

## EMPATHIC ACCURACY AND DEPRESSION

**Supplemental Content****Study 1: Prior publications and sampling strategy**

Data from this larger, NIA-supported study (R01 AG007476) have been reported elsewhere (Bloch et al., 2014; Brown et al., 2021; Carstensen et al., 1995; Chen et al., 2020; Haase et al., 2013, 2016; Holley et al., 2013; Levenson et al., 1993, 1994; Otero et al., 2019; Pasupathi et al., 1999; Seider et al., 2009; Shiota & Levenson, 2007; Yuan et al., 1998) and will continue to support other and related investigations. No prior studies using this dataset have examined empathic accuracy.

The initial goal of the study was to recruit a sample of older and middle-aged couples who were representative of the ethnic, economic, and religious makeup of the Berkeley, California area. To minimize systematic biases, the experimental sample was constructed in a three-stage process including: 1) a random telephone surveys conducted by a survey research company to assess the population characteristics of people living in the area related to marital satisfaction, age, ethnicity, religion, and socioeconomic status, 2) an initial screening of prospective subjects in which prospective subjects completed a questionnaire packet, and 3) recruiting couples from the pool of prospective subjects who met selection criteria that were established based on the results of the random survey.

Prospective subjects were recruited by way of advertisements in newspapers, radio, newsletters, bulletins, and advertisements on flyers and placards. A total of 960 prospective couples were screened to secure the final experimental sample. Couples were recruited within four categories on the basis of age and marital satisfaction (a) middle-aged satisfied, b) middle aged dissatisfied, c) older satisfied, and d) older dissatisfied. Middle aged couples needed to be married at least 15 years with wives between the ages of 40 and 50, and older aged couples needed to be married at least 35 years with wives between the ages of 60 and 70. Locke Wallace (Locke & Wallace, 1959) marital satisfaction scores from the initial stage 1 telephone survey were used to establish the selection criteria based on marital satisfaction. Couples were required to live within a 10-mile radius of the University of California, Berkeley. To reflect the modal long-term marriages of the Bay Area observed in the phone screening, couples were required to be within 5 years of age, marital satisfaction scores must fall within 20 points of each other, the primary wage earner must not have retired, neither spouse could be an alcoholic, and English had to be the native language or language customarily spoken in the home. Researchers were generally successful in having the compositions of the sample match the demographic criteria establish in the random telephone survey in terms of age, satisfaction, socioeconomic status, and religion, however, Caucasians were oversampled, with a 17% greater representation of Caucasians compared to the original target. Of the 156 couples in the sample, 155 of the couples were in first marriages, and childless couples were quite rare. Additional sampling and recruitment details have been reported previously (Levenson et al., 1993).

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**Study 1: Capturing and Covarying Emotional Expressivity**

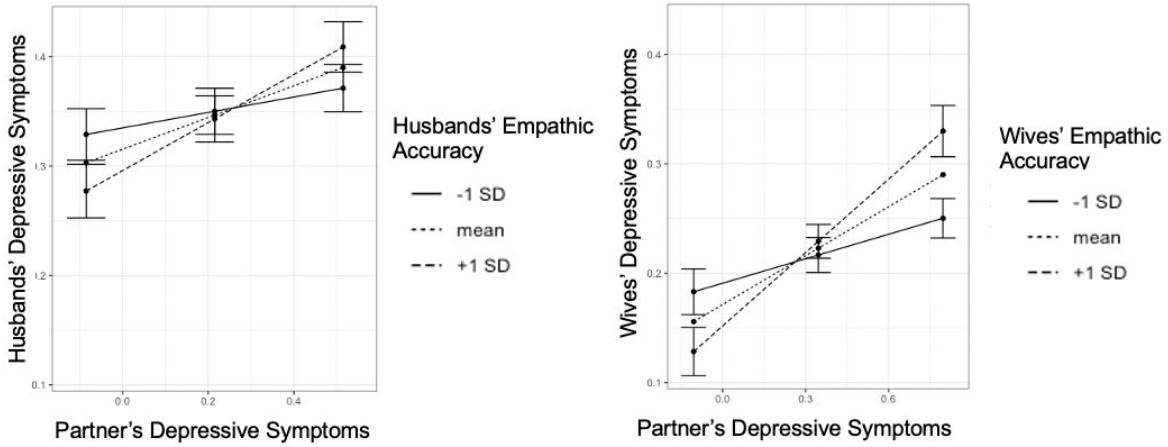
Video recordings of the conversations were coded by a team of trained coders (blind to the research hypotheses). Second-by-second positive and negative emotional behaviors for each spouse were coded using the Specific Affect Coding System (SPAFF; Coan & Gottman, 2007). SPAFF utilizes verbal content, voice tone, facial expression, gestures, and body movements to capture positive and negative emotional behaviors. Positive emotional codes include joy, humor, affection, interest, and validation; and negative emotion codes include contempt, disgust, defensiveness, belligerence, domineering, anger, whining, sadness, and fear/tension. Emotional behaviors of speakers were coded using a 3-point scale (0 = absent; 1 = low intensity; 2 = high intensity). At least two coders participated in behavioral coding, and inter-coder reliability was determined using the second-by-second agreement of coders throughout the 15-minute conversation. Inter-coder reliability was high ( $\kappa = 0.64$ ,  $z = 19.25$ ). Complete information about SPAFF coding and its reliability in this study has been published elsewhere (Carstensen et al., 1995).

To capture emotional expressivity for each husband and wife, we summed their second-by-second emotional speaker codes across the entire conversation. We then included partner emotional expressivity (the emotional expressivity of the target of empathic accuracy) as a covariate in our primary model, along with other covariates including age, education, and length of marriage. The interaction between empathic accuracy and partner's depressive symptoms remained significant when additional covariates including age, education, length of marriage, and partner emotional expressivity were included in the model ( $B = .30$ ,  $SE = .12$ ,  $p = .012$ ).

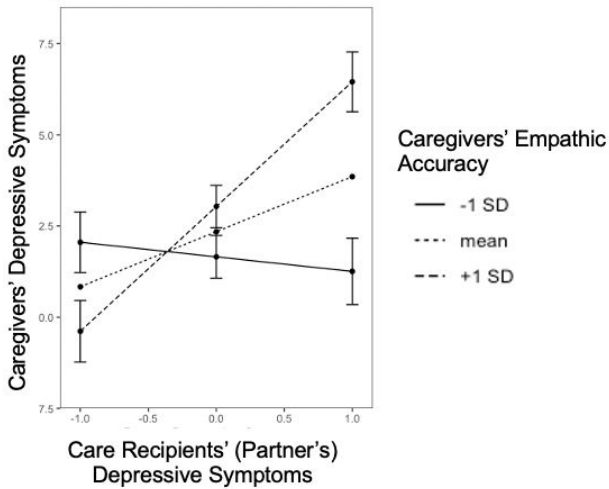
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Supplemental Figure 1.

Study 1



Study 2



*Note.* Empathic accuracy moderates the association between partner's depressive symptoms in heterosexual married couples (Study 1) and in a sample of informal caregivers of close relational partners with dementia (Study 2).

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## Supplemental References

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