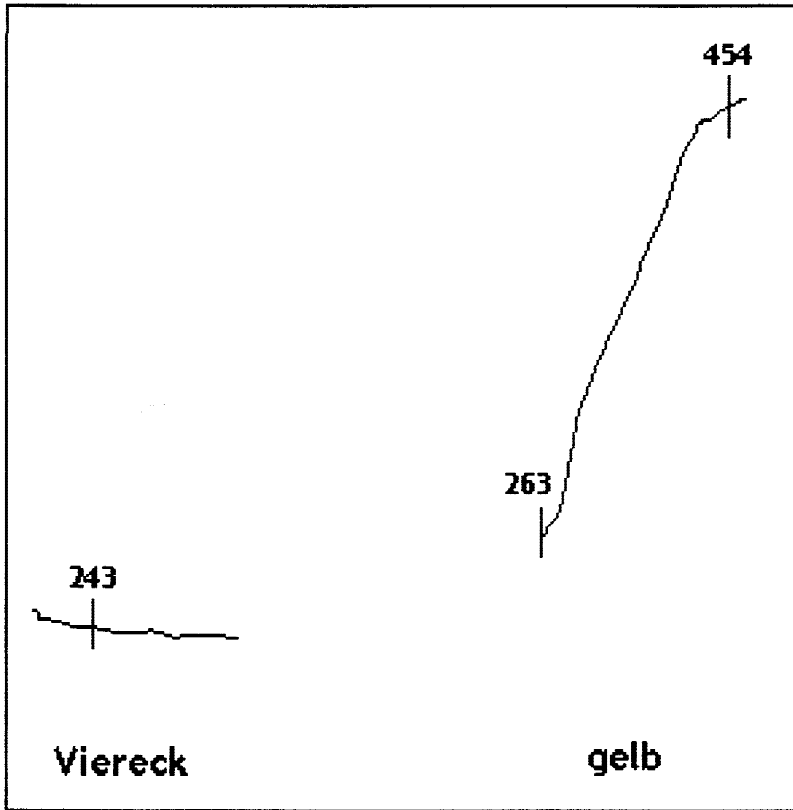


FIGURE 6: Turkish intonation with focal construction based on *Viereck gelb* 'green triangle'.

non-normative for Standard German. Nonetheless, the Turkish-German bilingual children produced postposition in their German, as demonstrated by ex. 6:

- (6) *Nimm ein Viereck grün und Viereck gelb.*
 'Take a square, green, and a square, yellow.'

In ex. 6, the color lexemes *grün* and *gelb* are postposed in order to focus for the listener which shapes are relevant. This construction is non-normative from the standpoint of Standard German because the two postposed elements are adjectives that are constituents of two noun phrases. Although postposed focal constructions predominated, the bilingual speakers also produced preposed focal constructions in their German. I was unable to determine, however, whether the two constructions as used by the bilinguals coincided with the pragmatic distinc-

TABLE 1. *Bilingual phrase-final rises in German and Turkish.*

	L*HH%	L%H%
Melek (n = 30)	27% (n = 8)	73% (n = 22)
<u>German</u> (n = 15)	33% (n = 5)	67% (n = 10)
<u>Turkish</u> (n = 15)	20% (n = 3)	80% (n = 12)
Gönül (n = 35)	40% (n = 14)	60% (n = 21)
<u>German</u> (n = 10)	40% (n = 4)	60% (n = 6)
<u>Turkish</u> (n = 25)	40% (n = 10)	60% (n = 15)
Enver (n = 42)	38% (n = 16)	62% (n = 26)
<u>German</u> (n = 10)	40% (n = 4)	60% (n = 6)
<u>Turkish</u> (n = 32)	38% (n = 12)	62% (n = 20)
Total (n = 107)	36% (n = 38)	64% (n = 69)
<u>German</u> (n = 35)	37% (n = 13)	63% (n = 22)
<u>Turkish</u> (n = 72)	35% (n = 25)	65% (n = 47)

tion marked by the difference between postposing and preposing as it occurs normatively in German.

When the bilingual speakers used the Turkish-like construction in either Turkish or German, the construction co-occurred with L%H%, suggesting the maintenance of the language-specific structure in Turkish and shift-induced interference in German. Fig. 6 shows the sharp rise associated with the second focal element in ex. 6.

Of the nine focal constructions in the corpus, which account for 5% of the bilingual data, there were no cases in which a postposed focal construction occurred with L*HH%. As with the interrogatives, the isomorphism between morphosyntactic and intonational form indicates that the morphosyntax determines the intonation. As the cases discussed below show, however, there are also forms that are not isomorphically tied to the morphosyntax.

System hybridization

The bilingual children produce rise patterns that consist of both L*HH% and L%H%, in both Turkish and German. This rise pattern is distinct from the patterns found among the German monolinguals. As noted above, the German monolinguals used L*HH% for all phrase-final rises. The pattern also differs from that exhibited by Ayşe, a second-language learner of German. Ayşe did not use both types of rise in Turkish, instead using L%H% exclusively. Furthermore, she relied primarily on L%H% in German as well, using L*HH% only sporadically – a pattern explainable largely through interference and second-language acquisition.

Table 1 shows the distribution and relative frequencies of the two types of rise in the German and Turkish of three of the four bilinguals. Hüseyin, the fourth

speaker, is discussed in the following section. It is clear from Table 1 that L%H% is relatively more frequent than is L*HH% for all three speakers in both languages. Two of the speakers, Gönül and Enver, produced almost twice as many rises in Turkish as they did in German; however, despite the higher number of rises produced in Turkish, the proportion of rises for each of the two types remained more or less constant across the two languages. The higher number of rises corresponds to the higher number of phrases produced over all in Turkish, as noted earlier. Unlike Gönül and Enver, Melek produced the same number of rises in both languages, a fact that is consistent with her own sense of being a balanced bilingual. (Gönül and Enver both self-identified as Turkish-dominant.)

The barrier conversations performed by the children were necessarily limited in terms of the discourse context and the types of information that passed between the speakers. The instructions that the speaker used tended to be organized into a number of parts (or “chunks”; see Chafe 1994). Each chunk typically consisted of adverbial phrases and explicit instructions for placement of the shapes into a part of the card’s design (e.g. a blue triangle on top of a yellow circle). Ex. 7 provides an example of a typical series of utterances related to the chunks on a card. Two vertical lines mark a boundary between chunks; boldface indicates the use of L*HH%, while underline indicates L%H%.²⁰ The numbers above each rise indicate the change in frequency values.

- (7)
- | | | | | |
|----|--------|---|-------------|-------------|
| 1 | Gönül: | rechts oben gelbes Kreis . Darauf ein kleines <u>grünes Dreieck</u> = | 240-200-294 | 196-332 |
| 2 | Melek: | = tamam | | |
| 3 | Gönül: | und neben ihn links oben grosses <u>Viereck grün</u> | 250-196-306 | 230-350 |
| 4 | Melek: | □ ja □ ich hab auch kein andere | | |
| 5 | Gönül: | darauf ein gelber Drei, Viereck, das <u>Grosse</u> | | |
| 6 | Melek: | mm-hmm = | | |
| 7 | Gönül: | = und un also links ganz unten links ganz unten <u>grünes Kreis</u> , | 230-212-302 | |
| 8 | | <u>grüner Kreis</u> . Darauf rot, roter <u>Kreis</u> . Neben ihm rechts unten | 196-325 | 219-316 |
| 9 | | um rotes Dreieck rot | 204-291 | 222-190-277 |
| 10 | Melek: | □ was Kreis? □ Dreieck? = | | |
| 11 | Gönül: | = ja roter Dreieck. Darauf | | |
| 12 | Melek: | □ warte, warte, wart □ mmm Darauf = | | |
| 13 | Gönül: | = darauf blauer <u>Dreieck</u> [...] Darauf ein kleinen gelben Viereck | 210-284 | |
- (English translation)
- | | | |
|---|--------|---|
| 1 | Gönül: | right, at the top, yellow circle. On top of it, a small, green triangle = |
| 2 | Melek: | = o.k. [Turkish] |
| 3 | Gönül: | and next to it <u>left</u> at the top, large square green |
| 4 | Melek: | □ yes □ I don't have any other one |
| 5 | Gönül: | on top of it, a yellow tri-square, the big one |
| 6 | Melek: | mm-hmm = |
| 7 | Gönül: | = and, uh, o.k. to the left, at the very bottom, left at the bottom |
| 8 | | green circle. On top of it red, the red circle. Next to it on the |

- 9 left at the bottom um red triangle red
 10 Melek: [] what circle? [] triangle? =
 11 Gönül: = yes, red triangle. on top
 12 Melek: [] wait, wait, wait [] mmm on top =
 13 Gönül: = on top of it a blue triangle [...] On top of that a small yellow square.

In this example, there are four chunks associated with the card. In each, Gönül first provides a locative adverbial (e.g. ‘right, at the top’) followed by the shape in question (e.g. ‘yellow circle’).

In addition to having a similar distribution across the two languages, the two rises also indicate a pragmatic distinction such that L*HH% is used to signal discourse cohesion, whereas L%H% is used to signal discourse continuation. “Discourse cohesion” refers generally to an internal consistency between the parts of a stretch of discourse; “discourse continuation” refers a lack of completion, or to the speaker’s intent to go on speaking. Gönül uses L*HH% to segment her discourse into informational chunks by using it at the end of the initial phrase of each chunk (lines 1, 3, 7, 8). By using L*HH% to “chunk” the discourse, Gönül helps to indicate overall cohesion within her task. L%H% occurs at the end of each information chunk and indicates overall discourse continuation (lines 1, 5, 8, 9, 13). In the last informational chunk, she uses L%H% to end each part of the description (lines 8 and 13). Gönül also employs L%H% in a Turkish focal construction (line 3) and in a correction (line 8).

A similar functional distinction emerges for two of the other three Turkish children. Like Gönül, Melek uses L*HH% to indicate cohesion within the informational chunks on her card. In addition, she uses L*HH% when repeating information that the listener did not hear and/or understand. Enver, too, uses L*HH% when repeating information; however, he exhibits a somewhat different usage than does Melek or Gönül. Rather than using L*HH% to segment his task into informational chunks, he uses it as “list intonation,” displaying expected patterns of downdrift (e.g. Liberman & Pierrehumbert 1984). “List intonation” is not the same as segmenting the information flow; nonetheless, it also provides internal cohesion for the listener. Thus, although there is some variability among these three speakers in terms of the specific functions of the two rises, the general function of L*HH% remains one of providing internal cohesion.

The pattern of using L*HH% to provide discourse cohesion occurs similarly in the bilinguals’ Turkish, particularly that of Enver and Gönül.²¹ Melek, however, demonstrates less consistency in Turkish than in German. Of the three occurrences of L*HH% in Melek’s Turkish data, only one clearly segments an informational chunk, and this occurs on the initial adverbial phrase of the task. The other two cases of L*HH% occur when Melek is correcting herself with respect to a previous utterance; an example is seen in Fig. 7. Figure 7 (*dörteck* ‘square’; *dörtgen* ‘square’) provides a direct comparison between L*HH% and L%H%. Melek first uses L%H% with *dörteck*, then uses L*HH% when she corrects her own use of the German morpheme *-eck* rather than the Turkish *-gen*.²²

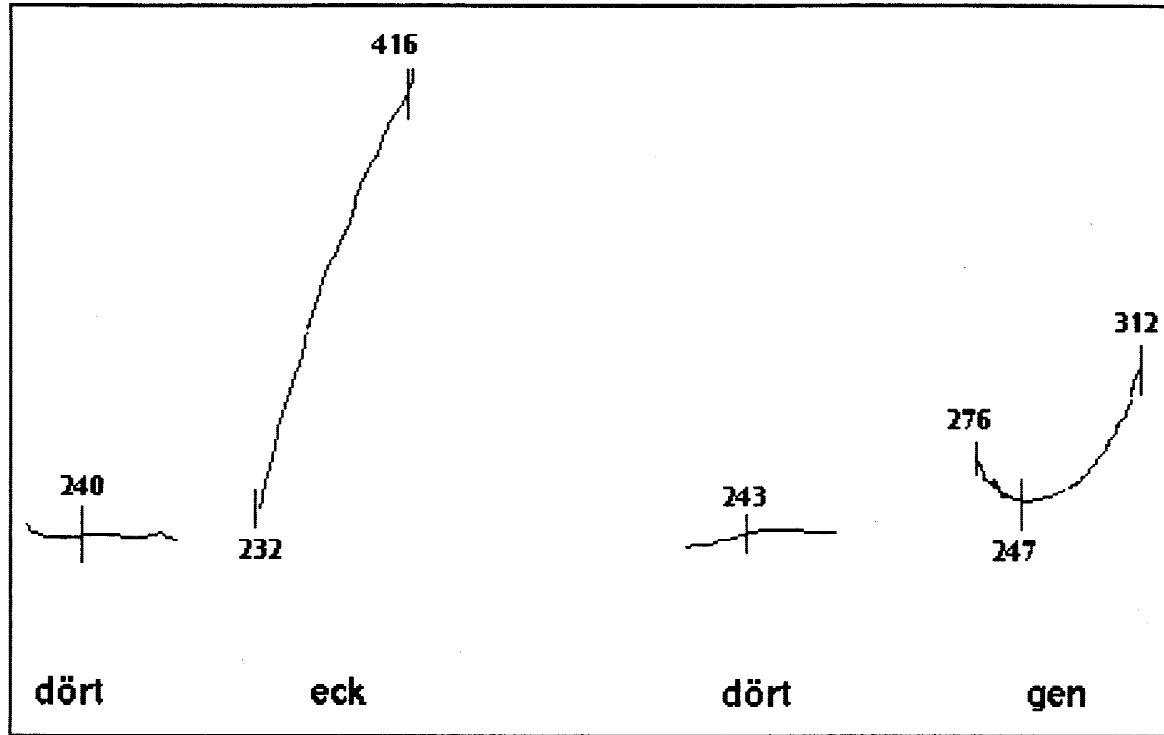


FIGURE 7: L*HH% and L%H% in contrast.

TABLE 2. *Discourse context of L*HH%.*

	Information flow	Repeated or corrected information following interruption	List
German	7	3	3
Turkish	23	2	0

This intonational minimal pair further underscores the distinction between discourse continuation and discourse cohesion.

Table 2 shows the discourse context of L*HH% in both Turkish and German for Gönül, Melek, and Enver. The majority of the cases of L*HH%, in both Turkish and German, achieve discourse cohesion by helping to segment the conversational task into informational chunks. The speakers also signal discourse cohesion by using L*HH% for corrected or repeated information – and, in Enver’s case, as a strategy for marking a list. Although segmentation into chunks more clearly indicates cases of discourse cohesion, listing and correction demonstrate discourse cohesion by providing task-internal coherence for the listener.

Variation among speakers

Three of the four bilingual speakers indicated a patterned distinction between L*HH% and L%H%, but the fourth speaker, Hüseyin, did not. Like the other three children, Hüseyin used language-specific patterns with interrogatives, and L%H% with Turkish-based focal constructions. However, of the 22 rises Hüseyin produced (7 in German and 15 in Turkish), he used L*HH% only twice – once each in his German and his Turkish – and neither usage corresponds to the distinctions drawn by the other three bilinguals. Hüseyin’s pattern resembles that of the second-language learner, Ayşe, more than it does those of his own age cohorts, but such similarity only holds for those rises that cannot be accounted for through the morphosyntax, leaving Hüseyin somewhere between the other bilinguals and the second-language learner. Because other aspects of his language use, including codeswitching patterns, align with those of the other three children, the differences in Hüseyin’s intonation patterns probably point to general variability among bilinguals with respect to this intonation pattern.

Such variation, even within a very small sample of speakers, should not be particularly surprising, for two primary reasons. First, the children whose intonation is examined here represent the first consistently bilingual cohort within the Turkish immigrant community in Germany. That community consists of a range of speaker types, including many who are second-language learners, many who are fluent bilinguals, and many who fall somewhere in between. The varia-

tion in the four children's patterns reflects the variation of the community as a whole, and Hüseyin is closer to second-language learners than are the other children. Second, the formal and functional distinctions produced by the other three bilinguals are emergent rather than fully conventionalized aspects of bilingual varieties of Turkish and German. As with any new linguistic variable, only time and the ongoing sociolinguistic development of the Turkish-German bilingual community will provide insights into the evolution and eventual stability of this variable. Despite the variation among the speakers and across the two languages, the critical point is that both types of rise occur in both languages in ways that are not easily attributable to interference. L*HH% is used for discourse cohesion, while L%H% consistently signals continuation. Taken as a whole, this pattern may be seen as distinguishing the bilingual speakers from their monolingual peers and also from the second-language learners of earlier generations.

IMPLICATIONS AND CONCLUSIONS

I have discussed three specific patterns of intonation found among several Turkish-German bilinguals. Two of the three patterns are captured by available models of contact-induced change. In the case of interrogatives, speakers have maintained language-specific intonation structures; in the case of focal constructions, speakers produce a syntactic form in German that is the likely result of shift-induced interference. That syntactic form – the postposed focal construction – is further linked to a Turkish pattern of intonation that can similarly be accounted for through shift-induced interference. Of relatively greater frequency are cases in which both rises occur in both languages. There is no satisfactory way to account for this pattern through an interference-based analysis, for three reasons: the same linguistic forms occur in both languages; the genesis of the forms is tied to both German and Turkish; and this particular pattern does not occur in the German or Turkish of monolinguals. Therefore, I have suggested that this pattern is best accounted for through a mechanism of fusion, a mechanism proposed to augment Thomason & Kaufman's (1988) interference-based model of contact-induced language change.

Although fusion offers a powerful new mechanism for describing aspects of contact-induced language change, the relatively small sample size and the restricted conversational context from which the present data were drawn render these findings largely preliminary. Despite their limits, however, these findings are provocative for existing theories of language contact because they indicate the emergence of patterns of intonation that cannot be accounted for through interference, but that are nonetheless the result of language contact. Although more cases like those discussed here are needed to secure the place of fusion within general models of language contact, the following characteristics appear important for distinguishing fusion from other mechanisms of contact-induced change:

- A contact situation in which at least one form of interference is clearly demonstrable in several subsystems of both of the languages in contact. As Thomason & Kaufman imply, cases of interference are likely to index the sociolinguistic context necessary to produce contact-induced change; thus, a contact situation in which only lexical borrowing occurs is unlikely to result in fused structures.
- Some linguistic feature (or set of linguistic features) that occurs in both languages.
- A linguistic feature (or set of features) that has a demonstrable formal relationship to both (or all) of the languages in contact.
- A similarity in the form and function of some linguistic feature (or set of features) that occurs in both (or all) of the languages used by the community(ies) in contact, and that does not conform to normative patterns for either of the languages.

Since differences in the phonology and morphosyntax of languages in contact can be captured largely through either borrowing or shift-induced interference, fusion is probably most common in linguistic subsystems that are highly context-dependent. Intonation is one such subsystem; others might include discourse markers, narrative structures, or formal systems of address. Crucially, however, discovering cases of fusion depends on the holistic examination of language structure and use, which looks beyond the boundaries of phonology and morphosyntax, and which, as Thomason & Kaufman recommend, locates language use within broader sociolinguistic contexts.

NOTES

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¹ There are, of course, theoretical differences between Weinreich's interests, which are driven primarily by synchronic concerns, and Thomason & Kaufman's interests, which are concerned largely with diachronic phenomena. Thanks to Tony Woodbury for pointing out the potential confusion.

² This lack is unsurprising, given the relatively recent technological advances that have made the acoustic study of intonation feasible.

³ For instance, in his landmark study of /r/-deletion, Labov 1972 used 68 participants (a relatively small number for stratificational sociology). In contrast, Liberman & Pierrehumbert 1984 used four participants in their landmark study of intonational invariance.

⁴ There is no evidence from the speakers discussed here of the use of German intonation patterns exclusively in both languages.

⁵ Statistics are from the *Statistisches Jahrbuch 1993 für die Bundesrepublik Deutschland*. Despite German reunification, the percentage of foreign nationals has remained more or less constant since the mid-1980s.

⁶ Statistics, from *Ausländer in Deutschland* (March 1993), reflect 1993 numbers and do not include ethnic Germans from Eastern Europe.

⁷ For instance, Turkish Kurds make up a sizable portion of Turks seeking political asylum in Germany. Furthermore, many immigrants from southern Turkey may speak Arabic in addition to or instead of Turkish.

⁸ Thus, even for individuals who may have shifted from Turkish to German and who may intend to stay indefinitely in Germany, there is an ideological investment in the idea of Turkey as the “home-land” and of Turkish as the native language (Queen forthcoming).

⁹ That study included a greater number of speakers and more discourse contexts than are discussed in this essay. Although the patterns exhibited by other speakers and in different contexts corroborate the analysis presented here, I have limited the scope of this article in order to remain focused on the theoretical questions involved in contemporary cases of language contact.

¹⁰ Potential differences based on gender were not considered in this study.

¹¹ In Kleinstadt, the Turkish children also had three hours of Turkish instruction as part of their curriculum. In Unistadt, Turkish was an optional after-school course.

¹² The program is based on an algorithm developed by Mark Liberman at AT&T Bell Laboratories and adapted by John McCarthy.

¹³ The bilingual children produced 123 phrases in German and 220 in Turkish.

¹⁴ In Liberman’s original proposal (1978), there were three possible tonal morphemes: H(igh), M(id), and L(ow).

¹⁵ The existence of the phrasal tone has been disputed by a number of researchers (Ladd 1983, Kohler 1987b, McLemore 1991, Féry 1993). Without taking a strong position within that debate, I here represent only two levels of tonal organization: accent tones and boundary tones.

¹⁶ Also known as “downdrift” (Liberman & Pierrehumbert 1984, Carleton 1996, Ladd 1996), “declination” is the rate at which the absolute pitch values of high accent tones become increasingly lower over the course of an utterance.

¹⁷ The normative German dipped rise is only “normative” for the dialects of German that are most closely related to Standard High German. Thus, speakers in other areas – particularly in southern Germany – may use different patterns of intonation.

¹⁸ Özén’s evidence comes primarily from the presence of phonemic length in certain words in Turkish; however, there is no acoustic evidence that demonstrates a lack of relationship between accent and length.

¹⁹ In Turkish, most vowels follow one of two types of vowel harmony (see Kornfilt 1997). The capitalized letter represents the unspecified phonetic features of backness and roundness.

²⁰ I have used standard transcription conventions to mark overlaps and conversational latching (e.g. Schiffrin 1994)

²¹ Enver actually uses L*HH% to signal discourse cohesion generally (rather than, for instance, list formation) more in Turkish than in German.

²² This example also provides evidence that the differences between the two rises cannot be attributed to stress patterns. Both *dörteck* and *dörtgen* have initial stressed syllables.

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