



DYADIC OR MONADIC? A REVIEW ON PERSONALITY REFLECTIONS OF BILINGUALS

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Article Info	Abstract
Keywords Bilingualism Bilinguals Split personality Traits Cultural frame shift	The purpose of this study is to review the current literature which produced evidence on split personality of bilinguals. In this research paradigm, split-personality does not refer to any psychological disorder, rather it denotes a personality feature of bi- or multilinguals. Although there is a plethora of research on bilingualism and bilinguals, data on split personality of bilinguals are scant. From the beginning of the 20th Century, the question of whether bilinguals have two personalities or not has been investigated on the basis of their language and cultural frame shift. We reviewed 13 studies that are directly related to split personality of bilinguals. These studies are discussed with respect to their purpose, methodology and major findings. Hence, we aimed to provide insights for the reader to have an understanding about the process of split-brain studies and the major findings that revealed how bilinguals reflect different personality traits depending on the language and culture they are interacting and residing. Further implications were provided for the researchers who seek answers in this area.
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1. Introduction

Bilingualism has been investigated from various aspects; especially, whether being a bilingual is an advantage or disadvantage for a person. In this comprehensive survey of literature, the split started with its definition; namely, whether a bilingual should have a native-like competence or not. According to Bloomfield (1933), a bilingual is a person who has “ native-like control of two languages” (p. 56). As a counterargument for Bloomfield’s definition, bilingualism is defined as the minimal competency in one of the four language skills in a language apart from his mother tongue (Macnamara, 1967). This dichotomy in the definition of bilingualism also gave rise to the research on what bilinguals can do and cannot do. Especially, studies focusing on the comparison of bilingual and monolingual children in their intelligence, metalinguistic awareness and cognitive abilities have attracted the researchers in this field (Barac & Bialystok, 2010). Starting from the second half of the

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20th Century, a new research interest emerged and directed the question whether bilinguals also switch their personalities when switching languages.

Weinrich (1953) argued that bilinguals reflect individual differences while switching languages. Due to social differences that surround bilinguals lead them to reflect their emotions and social terms in a different way in the same context (Ervin, 1961). Language is regarded as one of the elements of culture, hence bilinguals are inclined to carry the features of the cultures of their languages (LaFromboise et al., 1993). This notion ensued the concept of biculturalism that elucidates bilinguals also switch from one culture to another while switching languages. Although previous research mention that biculturals integrate their corresponding cultures at the same degree whereas bilinguals do not (Benet-Martínez & Haritatos, 2005; Grosjean, 2008; Škifić & Bakić, 2017), there is not a clear-cut difference between the traits of bilingual and bicultural individuals with this respect.

2. Instrumentation in Split-brain Studies

Instrumentation process is a highly challenging concern for the researchers in split-brain studies of bilinguals. Bilinguals answer the questions in these instruments to reflect the norms and values both in their native language and second language. It is of the utmost importance to translate these scales without shifting and changing the notions and nuances in each item (McCrae et al., 1998). We reviewed the instruments generally used in split-brain studies and presented in chronological order based on these studies. Our aim is to assist researchers who will further conduct research in this research area. The scope and some major criticisms directed to these instruments were also briefly discussed.

Thematic apperception test (TAT)

Developed by Henry A. Murray and Christiana D. Morgan in 1930s, TAT is used as a personality projective test. It is also known as picture interpretation technique. This test involves a series of picture-cards (31 in total) of people that depict various characters. Test takers are asked to tell stories about these pictures for the purpose of revealing their underlying personalities. These questions are mainly interpreted based on the following items;

- what has led up to the event shown?
- what is happening at the moment?
- what are the characters feeling and thinking?
- what was the outcome of the story? (Cramer, 2004).

TAT is regarded easily applicable and different emotional responses can be obtained from each new test taker. Howbeit, Lilienfeld, Wood and Garb (2000) argued TAT contains inadequate psychometric properties, and it was also criticised since it does not provide reliable and valid data (Keiser & Prather, 1990). When considered the use of TAT in bilingual research field it is difficult to implement it to participants in plenary sessions since this test is administered individually. Lastly, the characters and environments in the cards have always been labelled as old-fashioned and out-dated.

The California psychological inventory (CPI)

It was developed by Harrison Gough and first published in 1956. This test assesses social and interpersonal interactions of individuals based on a self-report inventory (Groth-Marnat, 2009). It includes 434 items which focus on "folk-concepts such as dominance, sense of responsibility, self-control, empathy, communality and flexibility" (Gough, 1990). The test consists of 18 scales in total and these scales are grouped into four main sections which are (1) poise, (2) socialization, (3) achievement potential, and (4) intelligence and interest modes.

Groth-Marnat (2009) sees CPI as a comprehensive test with a coverage of information and user-friendliness with its applicability compared to other tests. This test is also regarded as versatile and the test-takers reflect that their personality match with what CPI revealed for their personality traits (Laufer et al., 1982). A basic criticism directed to CPI is that it was not designed to assess personal idiosyncrasies as a whole rather it designed to gauge interpersonal behaviours (Hattrup, 2003). Another deficit cited by Megargee (1972) about CPI is that the samples illustrated in the test are mostly Caucasians; therefore, this case which might be conceived as a contemptuous situation by the minority groups.

Revised NEO personality inventory (NEO-PI-R)

The Revised NEO Personality Inventory is first developed by Costa and Macrae in 1978; however, these researchers then revised it in 1985, 1992, and 2005. It is used to measure 30 underlying facets based on five-factor domains that are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (Costa et al., 1977). This test is used in many fields, especially in the competence assessment and competence development in business-world (Costa et al., 1995). It has also become popular in the assessment of individuals where research is conducted for scientific journals (Oxford Handbook of Personality Assessment, 2009).

Costa, Fozard and McCrae (1995) noted that the scores obtained from the personality scores in Revised NEO-PI-R might be helpful in enacting right and grounded occupational choices based on the client's own strengths and weaknesses. When considered the weaknesses of this test Costa and McCrae (Costa & McCrae, 1992) argue that the results may not be interpretable on the condition that 40 items are missing. In addition, some items and words used in NEO-PI-R are difficult to be understood by the tests-takers whose ages range between 13-17 (McCrae et al., 2005).

Big five inventory (BFI)

Researchers examining various personality characteristics agreed upon five broad traits that is known as the Big Five personality dimensions (Barrick & Mount, 1991). These personality traits are: (1) Extraversion vs. introversion, (2) Agreeableness vs. antagonism, (3) Conscientiousness vs. lack of direction, (4) Neuroticism vs. emotional stability, and (5) Openness vs. closedness to experience. Although the names of these dimensions may vary regarding the research paradigms, BFI is widely used for gathering data about personality traits of people in many areas. To illustrate, it is used to predict academic performance and motivation of a person by including items regarding learning styles which might also influence that person's academic career (De Feyter et al., 2012). It has also been translated into various languages and used in different cultural contexts. Hence, BFI is regarded as an essential constituent for the generalizability of personality traits since the dimensions in this test is supported by an extensive research in literature (Krueger & Eaton, 2010).

BFI is criticised with respect to each trait it includes. Firstly, John and Srivastava (1999) argue that the traits in BFI are too broad to reflect an overview of personality; therefore, it should be organized in a descriptive way by taking into consideration the differences between individuals. Secondly, each trait might be posed from different perspectives regarding the test takers' cultural background (Gurven et al., 2013). Thirdly, Poropat (2002) claims that BFI is insufficient in detecting sex differences. Lastly, it was criticised its shortcomings in predicting accurate outcomes related to real life settings (Boyle, 2008).

Although split personality of bilinguals and biculturals is also an area of interest for broad fields such as psychology and sociolinguistics, data on this topic are scant. With this regard, this study reviewed the literature on bilinguals and biculturals that produced evidence on split personality. We also included studies that included multi-linguals in their research paradigm since bilinguals were also in the scope of these studies. The journal articles conducted on split-brain personality of bilinguals and multilinguals have been summarized in a chronological order in Table 1.

Table 1. *The journal articles on split-brain studies.*

Authors	Year	Methodology	Main Findings
Ervin	1964	A quantitative analysis of two sets of (TAT) stories; sixty-four adult French adult persons in Washington D.C.	Bilinguals demonstrated different dimensions in terms of verbal behaviours.
Hull	1996	A quantitative analysis based on simple within-subject repeated-measures research design; CPI completion (both in their native languages and English) twice between 5-15 days intervals; Chinese (n=57), Korean (n=17), and Mexican (n=74) who were American bilinguals in the USA.	Based on CPI traits, significant differences were observed which reflected language-related personality differences in the three groups.
McCrae, Yik, Trapnell, Bond and Paulhus	1998	Quantitative analysis based on the Revised NEO Personality Inventory Test and a number of additional personality and attitude measures; <i>Study 1:</i> 162 (80 men, 82 women) Chinese (native)- English (fluent speakers), <i>Study 2:</i> 633 Chinese living in Canada, <i>Study 3:</i> 99 Hong Kong-born Chinese and Canadian-born Chinese (reporting that their best language was English) bilingual undergraduate students.	Culture, language and genetic differences had impact on reflecting different personality profiles that were similar prototypes in the host culture.
Koven	1998	Qualitative research design; discursive analysis of two female Portuguese and French bilinguals living in France.	Different forms of languages create different selves within the context in which these selves are produced for the same person.
Ross, Xun and Wilson	2002	Mixed methods research design, content analysis of open-ended <i>self-descriptions</i> , statistical analysis of <i>mood</i> (9 positive vs. 13 negative moods) via a seven-point scale, <i>self-esteem</i> via Rosenberg's self-esteem measure (1965); 111 undergraduate students who are Chinese Canadian bilinguals.	Based on the cultural frames that surround biculturals, they shift from one self-concept to another with the association of that language.
Pavlenko	2006	Survey-based research design; web questionnaire; 1039 bi and multilinguals.	The argument of different selves in one body is not only a trait of late or immigrant bilinguals but also bilinguals and multilinguals.
Ramírez-Esparza, Gosling, Benet-Martínez, Potter and Pennebaker	2006	Survey-based research design; the implementation of BFI personality test; <i>Study 1:</i> 168, 451 Spanish-English bilinguals living in the USA; <i>Study 2:</i> 25 Spanish-English bilinguals; <i>Study 3:</i> 54 participants living in the USA and Mexico; <i>Study 4:</i> 170 Spanish-English bilinguals living in the San Francisco Bay Area	Based on CFS, language affects biculturals' both their perceptions regarding their culture and their personalities.

Authors	Year	Methodology	Main Findings
Luna, Ringberg and Peracchio	2008	Mixed methods research design; narrative analysis of interviews, statistical analysis of reduced BEM Inventory, Implicit Association Test (IAT) and Cultural Lifestyle Inventory (CLSI); <i>Study 1</i> : 14 bicultural female informants, <i>Study 2</i> : 28 Hispanic female students, <i>Study 3</i> : 93 fluent Spanish-English bilingual females.	Based on Cultural-frame switching theory, bicultural bilinguals were observed as frame-switchers as opposed to bilinguals who are not bicultural.
Chen and Bond	2010	Quantitative research design; BFI and The Sino-American Person Perception Scale (SAPPS). <i>Study 1</i> : 213 Chinese and English bilinguals, <i>Study 2</i> : 76 female Chinese-English bilinguals.	Different personality traits were observed in the participants based on the norms of corresponding cultures.
Dewaele and Nakano	2012	Mixed methods research design; descriptive statistics and content analysis of exploratory open-ended question; 106 multilinguals	Participants feelings change when using different languages based on the chronologic acquisition process of their languages.
Veltkamp, Recio, Jacobs and Conrad	2013	Quantitative research design; NEO-Five Factor Personality Inventory (NEO-FFI) and Language Experience and Proficiency Questionnaire, LEAP-Q; 68 bilingual German-Spanish bilinguals	Supporting the view language modulates personality, higher scores on <i>Extraversion</i> and <i>Neuroticism</i> in Spanish and higher score on <i>Agreeability</i> in German were reported in the participants' test scores.
Nodoushan and Laborda	2014	Quantitative research design; Self Concept Scale (SCS); 183 Iranian-American bilinguals	Bilinguals reflect different personalities that are language specific; in other words, languages used regardless of the context and time.
Bakić and Škifić	2017	Mixed methods research design; statistical analysis of the emotional occurrences and content analysis of exploratory open-ended questions in a questionnaire; 10 German-Croatian bilinguals	Personal factors affect the choice of language when reflecting different emotions.

3. Split-brain Studies Conducted on Bilinguals and Multilinguals

Bilingualism and biculturalisms have been widely investigated from different perspectives and topics. In this paper, we reviewed the studies conducted on split personality without differentiating two paradigms (Bilingualism and biculturalism) since culture and language are interrelated concepts (Ramírez-Esparza García-Sierra, 1982). Additionally, these studies were in core investigated whether bilinguals or multilinguals feel different, or their personality traits differ while switching languages. Previously stated, we reviewed the literature in a chronological order.

When considered the studies on split personality of bilinguals Ervin's study entitled 'Language and TAT content in bilinguals' is referenced as the first study in the

literature. Ervin (1964) investigated sixty-four French-English bilinguals' personality traits based on TAT pictures. The aim of this study is to reveal whether bilinguals exhibit different personalities while interpreting TAT pictures. She implemented TAT pictures to her participants in which they were divided in two groups based on criteria such as age, sex and education. Each group was induced to tell their stories in English and French alternately between six-week intervals. A quantitative analysis was utilized for these two sets of (TAT) stories and the emerging themes in this content analysis were achievement, recognition, dominance, withdrawal and autonomy, verbal aggression, physical aggression, guilt, escaping blame. According to results of the study, the stories told in French showed more aggression to peers and more withdrawal and autonomy than the stories told in English. Ervin acknowledged these differences through five factors. They were: (1) appropriateness of the language to the stories told by the participants, (2) effect of language in classifying the stimuli, (3) personal differences in the interpretation (4) effect of culture settings (5) direct correlation in shifting between language and culture. Based on these factors she concluded that when compared to monolinguals, bilinguals have additional behavioural dimensions. Ervin was criticized for not constructing a model for the above-mentioned factors which reflect relationships among them (Koven, 1998).

In Hull's (1996) study the question "Do bilinguals have two personalities?" was further analysed based on a quantitative research design with the implementation of CPI twice. The aim of this study was to investigate whether Mexican (n:74), Chinese (n: 57) and Korean (n: 14) bilinguals had different personalities regarding the language they used and the culture they were enclosed. Hull administered CPI self-assessment test two times to the participants first in their native language and second in English between 5- and 15-days intervals. CPI test used in this research consisted of three basic classes in which there are 18 concepts with 480 agree-disagree statements. These 18 concepts are dominance, capacity for status, sociability, social presence, self-acceptance, wellbeing, responsibility, socialization, self-control, tolerance, good impression, communality, achievement via conformance, achievement via independence, intellectual efficiency, psychological mindedness and flexibility. Hull implemented a within-group repeated measure analysis in the study and the bilingual groups were compared in three groups: Mexican vs. Chinese, Mexican vs. Korean and Chinese vs. Korean. The findings revealed that the concepts in CPI did not differ significantly on a personal basis, differences were observed among the three culture groups. To illustrate, the mean scores on the scales of capacity for status, wellbeing, and tolerance were higher in Mexican group compared

to Korean group and displayed significant differences. Based on these results, Hull defined Mexican culture as active, resourceful, versatile, free from self-doubt and energetic. The limitation of the study which was expressed by Hull was that substantive results were not obtained regarding gender differences of the participants.

McCrae, Yik, Trapnell, Bond and Paulhus (1998) investigated whether Hong Kong and North American bilinguals showed different personality traits. McCrae et al. (1998) argued that it would be insufficient to gather data from a single study referring the previous literature on this topic. Hence, they implemented three studies in which a total of 894 (162 Chinese-English in the first study; 633 Chinese-English in the second study; 99 Hong Kong-born Chinese and Canadian-born Chinese undergraduate students in the third study) bilinguals participated in their studies. McCrae et al. (1998) conducted a quantitative analysis based on the Revised NEO Personality Inventory Test and a number of additional personality and attitude measures to gather data from the participants. According to the results of their study, the researchers argued firstly that the emerging differences in bilinguals might stem from the genetic reasons as well as the extensive impact of culture on personality. Secondly, they reported that Chinese bilinguals obtained lower scores when compared to North Americans of European bilingual on extraversion domain of the scale. To illustrate, they obtained lower scores on assertiveness and activity facets. This case was commented as the impact of language, standards of comparison, acculturation, and--perhaps--genetic differences by the researchers. McCrae, Yik, Trapnell, Bond and Paulhus also stressed the importance of translation issue of the instrument used in such studies and implied the difficulty of transferring the intended notion as a self-criticism. To eliminate this problem, translation of such instruments should be prolonged on a longitudinal process and various authorities such as official translators should be included into this process rather than sticking to researchers in this area. Hence, it may be obtained more reliable data to reflect the intended notions in the translated versions of these instruments.

Koven (1998) on the other hand, focused on the impact of language through investigating the relationship among language, culture, and the self with the aim of whether these concepts create differences in the same person. She used a qualitative approach based on discursive analysis of data obtained from the narratives of the participants' personal experiences. The participants were two female Portuguese French bilinguals in Paris who were defined as Luso-descendants by Koven. Based on their personal experiences, the participants told their personal experiences in each

language in their natural contexts. Koven analysed the data in a descriptive way which was carried out in a three-phased process; (1) formal tools of voicing, (2) the speaker's experience of the two tellings and (3) the evaluators' impressions. According to the results of her study, the participants reflected different personalities in each language. To illustrate, the participant named Isabel purported that she was angry and a member of substratum in French whereas in her native language, Portuguese, she seemed rather mild and patient. The emerging results were commented as an impact of language used to elicit the selves that pertain to particular context and culture. Considering the results of Koven's study, the cultural relationships of the languages, in other words whether one cultural is superior to another may have an impact on worldviews of bilingual community. Hence, their personal traits regarding each culture might be reflected in a particular and distant way with the languages of those cultures.

In another study, Ross, Xun and Wilson (2002) examined whether bilinguals reflect their feelings, contrasting cultural knowledge and judgements in a different way based on their cultural framework. The researchers hypothesised in this study that Chinese-English bilinguals would reflect less Western self-perceptions in Chinese compared to English. With this hypothesis, they implemented a qualitative research design focusing on the content analysis of open-ended self-descriptions of the participants, self-esteem measure test of Rosenberg (1965) and mood via a seven-point scale. Rosenberg's self-esteem measure included items that were scored on a 9-point scale (1 = very strongly disagree, 9 = very strongly agree), on the other hand, the scale used in measuring mood consisted of 9 positive (strong, relaxed, content, inspired, hopeful, enthusiastic, proud, confident, and happy) and 13 negative (irritable, upset, angry, worried, distressed, nervous, scared, hostile, ashamed, afraid, guilty, alone, sad) terms based on a 7-point scale (1 = do not feel at all, 7 = feel very strongly). The participants of the study were 111 undergraduate students who are Chinese-Canadian bilinguals. Shifting languages was used as a tool to reveal what the participants feel about their cultures rather than as the major impact on participants reflections. The results of this study revealed that based on the situations the participants faced, they shifted from one self-concept to another with the help of the language of that culture. Although this case was shown as a constructive feature by the researchers in this research paradigm, the pressure bilinguals face is an undeniable fact especially for those who are at the beginning of the adaptation process to target culture.

In her study Pavlenko (2006) investigated whether bi- and multilinguals feel themselves as different person while switching languages and aimed to reveal what sources cause these self-perceptions regarding each self. Before explicating her study, Pavlenko provided definitions for the key terms; bilingual and multilingual, which are always dissociated in many of the studies. She covered these terms as bilingual and bilingualisms which elucidated dichotomies in this area. Based on a web-questionnaire which was developed by her and Jean-Marc Dewaele and one open-ended question "Do you feel like a different person sometimes you use your different languages?", she administered her study to 1039 bi- and multilinguals. The research design of this study was first based on descriptive quantitative analysis of the participants' responses obtained from both the questionnaire and the open-ended question. Second, the attributions obtained from elaborated forms of participants' answers were coded into thematic categories which were then analysed based on Bakhtinian approach and triangulated analysis to reveal psychological, and physiological processes of the participants' perceptions. The study revealed that bi- and multilinguals felt different when they switched from one to another language. Although this study included adequate number of participants to unveil in-depth understanding about whether bilinguals feel different while switching languages, it has also limitations in identifying and dissociating cultural and educational background of the participants.

Ramírez-Esparza, Gosling, Benet-Martínez, Potter and Pennebaker (2006) focused on Cultural Frame Switching (CFS) effects on bilinguals' personality traits. The researchers implemented a survey-based research design in which the data obtained from BFI test were analyzed via descriptive statistics. The research procedure was based on four-phased data gathering procedure. In the first study it was aimed to provide predictions about the expected personality differences of the participants who took BFI through Internet. These participants were 168,451 individuals living in the USA and 1013 individuals living in Mexico. The participants in the USA responded BFI in English on the other hand, the participants did in Spanish who live in Mexico. The other three studies were implemented as a within-subjects designs to Spanish-English bilinguals (Study 2: 25 Spanish-English bilinguals; Study 3: 54 participants living in the USA and Mexico; Study 4: 170 Spanish-English bilinguals living in the San Francisco Bay Area). Consistent with the findings of personality traits in their first study, Ramírez-Esparza et al. (2006) reported in their study that the bilinguals who responded BFI in English reflected themselves as more extraverted, agreeable and conscientious than in Spanish. When these results are considered, the cross-cultural relationship between the communities of the USA and Mexico should

have been taken into consideration. In other words, the impact of the dominance of one culture to the other culture investigated in a research paradigm may have an impact on bilinguals' reflections about their personality traits.

Luna, Rinberg and Peracchio (2008) investigated personal traits that are specific in the cultural frames of biculturals and bilinguals. With this purpose they implemented three studies in a qualitative research design. These studies were conducted to only female participants with the aim of reducing the impact of gender in their research paradigm. The participants were Hispanic-American bilinguals who speak Spanish and English (Study 1: 14 bicultural female informants, Study 2: 28 Hispanic female students, Study 3: 93 fluent Spanish-English bilingual females). In the first study a questionnaire for revealing their cultural identification and BEM inventory scale to measure their frame switching between English and Spanish. In the second study, it was aimed to measure the differentiation of the concepts self-sufficient and other-dependent frames with the implementation of Implicit Association Test (IAT). And the last study aimed to investigate whether bicultural or monoculturals make more frame-switchings. Luna, Rinberg and Peracchio (2008) first argued that female biculturals were more other-dependent in English than in Spanish based on the language-triggered frame switching, second bicultural bilinguals were observed as frame-switchers as opposed to bilinguals who are not bicultural. This study distinguished bilinguals as biculturals and monocultural bilinguals based on the exposure modality of the two cultures. They defined monoculturals as the bilinguals who were only exposed to the values of their identity-related culture; on the other hand, biculturals who were exposed to the values of two cultural systems simultaneously from the very beginning of their upbringings. However, previous research does not provide sufficient evidence on this discrimination and to what extent a bilingual constructs identity related to the cultures they are exposed.

In Chen and Bond's study (2010), it was aimed to reveal the underlying reasons that affect language and culture bilinguals' personality within the cultural accommodation hypothesis. The participants were 213 Chinese English bilinguals (Study 1) and 76 female Chinese-English bilinguals (Study 2). A quantitative method research design was adopted with the implementation of BFI, SAPSS and language proficiency and usage. The scale and questionnaire items were analysed via inferential statistics. In study 1, Chen and Bond administered two instruments which were BFI and language proficiency and usage scale. These two instruments were translated into Chinese by bilinguals using the backtranslation method. Language

proficiency and usage scale consisted of three domains in which the participant's language ability, past and present language use and media exposure were tested based on 6-point Likert-scale. According to Chen and Bond, the first study was based on the assumptions on perception effects and language effects that cause personality shift of bilinguals. They also claimed in their study that since the implementation of their first study is limited to measure self-perceived personality traits, they also conducted the second study based on the assumptions of perception effects, language effects and ethnicity affects. In the second study, the participants were interviewed Caucasian and Chinese interviewers and the instruments Language proficiency and usage and SAPSS were implemented via these interviewers in two sessions. Chen and Bond reported based on the findings of their study that bilinguals performed different personality traits as regards to the normative personality traits with the impact of language proficiency and cultural frames of those cultures. Although this study revealed insights about the impact of language in bilinguals' reflecting different personalities, it remained insufficient in posing direct links between language shifts and different personality traits of bilinguals.

Dewaele and Nakano (2012) aimed to investigate whether there were impacts of level of proficiency and onset-time of language acquisition on the personal feelings, feeling logical, serious, emotional, fake and different. With this purpose this study focused on systematic language shift and its link between, gender, age and educational level. Based on a quantitative and qualitative research design, it was implemented to 106 multilingual students who were mostly attending to Birkbeck College, University of London. The researchers in this study administered an online questionnaire which posed questions about the participants' semibiographical background, educational and linguistic history. With these aims, the participants gave their answers via 5-point Likert-scale for closed-ended questions. In addition to this instrument, Dewaele and Nakano posed an open-ended question to reveal the participants' feelings while switching languages. This question was analysed via content analysis and the categorisation of the answers were reported based on the ranges of the participants feelings from not feeling different to feeling different. This study revealed that the participants had different feelings with respect to their L1 in which they felt more authentic, logical, emotional and serious. However, Dewaele and Nakano also reported that these findings differed with respect to the participants acquisition order of the languages and their proficiency levels. This study provided very insightful information about the impact of language acquisition onset-time and level of proficiency of bilinguals which were generally ignored most studies in this field.

In another study, Veltkamp, Recio, Jacobs and Conrad (2013), investigated whether German-Spanish bilinguals showed different personality traits and without taking into consideration of cultural background of the participants, whether these personality traits were controlled or directed by language that was tested. The participants were 68 German-Spanish bilinguals in total; 40 of whom were native German speakers and 28 of whom native German speakers. Veltkamp, Recio, Jacobs and Conrad included late bilinguals who acquired their second languages after the age of 12. The instruments used in this study were NEO-Five Factor Personality Inventory and Language Experience and Proficiency Questionnaire, LEAP-Q. Based on 60 items of the Big-five domain (Neuroticism (N), Extraversion (E), Openness (O), Conscientiousness (C) and Agreeability (A)), NEO-Five Factor Personality Inventory test was used to reveal whether participants showed differences in their personality traits and LEAP-Q was to test linguistic profile of the participants. In addition to test the participants' language proficiency, a lexical decision task via an electroencephalogram was administered in both languages. The results were analysed via inferential statistics. Veltkamp, Recio, Jacobs and Conrad reported that the personality traits were oriented by language and language used by bilinguals had an impact on the scores of language proficiency test. This study provided evidence about the impact of language switch on some personality traits of bilinguals and the impact of language on the language test results. However, this study remained unclear whether cultural variables triggered some personality traits of bilinguals while switching languages.

In a similar study, Nodoushan and Laborda (2014) investigated whether bilinguals reflect different personality profiles while using their L1 and L2. With this aim, this study included 183 Iranian-American bilinguals from the same socio-economical class. As for the instrumentation in this study Self Concept Scale (SCS) which includes 25 Likert-type items. This scale was implemented in both English and Persian language to the participants hence it was aimed to gauge whether the participants' self-concept is normal or not. By administering with a three-week interval to randomly assigned two groups of the participants, Nodoushan and Laborda analyzed their data via descriptive statistics. According to results of this study, the researchers reported that bilinguals had two personalities that are manipulated via language at any given point of time. Although, this study supports the findings of previous studies on this topic, it should have included additional instruments which would seek answers for in depth understanding of the reasons the split personality of bilinguals.

Bakić and Škifić (2017) investigated the language choice of bilinguals in expressing their emotions and thoughts and the extent of this choice, respectively. In this study, a mixed methods research design was adopted in which qualitative data obtained from open-ended questions were analysed based on participants (ten Croatian nine of whom female and one male) sociolinguistic environment and emotions and quantitative data were analyzed on the basis of descriptive analysis of occurrences in L1 and L2 usage for emotions and participants' various types of cognitive processes. According to the analysis of the data, Bakić and Škifić reported in their study that bilinguals' selves were constructed based on various factors such as belonging to one or more cultures at the same time might have an impact on their personal reflections in each language.

4. Conclusion

In this review paper, we reviewed the studies conducted on bilingual and multilingual individuals with the aim of revealing whether these individuals reflect different personalities as regards to the language they use and their cultural frames. These studies have provided insightful and extensive understandings for the question whether bilinguals have split-personalities. However, it might be noteworthy to suggest additional implications that will enhance the understandings of the researchers' who will conduct research on this topic.

First, since culture and language are complementary and equinumerous factors which affect bilingual and multilingual individuals' selves and life-styles equally, it might be noteworthy not to include these factors relative variables in a study. In other words, instead of building a research paradigm that approaches or treats one factor as superior to another (culture to language or language to culture), it might be unidirectional to take language as the basic step to answer the question "Do bilinguals have two personalities?". Second, most of the studies reviewed in this paper, apart from Koven' s (1998) study, neglected the dominance factor, in other words superiority of one culture to another. Hence, the researchers might take into consideration while assessing and testing bilinguals' self-reflections, this factor should be taken into consideration by the researchers who will conduct research on this topic. Otherwise, the participants may provide reflections about their own culture and host culture in an adverse or favourable manner.

Third, translation issue in implementing the questions and the instruments in which it is aimed to transfer the intended notion in that language and in that culture is a key factor. Although researchers indicate the reliability of the translations for these elements, it may be beneficial to scrutinise and utilize the words and cultural phrases

in order to reflect the notions regarding each item in these questions and instruments. Fourth, starting from Ervin's first study, no previous study touched upon the historical background of bilinguals' interacting cultures which might also affect the underlying feelings of bilinguals regarding that language and culture. The studies, especially conducted on immigrants, should take into consideration the historical and political background between their own countries and hosting countries. Hence, this consideration will decrease the prejudgments and bias when reflecting their views in these studies.

Fifth, when considered the repeated-measurement of the instrumentation process of the reviewed literature, the time interval between implementation of the instrument in each language was timed for a short period (e.g., two weeks or three weeks). The personality traits that are aimed to be measured or observed by the researcher might not be reflected in a short time interval. Hence, the researchers should consider the prolonged time intervals between their repeated-measurement of the instrumentation process. Lastly, the variables such as gender, social status, educational background and age play significant role in reflecting personal feelings and traits for an individual (Kulik, 2002). Hence, these variables should also be included into the research paradigm. To conclude, research on this topic need more evidence whether bilinguals have split personality based on the language and cultural frame; therefore, further research might be conducted by taking into consideration the above-mentioned factors and variables in this research paradigm.

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