

TOWARD AN INTERDISCIPLINARY UNDER- STANDING OF HERITAGE LANGUAGE ANXIETY

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ABSTRACT

This paper summarizes recent research on heritage language anxiety (HLA) that three generations of the Turkish immigrant community in the Netherlands experience in their daily lives. Through an interdisciplinary perspective, it integrates an extended questionnaire (n=113), semi-structured interviews (n=30), and an experiment (n=30) in which physiological responses (i.e. electrodermal activity) are measured during a video-retelling task conducted in monolingual and bilingual modes. Findings illustrate the complex interplay of daily sociolinguistic and socio-emotional challenges, HLA and physiological reactions. In its application of interdisciplinary research, the paper provides a more integrative glimpse into the multifaceted dimensions that underpin heritage language anxiety, particularly in the immigrant context.

[1] INTRODUCTION

In language contact literature, there is evidence that heritage language (HL) users feel incompetent and insecure when speaking their HL, and some have difficulties communicating with so-called native speakers of the HL, including their parents and grandparents (Braun 2012). This insecurity may often lead to heritage language anxiety (HLA) which occurs in immigrants' daily communications or during their visits to their home country, as recent research on three generation of the Turkish immigrant community in the Netherlands indicates (e.g. Sevinç 2018; Sevinç & Dewaele 2018; Sevinç & Backus 2019).

The construct of anxiety ranges from an amalgam of overt behavioral characteristics, which can be measured and analyzed scientifically, to introspective feelings that remain epistemologically inaccessible (Casada & Dereshiwsky 2001). This complexity makes anxiety a compelling topic of investigation which should be studied in connection with a complex web of language experiences, physiological reactions, interpersonal relationships, specific contexts and type of setting in which people are interacting, and so on

(MacIntyre 2017).

Despite a large body of research on language anxiety in instructed second language acquisition (SLA) research, the concept of HLA outside classroom contexts is relatively untouched. As noted in Montrul (2012), the extension of theoretical frameworks and methodologies from instructed SLA can significantly advance the research on HLA, but deeper understanding of HL speakers also needs more fruitful integration of the psycholinguistic and sociolinguistic perspectives contributing to the acquisition and maintenance of HLA.

In order to explore the relationships between and among linguistic, social, psychological and physiological aspects of immigrant experience and heritage language anxiety, and illuminate gaps between disciplines, this paper summarizes recent interdisciplinary research on HLA that integrates psycholinguistic perspectives (i.e. anxiety and psychophysiology) and sociolinguistic perspectives (i.e. language maintenance and shift). It relies on a mixed methods approach that combines a large-scale questionnaire, semi-structured interviews and an experiment conducted across three generations of the Turkish immigrant community in the Netherlands.

[2] HERITAGE LANGUAGE ANXIETY

Anxiety is an emotion characterized by feelings of apprehension, tension, fear or worried thoughts and physical changes (Spielberger 1966) such as sweaty palms, gastrointestinal discomfort, trembling, and increases in heart rate all of which are indicative of automatic nervous system (ANS) activation (Croft et al. 2004).

In instructed SLA research, language anxiety is extensively addressed as the fear or apprehension experienced when a language learner or user is expected to perform in a foreign language –*foreign language anxiety*– or in a second language –*second language anxiety*– (Gardner & MacIntyre 1993). Although these two types of language anxiety have so far been widely documented in language learning situations, HLA has hitherto been underexplored.

Following anecdotal evidence regarding Mexican and Spanish HL learners' anxiety (e.g. Levine 2003), Tallon (2011) coined the term heritage language anxiety, indicating that “further research is needed to study in more detail the type of anxiety experienced by heritage speakers—perhaps a different type of anxiety, such as “heritage language anxiety” as the language is not a “foreign” language for these students” (p. 78). The majority of studies on HLA have primarily compared heritage language speakers with non-heritage language learners (i.e. foreign language learners), investigating whether or not foreign language anxiety (FLA) affects a specific group of learners like HL learners in the same way it impacts traditional FL learners (e.g. Spanish: Levine 2003; Tallon

2011; Prada & Pascual y Cabo 2020; Chinese: Xiao & Wong 2014; Korean: Jee 2016). Overall, they conclude that HL speakers' anxiety levels tend to be lower than those of nonheritage FL learners in the classroom context.

The current paper summarizes recent research on HLA that three generations of the Turkish immigrant community in the Netherlands experience in their daily lives, outside classroom contexts, unlike much of the previous research in SLA that focused on the classroom context. The term "*heritage language anxiety*" as used in this paper can be defined as feeling of apprehension, concern, fear or worry experienced by immigrant or minority community members when using the language they learned in the family and which holds a minority status in their residential country.

[3] TURKISH IMMIGRANTS IN THE NETHERLANDS

As part of general labor migration to Western Europe, in 1964, the Dutch government signed a short-term recruitment agreement with Turkey, which officially commenced the movement of Turkish immigrants to the Netherlands. Followed by family reunifications and migration marriages, the Turkish population in the Netherlands reached 400,000 (CBS estimate 2013), constituting the largest immigrant group residing in the Netherlands. As scholars have noted, the first-generation of this group consists mainly of Turkish-born immigrants with close ties to the Turkish community in the Netherlands, and who ascribe a high value to the maintenance of Turkish (Extra & Yağmur 2010). Within this population, the HL tends to be the dominant language and there is a strong commitment to Turkish identity and culture (see Yağmur 2009; Backus 2011; Yılmaz & Schmid 2015 for a detailed overview).

The term "second generation" in the current study refers to first-generation immigrants' children who were born in the Netherlands or arrived there before the age of five and started school there. "Third generation" bilinguals refer to those whose grandparents migrated to the Netherlands through labor migration and to those who have one second-generation Turkish-Dutch bilingual parent and one Turkish-born parent who came to the Netherlands through marriage migration.

Different components of language maintenance and shift in the first and second generations of this community have been examined in several questionnaire-based studies (e.g. Arends-Toth & Van de Vijver 2003, Extra & Yağmur 2010). By means of conversational data, judgement tasks and controlled experiments, several studies document the HL (Turkish) use (i.e. vocabulary and structure) of first- and second-generation Turkish immigrants (e.g. Backus 1996).

Based on a cross-generational comparison, structural and lexical changes in Turkish spoken in the Netherlands are examined in Sevinç (2012, 2014), with a particular focus on the third generation. These studies illustrate that the Turkish spoken in the Netherlands, both lexically and structurally, differs from the Turkish spoken in Turkey. Such differences are not always welcomed within the ethnic community, and can cause negative self-image among those speakers who feel unable to speak the HL well (Sevinç 2014). Combining questionnaire and interview data, Sevinç (2016) then reveals a possible ongoing shift that is occurring among third-generation Turkish bilinguals in the Netherlands and discusses socioemotional consequences of this shift in the home language (i.e. a vortex of tension and pressure).

[4] THE PRESENT STUDY: METHODOLOGY

Through an interdisciplinary perspective, the current paper integrates three recent complementary studies on HLA across three generations of the Turkish immigrant community in the Netherlands: (1) Sevinç & Dewaele 2018, (2) Sevinç & Backus 2019 and (3) Sevinç 2018.

The study relies on a mixed methods approach that combines a large-scale questionnaire, personal interviews and an experiment. Each method may have a high level of weaknesses and bias, either from the researchers directing the questions or from the participants' tendency to give socially desirable responses (Crowne & Marlowe 1960). It may also be the case that some participants misunderstand prompts directed through only one method (e.g. questionnaires or interviews), which may mislead research findings. The growing interest in mixed methods research recently has demonstrated a dramatic increase (Creswell 2009; Harris & Brown 2010; Creswell & Plano Clark 2011). The main attraction to mixed methods research is that data gained through different methods may complement each other, overcoming weaknesses in individual methods (Harris & Brown 2010). Through mixed methods, researchers can view problems from multiple perspectives to enrich the meaning of a singular perspective, develop a more complete understanding of a problem (Creswell & Plano Clark 2011), and examine processes/experiences along with outcomes (Plano Clark 2010). When the quantitative phase is followed by the qualitative phase, it may also help determine the best participants with which to follow up (Plano Clark 2010).

Following guidelines provided in the previous studies (Harris & Brown 2010; Plano Clark 2010; Creswell & Plano Clark 2011), the current study combines different methods in two ways:

- (i) Questionnaires are combined with semi-structured, open-ended interviews (cf. Study 1, based on the questionnaire data, was followed by Study 3, based on an experiment with physiological measurements that was again followed up with self-reports of anxiety).
- (ii) Self-reports on language anxiety gathered through questionnaires are combined with physiological measurements (i.e. electrodermal activity) collected during a video-retelling task in different speech modes (cf. Study 1, based on the questionnaire data, was followed up by Study 3, based on both physiological measurements that was again followed-up by self-reports).

First, self-reports on language anxiety that immigrants experience in their daily lives were gathered through questionnaires. Questionnaire participants' responses were initially analyzed. The video-retelling experiments were conducted on the same day as interviews, three/four weeks after questionnaires were collected. Experiments were pursued by participants' self-reports on their language anxiety during the experiment. Following experiments, after a ten-minute break, the interviews were held.

Participants for Study 2 and 3 (the physiological experiment and interviews) were selected among the questionnaire respondents of Study 1. Particular attention was paid to reach the greater sample of third-generation bilinguals from different socioeconomic backgrounds and their family members for two purposes: first, to examine possible changes at play in the new (third) generation, second, to allow for a closer examination of the questionnaire findings related to high levels of heritage language anxiety reported by third-generation bilinguals.

[4.1] *Study 1*

The first study, Sevinç & Dewaele (2018), drawing on a 5-point Likert scale questionnaire¹, compares the levels of heritage language (Turkish) anxiety and majority language (Dutch) anxiety across three generations of the Turkish community (116 Turkish immigrants living in the Netherlands (76 female, 40 male); 45 were first-generation immigrants, 30 were second generation and 41 were third generation, see Table 1 for participants' demographic information).

The study investigates the link between immigrants' sociobiographical (i.e. generation, gender, education) and language background variables (i.e. age of

[1] See Sevinç & Dewaele (2018) for further information on the questionnaire and analyses and see Appendix A.1, A.2, and A.3 in Sevinç (2017) for the English, Dutch and Turkish version of the questionnaire.

acquisition, self-perceived proficiency, frequency of language use) and their language anxiety levels, based on a 5-point Likert scale ranging from not at all anxious (1) to extremely anxious (5).

	First Gen. (n=45)			Second Gen. (n=30)			Third Gen. (n=41)		
	M	SD	(Range)	M	SD	(Range)	M	SD	Range
Age (Years)	50	11.7	(32–85)	33	7.3	(20–42)	15	2.8	(11–21)
Gender									
Female (n=76)		32		20			24		
Male (n=40)		13		10			17		

TABLE 1: Questionnaire respondents' demographic information (Sevinç & Dewaele 2018).

[4.2] Study 2

The second study, Sevinç & Backus (2019), reports interview results on the causes and effects of HLA in two main categories: (socio)linguistic, and socioemotional aspects of HLA. Interviews were held with 30 participants (21 female, nine male; six were first-generation bilinguals, eight were second generation, and 16 were third generation, see Table 2 for participants' demographic information).

	First Gen. (n=6)			Second Gen. (n=8)			Third Gen. (n=16)		
	M	SD	(Range)	M	SD	(Range)	M	SD	Range
Age (Years)	41	4.0	(33–43)	26	1.6	(24–28)	14	2.2	(12–19)
Gender									
Female (n=21)		6		8			7		
Male (n=9)		–		–			9		

TABLE 2: Interviewees' and experiment participants' demographic information (Sevinç 2018; Sevinç & Backus 2019).

Semi-structured, open-ended interviews² were designed to delve deeper into information gathered through the questionnaire. The interview consisted of two main parts. The first part was concerned with bilingual's language background, their language history, linguistic dominance, and language practices and choices, while also providing a means to explore the story behind their experiences, learning languages motivations and attitudes towards bilingualism. The second part of the interviews consisted of questions related to

[2] See Sevinç & Backus (2019) for further information on interviews and analyses and see Appendix B.1, B.2, and B.3 in Sevinç 2017 for the English, Dutch and Turkish version of the interview questions.

socioemotional aspects of immigrant experience, language proficiency, language use, and language anxiety. There were two interviewers – one of Turkish origin (myself), and one Dutch– and the subjects could choose their interviewer: 12 of them chose the Dutch researcher and 18 the Turkish one. Interviewees were informed that they could use both languages freely. All interviews were fully transcribed and translated into English. Procedures for ‘open coding’, i.e. the process of breaking down, examining, comparing, conceptualizing and categorizing the data were applied to provide structure to the interview texts (see Strauss & Corbin 1990).

[4.3] Study 3

Article 3, Sevinç 2018, reports on physiological data (skin conductance level (SCL) and skin conductance response (SCR) amplitude and frequency) recorded during a video-retelling experiment to further investigate immigrants’ language anxiety.

In order to create a more natural setting, the experiment was conducted at my house in the Netherlands rather than at a laboratory. I carried out the experiment with the cooperation of a researcher with Dutch origin. We first introduced ourselves and the equipment (Biopac hardware, GSR100C amplifier settings), clarifying that one of us came from Turkey (myself), the other from the Netherlands—one had no knowledge of Turkish, and the other no knowledge of Dutch.

The interview participants in Study 2 ($n = 30$) were tested individually (see Table 2 above for participants’ demographic information). Biopac recorded two measures of autonomic arousal—skin conductance level (SCL) and skin conductance response (SCR)—during a video-retelling task in six experimental phases³: baseline (twice), free (bilingual) mode (twice), monolingual heritage language (Turkish) mode, and monolingual majority language (Dutch) mode.

In free (bilingual) modes, seven video clips were described. Participants could speak whichever language they were most comfortable with or they could switch their languages freely. In monolingual modes, 28 video clips were viewed and described by the participants, in Turkish around the Turkish researcher and in Dutch around the Dutch researcher. The aim here was to examine high levels of language anxiety when the participants spoke Turkish and/or Dutch in monolingual mode with or around so-called natives, as the majority of the questionnaire respondents reported in Study 1, Sevinç & Dewaele 2018.

Note that participants described the same 28 video clips during the

[3] The procedure and analyses of this experiment in each phase is discussed in greater detail in Sevinç (2018).

monolingual modes. To prevent any order bias, the experiment was performed in two versions in which only the order of the Turkish-monolingual-mode and the Dutch-monolingual-mode differed. After completing baseline1 and free (bilingual) mode, fourteen participants started with the monolingual-mode in their non-dominant least comfortable language, while the other fourteen did the opposite. After the experiment, participants reported the language anxiety levels that they experienced during the two monolingual-modes on a 5-point Likert scale ranging from none (1) to extreme (5).

[5] FINDINGS AND DISCUSSION

In this section, I will discuss the overall findings related to HLA from three studies (Sevinç & Dewaele 2018; Sevinç & Backus 2019 and Sevinç 2018) which draw on three different data sources—questionnaires, interviews and physiological measurements.

[5.1] *Findings: Study 1*

Findings from the questionnaires show that HLA prevails in different daily life situations (within the family, outside with friends, outside with/around native speakers) across three generations of the Turkish immigrants in the Netherlands (Sevinç & Dewaele 2018).

Mostly third-generation children suffer from a high level of HLA in all social contexts, including the family context, particularly when they speak Turkish with their fathers and grandparents. The majority of the third-generation group in the study reported experiencing medium, high, or extreme HLA with their grandparents, while both the second and third generation reported experiencing HLA mostly when speaking Turkish during their visits to Turkey, mostly when speaking Turkish outside with/around so-called Turkish native speakers, as well as with their Turkish friends in Turkey. Some of the first-, second-, and third-generation participants also reported high levels of HLA when speaking Turkish around Dutch people in the Netherlands (see Sevinç & Dewaele 2018 for detailed and statistical results).

Notably, statistical analysis revealed no significant correlations between language anxiety levels and language background variables in certain social contexts (such as within family and with friends). This finding demonstrates that language background variables and quantitative analyses on their own are insufficient to explain language anxiety in transnational contexts. Language anxiety in minority contexts appears to be a response to a variety of issues not easily captured through questionnaires alone.

[5.2] Findings: Study 2

The study demonstrates results from the interviews on the causes and effects of HLA in two main categories: sociolinguistic, and socioemotional aspects of language anxiety.

Sociolinguistic aspects of HLA are related to the feeling of having inferior Turkish skills prevailing across all three generations, even in the first. Bilinguals are often ashamed and anxious about the natural phenomena of their bilingual speech (i.e. language mixing habits, codeswitching, interference), particularly when mixing languages around so-called native speakers/monolinguals. This is related to sociolinguistic causes of HL, because Turkish-Dutch bilinguals are frequently expected to communicate in both languages like monolinguals, without any traces of bilingual language use, such as codeswitching and interference.

The study also reveals socioemotional aspects of HLA such as tension, pressure, language tension, unrealistic expectations and negative attitudes held by so-called natives, which are also tied to foundational emotional factors, such as identity, social exclusion and sense of belonging. It illustrates the discrimination and social exclusion that Turkish immigrants face because of their bilingual language use both in the Netherlands and when they visit Turkey. As reported in interviews, speaking Turkish is not tolerated at schools. Parents refer to the pressure coming from the mainstream society that pushes the idea of standard Dutch. The new generation experiences the brunt of the pressure to acquire both languages at an optimal level, while parents and grandparents all seem concerned, that their children cannot speak “proper Turkish”. This pressure triggers tension and generational conflict in the family, and HLA as a result.

In Turkey, an emigrant Turk living in any West European country is labeled as *almancı*, meaning “German-like”, regardless of the country they immigrated to. *Almancı* (var. *alamancı*) has other negative connotations as well, one of them meaning *nouveau riche*, with the implication that the person has recently and easily become rich and is now flaunting that wealth. Negative evaluations of emigrants’ Turkish linguistic and cultural skills by Turks in Turkey were often cited as one of the main causes of HLA, along with fear of being mocked and being excluded in Turkey. Taken together, all these factors combine to form the cluster of sociolinguistic and socioemotional causes of language anxiety in this immigrant community.

In the extract 1 below, CC demonstrates that his anxiety while speaking Turkish in Turkey is closely related to negative attitudes of Turks living in Turkey that is often linked with identity and ethnic allegiances and commitments. These findings also show that research should not ignore

immigrants' negative experiences during their visits to their home country and the impact of these experiences on HL maintenance.

[1] Because we [Turks in Europe] are afraid that they make mistakes (...) as a Turkish person, you do not know the language? (...) I experienced that before that I talked Dutch to my niece unconsciously. She is normal Turkish and lives there. She said: "You Dutch guy! What are you saying?" She laughed at me and said I need to talk Turkish more, then it should get better. It was a joke I know, but it was embarrassing, and this is a common reaction there. (CC, 15-year-old, third-generation)

With respect to sociolinguistic effects of HLA, due to anxiety, bilingual families may give up on using their home language, which leads to language shift. As proposed in Study 2, there is a "vicious circle" that connects immigrants' language knowledge, language use, and language anxiety. Bilingual children may ultimately avoid using the language about which they feel anxious, which, in turn, causes additional anxiety and reduced proficiency in the HL, as DTB illustrates in the excerpt below,

[2] My daughter for instance last summer, she behaved too ill-tempered in Turkey. She was not affected that much when she was little, but now when she couldn't make herself clear, when she panicked, she had nervous breakdowns! And this time she caused many problems. She is ashamed of herself when she can't talk Turkish. Kids [in the neighborhood in Turkey] invited her to play, but (...) because of her Turkish fear and these breakdowns she didn't play with them once the whole summer! (DTB, 44-year-old, first-generation immigrant).

The study also demonstrates how HLA and avoidance of Turkish has compounded the alienating effects in a socioemotional nature, such as isolation and breakdowns.

[5.3] *Findings: Study 3*

Findings of this study provide evidence for the relationship between anxiety, bilingual speech and physiological reactions. Drawing on the findings of the physiological experiment, it is possible to infer that HLA has physical components (e.g. autonomic arousal, increase in electrodermal activity—EDA) as well as socioemotional ones (e.g. belief that one is judged negatively by others

due to his/her language use or immigrant background).

Differences in the level of EDA—skin conductance level (SCL) and skin conductance response (SCR)—as an indicator of HLA were found among Turkish immigrants across three generations when using the HL in a monolingual mode around a so-called native speaker of that language. Third-generation bilinguals, to a greater extent than first-generation bilinguals, demonstrated greater autonomic arousal during the Turkish monolingual mode than during the Dutch monolingual mode (See Figure 1 for a sample of raw data from a third-generation bilingual, illustrating high levels of HLA during Turkish monolingual mode).

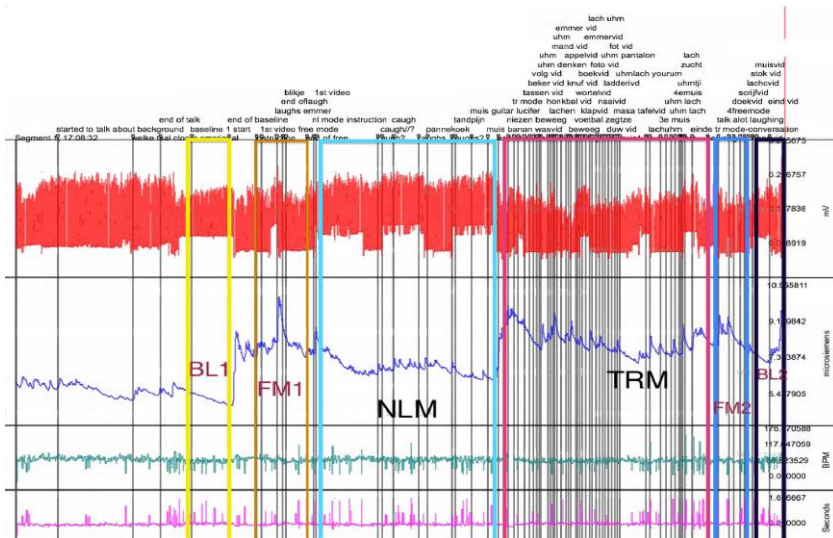


FIGURE 1: High levels of HLA and electrodermal activity during Turkish monolingual mode. Sample of raw data from a third-generation participant illustrating event markers, skin conductance level and skin conductance responses and the six phases of the experiment, (BL1) baseline1, (FM1) free-mode1, (NLM) Dutch monolingual mode, (TRM) Turkish monolingual mode, (FM2) free-mode2 and (BL2) baseline2, respectively, (Sevinç 2018).

Participants' SCLs/SCRs in monolingual-modes were strongly correlated with their self-reports on HLA⁴. These findings confirm the presence of HLA in immigrant contexts particularly when bilinguals use HL in monolingual mode around so-called native speakers. However, it is not all that clear-cut. Second-

[4] Study 2 and Study 3 involved the same participants, and a Pearson correlation analysis revealed significant correlations between SCL and SCR measures and reports of anxiety levels provided during the interviews (see Sevinç 2018 for a detailed analysis and Sevinç 2017 for further comparisons across the methods and findings).

and third-generation bilinguals for instance also had high levels of EDA during the free-modes (bilingual modes). For third-generation bilinguals, autonomic arousal both in the first bilingual-mode and second bilingual-mode was higher than in Dutch-monolingual-mode while for second-generation bilinguals, it was higher in the second bilingual-mode than in Turkish-monolingual-mode. The reason for this could be that second- and third-generation bilinguals mixed the two languages during bilingual-modes more frequently than first-generation participants, who mostly used their dominant language, Turkish, without switching to Dutch. These findings point out that codeswitching or mixing the two languages around native people who do not have an immigrant or Turkish-Dutch bilingual background may also provoke these individuals' linguistic anxiety during bilingual modes.

[6] CONCLUSION

The current paper combines linguistic, social, psychological and physiological aspects to provide evidence and interest for the concept of HLA in multilingual and immigrant contexts. Findings confirm the presence of HLA in immigrant contexts particularly when bilinguals use their HL in monolingual mode around so-called native speakers. Yet, they also call for attention to immigrant or minority community members' anxieties when speaking the HL and/or mixing their two languages around people from their mainstream community or so-called home country, and/or even within the family.

Turkish-Dutch bilinguals are constantly expected to communicate in both languages perfectly, as though they are multiple monolinguals in one person, who should thus function in the languages with "nativeness" in a monolingual mode in society (cf. Grosjean 2008; Ortega 2010), without any traces of bilingual language use, such as codeswitching and interference. These dynamics are reminiscent of the conflict between language pride and language (or moral) panic (Martínez 2006; Cameron 1995). Third-generation bilinguals tend to feel guilt, anxiety and shame about their level of Turkish, since it is associated with their Turkish identity. This puts a strain on communication with their parents and grandparents, as well as on their socialization and communication when visiting Turkey.

This interdisciplinary study shows that rather than only language background factors, a variety of other issues such as physiological reactions and social, emotional, cultural and political currents jointly take part in HLA in the immigrant context. HLA in immigrant contexts, as a social, unique and dynamic construction, appears to be a response to a variety of aspects not easily captured merely through questionnaires. The interview data and physiological

experiment have therefore been beneficial as a way of teasing out the details of this response. HLA has to be understood within a larger context of unequal power relationships (cf. Bourdieu 1977; Preston 2013) language contact situations, and the process of language maintenance and shift can be challenging for some immigrant and minority communities.

The outcomes of the studies I discussed here lend valuable new insight into HLA within immigrant contexts, a phenomenon which has thus far been underexplored in both contact and applied linguistics. Its results demonstrate that HLA is a complex interplay of sociolinguistic, socioemotional and physiological factors that are largely intertwined and often difficult to isolate. In its application of interdisciplinary research, this study provides a more integrative glimpse into the multifaceted dimensions that attend HLA, particularly in the immigrant context.

This study is innovative as it is the first study that generates insight into autonomic arousal research as it pertains to the link between physiology, bilingual speech, language background variables, social aspects and HLA. It suggests that an interdisciplinary approach applying physiological measures in association with social factors and self-reports is necessary to shed further light on HLA both in and outside the classroom context.

“The diverse methodological approaches across disciplines should not be viewed as a hindrance for the development of multilingual research, but rather as an asset” (Comanaru & Dewaele 2015, p. 404). Mixed methods should be used to examine this dynamic construct —HLA— as the complex interplay of sociolinguistic, socioemotional and physiological aspects. Reviewing emotional aspects of the immigrant experience, more interdisciplinary studies are necessary to shed further light on HLA and to uncover challenges immigrant communities face and the impacts of these challenges on individuals and languages. Finally, repeating the current research with a different immigrant or minority group or multiple immigrant groups would determine whether this is a phenomenon particular to Turkish immigrants or more widespread.

[7] LIMITATIONS AND FUTURE RESEARCH

The study has several limitations that need to be considered both in the interpretation of the results and for future research. First, the physiological experiment assessed bilinguals’ SCL and SCRs during a speaking task, but did not assess the association between these physiological measures and instances of language contact and change phenomena (i.e. vocabulary and sentence structure). Evaluation of participants’ actual speech during the speech modes and a comparison between their performance and EDA measurements could

better determine the link between language proficiency, anxiety and EDA. A comparison could also be made with a control group that includes Turks living in Turkey and Dutch people when they complete the experiment in their mother tongue.

In addition, although self-reports and interviews verified findings on participants' SCL/SCRs, this method cannot assure that the increase in participants' autonomic system corresponds to the actual language anxiety that they experience in their daily lives. Experimental conditions might have an impact on the results of EDA. It therefore could be more reliable to measure immigrants' physiological responses during their daily communications in different situations (e.g. within family, with friends and native speakers), when participants could move and speak in a natural, conversational way. With the current technology, however, this is not possible since the EDA signals are easily influenced by the movement and the EDA lead gets disconnected through movement artifact.

The physiological experiment was beneficial to attract attention to the link between physiology and language anxiety and to the concept of language mode, which have received relatively little attention in bilingualism and well-being research. Yet the interpretations based on this experiment require further investigation. In consideration of the present research questions and findings from Study 1 and 2, the focus was replaced on the differences in autonomic arousal between the two monolingual modes—Turkish and Dutch. However, findings also showed that immigrants might experience anxiety when they are in bilingual mode (e.g. when they codeswitch) around so-called native speakers/monolinguals, or when they speak their HL around people from the mainstream community. Given that in the current experimental setting, the conditions of the free-mode phase were different from the monolingual modes, this interpretation must be treated with caution. Future research is necessary to further examine these findings. Modifying the current experiment to investigate the anxiety during bilingual speech around monolinguals can be helpful.

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