

Collaborating across Cultures:
Cultural Metacognition and Affect-
Based Trust in Creative Collaboration

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Questions

- Intercultural Collaborators
 - Paul Simon
 - Ratan Tata
- Distinguishing psychological characteristics?
- Distinguishing features of their working relationships?

Creative Collaboration

- “We were close enough so we understood each other very well and we also had complementary skills. I'm more intuitive than he was. He was renowned for his clarity.... The fact that we just got along very well and had enormous respect for each other, and that we enjoyed each other's company [enabled] a mind that was better than our separate minds.”

~Kahneman (2007)

- Differences + Trust

Barrier to Creative Collaboration?



Sharing New Ideas → Vulnerability

Different Norms of Communication

NEGOTIATION BEHAVIORS (per 30 minutes)	CULTURES									
	USA	JPN	BRZ					ISRL		
<u>Verbal</u>										
“No’ s”	4.5	1.9	41.9					8.5		
“You’ s”	54.1	31.5	90.4					36.7		
<u>Nonverbal</u>										
Silent Periods	1.7	2.5	0					1.9		
Conversational Overlaps	5.1	6.2	14.3					30.1		
Facial Gazing	10.0	3.9	15.6					15.3		
Touching	0	0	4.7					0		



Constructs

- **Antecedents of Cross-Cultural Competence**
- **“Cultural intelligence”**
 - (Ang & Van Dyne, 2008; Earley & Ang, 2003; Thomas, 2006)
- **IV: Cultural metacognition**
 - Tendency to reflect on one’s cultural assumptions when preparing, monitoring, and learning from intercultural interactions
- **DV: Creative collaboration**
 - the exchange of ideas to develop solution that neither person in the dyad would have crafted on their own

Intervening Mechanisms

- Two types of trust in work relationships

McAllister (1995), Lewis & Weigert (1985)

Cognition-based trust

- Expectation of the other party's competence and reliability

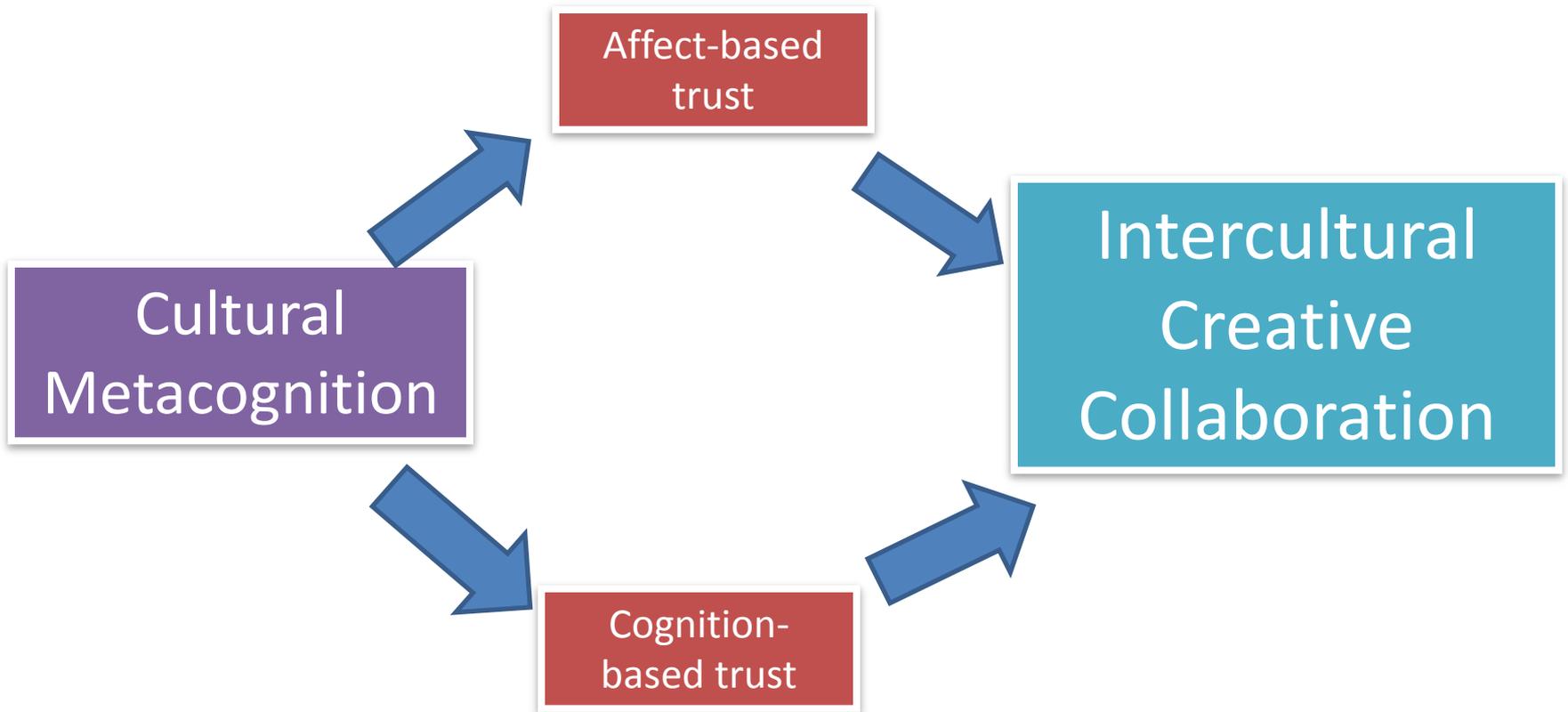
Affect-based trust

- Rapport, bond, desire to share hopes and problems

- Parallel to basic dimensions of social perception:

– **competence** vs **warmth** (*Fiske, Cuddy, & Glick, 2007*)

Model



Intervening Mechanisms

- Cultural metacognition helps individuals read people from other backgrounds, taking into account culture but not exaggerating its role
- Helps people mesh, get “on same wavelength”
- Personal communication and understanding begets rapport and ultimately **affect-based trust**

Intervening Mechanisms

- OR, individuals with low **cultural metacognition may** rely on pejorative stereotypes
- underestimate the competence and reliability of their colleagues from other cultures
- This would decrease communication about new ideas and cooperation

Empirical Strategy

- Hypotheses specify how an individual level construct (cultural metacognition) gives rise to an event that occur in intercultural relationships (creative collaboration)
 - Creative collaboration determined by two people and perceived by both of them; can be measured with either of these perceptions or through an objective scoring of their work product.
- **Multiple Methods:**
 - Study 1: Multi-rater Survey (other-culture associates)
 - Controls for prior multicultural experience
 - Study 2: Network Survey
 - Compares effects of cultural metacognition in same- vs other-culture relationships
 - Tests mediating mechanism
 - Study 3: Lab Experiment
 - Manipulates precondition for the mediating mechanism.

Study 1

Method: Multi-rater assessment

Participants: 43 middle-level managers (81% male, mean age 38) attending an executive MBA course.

Procedure:

- participants rated themselves on the cultural metacognition measures.
- Identified up to 10 coworkers of other cultures to provide feedback

Study 1

Measures:

Cultural metacognition:

- six-item metacognitive CQ scale developed by Van Dyne, Ang, Ng, Rockstuhl, Tan, & Koh (2011)
- Sample items:
 - “I am aware of how to use my cultural knowledge when interacting with people from different cultures”*
 - “I adjust my cultural knowledge while interacting with people from a new or an unfamiliar culture”*
 - “I develop action plans for interacting with people from a different culture”*

Cronbach’s alpha is 0.88 for the current sample.

Study 1

Measures:

Intercultural creative collaboration:

- Other-culture colleagues rated their intercultural creative collaboration.
- Two-Items:
 - “This person typically proposes win-win solutions when people from different cultural backgrounds have divergent ideas”
 - “This person's working relationships with people of other cultural backgrounds help this person and the others do creative, innovative work.”
- 7-point scale (1 = not at all, 7 = to a great extent).
- Correlation between these two items: 0.57.
- The rwg: 0.78

Study 1

Controls

- prior multicultural experience found to influence creative performance (Leung et al., 2008; Maddux & Galinsky, 2009)
- Variables:
 - Number of languages spoken
 - Number of countries lived
 - Number of countries visited
 - Previous experience interacting with people of other cultures
 - “your overall experience interacting with people who have different cultural backgrounds” and
 - “your overall experience interacting with people from other countries.”

Study 1: Results

DV= Other rated intercultural creative collaboration	Model 1	Model 2
Key Predictors		
Cultural metacognition (self-reported)	-	0.19* (0.10)
Control Variables		
Number of languages known	-0.12 (0.11)	-0.15 (0.10)
Number of countries lived in (at least 6 months)	0.09 (0.13)	0.08 (0.12)
Number of countries visited last year	-0.02 (0.05)	-0.04 (0.04)
Past foreign experiences	-0.10 (0.13)	-0.15 (0.12)
Number of dyadic observations	188	188
Overall R-squared	0.02	0.05
Chi-square change ^a	2.46	4.15

Study 2

Method: Social network survey

Participants: 60 EMBA students (77% male, mean age 35)

Procedure:

- List up to 24 contacts deemed important in their professional networks. (On average, participants listed 22 contacts, resulting in a total of 1,219 dyadic participant-alter observations)
- For each alter listed, the participants provided details regarding their relationship (e.g., trust, frequency of interaction, and length of relationship).

Study 2

Measures:

Cultural metacognition:

- Several weeks prior to the network survey, participants completed the Ang et al. (2007) 4-item metacognitive CQ subscale.
- Sample Items: “I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds,” “I am conscious of the cultural knowledge I apply to cross-cultural interactions,”
- Cronbach’s alpha : 0.78.

Study 2

Measures:

Creative collaboration - Sharing of new ideas.

- Item: “How likely are you to share new insights or information with this person?” 5-point scale: 1 (not at all) to 5 (to a great extent).
- a single-item measure to minimize tedium in completing the survey

Same- vs Different-Culture Tie

- At the end of survey listed others cultural background and their own
- Compare ego and alter' s cultural background; 1=different, 0 = same

Study 2

Measures:

Cognition-and Affect-based trust

modified from McAllister (AMJ 1995)

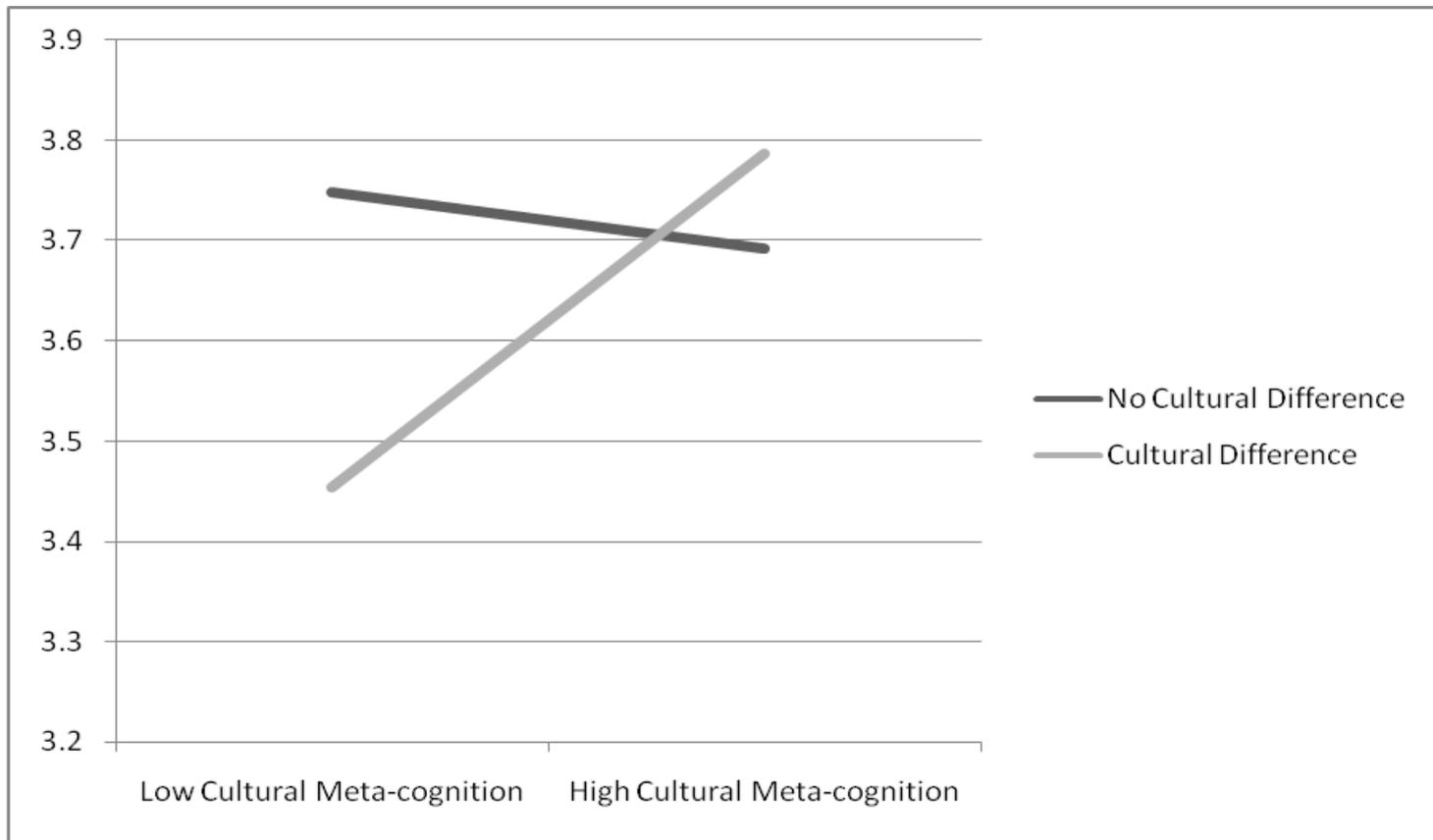
- **Cognition-based trust**
 - extent to which you could *rely* on the alter to:
 - » (a) complete a task that contact has agreed to do for the participant
 - » (b) have the knowledge and competence for getting tasks done
- **Affect-based trust**
 - extent to which they felt comfortable going to the alter to
 - » (a) share their personal problems and difficulties
 - » (b) share their hopes and dreams.

Study 2: Results

	Dependent Variable		Mediators			
	Creative Collaboration – Likelihood to Share New Insights		Affect-based Trust		Cognition-based Trust	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Key Predictors						
Participant' s cultural metacognition	0.05 (0.11)	-0.03 (0.11)	0.06 (0.09)	-0.03 (0.10)	0.00 (0.08)	0.02 (0.08)
Alter is of different culture than participant	- 0.07 (0.07)	- 0.10 (0.07)	-0.05 (0.07)	-0.09 (0.07)	0.01 (0.05)	0.01 (0.05)
Participant' s cultural metacognition X Participant-Alter of different culture interaction	-	0.21** (0.07)	-	0.26** (0.07)	-	-0.05 (0.06)

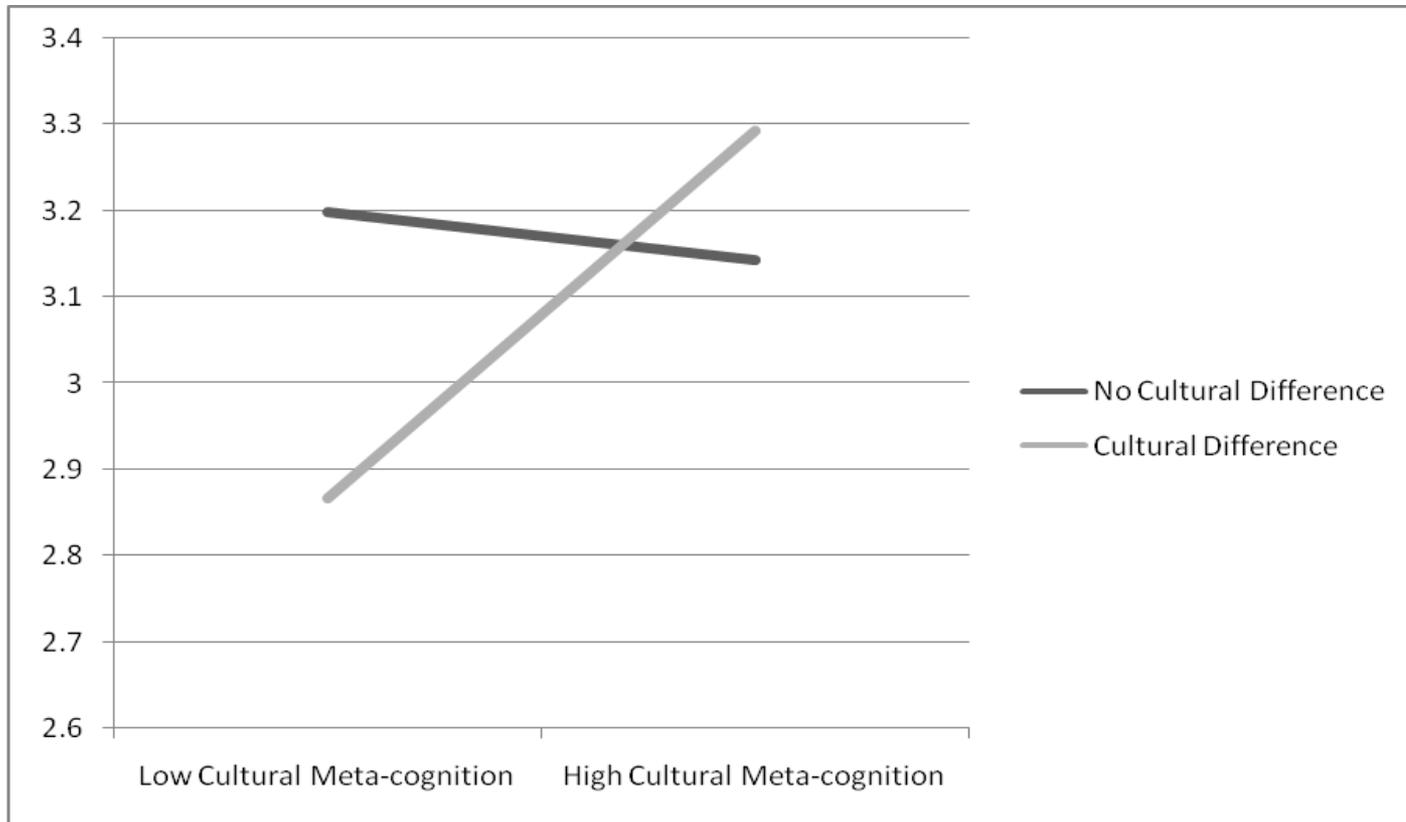
Study 2: Results

DV = Sharing new ideas



Study 2: Results

Mediator = Affect-based Trust



Study 2: Mediation

Different-culture ties only

Predictors:	Dependent Variables: Intercultural Affect-based trust, Intercultural Cognition-based trust, Creative collaboration – Likelihood to Share New Insights					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Cultural metacognition	0.29* (0.12)	-0.08 (0.10)	0.21* (0.11)	0.14 (0.11)	0.21* (0.11)	0.09 (0.11)
Affect-based trust	-	0.23** (0.04)	-	0.46** (0.04)	-	0.45** (0.04)
Cognition-based trust	0.34** (0.06)	-	-	-	0.40** (0.06)	0.24** (0.05)
Overall R-squared	0.46	0.21	0.34	0.44	0.39	0.48

Study 2: Mediation

- Bootstrapping mediation analyses (Preacher & Hayes, 2004; Shrout & Bolger, 2002) using 5,000 iterations with 95% confidence interval
 - indirect effect through affect-based trust as mediator is significant (95% bias-corrected confidence interval excludes zero),
 - but not for cognition-based trust (95% CI = - 0.10 to 0.01).

Study 3

Method: Lab Experiment

Participants: 236 students at U.S. University (45% male, mean age 21.3)

Procedure:

1. Participants completed cultural metacognition measure
2. Completed individual creativity task (design recipe for a new dish using ingredients from different cultures)
3. Participants randomly matched into different-culture pairs
4. Dyads randomly assigned into two conditions:
 - (a) initial personal conversation (share meaningful experience at the uni)
 - (b) no conversation
4. Complete joint creativity task
5. Post-task survey

Study 3

Measures:

- **Cultural metacognition**: 6 item measure; same as study 1; Cronbach's alpha = 0.88
- **Trust**: measured after joint task. McAllister's (1995) measures; Cronbach's alpha above 0.8 for both trust measures.

Study 3

Measures:

Creative collaboration:

- (a) perception of other as effective partner for creative work
 - E.g., “Overall, how would you rate your partner’s creativity?”;
“To what extent is he or she a good partner to work with on projects that require considerable innovation and creativity?”
 - Cronbach’s alpha = 0.92.
- (b) idea sharing (e.g., How forthcoming is your partner in sharing his or her ideas with you?)
- (c) third party rated creativity of joint product (recipes evaluated by two culinary experts on 5 dimensions: delicious, popular, novel, unique, and creative);
 - Cronbach’s alpha = 0.95 and inter-rater reliability = 0.64;
 - Ratings of both judged aggregated to form a composite score

Study 3

Manipulation Checks:

- Dyad level affect-based trust higher in the personal conversation condition than in the no-conversation condition
 - personal conversation condition: $M = 3.57$, $SD = 0.76$;
 - no-conversation condition: $M = 2.98$, $SD = 0.90$; $F(1, 115) = 12.17$, $p < 0.01$
- Dyad level Cognition-based trust did not differ significantly between these two conditions
 - personal conversation condition: $M = 4.95$, $SD = 0.94$;
 - no-conversation condition: $M = 4.72$, $SD = 0.64$; $F(1, 115) = 0.35$, $p = 0.56$

Study 3: Results

Preliminary Analyses:

- Compared individual creativity performance across two conditions. No significant difference ($F(1, 231) = 0.85; p = 0.36$).
- Individuals' cultural metacognition did not predict their creative performance on the individual task ($b = 0.00, p > 0.10$).
- Joint creativity performance associated with higher individual creativity in dyad => will control for higher individual creativity performance in subsequent analyses.
- Results from **a pilot experiment** suggested that it was the individual with the higher cultural metacognition in a dyad that primarily accounted for our proposed effects,
 - we tested our hypotheses with maximum cultural metacognition in the dyad.

Study 3: Results

- conversation manipulation had no main effect on the dependent variables ($p > 0.10$)
- Interaction effect such that cultural metacognition had positive impact on the creative collaboration variables in the personal conversation condition ($p < 0.05$ for all three variables) but not in the no-conversation condition.
 - results remained significant even when the higher individual creative performance in the dyad was controlled for.
- cultural metacognition predicted affect-based trust in the personal conversation condition ($b = 0.23$, $p < 0.05$) but not in the no-conversation condition ($b = -0.03$, $p = 0.75$).

Study 3

Moderated mediation analysis

- Interaction effects between the manipulation and cultural metacognition significant for all 3 outcome variables and affect-based trust ($p < 0.05$).
- Indirect effects in the **personal conversation condition** were significant in that the 95% confidence interval for these effects did not include zero
- Indirect effects in the **no-conversation condition** were all non-significant

Study 3: Mediation

(personal conversation condition)

Dependent Variable:	Creative collaboration – Perception of other as effective creative partner		
	Affect-based trust		
Predictor:	Model 1	Model 2	Model 3
Cultural metacognition	0.24* (0.10)	0.39** (0.12)	0.30** (0.12)
Affect-based trust	-	-	0.36** (0.15)
Bias-corrected 95% confidence interval		Partial mediation 0.01 – 0.25	

Study 3: Mediation

(personal conversation condition)

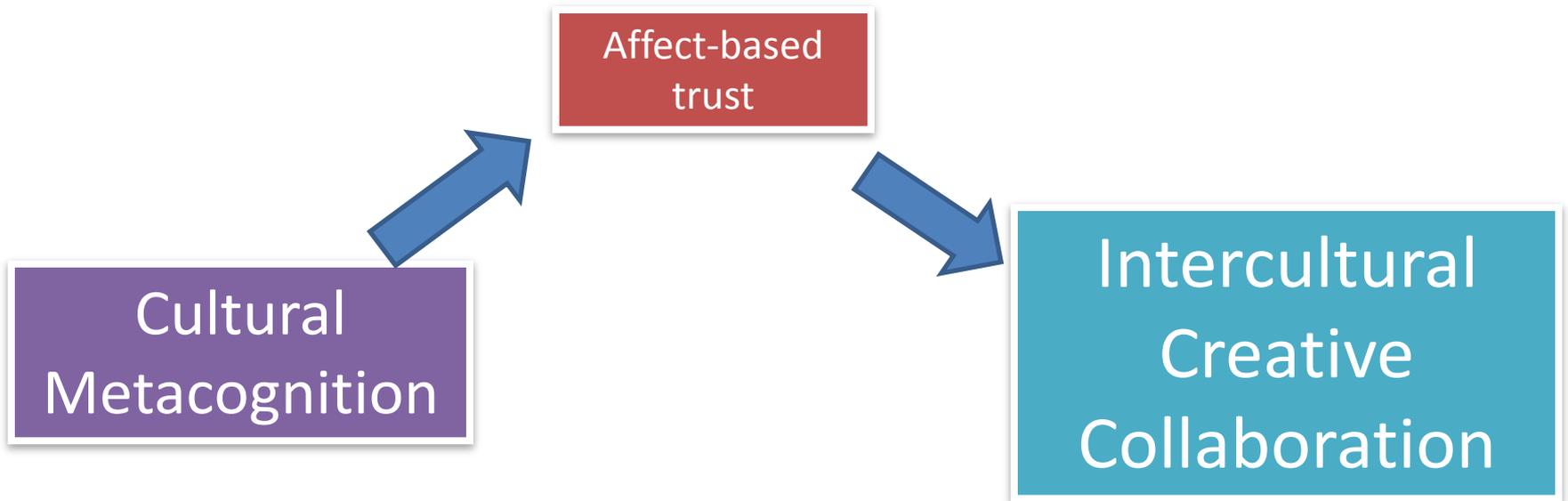
Dependent Variable:	Affect-based trust		Creative collaboration – Idea and information sharing in dyad	
Predictor:	Model 1	Model 2	Model 3	
Cultural metacognition	0.24* (0.10)	0.26* (0.10)	0.18 (0.11)	
Affect-based trust	-	-	0.31* (0.13*)	
Bias-corrected 95% confidence interval	Full mediation 0.01 – 0.19			

Study 3: Mediation

(personal conversation condition)

Dependent Variable:	Affect-based trust		Creative collaboration – Third party rated joint creativity performance	
Predictor:	Model 1	Model 2	Model 3	
Cultural metacognition	0.24* (0.10)	0.30** (0.10)	0.21* (0.09)	
Affect-based trust	-	-	0.38** (0.11)	
Bias-corrected 95% confidence interval			Partial mediation 0.02 – 0.24	

Summary



Three studies using different methods support above relationships

Theoretical Implications

- Cultural metacognition linked to affect-based trust but not cognition-based trust
 - perceptions of one's colleagues reliability and competence not based as much on the quality of interactions as there is evidence from a person's track record.
- Extends research linking cultural diversity and creativity.
 - Focus on dyadic collaboration rather than individual level creativity
 - Role of the communication process
- Insight antecedents of cross-cultural competence (cultural intelligence)
 - Only one of the four CQ factors mattered; need to be distinguished
 - High metacognition from one of the two members of the dyad suffices (max score)

Practical Implications

- Affect-based trust increases the likelihood that new ideas will be shared
 - Important to socialize with colleagues from other cultures, if you hope to collaborate
 - Team building exercises for global teams that seek to leverage diversity for innovation.
- To develop managers' talents for building close relationships across culture, it is not enough to impart knowledge about other cultures (cognitive CQ); managers need to develop metacognitive strategies for managing their cultural knowledge and assumptions

Current Directions

- Cultural metacognition and learning a new culture
 - With Krishna Savani
 - Associated with more implicit learning of cultural decision defaults
- Cultural metacognition and use of cultural-outgroup generalizations (stereotypes) in intercultural interactions
 - Shira Mor's dissertation
 - Associated with more contingent application and updating of generalizations, based on congruence of initial target behavior