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An investigation into the foreign language effect in moral dilemmas*

Ahlaki ikilemlerde yabancı dil etkisi üzerine bir araştırma*

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ABSTRACT

Recent research suggests that late bilinguals' decisions might be less influenced by emotionality and be characterized by more logical thinking in a foreign language. This phenomenon has been named the foreign language effect. This study aims to understand to what extent this effect is seen in Turkish-English bilinguals' decisions about moral dilemmas through presenting the dilemmas in English or Turkish. To this end, 173 bilinguals responded to moral dilemmas in a survey in either language. A group of monolinguals (n=102) also responded to the dilemmas as a comparison group. In a second study, 63 Turkish-German heritage speakers were asked to indicate their decisions on moral dilemmas presented in German, Turkish, or in their foreign language, English. In both studies, the rate of the utilitarian responses, associated with more logical thinking was higher in the more emotional dilemma presented in the foreign language; however, the difference was not statistically significant.

ÖZ

Yakın zamanda yapılan araştırmalar geç ikidillilerin yabancı dil ortamında verdikleri kararların duygusallıktan daha az etkilendiğini ve daha mantık odaklı olabileceğini göstermiştir. Buna yabancı dil etkisi adı verilmiştir. Bu çalışma Türkçe-İngilizce ikidillilere İngilizce veya Türkçe olarak sunulan ahlaki ikilemlerle ilgili kararlarında yabancı dil etkisinin görülüp görülmediğini araştırmaktadır. Bu amaçla üniversitede İngilizce öğretmenliği bölümünde okuyan 173 ikidilli öğrenciye ahlaki ikilem anketi Türkçe veya İngilizce dilinde verilmiştir. Karşılaştırma grubu olarak ayrıca tekdilli bir grup üniversite öğrencisine (n=102) de aynı anket Türkçe dilinde uygulanmıştır. İkinci çalışmada 63 Türkçe miras dil konuşucuna ahlaki ikilemler ilk dilleri olan Almanca, Türkçe veya yabancı dilleri olan İngilizce dilinde verilmiştir. İki çalışmada da anketi yabancı dilde alan grup, duygusallık içeren ahlaki ikilemde daha mantıklı düşünmeyle ilişkilendirilen faydacı yanıtları diğer gruplara göre daha çok vermiştir; ancak bu fark istatistiksel olarak anlamlı düzeyde çıkmamıştır.

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INTRODUCTION

Decision making is a complex process interacting with numerous variables. Current research suggests the linguistic context of a decision might also be one of these factors. It is posited that in emotion-invoking situations, late sequential bilinguals (individuals who become bilingual after late childhood, usually in a school setting) are inclined to be more rational in their decisions in a foreign or second language (L2) context (Cipolletti et al., 2016; Costa et al., 2014; Geipel et al., 2015; Hayakawa et al., 2017). Late bilinguals might not hold the same level of emotional attachment to their foreign language as they do to their first language (L1). In bilingual decision making research, certain moral dilemmas presented to bilingual respondents prompt them to select consequentialist choices associated with careful reasoning, whereas others, particularly dilemmas where the individual is actively engaged in the situation, prompt deontological choices associated with emotion-based tendencies (Geipel et al., 2015, p. 2). In the latter type of dilemmas, late bilinguals have been reported to make more consequentialist decisions in their foreign language in comparison to their native language. This inclination is described as the 'Foreign Language Effect' (FLE) (Costa et al., 2014). The utilitarianism tendency in a foreign language was also observed in the decisions made in the context of an unfamiliar dialect in the native language (Miozzo et al., 2020).

The implications of FLE are diverse in terms of data collection and judgment in multilingual settings. To illustrate, it has been suggested that the language used in responding to clinical surveys has a small effect on measuring psychological states, although such an effect was not found on expressing well-being (Paz et al., 2021). There are also studies showing differential rating of personality based on the language used (Chen et al., 2014; Chen & Bond, 2010). Volk et al. (2014) discuss the wide-ranging effects of working in a nonnative language in multinational companies and question whether they influence workers' cognitive efficiency. These implications might extend to multinational organizations or political bodies where important decisions are made.

We need more moral judgment and decision-making data from varied multilingual populations and from various dilemma scenarios since the findings of FLE research are still highly contentious. Thus, the current study's goal is to examine the FLE in Turkish-English bilinguals and contrast its findings with those of earlier research. Additionally, this study will contrast late sequential Turkish-English bilinguals residing in Turkey with simultaneous Turkish-German bilingual speakers who reside in Germany and speak English proficiently. This comparison will help us determine the extent to which multilinguals exhibit the FLE. There is a paucity of relevant research on other bilingual groups, despite the fact that the majority of earlier work has concentrated on the FLE among late bilinguals. The tested language pairs have also been limited to typologically more

similar languages, mostly from the European languages, which limits the generalizability of the results.

LITERATURE REVIEW

The phenomenon of FLE was mostly explored under the framework of decision making. Therefore, it is important to acknowledge the theoretical background in terms of decision making before discussing previous related studies.

Emotionality- and Cognition-Based Accounts of FLE

There is a claim that reasoning in a foreign language context might help bilinguals to make better decisions due to the apparent reduction or blocking of cognitive biases (Keysar et al., 2012). The foundation of the reduced emotionality view (Corey et al., 2017; Costa et al., 2014; Hayakawa et al., 2017) is that linguistic signals received in the mother tongue are typically processed with a higher level of sentimentality than those received in a foreign language (Pavlenko, 2012). This line of reasoning holds that skilled L2 speakers often comprehend the senses of words that are loaded with emotion, but they do not appear to feel the full emotional effect of such phrases (Corey et al., 2017). Furthermore, it appears that late bilinguals have stronger emotional ties with their native language than with their L2 (Harris et al., 2003). Bilingual individuals may not feel the same emotional intensity while telling lies in their foreign language, for example, which might make lying in the L2 simpler compared to the L1 (Caldwell-Harris & Ayçiçeği-Dinn, 2009).

The fact that many people experience foreign language learning in a classroom setting might be one factor contributing to the FLE (Ivaz et al., 2016). Since this context is less emotionally biased than informal contexts for learning an L2, learners may not form strong emotional attachment with their nonnative language as they would with their native language. Furthermore, according to Costa et al. (2014) and Iacozza et al. (2017), L2 learning in the school setting cannot replicate the social and cultural interactions that people experience with their L1 in daily life. Reduced emotionality in a foreign language may be the outcome of this "emotional distance" and "psychological distance" (Costa et al., 2014; Keysar et al., 2012). It appears that bilinguals would rather express their feelings—whether good or negative—in their L1 rather than their L2 (Belcher & Connor, 2001). Bilinguals perceive emotions with higher intensity in their L1 than in their L2, as evidenced by the fact that when they watch a commercial or read a slogan in the L1, they experience them more comprehensively (Puntoni et al., 2009). Furthermore, Pavlenko (2012) suggests that in addition to the linguistic context, factors such as proficiency level, context, exposure to the L2, and age of acquisition may further impact the potential emotional differences in L2 use.

It is possible that talking in the L2 will decrease emotionality, yet it might also mean that the bilingual individual's reasoning is becoming more rational. The cognitive

enhancement hypothesis (Costa et al., 2014) is based on this notion and claims that increased analytical thinking might result in the emergence of the FLE (Cipolletti et al., 2016; Keysar et al., 2012). According to the cognitive enhancement view, individuals tend to solve problems in their L2 by making more deliberate and slower judgments. In this line of thinking, people tend to solve problems in their L2 by making more deliberate and slower judgments. In Kahneman's (2003) decision making model, this more deliberative thinking style is associated with System 2 processes, which are characterized as more planned and slow as opposed to spontaneous and intuitive System 1 processes. It may be suggested that the FLE causes individuals to deliberate more than they would otherwise, since it causes people to automatically reason more than they normally do. This enables people to control instinctive choices that humans occasionally make (Costa et al., 2014).

Alternatively, according to the brain drain model, the foreign language context impedes the efficiency of System 2 thinking, leading to more biased decisions and reduced self-regulation by depleting cognitive resources (Volk et al., 2014). The researchers argue that especially in highly stressful work environments, bilingual speakers have more working memory load and might not be able to cope with biases and errors efficiently. The negative effects of this brain drain are expected to be lower for more proficient L2 speakers. According to Costa et al. (2014), bilinguals tend to consider twice before making judgments in the L2 because they instinctively think at more length than normal, which assist people to resist instinctual choices that humans occasionally make.

FLE and Moral Judgments

Typically, moral dilemmas involving the respondent's decision-making between deontological and utilitarian principles have been used to assess the FLE. In the famous trolley scenario, for instance, the participant can make the utilitarian choice of switching the rails to save five people from a fast-moving train at the expense of one person's death. However, when the participants are given the choice to actively push one heavy person from a footbridge to prevent the deaths of five people by a train, they might find this act emotionally challenging and ethically unacceptable, opting for the deontologist option of not causing the death of a person. When bilingual people use their L2, the deontologist tendency has been reported to decrease. Whether this tendency is due to the attenuation of automatic and emotion-based responses, namely System 1 thinking, or the intensification of controlled responses, i.e., System 2, due to higher cognitive load in the L2 has been a topic of debate (Costa et al., 2014). Under this account, it is also speculated that conversing in in the L2 directs people to defy moral and social conventions and make tougher, more rational conclusions.

In the seminal FLE study, late L2 speakers of English, French, Hebrew, and Spanish were given the two trolley

scenarios in their L1 or L2 (Costa et al., 2014). Both L1 and L2 responders predominantly chose the utilitarian option in the conventional trolley scenario. However, the footbridge scenario yielded greater prevalence of utilitarian decisions in the L2, supporting the emotion reduction hypothesis. This finding was repeated in Geipel et al. (2015), where L1 Italian, L1 Chinese and L1 German speakers made utilitarian decisions more frequently in the footbridge scenario in L2 English. However, an analysis of the participants' emotionality ratings did not indicate reduced emotionality for different dilemma types. The researchers argue that rather than emotionality, decreased access to social norms in an L2, might lead to the FLE. Cipolletti et al. (2016) also presented the trolley dilemmas to 160 university students in Spanish and English. Only a tiny percentage of those who completed this questionnaire in the L1 said they would force the person off the footbridge, while the majority said they would change the direction of the rail. Nonetheless, compared to the L1 surveys, the L2 surveys had a greater rate of utilitarian replies in the footbridge scenario.

In another large-scale study, Corey et al. (2017) administered both trolley moral dilemmas to late L2 learners of English in Spain. Replicating the FLE, the researchers did not find evidence for increased cognitive control in judging the dilemmas due to language switching. They also did not find social factors to influence the FLE, since in- or out-group membership of the stakeholders involved in the dilemmas did not result in an attenuation in the FLE. Through manipulation of actions or consequences, they found a small effect of action aversion on the FLE. Overall, this study pointed out that increased psychological distance and reduced attention to negative emotions might be deriving the FLE. However, the researchers refrain from making a claim that people are more utilitarian in an L2, since their methodology did not make it possible to dissociate utilitarianism and deontology.

In a more comprehensive study testing over 200 L1 and L2 English, Spanish and German speakers, Hayakawa (2017) calculated separate deontological and utilitarian scores for each participant using a process dissociation task comprising 20 scenarios. The results pointed to a small to medium size decrease in deontological scores in the L2 compared to the L1 across six experiments. Nevertheless, the utilitarianism scores were found to be consistently lower in the L1, suggesting that decreased deontology, rather than an increase in utilitarianism or intentional thinking, can account for the FLE. Using a more nuanced dissociation model, Białek et al. (2019) reported that L1 Polish speakers of L2 English were less sensitive to norms and consequences in their foreign language, but reported no effect on risk aversion in an L2, lending support to both reduced deontology and reduced utilitarianism. This could be interpreted more in line with a reduced emotionality account, rather than increased deliberation account.

Further support for the emotionality-based accounts of FLE comes from studies done with highly proficient groups. Čavar and Tytus (2018) did not document a notable moral FLE in dilemmas presented to L1 Croatian L2 German speakers living in Germany or Austria for a long time. It is argued that the lack of FLE might stem from increased proficiency and acculturation to the host culture, which might have increased emotionality in the L2, and thus diminished the FLE.

As another potential mitigator of the moral FLE, the effect of modality has been explored. With the expectation that emotionality would be induced more in the auditory modality, Muda et al. (2020) presented moral dilemmas to proficient 165 Polish-English bilinguals in either textual and auditory modality. The participants' utilitarian response rates were not found to differ based on modality. More notably, the FLE was not replicated. However, the results on the modality effect are inconclusive. By comparing responses from a self-paced reading task and a listening task in a within-groups design, Brouwer (2021) found a higher rate of utilitarian responses in the auditory mode in highly proficient L1 Dutch speakers of English. At the same time, the results supported the reduced emotionality account since the participants showed FLE only in personal, namely the more emotional dilemmas.

Apart from moral dilemma studies, some FLE studies have studied the relationship between susceptibility to heuristics and biased thinking in the L2. If the FLE is based on increased systematicity in the L2 due to more deliberate thinking, L2 speakers are expected to be less influenced by biases in the L2. To illustrate, in a gambling question, where-by people have a chance to choose between receiving 1\$, the safe option, or gambling for 2.5\$ or nothing, the rate of people taking this risk has been found to be higher if it is communicated in a foreign language (Keysar et al., 2012). Within the same research, FLE was associated with the attenuation of the framing effect (i.e., reduced tendency to take risks when a risky situation is framed based on positive outcomes), e.g., saving 200.000 out of 600.000 people rather than on negative outcomes, e.g., losing 400.000 out of 600.000 people.

In order to test the cognition-enhancement account of FLE, Vives et al. (2018) investigated the outcome bias, the inclination to make decisions on the basis of their consequences and the representativeness heuristic, which refers to judgments of probability based on similarity to target population at the expense of missing more important criteria. For example, people might predict that the probability of two events happening together is higher compared to the occurrence of only one of them, which is a logical fallacy. In the same way, people have the tendency to ignore the base rate of occurrence when making such predictions. In an analysis where such non-emotional scenarios were presented to L1- and L2-English and L1-Spanish speakers, Vives et al. (2018) failed to support the FLE, consistent with the reduced emotionality account.

The majority of the moral FLE research reviewed so far have compared language pairs with high similarity or cultural

familiarity. Costa (2014) had included L1 Korean and L1 Hebrew groups in their study, but the sample sizes were small. Muda (2020) had studied the effect of modality on the FLE using L1 Polish L2 English speakers. According to Dylman and Champoux-Larsson (2020), there is a possibility that the FLE might be more pronounced as language distance increases and cultural familiarity in daily life decreases. In their study with L1 Swedish speakers, they reported FLE in the L2 French group, however, the effect did not emerge in the L2 English speakers. The FLE was not found in Swedish-Norwegian bilinguals either, arguably due to high linguistic similarity.

THE STUDY

The inconclusive results related to the FLE, and its possible predictors necessitate studies involving linguistically and culturally more distant language pairs. Additionally, there is a paucity of relevant studies on multilinguals and heritage speakers. Furthermore, the FLE research is based on an implicit assumption that L2 speakers make similar decisions as the speakers of their native language when using their L1. However, in the broader bilingualism literature, we have been informed that monolinguals and bilinguals may differ in terms of neurocognition (Abutalebi & Green, 2016), and native language processing as well (Bice & Kroll, 2015)

Research Questions

This study's objective is to add to the FLE literature by testing it in language pairs with high linguistic distance and with different types of bilinguals. We also wanted to see if moral decisions differ between heritage language and the other first language. Another objective was to see the degree to which bilinguals and monolinguals differ in moral decision-making. To address these gaps, the following research questions were formulated:

1. To what extent do Turkish native speakers who speak L2 English decide between deontological and utilitarian options when presented with moral dilemma scenarios in their L1 or L2?
2. To what extent do monolingual or bilingual Turkish native speakers make similar moral decisions when they encounter dilemmas in their native language?
3. To what extent do heritage speakers of Turkish decide between deontological and utilitarian options when they encounter moral dilemmas in Turkish, their heritage language, or in their second native language, German, or in their foreign language, English?

Study 1

Participants

The participant group comprised 173 L2 speakers who studied English language teaching (ELT) and 102 monolingual Turkish speakers who studied Turkish language education or history (see Table 1). All students attended a state university in a medium-sized southwestern city in Türkiye. We considered the Turkish language and history students to be monolingual because they had very limited English

Table 1. Participant Information

Group (Survey Version)	n	Female	Male	Mean Age (Range)
Bilingual (Turkish)	88	61 (69.3%)	27 (30.7%)	21.8 (19-34)
Bilingual (English)	85	58 (68.2%)	27 (31.8%)	21.8 (19-34)
Monolingual (Turkish)	102	53 (52%)	49 (48%)	22.7 (20-52)

knowledge. In the monolingual group, 49 students reported to have no English knowledge at all. The remaining participants received limited English education as part of regular K12 education and can be considered to have beginner level English as only grammar-based elementary English is taught in regular K12 schools in Turkey. This group also self-rated their English proficiency as 1.83 out of 4.

At the time of data collection, the bilingual group had received an average of 12.5 years of English education. Prior to enrolling in college, they passed an institutional competency exam evaluating four abilities and grammar, scoring a minimum of 70 out of 100 points, which is the equivalent of B1-B2 (intermediate) proficiency level. None of them had stayed in a country where the L2 is spoken for more than nine months. The participants also self-rated their general English proficiency as 2.76 on average on a four-point scale. The bilingual group took the instruments either in Turkish or English.

Materials and Procedure

Demographic information was collected via a personal information form. The participants were also given three dilemmas in a survey: two moral dilemmas and a non-moral control dilemma, in a counter-balanced order. In the classical trolley dilemma, the participants were asked whether they could switch the route of a train to rescue five people by compromising one person. In the footbridge dilemma, the participants were asked whether they could actively push a heavy person off a bridge in order to save five others. Finally, the control dilemma required the participants to make logical reasoning to reach a decision about a daily life shopping problem. This control dilemma was included in order to have a neutral condition which was based on logical thinking, but not on emotions or morality. The dilemmas were presented to participants in counterbalanced order.

The moral dilemma scenarios were adapted from Koenigs et al. (2007). On a 7-point Likert scale, the impersonal traditional trolley dilemma had a mean emotion rating of 5.3, whereas the personal and high-conflict footbridge problem had a mean emotion rating of 6.0. The trolley scenarios were chosen because they enable the comparison of FLE outcomes across various multilingual populations and have often been utilized in earlier research studies (Brouwer, 2019; Čavar & Tytus, 2018; Corey et al., 2017; Costa et al., 2014; Geipel et al., 2015; Hayakawa et al., 2017).

To administer the dilemma questionnaires, the researchers visited some university classes upon instructors' approval. Students who expressed interest in taking part in the study reviewed the written consent forms, which provided them with information about the study's objectives, voluntary participation, the option to discontinue at any time, and confidentiality of their data. The participants completed the forms in ten minutes. The questionnaire was randomly administered to the bilingual participants in either Turkish or English.

Data Analysis

Using chi square analysis, the percentages of utilitarian choices in each predicament were compared. Given that a number of chi square tests were run, the Bonferroni correction was used. In the event that the chi square result was significant, post-hoc analyses were performed. In the event that there were less than five people in the expected cell count, Fisher's exact test was used.

RESULTS

The descriptive data gathered from the moral dilemma surveys are displayed in Table 2.

Table 2. Descriptive Statistics of the Moral Dilemma Surveys (n=275)

Dilemma	Decision Options	Monolingual Group-Turkish Survey (n=102)		Bilingual Group-Turkish Survey (n=88)		Bilingual Group-English Survey (n=85)	
		%	n	%	n	%	n
Classical Dilemma	Yes	76.5	78	83	73	67.1	57
	No	23.5	24	17	15	32.9	28
Footbridge Dilemma	Yes	43.1	44	37.5	33	45.9	39
	No	56.9	58	62.5	55	54.1	46
Control Dilemma	Yes	86.3	88	98.9	87	96.5	82
	No	13.7	14	1.1	1	3.5	3

The classical dilemma results indicate that in the monolingual Turkish group, 76.5% would sacrifice one person by switching the rails in order to rescue five others; in other words, most of them responded in a utilitarian manner. In the same dilemma type, the bilingual group who completed the survey in Turkish selected the utilitarian option more frequently (83%) compared to those who completed the survey in English (67.1%).

When compared to the classical dilemma, in the footbridge dilemma the utilitarian responses of the monolingual group (43.1%) and both bilingual groups (37.5% and 46.9%) were usually lower. Although the between-group differences were not large, the bilingual participants who completed the English survey provided the greatest rate of utilitarian answers.

Regarding the control problem, all groups received favorable replies in the range of 86-99%, which was much greater than those received for both trolley dilemmas. With this particular dilemma, the monolingual group had the lowest affirmative answer rate. All things considered, the footbridge dilemma had the lowest frequency of utilitarian choices, whereas the control dilemma had the highest frequency utilitarian choices (see Figure 1).

Chi square tests were performed on each dilemma independently to determine whether there was a statistically significant difference in response rates between the monolingual Turkish, bilingual Turkish and bilingual English survey groups. (see Table 3). The results did not indicate significant differences.

As there were less than one five people in some cells in the Control dilemma, the Fisher's exact test was carried out. The analysis indicated that there was a significant difference among groups ($p=.002^*$). Post-hoc analyses showed that the response rates of the bilingual group in the Turkish and En-

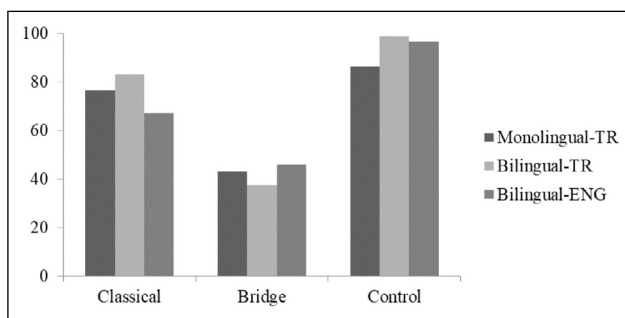


Figure 1. Percentages of utilitarian responses per dilemma.

Table 3. Between-Group Chi-Square Comparisons per Dilemma

Dilemma	χ^2	df	p^*	phi
Classical	5.99	2	.05	.148
Footbridge	1.31	2	.52	.069

*Bonferroni corrected $\alpha: .05/2 = .025$.

glish surveys were similar ($p=.36$). Similarly, the response rates of the monolingual group and the bilingual group who took the Turkish survey did not significantly differ ($p=.020$) (Bonferroni corrected $\alpha: .05/3 = .017$). However, the monolingual group's responses were significantly different than that of the bilingual-English group ($p=.001^*$).

DISCUSSION

In Study 1, participants who were monolingual Turkish speakers or late bilingual in Turkish-English speakers were given two trolley dilemmas and a control dilemma. These moral scenarios elicited deontological or utilitarian/consequentialist reactions. On the basis of prior research, for the typical trolley dilemma, differential utilitarian response rates on the basis of language were typically not anticipated, but the usage of a foreign language was anticipated to increase the frequency of utilitarian outcomes in the footbridge problem. When compared to the traditional trolley problem, the footbridge dilemma is considered to have higher emotional intensity. Furthermore, in the footbridge scenario, the agent holds more active responsibility in the sacrificing of one life, making it more difficult to perform the utilitarian action.

The outcomes of the two trolley dilemmas used in this study showed that there were no significant variations in utilitarian decision rates between languages. When it came to the classic trolley problem, the bilingual participants who completed the Turkish survey had a greater frequency of utilitarian replies (83%) compared to those who took the English survey (67.1%); nonetheless, the between-groups difference did not reach statistical significance. In addition, as the dilemma was not very emotionally challenging, we did not expect the L2 responses to be more utilitarian anyway. These findings were parallel to those of past studies (Cipolletti et al., 2016; Costa et al., 2014; Geipel et al., 2015), where the frequency of utilitarian decisions in the classical dilemma was not significantly different in the L1 and L2, despite the comparably higher utilitarian rate in the L1.

In the present study, both the monolingual and bilingual participants' total rates of utilitarian judgments in the footbridge dilemma were lower than that of deontological ones. Therefore, it could be argued that overall, the moral thinking patterns seemed to be similar regardless of a bilingual mindset. The proportion of utilitarian replies was somewhat greater for the bilingual individuals in English, the foreign language, (37.5%) than in Turkish (45.9%), but this discrepancy was statistically not significant. This was unexpected because a number of other research (Brouwer, 2021; Cipolletti et al., 2016; Corey et al., 2017; Costa et al., 2014; Driver, 2022; Geipel et al., 2015) indicate that the foreign language survey groups had a far higher utilitarian answer rate in the footbridge dilemma.

As the monolingual Turkish participants overall made less logical decisions in the control dilemma than the bi-

lingual English groups did, it is plausible to assume that the bilingual participants in this study tended to make more rational judgments in this sort of dilemma. Since the content of the control dilemma is based on logical reasoning and is independent of morality or emotion, it was not anticipated that the responses would vary based on the language employed.

Overall, the FLE was not replicated in the present study. The lack of a FLE was also reported in Čavar and Tytus (2018) who worked with highly proficient and immersed L2 speakers. However, the respondents of the current research were of intermediate to upper-intermediate proficiency level. Although they were studying the language for more than 10 years, most of them had not lived in a country where the L2 was spoken. One possible reason for the lack of the FLE might be that the participants studied English language teaching at university, and therefore might have high motivation, and positive attitudes toward the language, as well as frequent language contact, albeit at a formal setting. Additionally, we used the trolley dilemmas for comparison with the major past FLE studies. However, the use of a single dilemma per condition might also have prevented the detection of a possible FLE in this group. Crucially, Hayakawa et al. (2017) explain that analysis of only the traditional dilemmas with a single scenario for each might eliminate the FLE. Białek et al. (2019) also did not replicate the FLE when they performed a traditional analysis, which compares the utilitarian and deontological response rates. One could also argue that the sample size was not enough to capture the FLE; however, the sample size was similar to that of the previous studies which reported the FLE.

The results have implications on the relationship between linguistic and cultural factors with the FLE. The current findings do not imply influence of linguistic and cultural distance and align with that of a previous study with L1 Polish L2 English speakers, whereby the FLE was not replicated (Muda et al., 2020). However, in an earlier study with L1 Polish speakers, reduced emotionality effects were found (Białek et al., 2019). The findings of the current inquiry also conflicts with that of Dylman and Champoux-Larsson (2020) in which FLE was reported in linguistically distant language pairs (Swedish and French), but not in similar ones (Swedish and English).

Study 2

Participants

Study 2 looked into how speakers of Turkish-German ancestry respond to moral dilemmas in English, German, or Turkish. To take part in the study, heritage speakers from various cities in Germany and educational levels were contacted. All participants were born in Germany, were simultaneous bilinguals in Turkish and German, and had received K12 education in Germany. Some of the participants were attending university in Turkey at the time of data collection. Each participant took the survey in either German, English, or Turkish (see Table 4).

Table 4. Participant Information

Survey Language	Total (n)	Female (n)	Male (n)	Mean Age (Range)
German	18	11	7	23.55 (18-33)
English	24	14	10	26 (17-49)
Turkish	21	11	10	25.52 (18-45)
Total (n) (%)	63 (100)	36 (57.1)	27 (42.9)	25.14 (17-49)

On the basis of the participants’ self-ratings, their proficiency ranged between intermediate to upper-intermediate level of English proficiency (see Table 5). Procedures. The same survey used in Study 1 was adopted as the main data collection tool. In order to create an additional German version, the dilemmas were translated to German by a German native speaker who was proficient in English and was checked by two German native speakers in terms of comprehensibility. The participants were also inquired about their language history and demographics in the personal information part. Due to the Covid-19 pandemic, the Turkish, German, and English dilemma surveys were organized in Google Forms and their links were emailed to potential participants.

Data Analysis

Following data collection, SPSS was used to analyze the German, English, and Turkish questionnaire answers. Firstly, mean percentages of utilitarian judgments were compared using contingency tables. Fisher’s exact tests were used to assess between-group differences since due sample size was limited and the predicted count for some conditions was below five.

RESULTS

As is illustrated in Table 6, all three groups selected the utilitarian option over the deontological one more frequently for the classical problem. Nonetheless, the group who completed the survey in Turkish had the lowest utilitarian response rate, while the group that completed it in German had the greatest proportion. The Turkish survey takers had the lowest proportion of utilitarian replies in the

Table 5. Participants’ Self-Rated English Proficiency on a scale from 0-4

Skills (Survey language)	Group 1 (German) Mean (SD)	Group 2 (English) Mean (SD)	Group 3 (Turkish) Mean (SD)
Reading	2.61 (.6)	3.16 (.63)	2.66 (.57)
Writing	2.33 (.48)	2.95 (.55)	2.33 (.57)
Speaking	2.22 (.42)	2.83 (.70)	2.14 (.57)
Listening	2.22 (.42)	3 (.72)	2.33 (.48)
General Competence	2.44 (.51)	2.79 (.77)	2.19 (.51)

Table 6. Descriptive Statistics of the Moral Dilemma Questionnaire Responses

Dilemma	Decision Options	German Survey (n=18)		Turkish Survey (n=21)		English Survey (n=24)	
		%	n	%	n	%	n
Classical	Yes	94.44	17	76.19	16	87.5	21
	No	5.56	1	23.81	5	12.5	3
Footbridge	Yes	33.33	6	28.57	6	54.17	13
	No	66.67	12	71.43	15	45.83	11
Control	Yes	100	18	95.24	20	95.83	23
	No	0	0	4.76	1	4.17	1

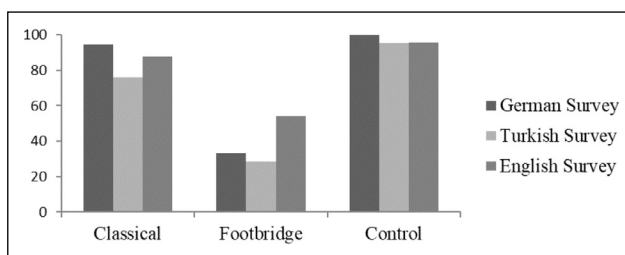
footbridge problem, whereas the English survey takers recorded the greatest rate of utilitarian responses. Regarding the control dilemma, the utilitarian judgments made by all three groups were greater than 95%.

As seen in Figure 2, the control dilemma yielded the largest percentage of utilitarian responses, while the footbridge problem yielded the lowest percentage of such selections.

According to Fisher's exact analysis, no significant differences were detected in the answer rates of the three groups in any of the dilemmas, despite the disparities in response rates in the descriptive statistics (see Table 7).

DISCUSSION

Study 2 set out to examine the FLE in a group of heritage speakers through moral dilemmas. The response rates of the control dilemma indicated no difference across the three language groups. This was anticipated given that the problem is logically grounded. The responses to the classical trolley dilemma indicated that the lowest utilitarian response rate was recorded in the Turkish survey takers

**Figure 2.** Percentages of utilitarian/consequentialist responses per dilemma.**Table 7.** Fisher's Exact Test Results per Dilemma

Dilemma	Value	P
Classical	2.48	.316
Footbridge	3.36	.219
Control	1.03	1.0

(76.2%), followed by the English (87.5%) and German survey (94.4%) groups. However, as the conclusion is not statistically significant, it is consistent with earlier research findings, which documented similar thinking in native and foreign languages in less emotional and impersonal dilemmas (Brouwer, 2021; Cipolletti et al., 2016; Geipel et al., 2015).

The group who took the survey in English had the greatest utilitarian choice rate in the footbridge dilemma data. Nevertheless, this difference did not reach statistical significance. Therefore, the findings did not align with previous studies reporting the FLE (Cipolletti et al., 2016; Corey et al., 2017; Costa et al., 2014; Geipel et al., 2015). With regard to the comparison of the native and heritage languages, the utilitarian response rate in the German group was higher than in the Turkish group; however, it was not statistically significant. In the footbridge dilemma, however, the response rates were highly similar in both German and Turkish. This finding hints that despite being raised in Germany, the heritage language of the participants might be equally influential as the other native language, German in emotional situations and dilemmas. The lack of formal schooling in Turkish might also have limited the use of Turkish to more personal and familial matters, preserving the emotional dimension. As a limitation of the study, the small sample size should be taken into consideration in the interpretation of the findings. In this sense, this study can be considered exploratory.

CONCLUSION

These two studies set out to investigate the FLE in late bilingual and heritage speakers respectively. In both studies, the utilitarian response rate in the classical trolley dilemma was higher than that of the footbridge dilemma. Furthermore, among the respondents who completed the survey in English, the footbridge problem yielded the greatest utilitarian rate in the foreign language as expected; yet the response rate differences between the groups was not statistically significant, indicating lack of the moral FLE in the present study.

One limitation of the study could be that the dilemma scenarios elicited dichotomous responses, restricting the kinds of statistical analyses that could be carried out. It is advised that Likert-scale replies be used in future research as they can reduce this restriction. In addition, individuals were given brief questionnaires because of Covid-19 and time restrictions. Surveys comprising longer and more dilemma scenarios or items tracing utilitarianist and deontological tendencies more comprehensively would make the results more reliable. In addition, the use of more comprehensive bilingualism scales could be used in order to identify the continuum of bilingualism in the participants better. Similarly, the use of brain imaging methods can help us understand whether reduced cognitive reasoning or emotional reduction accounts explain the FLE, using the related brain areas or waves.

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