



Contents lists available at [ScienceDirect](#)

Journal of Experimental Child Psychology

journal homepage: www.elsevier.com/locate/jecp



Bilingual children judge moral, social, and language violations as less transgressive than monolingual children



Maxine Iannucci^{*}, Kristen A Dunfield, Krista Byers-Heinlein

Department of Psychology, Concordia University, Montreal, Quebec H4B 1R6, Canada

ARTICLE INFO

Article history:

Received 15 July 2020

Revised 12 February 2021

Available online 25 March 2021

Keywords:

Bilingualism

Experience

Development

Social knowledge

Moral

Convention

ABSTRACT

Learning the rules and expectations that govern our social interactions is one of the major challenges of development. The current study examined whether bilingualism is associated with differences in children's developing social knowledge. We presented 54 4- to 6-year-old monolingual and bilingual children with vignettes of moral transgressions (e.g., hitting), social transgressions (e.g., wearing pants on one's head), and language transgressions (e.g., calling a common object by a nonsense word) and asked about their permissibility. In line with previous research findings, results demonstrate that all children evaluated moral violations more harshly than conventional violations. Notably, however, bilingual children were more permissive of violations across moral, social, and language domains than monolingual children. These findings yield new insights into the role of early experience in the development of social knowledge. We propose that bilinguals' unique linguistic and social experiences influence their understanding of moral and conventional rules.

© 2021 Elsevier Inc. All rights reserved.

^{*} Corresponding author.

E-mail addresses: iannucci.maxine@gmail.com (M. Iannucci), kristen.dunfield@concordia.ca (K.A. Dunfield), k.byers@concordia.ca (K. Byers-Heinlein).

Introduction

One of the central challenges of human development is learning the rules and expectations that govern our interactions. Across societies and cultures, we follow and expect others to follow these rules, going so far as to punish transgressors. Psychologists and philosophers have identified moral and social-conventional judgments as two particularly important domains of expectations that develop independently and apply in different situations (Smetana, Jambon, & Ball, 2014).

Moral judgments relate to concerns about harm, justice, and the welfare of others; they are universally applied, obligatory, and independent of authority. In contrast, social-conventional judgments relate to organizational structures and behavioral regularities that are relatively arbitrary, driven by social consensus, and highly variable over context and culture. Social domain theory is a constructivist account, arguing that our understanding of moral and social domains develops through active attempts to interpret and make sense of our experiences and observations (see Smetana, Jambon, & Ball, 2018, for a review). According to social domain theory, our moral and conventional knowledge form separate conceptual domains (Smetana, 2006). Numerous studies have demonstrated that by 3 years of age, children universally differentiate between these domains, rating moral transgressions as less acceptable than social-conventional transgressions (Smetana, 2006; Turiel, 2007). These distinct types of knowledge are believed to emerge from qualitatively different early social experiences (Smetana, 2006). Observational studies have revealed that moral transgressions result in communication related to intrinsic consequences of the act, whereas conventional transgressions evoke references to social order (Nucci & Turiel, 1978). For example, when teachers respond to moral violations they are more likely to discuss the emotional impact of the act (e.g., the feelings of the victims of the transgressions), whereas when they discuss conventional violations they are more likely to highlight the rules that govern social behavior (e.g., following school rules). Although research suggests that early social experiences shape children's developing social knowledge, few studies have explored the types of experiences that influence these judgments, and fewer studies still have done so in nonaffective domains (Smetana et al., 2018).

Language is a salient social convention that is integral to everyday life (Kalish & Sabbagh, 2007). Bilingual children navigate two conventional systems of communication, sometimes within two distinct social and cultural contexts, and as a consequence may be more attuned to the largely arbitrary nature of social and linguistic conventions than monolinguals. For example, Rosenblum and Pinker (1983) asked 5-year-olds to justify renaming objects with nonsense words within a lab context (e.g., calling a table a *shig*). They found that, compared with monolinguals, bilinguals were more likely to provide reasons that reflected the social context in which language is used. Specifically, bilinguals were more likely to explain that calling an object by a nonsense word was acceptable "because it's in our game" (Rosenblum & Pinker, 1983). In other words, bilinguals recognized and reported that if the context changes, it can be appropriate to change language and even to use unconventional forms. Work such as this suggests that bilinguals' unique linguistic and social experiences may lead to a more flexible understanding of language as a social construct.

In support of this idea, Byers-Heinlein and Garcia (2015) employed a switched-at-birth paradigm to demonstrate that bilingual children were less likely than monolingual children to hold the belief that human language is innate. Specifically, 5- and 6-year-old bilinguals demonstrated a better understanding that a baby born to English parents, but raised by Italian parents, will speak Italian when the baby grows up. In contrast, monolingual participants expected that the same baby would grow up to speak English. Importantly, a similar pattern of results was found for animal vocalizations. That is, the same group of bilinguals was more likely to believe that a baby cow that was raised by a family of pigs would oink instead of moo when the baby cow grew up, whereas monolingual participants were more likely to expect the baby cow to moo when it grew up. Surprisingly, and somewhat unexpectedly, sequential bilinguals (who acquired their second language after acquiring their first language) overextended this reasoning to the physical domain. That is, sequential bilinguals were more likely than either simultaneous bilinguals or monolinguals to believe that the baby cow that was adopted by pigs would grow up to have a curly pig tail! The authors suggested that sequential bilinguals' personal everyday experience of acquiring a new language altered the development of their

beliefs about how traits are acquired (Byers-Heinlein & Garcia, 2015). These findings illustrate how children's lived bilingual experience can generalize across both proximal domains (i.e., language and vocalization) and distal domains (i.e., physical characteristics). Extending this constructivist approach to understanding the impacts of bilingualism on cognition, the rationale of the current research was that bilinguals' experiences in navigating different sociolinguistic conventions will alter their developing understanding of social conventions, resulting in greater tolerance for conventional transgressions in the behavioral domain.

In this study, we examined whether bilingualism is a type of social experience that can affect children's developing understanding of social rules. We hypothesized that growing up bilingual could affect children's reasoning about social rules because bilingualism as a lived experience would make the arbitrary nature of social conventions especially salient. Specifically, we predicted that 4- to 6-year-old bilingual children would judge violations of social conventions—both linguistic and nonlinguistic—less harshly than monolingual children but that both groups would express similar and harsher judgments about moral violations.

Method

Participants

A total of 54 4- and 5-year-old children (31 girls; $M_{\text{age}} = 4.81$ years, $SD = 0.40$) were tested in day-care centers across Montreal, Deux-Montagnes, and Quebec City, Quebec, Canada, except for 2 participants who were tested in the lab. Day-care centers were located in neighborhoods of middle socioeconomic status based on the median household income of the associated postal codes. Of the 54 participants, 30 were classified as bilingual (19 girls; $M_{\text{age}} = 4.76$ years, $SD = 0.42$) and 24 were classified as monolingual (12 girls; $M_{\text{age}} = 4.87$ years, $SD = 0.38$). Our target sample was 48 children, for which a power analysis indicated 80% power to detect a small to medium effect of .25, which is consistent with effect sizes found in previous research. Because group membership was contingent on language experience and assessed after the experimental phase, all 4- and 5-year-olds within a day-care center were recruited and tested until we reached (or, in the case of our bilingual group, exceeded) our target sample size. Due to the prevalence of the French language in Quebec City and Deux-Montagnes, the dominant language of the majority of our monolingual participants was French (23/24 monolinguals). The dominant language of participants in our bilingual group was either English ($n = 13$) or French ($n = 17$). Data for the bilingual children were collected from January 2018 to August 2018. Because we were unexpectedly unable to recruit a sufficient number of monolinguals in Montreal, we created and preregistered a data collection and analysis plan to test monolinguals in other nearby communities (<https://osf.io/436gk>), and these data were collected from September 2018 to June 2019.

Language group membership was determined on the basis of parents' responses to a modified version of the Language Experience and Proficiency Questionnaire (LEAP-Q; Marian, Blumenfeld, & Kaushanskaya, 2007), which was administered over the phone following data collection in the day-care centers. Parents were asked to identify the languages their children used; provide a ranking of languages by dominance, age of acquisition, and the percentage of time their children were exposed to each language both currently and over their entire lives; and assess their children's proficiency in understanding and speaking each language on a scale from 0 to 10 (with 0 being *none* and 10 being *perfect*) relative to other children of their age. Participants whose parents we were unable to reach were not included in the study. The predetermined inclusion criteria for the bilingual group consisted of a minimum 25% exposure to a second language and a comprehension proficiency that exceeded 4 out of 10. As a consequence of Montreal's rich language diversity, 15 participants were also exposed to a third language. These individuals were included in the bilingual group because our working definition of "bilinguals" refers to individuals using two or more languages on a regular basis (Grosjean, 2010). We defined bilingualism according to children's exposure and proficiency in a manner that included both simultaneous and sequential bilinguals because our hypothesis pertained to children's lived experience using two or more languages in everyday life rather than the experience of acquiring

a new language (cf. Byers-Heinlein & Garcia, 2015). The inclusion criteria for the monolingual group were a maximum of 5% exposure to a second language and comprehension proficiency in that second language reported to be less than 1 out of 10. Such conservative cutoffs were established in light of the underlying rationale of the research, wherein experience with more than one system of communication served as a critical factor in our prediction.

We deviated slightly from our preregistered inclusion criterion for 6 of the 24 included monolinguals due to inconsistencies between exposure and proficiency as reported by parents on the LEAP-Q that led us to believe that child were monolingual. Specifically, 4 parents rated their children's proficiency in a second language from 1/10 to 3/10 while reporting practically no exposure to a second language of any kind. An additional 2 parents rated their children 0/10 on proficiency while reporting that their children were exposed to a second language 5% to 15% of the time. Such inconsistencies are not uncommon in parent reports of children's language exposure (Byers-Heinlein et al., 2019). Bilingualism is highly desirable in Canada, and parents may be likely to slightly over-report children's proficiency in and exposure to a second language. Note that the decision to include these children in the monolingual group was made after preregistration but prior to data analysis. However, we also ran the analysis without these children included and found a similar pattern of results, which we report in the online [supplementary material](#).

In support of the growing importance of transparent reporting regarding definitions of bilingualism in research (Surrain & Luk, 2017), a detailed report of our sample of bilinguals and monolinguals is provided in the [supplementary material](#). An additional 14 children were tested but excluded from analysis for the following reasons: experimenter error ($n = 1$), not completing the study in its entirety ($n = 4$), our receipt of an a priori communication from an educator concerning a potential developmental or language delay ($n = 7$), or repeatedly failing our comprehension check ($n = 2$).

Measures

Our protocol was based on the Social Rules Interview, where children judge transgressions on four criteria: permissibility, contingency on authority, rule alterability, and deservingness of punishment (Smetana et al., 2012). Due to concerns about the validity of the punishment items related to translating key wording from English to French (i.e., it was not clear that children understood our French translation of the key word referring to punishment: "consequences"), we report the materials, procedure, and results for these items in the [supplementary material](#) rather than in the main text. Visual stimuli consisted of 15 hand-drawn images. Each image depicted a child committing a specific transgression in the moral, social-conventional, or language domain, with the gender of the characters in the pictures matching that of the participant. To our knowledge, the inclusion of language items in the Social Rules Interview was novel and allowed us to test whether any monolingual-bilingual differences were specific to language or generalized to other nonlinguistic social conventions. There were five different pictures for each of the three domains of transgression. The five moral items were hitting another child, yelling at another child, pulling another child's hair, breaking another child's toy, and stealing another child's toy. The social-conventional items were wearing pants on one's head, eating with one's hands, eating dinner under the table, combing one's hair with a fork, and wearing underwear over one's clothes. The language items were calling a common object by a nonword, calling a common object by a nonsense word, calling a common object by an incorrect but familiar word, and uttering an ungrammatical sentence (2). The images were created for the purpose of this study; however, the majority of the moral and social transgressions were based on previous research (Smetana & Braeges, 1990; Smetana et al., 2012). Cronbach's alpha for the five items within each of the three scales indicated acceptable reliability (Kline, 2009; moral items, $\alpha = .88$; social items, $\alpha = .87$; language items, $\alpha = .86$). The full experimental protocol, including stimuli, is available on the Open Science Framework (<https://osf.io/2t9nd>).

We received some feedback from children on our stimuli that should be considered in future replication attempts. Specifically, a few children mentioned that one particular item in our study that was meant to convey the language transgression of referring to a common object (a dog) by a nonword (a raspberry sound) could be interpreted as a moral transgression instead of a language transgression (e.g., it could "hurt the dog's feelings"). We ran the analysis with the item removed and found the

same pattern of results, suggesting that the alternate interpretation did not unduly influence participants' evaluations.

To assess children's evaluations of the transgressions, we created a 6-point Likert scale that was administered in two steps. The first step showed children a green happy face beside a red sad face. Once children registered their dichotomous choice, in the second step children saw a set of three faces equidistant from one another and ranging in expression from least to most expressive. If their original choice was "okay" (happy face), children saw three green smiley faces (with a small, medium, and large smile), and if their original choice was "not okay" (sad face), they saw three red sad faces (with a small, medium, and large frown). Children then were asked to select the face that best represented the strength of their judgment.

Procedure

Each child was tested individually in either English or French, depending on the child's dominant language. The interview was administered by a bilingual female experimenter, and the test took place in a quiet room within the participant's day-care center or the lab. Participants were introduced to the rating scales and tested to ensure that they understood the scale options.

Each participant encountered 15 trials. The transgression items were organized into six different orders (see materials on the Open Science Framework: <https://osf.io/2t9nd>) that were counterbalanced across participants. For each picture, a short statement describing the scene was provided as the experimenter pointed to the corresponding character. The participant was then asked to answer a fixed set of questions for each picture. The questions were based on previous research (Smetana & Braeges, 1990; Smetana et al., 2012) and assessed a particular criterion judgment:

Permissibility: "Is [the behavior] okay or not okay?"

Contingency on authority: "What if nobody else knows about [the behavior]?"

Rule alterability: "What if everyone said [the behavior] was okay?"

For each criterion, the participant indicated by pointing whether he or she thought the behavior was "okay" (a green happy face) or "not okay" (a red sad face). The participant was then asked a follow-up question assessing to what degree he or she believed the behavior to be okay or not okay using a second smiley face scale with options that ranged from *a little bit*, to *medium*, to *really* okay or not okay, depending on the child's initial answer. Put together, these scales made up a 6-point Likert scale with *really not okay* coded as 1 to *really okay* coded as 6. The responses to these answers made up our outcome variable.

Testing took approximately 15–20 min. Small gifts were distributed to all children in the day-care center following testing whether or not they participated in the study.

Results

Data integrity

The data were screened to ensure that all values fell within the possible minimum to maximum range. There was a very small proportion (<1%) of missing data due to the experimenter forgetting to ask one of the questions during testing. These data points were excluded in a pairwise fashion. Initial analyses indicated no effects of dominant test language (English or French), gender (girls or boys), or order of item presentation (for further details, see [supplementary material](#)).

Skewness indices for our variables of interest remained below an absolute value of 3, and kurtosis indices remained below 10, indicating no severe issues related to non-normality (Kline, 2009). As is common and accepted practice in psychology, we treated our 6-point Likert scale as a continuous dependent variable (Finney & DiStefano, 2013; Lantz, 2013). Statistical analyses and plotting were carried out in R Version 3.6.0 (R Core Team, 2019; Wickham, 2016).

Main results

We first examined children’s responses on the 6-point scale (1 = really not okay to 6 = really okay) for the questions pertaining to permissibility, contingency on authority, and rule alterability, examining whether responses differed as a function of children’s language experience and the domain of transgression. A 2 (Language Experience: bilingual or monolingual) × 3 (Domain: moral, social, or language) × 3 (Criterion: permissibility, authority, or rule) mixed analysis of variance (ANOVA) revealed a significant effect of domain of transgression, $F(2, 104) = 20.54, p < .001, \eta^2 = .06$. Consistent with past research, all transgressions were rated as not okay (i.e., the means were below 3.5), with moral transgressions rated as more not okay than both social transgressions, $t(53) = -4.37, p < .001, d = 0.59$, and language transgressions, $t(53) = -6.33, p < .001, d = 0.84$. There was no difference between evaluations in the social and language domains, $t(53) = -2.02, p = .05, d = 0.27$. The ANOVA also revealed a statistically significant main effect of criterion, $F(2, 104) = 3.37, p = .04, \eta^2 = .02$. Post hoc tests indicated a difference between permissibility and rule alterability criterion judgments [transgressions were evaluated as more okay overall if rules could be altered, $t(53) = -2.55, p = .01, d = -0.31$], but we found no differences between contingency on authority and either permissibility, $t(53) = 1.55, p = .13, d = 0.20$, or rule alterability, $t(53) = -0.97, p = .33, d = -0.13$. Finally, there was an interaction between domain and criteria, $F(4, 208) = 4.40, p = .002, \eta^2 = .007$. Within the language domain, transgressions were evaluated as more okay for permissibility than for contingency on authority. Compared with social transgressions, moral transgressions were evaluated to be less okay for permissibility, $t(53) = -5.29, p < .001, d = 0.70$, contingency on authority, $t(53) = -2.80, p = .007, d = 0.38$, and rule alterability, $t(53) = -2.31, p = .025, d = 0.32$. Similarly, compared with language transgressions, moral transgressions were also evaluated as less okay for permissibility, $t(53) = -6.72, p < .001, d = 0.91$, contingency on authority, $t(53) = -3.60, p = .001, d = 0.49$, and rule alterability, $t(53) = -4.58, p < .001, d = 0.61$. See Table 1 for all means and 95% confidence intervals.

Our main hypothesis predicted a significant interaction between bilingualism and domain, with the two groups differing on social and language questions but not on moral questions; however, this interaction was not statistically significant, $F(2, 104) = 0.39, p = .68, \eta^2 = .001$. There was also no significant interaction between bilingualism and criterion, $F(2, 104) = 0.61, p = .54, \eta^2 = .002$, and no significant three-way interaction among bilingualism, domain, and criterion, $F(4, 208) = 1.32, p = .27, \eta^2 = .002$. Instead, we found a significant main effect of language experience, $F(1, 52) = 6.53, p = .013, \eta^2 = .06$. Overall, bilinguals rated the transgressions averaged across all domains as less not okay than monolinguals, $t(52) = -2.52, p = .014, d = 0.69$. This difference remained statistically significant when two-tailed *t* tests were conducted within each domain ($d_{\text{moral}} = .52, d_{\text{social}} = .47, d_{\text{language}} = .36$). See Fig. 1 for a visualization of individual item-level data points and plotted means.

Table 1
Cell means [and 95% confidence intervals] for mixed analysis of variance.

Criterion	Domain of transgression			Row mean
	Moral	Social	Language	
Permissibility	1.82 [1.51, 2.13]	2.51 [2.15, 2.87]	2.97 [2.59, 3.35]	2.43
Bilinguals	2.17 [1.65, 2.70]	2.90 [2.35, 3.45]	3.33 [2.81, 3.84]	
Monolinguals	1.38 [1.21, 1.55]	2.02 [1.64, 2.41]	2.52 [1.98, 3.06]	
Authority contingency	2.35 [1.98, 2.72]	2.78 [2.43, 3.13]	2.86 [2.54, 3.19]	2.66
Bilinguals	2.57 [2.07, 3.08]	3.11 [2.60, 3.62]	2.97 [2.52, 3.42]	
Monolinguals	2.07 [1.50, 2.64]	2.38 [1.92, 2.83]	2.73 [2.23, 3.24]	
Rule alterability	2.49 [2.09, 2.89]	2.89 [2.46, 3.29]	3.07 [2.68, 3.45]	2.82
Bilinguals	2.90 [2.32, 3.47]	3.13 [2.53, 3.72]	3.34 [2.82, 3.87]	
Monolinguals	1.98 [1.47, 2.50]	2.57 [1.97, 3.17]	2.72 [2.13, 3.29]	
Column mean	2.22	2.72	2.97	
Bilinguals	2.54 [2.17, 2.92]	3.05 [2.64, 3.45]	3.21 [2.81, 3.62]	
Monolinguals	1.81 [1.39, 2.23]	2.32 [1.86, 2.78]	2.66 [2.20, 3.11]	

Note. Responses were on a 6-point scale (1 = really not okay to 6 = really okay).

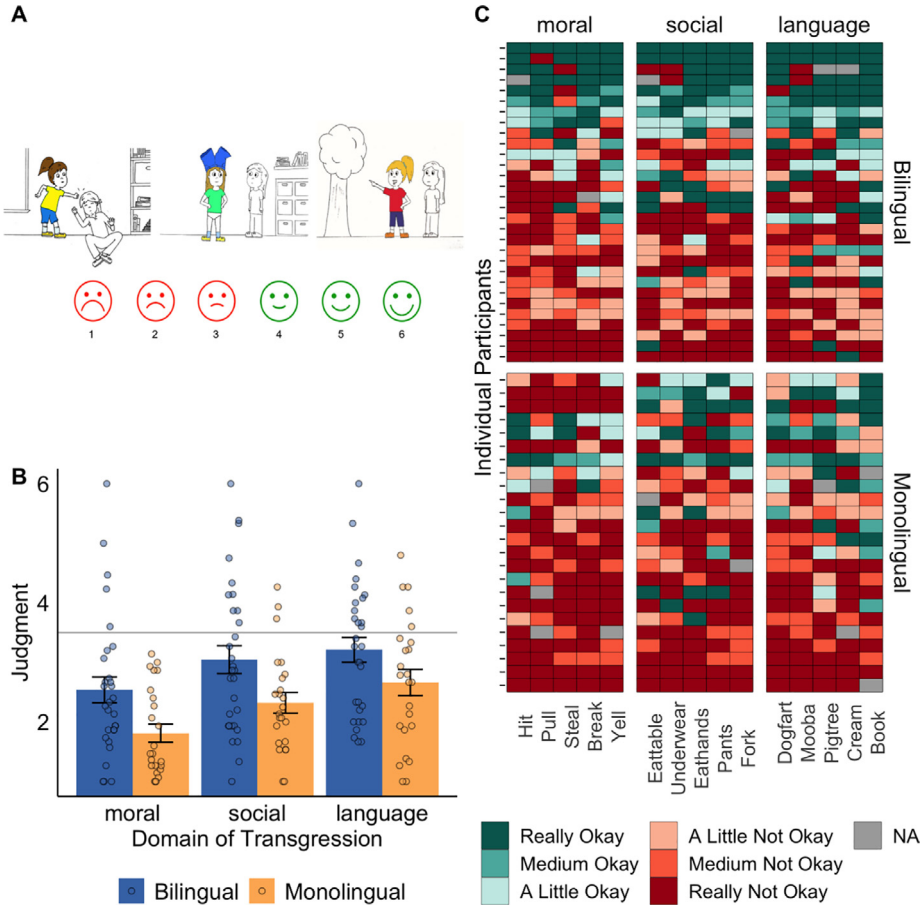


Fig. 1. (A) Top row, from left to right, are item examples of a moral transgression (“This girl hit this girl”), a social transgression (“This girl wore her pants on her head”), and a language transgression (“This girl called this a pig”). The bottom row is our 6-point Likert combined response scale (1 = really not okay to 6 = really okay). (B) Judgments of transgressions by domain on our 6-point Likert scale. Error bars are standard errors of the mean. Data points are individual participants’ responses averaged across criterion judgments within each domain. (C) Rows represent individual participants’ judgments for each transgression item on our 6-point Likert scale. Columns represent each transgression item across moral, social, and language domains.

To further investigate each language group’s evaluations, separate 3 (Domain: moral, social, or language) × 3 (Criterion: permissibility, authority, or rule) ANOVAs were conducted for the bilingual and monolingual groups. For each group, there was a significant effect of domain [(bilinguals: $F(2, 58) = 9.17, p < .001, \eta^2 = .04$; monolinguals: $F(2, 46) = 11.56, p < .001, \eta^2 = .08$]. There was also a significant interaction between domain and criterion only for the bilingual group, $F(4, 116) = 4.58, p = .002, \eta^2 = .01$ [monolinguals: $F(4, 116) = 1.44, p = .23, \eta^2 = .007$]; in line with our research question, bilinguals evaluated language transgressions as less contingent on authority than social transgressions. For both groups, social transgressions (bilingual: $M = 3.05, SD = 1.29$; monolingual: $M = 2.32, SD = 0.85$) and language transgressions (bilingual: $M = 3.21, SD = 1.13$; monolingual: $M = 2.66, SD = 1.08$) were rated as more okay than moral transgressions (bilingual: $M = 2.55, SD = 1.96$; monolingual: $M = 1.81, SD = 0.75$), but there was no difference for either group between the evaluations of social and language transgressions. Thus, the pattern of judgments across domains was similar in the two groups despite bilinguals rating transgressions less harshly overall than monolinguals.

Discussion

Social conventions are largely arbitrary, whereas moral prescriptions are not. Our study replicated previous research, finding that 4- and 5-year-old children judge moral violations more harshly than language and social violations (e.g., Smetana et al., 2012). Our primary research question was whether growing up bilingual could alter children's understanding of the rules that govern our everyday interactions. We found support for the prediction that bilingual children judged violations of social norms—both linguistic and nonlinguistic—less harshly than monolingual children. Whereas both groups judged moral violations to be not okay, unexpectedly, bilinguals judged moral violations to be somewhat less transgressive than monolinguals.

Consistent with social domain theory, one explanation for bilinguals' more permissive approach to social rules violations relates to their social experiences. Bilingual children are implicitly—and frequently explicitly—reminded that language use is context dependent. Bilingual children's unique experience of being embedded in and balancing between two distinct language environments likely highlights the arbitrariness and context dependency of language conventions (e.g., Rosenblum & Pinker, 1983). Similar to the bilinguals' evaluations of language transgressions in our study, Siegal, Iozzi, and Surian (2009) reported that 4- to 6-year-old bilinguals were more likely than monolinguals to identify violations of language conventions as “silly.” In line with our results, bilinguals' evaluations in Siegal et al.'s study could be a function of their unique experience with multiple conventional systems of language. For example, a child from an English-speaking family that goes to a French-speaking day-care center learns that different language conventions are required in different social contexts in the same way that one might understand that violating a particular social convention (e.g., slurping noodles) can be wrong in some contexts (e.g., North America), but okay or even positive in others (e.g., Japan). Relatedly, cultural experience-related influences of bilingualism could be contributing to children's conventional reasoning. Children in bilingual families may experience more diverse non-linguistic social conventions and cultural practices (e.g., bilingual homes may also be bicultural, involving exposure to more diverse cultural practices, food, and dress) than monolinguals.

There are additional cognitive correlates of bilingualism that may have contributed to our results. For example, Diaz and Farrar (2018) identified metalinguistic awareness to be an important early predictor for the false-belief advantage in bilingual children and suggested that bilinguals' experience in navigating different language environments makes them more consciously aware of the representational nature of language; in turn, this increased awareness leads to the recognition that different speakers have different internal states. In the context of our study, this metalinguistic awareness may help bilinguals to recognize the flexible conventional nature of language, which in turn can be generalized to other instances of social conventional knowledge. However, it is difficult to explain monolingual–bilingual differences in moral judgments under this account. Our study did not directly measure metalinguistic awareness, but future studies could assess whether it is a mechanism that may contribute to the effect we observed.

Although we believe that our results are best explained by bilinguals' experience in navigating two sociolinguistic contexts, we cannot rule out the influence of other peripheral correlates of bilingualism in our sample. As one example, at least one study has found that children's judgments of moral transgressions are associated with their mothers' use of harsh discipline, which in turn is predicted by characteristics of their neighborhood (Ball, Smetana, Sturge-Apple, Suor, & Skibo, 2017). It is possible that bilingual children live in different types of neighborhoods than monolingual children and that these neighborhoods could be of systematically different socioeconomic status (Morton & Harper, 2007), in turn contributing to different parenting practices. This specific explanation is unlikely to account for the results of our study given that our participants were recruited from day-care centers in similar middle-income neighborhoods. Nonetheless, because bilingualism cannot be randomly assigned, future studies should explicitly measure a wide variety of potentially confounding factors such as children's socioeconomic status, neighborhood and cultural characteristics, and their families' disciplinary style when examining the myriad mechanisms underlying the development of social judgments.

Any account of the variations in the evaluations of transgressions across domains must be able to accommodate the moral domain. Our interpretation is that the bilinguals in our sample overgeneralized

their understanding of the conventionality of language not only to other conventional domains but also to less inherently flexible domains such as moral judgments. Importantly, ours is not the first study to report that children's lived experience with multiple languages can generalize across both proximal and distal domains. Specifically, 5- and 6-year-old sequential bilinguals were more likely than monolinguals to believe that a baby born to English-speaking parents can grow up to speak Spanish if adopted by Spanish-speaking parents, but also that a baby cow can grow up to have a curly tail if adopted by pig parents (Byers-Heinlein & Garcia, 2015). An interesting future direction could be to directly compare evaluations of behavioral transgressions between sequential and simultaneous bilingual children. If the effect is in part driven by the conscious awareness of the largely arbitrary nature of social conventions, then one would expect that the effect would be greater in sequential bilinguals who not only navigate two distinct linguistic environments but are also aware of the acquisition of that second linguistic system.

Importantly, it bears repeating that the bilinguals in our sample did not judge the moral transgressions to be okay. Instead, compared with the monolinguals, they judged these transgressions to be "less not okay." That is, bilingual children's mean evaluations remain significantly below the midline (Fig. 2B), and our results do not warrant the conclusion that bilinguals are less moral than monolinguals or would be more likely to morally transgress than monolinguals. Our results simply highlight more leniency in bilingual children's evaluations of transgressions compared with monolingual children's evaluations.

In conclusion, bilingualism, with its specific language features accompanied by a host of related environmental factors, provides a unique sociolinguistic experience. Future research will need to directly test which aspects of bilinguals' everyday experiences may be involved in developing a more flexible stance toward moral, social, and language violations in addition to the breadth of these influences on conceptual understanding. Language is an intense, sustained, and integrative experience embedded in our social world, and its influence appears to generalize beyond language-specific processes (Bialystok, 2017). Our study provides striking evidence that bilingualism is linked to how children think about both conventions *and* morals. These results yield new insights into the role of early experiences in the development of social knowledge.

Acknowledgments

This work was funded by grants from the Social Sciences and Humanities Research Council of Canada (SSHRC) and Fonds de Recherche du Québec–Société et Culture (FRQSC). We thank participating families and day-care centers as well as Michela Martiniello and the Concordia University Social Cognitive Development (CSCD) Lab.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jecp.2021.105130>.

References

- Ball, C. L., Smetana, J. G., Sturge-Apple, M. L., Suor, J. H., & Skibo, M. A. (2017). Moral development in context: Associations of neighborhood and maternal discipline with preschoolers' moral judgments. *Developmental Psychology*, *53*(10), 1881–1894. <https://doi.org/10.1037/dev0000378>.
- Bialystok, E. (2017). The bilingual adaptation: How minds accommodate experience. *Psychological Bulletin*, *143*(3), 233–262. <https://doi.org/10.1037/bul0000099>.
- Byers-Heinlein, K., Esposito, A., Winsler, A., Marian, V., Castro, D., & Luk, G. (2019). The case for measuring and reporting bilingualism in all developmental research. *Collabra Psychology*, *5*, 37. <https://doi.org/10.1525/collabra.233>.
- Byers-Heinlein, K., & Garcia, B. (2015). Bilingualism changes children's beliefs about what is innate. *Developmental Science*, *18*(2), 344–350. <https://doi.org/10.1111/desc.12248>.
- Diaz, V., & Farrar, M. J. (2018). The missing explanation of the false-belief advantage in bilingual children: A longitudinal study. *Developmental Science*, *21*(4), e12594. <https://doi.org/10.1111/desc.2018.21.issue-410.1111/desc.12594>.
- Finney, S. J., & DiStefano, C. (2013). Non-normal and categorical data in structural equation modeling. In G. R. Hancock & R. O. Mueller (Eds.), *Structural equation modeling: A second course* (2nd ed., pp. 439–492). Greenwich, CT: Information Age Publishing.

- Grosjean, F. (2010). *Bilingual: Life and reality*. Cambridge, MA: Harvard University Press.
- Kalish, C. W., & Sabbagh, M. A. (2007). Conventionality and cognitive development: Learning to think the right way. *New Directions for Child and Adolescent Development*, 2007(115), 1–9. <https://doi.org/10.1002/cd.178>.
- Kline, R. B. (2009). *Becoming a behavioral science researcher: A guide to producing research that matters*. New York: Guilford.
- Lantz, B. (2013). Equidistance of Likert-type scales and validation of inferential methods using experiments and simulations. *Electronic Journal of Business Research Methods*, 11(1), 16–28.
- Marian, V., Blumenfeld, H. K., & Kaushanskaya, M. (2007). The Language Experience and Proficiency Questionnaire (LEAP-Q). *Journal of Speech, Language, and Hearing Research*, 50, 940–967. [https://doi.org/10.1044/1092-4388\(2007\)067](https://doi.org/10.1044/1092-4388(2007)067).
- Morton, J. B., & Harper, S. N. (2007). What did Simon say? Revisiting the bilingual advantage. *Developmental Science*, 10(6), 719–726. <https://doi.org/10.1111/j.1467-7687.2007.00623.x>.
- Nucci, L. P., & Turiel, E. (1978). Social interactions and the development of social concepts in preschool children. *Child Development*, 49(2), 400. <https://doi.org/10.2307/1128704>.
- R Core Team (2019). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. URL: <http://www.R-project.org/>.
- Rosenblum, T., & Pinker, S. A. (1983). Word magic revisited: Monolingual and bilingual children's understanding of the word-object relationship. *Child Development*, 54(3), 773. <https://doi.org/10.2307/1130064>.
- Siegal, M., Iozzi, L., & Surian, L. (2009). Bilingualism and conversational understanding in young children. *Cognition*, 110(1), 115–122. <https://doi.org/10.1016/j.cognition.2008.11.002>.
- Smetana, J. G. (2006). Social-cognitive domain theory: Consistencies and variations in children's moral and social judgments. In M. Killen & J. Smetana (Eds.), *Handbook of moral development* (pp. 119–153). New York: Psychology Press.
- Smetana, J. G., & Braeges, J. L. (1990). The development of toddlers' moral and conventional judgments. *Merrill-Palmer Quarterly*, 36, 329–346.
- Smetana, J. G., Jambon, M., & Ball, C. (2014). The social domain approach to children's social and moral judgments. In M. Killen & J. Smetana (Eds.), *Handbook of moral development* (pp. 23–45). New York: Psychology Press.
- Smetana, J., Jambon, M., & Ball, C. (2018). Normative changes and individual differences in early moral judgments: A constructivist developmental perspective. *Human Development*, 61(4–5), 264–280. <https://doi.org/10.1159/000492803>.
- Smetana, J. G., Rote, W. M., Jambon, M., Tasopoulos-Chan, M., Villalobos, M., & Comer, J. (2012). Developmental changes and individual differences in young children's moral judgments. *Child Development*, 83(2), 683–696. <https://doi.org/10.1111/j.1467-8624.2011.01714.x>.
- Surrain, S., & Luk, G. (2017). Describing bilinguals: A systematic review of labels and descriptions used in the literature between 2005–2015. *Bilingualism: Language and Cognition*, 22, 401–415. <https://doi.org/10.1017/S1366728917000682>.
- Turiel, E. (2007). The development of morality. In W. Damon, R. M. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (pp. 789–857). New York: John Wiley.
- Wickham, H. (2016). *Ggplot2: Elegant graphics for data analysis*. New York: Springer-Verlag.