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Using a false feedback paradigm to create a sense of competence or incompetence in one's heritage language: Testing effects on second-generation adults' sense of belonging and multicultural identity negotiation

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Second-generation people face unique cultural experiences, such as learning to navigate between their family's heritage culture and mainstream society's culture. Previous research has shown that fluency in one's heritage language can foster a sense of belonging and identification with one's heritage culture. However, these studies were primarily based on correlational or qualitative designs. This experimental study ($N = 46$ second-generation Americans) examined the effect of manipulating one's sense of heritage language competence or incompetence on one's heritage culture belonging and multicultural identity negotiation using a false feedback paradigm. Although several reasons may explain that no significant results were found, this study proposes experimental methods that can contribute to new experimental research on the language experiences of second-generation individuals.

Keywords: cross-cultural psychology, heritage language, belonging, multicultural identity, second-generation

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Second-Generation Individuals' Cultural and Linguistic Experiences

As a result of global migration, many societies worldwide have become more culturally diverse (e.g., Berry, 2023; Poushter & Fetterolf, 2019, Segal, 2019). For instance, in the United States, almost 10.3 million migrants settled between 2011 and 2020, mainly from Mexico, India, China, the Dominican Republic, Vietnam, the Philippines, El Salvador, Brazil, Cuba and South Korea (World Population Review, 2023). In 2020, first-generation migrants represented nearly 13.5% of the U.S. population (United States Census Bureau), while second-generation (children of migrant parents) represented 12.3% of the U.S. population in 2018 (Budiman et al., 2020). Across the literature, it is generally agreed that second-generation individuals are people born in the receiving country of their migrant parent(s) (Berry & Hou, 2019; Birman & Simon, 2014; Chen et al., 2021) or those who migrated at a very young age (e.g., before five years old; Rumbaut, 2004). Unlike the first-generation, children of migrant parents usually learn their heritage culture outside their migrant parents' country of origin, and their connection to their heritage culture may (or may not) be maintained within their family or community (Ferguson et al., 2016).

Previous studies have cited knowledge of one's heritage language as a vital way for second-generation people to stay connected to their heritage culture (Alessandria et al., 2016; Liang & Shin, 2021). A *heritage language* (or minority language) is spoken by individuals in a minority cultural group (Valdes, 2005). In a migration context, it refers to migrants' native languages that differ from the dominant languages used in the society they settled in (e.g., the English language in the United States; Chhuon, 2011). For second-generation individuals and their families, being able to understand and communicate in their heritage language is considered a significant marker representing their heritage culture (e.g., values, traditions, belief systems), as well as their cultural identity (Arrendo et al., 2016; Jaspal & Coyle, 2009). Heritage language learning is also cited as one of the main ways migrant parents cultivate a sense of heritage culture belonging and attachment among their children (Jeon, 2020; Nordstrom, 2016). Interactions between members of a given group can lead to establishing a system of shared conventions and norms within that community, making language a powerful carrier of specific behaviours, emotions, representations, or cultural affiliations (Holtgraves & Kashima, 2008).

Despite the vital role one's heritage language might play in one's cultural and identity experiences, many studies highlighted a language shift in favour of one's mainstream language over the maintenance of one's heritage language among children of migrant parents. Notably, previous studies (e.g., Boutakidis et al., 2011; Geerlings et al., 2015) have shown that second-generation individuals are usually more proficient in their mainstream language (e.g., English) than their heritage language over time. This linguistic shift can be explained by several factors, such as the predominant use of mainstream language in institutional environments (e.g., school; Kang & Kim, 2012) and the increased socialization of children outside their family circle over time (Nesteruk, 2010). Other factors may also contribute to heritage language loss, such as the length of residence of the migrant families in the receiving society (Portes & Rumbaut, 2014), the parents' reluctance to teach their heritage language to their children out of concern for their integration within the receiving society (Bezcioglu-Goktolga & Yagmur, 2017; Shin, 2010), and the low concentration of peers from one's heritage cultural community within a given neighbourhood (Cho, 2000; Nesteruk et al., 2015). In that case, heritage language transmission can differ significantly from one family context to another, which may affect how children of migrant parents situate themselves within their heritage cultural group and how they identify with their multiple cultural groups (Shin, 2010).

Heritage Cultural Identity, Belonging, and Language

Cultural identity is a dynamic process that can change with age, type of environment, and social events (Phinney, 2006). According to Phinney's (1989) *Model of Ethnic Identity Development*, heritage cultural (or ethnic) identity formation can be understood in three developmental stages. In the unexamined stage (*diffusion-foreclosure*), individuals explore their heritage culture minimally. They can acquire a negative or positive perception of one's cultural identity, depending on one's socialization and cultural experiences. In the search phase (*moratorium*), individuals explore and learn about their heritage cultural group (e.g., history, values and traditions). This process allows individuals to assess their role and place within their heritage cultural group and mainstream society. Finally, in the identity achievement stage, people understand and accept their heritage cultures, internalize them within their self-concept, and commit to acquiring an achieved heritage cultural identity. The first stage generally occurs during childhood, while the second and third stages occur from adolescence to adulthood (Phinney, 1989). However, experiences with these identity development stages may vary from one individual to another.

For members of a given heritage cultural group, Phinney's model (1989) suggests that these individuals identify with and become involved in their heritage cultural group to some degree. The extent to which a cultural group becomes an integral part of one's identity is highly influenced by one's personal experiences, as well as the status of the cultural group in a given society (minority vs. majority groups) and the history of the group with the receiving society (e.g., slavery, colonization and immigration) (Phinney, 1996). According to Phinney and Ong (2007), a central component of one's heritage cultural identity is people's attachment or belonging to their cultural group. A *sense of belonging* can be defined as one's involvement in a given group and includes perceived support and connections with peers from the group in question (Hagerty et al., 1992). Group inclusion is facilitated when members share common characteristics, such as values, beliefs, physical traits, and language (Allen et al., 2021; Kristof-Brown et al., 2005). For instance, when children of migrant parents are proficient

in their heritage language, it may indicate to members of their heritage cultural groups that these individuals are more open to learning and understanding the group's culture (Boutakidis et al., 2011), which can increase the perceived legitimacy of one's membership within their heritage cultural group (Jaspal & Coyle, 2009). Several studies showed heritage language fluency among second-generation individuals tended to be associated with greater belonging toward their heritage cultural group (Jeon, 2020; Nordstrom, 2016; Oh & Fuligni, 2010).

These earlier works provide a better understanding of how one's heritage cultural identity and belonging might be related to language. At the same time, children of migrant parents learn to navigate between their family's heritage culture and mainstream society's culture at a young age and throughout their lives (Sam & Berry, 2010). Therefore, it is relevant to address how heritage language competence relates to how one's heritage and mainstream cultural identities are integrated and negotiated within one's self-concept, a core element in second-generation individuals' identity experience (Birman & Simon, 2014).

Multicultural Identity Negotiation and Heritage Language Proficiency

Being encultured in heritage and mainstream cultures implies that second-generation people develop multiple cultural identities, which are then negotiated (or configured) within their self-concept (Amiot et al., 2007; Erikson, 1968; Schatchter, 2004). To conceptualize how second-generation individuals' identities might be connected, the identity configurations proposed by the *Cognitive-developmental model of social identity integration* (CDSMII; Amiot et al., 2007; Yampolsky et al., 2016) will be employed in the present study. First, *categorization* involves identifying with an exclusive and predominant culture, which may be one's heritage or mainstream culture. Second, *compartmentalization* includes multiple cultural identities seen as opposing each other. Identities are kept in separate compartments within one's self-concept, and identification with one's cultural groups is highly context-bound. For example, someone might refrain from expressing their mainstream cultural identity in their heritage cultural setting (e.g., at home), and, inversely, they may refrain from expressing their heritage cultural identity in a mainstream cultural context (e.g., at school). Third, *integration* involves having several cultural identities that are connected. Individuals with integrated multicultural identities perceive similarities and complementing differences between their identities. One may also identify with a larger or superordinate identity that links one's cultural identity together. For example, people might connect their heritage and mainstream cultural identities within their gender identity.

Past studies have shown potential connections between heritage language proficiency and multicultural identity configurations. For example, second-generation individuals who were more proficient in their heritage language identified more with their heritage culture (similar to heritage culture categorization; Nesteruk et al., 2015; Oh & Fuligni, 2010) or reported greater bicultural identification (similar to integration; Nour, 2016; Shen & Jiang, 2021). Conversely, children of migrant parents who reported limited heritage language proficiency identified more with their mainstream cultural group (akin to mainstream culture categorization; Locher-Lo, 2020; Nesteruk et al., 2015; Shen & Jiang, 2021). Most recently, Taing and colleagues' (2024) study explored how heritage language competence was related to second-generation Canadian and American adults' identity configurations via their sense of heritage culture belonging. Results from their mediation models suggested that the more participants reported greater heritage language competence, the more they reported identifying more strongly with their heritage cultural group or integrating their heritage and mainstream cultural identities within their self-concept via a greater sense of belonging. They also found that greater language competence was associated with less predominant identification with their mainstream cultural group via a greater sense of belonging. As for identity compartmentalization, belonging did not significantly mediate the relation between language competence and this type of identity configuration. Moreover, no significant correlations were found between identity compartmentalization, heritage language competence, or belonging.

Objectives and Hypotheses

Throughout the existing literature, numerous studies have identified potential connections between second-generation individuals' heritage language proficiency, heritage culture belonging, and identity integration (e.g., Nour, 2016; Shen & Jiang, 2021), as well as their exclusive identification with either their heritage or mainstream cultures (e.g., Nesteruk et al., 2015; Oh & Fuligni, 2010; Locher-Lo, 2020). However, a gap remains in understanding the causal relationships between these variables. To address this, we employed an experimental approach, manipulating participants' perceived heritage language competence through a false-feedback paradigm, to investigate how this influences second-generation American adults' sense of belonging to their heritage culture and their negotiation of a multicultural identity within their self-concept. The following hypotheses are being tested:

1. Participants who receive positive feedback (a higher score) on a standardized language test are expected to report a greater integration of their cultural identities, a stronger identification with their heritage culture, and an increased sense of belonging to that culture. In contrast, their identification with mainstream culture is anticipated to be weaker.
2. Participants who receive negative feedback (a lower score) are expected to report weaker integration of their cultural identities, a diminished sense of belonging to their heritage culture, and a lesser identification with it. Their identification with mainstream culture, however, is anticipated to be stronger.

Furthermore, additional exploration is needed regarding the connections between heritage language, belonging, and identity compartmentalization. The only correlational studies to date, conducted by Taing and colleagues (2024), found a non-significant association among these variables. The current study also explores the relationship between these factors.

Table 1. Participants' ethnocultural backgrounds and heritage languages

	Heritage languages	
Ethnocultural backgrounds	Spanish (n = 21)	Mandarin (n = 25)
East Asian (e.g., Chinese)	0	24
Latin American (e.g., Salvadoran, Mexican)	16	0
Mixed heritage Latin and White American	3	0
Mixed heritage East Asian and White American	0	1
Not specified	2	0

Note. N = 46.

Method

Participants and Procedure

Participants were recruited through an online participant pool, Prolific Academic, from 2020 to 2021[1]. Potential respondents were pre-screened to ensure a sample of second-generation participants (born in the U.S. or migrated before they were five years old) with at least one parent who had immigrated to the U.S. and spoke Mandarin or Spanish. Those heritage languages were prioritized in the current study since Mandarin and Spanish represent two of the most substantial language groups in the U.S. (United States Census Bureau, 2015). Individuals who lived outside the U.S. for more than five years during childhood or adolescence were removed from the final sample (n = 1). Furthermore, since the current study procedure was built around a false-feedback paradigm for a standardized language test, the participants needed to fall around the average in order to ensure that participants would believe the false feedback results. Thus, participants were also pre-screened with the *Language Fluency Measure* (described below), and those who scored between 2.50 to 3.50 (37.5% to 62.5%) on a five-point Likert scale (1 = *not at all;* 5 = *extremely well*) were contacted by the first author to complete an online questionnaire on LimeSurvey (2023). Participants were compensated £1 for completing the pre-screening and £3.75 for the main questionnaire. No multivariate outliers were found using the Mahalanobis Distance (Tabachnick & Fidell, 2013).

The sample size was determined by performing statistical power analysis on *G*Power* (Faul et al., 2009). To conduct a multivariate analysis of variance (MANOVA) with three experimental conditions, five dependant variables, an effect size of .25, a power of .80, and an alpha error of .05, a minimum of 39 participants had to be recruited (13 individuals per condition). The final sample consisted of 46 second-generation American adults (n = 25 Mandarin speakers; n = 21 Spanish speakers), of whom 26 participants self-identified as cisgender women and 20 as cisgender men (M_{age} = 25.48, SD_{age} = 5.75). Over half of the participants were undergraduate students (56.5%) and were employed (65.2%). All participants were born in the United States, and the majority reported one ethnocultural background (91.3%). Table 1 summarizes participants' ethnocultural backgrounds by heritage languages.

[1] This study was conducted with the approval of Université Laval's Ethics Committee for Research Involving Humans.

Measures

Once participants provided their consent, they were presented with demographic questions, followed by the perceived language competence scale, the standardized language tests and the false-feedback experimental condition; this was followed by scales measuring perceived group belonging, the multicultural identity configurations, and again measuring their perceived language fluency. Since deception was employed in the experimental task, participants could decline or agree to maintain their participation in the study. This option was available in the debriefing.

Demographic questions were asked about participants and their parents. Questions included gender, age, education, employment status, income, place of birth (i.e., country), ethnocultural background, time of residency in and outside the United States, first language learned, and languages spoken and understood to date.

The *Language Fluency Measure* (LFM) measures **perceived heritage language skills** (Kim & Chao, 2009). The LFM consists of three items measuring oral communication, reading/writing, and listening abilities; the current study only used the two items measuring listening and writing/reading skills since the standardized language tests in the experimental phase only examined these two types of abilities. Both items were rated on a Likert scale ranging from 1 (*not at all*) to 5 (*extremely well*). Participants' perceived heritage language skills were measured again after the experimental task. A score for each time point (before and after the experimental task) was calculated by averaging the two LFM items.

Participants were asked to complete a standardized language test, either the *Hanyu Shuiping Kaoshi* Level 3 (HSK-III; Chinese Testing International, 2023) or the *Diplomas de Español como Lengua Extranjera* Level B1[2] (DELE-B1; Instituto Cervantes,

[2] The HSK (level III) assesses people's ability to understand and communicate in Mandarin Chinese at a basic level in their daily, academic and professional lives (China Education Center, 2023). The DELE (level B1) assesses people's ability to understand and produce simple texts on familiar topics and to describe everyday life experiences (Institute Cervantes, 2023). According to the Confucius Institute Headquarters (Chinese Testing International, 2018), level III of the HSK corresponds to level B1 of the Common European Framework of Reference for Language (CEFR). In addition, the B1 level in the DELE corresponds to CEFR's B1 level (Instituto Cervantes, 2022). The intermediate levels of the HSK and DELE (levels III and B1) were prioritized in this study

Table 2. Differences in participants' perceived and objective heritage language skills, belonging and identity configurations across three experimental conditions

Variables	Low score (n = 16)		High score (n = 16)		Control (n = 14)			
	M	*SD*	*M*	*SD*	*M*	*SD*	*F*	*p*
Perceived heritage language skills (before the experimental task)	2.81	0.25	2.90	0.33	2.89	0.35	0.42	.66
Perceived heritage language skills (after the experimental task)	2.78	0.48	2.81	0.48	2.89	0.63	0.18	.84
Objective heritage language skills	62.28	26.59	60.31	26.54	54.23	26.99	0.36	.70
Mainstream culture categorization	2.86	1.59	2.80	1.59	2.89	1.47	0.01	.99
Heritage culture categorization	2.55	1.27	2.13	0.83	2.80	1.43	1.24	.30
Compartmentalization	3.00	1.01	2.63	1.17	2.63	0.88	0.66	.52
Integration	3.60	0.82	4.11	1.24	4.00	0.90	1.11	.34
Heritage culture belonging	2.44	0.77	2.56	0.85	2.55	1.08	0.09	.91

2012). Before completing the DELE-B1 or the HSK-III, participants were asked to indicate the score they believed they would get on the language tests. Participants' expected scores ranged from 35% to 65%. The HSK-III assesses listening, writing and reading abilities. Since we expected that participants with Mandarin as their heritage language would not necessarily be equipped with a keyboard with Chinese characters, only the listening and reading sections were used. Participants were asked to select the corresponding pictures to ten audio recordings (listening comprehension) and to match twenty sentences that shared the same theme (reading comprehension). For the DELE-B1, participants were asked to match six audio recordings to different scenarios (listening comprehension) and to select the corresponding characters to seven audio movie descriptions (reading comprehension). A score was calculated by summing the correct answers in each test and converting it into a percentage.

Experimental condition: false feedback. After completing the language tests, participants were randomly assigned a high score to induce a sense of heritage language competence (80%), a low score to induce a sense of heritage language incompetence (20%), or no score (control condition). The attribution of false scores comes from the *false feedback paradigm* (Valins, 1966), which allows us to induce an emotional state in an individual and measure the impact of this state on different variables. A manipulation check was done at the end of the study by asking participants to write down their scores after the language tests (Kidd, 1976). All participants in the experimental groups correctly reported their false scores, and participants in the control group reported no scores. They were also asked to indicate how well they completed the language tests on a scale from 1 ("I was not able to read and understand the test, and I guessed all the answers") to 5 ("I was able to read and understand the test, and I answered all the questions with certainty"). In general, participants reported a moderate understanding of the language tests. Participants who guessed their way through the language tests were removed from the study (n = 3).

since we wanted participants to perceive the false scores as credible results to receive if the language tests were not too easy or too challenging to complete.

Perceived belonging to one's heritage cultural group was measured by the group membership subscale of the *Perceived Group Inclusion Scale* (PGIS; Jansen et al., 2014). This measure consisted of four items: "When I think about people from my heritage cultural group… (1) I feel that I belong, (2) I feel that I am part of this group, (3) I feel that I fit in, and (4) I feel treated as an insider." Each item was rated on a Likert scale ranging from 1 (*not at all*) to 5 (*completely*), and a score was calculated by averaging all the items (α = .93).

Multicultural identity configurations were measured with the *Multicultural Identity Integration Scale* (MULTIIS; Yampolsky et al., 2016). This measure consisted of 27 items across four identity configurations: heritage culture categorization (e.g., "I identify exclusively with my heritage culture"; α = .89), mainstream culture categorization (e.g., "While I have different cultures, only my mainstream culture defines me"; α = .89), compartmentalization (e.g., "The differences between my cultural identities contradict each other"; α = .85), and integration (e.g., "My cultural identities are connected"; α = .84). Items were rated on a seven-point Likert scale (1 = *not at all*; 7 = *exactly*), and four scores were calculated by averaging the items for each identity configuration.

Results

Analyses were conducted using SPSS Statistics 23.0 (IBM, 2020). First, a 2×3 repeated measures analysis of variance (ANOVA) was performed to examine the differences between perceived heritage language skills before and after the experimental task, interacting with the three conditions (low, high and control). According to the results, participants' perceived heritage language competence did not significantly differ before and after completing the experimental task, $F(1, 43) = .27$, $p = .61$, partial $\eta^2 = .01$, or between the three experimental conditions, $F(2, 43) = .32$, $p = .73$, partial $\eta^2 = .02$. In addition, time and condition had a non-significant interaction effect on perceived heritage language competence, $F(2, 43) = .12$, $p = .89$, partial $\eta^2 = .01$.

A multivariate analysis of variance (MANOVA) was conducted to examine if participants' identity configurations and heritage culture belonging differed significantly across the conditions.

According to the results (see Table 2), the main effect of conditions on the dependent variables was non-significant, $F(14, 76) = .57$, $p = .88$, Pillai's Trace = .19, partial $\eta^2 = .10$, suggesting that participants' heritage and mainstream culture categorization, identity integration, compartmentalization, and belonging did not differ between the three conditions.

Discussion

Using an experimental approach, the current research aimed to examine the effects of one's sense of competence and incompetence in one's heritage language on second-generation American adults' sense of belonging to their heritage culture and multicultural identity configurations. Overall, no significant results were found in this study. Participants' perceived heritage language competence did not significantly differ before and after completing the experimental task or between the three experimental conditions. In addition, results from the MANOVA were non-significant, suggesting that participants' perceived and actual heritage language competence, identity configurations (heritage and mainstream culture categorization, identity integration, and compartmentalization), and heritage culture belonging did not differ between the three conditions. At first glance, the non-significant results of this study imply that there are no causal relationships between heritage language competence or incompetence, belonging, and multicultural identity configurations. However, upon closer inspection, we identified several methodological limitations that may have affected the effectiveness of our experimental manipulation, particularly our ability to instill a sense of linguistic competence or incompetence in participants from the outset.

The experimental manipulation might have failed due to the false scores that were randomly assigned. Since the participants had "average" perceived heritage language proficiency before the experimental tasks (between 40% to 60%), giving a score that was too low (20%) or too high (80%) may have been perceived as unrealistic and, therefore, unbelievable. In addition, assessing participants' perceived heritage language proficiency and expected performance before the experimental task might have created a cognitive dissonance (Festinger, 1957) between what participants expected their score to be in the language tests and the false feedback they received afterward, which may have led to a reactance response. According to Festinger (1957), people who experience dissonance may attempt to justify the observed inconsistency. For example, participants who received a score of 20% after expecting their performance to be higher might hold on to their original belief (e.g., "I am sure I have answered at least half the questions correctly. I should have scored higher than 20%") and try to justify the discrepancy between their expected performance and the false feedback (e.g., "Maybe there is a problem with the online questionnaire?" or "Did I select the wrong answers by accident?). Nevertheless, asking participants to report their perceived language fluency and expected performance before the experimental phase may have created more resistance to endorse the false feedback after having affirmed one's perceived fluency, which could have made it more difficult to manipulate their perception of their language abilities.

Using self-reported scales may present a potential bias in assessing language skills as a criterion for participation. In this study, it was essential to recruit participants with "average" language skills (between 37.5% and 62.5%), as we believed these participants would have been more likely to think that scores of 20% or 80% reflected their actual performance on the standardized language tests. That said, assessing participants' language skills using a self-reported scale rather than an objective measure could have resulted in an overestimation or underestimation of their language abilities (Boutakidis et al., 2011; Phinney et al., 2001), which could have placed them above or below the target language proficiency range. Participants with language skills that were too low or too high may have been less inclined to accept the false scores as a true reflection of their performance on the language tests.

In addition to the methodological factors that may explain the non-significant findings, it is possible that these results reflect a genuine absence of a causal relationship between heritage language fluency and an individual's sense of belonging or identity. This would be surprising, given that many studies suggest a positive connection between language proficiency and a stronger sense of belonging, particularly in relation to one's heritage culture (Kim & Chao, 2009). For instance, several studies (e.g., Nour, 2016; Oh & Fuligni, 2010; Shen & Jiang, 2021; Taing et al., 2024) indicate that fluency in a heritage language supports individuals' identification with their ethnic group and their bicultural identity integration.

However, the relationship between heritage language fluency and cultural identity is not universally supported in the literature, and several studies highlight important exceptions. While language proficiency is crucial for some individuals, it does not hold the same significance for everyone. For example, Kim and Chao (2009) found that, unlike their Mexican counterparts, second-generation Chinese adolescents did not view heritage language fluency as a central component of their ethnic identity. Similarly, Brown's (2009) qualitative study of second-generation Korean-Americans revealed that some participants did not feel their cultural identity was enhanced by their heritage language skills. Instead, for them, language was perceived more as a functional skill rather than a core element of their ethnic identity. This finding suggests that the importance of language in shaping cultural identity may vary across different ethnic groups. Elrahman (2024) found in his study of second-generation adults in the U.S. that language attrition did not hinder participants' sense of ethnic identity or limit their feelings of agency. Despite some expressions of grief over losing fluency in their heritage language, most participants felt a strong sense of pride in their cultural heritage and did not view their language skills as essential for maintaining their cultural identity. This challenges the assumption that fluency in a heritage language is a prerequisite for a positive ethnic identity, suggesting that individuals can construct and maintain a sense of belonging through other means, such as cultural values, traditions, and family practices.

These findings point to the need for a more nuanced

understanding of the role of heritage language in cultural identity. While first-generation migrants often see language as integral to both cultural preservation and identity formation (Guglani, 2016), second-generation individuals may place greater emphasis on other aspects of their heritage, such as cultural practices (e.g., foods and holiday celebrations), values, and upbringing. This perspective underscores the idea that cultural identity can be constructed through a variety of channels, not just through language proficiency.

Moreover, in the U.S. context, many second-generation individuals may prioritize fluency in the dominant language, English, as essential for social integration and success (Zhang & Slaughter-Defoe, 2009). While heritage language is often viewed as an important part of cultural identity, it is not always seen as critical for participation in the broader society. Parents, regardless of their generation, often hope that their children will learn the heritage language, but they may also view it as a secondary concern compared to the necessity of mastering English in the U.S. (Guglani, 2016).

Heritage language proficiency is often linked to cultural identity, particularly in migrant communities, but this relationship is complex. For many second-generation individuals, language is just one part of a broader identity that includes values, practices, and experiences. While it can strengthen cultural ties, fluency is not always necessary for a strong sense of belonging or ethnic identity. Understanding cultural identity requires considering both language and other cultural factors.

Future Research

Several changes could be made to improve the experimental manipulation in this study for future studies. First, presenting participants with slightly higher or lower false scores than their initial self-reported language abilities would have a greater likelihood of being effective as a manipulation. For instance, we could attribute custom false feedback for each participant (e.g., giving scores 10% higher or lower than participants' self-reported and pre-manipulated language competence). Second, instead of attributing scores of 20% or 80% after the standardized language tests, we could have presented false results depicting participants' performance relative to other second-generation individuals. More specifically, before the experimental phase, we could have asked how much better they believe to be compared to the second-generation population (e.g., "Regarding my skills in my heritage language, I believe that I am 15% better than the average person from the second-generation). After completing the language tests, a short text could have been presented to situate the participants in comparison to others from the second generation (e.g., "According to your performance in the language test, your language competence is 30% higher/lower than the average person from the second generation"). Giving participants feedback on their language skills in comparison to other second-generation individuals instead of giving personal scores could make the manipulation more realistic and believable for the participants. Third, if the language tests were administered in person (e.g., in a classroom), we could have hired an examiner to give false feedback to participants. The presence of an authority figure could have given a stronger impression that the false feedback reflected the participants' actual performance, which could have helped to reinforce the experimental manipulation.

In addition to identifying potential improvements for the experimental manipulation, future research should undertake a comprehensive investigation into the role of heritage language in shaping the multicultural identity of second-generation individuals. This exploration should include an analysis of how heritage language influences their daily lives and self-perception, as well as the extent to which language serves as a marker of their identity and connection to their cultural heritage. Furthermore, it is crucial to examine other significant factors that contribute to their sense of belonging and identity, such as family values, cultural traditions, and community engagement. A more profound understanding of these elements will yield valuable insights into how they collectively influence the multicultural identity and cultural membership of second-generation adults.

Conclusion

While our study did not yield significant results, it was the first to examine the relationship between second-generation adults' heritage language competence, heritage culture belonging, and multicultural identity configurations using an experimental approach. Despite the lack of significant findings, this study has the potential to inform future research and contribute to a deeper understanding of the complex experiences of children of migrant parents. Further experimental research addressing the methodological limitations of this study could shed new light on the causal links between heritage language competence, belonging, and identity configurations.

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