Shift in language dominance in bilinguals:
An acculturation perspective

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Abstract

This paper investigates shift in language dominance in sequential bilinguals following migration. Participants include 149 Polish-English bilinguals who relocated to the UK[1] in early adulthood and underwent processes of acculturation and sociocultural integration. The independent variables in this study are divided into (1) sociocultural aspects, including: migration, acculturation level, social network profile, predicted future domicile; and (2) biographical aspects, including: age of onset of L2 acquisition (AoA), age at migration, and length of residence. The study employed both quantitative and qualitative approaches. The findings revealed strong links between language dominance and sociocultural variables including acculturation level, social network profile, and predicted future domicile. The results showed that sociocultural integration is a strong predictor of shift in language dominance. This study adds sociocultural and dominance perspectives to current research on language development over lifespan, by documenting a shift in language dominance in young adult sequential bilinguals following migration.

Keywords

Language dominance, acculturation, bilingualism, Polish-English bilingualism, language shift, language development over lifespan, complementarity principle.

1. Introduction

Language dominance is a concept frequently employed in bilingualism research and most bilinguals are said to be dominant in one language (Silva-Corvalán and Treffers-Daller, 2016). The original distinction between dominant and balanced bilinguals proposed by Hamers and Blanc (2000) does not seem to further explain the nature of dominance, neither does it link dominance with competence levels (Treffers-Daller, 2011). Dominant bilinguals are defined as "bilinguals who display greater ease in one of the languages (overall or in the domain in

question)" (Pavlenko, 2014, p. 23). Grosjean (Grosjean, 2016, 2015) argues that language dominance is strongly linked to the distribution of languages across domains of language use, and calls for the complementarity principle (CP) to be taken into consideration when operationalising and measuring language dominance. Bilinguals differ not only in respect to their linguistic portfolio and proficiency levels, but also in their reasons for becoming bilingual, their life trajectories, language preferences and acculturation levels (Nguyen and Benet-Martínez 2007; Dewaele 2010; Grosjean and Ping 2013; Wei and Hua 2013; Dewaele 2015a; Grosjean 2015).

Migration creates situations of language contact both within the receiving society, and the individual speaker (Kerswill, 2006; Papastergiadis, 2000). Language contact can promote shifts in language use which can be analysed at a level of a group or the individual language user (Esser, 2006). Shifts in language dominance in bilinguals may occur as a result of language contact, and Grosjean (2010, p. 90) points out that "one should be careful… not to think that the bilingual's first language, or mother tongue, is the stronger, most fundamental language; [that] it really depends on the individual's language history". Language shift at a group level is typically studied within a particular community, and across more than one generation (cf. Wei, 1994). At the individual level, language shift refers to changes in language use during a single lifespan, and is understood as language development (de Bot and Schrauf, 2009). Lowie, Verspoor and de Bot (2009) call for more research into language development at the individual level. Living in a new language and culture involves a shift in language use from L1 to L2, where the latter becomes the prevailing means of communication (Hammer, 2015; Hoffman, 1989). Dewaele (2015b) calls for more research into the effects of sociocultural variables into the relationship between language and culture. Pavlenko (2014, p. 305) highlights the need to "document an actual shift in speaker's performance". This paper aims to address the above calls (Dewaele, 2015b; Grosjean, 2016; Lowie et al., 2009; Pavlenko, 2014) and continue the line of enquiry into language dominance, including the CP into the operationalisation process.

2. Literature review

2.1 Language dominance

Language dominance is an all-encompassing concept the measurement of which revolves around language use, fluency and proficiency level (Wang, 2013). Proficiency is defined as the "overall level of language achievement", while language dominance is defined as the "overall level of language activation that creates the impression of fluency and ease of lexical retrieval and syntactic processing (may vary by domain)" (Pavlenko, 2014, p. 23). Birdsong (2006) points out that language dominance is related to accuracy, speed and automaticity of language processing. Ways of operationalisation of language dominance tend to include a wide array of research methods, including self-ratings, vocabulary-size tasks, lexical selection and word recognition tasks, measures of fluency, proficiency and domain-specific language use (Silva-Corvalán and Treffers-Daller, 2016). Some researchers deem it important to take typological differences between languages into consideration when measuring language dominance (Daller et al., 2011; Treffers-Daller and Korybski, 2016), while others see domains and functions of language use as the key variables (Carroll and Luna, 2011; Grosjean, 2015).

Measuring language dominance enables researchers to conduct comparisons between bilinguals, despite individual differences and contrasting socio-biographical profiles (Treffers-Daller and Korybski, 2016). As a variable, language dominance is employed in a broad range of contexts, for example when investigating links between language mode and reaction times

for non-words (Dunn and Fox Tree, 2014); measuring cognitive costs in sentence comprehension during code-switching (Bultena et al., 2015); establishing possible age-related decline in language inhibition patterns (Goral et al., 2015); and when investigating effects of code-switching on suprasegmental phonetics (Olson, 2015). The multi-dimensional character of language dominance accounts for different methodologies and different ways of operationalisation being used (Flege et al., 2002; Wang, 2013).

Flege, MacKay, and Piske (2002) proposed a fluency-based measurement of language dominance. The measurement was made on the basis of success rates in specific language tasks and achievement of near-native pronunciation. The fluency-based approach was criticised for not accounting for the complexity of bilingual dominance and reducing it to a success rate in few tasks performed in a controlled environment.

Dewaele and Pavlenko (2001) studied language preferences in 1,579 multilinguals (Dewaele, 2010). They used self-report to determine language dominance by asking the following open-ended question: "which do you consider to be your dominant language?" (Dewaele and Pavlenko, 2001, p. 1). Participants answered the question by providing the language they felt was their dominant language.

Treffers-Daller (2011) proposed a way of operationalisation of language dominance using measurements of lexical diversity in both languages. She studied lexical richness in 25 Dutch-French and 24 French-English bilinguals whose task was to tell stories in their respective languages. The vocabulary used was quantified in terms of lexical richness. Language dominance was decided on the basis of lexical competence in both languages.

Lexical retrieval and verbal fluency tasks were also used by Opitz (2010), who measured language dominance in 27 German late bilinguals living in Ireland. Research by Opitz (2010) and Treffers-Daller (2011) concludes that lexical richness is linked to language dominance, while lexical reduction, structural simplification and compromised fluency are said to stem from decreased levels of activation and thus can mark the onset of language attrition (Pavlenko, 2014, p. 23).

Treffers-Daller and Korybski (2016) conducted a study measuring language dominance in a group of 26 Polish-English bilinguals living in the UK. The proposed Index of Language Dominance was operationalised using two measures of lexical diversity. Participants' task was to tell stories in both L1 and L2, and detailed analyses of the vocabulary used were performed.

Dunn and Fox Tree (2009) studied 102 Spanish-English bilinguals residing in the United States who filled out an online questionnaire. Bilingual Dominance Scale was measured with the use of 12 questions including second language acquisition (SLA) -oriented variables, language use in domains of home and mathematical calculation, as well as participants' preferences for the language they wish to use for life (Dunn and Fox Tree, 2009).

Grosjean (2015, p. 574) claims that measuring language dominance should be "based not only on language fluency and on language use, but also on how the two languages are distributed across domains of life". Studies which consider the notion of a domain as pivotal enable researchers to quantify language use which allows space for further comparative analyses. By employing domain-based approaches to investigate language use in bilinguals, it is possible to combine the social and cultural aspects of language use, and observe patterns of language maintenance and shift (Epstein 1915; Weinreich 1953; Fishman 1965; Wei 1994; Schrauf 2009; Grosjean 2010; Hlavac 2013).

2.2 Complementarity Principle

Grosjean (1997, p. 165) proposed the CP by asserting that "bilinguals usually acquire and use their languages for different purposes, in different domains of life, with different people. Different aspects of life require different languages". He argues that bilingual language use is

distributed across different domains of experience, such as home, school, work, close and distant family members, friends, shopping, hobbies and other. The arrangement of language coverage across domains is said to depend on how languages were acquired, how they are normally used, and with whom bilingual speakers interact (Grosjean, 2016, 2015, 2010, 1997). Such distribution of languages across domains is said to have an impact on language dominance, fluency and translation abilities. Phenomena of conversational code-switching, for example, can be linked with domain-specific language distribution (Isurin et al., 2009; Kharkhurin and Wei, 2015; Wei, 1999). The proposed visual representation of the CP is that of multiple hexagons which are marked by language codes of L1 and L2, and they complement one another. These hexagons give a picture of what languages cover what domains in the experience of the bilingual speaker. The more domains fall under a given language, the more dominant and fluent the speaker is expected to be in that language. Conversely, if only few domains fall under a given language, the overall fluency in that language is expected to be lower. This is connected with the availability of vocabulary and domain-specific linguistic competence, where the two are directly linked with the overall language dominance (Grosjean, 2010). According to Grosjean (2016), in order to fully investigate and measure language dominance in bilinguals, it is crucial to employ a domain-based methodology.

2.3 Acculturation and shift in language dominance

Migration and immersion in a different sociolinguistic and cultural environment is linked to a shift in language dominance which can be described as "access to L1 gradually becoming slower than access to L2, without L2 competence necessarily being nativelike" (Köpke and Schmid, 2004, p. 11). Grosjean (2002) refers to this process as restructuring, which happens when bilingual language users increase their fluency in the L2, to the disadvantage of their L1. Shift in language dominance is not synonymous with a loss of the less dominant language, however it can naturally precede such an eventuality (Schmid, 2011). Grosjean (2015) argues that language dominance in the bilingual speaker can change during lifetime. Migration, sociocultural and psychological integration, and living in the second language can lead to changes in the character of first language maintenance and a more general shift in language dominance (Fishman, 1964; García et al., 2006; Grosjean, 2015; Hulsen et al., 2002).

Acculturation refers to the "process of cultural and psychological change" (Berry, 2005, p. 698). According to Berry (2005), acculturation involves changes in the behavioural repertoire of the individual, which usually includes extensive use of the target language. Direct links between acculturation level and linguistic performance were made by Schumann (1986). Schumann (1986) considers acculturation from the point of view of SLA, and defines it as "social and psychological integration of the learner with the target language group" (Schumann, 1986, p. 379). The process of acculturation is said to depend on the learner's social and psychological positioning, which can present either a certain distance, or proximity to the target language group, and is expressed by means of describing the individual as being acculturated to either a higher or lower degree. Schumann (1986) argues that immersion in the target language and culture significantly increases linguistic performance. Acculturation is said to combine the social and individual factors, and according to Schumann (1986), it is one of the most powerful causal variables in SLA. Research into language achievement and acculturation suggests strong links between the two variables (Hammer and Dewaele, 2015; Jiang et al., 2009). Proficiency levels were also found to strongly correlate with language dominance (Hammer, 2015).

2.4 Social network profile

Acculturation phenomena link with either participation or movement away from L1-oriented enclaves (Chiswick and Miller, 2005). Group membership is a fundamental concept from the point of view of acculturation, as it has an impact on one's behaviour and language use (Dabène and Moore, 1995; Fishman, 1989). Language contact is considered to be a crucial component of acculturation and successful L2 acquisition, and increased language contact with the host group is likely to significantly increase frequency of L2 use (Schumann, 1986). Openness and willingness to initiate, maintain and develop friendships with the locals are perceived as important criteria of successful acculturation (Ward, 2001). L2-oriented social networks are a powerful source of target language contact and enable further processes of acculturation and development of L2 identity (Preece, 2016; Regan et al., 2016). Group membership in strictly L1-oriented social networks may result in the formation of L1 linguistic concentrations, also referred to as enclaves, which are typically linked with lower frequency and proficiency levels in L2 (Chiswick and Miller, 2005). Linguistically, social networks are said to influence and facilitate either L1 maintenance, or language shift towards L2 (Allard and Landry, 1992; Fishman, 1964; Stoessel, 2002; Wei, 1994). Empirical studies identified social networks to be one of the main driving forces behind language shift towards L2 (Fishman, 1964; Holmes, 1997; Hulsen et al., 2002; Pütz, 1994; Wei, 1994). Wei (1994) also found that social network profile may have an impact on the L2 user being an atypical case within their own generation, for their social network profile will have a significant effect on their language use and choice (Daming et al., 2009; Wei, 1994).

2.5 Predicted future domicile

Schumann (1976) points out that learners who intend to stay in the host country for a long time, or indefinitely, are more likely to seek opportunities of language and culture contact when compared with sojourners, whose residency is temporary and whose expectation is to eventually return to the home country (Bochner, 2006). The nature of domicile is said to be connected to the acculturative process. Linguistically, temporary domicile may be linked with a more instrumental motivation for L2 learning and use, while in permanent settlement the motivation for L2 learning and use may be more integrative (Gardner and Lambert, 1972; Schumann, 1976).

2.6 Biographical profile of the L2 user

Age of acquisition (AoA) is one of the most investigated independent variables in SLA (Cook and Singleton, 2014; Dewaele, 2013, 2010, 2009). AoA is often considered in respect to critical period hypothesis (CPH) which assumes that between the age of six and 17 the inherent mechanism responsible for successful language attainment somehow expires (Birdsong, 2006; DeKeyser, 2000; Singleton, 2003). The age of nine is associated with cognitive restructuring in monolinguals (Pavlenko, 2011), while the age of 17 and beyond is associated with inability to reach native-likeness (Abrahamsson and Hyltenstam, 2009). It is important to distinguish between the AoA, and the age at migration, as the two (different) terms are found to be used interchangeably in literature. Pavlenko (2014, 2011) calls for future studies to continue to differentiate between age of onset of acquisition and age at migration.

Age at migration is said to be a reliable predictor of L2 performance (Jia et al., 2002). Jia and Aaronson (1999) suggested the Dominant Language Switch and Maintenance Hypothesis, according to which age at migration and language proficiency are main predictors of either language maintenance or language shift in migrants (Jia and Aaronson, 1999).

Younger arrivals are expected to shift towards the L2 more readily than older arrivals, where the latter are expected to be keener on L1 maintenance. Changes in language dominance are reported to occur between three and seven years of domicile in the host country (Magiste, 1979).

The final biographical variable describing the L2 user which may link with linguistic performance is length of residence in the host country (Bialystok, 1997). Greater length of residence is said to be linked with higher levels of success in the task of "re-naming the world", in other words, cognitive restructuring in bilinguals (Pavlenko, 2011, p. 199).

3. Methodology

3.1 Research questions and hypotheses

Three research questions and seven hypotheses have been formulated to investigate shift in language dominance in bilinguals. The research questions include the following:

(1) What is the effect of migration on language dominance?
(2) Is language dominance following migration linked to acculturation level, social network profile, and predicated future domicile?
(3) To what extent can AoA, age at migration, and length of residence predict language dominance following migration?

One hypothesis was formulated to address the first research question, which investigates the effect of migration on language dominance:

Hypothesis 1: There will be a shift towards L2 in language dominance following migration.

Three hypotheses were formulated to address the second research question, which investigates possible links between language dominance and acculturation level, social network profile, and predicted future domicile:

Hypothesis 2: Participants with higher acculturation levels will be more L2-dominant.
Hypothesis 3: Participants who function in predominantly L2-speaking social networks will be more L2-dominant.
Hypothesis 4: Participants who intend to stay in the L2-speaking country indefinitely will be more L2-dominant.

Three hypotheses were formulated to address the third research question, which investigates the extent to which AoA, age at migration, and length of residence can predict language dominance:

Hypothesis 5: Participants with lower age of onset will be more L2-dominant.

Hypothesis 6: Participants with lower age at migration will be more L2-dominant.

Hypothesis 7: Participants with greater length of residence will be more L2-dominant.

3.2 Participants

Participants consisted of 149 highly educated young adult L2-competent sequential Polish-English bilinguals. The lowest AoA within the sample was three years old, with the age of 12 being the average (Mean = 12.3 years, SD = 4.6). Over 50% of the participants started learning English before the age of 13. All participants were university/college graduates out of which 58.4% held a MA, 26.2% held a BA, 10.1% held a PhD, and 5.4% were College graduates. Each of the participants made a decision to move to the UK in early adulthood, and all of them were professionally or academically active. Participants' ages ranged from 23 to 45 years, with the average being 31 (Mean = 31.1, SD = 4.7). Age at migration ranged from 18 to 41 years old, with the average being 23 (Mean = 23.6, SD = 3.8). The majority of 128 participants had migrated by the age of 26 and the average length of residence was eight years. All participants were competent users of English and according to the Common European Framework of Reference for Languages (CEFR), 45.6% were proficient L2 users, 38.3% declared to have native-like proficiency, and 16.1% were independent users of English (Council of Europe, 2011). 86% of the participants were female and 14% male which represents a typical gender distribution in online questionnaires devoted to language use (Wilson and Dewaele, 2010).

3.3 Procedure

The study combined both emic and etic approaches which enabled to combine statistical quantification with individual experience (Dewaele, 2015b; Dörnyei, 2007). All participants completed an online questionnaire which included closed- and open-ended questions, and a table of language use (Hammer, 2012).

Language dominance was operationalised using the CP, in other words, by eliciting language use data for different domains of life. Language use data were obtained for before and after migration, across 20 experiential domains. Each of the 20 domains had a 'before migration' and 'after migration' column, with two drop-down menus respectively. The drop-down menus used a 5-point Likert scale and the measures included: (1) Polish, (2) Mainly Polish, (3) Equally Polish and English, (4) Mainly English, (5) English. The participants were asked to think how they use their languages currently, and how their language use changed over time, and select one of the available options for both 'before migration' and 'after migration' situations. The domains included: *workplace/daytime study, household, interest group (course/regular activity), peer group (main group of friends), nuclear family (main family members), romantic partner, best friend, role model, thinking of events experienced in L1, thinking of events experienced in L2, praying/having an internal monologue about life, writing in a personal journal/diary, calculating/counting, note taking (for personal use/synthesizing information/learning), writing out a to-do list/personal action plan, writing out a shopping list, reading books/magazines/newspapers, watching films/programmes, listening to music/radio, language for hobby maintenance* (Hammer, 2012). Empirical validity for domain-specific self-report utilising a 5-point Liker scale measurement was provided by Schrauf (2014) who measured domain-specific language use. Language dominance scores were created by calculating the means of language use for before and after migration for all 20 experiential domains. A high internal consistency reliability for language use in 20 experiential domains was revealed during Cronbach alpha analyses for scores before migration (alpha = .89) and after migration (alpha = .88).

A retrodictive research method was used in that the end result (language dominance after migration) was measured with a simultaneous investigation of the development path from the starting point (language dominance before migration). The retrodictive research method

was previously used by Dörnyei (2014), and most recently by Chan, Dörnyei and Henry (2015). The retrodictive approach permitted the gathering of evidence of language shift by tracking back language use before migration and comparing it with language use after migration.

Closed-ended Likert scale questions measured key sociocultural variables, namely, acculturation level, social network profile, and predicted future domicile. Acculturation was operationalised using the following question: 'Acculturation is a process roughly defined as: social and psychological integration with the target language group. How integrated with your English language group do you feel?' Five available answers included: 'Completely / Highly / Moderately / Slightly / Not at all' (Hammer, 2012). Acculturation level scores were validated by means of correlations with other variables, namely, social network profile ($r_s = .454^{**}$; p < .0001), predicted future domicile ($r_s = .279^{**}$; p < .001), L2 dominance ($r_s = .450^{**}$; p < .0001), and length of residence ($r_s = .264^{**}$; p < .001). The measurement of social network adopted an egocentric/anthropological approach by investigating the participants' personal network (Daming et al., 2009).

Open-ended questions elicited further data to complete the biographical profile of the L2 user, and included questions about the age of onset, age at migration, length of residence, current age, and personal experience of a linguistic transition.

Semi-structured interviews followed the online survey and focused on investigating changes in language use and language dominance following migration. Fourteen participants were interviewed as part of the study. The qualitative fragments cited in this paper represent patterns of experience which were particularly resonant and relevant (Smith, 2011; Straub, 2006).

4. Results

A series of one-sample Kolmogorov-Smirnov tests revealed that the scores for language dominance are not normally distributed (Kolmogorov-Smirnov Z values vary between 3.2 and 3.9, p < .0001); therefore Wilcoxon signed-rank and Kruskal-Wallis tests were used as non-parametric equivalents of independent t-test and one-way ANOVA.

4.1 The effect of migration on language dominance

A Wilcoxon signed-rank test showed that there is a highly significant shift towards L2 in language dominance following migration (Z = -10.6, p < .0001). Mean score for L2-dominance before migration was 1.6 while after migration it reached 3.5. Figure 1 illustrates the shift towards L2 in language dominance following migration:
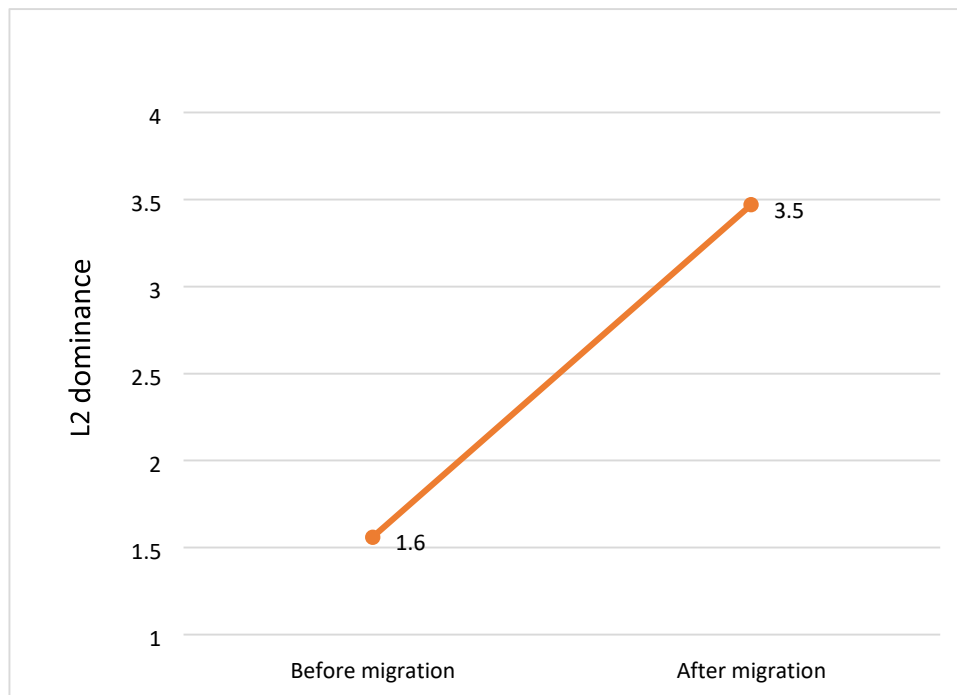
Figure 1. Shift towards L2 in language dominance following migration.

Language dominance score was additionally validated by means of correlating it with other variables (Flege et al., 2002; Treffers-Daller and Korybski, 2016), namely L2 proficiency level (r_s = .256**; p < .002), level of L2 socialisation (r_s = .618**; p < .0001), and acculturation level (r_s = .450**; p < .0001.).

4.2 The effect of acculturation level on language dominance

A Kruskal-Wallis test showed that there is a significant effect of acculturation level on language dominance (χ^2 = 30.7, p < .0001) with a mean rank of 33.7 for the slightly acculturated group, 53.5 for the moderately acculturated group, 76.2 for the highly acculturated group, and 96.9 for the completely acculturated group. Figure 2 presents the effect of acculturation level on language dominance following migration and parallels it with L2 dominance scores before migration, which were similar for all participants.
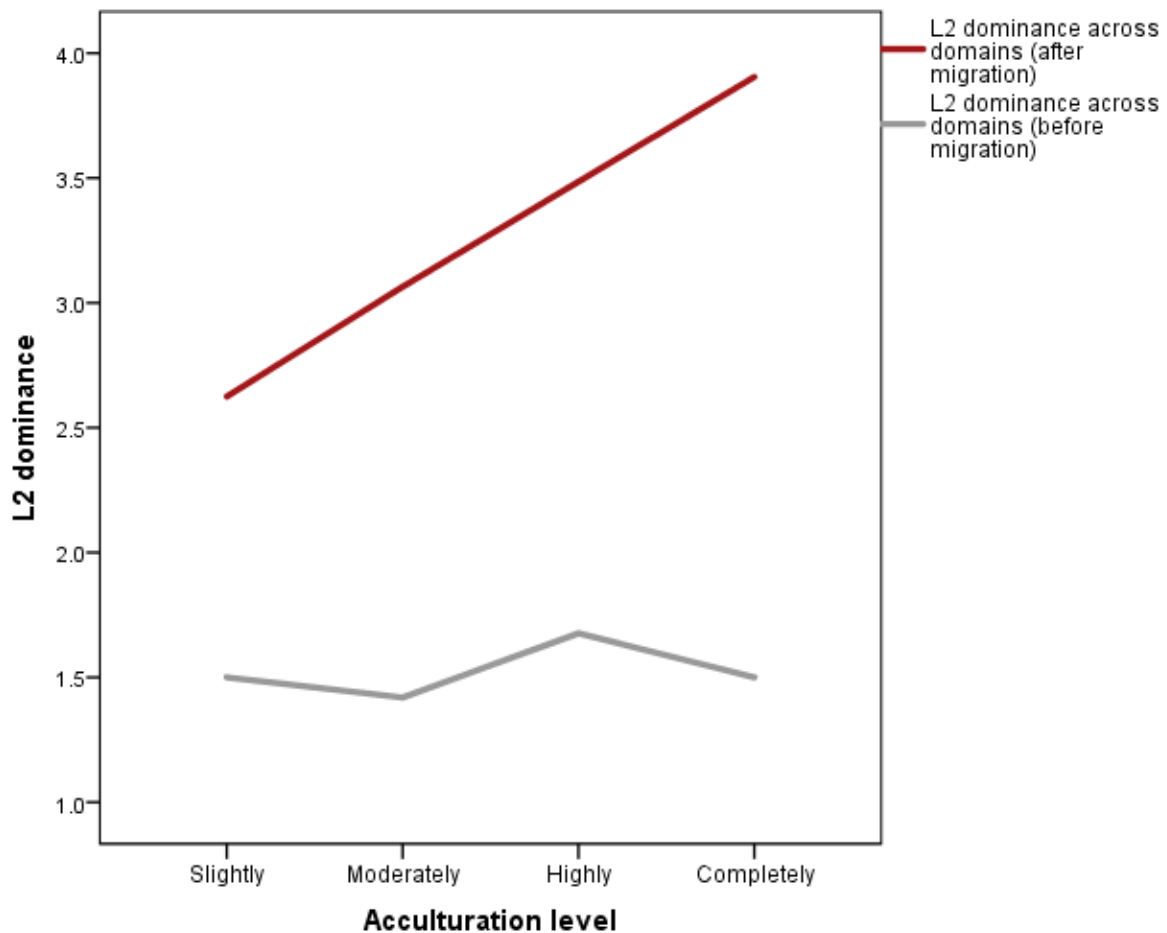
Figure 2. Effect of acculturation level on language dominance.

4.3 The effect of social network profile on language dominance

A Kruskal-Wallis test showed that there is a significant effect of social network profile on language dominance ($\chi^2 = 56.6$, $p < .0001$) with a mean rank of 35.9 for the majority Polish-speaking social network, 56.5 for the equally Polish and English-speaking social network and 98.8 for the majority English-speaking social network. Figure 3 illustrates the effect of social network profile on language dominance and parallels it with L2-dominance scores before migration, which were similar for all participants.
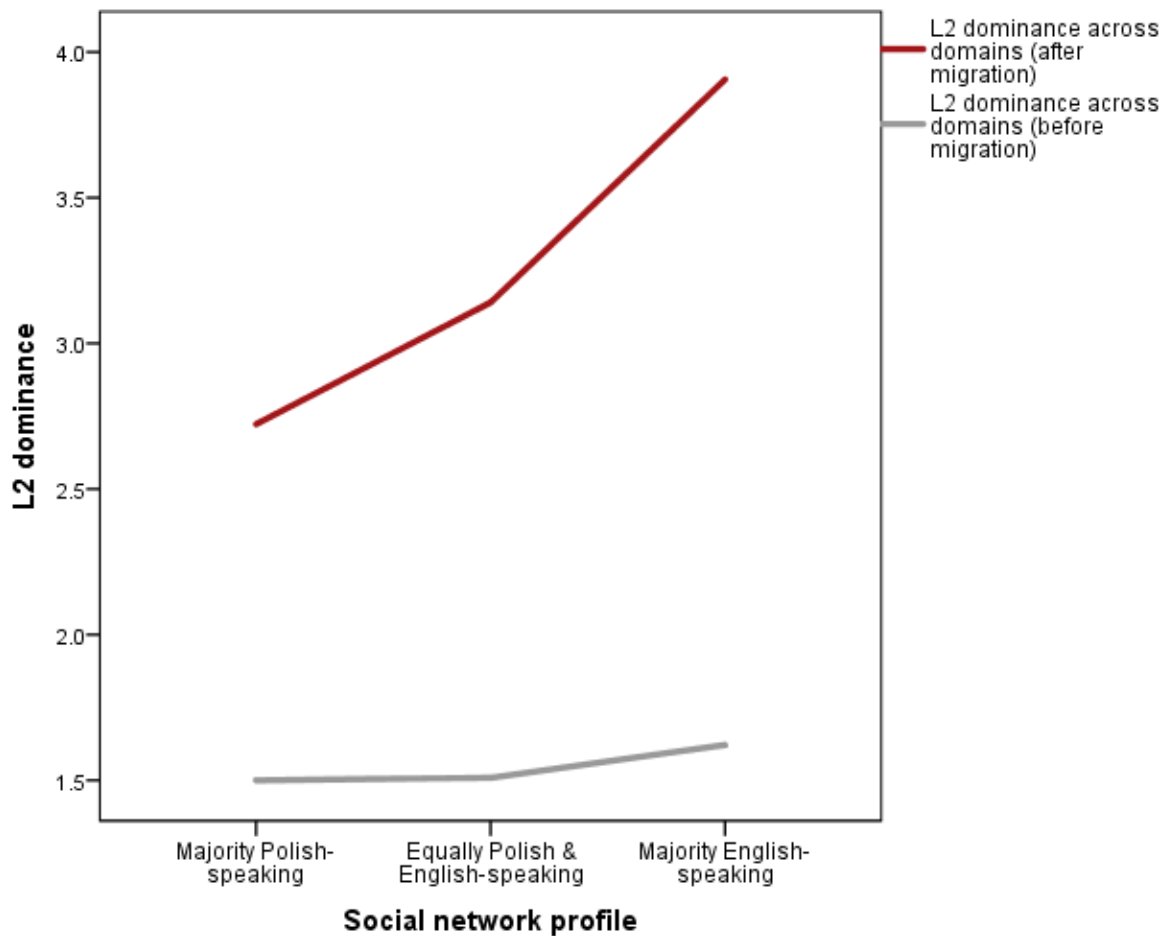
Figure 3. Effect of social network profile on language dominance.

4.4 The effect of predicted future domicile on language dominance

A Kruskal-Wallis test showed that there is a significant effect of predicted future domicile on the degree of L2-dominance ($\chi^2 = 13.8$, $p < .001$) with a mean rank of 82.7 for the intention to stay in the L2-speaking country indefinitely, 68.0 for being unsure about predicted future domicile and 40.9 for the intention to leave the L2-speaking country at one point in the future. Figure 4 illustrates the effect of predicted future domicile on language dominance and parallels it with L2-dominance scores before migration, which were similar for all participants.
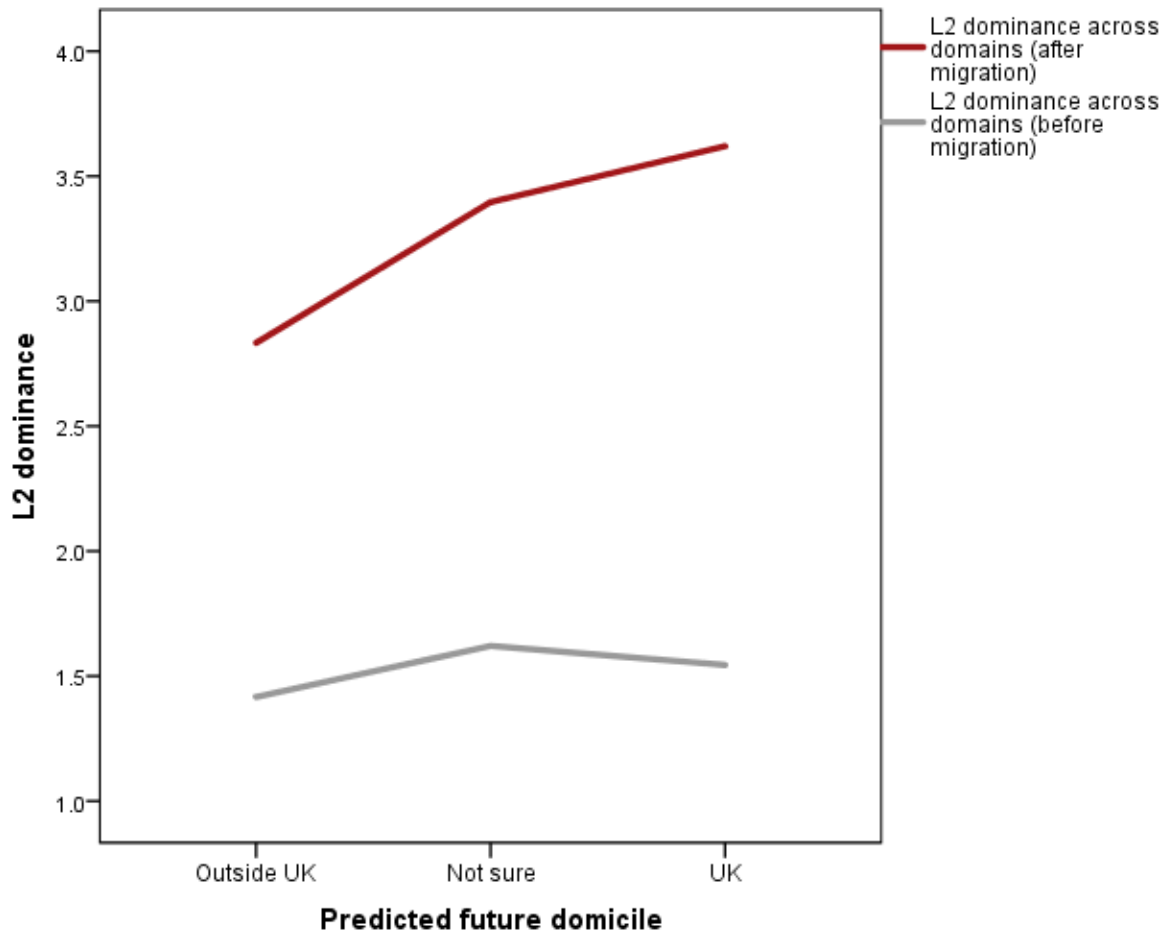
Figure 4. Effect of predicted future domicile on language dominance.

4.5 The effect of age of onset on language dominance

A series of Kruskal-Wallis tests showed no significant effect of age of onset on language dominance ($\chi^2 = 2.7$, p = .261) with a mean rank of 83.1 for the 0--9 years of age group, 71.3 for the 10--16 years of age group, and 72.5 for the 17 years of age and over group.

4.6 The effect of age at migration on language dominance

A series of Kruskal-Wallis tests showed no significant effect of age at migration on language dominance ($\chi^2 = 3.36$, p = .340) with a mean rank of 80.2 for the group who migrated between 18--23 years of age, 67.7 for the group who migrated between 24--29 years of age, 77.3 for the group who migrated between 30--35 years of age, and 77.3 for the group who migrated between 36--41 years of age.

4.7 The effect of length of residence on language dominance

A series of Kruskal-Wallis tests showed no significant effect of length of residence on language dominance ($\chi^2 = 1.3$, p = .514) with a mean rank of 68.8 for the under 5 years of residence

group, 76.8 for the between 5 and 10 years of residence group, 78.5 for the over 10 years of residence group.

The feedback from the interviews and the open questions confirmed the statistical patterns. A selection of the most illustrative and interesting extracts is presented below:

MI1 reported a dramatic shift in language use following migration:

'[My language use changed] dramatically. I was a teacher of English back home, so I used English a bit but it was the boring academic English that you teach kids, I'd probably look at some websites and read some magazines but that was about it... [now] that's what I have to do every day all the time and Polish is only used for staying in touch with my family back home and a couple of Polish friends over here so it shifted quite significantly, yes.'

MI2 (completely acculturated; English dominance) explains that she functions in L2 on a daily basis and this dictates her language use in general:

'I function in English altogether, I read in English, I listen to English TV, whatever interaction I would have it would be in English, it would take too much time, and it would be very confusing to switch back between Polish and English in this case, I think, it wouldn't quite make sense, but possibly at the beginning this is what it would have been and that's what makes it difficult when you learn a language or when you've just moved to the country where you have to use a different language which is not your mother tongue, I think it's how it works.'

MI3 (highly acculturated; majority English dominance) expressed how she finds it easier to put her thoughts into words in L2; she also recalls her original fascination with the English language:

'It's easier for me to express myself in English… when I imagine a dialogue I imagine it in English, I find it easier, it has a function for me to create the communication the way I want it and the way I want to express myself, and I'm thinking it's much clearer in English, so for some reason, yes… It is interesting and then I'm thinking am I going wrong somewhere in all this, because I'm not trying to completely erase Polish, this isn't absolutely my goal (…) I just maybe at some point, when I was a teenager, I started reading Dickens, I really loved the language and I really loved the way, the expressions he used and then I even started enacting things, and I just really enjoyed it, and maybe that's why I shifted from... I find it just easier... (…)'

N5 (moderately acculturated; majority Polish dominance) reported that despite changing country borders, L1 is her dominant language:

'I have realised that Polish is my main language even while living in the UK… It is my mother tongue and it is much easier to communicate.'

N31 (slightly acculturated; majority Polish dominance) reported that L2 is used purely for functional reasons but not more than that:

'No, I still use Polish as I used before. I just expanded a number of people I can have conversations with. Regarding English, I simply need it to function in the society.'

N160 (balanced social network; equally Polish-English dominance) described how gradual changes in her social network impacted her language ability and use:

'It was a gradual process. When I came to London in 2002 to write my master's in sociology, I knew far more Polish people then. The longer I stayed, the more English-speaking people I met through university, work and socialising. My confidence in speaking English grew with a number of English-speaking people I was friends with (...) I always tried to mix with English-speaking people as I always wanted to improve my English at every opportunity. I tried to share flats with Australians and Irish, and avoided working with Polish people with some exceptions for my best friends... Also, finishing my other masters here, and starting my professional career helped, and made me use English on a daily basis. Overall, when I came to London, I was using English approx. 60% of the time, now it's closer to 80%.'

N153 (majority Polish-speaking social network; equally Polish-English dominance)

'English for workplace; Polish for socialising.'

N134 (permanent domicile; English dominance) reported how her languages are used for different purposes and with different people, and she asserted where she feels at home:

'Polish is sister, mum (both living in Italy), grandma (Poland), dad (England), close family and a few Polish friends, holidays in Krakow. English is work, hobby, TV, books, large groups of multicultural friends. England is home.'

5. Discussion

The quantitative and qualitative findings revealed a statistically significant shift towards L2 in language dominance following migration, which fully confirmed Hypothesis 1. The findings also showed that language dominance is tightly linked to acculturation level, social network profile and predicted future domicile, confirming Hypotheses 2, 3 and 4. Participants with higher levels of acculturation were found to be more L2-dominant than participants with lower levels of acculturation. A clearly defined monotonic increase in L2 dominance was seen to correspond with an increase in acculturation levels. Participants with majority L2-speaking social networks were found to be more L2-dominant when compared to participants with balanced, or majority L1-speaking social networks. Participants who intended to stay in the L2-speaking country indefinitely were found to be more L2-dominant than participants who were not sure of their future domicile, or those who saw their residency as temporary. No links were established between language dominance and AoA, age at migration and length of residence, disproving Hypotheses 5, 6 and 7.

Evidence presented in this paper supports Grosjean's (2015) assertion that language dominance in bilinguals can change following migration, and that the previously less dominant L2 can become the main, dominant language in the life of the bilingual speaker. The study

proved the importance of employing the CP into the measurement of language dominance in sequential bilinguals (Grosjean, 2016). The results also confirmed that changes in language dominance occur between three to seven years following migration (Magiste, 1979), for the average length of residence of the present sample was eight years.

The findings provide empirical evidence that language use is tightly linked to acculturation levels, which supports the work of Schumann (1986) and Schrauf (2009). Participants were found to be L2-dominant proportionally to the degrees of acculturation into the new society. The statistical findings were particularly well illustrated during the interviews with completely and highly acculturated bilinguals. One of the interviewees (MI2) said she 'functions in English altogether' which is reflected in her predominant use of L2 on a daily basis. In contrast, two moderately acculturated interviewees declared that L1 is their dominant language despite living in the UK, that they 'still use Polish as they used it before', and that English is 'simply needed to function in the society'.

The results showed that social network profile is tightly linked to shift in language dominance in bilinguals, which links with the work of Fishman (1964), Allard and Landry (1992), Wei (1994), Pütz (1994), Holmes (1997), and Hulsen, de Bot, and Weltens (2002). The present study added an individual perspective on language shift by investigating changes in language dominance over lifespan, and showed that functioning in majority L2-speaking social networks is linked to higher L2-dominance.

The findings also revealed that predicted future domicile is strongly linked to patterns of language use following migration, which supports Schumann's (1976) assertion that individuals who intend to stay in the L2-speaking country indefinitely seek opportunities of linguistic and cultural contact to a higher degree and, ultimately, have a higher chance to acculturate to a higher level, which is reflected in their language use. The findings confirmed that permanent residency is linked with higher levels of L2-dominance. The findings also link with Gardner and Lambert's (1972) notion that permanent residency is associated with a more integrative motivation for language learning and use. Predicted future domicile was found to strongly correlate with acculturation level, which confirms Schumann's (1976) view of it being an important acculturation variable, which has an effect on patterns of language use.

The results showed no links between language dominance and AoA. It can be concluded that sociocultural integration, acculturation and socialisation in majority L2-speaking social networks neutralise the standard temporal predictor of language use.

Similarly, no effects of age at migration were found to influence language dominance. It should be noted that the present sample consisted of bilinguals who relocated in young adulthood. Had different age groups been investigated as part of the study, age-related effects could be more prominent (Treffers-Daller and Korybski, 2016). As this study focused exclusively on young adults, it can serve as support for the Dominant Language Switch and Maintenance Hypothesis (Jia and Aaronson, 1999) in that young L2 competent arrivals are more likely to shift language dominance towards L2 following migration.

Length of residence did not prove to be linked to language dominance following migration. Length of residence scores in this study were used to validate acculturation level values, which yielded a strong positive statistically significant correlation between acculturation level and length of residence. This study adds an acculturation perspective and therefore length of residence is not understood as the causal variable in itself, but as a variable parallel to sociocultural variables, which were found to have effects on the degree of language shift and language use following migration. From the acculturation perspective, causality does not lie exclusively in how long the residence lasts, but what happens during the length of that residence, in other words, whether sociocultural and psychological integration takes place and to what degree. This connects with Chiswick and Miller's (2005) study on the role of enclaves

in sociocultural adjustment, as L2 socialisation and increased levels of L2 exposure will result in more cultural and linguistic intake.

6. Conclusion

The findings suggest that acculturation level, social network profile and predicted future domicile are tightly linked to the degree of shift in language dominance following migration. Acculturation showed to be a reliable predictor of language dominance, stronger than traditional temporal predictors of linguistic performance. Social network profile was found to be a very strong sociocultural variable and a fundamental constituent of the acculturation processes. In response to research calls by Lowie, Verspoor and de Bot (2009), Pavlenko (2014), Dewaele (2015b), and Grosjean (2016) this study: (1) extended current research into language development at the individual level and across lifespan; (2) documented shift in language dominance in sequential bilinguals; (3) provided evidence for the links between sociocultural variables and language use; and (4) measured language dominance including the CP into the operationalisation process.

Finally, this study provides empirical evidence that language dominance can change over time; and it adds a new facet to Schumann's Acculturation Model (1986), by highlighting the link between levels of acculturation and the extent of language shift in competent bilinguals following migration.

About the author

Dr Kate Hammer is a Lecturer at the UCL Centre for Applied Linguistics, University College London, United Kingdom. Her research interests are varied and include the interaction between language use in bilinguals, cognition, and culture. She has authored a number of original research publications, including 'L1 + L2 to the power of culture: Acculturation and language use for cognitive domains in bilinguals' published by Cambridge University Press.

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[1] 12 out of the 149 participants were residing outside the UK (Republic of Ireland, USA, Canada, Australia).