

# When Empathy Fails: Individuals Using Voice Synthesizers Experienced Lower Rapport with High Empathy Partners

Amber Fultz, Duy Nguyen, William Smart, PhD, & Frank Bernieri, PhD; Oregon State University

## Research Question

Are highly empathic individuals better at facilitating rapport in interactions involving AAC systems?



## Background

Augmentative Alternative Communication (AAC) systems facilitate communication but disrupt the natural rhythms that are the hallmark of emotionally satisfying interactions. Some people are likely to have an easier time compensating for this system than others. Empathy (Davis, 1980), for example, is intuitively and theoretically associated with superior interpersonal behavior (Hall & Bernieri, 2001). Therefore, we predicted that highly empathic individuals would skillfully accommodate for disruptions caused by AAC systems and achieve a higher state of rapport with individuals communicating with one than would those low in trait empathy.

## Hypothesis

Participants using AAC systems who interacted with a person high in trait empathy would report higher rapport with their partner than those interacting with a low empathy partner.

## Method

### Participants:

There were 102 participants. All were students who received extra credit for their participation. Twenty-six were omitted for various reasons (i.e., equipment failures, being well-acquainted with their conversational partner) leaving 38 dyads for this analysis (16 males and 60 females).

### Procedure:

Unacquainted participants conversed for ten minutes. One participant was randomly assigned to use the AAC system and the other was their conversational partner (Figure 1).



Figure 1: Speech input with joystick

## Rapport Scale:

The participant assigned to the AAC system reported their rapport after the conversation. A principle components analyses (PCA) was performed on the items to reduce the data. Composite variables were formed on the basis of the factor solution below.

23 Items	Composite Variables Identified					
	Coordination	Rapport	Halting	Disinterest	Dullness	Intensity
Cooperative	*.81	.19	-.9	-.28	-.11	.6
Harmonious	*.74	.21	-.32	-.2	-.16	.4
Well-coordinated	*.68	.24	-.43	-.13	-.19	.13
Positive	*.68	.25	-.1	-.33	-.26	.14
Involving	*.59	.17	-.20	-.7	-.27	.38
Self-Rapport	.34	*.76	-.9	-.2	-.37	-.17
Partner-Rapport	.38	*.73	-.4	.1	-.31	-.18
Inclusion	.20	*.70	-.14	-.20	-.13	.14
Better-Rapport	.12	*.69	-.37	-.29	-.6	.13
Slow	-.15	-.20	*.77	.13	.17	-.1
Uncomfortably Paced	-.25	.0	*.77	.22	.33	.9
Awkward	-.29	-.15	*.55	.34	.23	.35
Active	.42	.25	*.49	-.3	-.30	.18
Typical	.5	*.56	*.60	-.19	-.6	.21
Unfriendly	-.15	-.10	.4	*.83	.12	.10
Cold	-.11	-.12	.24	*.74	.29	.6
Unfocused	-.19	-.15	.26	*.61	-.15	.19
Dull	-.23	-.22	.30	.34	*.67	-.1
Boring	-.22	-.19	.29	*.42	*.65	.6
Unsatisfying	-.30	-.17	.36	.39	*.56	.4
Worthwhile	.28	.29	-.15	-.10	*.57	.21
Intense	.18	-.10	.0	.11	.7	*.78
Engrossing	.14	.26	.4	.30	-.26	*.57

Figure 2: Six component solution after varimax rotation.

The intercorrelations between each composite variable are displayed below (Figure 3).

Coordination	Rapport	Halting	Disinterest	Dullness	Intensity
-					
Rapport	.53***	-			
Halting	-.59***	-.50**	-		
Disinterest	-.44**	-.33*	.53***	-	
Dullness	-.61***	-.55***	.72***	.63***	-
Intensity	.23	-.02	.09	.39*	.08

Note. \*p < .05, \*\*p < .01, \*\*\*p < .001.

Figure 3: Correlation matrix for all six composite variables.

### Empathy:

The conversational partners of the individuals assigned to the AAC system completed the Davis IRI (Davis, 1980). Its four subscales combine to create two distinctive empathy components: cognitive and affective. We performed median splits on each component to create four different empathy types for the partners.

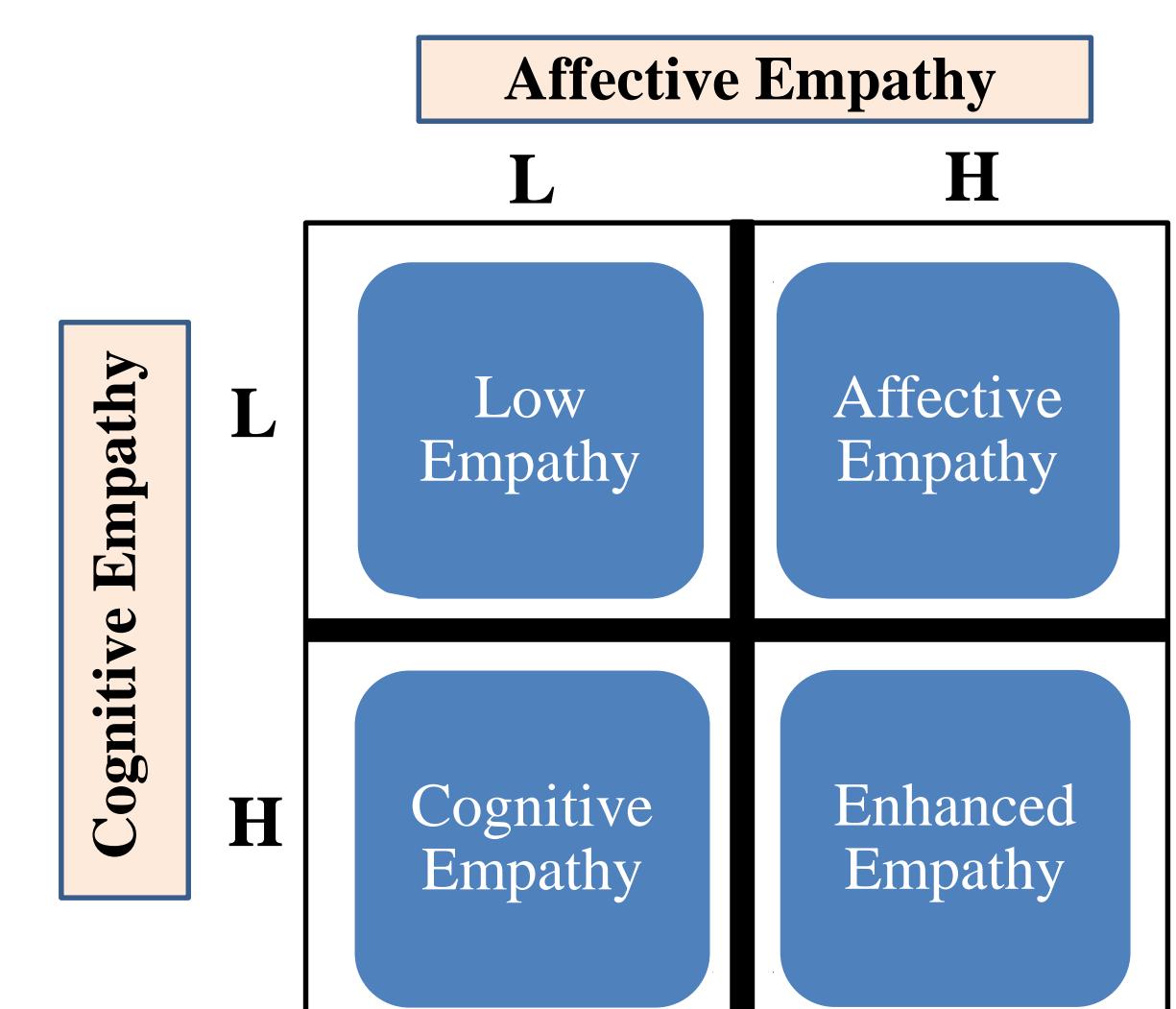
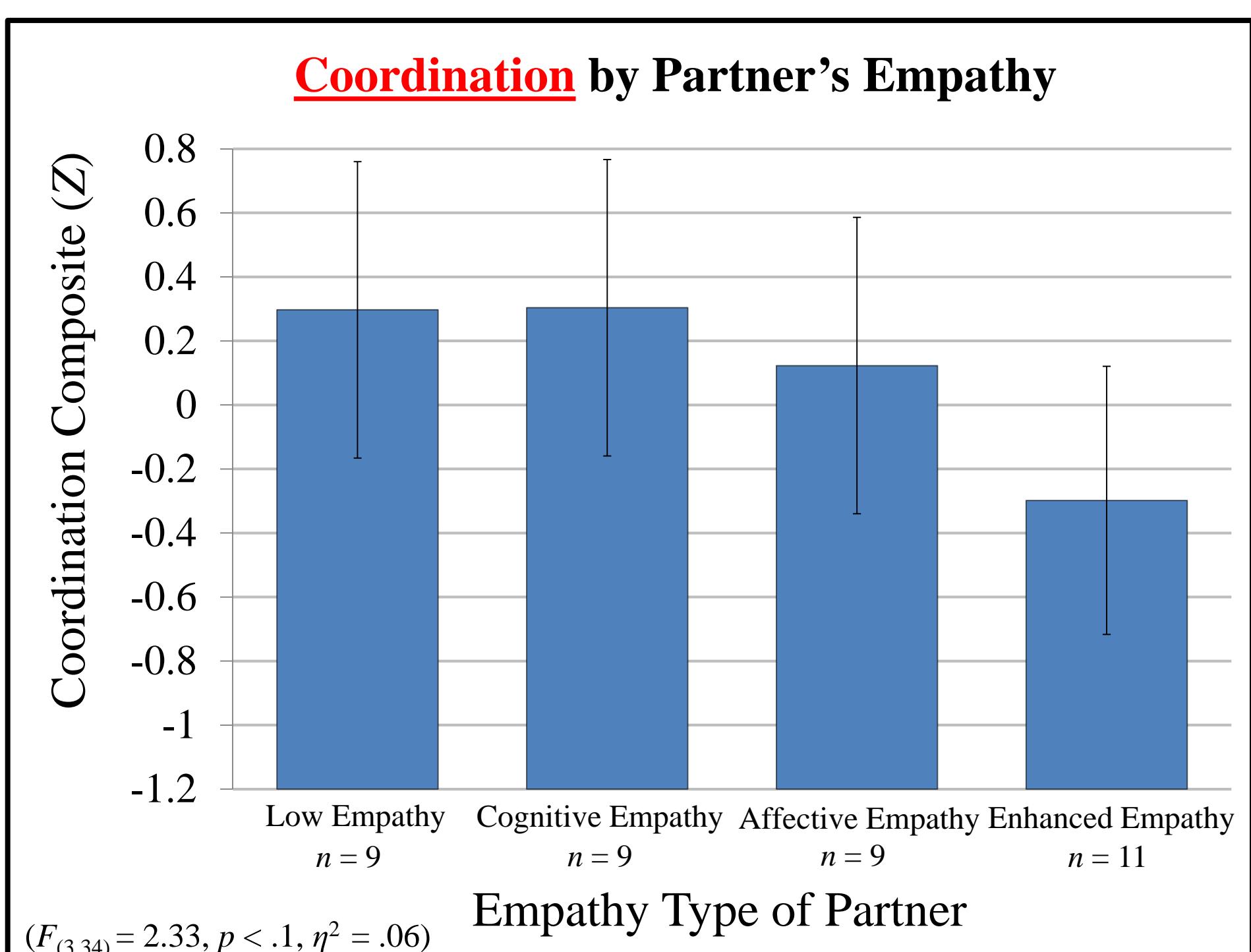


Figure 4: Empathy types as identified by the Davis IRI

## Results

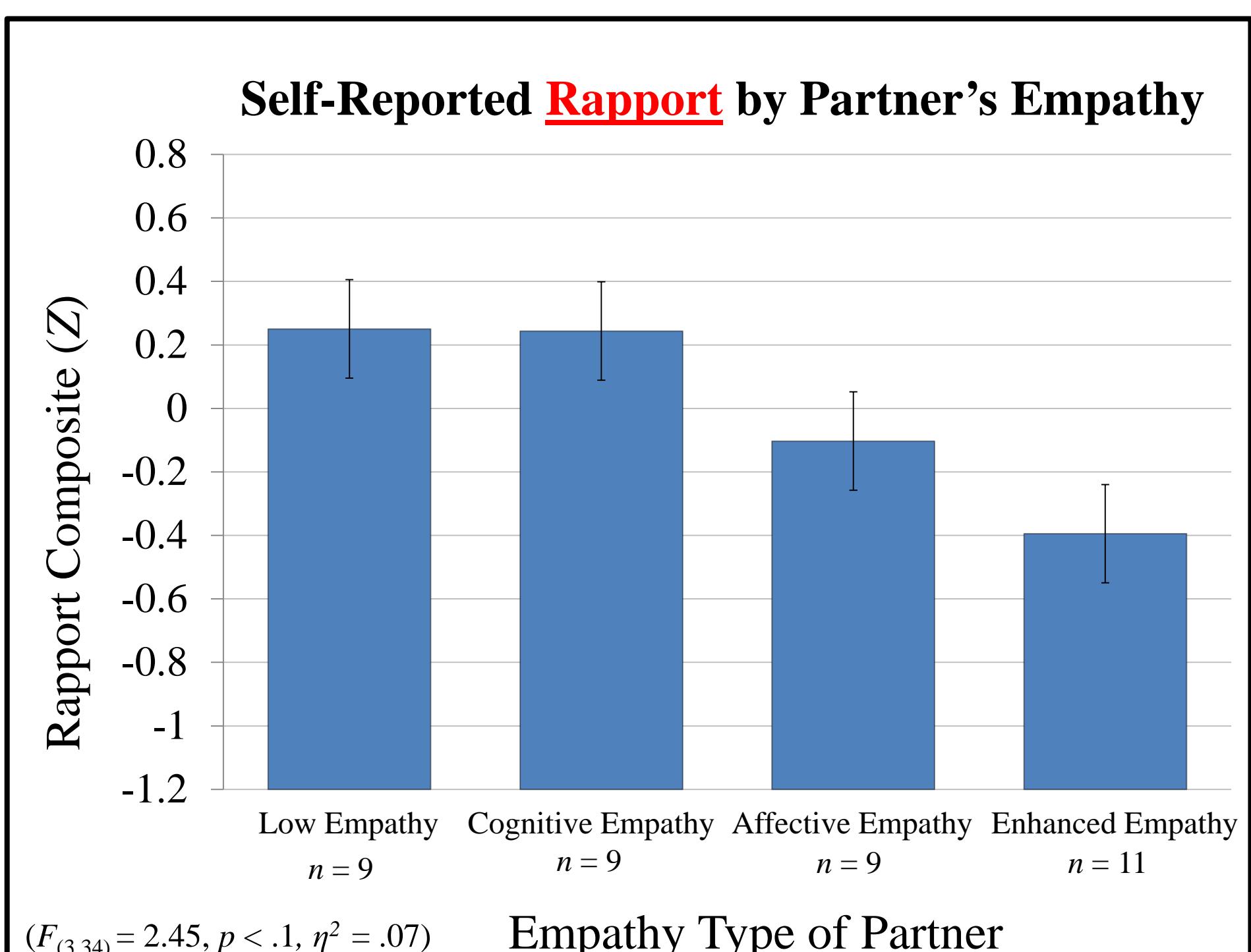
One-way ANOVAs and contrast analyses were performed on the self reports of the participants assigned to the AAC system. Significant effects were found for Coordination and Rapport.



Graph 1: Coordination ratings by individuals assigned to the AAC system as a function of their partner's empathy type

Contrary to predictions, participants assigned to the system experienced the *lowest coordination* when interacting with Enhanced Empathy partners. The difference between this group and the mean of the other three groups was significant ( $F_{(3,34)} = 6.45, p < .05, \eta^2 = .16$ ).

Participants using the AAC system also reported experiencing the least **rapport** with an enhanced empathy partner.



Graph 2: Rapport ratings by individuals assigned to the AAC system as a function of their partner's empathy type

Again, the contrast testing the difference between the Enhanced Empathy dyads and the mean of the other three groups was significant ( $F_{(1,34)} = 5.47, p < .05, \eta^2 = .13$ ).

## Discussion

Contrary to expectations, participants assigned to the AAC system reported the least satisfying conversations when interacting with partners who were high on *both* cognitive and affective empathy.

It turns out that high empathy may not be a wholly beneficial personality trait after all (Oakley, 2013). This pattern of poor interpersonal outcomes for high empathy individuals has been observed before. *Empathic enhancement* is the term associated with these findings. Individuals with enhanced empathy can suffer aversive emotional states, poor interpersonal outcomes and even psychopathy (Dinsdale, Mokkonen & Crespi, 2016).

We suspect our enhanced empathy participants were more distressed by the situation and were motivated not to make things worse for their partners (the participants using the AAC system). If so, then the participant assigned to the system might have perceived this combination of distress and lack of eye-contact as disinterest and thus felt lower rapport with their empathetic partner (Tickle-Degnen & Rosenthal, 1990). Only an investigation of the nonverbal behaviors involved can confirm this interpretation.

The findings in this study could radically change how we select and train health care providers and care-takers of individuals with a physical disability. Perhaps our findings can be dismissed because of the novelty of the situation. However, it would be ironic if the most empathically enhanced health care professionals who are the *most sensitive* and motivated to help turned out to be the poorest behavior models. This study reminds us that it is important for health care practices to advance beyond common sense and intuition by seeking out empirical evidence to develop optimal behavior strategies for face-to-face interactions involving AAC systems.

## References

- Aron, A., Aron E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, 63, 596-612.
- Bernieri, F. J., Davis, J. M., Rosenthal, R., & Knee, C. (1994). Interactional synchrony and rapport: Measuring synchrony in displays devoid of sound and facial affect. *Personality and Social Psychology Bulletin*, 20, 303-311.
- Davis, M. H. (1980). *A multidimensional approach to individual differences in empathy*. (Doctoral dissertation) Retrieved from the University of Texas at Austin.
- Davis, M. H. (1983). The effects of dispositional empathy on emotional reactions and helping: A multidimensional approach. *Journal of Personality*, 51(2), 167-184.
- Dinsdale, N., Mokkonen, M., & Crespi, B. (2016). The 'extreme female brain': increased cognitive empathy as a dimension of psychopathology. *Evolution and Human Behavior*, 37(4), 323-336.
- Hall, J., & Bernieri, F. J. (2001). *Interpersonal Sensitivity: Theory and Measurement*. LEA.
- Oakley, B. A. (2013). Concepts and implications of altruism bias and pathological altruism. *Proceedings of the National Academy of Sciences*, 110, 10408-10415.
- Oswald, M. A. (1996). The effects of cognitive and affective perspective taking on empathic concern and altruistic helping. *The Journal of Social Psychology*, 136(5), 613-623.
- Tickle-Degnen, L., & Rosenthal, R. (1990). The nature of rapport and its nonverbal correlates. *Psychological Inquiry*, 1(4), 285-293.

## Acknowledgement

Thank you to Whitney Iparraguirre, Morgan Stosic, Hannah Huntington, Jazlyn Mitchell, Sabrina Bradshaw, Courtney Ball, and Shanshan Lu.

## Contact Information:

Amber Fultz: fultz@oregonstate.edu