

# Physiological Linkage and Relationship Functioning: Initial Findings From a Laboratory-Based Study of Married Couples

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## Background

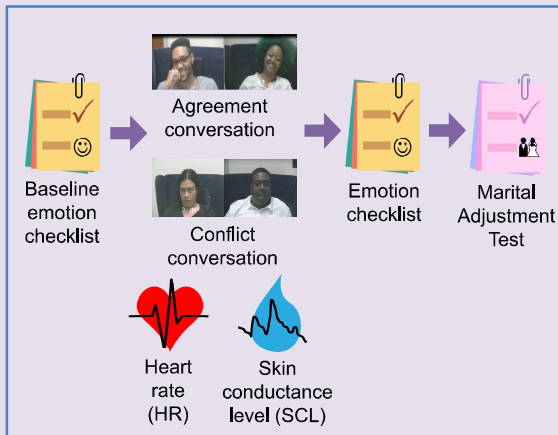
### Physiological Linkage: A Window into Human Connection

- Physiological linkage refers to the degree to which bodily signals such as heart rate or skin conductance are synchronized between relationship partners
- Research suggests that physiological linkage may be harmful or beneficial for relationship functioning [1, 2, 3]

### The Present Study

- We examined physiological linkage (heart rate and skin conductance level between married spouses during agreement and conflict conversations)
- Linkage during agreement conversations was hypothesized to correlate with higher marital satisfaction and higher levels of positive emotion, while linkage during conflict conversations was hypothesized to correlate with lower marital satisfaction and higher levels of negative emotion.

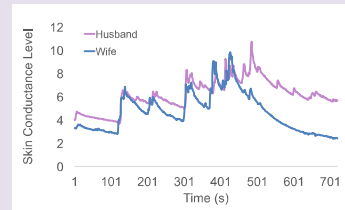
## Method



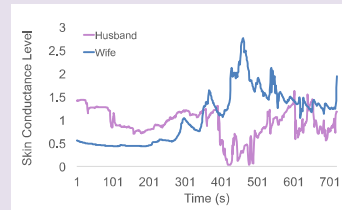
- N = 53 married couples (106 spouses)
  - Age:  $M = 42.6$ ,  $SD = 9.9$ ; Race: 42.4% White, 38.4% Black, 7.1% Asian, 6.1% Latino, 6% Other
  - Highly diverse in socioeconomic background (e.g., household income ranging from < 20K to > 150K)
- Physiological linkage was measured on a second-by-second basis using overall (anti-phase and in-phase linkage scores ranging from -1 to 1, respectively) and total (absolute values ranging from 0 to 1) heart and skin conductance level linkage
- Marital satisfaction was measured using the Marital Adjustment Test (15 items;  $\alpha = .80$ ;  $M = .06$ ,  $SD = .53$ ; i.e., engagement in outside interests together, any regrets in deciding to marry, and frequency of confiding in mate) [6]

## Physiological Linkage

### In-phase Linkage



### Anti-phase Linkage



Note: Data from two couples during the conflict conversation trial from the current study are shown.

## Results

### Physiological Linkage: Intercorrelations

Overall Linkage	1	2	3
1. HR Linkage - Agreement			
2. HR Linkage - Conflict	.357**		
3. SCL Linkage - Agreement	.191	.239*	
4. SCL Linkage - Conflict	.121	.272*	.423*

Total Linkage	1	2	3
1. HR Linkage - Agreement			
2. HR Linkage - Conflict	.228**		
3. SCL Linkage - Agreement	.343	.089*	
4. SCL Linkage - Conflict	.293	-.013	.453**

### Physiological Linkage: Links with Disgust



### Physiological Linkage, Emotional Experiences, and Marital Satisfaction

	Agreement Conversation				Conflict Conversation			
	HR Linkage		SCL Linkage		HR Linkage		SCL Linkage	
	Overall	Total	Overall	Total	Overall	Total	Overall	Total
Amusement	.228	.231	.064	-.030	.107	.152	.079	.065
Affection	.003	-.032	.086	.049	.162	.128	.131	.138
Anger	-.114	-.211	.008	.054	-.230*	.050	-.068	-.126
Compassion	-.132	-.138	-.010	.031	.096	.114	.114	.117
Disgust	-.119	-.150	-.094	-.044	-.388**	.052	-.234*	-.254*
Sadness	-.089	-.195	-.051	.009	.093	-.140	-.067	-.115
Embarrassment	-.099	-.054	.140	.123	.032	-.035	-.059	-.128
Pride	.239*	-.023	.169	.233	.053	.121	-.045	-.095
Marital Satisfaction	.079	.054	.199	.251*	-.085	.194	.096	.106

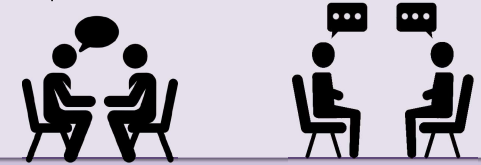
Note: Correlations ( $r$ ) between variables are shown (green = positive emotions, red = negative emotions, yellow = self-conscious emotions). HR = Heart rate. SCL = Skin conductance level. \* $p < .05$ , \*\* $p < .001$ .

## Summary

- Physiological linkage during marital interactions was not clearly associated with spouses' marital satisfaction
- Physiological linkage during marital interactions was associated with specific emotional experiences for spouses, notably with lower disgust in response to conflict conversation
- Physiological linkage measures showed sizable intercorrelations across conversations (e.g., spouses whose heart rates linked up during agreement conversations also linked up during conflict conversations)

## Future Directions

- Study limitations point toward directions for future research
  - Differentiate between in-phase and anti-phase linkage
  - Increase sample size
  - Account for interdependence between spouses
  - Study other physiological channels, contexts, and samples



## Acknowledgments

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