

## Study 1

### Methods

#### Participant recruitment and testing

For the sample recruited from Prolific Academic in Study 1 (N=242), participants were pre-screened prior to recruitment to confirm their intercultural relationship, and to ensure that they were in an intercultural relationship for 6 months or longer. Participants were also required to have a high Prolific approval rating (90% or higher) for the previous studies that they have participated in through the Prolific platform. Each participant had to complete the online questionnaire with their own respective prolific account. In addition to these checks, we explicitly instructed participants to complete the survey independently without the presence or input of their partner. Participants were compensated with 5 GBP (approximately \$8.63 CDN) per hour of participation. The sample included 228 individuals in mixed-sex couples, 5 participants were in same-sex couples (2 men), 2 participants were in a couple where at least one partner identified as non-binary, and lastly 1 participant did not specify their partner's gender. While we know the same/different sex pairings of the participants' relationships, we did not specifically ask for their individual sexual orientations and so we do not know how many individual participants were gay, bisexual, pansexual, etc.

Study 1 did not collect data on whether or not participants had children. Moreover, the sample was recruited through Prolific Academic without restricting the current location or the birthplace of the participants, resulting in an international sample from several countries. We were able to find the country of residence of the participants at the time of testing through the Prolific website, which can be found in the table below. Only aggregated anonymized responses are available from Prolific, and therefore, the country of residence information cannot be matched to each participant in the main database. Furthermore, the country data that we extracted from Prolific includes all participants, including partial responses which were not included in the final analyses. In the questionnaire, participants were not asked to report their birthplace, or the birthplace of their parents. Moreover, the international scale of the sample meant that each participant completed the survey from several different countries. As a result, we are unable to determine participants' immigration or generation status, such as whether they were the first generation to migrate to their current country of residence, or whether it was their parents who were the first to migrate.

#### *Study 1: Country of residence of participants recruited through prolific*

Countries by region	N
North America	
Canada	17
United States	84
South and Central America	
Chile	2
Mexico	4
Europe	
Austria	1

Belgium	2
Denmark	2
Finland	2
France	1
Germany	7
Greece	2
Ireland	1
Italy	4
Netherlands	1
Norway	1
Portugal	2
Spain	8
United Kingdom	108
West Asia	
Israel	2
Turkey	1
East Asia	
Japan	1
Korea	1
Africa	
Kenya	1
Oceania	
Australia	5
New Zealand	1

Note: N=262, including those that were not included in the final analyses due to partial responses.

Participants were also asked whether they self-identify as bicultural with the following question:

“Bicultural” is a term used to describe a person who has prolonged experiences and identifies with at least two different cultures. For example, first or second generation immigrants, or people whose parents are from different cultural or racial backgrounds, may be described as bicultural. Considering your own cultural background, only as far back as your parents, would you describe yourself as bicultural?

There were 77 individuals who self-identified as bicultural in Study 1.

The ethnic pairings of the couples were calculated and are presented in the table below. Please note that the pairings between individuals from the same ethnic category (i.e., White and White, Black and Black, etc.) were still from different cultural backgrounds (e.g., Finnish and American, Trinidadian and Nigerian, etc.), therefore meeting our criteria for inclusion as intercultural pairings. These individual and unique cultural pairings are too numerous and diverse to name.

*Study 1: Ethnic pairings for couples*

<u>Ethnicity pairings</u>	<u>Frequency</u>	<u>Percent</u>
White and White	84	34.71
White and Black	17	7.02

White and East-Asian	34	14.05
White and South-Asian	11	4.55
White and Southeast-Asian	2	0.83
White and Middle-Eastern	3	1.24
White and Central-Asian	1	0.41
White and Latin-American	39	16.12
White and Indigenous	2	0.83
White and bi-cultural	13	5.37
Black and Black	3	1.24
Black and Latin-American	1	0.41
Black and bi-cultural	1	0.41
East-Asian and East-Asian	3	1.24
East-Asian and South-Asian	2	0.83
East-Asian and Latin-American	3	1.24
South-Asian and bi-cultural	1	0.41
South-Asian and South-Asian	1	0.41
Latin-American and Latin-American	8	3.31
Latin-American and Middle-Eastern	1	0.41
Latin-American and bi-cultural	3	1.24
Bicultural and bicultural	2	0.83
Missing partner background	6	2.48

Note: N = 242

## Measures

### Relationship marginalization (Lehmiller & Agnew, 2006)

My relationship has general societal acceptance.

My family approves of my relationship.

My friends approve of my relationship.

I believe that most other persons (whom I do not know) would generally disapprove of my relationship.

My family is not accepting of this relationship.

My friends are not accepting of this relationship.

### Couple and cultural identity configuration vignettes

Below are a series of scenarios about the relationship between your cultural identity(ies) and your couple identity. For this section of the questionnaire, we ask that you read each of the following scenarios and indicate how much each one represents your own experience; please consider your cultural identity(ies) and your couple identity when rating the scenarios.

### Integration:

My cultural identity and my couple identity are connected parts of myself. There is a lot of common ground between these identities. The differences between them (e.g.,

values, expectations, norms, desires, etc.) complement each other. These identities are also linked together through a bigger, more global identity (e.g., human, spiritual, national identity). I identify with my relationship and my culture(s) at the same time.

**Compartmentalization:**

My cultural identity and my couple identity are two separate parts of myself. The differences (e.g., values, expectations, norms, desires, etc.) between my romantic relationship and my cultural identity(ies) contradict each other and cannot be reconciled. Either I identify with my culture(s) or with my relationship, but never both at the same time.

**Couple categorization:**

My cultural identity and my couple identity are dramatically different on many levels (e.g., values, expectations, practices, norms, desires, etc.), and I need to choose between them. I identify with my romantic relationship more than with my culture(s). My culture(s) do not define who I am.

**Cultural categorization:**

My cultural identity and my couple identity are dramatically different on many levels (e.g., values, expectations, practices, norms, desires, etc.), and I need to choose between them. I identify with my culture(s) more than with my relationship. My romantic relationship does not define who I am.

## **Relationship quality**

### **Relationship investment model scale (Rusbult, Martz and Agnew, 1998)**

#### **Investment subscale**

I have put a great deal into our relationship that I would lose if the relationship were to end.

Many aspects of my life have become linked to my partner (recreational activities, etc.), and I would lose all of this if we were to break up.

I feel very involved in our relationship-like I have put a great deal into it.

My relationships with friends and family members would be complicated if my partner and I were to break up (e.g., partner is friends with people I care about).

Compared to other people I know, I have invested a great deal in my relationship with my partner.

#### **Commitment subscale (3 selected items from the 7 total items in the original subscale)**

I want our relationship to last for a very long time.

I am committed to maintaining my relationship with my partner.

I would feel very upset if our relationship were to end in the near future.

### **Perceived Relationship Quality Component Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000)**

#### **Satisfaction subscale**

How satisfied are you with your relationship?

How content are you with your relationship?

How happy are you with your relationship?

## Results

### Data preparation

Missing data analyses were conducted and showed that across all the variables of study, missing data ranged from .8% to 2.5%, with no systematic pattern to the missing data. Since less than 5% of the data were missing and the pattern was random, multiple imputation (e.g., Rubin 1988) was not warranted. Outlier analyses found five univariate outliers. We conducted multiple imputation for the missing data and winsorizing for the outliers (Ghosh & Vogt, 2012). The results remained unchanged regardless of these interventions and so all the analyses presented in the manuscript were run using the unchanged data.

### Moderation analyses and control variables

Moderation analyses were conducted using relationship length, sample and individual's bicultural vs. monocultural status as moderators separately.

Relationship length did not significantly interact with relationship marginalization to predict any identity configurations. Including relationship length as a covariate did not substantively alter the results; relationship marginalization remained a significant negative predictor of integration and positive predictor of compartmentalization, couple categorization, and cultural categorization,  $ps < .003$  suggesting that, across relatively longer or shorter relationships, those who reported greater marginalization were more likely to compartmentalize their couple and cultural identity, or to identify solely with their cultural identity or their couple identity. Those who reported lower marginalization also reported greater integration of their couple and cultural identities, regardless of whether they were in a relationship for a relatively longer or shorter time.

Relationship length did not significantly interact with any of the identity configurations to predict investment, commitment, or satisfaction. Including relationship length as a covariate did not substantively alter the results. Integration remained a significant positive predictor of investment, commitment, and satisfaction,  $ps < .008$ . Couple categorization remained a significant negative predictor of satisfaction,  $p = .03$ . Cultural categorization remained a marginal negative predictor of investment,  $p = .07$ , and a significant negative predictor of commitment and satisfaction,  $ps < .03$ . These findings show that when individuals integrated their identities, they still reported greater investment, commitment and satisfaction, regardless of the how long they had been in the relationship. When individuals identified with their couple or their cultural identity exclusively, they still reported lower relationship quality regardless of the length of time that they were in their relationship.

We did not ask about and therefore could not examine moderation by number of children.

We did not ask for participants immigration status per se, but we did ask whether they identify as bicultural or not. Using bicultural status as a proxy for immigration status, there were no significant interactions with RM to predict any of the identity

configurations. There were also no significant interactions between bicultural status and any of the identity configurations in predicting investment, commitment, or satisfaction.

### **Cross-sectional Indirect Effects**

Our hypotheses and theorizing do imply an indirect pathway between relationship marginalization to relationship quality as mediated by couple-cultural identity configurations. Indeed, we would predict and plan to test this mediation model in future research using experimental or longitudinal designs which allow for causal and directional inferences without the pitfalls of examining mediation in cross-sectional designs. However, we have examined the predicted indirect effects models using simple mediation analyses (PROCESS v.3) and find initial evidence at least for the plausibility of such models. We report these results here.

As we would predict, the negative indirect effects of relationship marginalization via reduced identity integration are significant—i.e., 95% confidence intervals (10,000 resamples) do not contain zero—for investment [95% CI: -0.12, -0.01], commitment [-0.14, -0.02] and satisfaction [-0.13, -0.02]. The negative indirect effect of RM via increased compartmentalization is also significant for commitment [-.11, -.01], as we would hypothesize, but not for investment nor satisfaction. Exploring the indirect effects as mediated by couple categorization or cultural categorization reveals a *positive* indirect effect of RM on satisfaction [0.01, 0.07] via increased couple categorization and negative indirect effects of RM on commitment and satisfaction via reduced cultural categorization, [-0.09, -0.01] and [-0.10, -0.01] respectively. There were no other significant indirect relationships between RM and relationship quality markers as mediated by couple or cultural categorization.

## **Study 2**

### **Participant recruitment and testing**

The total sample size for Study 2 was 516 participants (N = 258 couples).

For the sample recruited from Prolific Academic in Study 2 (n=312), participants were also pre-screened prior to recruitment to confirm their intercultural relationship status, and to ensure that they were in an intercultural relationship for 6 months or longer. Participants were also required to have a high Prolific approval rating (90% or higher) for the previous studies that they have participated in through the Prolific platform, their romantic partner needed to be on Prolific as well. Each partner was required to complete the online questionnaire using their own respective prolific account. For some participants, their partner joined Prolific in order to take part in the study, but they still had to undergo the same pre-screening when joining to confirm their relationship status and their partner's Prolific ID. Participants were compensated with 5 GBP (approximately \$8.63 CDN) per hour of participation. None of the participants from Study 1 were allowed to participate in Study 2.

For the community sample in Study 2 (n=204), partners needed to sign up independently indicating their name, their partner's name, and confirm that they were

in an intercultural romantic relationship together for at least 2 months. They were also required to submit separate email addresses and phone numbers for themselves and their partner so that we could contact them independently. In this way we were able to pre-screen their registration to ensure that they were indeed in a relationship with each other. Further, each partner was contacted separately by email and by phone to provide the survey link, and follow up if there were any delays in their participation. Participants were compensated with \$10.00 CDN for their participation.

In addition to these checks, we explicitly instructed participants to complete the survey independently without the presence or input of their partner. This was the case for both prolific and community samples.

There were 246 mixed-sex couples, and 8 couples were in same-sex couples in which both partners were women. While we know the same/different sex pairings of the couples, we did not specifically ask for their individual sexual orientations and so we do not know how many individual participants were lesbian, bisexual, pansexual, etc.

Given that Study 2 data was composed of two data samples, certain information are not available consistently across both samples. In terms of whether or not the participants had children, this data was only collected for the community sample. For this sample of 204 individuals, 20 reported having children.

The community sample restricted recruitment to those residing in Canada, with a primary focus on Toronto. In terms of immigration status, there were 78 individuals who were 1<sup>st</sup> generation Canadians, 82 individuals who were 2<sup>nd</sup> generation Canadians, 1 person was 3<sup>rd</sup> generation Canadian. Forty-eight individuals were not of migrant origin, including 47 white Canadians, and 1 Métis. One person had unknown origins due to adoption but was raised in Canada. Like Study 1, the Prolific Academic sample was collected without restricting the current location of the participants, resulting in an international sample from several countries. We were able to find the country of residence of the participants at the time of testing through the Prolific website, which can be found in the table below. Only aggregated anonymized responses are available from Prolific, and therefore the country of residence information cannot be matched to each participant in the main database. Furthermore, the country data that we extracted from Prolific includes all participants, including partial responses which were not included in the final analyses. In terms of immigration status, the participants' birthplace, and the birthplace of their parents were not recorded for the Prolific sample, and thus we are unable to determine if participants are 1<sup>st</sup> or 2<sup>nd</sup> generation migrants, etc. for this sample.

*Study 2: Country of residence of participants recruited through prolific*

Countries by region	N
North America	
Canada	26
United States	99
South and Central America	
Chile	2
Mexico	10
Europe	
Belgium	2

Denmark	3
France	2
Germany	4
Greece	6
Hungary	1
Iceland	2
Italy	9
Luxembourg	1
Netherlands	4
Poland	3
Portugal	6
Spain	13
United Kingdom	152
West Asia	
Israel	2
East Asia	
Japan	3
Oceania	
Australia	6
New Zealand	5

Note: N=364, including those that were not included in the final analyses due to partial responses.

Participants were asked whether they self-identify as bicultural using the same question as in Study 1. In Study 2, there were 295 individuals who self-identified as bicultural.

The ethnic pairings were calculated and are displayed in the table below. As in Study 1, please note that the pairings between individuals from the same ethnic category (i.e., White and White, Black and Black, etc.) were still from different cultural backgrounds (e.g., Finnish and American, Trinidadian and Nigerian, etc.), therefore meeting our criteria for inclusion as intercultural pairings. The individual and unique cultural pairings for each couple are too numerous to name (e.g., one couple had a partner who was Indo-Guyanese and the other was Egyptian).

*Study 2: Ethnic pairings for couples*

Ethnic pairings	Frequency	Percent
White and White	144	19.97
White and Black	42	5.83
White and East-Asian	57	7.91
White and South-Asian	58	8.04
White and Southeast-Asian	14	1.94
White and Middle-Eastern	17	2.36
White and Central-Asian	1	0.14
White and Latin-American	56	7.77
White and Indigenous	1	0.14



White and bi-cultural	29	4.02
White and other	2	0.28
Black and Black	4	0.55
Black and East-Asian	2	0.28
Black and South-Asian	3	0.42
Black and Middle-Eastern	1	0.14
Black and Latin-American	1	0.14
Black and bi-cultural	5	0.69
East-Asian and East-Asian	3	0.42
East-Asian and South-Asian	7	0.97
East-Asian and Southeast-Asian	7	0.97
East-Asian and Middle-Eastern	1	0.14
East-Asian and Latin-American	3	0.42
East-Asian and bi-cultural	5	0.69
South-Asian and South-Asian	4	0.55
South-Asian and Southeast-Asian	4	0.55
South-Asian and Middle-Eastern	2	0.28
South-Asian and Latin-American	3	0.42
South-Asian and Indigenous	1	0.14
South-Asian and bi-cultural	5	0.69
South-Asian and other	2	0.28
Southeast-Asian and Southeast-Asian	2	0.28
Southeast-Asian and bi-cultural	1	0.14
Middle-Eastern and bi-cultural	2	0.28
Middle-Eastern and other	1	0.14
Latin-American and Latin-American	5	0.69
Latin-American and Middle-Eastern	2	0.28
Latin-American and Southeast-Asian	1	0.14
Bicultural and bicultural	10	1.39
Bicultural and Central Asian	1	0.14

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*Note.*  $N=510$

## Measures

The same measures used in Study 1 were also used in Study 2, with the exception of the satisfaction measure. The satisfaction subscale from the Relationship Investment Model Scale (RIMS; Rusbult, Martz and Agnew, 1998) was used for the community sample, and the satisfaction subscale from the PRQC was used for the Prolific sample. The reason for this difference was that the community sample was collected earlier and had elected to use the full RIMS. The Prolific sample used the more recent PRQC to measure other aspects of relationship quality, and measuring satisfaction with both the PRQC and the RIMS would have been repetitive for participants. As a result, only

the satisfaction subscales were different between the two samples, though both samples used the commitment and investment subscales from the RIMS.

**Relationship investment model scale - Satisfaction subscale (community sample)**

I feel satisfied with our relationship

My relationship is much better than others' relationships.

My relationship is close to ideal.

Our relationship makes me very happy.

Our relationship does a good job of fulfilling my needs for intimacy, companionship, etc.

**PRQC - Satisfaction subscale (Prolific sample)**

How satisfied are you with your relationship?

How content are you with your relationship?

How happy are you with your relationship?

**Validity of the couple and cultural identity configuration vignettes**

Given the nature of vignette measures, we cannot measure an internal reliability structure (e.g., Chronbach's alpha) the way we would for a multi-item scale. However, we are able to provide some evidence for the convergent validity of the vignettes in terms of how they correlate with the closely related cultural identity configurations. The community sample questionnaire in Study 2 included the Multicultural Identity Integration Scale (MULTIIS), which measures how an individual with multiple cultural identities configures their cultural identities within their self-concept (Yampolsky, Amiot & de la Sablonnière, 2016). Though the MULTIIS was testing the individual cultural identity configurations and the vignettes were testing the couple and cultural identity configurations, we expected that each configuration vignette would correlate with the subscales of the MULTIIS in a consistent way (see the table below).

We conducted actor correlation analyses between the vignettes and the MULTIIS subscales and found that the integration subscale of the MULTIIS was significantly and positively correlated with the integration vignette ( $r^2 = .42, p < .000$ ). The compartmentalization subscale was also significantly and positively correlated with the compartmentalization vignette ( $r^2 = .38, p < .000$ ). The categorization subscale of the MULTIIS (which did not differentiate which cultural identity was predominant) did not correlate significantly with the couple categorization vignette ( $r^2 = .02, p = .784$ ), but there was a marginal and positive correlation with the cultural categorization vignette ( $r^2 = .12, p = .086$ ).

*Study 2: Community subsample actor correlations between the couple and cultural identity configuration vignettes and the cultural identity configuration subscales of the MULTIIS.*

	1	2	3	4	5	6
1. Integration vignette	-					
2. Compartmentalization vignette	-.23**	-				
3. Couple categorization vignette	-.28**	.22**	-			
4. Culture categorization vignette	-.10	.22**	.22**	-		
5. MULTIIS Integration	.42**	.02	-.04	.07	-	
6. MULTIIS Compartmentalization	-.11	.38**	.16*	.15*	-.17*	-
7. MULTIIS categorization	.05	.20**	.02	.12 <sup>†</sup>	-.17*	.50**

Note.  $N = 204$ , \*\* =  $p < .01$ , \* =  $p < .05$ .

## Results

### Data preparation

Missing data analyses were conducted and showed that across all the variables of study, missing data ranged from .8% to 1.4%, with no systematic pattern to the missing data. Since less than 5% of the data were missing and the pattern was random, multiple imputation (e.g., Rubin 1988) was not warranted. Outlier analyses found eleven univariate outliers. We conducted multiple imputation for the missing data and winsorizing for the outliers (Ghosh & Vogt, 2012). The results remained unchanged regardless of these interventions and so all the analyses presented in the manuscript were run using the unchanged data.

### Moderation analyses and control variables

APIM moderation analyses were conducted using relationship length, sample and individual's bicultural vs. monocultural status as moderators separately in all APIM analyses to explore whether the above variables would moderate the relationships we observed in our original analyses. Multiple testing corrections using Benjamin-Hochberg procedure (McDonald, 2014) were applied in the APIM moderation analyses.

Similar to the findings in Study 1, relationship length did not appear to moderate any of the original APIM analyses. However, *the partner's* bicultural status appears to moderate *the actor's* couple categorization to predict *their partner's* relationship investment. This result showed that the negative *actor effect* of identifying predominantly with one's couple identity on *their partner's* relationship investment was weaker when their partner was bicultural than when their partner was monocultural. No other significant moderation results were found using bicultural status as a moderator.

In Study 2, our data came from two sources, one from the community sample and the other from Prolific Academic. There appeared to be moderating effects of the sample for two APIM analyses. The positive effect of having a partner who identifies predominantly with their couple identity for relationship investment and for

relationship commitment is stronger in the community sample than in the Prolific sample. In general, the potential moderators do not seem to have affected our results in the APIM analyses.

### **Cross-sectional APIM indirect effects**

Our study is a cross-sectional design, which does not support establishing causal links between marginalization on relationship investment, commitment, and satisfaction via different identity configurations, and so the mediation analyses could very well compromise the statistical validity of our study. Therefore, the indirect effects presented below were largely exploratory and should be interpreted with caution due to the design of the study (Green, Ha, & Bullock, 2010; Pek & Hoyle, 2016; Preacher & Hayes, 2008). Only the significant indirect effects are summarized below.

We tested the plausibility of potential dyadic indirect effects using the results of the APIM analyses reported in the main text in combination with Monte Carlo mediation analyses (Selig & Preacher, 2008).

The general significant indirect effects are as follows:

According to our results, it appears that the actor's level of integration might play an important role as a mediator across different analyses. For instance, there is a negative indirect effect of actor marginalization on *actor's* investment via lower levels of actor integration [95% CI: -.061, -.010]. The more *the actor* sees the relationship as marginalized, the less *the actor* integrates their couple and cultural identities, and the less *the actor* is willing to invest in the relationship. Another negative indirect effect was observed for the actor's marginalization on partner's investment via lower levels of actor integration [95% CI: -.054, -.006]. This indirect effect indicated that the more *the actor* sees the relationship as marginalized, the less *the actor* integrates their couple and cultural identities, and the less *the partner* is invested. The negative indirect effect of actor marginalization on actor's commitment via lower levels of actor integration was also significant [95% CI: -.040, -.004]. The more *the actor* sees the relationship as marginalized, the less *the actor* integrates their couple and cultural identities, and the less *the actor* is committed to the relationship.

The same patterns were observed for predicting relationship satisfaction. The negative indirect effect of actor marginalization on actor's satisfaction via lower levels of actor integration was significant [95% CI: -.053, -.012]. The more *the actor* sees the relationship as marginalized, the less *the actor* integrates couple and cultural identities, and the less *the actor* is satisfied with the relationship. Lastly, the negative indirect effect of actor marginalization on actor's satisfaction was significant via higher levels of actor compartmentalization [95% CI: -.043, -.010]. The more *the actor* sees the relationship as marginalized, the more the actor compartmentalizes their couple and cultural identities, and the less *the actor* is satisfied with their relationship.

### References

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