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Self-reported frequency of swearing in English: Do situational, psychological and sociobiographical variables have similar effects on first and foreign language users?

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KEYWORDS: Swearing; personality; multilinguals; English; intra-speaker variation; inter-speaker variation

Abstract

An analysis of data collected from 2347 users of English on their self-reported swearing behaviour in English revealed significant higher values for the 1159 native English (L1) users than for the 1165 English foreign language (LX) users. Parallel analyses on the data of the L1 and LX users revealed that the interlocutor effect was slightly stronger among L1 users. Swearing was reported to be most frequent in interactions with friends, when alone, followed by interactions with family members, colleagues and strangers. Participants scoring high on Psychoticism, Extraversion and Neuroticism reported significantly more swearing in English. Extraversion and Neuroticism had the strongest effects on LX users' self-reported swearing with friends and alone while Psychoticism and Neuroticism had the strongest effects on L1 users' self-reported swearing with strangers and with friends. The effects of sociobiographical variables (education level, age group, gender) were broadly similar among L1 and LX users but were significant in more categories of interlocutors for the L1 users. It is argued that the weaker effect of situational, psychological and sociobiographical variables on self-reported frequency of swearing among LX users of English could be linked to larger heterogeneity in their history of learning, socialisation, proficiency and use of English.

Keywords: Swearing, personality, multilinguals, English, intra-speaker variation, inter-speaker variation

Introduction

Swearing is ubiquitous and knows no age nor social boundaries (Jay 2009). In other words, everybody swears occasionally, and some do so more regularly. While swearing can lead to social disapproval, and is commonly linked to laziness, lack education or self-control, it is in fact an integral part of human interactions (Jay and Jay 2015). As Jay (2009) points out, we feel better after swearing: its cathartic effect frees us of angry emotions and limits instances of physical violence. People who swear are not necessarily perceived negatively and frequent use of swearwords is not an indication of a limited vocabulary, on the contrary (Jay and Jay 2015).

Swearing “well” requires a strong sense of what is considered appropriate within a particular speech community. As children start to swear, their elders may tell

them off and they gradually build up “experience with a culture and its language conventions” (Jay and Janschewitz 2008: 267). It means that children become aware that “some words are taboo or “bad” words and others are non-taboo, “good” or neutral words” (Jay and Jay 2013: 460). The authors point out that when children enter school they already possess the rudiments of adult swearing. Swearing can thus be described as a linguistic behaviour that often triggers specific, explicit feedback, which is part of the socialization process. Children and teenagers thus develop their understanding and assessment of the inappropriateness of taboo words (Andersson and Trudgill 1990; Jay and Jay 2013). Anna Leach, a British journalist for the respectable broadsheet *The Guardian* wrote an article in 2014 entitled *Is swearing at work good for your career?* She presented anecdotal evidence that in some industries, such as advertising, catering, probation and journalism, swearing is more frequent and accepted, and that new members of staff may be encouraged to accommodate to the norms of that specific speech community. This provocative advice is sound considering that research has shown that swearing can have positive social consequences for the speaker: “it influences the perceived credibility, intensity, and persuasiveness of the swearer” (Vingerhoets, Bylsma and De Vlam 2013: 287). It can also promote group bonding and solidarity, inhibit aggression, elicit humour but it can also cause emotional pain to others (287). Stapleton (2010) has argued that swearing allows not only the expression of emotion but also the construction and display of identity.

Swearing is challenging for Foreign language (LX) speakers as their knowledge of conventions surrounding the use of swearing might be incomplete or inaccurate (Dewaele 2010, 2013, 2016). Moreover, LX speakers may not realise that their swearing in the LX might be interpreted differently by L1 users compared to the same words used by L1 speakers in an identical situation (Dewaele 2010, 2013, 2016).

The question that the present study addresses is whether the situational, psychological and sociobiographical variables that have been identified as being linked to swearing have the same effects in L1 and LX users. The question arose after reading Jay and Janschewitz (2008) who looked at offensiveness ratings of swearing among L1 and LX users of American English. They found a gender effect among the L1 users, with women providing higher offensiveness ratings than men - which they link to differences in the socialisation of men and women - but gender had no effect on the offensiveness ratings of the LX users. The authors attribute this to the heterogeneity of LX users’ linguistic and cultural backgrounds. A similar question was raised by researchers focusing on the acquisition of sociolinguistic competence in an LX and more specifically on the use of stigmatised variants (Howard, Mougeon and Dewaele 2013). Mougeon, Nadasdi and Rehner (2010) have linked the low frequency of stigmatised variants in LX learners’ output to an absence of them in their educational input (that is, foreign language teachers do not swear in class and these words are not included in course books). Moreover, basic social characteristics of LX learners (gender and social class) were found to have an effect on the learning of only half of the non-standard variants under consideration (134).

The aim of the present paper is thus not to identify new psychological, sociolinguistic and pragmatic variables that are linked with swearing but rather compare the strengths of the relationships of a number of known variables on L1 and LX users’ self-reported frequency of swearing in English.

We will start with a brief introduction of research on swearing in psychological, sociolinguistic, pragmatic and multilingualism research. After that, four research questions will be presented, followed by the methodology section. The answer to the first research question is provided by a statistical analysis of the full database ($N = 2347$), while the answers to the following questions are based on parallel analyses of the databases of the 1159 English L1 users and 1165 English LX users. The results will then be discussed and some tentative conclusions will be presented.

Literature review

Psychologists have investigated links between personality dimensions and swearing using a variety of research designs. These included continuous recordings over a certain period of time, massive written data gathering from the web and the use of questionnaires linked to Discourse completion tests (DCTs) to collect judgments from participants to certain swearwords used in specific situations.

Mehl, Goslin and Pennebaker (2006) recorded 2 continuous days of conversations of 96 Texan university students who were wearing an Electronically Activated Recorder. The researchers found no correlation between participants' self-rated Extraversion and swearwords, but a significant positive relationship emerged between frequency of swearwords and other-rated Extraversion (867). A significant negative correlation also existed between both self- and other-rated Agreeableness and swearwords: more swearing being linked to lower level Agreeableness. Similarly, a significant negative correlation existed between both self- and other-rated Conscientiousness and the frequency of swearwords. A gender difference emerged with the use of swearwords shaping judges' impressions of participants' Conscientiousness more for males than for females. No link existed between Emotional Stability and swearwords. A single significant negative correlation emerged between Openness to Experience among the male participants and the amount of swearwords (871).

Schwartz et al. (2013) adopted a different approach, using an open-vocabulary technique, collecting 700 million words and phrases from 19 million Facebook status updates written by 136,000 people. About 75,000 participants took a personality questionnaire (the International Personality Item Pool), and striking relations were found between personality, gender, age and language. Male participants used significantly more swearwords, a negative correlation emerged between age and number of swearwords. Swearwords were significantly negatively correlated with Agreeableness and Conscientiousness, positively correlated with Neuroticism. No relation existed between the amount of swearwords and Extraversion and Openness. A word cloud-based technique showed that "fucking" "fuck", "shit", "hell", "stupid", "I hate", were the best classifiers for Neuroticism in Facebook status updates.

In their overview of the psychological and neurological literature on swearing, Vingerhoets et al (2013) conclude that

people with an antisocial personality swear more often than others, whereas people who would have high scores on religiosity, sexual anxiety, or repression seem to swear less frequently. Certain neurological diseases, like Alzheimer's disease or Gilles de la Tourette's syndrome, also increase an individual's swearing behaviour. (301)

The authors seem to assume that the patterns they uncovered for L1 users apply to all, including LX users (which are not mentioned).

The pioneering study by Jay and Janschewitz (2008), which was mentioned earlier, looked at perceived offensiveness and likelihood of hypothetical scenarios involving taboo words among American and foreign students, including 68 native speakers of American English and 53 LX speakers. Judgments of appropriateness of the use of three high taboo, three medium taboo and three low taboo words was found to be a highly variable. Ratings depended on speaker-listener relationship in terms of status (dean, janitor and student), social-physical context (Dean's office, Dorm room and Parking garage), and particular taboo word used. Female native speakers were found to provide higher offensiveness ratings than male native speakers, though no difference emerged in the group of LX users. The researchers found no effect of level of English experience on offensiveness or likelihood ratings, possibly because the LX speakers had spent an average of 11 years in the US, were highly proficient and socialised in English. One could wonder why that English socialisation had had no effect of gender variation.

Sociolinguists have investigated variation in swearing linked to age, gender, ethnicity, social class and ethnicity among native speakers using their L1 using a variety of research designs, including large corpora (Bailey and Timm 1976; Rathje 2014; Stenström 1995). Johnson and Lewis (2010) collected data from 59 male and 64 female American university students on how they would interact with a person at work. It contained 12 situations where swearwords were used in short phrases, with different combinations of the sex and social status of the swearer, and formality of the situation. Dependent variables included degree of surprise at hearing the swearing message, and judgments of incompetence of the speaker. Swearing was significantly more unexpected in formal meetings than in more informal social gatherings. Some expressions were more unexpected than others ("fuck off" versus "oh, shit"). Gender and social status did not influence perception of swearing (115).

Beers Fägersten (2007) collected data from 60 American undergraduate students using a list of single swearwords, and secondly, a list of swearing utterances with contextual information such as setting and interlocutor details. She found that the females' average ratings were consistently higher than the males' averages. The analysis of the overall average ratings of the swearwords in dialogues showed that, with the exception of "shit" and "fucking", the swearwords were perceived to be less offensive. Beers Fägersten (2012) developed her previous research including questionnaire and interview data revealing participants' individual opinions about their use or avoidance of specific swearwords and about others' use of these words.

Sociolinguists have also used corpus linguistics to identify the characteristics of people swearing more. Rayson, Leech and Hodge (1997) retrieved swearwords from the conversational corpus in the British National Corpus (BNC) to look into social differentiation in the use of these words. The words "fucking" and "fuck" were highly frequent in male speech. Under-35's were also more likely to use these words, in addition to "shit", while skilled working class and working class speakers were also more frequent users of these words, as well as "bloody" (10). The sociolinguistic study of the use of "fuck" in modern British English by McEnery and Xiao (2004) showed that the word "fuck" in the BNC occurs more frequently in the speech of men (240), teenagers and young adults (241), speakers from lower social classes and people who left school at age 15-16 (246).

Sociolinguists also found that swearing is a powerful marker of group identity among teenagers (Stenström 1995, 2014). She found that both boys and girls used taboo language but that girls swore more when talking about sex or when they were derogatory about boys. Boys used stronger swearwords when expressing negative emotion. Comparing British and Spanish teenagers, she found that the taboo words belong roughly to the same domains (sex and excretion) but that the Spaniards use more taboo words overall than the British (2014: 21).

Second Language Acquisition research into a corpus of conversations between a researcher and 39 university learners of French revealed that female, high proficient and more extravert learners tended to use more colloquial and emotional words (Dewaele 2004d, Dewaele and Pavlenko 2002). Extraverts also used more mildly stigmatised sociolinguistic variants such as the omission of the particle “ne” in negations in French (Dewaele 2004c). Extravert LX learners and users thus seemed less reluctant to use slang, stigmatised words and more willing to engage in potentially more “dangerous” emotional topics.

Multilingualism research based on the Bilingualism and Emotion Questionnaire (BEQ) (Dewaele and Pavlenko 2001-2003) to which more than 1500 adult multilinguals contributed data has shown that the L1 is typically preferred to swear in (Dewaele 2004a, 2013). However, a number of participants such as Barbara reported swearing more in the LX because they felt it was a way to spice up their speech:

Barbara (German L1, English L2, Latin L3, French L4): And it's tempting to try and make up for what I perceive as lack of oomph in my expression of anger by the use of swearwords since they sound great but don't have any emotional consequence for me but that doesn't usually go down too well with my surroundings” (2013: 113)

For Layla the preference for swearing in the LX was dictated by the social conventions in her L1 culture:

Layla (Arabic L1, English L2): I never swear in Arabic, never never at all, because I know exactly what it means, because it's my language anyway, and how offensive it would be to swear, but in English because it's not my native language, sometimes I use some swearwords, but I don't really aware I'm not really aware of how immense those words are” (2013: 125)

The participants who mentioned swearing more frequently in the LX were typically of Asian and Arabic origin (cf. Caldwell Harris et al. 2013). They reported that swearing in English LX allowed them to overcome the social constraint that weighs on them in their home cultures, where swearing is typically reserved to males, can carry social stigma and can be considered a sign of lack of education.

A number of studies based on the BEQ showed that LXs that had only been learnt through classroom instruction were less likely to be used for swearing. Also, a lower age of onset of acquisition of the LX was linked to higher frequency of swearing in that language. A strong positive relationship emerged between swearing in the LX and general frequency of use of a LX, strong socialisation in the LX and a wide network of LX interlocutors. In other words, active and frequent participation in authentic interactions in the LX for a long time is necessary before LX users started using LX swearwords. Swearing in the LX was linked to higher levels of proficiency in the language. Gender and education were not related to LX choice for swearing (Dewaele 2004b, 2011a, 2013).

Dewaele (2010, 2011b) investigated language preferences for swearing among 386 adult multilinguals who had declared that they were maximally proficient in their L1 and L2 and used both languages constantly. A statistical analysis revealed that despite the similarity in proficiency and frequency of use of both languages, the L2 was used significantly less frequently for swearing. Moreover, L2 swearwords were perceived as having significantly weaker emotional resonance than L1 swearwords.

In a study based on part of the database collected for the present study Dewaele (2016) looked at differences in 1159 L1 and 1165 LX English users' understanding, perception and self-reported use of 30 negative emotion-laden English words, including swearwords. Compared to the L1 users, the LX users were found to overestimate the offensiveness of most words. This pattern was the opposite of what had been found in previous research. One possible explanation is that LX users attach a red flag to swearwords, marking them as dangerous with a slightly opaque meaning and as a result they overestimate their power. LX users also reported a preference for relatively less offensive words compared to L1 users. LX users who had lived in English-speaking environments, who had acquired the LX outside the classroom and felt more proficient in English LX had values approximating those of the L1 users.

This short overview of a number of studies on swearing in various disciplines shows that swearing frequency is highly variable: with cultural differences, considerable intra-speaker variation (the same individual's different usage in different contexts with different interlocutors) and inter-speaker variation (differences between speakers which can be linked to personality traits, sociobiographical variables and linguistic profiles). It also shows that swearing in an LX is often perceived differently from swearing in the L1, which highlights the need to investigate whether the independent variables linked to swearing in the L1 are equally linked to swearing in the LX. The present study will do exactly this, based on self-reported swearing frequencies in English from a large linguistically and culturally diverse sample of participants.

Research questions

The present study aims to address the following four research questions:

- 1) Is there a difference in the amount of self-reported frequency of swearing in English between L1 and LX users of English?
- 2) Is the effect of interlocutor on self-reported frequency of swearing in English similar for L1 and LX users of English?
- 3) Is the link between personality traits (Extraversion, Neuroticism and Psychoticism) and self-reported swearing frequency in English with various interlocutors similar for L1 and LX users of English?
- 4) Is the link between sociobiographical factors (education level, age group and gender) and self-reported swearing frequency in English with various interlocutors similar for L1 and LX users of English?

Method

Instruments

Data were collected through snowball sampling, which is a form of non-probability sampling (Ness Evans and Rooney 2013). An open-access anonymous online questionnaire was used, advertised through several listservs, targeted emails to

teachers and students, and informal contacts asking them to forward the link to friends. It remained online for five months in 2011-2012 and attracted responses from mono and multilinguals across the world. Around 2500 participants filled out the questionnaire of which 2324 did so completely.

On-line questionnaires allow the collection of large amounts of data from diverse samples in terms of sex, age, race, socio-economic status and geographical location (Wilson and Dewaele 2010). The authors have argued out that in multilingualism research participants do not necessarily need to represent the general population but that they must meet specific criteria, such as having sufficient metalinguistic awareness, and must be able and willing to engage with the questions on language preferences and use. We assume that people are sufficiently aware of the amount of swearing they use over a wide time-span in specific interactions and can readily comment on when prompted. Self-reported data are obviously not as reliable as actual production data, which are much harder to obtain in sufficient quantity from a large enough multilingual sample. We also argue that the reliability of the self-reported data is strengthened by anonymity of the participants. Indeed, they had no reason to lie about the frequency with which they swear as it would not benefit them in any way. This reduced social desirability (the tendency of participants to answer questions in a manner that they imagine will be viewed favourably by the researcher) is another crucial advantage of internet-based questionnaires. Also, with more than 2000 multilinguals from all over the world, the results have a good ecological validity, as the effects of local social, political and historical factors linked to particular languages or linguistic practices are averaged out. Finally, the psychometric properties of online versions of traditional questionnaires are very similar to the pen-and-paper versions (Denissen, Neumann and van Zalk 2010).

The research design and questionnaires received ethical clearance from the School of Social Sciences, History and Politics at Birkbeck, University of London. Participants started by filling out a short sociobiographical questionnaire with questions about gender, age, education, language history and present language use. Participants also filled out the short version of the Eysenck Personality Questionnaire (EPQr) (Eysenck, Eysenck and Barrett 1985), based on self-reported behaviour. Participants filling out the EPQr are invited to tick either 'yes' or 'no' for 12 items for three personality dimensions. One item for Extraversion is for example: 'Are you rather lively?'. One item for Neuroticism is for example: 'Are you an irritable person?'. Finally, one item for Psychoticism is: 'Do you prefer to go your own way rather than act by the rules?' After recoding negatively phrased items, the sum of items is calculated for the three dimensions. Scores on these personality dimensions are normally distributed, in other words, a majority of people have scores in the middle of the dimension. The Eysenck factors are strongly replicable across the world (Barrett, Petrides, Eysenck and Eysenck 1998). The EPQr is considered robust. The values for the Cronbach alpha are sufficiently high (all $> .85$), suggesting good internal consistency. Three groups were created for each personality dimension: those within 1 standard deviation (SD) around the mean (the middle group), those with scores more than 1 SD above the mean (the high group) and those with scores with more than 1 SD below the mean (the low group).

Participants

A total of 2347 participants (1636 females, 664 males¹) filled out the questionnaire. The mean age was 32 years (SD = 12). Six age groups were created: those in their teens ($n = 150$), 20s ($n = 1017$), 30s ($n = 582$), 40s ($n = 309$), 50s ($n = 143$), 60s and

over ($n = 91$). Participants were generally highly educated with 219 having a high school diploma, 772 a Bachelor's degree, 758 a Master's degree and 570 a PhD⁵. The majority of highly educated, female participants is typical in web-based language questionnaires (Wilson and Dewaele 2010).

The largest group were Americans ($n = 555$), followed by British ($n = 426$), Polish ($n = 125$), Germans ($n = 107$), French ($n = 105$), Italians ($n = 90$), Israeli ($n = 86$), Swiss ($n = 86$), Dutch ($n = 75$), Canadians ($n = 62$), Belgians ($n = 43$), Spaniards ($n = 43$), Austrians ($n = 42$), Swedes ($n = 39$), Australians ($n = 30$), and smaller groups representing another 75 nationalities, including many with double nationalities.

The sample of participants consisted of 190 monolinguals, 503 bilinguals, 645 trilinguals, 517 quadrilinguals, 279 pentalinguals, 125 sextalinguals, 37 septalinguals, 16 octalinguals, 9 nonalinguals, one participant reported 10 and another 12 languages.

English was the most frequent L1 ($n = 1159$). Slightly over half of the participants had English as a foreign language ($n = 1165$). Their L1s were German ($n = 171$), French ($n = 135$), Polish ($n = 124$), Spanish ($n = 104$), Dutch ($n = 90$), Italian ($n = 87$), Swiss German ($n = 43$), Swedish ($n = 39$), in decreasing order there were smaller groups of native speakers of Portuguese, Hebrew, Russian, Chinese, Finnish, Greek, Croatian, Serbian, Turkish, Hungarian, Japanese, Catalan, Danish, Norwegian and another 48 languages with fewer than 10 participants. Many participants also listed two L1s.

The English L1 users rated their oral proficiency in English very high: $mean = 4.9$ ($SD = .70$) on a 5-point Likert scale. They also reported extremely frequent use of English ($mean = 4.8$, $SD = .74$) on a 5-point Likert scale. The English LX users rated their oral proficiency in English significantly lower but still high: $mean = 4.4$ ($SD = .73$) on a 5-point Likert scale (Mann-Whitney $s = -23.6$, $p < .0001$). They also reported significantly lower – but still frequent – use of English ($mean = 4.2$, $SD = 1.0$) on a 5-point Likert scale (Mann-Whitney $Z = -22.6$, $p < .0001$).

mean age of acquisition of English for the LX users was 9.7 years ($SD = 3.8$). Most participants had learned English in mixed contexts, namely a combination of classroom instruction and authentic use outside ($n = 552$), others had learned it through classroom instruction only ($n = 503$), while the remaining 102 participants had learned English naturalistically, that is, without any formal instruction³.

A majority of LX users had lived – or was currently living – in an English-speaking country for more than 3 months ($n = 673$), with the remaining 489 not having left their home country. Six groups were created for those who had lived in an English-speaking environment depending on length of stay: between 3 months and 1 year ($n = 68$), less than 2 years ($n = 41$), less than 3 years ($n = 38$), less than 4 years ($n = 37$), less than 5 years ($n = 37$), more than 5 years ($n = 265$)⁴.

Dependent variable

Data about swearing frequency of the participants with various interlocutors were elicited through the following general closed question:

How often do you swear in English? When you are... 1) alone; 2) with friends; 3) with family; 4) with colleagues and 5) with strangers. Possible answers included:

(1 = never, 2 = rarely, 3 = sometimes, 4 = frequently and 5 = very frequently). These broad descriptors may be relative imprecise but are more likely to be more valid than more specific descriptors (for example: “I swore 1-4 times versus 5-9 or more than 10 times today” with specific types of interlocutors, or the same frequencies over a longer time-span (“in the previous week”, “month”, “year...”) where the quality of the participant’s memory would determine the validity of the feedback.

One-sample Kolmogorov-Smirnov tests showed that the values for self-reported frequency of swearing with different interlocutors are not normally distributed (all $p < .0001$). As a consequence, non-parametric statistical techniques⁵ were used: Mann-Whitney tests instead of t-tests, Kruskal Wallis one-way analyses of variance by ranks instead of ANOVAs and a Friedman’s ANOVA test instead of a Repeated measure ANOVA.

Results

Difference in self-reported swearing frequency of L1 and LX users of English

A Mann-Whitney test revealed that the L1 users reported significantly more swearing in English across different categories of interlocutors compared to the LX users (see table 1). The difference was the biggest for swearing with family members and friends, with lower values for the LX users. The difference was weaker – though still highly significant- for swearing with colleagues and strangers (see figure 1).

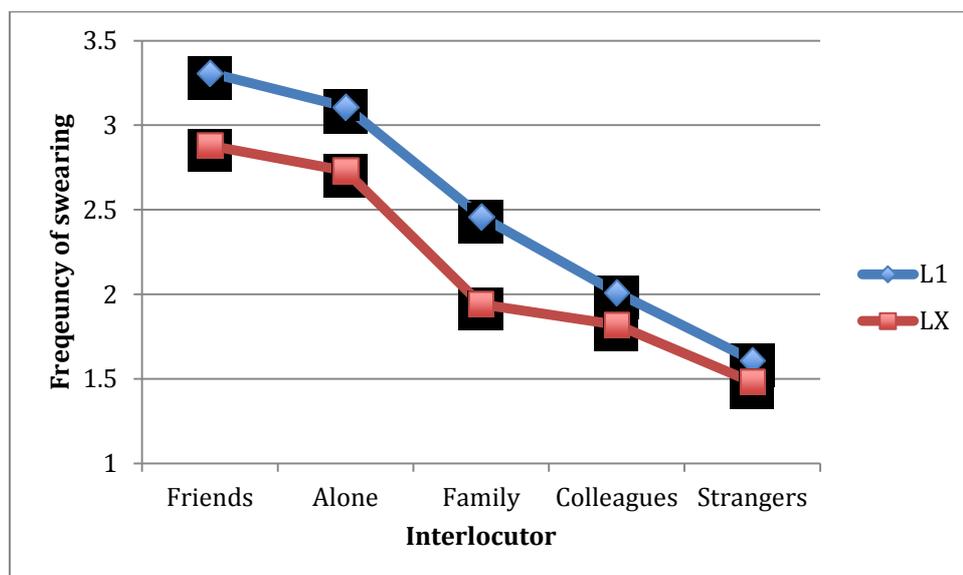
Table 1. Pair-wise comparison of self-reported swearing with friends, alone, family, colleagues and strangers in English L1 and English LX (Mann-Whitney test)

	Friends	Alone	Family	Colleagues	Strangers
Mann-Whitney U	505737	533273	480364	582072	595187
Wilcoxon W	1169865	1199708	1143340	1250818	1255862
Z	-9.9	-8.3	-11.6	-5.2	-4.3
p (2-tailed)	0	0	0	0	0

The effect of interlocutor on swearing among L1 and LX users

A Friedman’s ANOVA test for related samples revealed that the effect of type of interlocutor is highly significant on the amount of swearing both for L1 and LX users ($N = 1127$, $Chi^2 = 2478$, $df = 4$, $p < .0001$ and $N = 1133$, $Chi^2 = 1921$, $df = 4$, $p < .0001$ respectively). The effect is thus slightly stronger for L1 users ($r = 1.5$) than for LX users ($r = 1.3$). L1 and LX users report swearing most frequently with their friends, followed by swearing when alone, with members of their family, with colleagues and finally with strangers (see figure 1).

Figure 1. Effect of interlocutor on self-reported frequency of swearing in L1 and LX users



A series of Kruskal-Wallis analyses on the data from the L1 users and the LX users showed significant effects in both databases, with high scorers on the three personality dimensions reporting more swearing with all interlocutors (see table 2). A comparison of the χ^2 values shows that the effect of extraversion ($df = 2$) was much stronger for the LX users than for the L1 users. The effect of extraversion was particularly strong for LX users swearing with friends (see figure 2). The effect of Psychoticism ($df = 2$), on the other hand, was overall stronger for the L1 users than for the LX users (see figure 4). It was strongest for L1 users in swearing at strangers, that is, a hostile situation. The effect of Neuroticism ($df = 2$) was more similar in both groups, with its effect concentrated in swearing with friends and when alone. The effect was weaker or absent in swearing with family members, colleagues or strangers (see figure 3)

Table 2. The effect of personality traits on self-reported swearing in English of L1 users and LX users (Kruskal Wallis χ^2)

Personality trait	Friends		Alone		Family		Colleagues		Strangers	
	L1	LX	L1	LX	L1	LX	L1	LX	L1	LX
Extraversion	15***	27***	3	6	6*	19***	4	13***	5	9*
Neuroticism	23***	13**	18***	25***	5	4	8*	1	6	3
Psychoticism	31***	20***	20***	12**	15***	2	32***	14**	49***	8*

• $p < .05$, ** $p < .001$, *** $p < .0001$

Figure 2. Effect of Extraversion on self-reported frequency of swearing in L1 and LX users

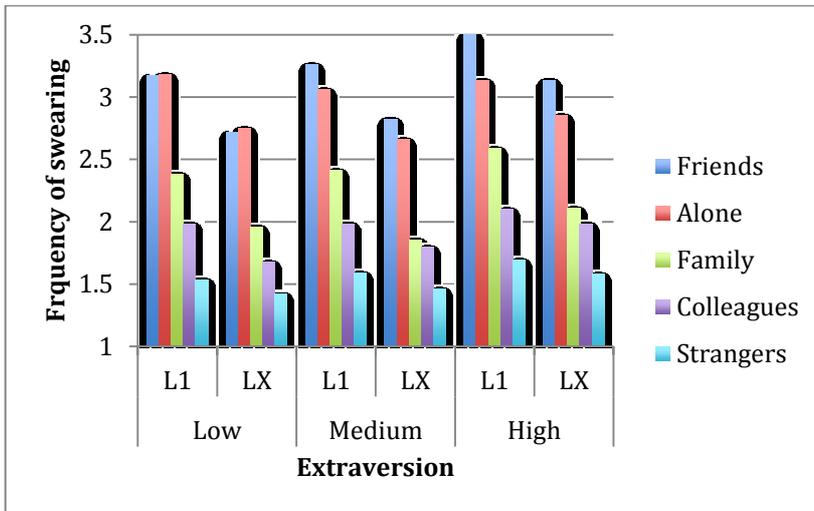


Figure 3. Effect of Neuroticism on self-reported frequency of swearing in L1 and LX users

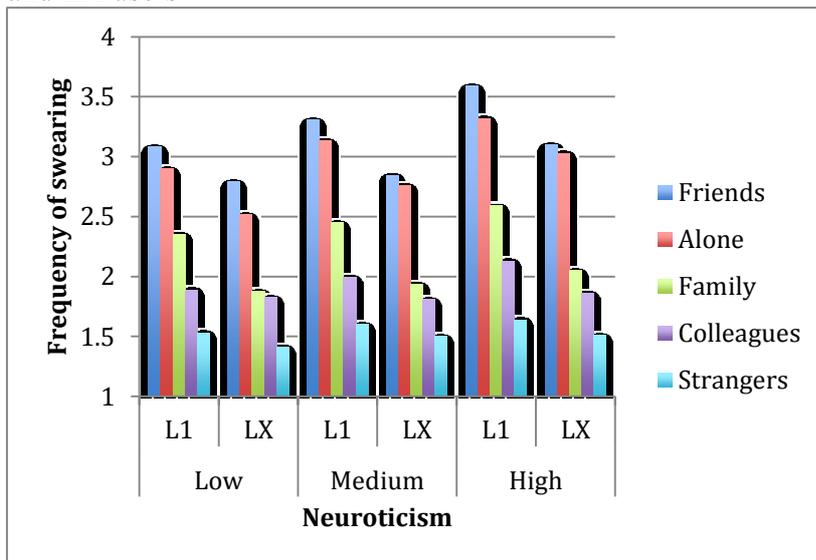
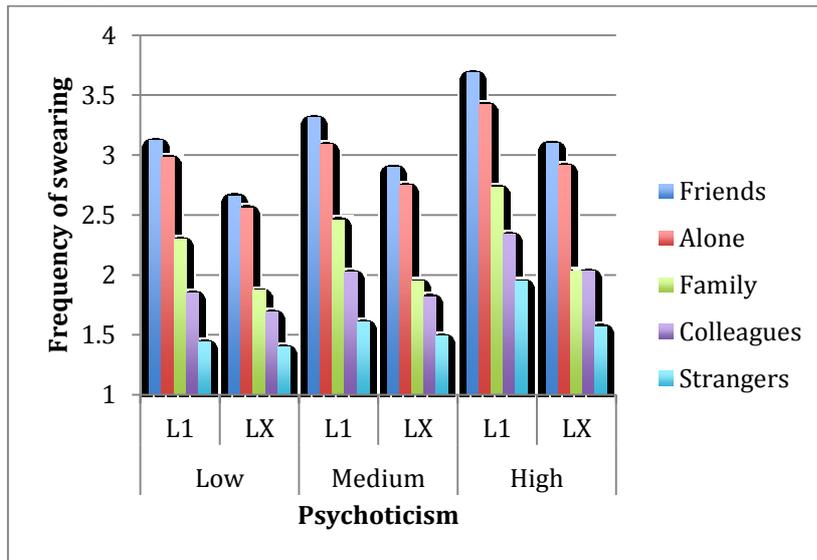


Figure 4. Effect of Psychoticism on self-reported frequency of swearing in L1 and LX users



Analysis of the sociobiographical variables in the L1 and LX databases

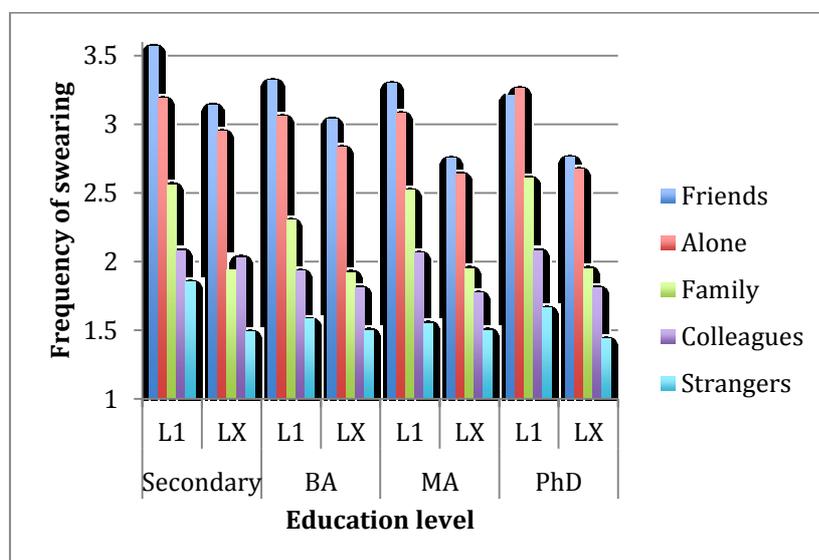
A series of Kruskal-Wallis analyses with education level ($df = 3$) as independent variable on the data from the L1 users and the LX users showed a significant effect in four out of the five categories of interlocutors for the L1 users, and a significant effect in two out of the five categories of interlocutors for the LX users (see table 3 and figure 5).

Table 3. Effect of education and gender on self-reported swearing in English of L1 users and LX users (Kruskal Wallis Chi^2 and Mann Whitney Z)

Variable	Friends		Alone		Family		Colleagues		Strangers	
	L1	LX	L1	LX	L1	LX	L1	LX	L1	LX
Education	9*	23***	6	11*	13*	0	9*	5	14*	2
Age group	59***	49***	5	14*	16*	9	14*	13*	2	7
Gender	-5***	-3*	-2*	0	0	-1	-5***	-4***	-5***	-5***

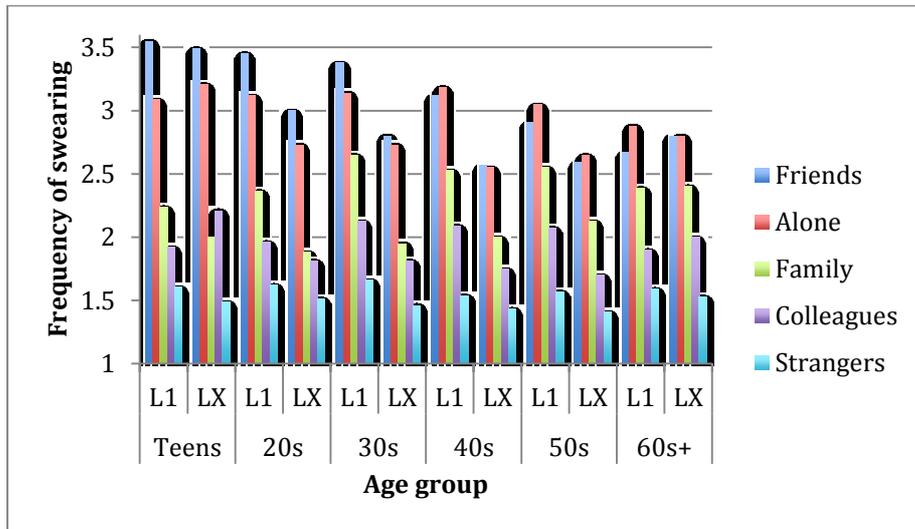
- $p < .05$, *** $p < .0001$

Figure 5: Effect of education level on self-reported frequency of swearing in L1 and LX users



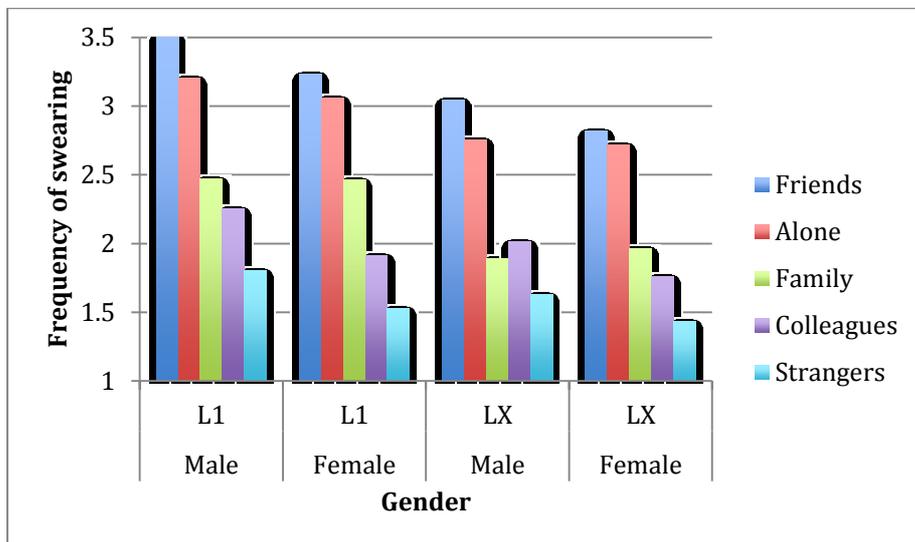
A series of Kruskal-Wallis analyses was carried out with age group ($df = 5$) as independent variable. Participants' age was found to have a significant effect in three out of the five categories of interlocutors for the L1 users and in three (including two different ones) out of the five categories of interlocutors for the LX users. It shows that where the effect emerged, teenagers tended to report more swearing (see table 3 and figure 6).

Figure 6: Effect of age group on self-reported frequency of swearing in L1 and LX users



A Mann-Whitney test ($df = 1$) revealed that gender had a significant effect on frequency of swearing in four out of the five categories of interlocutors for the L1 users and in three out of the five categories of interlocutors for the LX users. The gender effect was very similar for L1 and LX users in interactions with friends, colleagues and strangers. Where the differences occurred, the male participants typically reported more swearing than the female participants (see table 3 and figure 7).

Figure 7: Effect of gender on self-reported frequency of swearing in L1 and LX users



Discussion

The finding that L1 users reported significantly more swearing in English across interlocutors compared to the LX users corresponds with earlier findings that the L1 is generally the preferred language for swearing in multilinguals, even those with high levels of proficiency in the LX (Dewaele 2004b, 2011, 2013). In addition, the LX users in the present study may have preferred their own L1s for swearing, and, being

more multilingual than the English L1 users, they had a larger choice of languages at their disposal for swearing.

The answer to the second research question is also positive. The effect of interlocutor on self-reported frequency of swearing in English is broadly similar for L1 and LX users of English, though slightly weaker for the LX users. It shows that L1 and LX users adapt their swearing behaviour to the type of interlocutor they are facing (cf. Jay and Janschewitz 2008). Interactions with friends are most likely to elicit swearing, with an average value just above 3 (“sometimes”). This type of swearing is very likely to be part of the banter between friends, its aim being bonding and strengthening a sense of solidarity between the interlocutors (Stapleton 2010; Rassin and Muris 2005). Swearing to oneself was the second most frequent category with average value just below 3 (“sometimes”). This type of swearing is probably quite different in nature. Indeed, it is unlikely to have the positive glow of swearing between friends. It may express surprise, frustration and anger. As it is directed at oneself it should not offend anybody, although it may be overheard. Swearing with family members and colleagues is less frequent (rare), while swearing at strangers is very rare. It is very likely that the very occasional swearing at strangers is a much more hostile speech act compared to that with the other interlocutors. This confirms and expands the findings of Jay and Janschewitz’s (2008), Beers Fägersten (2012) and Johnson and Lewis (2010) on the importance of context in swearing. The low frequency of swearing with strangers echoes Rassin and Muris’s (2005) finding that swearing to shock someone is less frequent than expressing emotion to known interlocutors.

The answer to the third research question is less clear-cut, as higher levels of Extraversion, Neuroticism and Psychoticism were linked to more self-reported swearing in English with various interlocutors, but the strength of the effect varied, with Extraversion having a stronger effect among LX users than among L1 users of English, Psychoticism having a stronger effect among L1 users and Neuroticism having a more comparable effect in both groups, especially in swearing with friends and when alone. The finding that extraverts tend to use stigmatised language more frequently is not new (Dewaele 2004c, d; Fast and Funder 2008; Mehl et al. 2006). The effect was strongest for both LX and L1 users for self-reported swearing with friends. This could be linked to the gregarious nature of extraverts and their use of swearing to strengthen social bonds with friends, and to a lesser extent with other interlocutors. More introverted people avoid risk-taking, including swearing, which could be seen as a form of linguistic risk-taking. It is possible that more extravert LX users are more likely to abandon caution in swearing in English with their friends after judging optimistically that they belonged to the in-group and could thus act like the L1 members of the group. Extraversion could have a weaker effect for the L1 users as this identity issue does not apply to them. More neurotic, anxious individuals are more responsive to threat or stress which could translate in increased use of swearing, as Schwartz et al (2013) reported for Facebook updates. Interestingly, the effect was strongest for L1 users swearing with their friends and for LX users swearing when alone. It thus seems that the more neurotic L1 users were less anxious about how their friends might react to their swearing compared to more neurotic LX users who engaged more in swearing to oneself which has no social consequences. On the other side of the Neuroticism continuum are emotionally stable individuals, who do not experience anxiety and frustration to the same extent, and therefore swear less. High levels of Psychoticism were associated with increased swearing among

L1 users, and to a lesser degree among LX users. The effect was particularly strong among L1 users with strangers (though this remained a rare event), but also with friends and colleagues, and to a lesser extent with family members and to one-self. It comes as no surprise, as swearing is an excellent way to communicate hostility and aggression. It confirms Vingerhoets et al.'s (2013) conclusion of their overview of the psychological and neurological literature on swearing, namely that having an antisocial personality is linked to increased swearing (301). The effect of Psychoticism is also indirectly confirmed by the findings of Mehl et al. (2006) and Schwartz et al. (2013) whose participants scoring low on Agreeableness and Conscientiousness used more swearwords. The weaker effect of Psychoticism among LX users could be linked to their awareness that their pragmatic calibration might not have been precise enough to meet out the appropriate type and amount of swearwords which could have prompted violence in interactions with strangers. L1 users who scored high on Psychoticism were probably more confident and more inclined to swear with strangers, knowing exactly how to remain under the threshold that would trigger conflict.

The answer to the final research question is also nuanced. The relationship between sociobiographical factors and self-reported swearing frequency in English with various interlocutors similar for L1 and LX users of English varied according to the independent variable. Education level had a more systematic effect for the L1 users than for the LX users. Among L1 users the effect was significant with friends, family, colleagues and strangers, among LX users the effect was only significant with friends. Lower education levels were typically linked to more self-reported swearing, which reflects findings in sociolinguistic research (McEnery and Xiao 2004; Rayson, Leech and Hodge 1997). The fact that the effect of education was only significant with friends and alone among LX users suggests that their swearing frequency is not strongly linked to their social class (if we agree that education level is a proxy). In other words, they may have mirrored the swearing of their friends but not of other interlocutors. It is possible that they had not picked up these sociolinguistic patterns from various categories of L1 users of English, or they may have decided to deviate from them (Dewaele 2013).

Participants' age was found to have relatively similar effects among L1 and LX users of English. The effect was strongest in interactions with friends, was equally present in swearing with colleagues and was absent in swearing at strangers. It was linked to swearing when alone for the LX users, and swearing with family members for the L1 users. Teenagers who were L1 and LX users of English reported the most frequent swearing with their friends. LX teenagers also reported the highest frequency of swearing in English. This could be linked to the incorporation of high frequency English swearwords and slang expressions in many other languages (see Rassin and Muris 2005 for Dutch). Older groups reported gradually less swearing with friends and more swearing when alone. It thus seems that as L1 and LX users age, their swearing becomes more private and that includes more frequent swearing with family members, though the difference between L1 and LX users is quite important. The effect of age on swearing with colleagues was also different among L1 and LX users. Among the L1 users the mean frequencies of swearing with colleagues and alone shows something approximating a bell curve distribution, with most swearing reported by participants in their thirties and forties. Among LX users there is a linear decrease in swearing with colleagues along older age groups, with a sudden resurgence for those aged 60 and above. The LX users also display an almost

inverted bell curve for swearing alone, with both teenagers and those aged 60 and above reporting the most frequent swearing. While the general patterns for age conform broadly with the findings of earlier studies (McEnery and Xiao 2004; Rayson, Leech and Hodge 1997; Schwartz et al. 2013), they also show a much more complex and nuanced picture, with different patterns for different interlocutors, and some interesting differences between L1 and LX users.

Gender turned out to have a significant effect in four out of the five categories of interlocutors for the L1 users and in three out of the five categories of interlocutors for the LX users. The male L1 participants reported more swearing with friends than the L1 female participants, the same pattern emerged for the other situations except for family members. The same gender patterns occurred for LX users albeit weaker with friends and alone, but equally strong with colleagues and with strangers. The pattern is again quite similar with previous research (Beers Fägersten 2007; McEnery and Xiao 2004; Schwartz et al. 2013; Stenström 1995). It is also quite close to the finding reported in Jay and Janschewitz (2008) that set off the present investigation. The gender effect was more striking among L1 users, but was not absent among LX users. This could be linked to the fact that our participants were older on average, and may have had a longer socialisation in English LX than the non-native university students in Jay and Janschewitz (2008).

Finally, why do situational, psychological and sociobiographical have a slightly stronger effect on self-reported swearing of L1 users rather than LX users? One possible hypothesis is that L1 users form a much more homogeneous group in terms of knowledge of English, including very high levels of mastery of sociolinguistic and sociopragmatic rules linked to swearing. The group of LX users is less homogeneous in that respect, as many may have reached levels within the range of the L1 users after prolonged socialisation in English but many have lower levels of understanding of the rules that govern swearing in English because of less frequent practice and observation of swearing in various contexts. Also, the observation of English swearing might be more passive among LX users, that is, watching it in films or hearing it in songs, while it may be more active among L1 users, that is, not just as an observer but as an active participants in interactions where swearing might occur. It is also likely that how and when LX users learnt English, and how often they use it with how many different interlocutors may also affect their self-reported frequency of swearing. In other words, the variation in English proficiency and use among LX users may add noise to the data, and slightly weaken the effect of the factors linked to frequency of swearing among L1 users of English.

The present research design is not without limitations. Firstly, self-reported behaviour may give us a glimpse into participants' views about their habitual behaviour, especially because it is a relatively rare event for most participants (the use of actual recordings would therefore be much more onerous) but this may include some margin of error linked to social bias. Some may have under-reported swearing despite the fact that in an anonymous questionnaire nobody had to worry about being identified. This limitation is largely compensated by the diversity of the sample in terms of age, nationality and linguistic and cultural background. Secondly, despite the large size of our sample, we cannot claim that it is representative of the general population, with its high proportion of highly educated, female participants. The conclusions need therefore to be interpreted with caution.

Conclusion

English L1 users were found to report significantly more swearing in English compared to LX users. A strong interlocutor effect emerged in both groups – though slightly stronger among L1 users-, with most swearing reported in interactions with friends, followed by swearing without interlocutor, and gradually less frequent swearing in interactions with family members, colleagues and strangers. Participants scoring high on Psychoticism, Extraversion and Neuroticism reported significantly more swearing in English, but subtle differences emerged in the strength of the effects between L1 and LX users. While Extraversion and Neuroticism had the strongest effects on LX users' self-reported swearing with friends and alone, Psychoticism and Neuroticism had the strongest effects on L1 users' self-reported swearing with strangers and with friends. While the effects of sociobiographical variables were broadly similar among L1 and LX users, they were significant in more categories of interlocutors for the L1 users.

In sum, situational, psychological and sociobiographical variables have broadly similar effects among L1 and LX users of English but they tend to be stronger for L1 users, possibly because a range of variables linked to the LX users' history of learning and using English may also affect the self-reported frequency of swearing.

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¹ 24 participants did not answer this question.

² The sociodemographic profile of the L1 and LX users is similar in terms of mean age (L1 users: 32 years, LX: 31 years), gender distribution (L1 users: 69% women, LX users: 72% women), education (L1 users: 2.6 on 4-point scale, LX users: 2.8). The LX users were more multilingual than the L1 users (L1 users knew an average of 2.8 languages, LX users: 3.8 languages).

³ 18 participants did not provide information on this.

⁴ 187 participants left this question blank.

⁵ Unfortunately there is no good non-parametric equivalent of multiple regression analysis, which would have allowed us to measure the relative impact of all independent variables together. Multiple analyses of variance (MANOVA), which would have allowed us to investigate interaction effects between independent variables, were equally off limits.