



Facial Expression Accommodation predicts the Quality and Durability of Romantic Relationships

Kibum Moon, Young-Gun Ko[†]

[†] Department of Psychology, Korea University, Republic of Korea, elip@korea.ac.kr



INTRODUCTION

- Facial reactions to emotional facial expressions of others are enormously influenced by social contexts (Hess & Fischer, 2013; Seibt et al., 2015).
- Partner's angry face elicits positive facial reactions in cooperative or supportive relationships but not in competitive and self-centered relationships (Häfner & Ijzerman, 2011; Seibt et al., 2013).
- Häfner and Ijzerman (2011) considered such positive facial reactions as a behavior of accommodation, a concept suggested by Rusbult and colleagues (1991), which means to react constructively rather than to retaliate when a partner acts destructively.
- However, no study has yet directly examined the association between **FEA** (Facial Expression Accommodation) and healthy relationship.
- We hypothesized participants who possess higher levels of FEA are not only more satisfied with their relationships but also better at maintaining the relationships.

Objectives

- To investigate whether FEA is associated with self-reported relationship quality.
- To examine the predictive validity of FEA in anticipating future relationship status after controlling for the self-reported relationship quality.

METHOD

Participants

$N = 96$ (48 heterosexual couples; $M_{\text{age}} = 23.01$, $SD_{\text{age}} = 2.72$)

Procedure

1. The photos of participants' angry, happy and neutral facial expressions were taken.
2. Participants responded to self-report tests assessing the quality of romantic relationship.
3. To assess FEA, facial reactions towards each of 6 facial stimuli were videotaped and analyzed.
 - In this session, the facial stimuli were displayed on the screen one by one in random order for 5 seconds following a warning messages.
 - When participants were observing each photos, the facial reactions of participants were videotaped simultaneously.
 - The facial stimuli consisted of 6 photos: target (partner vs. stranger) \times facial expression (angry, happy, and neutral)
 - A follow up survey of the participants for their relationship status was done after 6 months.

Measures

1. **Affdex**: An automatic facial coding software.
 - Affdex automatically analyzes the valence and emotions of a facial expression in a photo or video based on FACS (Ekman & Friesen, 1978)
 - FEA was operationally defined as the mean valence of a facial reaction towards an angry face for 4 seconds. (*The measurements of the facial valence during the last 1 second had no association with other study variables, so to be excluded from the analysis.)
2. Relationship quality and durability
 - Relationship satisfaction : K-MSI for couples consists of 41 binary items, $\alpha = .91$
 - Emotional experience in a relationship: PANAS is consisted of 10 items (5 Likert point) each for positive ($\alpha = .76$) and negative affect ($\alpha = .86$) in a couple interaction within the latest 1 week
 - Future relationship status was coded as 1 for "still together" and 0 for "broke up".

RESULT

Table 1. Correlations among study variables

Variables	1	2	3	4	5
1. Relationship Satisfaction	.58***	-.37***	.40***	.20 [†]	.01
2. PANSA – negative affect	.50***	.45***	-.18 [†]	-.13	.06
3. PANAS – positive affect	-.58***	-.08	.26*	.25*	.12
4. FEA – Partner	.28**	-.28**	.18 [†]	.29**	.10
5. FEA – Stranger	-.01	-.01	-.11	.19	-.01
<i>M</i>	29.45	21.03	35.15	17.59	-2.99
<i>SD</i>	7.69	7.78	6.03	31.70	19.98

Note. $N = 96$. The correlations within the actor variables are presented below the diagonal, and the correlations between the actor and partner variables are presented in and above the diagonal (grey colored cells). FEA-partner = The valence of facial reaction to a partner's angry face; FEA-stranger = The valence of facial reaction to a stranger's angry face .

[†] $< .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Correlations

- The FEA towards a partner was positively correlated with the actor's relationship satisfaction and positive affect, $r = .28$, $p < 0.01$; $r = .28$, $p < 0.01$; the partner's relationship satisfaction, $r = .20$, $p = 0.05$, and negatively correlated with the actor's negative affect.

Welch's t test

- 36 couples maintained their relationships and 12 couples were broken up.
- Fig. 1 illustrates the mean differences in FEA by target (partner vs. stranger) between two groups (still together vs. broken up), which were significant, $t_{\text{partner}}(48.27) = 3.59$, $p < .001$, $r = .46$; $t_{\text{stranger}}(82.20) = -2.78$, $p < .01$, $r = .29$.

Multiple logistic regression

- When 5 variables in table 2 were inserted simultaneously to predict future relationship status (coded as 1 for still together and 0 for broken up), only FEA towards a partner was significant, $B = 0.23$, $p < .05$.
- Change in the probability of maintaining relationship according to the FEA level is shown in Fig. 2.
- Of 21 participants who were exceed 1SD in FEA, 20 participants (**95.24%**) maintained romantic relationships.

Fig. 1. Mean difference in FEA

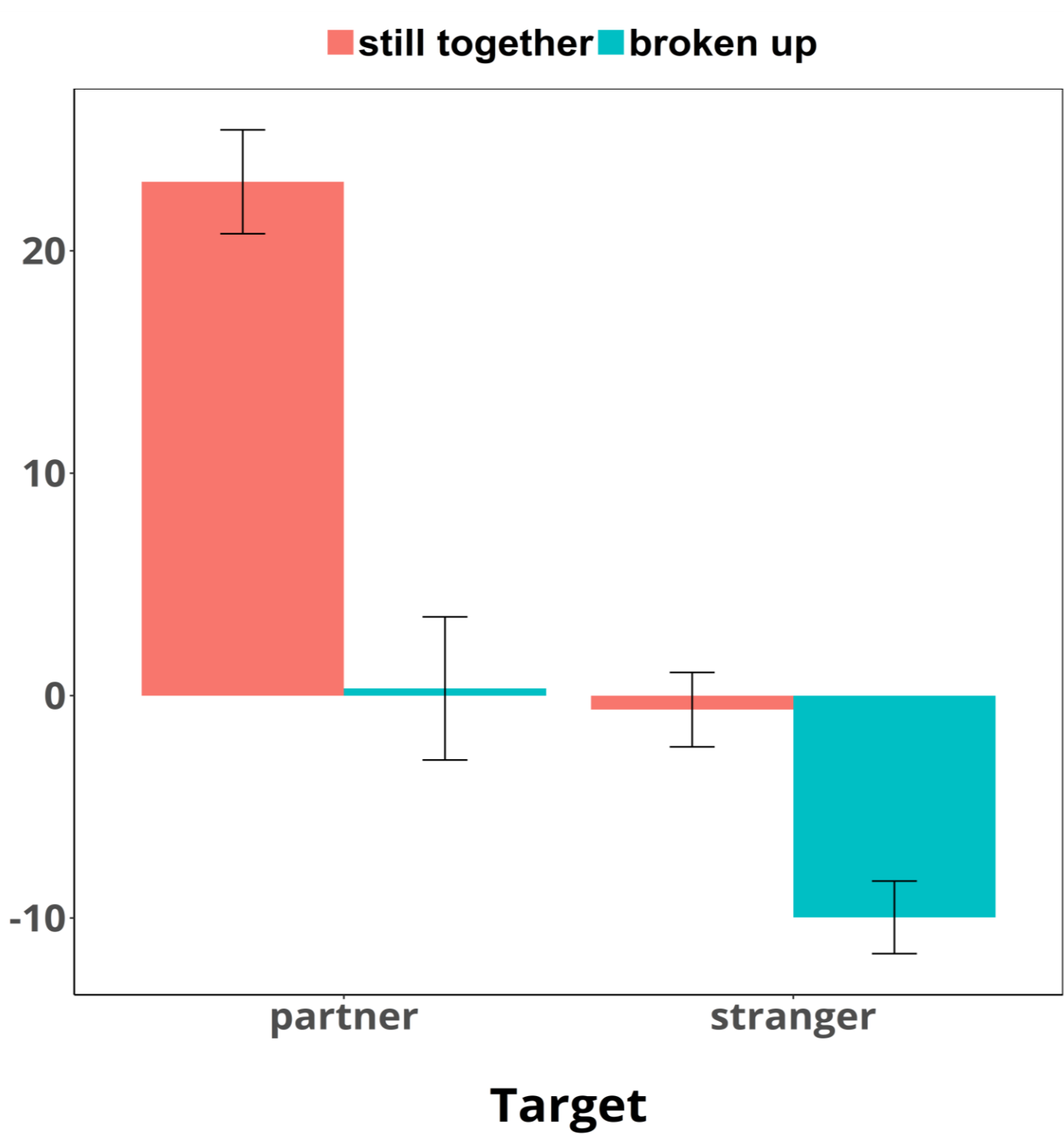
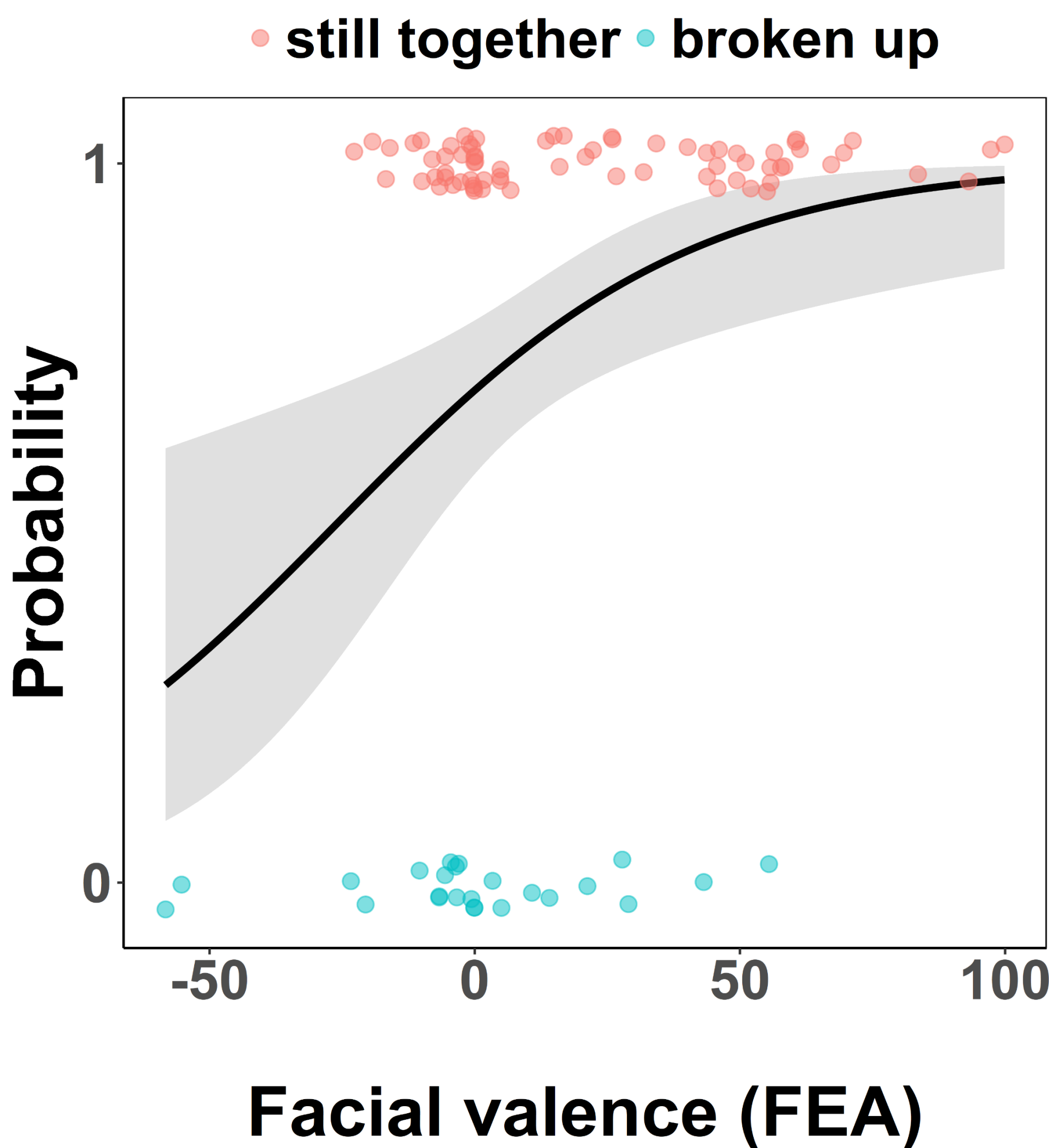


Table 2. Summary of logistic regression analysis predicting future relationship status

Predictor	<i>B</i>	<i>SE</i>	<i>p</i>
FEA–partner	0.023	0.011	.039
FEA–stranger	0.027	0.019	.146
R.S.	-0.029	0.053	.592
PANAS–NA	0.085	0.055	.123
PANAS–PA	-0.046	0.043	.286

Note. $N = 96$. R.S. = Relationship Satisfaction.

Fig. 2. Change in the probability for maintain relationship according to FEA



CONCLUSION

- **The results show that FEA is considerably related to the actor and partner's self-reports on relationship quality.**
- **This study also substantiates the importance of FEA in maintaining romantic relationships.**
- **The participants who were broken up not only failed to accommodate partner's angry facial expression but also mimic stranger's angry facial expression.**
- **This result implies the fact that FEA is not just a *sign* of likability towards a partner but an adaptive interpersonal function to build up a healthy relationship.**
- **This study also verifies the utility of the automatic facial coding software (i.e., Affdex) to the research fields of emotional behavior.**

REFERENCES

- Häfner, M., & Ijzerman, H. (2011). The face of love: spontaneous accommodation as social emotion regulation. *Personality & Social Psychology Bulletin*, 37(12), 1551–1563. <https://doi.org/10.1177/0146167211415629>
- Hess, U., & Fischer, A. (2013). Emotional Mimicry as Social Regulation. *Personality and Social Psychology Review*, 17(2), 142–157. <https://doi.org/10.1177/1088868312472607>
- Kilpatrick, S. D., Bissonnette, V. L., & Rusbult, C. E. (2002). Empathic accuracy and accommodative behavior among newly married couples. *Personal Relationships*, 9(4), 369–393. <https://doi.org/10.1111/1475-6811.09402>
- Rusbult, C. E., Verette, J., Whitney, G. A., Slovik, L. F., & Lipkus, I. (1991). Accommodation processes in close relationships: Theory and preliminary empirical evidence. *Journal of Personality and Social Psychology*, 60(1), 53–78. <https://doi.org/10.1037/0022-3514.60.1.53>
- Seibt, B., Mühlberger, A., Likowski, K. U., & Weyers, P. (2015). Facial mimicry in its social setting, 6(August). <https://doi.org/10.3389/fpsyg.2015.01122>
- Seibt, B., Weyers, P., Likowski, K. U., Pauli, P., Mühlberger, A., & Hess, U. (2013). Subliminal Interdependence Priming Modulates Congruent and Incongruent Facial Reactions to Emotional Displays. *Social Cognition*, 31(5), 613–631. <https://doi.org/10.1521/soco.2013.31.5.613>
- Ekman, P., & Friesen, W. V. (1978a). *Facial Action Coding System (FACS): A technique for the measurement of facial action*. Palo Alto, CA: Consulting Psychologists Press.