Empathy in context: Socioeconomic status as a moderator of the link between empathic accuracy and well-being in married couples

Emily F. Hittner (ORCID)
Claudia M. Haase
Northwestern University, USA

Abstract
The present laboratory-based study investigated socioeconomic status (SES) as a moderator of the association between empathic accuracy and well-being among married couples from diverse socioeconomic backgrounds. Empathic accuracy was measured using a performance-based measure of empathic accuracy for one's spouse's negative emotions during a marital conflict conversation. Aspects of well-being included well-being (i.e., positive affect, life satisfaction), ill-being (i.e., negative affect, anxiety symptoms, depressive symptoms), and marital satisfaction. SES was measured using a composite score of income and education. Findings showed that SES moderated associations between empathic accuracy and well-being. Empathic accuracy was beneficial (for well-being and ill-being) or not harmful (for marital satisfaction) at low levels of SES. In contrast, empathic accuracy was not beneficial (for well-being and ill-being) or harmful (for marital satisfaction) at high levels of SES. Results were robust (controlled for age, gender, and race). Findings are discussed in light of interdependence vs. independence in low- vs. high-SES contexts and highlight the importance of socioeconomic context in determining whether empathic accuracy benefits well-being or not.

Corresponding author:
Claudia M. Haase, School of Education and Social Policy, Northwestern University, Annenberg Hall, 2120 Campus Drive, Evanston, IL 60208, USA.
Email: claudia.haase@northwestern.edu

Empathy is an essential part of our social and emotional lives (Bloom, 2017; Ickes, 2003; Krznaric, 2015; Levenson & Ruef, 1992). Empathic accuracy (i.e., being able to recognize what someone else is feeling) in particular is often thought to benefit well-being; however, empirical findings are surprisingly mixed (e.g., Gadassi et al., 2011; Simpson et al., 2003). Drawing from emotion-in context models (Aldao, 2013; McRae, 2016; Troy et al., 2013), we propose that socioeconomic status (SES) plays a key role in determining whether empathic accuracy benefits well-being or not—and test this hypothesis in a laboratory-based study of married couples from highly diverse socio-economic backgrounds.

Empathic accuracy and well-being

Empathic accuracy reflects the ability to recognize the emotions of others (Ickes et al., 1990) and has long been thought to benefit individual and relational well-being (i.e., Ickes, 1997). Numerous studies show that higher levels of empathic accuracy, along with related skills including emotion recognition, are linked to (a) higher levels of well-being such as positive mood (i.e., Hinnekens et al., 2018), happiness (i.e., Furnham & Petrides, 2003), and life satisfaction (i.e., Gannon & Ranzijn, 2005), (b) lower levels of ill-being such as anxiety (i.e., Fernandez-Berrocal et al., 2006) and depression (i.e., Gadassi et al., 2011; cf. Schreiter et al., 2013) and (c) higher levels of relationship satisfaction (i.e., Sened et al., 2017).

   Yet, a closer look at the literature reveals substantial heterogeneity in the link between empathic accuracy and well-being. In terms of individual well-being, some studies have shown no associations between empathic accuracy and individual well-being (Auyeung & Alden, 2016; Gadassi et al., 2011). In fact, some studies have linked higher empathic accuracy to higher depression for men (Papp et al., 2010), anxiety (perceiving social threat; Auyeung & Alden, 2016), and burnout (Gleichgerrcht & Decety, 2011). In terms of relational well-being, a recent meta-analysis (Sened et al., 2017) showed a (small) positive main effect; however associations between empathic accuracy and relationship satisfaction were quite heterogeneous with effects ranging from positive to nil to, in fact, negative.

   This heterogeneity has spurred discussions about when and why empathic accuracy might be maladaptive (Bloom, 2017; Kilduff et al., 2010; Schlegel, 2020; Simpson et al., 2003) and has prompted a quest for moderators of the link between empathic accuracy and well-being. Researchers have now examined individual (e.g., gender; Ickes et al., 2000), relational (e.g., relationship length; Kilpatrick et al., 2002), and contextual (e.g., culture; Chung et al., 2010) moderators of the link between empathy and well-being (see also Sened et al., 2017). Yet, despite growing evidence documenting the importance of socioeconomic status in moderating associations between aspects of emotional functioning and well-being (e.g., Hittner et al., 2019; Troy et al., 2017), research has yet to examine SES as a moderator.

Socioeconomic status as a moderator

Socioeconomic disparities in the US are prominent and have been widening in recent years (Reardon, 2011; Wolff, 2010) with half of the population considered poor or low-income. Thus, understanding how empathic accuracy may benefit well-being across different socioeconomic backgrounds may be relevant for individuals, researchers, and practitioners alike.

The lives of individuals from lower vs. higher SES-backgrounds are similar in some ways, but quite different in others. Psychological scientists have long been interested in the psychological ramifications of socioeconomic differences (e.g., Elovainio et al., 2012; Kraus et al., 2012; Piff et al., 2010; Stephens et al., 2014) and a growing body of affective science research has shown that the same emotional processes can have quite different consequences for well-being in different SES contexts (Hittner et al., 2019; McRae, 2016; Troy et al., 2017). Drawing from these emotion-in context models (Aldao, 2013; McRae, 2016; Troy et al., 2013), we propose that empathic accuracy benefits well-being in particular in low-SES contexts but not (or less so) in high-SES contexts.

To our knowledge, this proposition has not yet been examined directly, but several lines of research provide indirect supporting evidence. First, affective science research has repeatedly demonstrated that aspects of emotional functioning, such as positive reappraisal, benefit well-being in low-SES contexts but not (or less so) in high-SES contexts (Hittner et al., 2019; Troy et al., 2017). Positive reappraisal, just like empathic accuracy, is often thought to benefit well-being across the board (Mauss et al., 2007; McRae et al., 2012; Troy et al., 2018). Yet, its benefits appear to be particularly pronounced in low-SES contexts. Low-SES contexts may constrain an individual's control over the external environment and thus render abilities to control and understand internal processes, including emotional processes, particularly important (see Troy et al., 2013). To the extent that empathic accuracy allows individuals to understand the emotions of relationship partners (and perhaps align their own emotions accordingly), this suggests that empathic accuracy may be particularly beneficial in low-SES contexts.

Second, multiple lines of theoretical and empirical work converge on the idea that low-SES contexts prioritize and reward interdependence, whereas high-SES contexts prioritize and reward independence (Destin et al., 2017; Kraus et al., 2010; Stephens et al., 2014). In low-SES contexts, which are often characterized by increased threat and uncertainty, decreased access to material resources, and less choice and control (Oakes & Rossi, 2003), individuals may benefit when they prioritize interdependence because social relationships are vital resources in obtaining well-being and life outcomes. In contrast, in high-SES contexts, which are often characterized by more safety and certainty, higher access to material resources, and more choice and control (Stephens et al., 2014), individuals may benefit when they prioritize independence to achieve well-being and life outcomes (e.g., Destin et al., 2017; Kraus et al., 2010; Kraus & Keltner, 2009; Piff et al., 2010; Ross et al., 2019; Stellar et al., 2012; Stephens et al., 2014; Sun et al., 2019; Tan et al., 2019). Since empathic accuracy is a key aspect of interdependent emotional functioning (Ickes et al., 1990; Kraus et al., 2010; Simpson et al., 2003), this would again suggest that empathic accuracy may be particularly beneficial in low-SES contexts.

Third, there is emerging evidence that financial incentives can directly undermine empathic accuracy (Ma-Kellams & Blascovich, 2013). This work supports the idea that higher SES contexts may not reward empathy as much (see Kraus et al., 2012), although we should highlight that not all research supports the benefits of empathic accuracy in low-SES contexts (see Hall et al., 2015).

Finally, studies show that individuals from lower-SES backgrounds benefit more from supportive social relationships (which may be tied to empathic accuracy; Verhofstadt et al., 2008) in terms of physical health (Chen et al., 2013) and academic performance (Stephens et al., 2012) than their counterparts from higher-SES backgrounds.

Marriage as a context for probing empathic accuracy

Previous studies have operationalized empathic accuracy in different ways, with some studies examining empathic accuracy using single-subjects designs (e.g., using performance on emotion recognition tasks; Soto & Levenson, 2009; Stinson & Ickes, 1992) and others focusing on empathic accuracy in close relationships, such as marriage (e.g., using the ability to accurately recognize what a partner is feeling; Cohen et al., 2012; Simpson et al., 2003). We believe that marriages may offer a particularly fruitful testing ground for empathic accuracy (Hinnekens et al., 2016; Kilpatrick et al., 2002; Simpson et al., 1995; Verhofstadt et al., 2008) and its well-being consequences across different socioeconomic contexts.

Marriages are among the most important social relationships in the lives of many people (about 96% of US Americans over age 65 have been married at least once). Whether marriages fare well or poorly has far-reaching consequences for well-being (Gottman & Levenson, 1992; Karney & Bradbury, 2020; Kiecolt-Glaser & Newton, 2001; Levenson et al., 2013) and empathic accuracy in marriages has documented links with individual and relational well-being (Carr et al., 2014; Lorenz et al., 2006; Sened et al., 2017). Yet, as reviewed above, the link between empathic accuracy and well-being shows substantial heterogeneity and despite repeated calls to action for relationship science to broaden its focus beyond middle-class couples (e.g., Karney & Bradbury, 2005), studies have yet to examine married couples from diverse socioeconomic backgrounds to probe SES as a moderator. Building on the notion that social relationships and emotional functioning within those relationships become particularly important in low-SES contexts (Chen et al., 2013; Hittner et al., 2019; Troy et al., 2017), we expect the ability to accurately recognize what a partner is feeling to be especially relevant and beneficial for well-being among spouses from low-SES backgrounds.

The present study

The present study examined how socioeconomic status moderates the association between empathic accuracy and well-being. We hypothesized that higher levels of empathic accuracy would predict higher levels of well-being at lower SES but not at higher SES levels. We tested this hypothesis in a context with high ecological validity—among married couples from highly diverse socioeconomic backgrounds who rated their own and their partner's emotions during laboratory-based discussions of conflict,

pleasant, and neutral relationship topics following well-established paradigms (e.g., Gottman & Levenson, 1992). Socioeconomic differences are pervasive (Reardon, 2011; Wolff, 2010), have well-documented psychological consequences (Adler & Newman, 2002), and are known to moderate the effects of emotional functioning on well-being (Aldao, 2013; Hittner et al., 2019; Troy et al., 2017). Yet, to our knowledge, no prior studies have examined SES as a moderator of the link between empathic accuracy and well-being in married couples.

The study design allowed for examining (a) a performance-based measure of empathic accuracy during marital interactions (i.e., using an established paradigm assessing convergence between self-rated and spouse-rated emotional experiences; Côté et al., 2011). Moreover, we were able to study (b) multiple facets of well-being (Diener, 2000; Proulx et al., 2007), including positive aspects of individual well-being (i.e., positive affect, life satisfaction), negative aspects of individual well-being or ill-being (i.e., negative affect, anxiety symptoms, depressive symptoms), and relational well-being (i.e., marital satisfaction). Our multi-dimensional approach to measuring well-being acknowledges that different aspects of well-being are related but conceptually and empirically distinct, with important differences between individual and relational well-being (Proulx et al., 2007) and, within individual well-being, between positive aspects and negative aspects of well-being (Watson et al., 1988; see also Morris & Cuthbert, 2012). Finally, our study design allowed for examining (c) multiple dimensions of SES (i.e., income, education; Diemer et al., 2013).

Primary analyses focused on empathic accuracy of negative emotions during the conflict conversation given that empathic accuracy for negative emotions has particularly robust consequences for well-being (Sened et al., 2017) and most studies have examined conflict interactions (e.g., Cohen et al., 2015; Levenson & Ruef, 1992; Simpson et al., 2003). To limit the number of primary analyses and following prior work (e.g., Ryff et al., 2006; Wells et al., 2019), we used a composite approach when analyzing well-being outcomes, examining (a) individual well-being (using a composite of life satisfaction and positive affect) and (b) individual ill-being (using a composite of negative affect, anxiety, and depression). Additionally, we analyzed (c) relational well-being (indexed by marital satisfaction). In supplemental follow-up analyses, we examined each aspect of individual well-being separately as in prior work (e.g., Wells et al., 2019). Moreover, follow-up analyses examined whether findings were specific to the conflict conversation; whether findings were driven by empathic accuracy for specific negative emotions (and emerged for overall positive emotions); and whether findings generalized across different aspects of SES (cf. Diemer et al., 2013).

Method

Participants

The sample was drawn from a larger research project studying emotion in 122 married spouses from highly diverse SES backgrounds from the Chicago land area who had at least one child between 5 and 18 years. Recruitment strategies (i.e., flyers, ads on trains, online postings) aimed to maximize socioeconomic diversity, including individuals from

low- medium-, and high-SES backgrounds. Of note, we did not specifically focus on couples living in poverty (although, a number of our couples from low-SES backgrounds indeed fell below the poverty line which was $20,212 for a household of three members in 2018; US Census Bureau, 2018). Findings from this study have been reported previously (Hittner et al., 2019), but no studies have examined links between empathic accuracy and well-being.

The present study used a subsample ($n = 88$) who completed the laboratory-based paradigms (i.e., self- and partner-ratings of emotional experiences in response to conflict, pleasant, and neutral conversations) from which we derived the empathic accuracy measures (50% female; Age: $M = 43.7$ years, $SD = 8.9$ years; Income: $M = 4.2$, $SD = 2.1$ [on a scale from 1 = Less than $20,000 to 7 = Greater than $150,000], range: 1–7; Education [in years]: $M = 15.7$, $SD = 2.6$, range: 8–21; 39.3% White, 38.2% Black, 9.0% Latinx, 6.7% Asian, 1.1% Hawaiian/Pacific Islander and 4.5% Multiracial). Spouses who completed the laboratory-based paradigms did not differ from other spouses in terms of age, gender, race, empathic accuracy, socioeconomic status, anxiety, depression, or life satisfaction, $ps > .05$; spouses who completed the laboratory-based paradigms had significantly higher levels of positive affect $t(107) = 2.04$, $p = .043$ compared to other spouses. This study was approved by the Northwestern University Institutional Review Board.[1] Couples were compensated with $100 for study participation.

Analyses focused on laboratory-based assessments of empathic accuracy and questionnaire assessments of SES and well-being. For the laboratory-based assessment, following established procedures (e.g., Gottman & Levenson, 1992), spouses selected topics for conflict and pleasant conversations. Spouses then engaged in a 5-minute neutral conversation (i.e., events of the day), and then a 10-minute conflict and a 10-minute pleasant conversation (in counterbalanced order). After each conversation, participants rated the intensity (0 = *not at all*, 8 = *strongest ever felt*) of their own emotions (i.e., negative emotions: anger, disgust, embarrassment, fear, sadness, shame, $\alpha = .82–.90$; positive emotions: amusement, affection, calm, excitement, pride, $\alpha = .70–.77$) and their spouses' emotions (i.e., negative emotions: anger, disgust, embarrassment, fear, sadness, shame, $\alpha = .82–.90$; positive emotions: amusement, affection, calm, excitement, pride, $\alpha = .65–.80$) during the conversation (Figure S1).

Measures

Descriptive statistics for key variables are presented in Table 1.

Empathic accuracy. To measure empathic accuracy, we used a procedure from prior research (Côté et al., 2011; Kraus, 2017; Kraus et al., 2010). Empathic accuracy for negative emotions (i.e., anger, disgust, embarrassment, fear, sadness, shame) was measured by (1) creating average values for negative emotions each spouse felt in each conversation and then (2) computing the absolute value of the difference between a participant's rating of their spouse's negative emotion and their spouse's actual negative emotion rating for this conversation.[2] For ease of interpretation, we reverse-coded this variable so that higher scores reflected higher empathic accuracy. Analyses focused on empathic accuracy for overall negative emotions during the conflict conversation.

Table 1. Descriptive statistics of key variables.

Variables	Mean	SD	Min	Max
Empathic Accuracy (Negative Emotion) *Conflict Conversation*	−1.20	1.18	−5.33	0.00
Empathic Accuracy (Negative Emotion) *Pleasant Conversation*	−0.75	1.11	−5.50	0.00
Empathic Accuracy (Negative Emotion) *Neutral Conversation*	−1.03	1.20	−5.83	0.00
Income	4.20	2.05	1.00	7.00
Education	15.73	2.60	8.00	21.00
Marital Satisfaction	89.59	26.96	31.00	141.00
Positive Affect	3.57	0.64	2.10	4.90
Life Satisfaction	4.56	1.31	1.00	7.00
Negative Affect	2.26	0.76	1.00	4.36
Anxiety Symptoms	1.38	0.33	1.00	2.48
Depressive Symptoms	1.74	0.45	1.00	2.90
Age	43.66	8.90	21.00	68.00
Gender (Female)	0.50	0.50	0.00	1.00
Race (White)	0.39	0.49	0.00	1.00

Note: Overall individual well-being and overall individual ill-being were calculated as standardized averages of aspects of well-being (i.e., positive affect, and life satisfaction) and ill-being (i.e., negative affect, anxiety symptoms, depressive symptoms). Composite SES was calculated as a standardized average of income and education and therefore is not shown here.

Follow-up analyses examined empathic accuracy for individual negative emotions and overall positive emotions (i.e., amusement, affection, calm, excitement, pride) during the conflict, pleasant, and neutral conversation.

Well-being. Analyses focused on composite measures of individual well-being (standardized average of positive affect and life satisfaction; $\alpha = .81$); individual ill-being (standardized average of negative affect, anxiety, and depression; $\alpha = .92$), and marital satisfaction (using the Locke-Wallace Short Marital-Adjustment Test; 15 items, $\alpha = .70$, using standard weight methods as in prior research, Locke & Wallace, 1959).

Specifically, (1) *positive affect* was measured using the Positive and Negative Affect Schedule (10 items from positive affect subscale; e.g. "During the past 30 days, how much of the time did you feel excited"; $\alpha = .84$; $1 = very slightly or not at all$, $5 = extremely$; Watson et al., 1988). (2) *Life satisfaction* was measured using the Satisfaction with Life Scale (4 items; e.g. "I am satisfied with my life"; $\alpha = .86$; $1 = strongly disagree$, $7 = strongly agree$; Diener et al., 1985). (3) *Negative affect* was measured using the Positive and Negative Affect Schedule (11 items from the negative affect subscale; e.g. "During the past 30 days, how much of the time did you feel ashamed"; $\alpha = .86$; $1 = very slightly or not at all$, $5 = extremely$; Watson et al., 1988). (4) *Anxiety* was measured using the Beck's Anxiety Scale (21 items; e.g. "fear of worst happening" during the last month; $\alpha = .86$; $0 = not at all$, $3 = severely$; Beck et al., 1988). (5) *Depressive symptoms* was measured using the Center for Epidemiological Studies Depression (10 items; e.g. "I felt depressed" during the last week; $\alpha = .75$; $0 = rarely$, $4 = most of the time$; Radloff, 1977).

Socioeconomic status. Socioeconomic status was measured using a standardized composite of (1) household income (i.e., "What is your family's annual household income [before taxes]?"; $1 = $ *less than $20,000*, $7 = $ *greater than $150,000;* Figure S2) and (2) highest completed years of education (i.e., "What is the highest level of education you have obtained?"; 8 years $= $ some *high school/GED,* 12 years $= $ *high school/GED,* 14 years $= $ *2-year college,* 16 years $= $ *4-year college,* 18 years $= $ *Master's Degree,* 21 years $= $ *PhD., MD., or other professional degree;* Figure S2).

Covariates. Covariates included age (in years); gender (0 = male, 1 = female); and race (0 = other; 1 = White). Given the ethnic-racial diversity of our sample, we also created indicator variables for Black, Latinx, South Asian, White, Hawaiian Pacific Islander, and Multiracial Race.[3]

Data analyses

Multilevel modeling was conducted using the MIXED command in SPSS with clustering at the couple level to account for non-independence of dyadic data (Kenny et al., 2006). To test our main hypothesis, analyses included overall individual well-being (i.e., a composite of positive affect, life satisfaction), overall individual ill-being (i.e., composite of negative affect, anxiety symptoms, depressive symptoms), or marital satisfaction as the dependent variable, empathic accuracy for negative emotion in the conflict conversation, a composite SES measure of income and education, and the interaction between the two as predictors. Analyses were controlled for covariates (i.e., age, gender, and race). Findings were largely similar when not controlling for age and race (see Supplemental Material). Given the dyadic nature of the data, gender was always included as a predictor.[4] Predictors were grand mean centered to account for potential multicollinearity in hierarchical linear models (Yu et al., 2015). Simple slopes of empathic accuracy predicting well-being, ill-being, or marital satisfaction were then analyzed and plotted at low ($M - 1SD$), medium (M), and high ($M + 1SD$) levels of SES using software developed by Preacher, Curran and Bauer (http://quantpsy.org/interact/mlr2.htm) (Preacher et al., 2006). Additional interactive plots developed by McCabe, Kim and King (https://connorjmccabe.shinyapps.io/interactive/) are shown (McCabe et al., 2018), which depict simple slopes at very low ($M - 2SD$), low ($M - 1SD$), medium (M), high ($M + 1SD$), and very high ($M + 2SD$) SES levels as well as confidence intervals and individual data points. In supplemental analyses, we examined each aspect of individual well-being separately.

Follow-up analyses examined, first, whether findings were specific to the conflict conversation or emerged during the pleasant and neutral conversation (e.g., Zaki et al., 2008). Second, analyses examined whether findings were driven by empathic accuracy for specific negative emotions. Third, analyses probed whether findings were specific to empathic accuracy for negative emotions or emerged for empathic accuracy of positive emotions. Finally, analyses tested whether findings generalized across aspects of SES or were specific to income or education. Income levels reflect an individual's access to material resources and can fluctuate year-to-year (Duncan & Rodgers, 1988) and cumulate over time (Galobardes et al., 2006). Education is a more static measure

(Krieger et al., 1997). Studies often combine income and education into a composite, robust measure of SES (Shavers, 2007), but the extent to which findings generalize or are specific across aspects of SES can provide important hints as to what the "active ingredient" of SES is that produces differential effects (Diemer et al., 2013). With this aim, we conducted regions of significance testing.

Results

Preliminary analyses

Table 2 presents intercorrelations of key study variables for wives and husbands.

Empathic accuracy and well-being: Moderation by SES

SES moderated the association between empathic accuracy and overall individual well-being, $p = .003$, overall individual ill-being, $p = .011$, and marital satisfaction, $p = .011$, controlling for covariates (Table S1).[5,6] Simple slope analyses showed that higher levels of empathic accuracy predicted higher levels of well-being at low ($B = .30$, $SE[B] = .11$, $p = .010$) but not medium ($B = -.01$, $SE[B] = .10$, $p = .922$) or high ($B = -.32$, $SE[B] = .17$, $p = .068$) SES levels. Similarly, higher levels of empathic accuracy predicted lower levels of ill-being at low ($B = -.31$, $SE[B] = .11$, $p = .007$) but not medium ($B = -.05$, $SE[B] = .11$, $p = .656$) or high ($B = .21$, $SE[B] = .17$, $p = .236$) SES levels. Empathic accuracy did not predict marital satisfaction at low ($B = .19$, $SE[B] = .11$, $p = .101$) or medium ($B = -.04$, $SE[B] = .08$, $p = .643$) SES levels, but higher levels of empathic accuracy did predict lower levels of marital satisfaction at high-SES levels ($B = -.26$, $SE[B] = .13$, $p = .04$). To provide an overview, Figure 1 plots simple slopes (Preacher et al., 2006). To provide more detail, Figure 2 shows these findings using interactive plots (McCabe et al., 2018),[7] which include confidence intervals, individual data points, and plot SES at −2SD, −1SD, M, 1SD, and 2SD levels. Results were largely similar when not controlling for covariates (see Supplemental Material).

Follow-up analyses showed that results were largely similar when analyzing specific aspects of well-being or ill-being (see Supplementary Material; Table S2; Figure S3). Not all interaction effects reached statistical significance, but simple slopes patterned in the expected direction with empathic accuracy predicting higher well-being and lower ill-being at low (but not medium or high levels of SES) (see Supplementary Materials).

Follow-up analyses

Specificity across conversations. Findings were specific to the conflict conversation and did not emerge in the pleasant or neutral conversation, $ps > .05$.

Specificity across negative emotions. Findings for individual well-being were in part driven by empathic accuracy for self-conscious emotions (i.e., shame and embarrassment) (Table S3–S4). SES moderated the association between empathic accuracy for spouse's shame and overall well-being ($p = .002$) and overall ill-being ($p = .001$). SES also moderated the association between empathic accuracy for spouse's embarrassment and

Table 2. Intercorrelations between key variables for spouses.

Variables	1	2	3	4	5	6	7	8	9
1. Empathic Accuracy (Conflict)	**0.52****	0.52**	0.57**	0.43**	0.29	−0.27	0.32*	0.23	0.10
2. Empathic Accuracy (Pleasant)	0.31*	**0.66****	0.47**	0.06	0.05	−0.25	0.20	0.15	0.14
3. Empathic Accuracy (Neutral)	0.46**	0.27	**0.46****	0.27	−0.10	−0.07	0.15	0.10	0.07
4. Composite SES	0.23	0.34*	0.28	**0.78****	−0.04	0.08	−0.06	0.08	0.44**
5. Overall Well-Being	0.16	0.35*	0.03	0.22	**0.22**	−0.27	0.58**	−0.07	−0.09
6. Overall Ill-Being	−0.19	−0.31*	−0.26	−0.02	−0.60**	**0.25**	−0.27	−0.23	0.09
7. Marital Satisfaction	0.02	0.25	−0.07	0.15	0.63**	−0.43**	**0.69****	0.10	−0.06
8. Age	−0.01	−0.22	−0.09	−0.13	−0.17	−0.01	−0.13	**0.65****	0.21
9. White Indicator	0.08	0.22	0.03	0.58**	0.11	0.09	0.17	0.14	**0.72****

Note. Husbands' correlations are below the diagonal; wives' correlations are above the diagonal; correlations between husbands and wives are on the diagonal in bold.
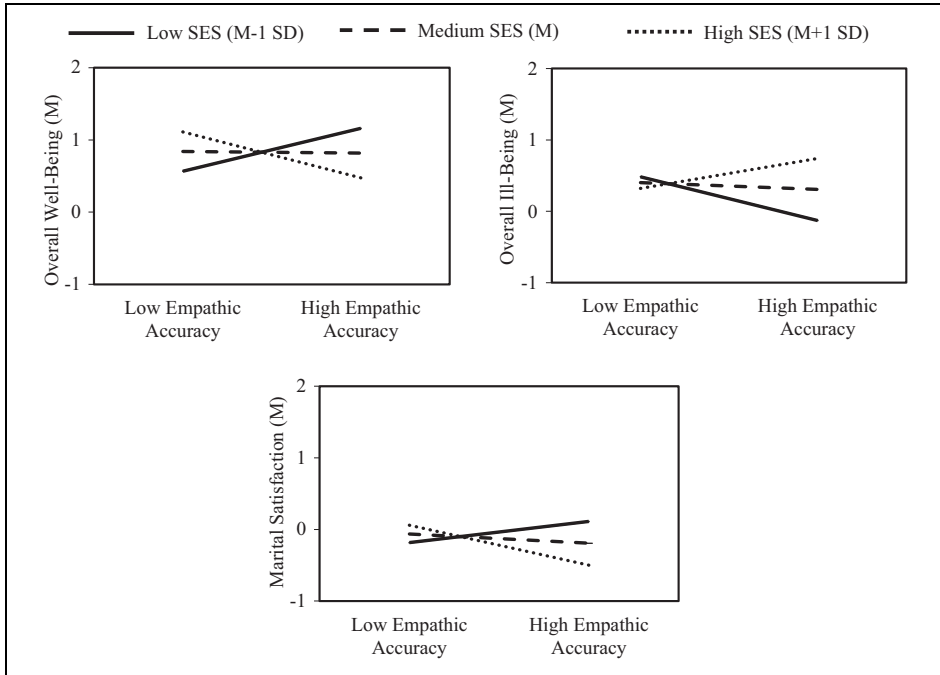$* p < .05.$ $** p < .01.$

Figure 1. Simple slope plots showing that socioeconomic status (SES) moderated the association between empathic accuracy and overall well-being, overall ill-being, and marital satisfaction, controlling for age, gender, and race. Interactions were significant, $ps < .05$. Socioeconomic status was plotted at low $(M - 1SD)$, medium (M), and high $(M + 1SD)$ levels of SES.

overall ill-being ($p = .045$). Findings for marital satisfaction were in part driven by anger such that SES moderated the association between empathic accuracy for spouse's anger and marital satisfaction ($p = .028$). All simple slopes patterned in the expected direction. SES did not moderate the association between empathic accuracy for other specific negative emotions and well-being, $ps > .05$.

Specificity for empathic accuracy of negative emotions. Findings were specific to empathic accuracy for spouse's negative emotions and did not emerge for spouse's positive emotions, $ps > .05$.

Generalizability across aspects of SES. Results largely generalized across income and education when examining overall individual well-being and individual ill-being (Table S5). Specifically, both income and education moderated the associations between empathic accuracy and overall well-being (income: $p = .027$, education: $p = .005$) and overall ill-being (income: $p = .045$, education: $p = .031$). Findings for marital satisfaction were comparable for income ($p = .026$) and education ($p = .087$). Simple slopes patterned in the expected directions.
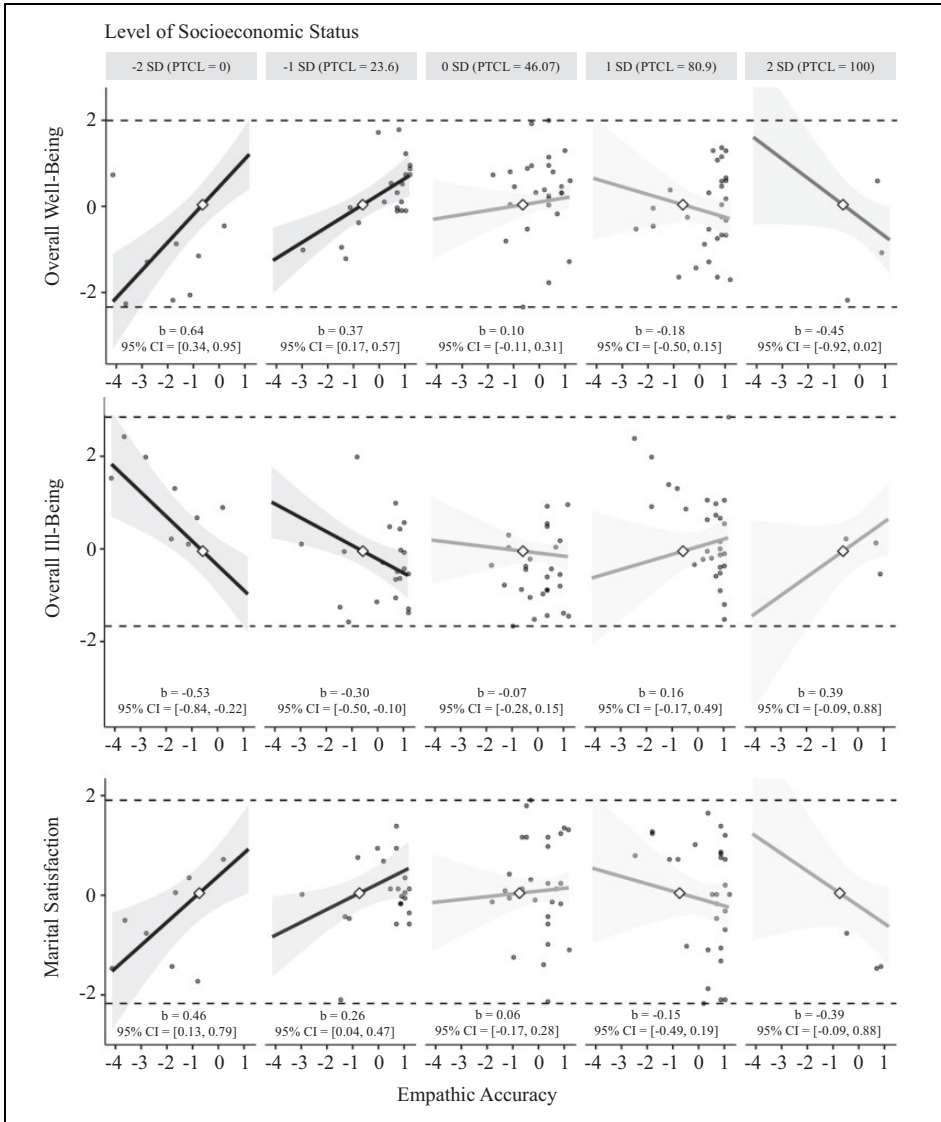
Figure 2. Interactive plots showing that socioeconomic status moderated the association between empathic accuracy and overall well-being, overall ill-being, and marital satisfaction, controlling for age, gender, and race. Interactions were significant, $ps < .05$. Each data point represents an individual. PTCL = percentile.

Region of significance testing (Johnson & Neyman, 1936) followed up significant associations (at a threshold of $p = .05$) and further showed that (1) empathic accuracy and overall well-being were positively associated at income levels less than \$35,000–

50,000 and at less than 14 years of education; empathic accuracy and overall well-being were negatively associated at more than 18 years of education. Moreover, (2) empathic accuracy and overall ill-being were negatively associated at income levels less than $20,000–30,000 and at less than 16 years of education. Finally, (3) empathic accuracy and marital satisfaction were positively associated at income levels less than $20,000; empathic accuracy and marital satisfaction were negatively associated at income levels greater than $150,000.

Discussion

The present study showed that whether empathic accuracy for one's spouse's emotions during marital conflict benefits well-being (or not) depends on socioeconomic context. Specifically, findings showed that, at low levels of SES, empathic accuracy was beneficial (for well-being and ill-being) or not harmful (for marital satisfaction), whereas, at high levels of SES, empathic accuracy was not beneficial (for well-being and ill-being) or harmful (for marital satisfaction). Findings (1) generalized across three dimensions of well-being (suggesting that empathic accuracy is broadly adaptive in low-SES contexts); (2) were specific to negative (and not found for positive) emotions (converging with Sened et al., 2017); (3) were specific to the conflict conversation and not found for neutral or pleasant conversations (cf. Simpson et al., 2003); and (4) largely generalized across income and education (cf. Diemer et al., 2013).

Empathic accuracy in socioeconomic context

The present study shows that whether empathic accuracy benefits well-being or not depends, in part, on socioeconomic context. Person-by-context models of emotion have proposed (Aldao, 2013; McRae, 2016; Troy et al., 2013) and studies have repeatedly shown that aspects of emotional functioning are most beneficial for well-being and health at low-SES levels (Chen & Miller, 2012; Chen et al., 2013, 2015; Chen & Matthews, 2001; Gallo et al., 2005; Hittner et al., 2019; Sun et al., 2019; Troy et al., 2017; Wrosch et al., 2000). Studies have also shown that social relationships are most beneficial for health and other outcomes at low-SES levels (Chen et al., 2013; Stephens et al., 2012).

The present study extends these findings to a key aspect of emotional functioning—empathic accuracy—in a key social relationship—marriage (Gottman & Levenson, 1992; Karney & Bradbury, 2020; Kiecolt-Glaser & Newton, 2001; Levenson et al., 2013). We focused on empathic accuracy during marital conflict in particular because how couples understand each other's emotions during conflict may be critical for relationship satisfaction and longevity.

Empathic accuracy allows individuals to understand, respond to, and bond with others (Ickes, 1997) and may be more beneficial in low-SES contexts where social relationships are more central than in high-SES contexts where individual goal pursuit is prioritized (Destin et al., 2017; Kraus et al., 2010; Stephens et al., 2014). Thus, accurately recognizing what a spouse is feeling may benefit well-being more in low-SES contexts where relationships are more key than in high-SES contexts where it might conflict with other goals (e.g., accurately detecting shame in one's spouse may put a damper on a business

dinner). In this vein, it is interesting that empathic accuracy was not associated with most well-being aspects and even negatively linked to marital satisfaction at high-SES levels. Clearly, more research is needed, but one possibility is that empathic accuracy may be negatively associated with marital satisfaction in high-SES contexts because it may make individuals more aware of their spouse's individual goal pursuits some of which could be potential relationship threats (Simpson et al., 1995).

Strengths and limitations

The present study had several strengths. We drew from a highly diverse sample of married couples, used performance-based measures of empathic accuracy, assessed multiple conversations contexts, and replicated findings across multiple aspects of well-being.

The study also had limitations. First, the present sample was relatively small and future research will undoubtedly benefit from using larger samples. Yet, our sample was quite comparable to other dyadic laboratory-based studies of empathic accuracy (Sened et al., 2017; e.g. Crenshaw et al., 2019), relied on a powerful within-subjects design, afforded statistical power (.80) to detect medium-sized effects (per guidelines by Cohen, 1992) at an alpha level of .05[8] and is to our knowledge unparalleled for a laboratory-based study of empathic accuracy in married couples from highly diverse backgrounds. Second, the present study focused on empathic accuracy for spouse's emotions using paradigms widely used in prior work (Gottman & Levenson, 1992). Future work could examine other measures of empathy, including rating-dial based measures (Levenson & Ruef, 1992), affective empathy (Losoya & Eisenberg, 2001), empathic accuracy for others' thoughts (Ickes & Hodges, 2013), and empathic accuracy in other social contexts (e.g., dating partners, friends, family members, strangers). In a similar vein, the present study accounted for stereotype accuracy in our models of empathic accuracy. Further research can consider other approaches to understanding empathic accuracy in romantic relationships including accuracy-bias models (Kenny & Acitelli, 2001; Neyer et al., 1999) and truth and bias models (West & Kenny, 2011). Third, this is a cross-sectional study and future studies are needed to determine whether empathic accuracy predicts well-being or vice versa (or both).

Conclusion

Empathy has long been thought to have a central place in "the good life". Yet, previous research has revealed considerable heterogeneity in the link between empathic accuracy and well-being (e.g., Sened et al., 2017). The present study of married couples from diverse socioeconomic backgrounds reveals that being able to recognize the emotions of one's spouse (i.e., empathic accuracy) benefits well-being in low-SES but not high-SES contexts and thus point to an important resource for bolstering well-being among spouses in low-SES marriages (Conger et al., 2010).

Author contributions

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ORCID iD

Emily F. Hittner ⬤ https://orcid.org/0000-0002-0024-5089

Open research statement

As part of IARR's encouragement of open research practices, the authors have provided the following information: This research was not pre-registered. The data used in the research are available. The data can be obtained at: by emailing: claudia.haase@northwestern.edu. The mate- rials used in the research are available. The materials can be obtained at: by emailing: claudia.haase@northwestern.edu.

Supplemental material

Supplemental material for this article is available online.

Notes

1. Data are available upon request.
2. To index interpersonal accuracy, we used deviation scores, as in prior research (Côté et al., 2011; Kraus, 2017; Kraus et al., 2010). We opted for this approach over other possible approaches (e.g., profile correlations) because we sought to index how much a person's judg- ment of their spouse's absolute level of emotion matched the absolute level of emotion their spouse reported (Fletcher & Kerr, 2010; Gagné & Lydon, 2004).
3. Results remained stable regardless of how race was coded. For instance, SES moderated the relationship between empathic accuracy and overall well-being ($B = -.29$, SE[B] $= .10$, $p = .007$), ill-being ($B = .29$, SE[B] $= .11$, $p = .008$), and marital satisfaction ($B = -.24$, SE[B] $= .09$, $p = .011$) accounting for age, gender, and indicators for Black, Latinx, South Asian, Hawaiian Pacific Islander, and Multiracial race, with simple slopes patterning in the expected directions.
4. Exploratory analyses showed that most findings generalized across gender, with two excep- tions, indicated by three-way interaction effects between gender, empathic accuracy, and SES for overall well-being ($B = .45$, $SE[B] = .19$, $p = .023$). Decomposing these interaction effects revealed that there were significant interactions between empathic accuracy and SES for men (well-being: $B = -.58$, $SE[B] = .13$, $p < .001$). Simple slope analyses patterned in the expected direction across SES levels for men. For women, empathic accuracy predicted higher levels of well-being regardless of SES, ps $> .05$. Findings for ill-being and marital satisfaction general- ized across gender.

5. Findings remained robust when accounting for stereotype accuracy (i.e., subtracting out the mean emotion rating before computing the empathic accuracy score; Kenny & Acitelli, 1994). With this approach, SES similarly moderated the association between empathic accuracy and overall individual well-being ($B = -.31$, $p = .003$), overall individual ill-being ($B = .27$, $p = .011$), and marital satisfaction ($B = -.27$, $p = .005$), controlling for covariates.

6. Findings remained robust when additionally accounting for length of marriage and main effects of spouses' emotions. SES moderated the association between empathic accuracy and overall individual well-being ($B = -.30$, $p = .004$), overall individual ill-being ($B = .20$, $p = .033$), and marital satisfaction ($B = -.21$, $p = .017$), controlling for length of marriage, spouses' emotions, and covariates.

7. We thank an anonymous reviewer for this suggestion.

8. We opted for a sensitivity analysis to address statistical power using GPower (see Faul et al., 2007; cf. Zhang et al., 2019).

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