

I've Heard It Both Ways: Bilingualism and Perspective Taking

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Abstract

Language can have an enormous impact on shaping the way people perceive the world, from the way common items are described as having different attributes based on the spoken language¹ to the way those same objects are interpreted based on different, unique linguistic components². As such, it becomes relevant to question how deeply the effect of language can be felt in terms of an individual's cognitive processes. It is with this intention that this research set out to examine the extent to which cognitive differences may exist between monolinguals and bilinguals. Specifically, the purpose of this study was to examine whether or not Spanish-English bilinguals were better at perspective taking than English monolinguals. It was hypothesized that because bilinguals may possess more fluidity in cultural frame switching due to higher levels of Bicultural Identity Integration³, their ability to switch between two distinct perspectives may also be benefitted. In order to test this hypothesis, two participant groups, one comprised of English monolinguals and the other of Spanish-English bilinguals, were asked to read a short scenario in which two distinct perspectives were presented. Participants were also asked to vividly imagine that they were in the scenario, thus putting them into one of the perspectives. After reading the passage, participants were asked to answer multiple choice questions regarding the passage in order to gauge how well participants may have been able to take the opposing perspective. Finally, participants took the Interpersonal Reactivity Index⁴ with the intention of collecting data about their perspective taking abilities. Data obtained from both groups will be analyzed using SPSS. It is hoped there will be a significant difference between the groups, signaling a possible bilingual advantage in perspective taking.

Keywords: Bilingualism, Spanish-English, Perspective Taking

1. Introduction And Literature Review

With the recent rise in bilingualism in the United States, language becomes especially important to bilinguals as it grows to represent their world in two different ways, which they must learn to reconcile and manage. Language has an enormous impact on shaping the way people perceive the world. As such, it becomes relevant to question how deeply the effect of language can be felt in terms of an individual's cognitive processes. Specifically, this study examined whether Spanish-English bilinguals were better at perspective taking than English monolinguals with the ultimate intent to add to the current literature by illustrating a potential bilingual advantage in perspective taking abilities as an extension of the cognitive differences that exist between monolinguals and bilinguals.

The question of how the brain operates when there is more than one language to access and use creates a basic starting point for researchers to explore bilingualism. To this end, Kroll and Bialystok sought to examine the effect of bilingualism on language processing and cognition⁵. In their review of the literature on the subject, it was found that even when a single language was being used, both languages were being activated in the brain. Because both languages

may be activated when only when one is in use, it follows that there must be a cognitive system that allows the main language of use to operate without interference from the other language⁵. This mechanism makes a fluid switch between both languages possible because with simultaneous activation an individual would have to be able to switch seamlessly between languages depending on the situation and context. Ultimately, it seems that bilinguals have to consolidate their cognitive and linguistic systems in a different way from monolinguals, which leads to differences in cognitive and linguistic processing⁵. Bilinguals are not superior for knowing two languages, but rather, having two languages requires bilinguals to use their cognitive resources in a unique way.

Given that a bilingual possesses two languages, it is important to consider how language is thought to shape the way an individual thinks about the world. Whorf in 1956 argued that different languages create different forms of categorization in the mind, thus affecting thoughts and behavior⁶. In other words, the language that a person speaks impacts the way in which they view the world. This may be the case because language is not simply made up of linguistic characteristics, but is also imbued with other social, cultural, and even psychological factors that accompany the language⁶. Given all these different factors, a choice must be made as to which language best fits the context and situation. Once this appraisal is complete, an individual then relies on the metaphors and information available to them the language. Therefore, when a bilingual is speaking one of their two languages they are using language specific resources. In this way, language reflects and shapes the representations that are used to think about and interpret the world⁷. This can lead to a difference in the way the same event or situation is structured or thought about depending on the language being used⁸. Thus, bilinguals have two sets of resources to shift between and use in any given situation, which arguably leads to the cognitive and linguistic differences in comparison with monolinguals.

In a similar vein, due to the different resources available to bilinguals, Chen, Benet-Martínez, and Ng sought to explore whether language could affect a person's perception of personality⁶. Chinese-English bilinguals were asked to converse with interlocutors in order to provide a separate perspective from their own. In terms of rating the bilinguals after speaking with them, the interlocutors observed different behaviors and differences in personality depending on whether the bilingual was speaking Chinese versus English. These differences were especially noticeable in bilinguals who rated themselves higher in dialectical thinking⁶. It can then be inferred that these observable differences, depending on the language being spoken, seem to indicate that language can shape the way personalities are perceived.

While the spoken language recalls different resources from which a bilingual has to choose, it is important to break down language as a whole and examine its linguistic components because these can shape the way objects are perceived across languages. The more determined, and often overlooked, grammatical aspects of language can change the way everyday items are thought of and described based on the language in which they are presented or primed¹. To illustrate this point, Banga, Hanssen, Schreuder, and Neijt studied Dutch and English speakers to see if modifiers in Dutch would produce a different description of the same object than they would for English speakers². They found that Dutch speakers usually rated pluralized items as being comprised of a higher number items whereas English speakers would estimate these pluralized items as containing less of the object². This finding would indeed indicate that the spoken language itself had an impact on the interpretation of the same object. The fact that language can have such an effect on the way people think becomes even more relevant when examining how bilinguals think.

Acknowledging the clear influence language can have on thought, it becomes relevant to examine the differences in cognitive abilities between monolinguals and bilinguals. Marzecová et al. conducted a study in order to examine whether bilinguals have greater cognitive flexibility than monolinguals⁹. Studying Hungarian-Polish bilinguals and Hungarian monolinguals, researchers presented the participants with two cognitive tasks in order to explore temporal orienting and social category switching. It was generally found that bilinguals had faster reaction times and greater accuracy when it came to various categorization tasks⁹. These findings suggest that because such tasks required the use of cognitive abilities outside of their regular functions, bilinguals were able to better adapt cognitively which would indicate an advantage in more cognitive processes than were previously identified⁹. As a result, there seems to be a greater cognitive flexibility in bilinguals when compared to monolinguals. Consequently, the exploration of how far this flexibility extends and if it can be applied to social contexts is pertinent in trying to understand bilingualism.

If the cognitive advantage of bilinguals were to extend into social contexts, it then becomes pertinent to examine the impact it has on the bilingual's personality or identity and ask whether bilinguals have a separate identity for each language they possess. In order to take a closer look at this question, Ramírez-Esparza, Gosling, Benet-Martínez, Potter, and Pennebaker examined cultural frame switching, which refers to the specific cultural cues that signal to an individual to switch between sets of values and interpretations¹⁰. In the context of bilingualism, cultural frame switching seems to play an important role in the way bilinguals navigate their everyday lives language can act as a cue to switch between one cultural frame and another^{10,11}. Analyzing Spanish-English bilinguals, it was found that of the big five personality traits, increases were found in extraversion, agreeableness, and conscientiousness when speaking in English versus speaking in Spanish¹⁰. While this does not altogether signify two distinct personalities, the

change in these traits does illustrate that a shift in personalities occurs depending on the language being spoken. If cultural frame switching can be triggered by a language so that an individual can best adopt the appropriate values for the situation, this shift must ultimately be carried out with some ease. If this were the case, and their personalities did shift at least somewhat, this ease of switching could also extend further into social situations as well.

Furthering this point, the frame switching that occurs within bilinguals points to an accessibility issue in the mind. In the case of bilinguals, both languages must be easily accessible in order for a switch to occur. To this end, Hong, Morris, Chiu, and Benet-Martínez further defined what occurs as specific, distinct pathways that change cognition only when these pathways are specifically activated and called to the front of an individual's mind¹². In other words, both languages may be activated, but only the one that comes to the forefront of the mind gets used; however, a switch may occur fairly easily between one or the other depending on the context and cues that are being offered from the environment. If this is the case, then it could logically follow that because bilinguals are constantly activating both languages and having to switch between them, there is high accessibility of these languages and all the accompanying constructs, which gives bilinguals further ease to switch back and forth. This capacity for cognitive work seems to be highly relevant in the lives of bilinguals and points to many potential advantages not only on a personal level but also in interactions with other people.

Following many of the cognitive effects that bilingualism may have on an individual and how it can impact the way a person perceives personality in others⁶ it is also important to note how an individual's personality may itself change as a function of the language being used. Chen and Bond conducted two studies with Chinese-English bilinguals in Hong Kong in which they had participants fill out two inventories, one of which was in English and the other in Chinese¹³. After examining these inventories, differences in certain personality dimensions depending on the language were observed, much like in perceiving personality in others^{6, 13}. Not only that, but when interacting with someone from a perceived different culture, they would shift their own personalities to what they considered was normal for that culture¹³. This finding suggests that bilinguals may be better able to adapt to their social surroundings and the personalities that surround them. Of course, it stands to reason that this would be most effective if it were to occur in one of the two languages the bilingual spoke, but regardless of this, the enhanced social ability might still be present and have important social ramifications for bilinguals.

In a similar direction, because identity is such an integral part of a person's psychology, the effects of language, or what is more, two languages, on a person's social identity is of utmost importance. Much like the shift that is observable when interacting with someone from a different culture, in an effort to manage both languages bilinguals use language cues in order to self-regulate in order to present themselves to the world in such a way that fits with the appropriate norms^{13, 14}. This points to bilinguals being able to act like a chameleon and exhibit the characteristics they find to be normative based on the priming language. As such, it is important to take into account how this might affect the well-being of the bilingual individual if they are constantly trying to reflect the correct cultural values based on the language being spoken. From a social psychological perspective, the use of different languages changes the bilinguals' responses on an emotional, behavioral, and cognitive level as well¹⁴. Arguably, due to linguistic cues constantly dictating a change between different psychological responses that are unique to each language, this creates more ease and fluidity between switching from one language to another. This fluidity and flexibility could then very easily be transferred and applied to other tasks, especially in social settings where it could prove to be imperative.

Due to this management of separate personality traits, a framework has been outlined that may account for the integration of these two distinct sets of traits in a bilingual individual. As proposed by Benet-Martínez et al., Bicultural Identity Integration (BII) refers to the degree that biculturals think that their cultural identities are compatible^{3, 15}. In this framework, an individual with high BII would represent someone who does not feel as if their two cultures are conflicting. On the other hand, a person with low BII would have a difficult time integrating both cultures into one identity for his/herself¹⁵. This would indicate that individuals with high BII would have a better integration of the two identities posed by the two languages and would probably be able to better identify the situations in which a switch would be necessary. They would also be more adept in doing so. Conversely, those with low BII might have more difficulty performing the same kinds of social tasks because they could not readily reconcile both identities and personalities in a way that made sense and allowed them to do so fluidly. This is important when it comes to bilingualism and its social effects on individuals because it indicates that a spectrum exists in this regard, signaling different levels of bilingualism and biculturalism.

Additionally, because BII exists in such a malleable form, it further reinforces the idea of a greater cognitive flexibility in the minds of bilinguals, especially in terms of their own identity and in dealing with other people. This "fluidity of self" would then be based on the context of the situation and the cues that are afforded in each situation so that the individual can adequately appraise and decide the best manner in which to manage the situation¹⁶. This flexibility, then, contributes to the integration in BII and how given the correct cues, the bilingual can switch between one set of normative values to another. If the integration of the two cultures is considered in and of itself, it indicates

a more perceptual synthesis of the two cultures in which the two overlap with one another¹⁷. This overlap between both cultures once again goes back to a compatibility that would imply an ability to go back and forth between these cultures with ease. This ease would not come from the simple fact of having two languages, but rather would result from continually needing to manage the use of cognitive resources in a different way from monolinguals. This would simply strengthen the ability of switching between the languages through practice. Furthermore, an individual with a high BII would be more adept at this given that they would perceive their cultural identities as more integrated and thus more permeable with one another. As such, this would lead to less conflict between the two cultures and ultimately a more fluid and easy cultural frame switch based on the cues received³. In short, a higher BII indicates a greater flexibility and fluidity for cultural frame switching as well as switching between personalities. Given that language is arguably such a large part of a bilingual person's life, it then stands to reason that perhaps this fluidity and reinforcement of switching abilities might extend to other cognitive areas and especially to a social context. Why, then, could this not also translate to a greater ability to switch between two different perspectives? This particular social implication for bilinguals has not necessarily been thoroughly explored and thus presents very interesting possibilities for its application.

Given the preponderance of evidence supporting a cognitive advantage and cognitive flexibility with which bilinguals can switch more easily between different personality traits given certain linguistic cues, it seemed relevant to extend the research in this area. The purpose of the present study is to investigate whether this advantage transfers to other aspects of cognition. With a potential higher cognitive flexibility⁹ due to the shift between languages and the activation of many cognitive resources⁵ it was hypothesized that this flexibility and fluidity might extend into other, more socially related contexts as well. Research supporting the assertion that gender differences in the use of language exist¹⁸ in conjunction with how language shapes thought and the cognitive differences between monolinguals and bilinguals all provided the perfect foundations for which to examine any potential social differences between monolinguals and bilinguals. Specifically, this study sought to examine the actual perspective switching abilities between English monolinguals and Spanish/English bilinguals. It was hypothesized that Spanish/English bilinguals would be better able to switch between two distinct perspectives due to their bilingualism and cognitive practice switching between the two languages, thus making them more socially adept.

2. Method

2.1 Design

This study relies on a quasi-experimental design in which there were two experimental groups; however, participants were sorted into their respective groups based on a preexisting individual difference. Specifically, participants were either in the English monolingual group or the Spanish/English bilingual group. This difference will be treated as the independent variable. The dependent variable was the actual perspective taking ability of each participant. In order to gauge perspective taking ability, two subscales of the Interpersonal Reactivity Index⁴ were examined, as well as measures for actual perspective taking ability and self-reported perspective taking ability.

2.2 Participants

Participants were drawn from the student population of North Central College. Like most cross-linguistic studies in which the sample sizes tend to be much smaller than traditional psychological studies, it should be noted from the outset that due to the populations being recruited, this study also employs a small sample size (N=15). The English monolingual participants, which made up half of the sample (N=8), were Psychology 100 students who received class credit for their participation and were able to sign up via an online experiment sign up system. The Spanish/English bilingual group (N=7), were obtained via email solicitation, sent to students identified by faculty or staff as Spanish/English bilingual. This group participated on a volunteer basis and received no compensation for their participation. In all, the sample obtained had 7 male participants and 8 female participants. The monolingual group was comprised of 3 males and 4 females while the bilingual group was evenly split with 4 males and 4 females.

2.3 Materials

2.3.1 *scenario*

This study required the creation of a brief scenario that presented two completely distinct perspectives over a trivial conflict between two friends. Written in first person, participants were placed into one side of the conflict against a non-gender specific friend so that the situation would be applicable to both males and females. The situation presented was a conflict over graduation plans because it should not have been deemed controversial but rather inane and plausible for college students.

2.3.2 *actual perspective taking ability*

Immediately following the scenario was a set of multiple choice questions that served as a measure of actual perspective taking ability. These questions were created not only to ensure that participants were carefully reading the story, but also to see how well participants could identify and see both perspectives that were presented. This measure consisted of seven multiple choice questions. The total number of questions answered correctly thus served as an actual perspective taking ability score.

2.3.3 *self-reported perspective taking ability*

In conjunction with the actual perspective taking ability questions, a separate measure was created in order to see how well participants thought they were able to take different perspectives. This measure consisted of four multiple choice questions that asked participants how easy it was for them to see their own and the opposite perspective in the scenario. Each response was assigned a point value from 1 to 5 and the total summation of all the responses acted as a self-reported perspective taking ability score.

2.3.4 *perspective taking and empathetic concern*

In order to obtain a more widely used measure of the participants' perspective taking abilities, the Interpersonal Reactivity Index⁴ was administered immediately following the multiple choice questions accompanying the scenario. The IRI is comprised of twenty-eight questions that use a five point Likert scale to ask participants to rate how well each statement describes them⁴. While the scale as a whole is broken down into four sub scores that have been found to represent the four factors present in empathy, for the purposes of this study only the Perspective Taking (PT) and Empathetic Concern (EC) scores were used as measures as these were of most relevance in measuring the perspective taking ability of participants.

2.4 Procedure

A prewritten script was used during each session of this study in order to try and maintain as much uniformity as possible across conditions. According to the script, participants were asked to take a seat upon arrival until it was time to begin. Participants were individually handed the informed consent and a black pen. They were asked to read the informed consent carefully and then sign and date at the bottom. This served as acknowledgement that they understood all the risks and benefits associated with the study, were eighteen years or older, and participating of their own volition. Once all of the participants had finished reading and signing the informed consent, these were collected and the materials packet was passed out face down. Participants were asked to keep the packet face down until they were instructed to turn it over and begin. At this point, participants were told that in the packet they would find a short story and that they were to read the directions preceding the story which would ask them to read the passage very carefully and to vividly imagine themselves in the story. They were also advised to take their time while reading the passage in order to ensure that they were closely reading and imagining the story. Participants were then informed that immediately following the story they were going to see a series of multiple choice questions regarding the story and that they were to answer these questions to the best of their abilities as there would be one best answer for each question. Finally, participants were also told that there would be a post-study survey at the end of the packet that they

were supposed to answer as honestly as possible. They were then instructed that when they were finished they could hand in the packet and leave. Participants were then asked if they had any questions. After this, participants were allowed to flip over the packet and begin.

Participants were allowed up to thirty minutes to complete the materials packet, though the full time was never used. Once they completed the packet and handed it in, participants were given a debriefing form that explained the purpose of the study. Packets were then scored and the data provided by the scores was recorded.

3. Results

Due to the nature of the study design, with two independent, quasi-experimental participant groups, an independent t-test was used to see if there was a significant difference between groups and a 2x2 ANOVA was employed to examine whether there were any significant interactions between variables. For both participant groups, the mean scores for actual perspective taking ability and self-reported perspective taking ability, as well as the mean scores of the perspective taking and empathetic concern subscales from the IRI were calculated.

3.1 Actual Perspective Taking Ability

The first scores that were compared were the means of the actual perspective taking measure for each group, which were obtained from the seven multiple choice questions that comprised this measure. Higher scores indicate better perspective taking abilities for the scenario. Contrary to the hypothesis, the bilingual group's mean ($M=5.71$, $SD=.756$) was found to be less than the monolingual group's mean ($M=6.25$, $SD=.707$), however the t-test revealed that this difference was not significant $t(13)=1.418$, $p=.180$.

A two-way ANOVA was then conducted to examine the interaction of gender and language on the actual perspective taking ability. The data failed to show a statistically significant interaction between the effects of gender and language on actual perspective taking ability, $F(1, 11)=.050$, $p=.828$.

3.2 Self-Reported Perspective Taking Ability

The mean scores of self-reported perspective taking ability for each group were then compared. These scores were obtained from the second measure present in the multiple choice questionnaire that was made up of four multiple choice questions. Higher scores indicated that the participant reported seeing both perspectives easily. Consistent with the hypothesis, the bilingual group's mean ($M=15.71$, $SD=2.059$) was higher than the monolingual group's mean ($M=13.62$, $SD=1.598$). An independent t-test revealed this difference was indeed significant, $t(13)= -2.212$, $p=.045$.

A two-way ANOVA was then conducted to examine the interaction of gender and language on self-reported perspective taking ability. The data failed to show a statistically significant interaction between the effects of gender and language on self-reported perspective taking ability, $F(1, 11)=.327$, $p=.579$. Interestingly, a simple effect comparison showed that while neither language nor gender had significant effects, language just missed having a significant effect on self-reported perspective taking ability ($p=.054$) while gender was much less significant ($p=.228$).

3.3 IRI – Perspective Taking

Mean scores for the IRI subscale of Perspective Taking were then calculated. Higher scores generally indicate better perspective taking abilities. Consistent with the hypothesis, the bilingual group's mean ($M=20.00$, $SD=4.243$) was found to be greater than the monolingual group's mean ($M=16.13$, $SD=5.167$), however the independent t-test failed to show that this difference was significant $t(13)= -1.572$, $p=.140$.

A two-way ANOVA was then conducted to examine the interaction of gender and language on the perspective taking ability. The data failed to show a statistically significant interaction between the effects of gender and language on perspective taking ability, $F(1, 11)=1.88$, $p= .197$.

3.4 IRI – Empathetic Concern

Finally, mean scores for the IRI subscale of Empathetic Concern were calculated. Higher scores generally indicate better empathetic concern towards others. Consistent with the hypothesis, the bilingual group's mean ($M=22.00$, $SD=6.130$) was found to be greater than the monolingual group's mean ($M=16.63$, $SD=5.012$), however the t-test revealed failed to show that this difference was significant $t(13)=-1.621$, $p=.129$.

A two-way ANOVA was then conducted to examine the effect of gender and language on the empathetic concern. The data failed to show a statistically significant interaction between the effects of gender and language on empathetic concern, $F(1, 11)=.055$, $p= .820$. However, a simple effect comparison showed that gender did have a significant effect on empathetic concern ($p=.028$) but language did not ($p=.123$).

3.5 Correlations

The four dependent measures were then analyzed to see if any correlations existed between measures using the Pearson correlation analysis. While there did not appear to be significant correlations between most of the measures, there did appear to be a significant, positive correlation between the measures of self-reported perspective taking ability and the IRI subscale score for empathetic concern, $r=.724$, $N=15$, $p=.002$. This finding indicates that higher scores on empathetic concern were indicative of higher scores on self-reported perspective taking ability and vice versa, so the two measures were found to be related.

4. Discussion

This study was designed with the intention of investigating a potential difference in perspective taking abilities between monolinguals and bilinguals. Contrary to the hypothesis, results failed to show a significant difference between language groups in terms of the actual perspective taking ability measure, the IRI subscale of perspective taking, and the IRI subscale of empathetic concern. Possible explanations for why the overall hypothesized difference was not observed will be discussed in a later section.

Nevertheless, a significant difference was observed between groups in terms of self-reported perspective taking ability with bilinguals scoring significantly higher than monolinguals. In other words, bilinguals reported that they were more easily able to see both perspectives compared to monolinguals. This finding was consistent with the hypothesis which believed that bilinguals would have more flexibility and fluidity when it came to perspective taking thus allowing them to more easily see and switch between both sides. Given that this difference was found to be significant in the self-reported measure of perspective taking ability indicates that bilinguals might be more consciously aware of being able to see two sides to an issue.

Relative to this finding, a positive relationship between the measures of self-reported perspective taking ability and the IRI sub-score for empathetic concern was also observed. The relation between these two measures, with higher empathetic concern scores being indicative of higher self-reported perspective taking ability scores, could potentially have to do with the creation of the self-reported perspective taking ability measure for this study. Instead of tapping into the actual perspective taking abilities that were being examined, it is possible that this measure was more closely related to the measure of empathetic concern, which would explain the positive correlation that was found between the two measures. Interestingly, if the significant difference between groups for self-reported perspective taking is taken in conjunction with the positive correlation between self-reported perspective taking and empathetic concern, this could point to an overall difference between monolinguals and bilinguals in terms of empathetic concern. This finding holds a lot of potential in terms of future work, which will be discussed in a subsequent section.

4.1 Limitations

One very important limitation to address concerning this study was the equating of bilingualism and biculturalism. Much of the current literature addresses biculturalism and its potential effects on cognition and self-identity; however, biculturalism does not necessarily imply bilingualism and bilingualism does not necessarily imply biculturalism. For the purpose of this study, however, and in an effort to keep it simple while working with the time and resources

available, the sample of bilingual individuals acquired were recruited on the basis of being native Spanish speakers. Therefore, the difference in biculturalism and bilingualism may in part be responsible for the results failing to show a significant difference between monolinguals and bilinguals in terms of perspective taking abilities.

Furthermore, another limitation present was the lack of the implementation of a true measure of bilingualism for the bilingual group. The participation of the bilinguals was based solely upon recommendation and identification as Spanish/English bilingual, but there was no true way to measure just how bilingual the bilinguals that participated truly were. As a result, this may have been reflected in the lack of a significant difference found in the results.

Another limitation was the sample obtained. Most cross linguistic studies operate with smaller sample sizes than would generally be used in more traditional psychological studies. It was therefore within this context that the sample size in this study was also small ($N=15$). Another consideration in terms of the sample was the community in which the study was conducted, North Central is located in the affluent suburb of Chicago, Naperville, and consists of an undergraduate population of just under 3,000 students, of which about 1/5 is a minority, it was difficult to easily access the desired groups. It is possible that perhaps with a larger sample size the hypothesized difference would have been found to be significant.

It is also possible that the scenario was not powerful enough to elicit the participants to view the two perspectives presented as completely different, which would then affect their ability to take on the two perspectives. Similarly, the multiple choice questions were also created specifically for the study so they may not have precisely measured perspective taking ability, as was perhaps exemplified by the positive correlation between self-report perspective taking and empathetic concern.

4.2 Future Directions

While this particular study did not illustrate the desired difference between groups, the potential for a difference in perspective taking abilities between bilinguals and monolinguals is still very possible. Two of the four measures used to measure perspective taking were specifically created for this study, so it is possible that with different, more well-known and tested measures of perspective taking a significant difference in perspective taking abilities between monolinguals and bilinguals could be observed. Self-report measures could also be changed to more observational measures that may also yield different results and potentially demonstrate a difference between bilinguals and monolinguals.

Similarly, the task of reading a scenario could be substituted for a visual or spoken task. Given the research that demonstrated significant differences in bilinguals using spoken language and conversation^{6, 10} a spoken task might better be able to demonstrate a significant difference.

Following the significant difference found between language groups for self-reported perspective taking ability, which in turn seems to be related to empathetic concern, another potential direction that future work could explore is simply empathetic concern. Presenting participants with visual tasks that should elicit empathetic responses from individuals could provide an interesting insight into whether there is a significant difference in the way that bilinguals and monolinguals interpret social situations. More physiological measures could also be employed as a more objective measure of an empathetic response. Since empathetic concern and perspective taking are related⁴ more research into empathetic concern could hold many implications for perspective taking as well.

4.3 Conclusion

The purpose of this study was to investigate a potential difference in actual perspective taking abilities between monolinguals and bilinguals. While the overall hypothesized difference was not clearly observed, this research could still hold great implications for the importance of being bilingual in today's society. The benefits of being bilingual could be immense in terms not only of cognition and perspective, but also for shaping the way individuals interact with one another. This was evidenced by the difference between groups for empathetic concern, which greatly relates to the way that people interact with one another. Therefore, research in the realm of the social implications of being bilingual as a function of different cognitive abilities is especially important given the continued diversification of the world. The potential for an enhanced perspective taking ability and empathetic concern could imply a greater, or different kind of, emotional intelligence that would allow individuals to better interact and relate to one another. The social ramifications for improvements in cultural relations would go a long way in advancing society. While this study was not able to clearly demonstrate this difference, perhaps with time and continued investigation the benefits of a possible bilingual advantage may be further illuminated and understood.

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