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You just don't get it: The impact of misunderstanding on psychological and physiological health

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Abstract

We examined the effects of felt (mis)understanding on satisfaction, stress, and motivation in two different studies. In Study 1, we used an experimental design in which 72 participants (54 women, 18 men) engaged in understanding or misunderstanding interactions. Afterward, we measured their satisfaction with the interaction and their motivation for and performance on a subsequent task. Consistent with our hypotheses, we found that people who had a misunderstanding interaction reported lower interaction satisfaction, motivation, and poorer performance than those who were given no instructions. In Study 2, we used diary methodology and measured diurnal cortisol slopes ($N = 86$; 63 women, 21 men) to determine how day to day fluctuations in understanding and misunderstanding were associated with daily feelings of motivation, satisfaction, and perceived stress. Consistent with our hypotheses, the results found that feeling misunderstood predicted higher perceived stress, lower life satisfaction and motivation as well as less healthy cortisol slopes. Felt understanding predicted higher life satisfaction and higher motivation in Study 2 (not Study 1). Similar to other relationship constructs, our findings suggest that the physical and psychological impact of misunderstanding is important to consider distinct from understanding. Further, they suggest that not feeling misunderstood by our close others may matter more than feeling understood by them.

Keywords

(Mis)understanding, relationship satisfaction, motivation, stress

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The impact of misunderstanding on psychological and physiological health

Positive encounters we have in our close relationships serve as protective factors for individuals; they predict a range of psychological and physical health benefits (Holt-Lunstad & Smith, 2012; Shor et al., 2013). These potential benefits, however, are counteracted by significant risks. Unsatisfying interactions and unstable relationships are key predictors of poor psychological (e.g., depression) and physical (e.g., wound healing) health outcomes (Robles & Kiecolt-Glaser, 2003). Interestingly, the negative events we encounter in our relationships tend to have a more pronounced effect on our health compared to positive events; in the famous words of Ewart and colleagues (1991), “not being nasty matters more than being nice.”

We were interested in a specific relationship risk factor, feeling misunderstood—an experience that occurs when a person is taken the wrong way or when their partner does not see their true self (e.g., Condon, 2008; Lun et al., 2010; for a review see Reis et al., 2017). We argue that misunderstanding is not just a lack of understanding; it has independent effects, effects that theoretically could be stronger than the effects of understanding. As we will outline below, there are many studies that show the positive effects of understanding, but the effects of misunderstanding, particularly in the context of close relationships, have not been fully considered. As such, we will investigate the effects of both feeling understood and misunderstood on satisfaction, motivation, and stress.

Consequences of understanding

A host of research suggests that feeling understood in relationships is associated with numerous benefits for relationships. Being understood by others enables people to feel psychologically connected to each other and to have more positive, agreeable interactions (Reis et al., 2017). For individuals who are in relationships, they experience increased intimacy, trust, support, and relationship satisfaction when they feel understood by their partner (Cahn, 1990; Cahn & Shulman, 1984; Lippert & Prager, 2001; Murray et al., 2002; Pollmann & Finkenauer, 2009; Reis et al., 2004; Weber et al., 2004). Feeling understood by a partner also lessens the negative effects of destructive conflict strategies, including demand-withdraw (Weger, 2005). Importantly, these benefits largely come from *feeling* understood as opposed to actual understanding; an individual’s subjective experience of how well their partner understands them predicts relationship outcomes more so than does their partner’s actual knowledge (Lemay et al., 2007; Pollmann & Finkenauer, 2009).

Given the benefits that understanding has for relationships, it is perhaps unsurprising that we also see benefits for individuals when they feel understood. For example, feeling understood is associated with higher life satisfaction (Lun et al., 2008). Understanding also has implications for individuals’ physical health. Diary data reveals that feeling understood was associated with fewer physical symptoms, such as headaches, faintness and stomachache (Lun et al., 2008). Further, in a longitudinal study with married couples, Slatcher and colleagues (2015) found that individuals who felt their partner was

responsive, a construct that includes understanding, experienced improved physiological health 10 years later (i.e., steeper daily cortisol slopes).

Understanding vs. misunderstanding

In the studies reviewed above, the positive effects of feeling understood are measured by comparing relatively high levels of understanding with relatively low levels of understanding. They do not directly address misunderstanding. Although understanding and misunderstanding are often negatively correlated with each other, they are distinct constructs (Bailey, 2004; Condon, 2008). In fact, in Lun and colleagues 2008 study, the negative correlation between understanding and misunderstanding was only $-.38$. Further, understanding and misunderstanding have distinct causes (Condon, 2008). Behaviors that lead to high levels of felt understanding (e.g., speaking in a soft voice) do not necessarily decrease misunderstanding (Cahn & Frey, 1992). Similarly, behaviors that lead to high levels of felt misunderstanding (e.g., leaning away from a partner) do not necessarily decrease understanding (Cahn & Frey, 1992). More generally, feelings of being misunderstood tend to be caused by very concrete events like differences in the interpretations in the message tone (Edwards et al., 2017), whereas feelings of being understood are often based on more general active listening responses like nodding and correctly paraphrasing (Weger et al., 2014).

Feeling understood versus misunderstood can also create different emotional and neurological responses. For example, understanding produces feelings of satisfaction, relaxation, pleasure, goodness, acceptance, comfort, happiness, and importance, whereas misunderstanding produces feelings of dissatisfaction, annoyance, discomfort, insecurity, sadness, failure, incompleteness, and disinterest (Cahn & Shulman, 1984). Although some of these emotional responses are seemingly opposite (e.g., satisfaction vs. dissatisfaction), many are distinct (e.g., relaxation vs. incompleteness). As another example, MRI work reveals that feeling understood activates the ventral striatum and middle insula, areas involved with reward and social connection, whereas feeling misunderstood activates the anterior insula, which is generally associated with negative affect (Morelli et al., 2014). In short, the outcomes associated with understanding and misunderstanding are distinct.

We argue that people may be more impacted by misunderstanding than understanding, in part because individuals expect others to be understanding (Jing-Schmidt, 2007; Oishi et al., 2013; Straup et al., 2019). Indeed, across a wide range of situations and a variety of different relationship types, people dedicate more of their time and resources to thinking about and processing negative and problematic events as opposed to positive events (Baumeister, et al., 2001; Lewicka et al., 1992; Klinger et al., 1980). Similarly, individuals attend more to signals of misunderstanding than to signals of understanding (Cahn & Frey, 1992). Consistent with the mobilization-minimization hypothesis, which predicts that people respond more quickly and more intensely to negative events than to positive or neutral events, we can further conclude that the psychological and physiological consequences associated with negative events should outweigh the benefits of positive events (Taylor, 1991). For example, negative behaviors in relationships (e.g., making things difficult for your partner by having a negative attitude) were more strongly linked to

stress, well-being, and quality of life than were positive behaviors (e.g., helping a partner by remaining calm; Rivers & Sanford, 2018). Specific to physical health, during conflict discussions, negative exchanges (e.g., criticism and hostility) had larger impacts on blood pressure than did supportive and neutral exchanges (which often were unrelated to blood pressure; Ewart et al., 1991).

Consequences of misunderstanding

In contrast to the abundant literature on the effects of understanding, there is only limited research on the effects of misunderstanding, particularly in the context of close relationships (c.f., Edwards et al., 2017). There has, however, been research investigating the effects of misunderstanding on motivation. For example, when participants were misunderstood by a stranger in an interaction task, they subsequently shared more information with that person, suggesting that participants had a motivation to be understood by their interaction partner after being misunderstood (Faulmüller et al., 2012). Lun et al. (2010) found that there were cultural differences in participants' response to being misunderstood; specifically, Asian Americans responded to misunderstanding with a decrease in motivation, whereas European Americans responded to misunderstanding with an increase in motivation (Lun et al., 2010).

Feeling misunderstood and the negative affect which accompanies this feeling also hinders people's ability to perform well. When individuals focus on the stressful situation they are dealing with, such as a misunderstanding interaction, they unconsciously reduce the energy they spend on other activities (Segerstrom, 2007). This is in part because managing the stressor requires all of their energy and effort. In a study by Lun et al., (2010), individuals who had a social orientation and felt misunderstood by close others displayed less persistence on a handgrip task and experienced a decrease in GPA. In a subsequent study, feeling misunderstood influenced basic perceptions of pain and distance; people who felt misunderstood kept their hand in ice water for a shorter time, estimated a hill to be steeper, and estimated target distances to be longer than those in the control condition (Oishi et al., 2013).

The current studies

Taken together, although understanding may provide individuals with benefits, we suspect that the consequences of misunderstanding might outweigh these benefits. Indeed, past studies typically find that feeling understood predicts positive relationship and individual outcomes (Cahn, 1990; Cahn & Shulman, 1984; Lippert & Prager, 2001; Murray et al., 2002; Pollmann & Finkenauer, 2009; Reis et al., 2004; Weber et al., 2004), but some studies have found null effects (Oishi et al., 2013). By contrast, very little work has looked specifically at misunderstanding, particularly in the context of close relationships. Further, there is little work linking understanding and misunderstanding to physiological measures of health. As such, the goal of current research is to use both experimental (Study 1) and diary (Study 2) data to study the impacts of felt (mis)

understanding on individual outcomes, including life satisfaction, perceived stress, motivation, and diurnal cortisol slopes.

Study I

In our first study, we examined the psychological impact of (mis)understanding in an experimental study in which participants imagined they were roommates trying to resolve an issue. We manipulated whether people felt understood or misunderstood during the discussion by instructing partners to use specific phrases during the interaction. We also included a condition in which participants were allowed to interact as they naturally would, with no instructions. This condition was our “typical interaction condition” that we used to compare the impact of understanding vs. misunderstanding to a more natural interaction. We have seen in previous studies that when students felt misunderstood by others, they displayed less motivation for a handgrip task and their academic performance dropped (Lun et al., 2010). In these earlier studies, misunderstanding was conceptualized as the gap between how well individuals expect to be known by their partners and how well they perceive to be known by their partners (e.g., feeling their partner had an inaccurate view of their personality). We used a different approach and conceptualized misunderstanding in a way that is consistent with research on misunderstanding in interactions (Cahn & Frey, 1992). Cahn and Frey (1992) studied which behaviors in a conversation partner make people feel understood and misunderstood. They found that people feel more understood when the conversation partner “said that they like what you said” and when they “agreed verbally with you.” People feel more misunderstood when the conversation partner “expressed rejection of you as a person,” “verbally expressed disinterest in what you said,” “expressed criticism; didn’t like what you said” and “disagreed verbally with you.” This conceptualization of misunderstanding mirrors how misunderstanding happens in daily life (i.e., feeling like a partner misunderstands you in a conversation; cf. Edwards et al., 2017).

Past research that compares understanding and misunderstanding interactions finds that understanding conditions produce similar responses on individual outcomes compared to a neutral condition, but that the misunderstanding condition leads to negative effects compared to the neutral condition (Oishi et al., 2013). Based on this work, we hypothesized that individuals in the misunderstanding condition would report lower interaction satisfaction as well as have lower levels of motivation and performance for a subsequent puzzle task than those in the typical interaction condition. Also, extant work shows clear positive benefits of understanding on individual’s relationship outcomes (Cahn, 1990; Cahn & Shulman, 1984; Lippert & Prager, 2001; Murray et al., 2002; Pollmann & Finkenauer, 2009; Reis et al., 2004; Weber et al., 2004). Consistent with this research, we hypothesized that people in the understanding condition would have higher interaction satisfaction than those in the typical interaction condition. Finally, because individuals focus more on signals of misunderstanding than understanding (e.g., Cahn & Frey, 1992) and because more generally negative emotional experiences carry more weight than positive emotional experiences (Baumeister et al., 2001), we hypothesized

that the effects of misunderstanding would be more consistent than the effects of understanding on satisfaction, motivation, and performance.

Study 1 Method

Participants. We recruited 72 individuals (54 women and 18 men) from the subject pool in Communication Science and the personal network of a research assistant. Participants attended a Dutch international university in Tilburg and ranged in age from 18 to 30 years old (*Mean* = 21.64, *Median* = 22, *SD* = 2.69). Participants signed up for a certain time slot via an online system. There was room for two participants per time slot. If only one participant signed up for a given time slot, he or she was rescheduled. Participants were randomly assigned to one of three conditions (misunderstanding, understanding, and no instructions) in pairs of two. Only people fluent in Dutch were eligible to participate to make sure that they could have a natural interaction. We did not ask for the participants' race. Participants received partial course credit for their participation.

Procedure

We conducted the study in an on-campus lab or, in a similar quiet environment. We told participants that the study would take approximately 20–30 min to complete. This included time to read the instructions, to discuss the case, to answer questionnaires about the discussion, and to complete a puzzle task.¹ During the discussion of the case, which lasted for 10 min, the research assistant stayed in the room to ensure that participants would follow the instructions. Only one couple needed to be reminded of the instructions.

Materials and measures

Case

The case for the interaction was taken from the Dispute Resolution Research Centre (Thompson, 2001). We asked participants to imagine that they were roommates and that they needed to find a solution for several problems in their home. Each participant received a case with a different viewpoint on those problems. We created the understanding and misunderstanding conditions by giving instructions on how to behave during the discussions. The phrases we asked participants to use were based on the Conflict Communication Inventory scale (Sanford, 2010) and on the study by Cahn and Frey (1992) that showed which verbal behaviors are associated with feelings of understanding and which are associated with feelings of misunderstanding. For example, they found that “verbal indicators of not understanding” and “disagreeing verbally with you” are related to feelings of misunderstanding and that “verbal indicators of understanding” and “agreeing verbally” are related to feelings of understanding. As such, we instructed participants in the misunderstanding condition to stick to their own viewpoint as much as possible and to start their turns with phrases like “I don’t understand your viewpoint. I think...” and “You are wrong. I think....” As for the understanding condition, we

instructed participants to show understanding for the other's viewpoint and start their turns with phrases like "I understand your viewpoint. I think..." and "You may be right. I think..." Participants in the typical interaction condition did not receive any instructions about how to react during the discussion.

General information

We asked the participant's age and gender and the extent to which they knew their interaction partner before the experiment. This was measured on a seven-point scale (1 = *very well*; 7 = *not at all*) with the following question: "Before the experiment, I already knew my interaction partner."

Felt (mis)understanding

To assess feelings of felt (mis)understanding, we used six items based on the Conflict Communication Inventory Scale (Sanford, 2010). Participants indicated on a seven-point scale (1 = *completely disagree*; 7 = *completely agree*) the extent to which they agreed or disagreed with statements like "My interaction partner made me feel that my viewpoint was valuable" (Cronbach's $\alpha = .84$).

Stress

We measured participants' stress with six items taken from the Perceived Stress Scale (Cole, 1999). Participants indicated on a seven-point scale (1 = *completely disagree*; 7 = *completely agree*) the extent to which they agreed or disagreed with statements like "During the interaction I felt nervous and stressed" (Cronbach's $\alpha = .81$).

Interaction satisfaction

To measure participants' interaction satisfaction, we used nine items adapted from the Student Communication Satisfaction Scale (Goodboy et al., 2009). Participants indicated on a seven-point scale (1 = *completely disagree*, 7 = *completely agree*) the extent to which they agreed or disagreed with statements like "My communication with my interaction partner felt satisfying" (Cronbach's $\alpha = .87$).

Motivation

We measured participants' motivation with six items from the Situational Motivation Scale (Guay et al., 2000). Participants indicated on a seven-point scale (1 = *completely disagree*; 7 = *completely agree*) the extent to which they agreed or disagreed with statements like "I am motivated to do this task" (Cronbach's $\alpha = .73$).

Puzzle task

We used the Remote Associates Test to measure performance. In this task, participants are given two to four words and asked to find a word that is related to all the given words. An example is “fall–water–cloud” with “rain” as a solution. We used 27 items which varied in difficulty. Research assistants coded the answers as correct or incorrect.

Analytic strategy

In the data for this study, individual scores (level 1) were nested within interaction dyads (level 2). To account for the dependency in the data, multilevel modeling (MLM) was conducted in SPSS. Mixed model ANOVA is a type of MLM that simultaneously models the error involved with sampling observations at multiple levels, making it a preferred strategy to Ordinary Least Squares regression (Kenny et al., 2006). Given that we had a smaller number of participants, we used a restrictive maximum likelihood method of estimation (Raudenbush & Bryk, 2002). Because we were using dyadic data, we used the “repeated” command with a compound symmetry covariance structure to model the nonindependence (Kenny et al. 2006).

Study I results and discussion

In order to determine whether understanding and misunderstanding predicted our outcome variables, we ran five separate mixed model ANOVAs with the typical interaction condition as a comparison group and the understanding and misunderstanding condition as predictors of perceived understanding, interaction satisfaction, stress, motivation, and performance. The first analysis, which had perceived understanding as the outcome variable, showed that our manipulation was successful. Participants in the understanding condition reported higher perceived understanding than participants in the typical interaction condition ($b = .92$, $SE = .32$, $t(33) = 2.92$, $p = .006$) and participants in the misunderstanding condition reported a lower perceived understanding than participants in the typical interaction condition ($b = -.63$, $SE = .29$, $t(33) = 2.13$, $p = .040$).

Consistent with our hypotheses and as can be seen in Table 1, the misunderstanding manipulation reduced interaction satisfaction, motivation for the next task, and the performance on the next task. We did not find an effect of condition on stress, but the means were in the predicted direction.

As can be seen in Table 2, participants in the understanding condition did not differ from the participants in the typical interaction condition. That is, when comparing participants in the understanding condition and participants in the typical interaction condition, there were no significant differences on interaction satisfaction, perceived stress, motivation for the next task, or performance for the next task.

Together, these results suggest that feeling understood does not influence how people evaluate the interaction or their motivation and performance after the interaction. This is in line with earlier studies finding no difference between an understanding condition and a

Table 1. Results of Study 1 mixed models analyses with the misunderstanding condition compared to the typical interaction condition.

	<i>Intercept</i>	Misunderstanding				
		<i>b</i>	<i>SE</i>	<i>t</i> (33)	<i>p</i>	CI
Perceived understanding	3.28	−0.63	.23	2.13	.040	−1.23 to −0.3
Interaction satisfaction	5.17	−0.81	.30	2.75	.010	−1.41 to −0.21
Stress	3.16	0.53	.32	1.64	.111	−0.13 to 1.19
Motivation	5.63	−0.53	.18	2.90	.007	−0.91 to −0.16
Performance	22.05	−1.42	.64	2.23	.033	−2.71 to −0.12

Table 2. Results of Study 1 mixed models analyses with the understanding condition compared to the typical interaction condition.

	<i>Intercept</i>	Understanding				
		<i>b</i>	<i>SE</i>	<i>t</i> (33)	<i>p</i>	CI
Perceived understanding	3.28	0.92	.23	2.92	.006	0.28 to 1.56
Interaction satisfaction	5.17	0.25	.32	0.80	.432	−0.39 to 0.90
Stress	3.16	−0.13	.35	0.37	.715	−0.83 to 0.58
Motivation	5.63	−0.21	.20	1.06	.295	−0.61 to 0.19
Performance	22.05	−0.23	.68	0.34	.736	

control condition (Oishi et al., 2013). It seems that feeling understood is the default, and inducing feelings of understanding does not have any benefits. Importantly, feeling misunderstood decreased satisfaction with the interaction and the motivation and performance on a subsequent task when compared to the typical interaction condition. Our results support previous findings that show negative effects of feeling misunderstood on motivation in an Asian American sample (Lun et al., 2010) and extend these findings to a new cultural context.

Given that the typical interaction group did not differ from the understanding group, our findings may also suggest that individuals habituate to feeling understood. This effect has been seen in other settings such as in studies on romantic conflict. In their classic paper on conflict behaviors of distressed and non-distressed couples, Gottman and colleagues (1977) found that these couples differed in how much negative affect they showed, but they did not differ in how much positive affect they showed. Indeed, showing positive affect like smiling and nodding did not differentiate distressed and non-distressed couples. This suggests that in general, people have an expectation for the “good” (e.g., understanding and happiness) as opposed to the “bad” (e.g., misunderstanding).

Study 2

In our second study, we used a daily diary method to look at how daily fluctuations in feeling understood and misunderstood relate to motivation and stress. As opposed to inducing feelings of (mis)understanding, in Study 2, we examined the effects of (mis)understanding in a more naturalistic context. That is, on days when individuals experience an understanding or misunderstanding interaction, does it lead to changes in their psychological and physiological health compared to days when they are not having these experiences. We also used Study 2 to examine the effects of (mis)understanding in a new context—already existing romantic couples. Because we have seen that partner responsiveness (e.g., understanding) was associated with improvements in physiological health (Slatcher et al., 2015), we hypothesized that on days when participants felt understood they would experience higher levels of motivation and satisfaction, lower levels of stress, and steeper (i.e., healthier) cortisol slopes compared to days when they felt less understood. Further, because unstable relationships are linked to poor psychological and physical health outcomes (Robles & Kiecolt Glaser, 2003), we hypothesized that on days when participants felt more misunderstood they would experience lower levels of motivation and satisfaction, higher levels of stress, and less steep (i.e., less healthy) cortisol slopes compared to on days when they felt less misunderstood. Finally, because negative emotional experiences tend to outweigh positive emotional experiences (Baumeister et al., 2001), we also hypothesized that the effects of misunderstanding would be stronger than the effects of understanding.

Study 2 methods

Participants. We recruited 84 individuals in romantic relationships (63 women, 21 men) from subject pools in Communication Science and Social Psychology at a Dutch international university in Tilburg. Participants ranged in age from 18 to 44 years old ($Mean = 21.56$, $Median = 21.00$, $SD = 4.31$) and were from 16 different countries (72.6% were from the Netherlands). Participants self-reported their ethnicities as Caucasian (White; 59.5%), Asian (7.1%), Hindu (1.2%), Latin American (2.4%), Turkish (1.2%), or other (29.8%). Participants had been in their current relationships anywhere from 2 to 240 months (average relationship length was 30.40 months). The majority of participants (91.7%) reported that they were in a long-term committed partnership (of which 3.6% were married and 1.2% engaged to be married). Given our interest in diurnal cortisol, individuals were not eligible to participate in the current study if they smoked cigarettes, used other tobacco products (i.e., dip, chew, and patch), had a medical condition that impacted their hormones, were pregnant, were currently diagnosed with depression or anxiety, or worked between the hours of 11 p.m. and 6 a.m. (i.e., the night shift). Although our goal was to recruit individuals as opposed to couples, 3 couples did participate in the study. Upon learning that these individuals were coupled with each other, we flipped a coin to determine which member would remain in the sample to prevent dyadic dependencies in our data. As such, our final sample consisted of 81 individuals. All of the participants received partial course credit for their participation in the study.

Procedure

We asked students in the participant pool to complete an eligibility screening survey which assessed health variables that impact cortisol secretion (see measures for eligibility criteria). Eligible participants were invited to the lab, where we explained the study procedure. Specifically, we asked participants to complete an initial online questionnaire which contained a measure of general health. We also provided participants with the materials they would need for the cortisol samples used in the diary component of the study and explained protocol for collecting these samples.

Once participants had completed their initial survey online, we emailed them and asked when they wanted the diary component of the study to start. Then, we sent participants a link to an evening survey every day for six consecutive days. Participants were sent reminders if the survey had not been completed by 10 pm. Participants were given until noon the following day to complete the survey. We had high compliance rates, with 87.7% of the diary days completed the evening the samples were due and 100% of the diary days completed by noon the next day.²

Consistent with past work (Crockett & Neff, 2013), we asked participants to provide saliva samples twice daily on each of the six diary days in order to determine diurnal cortisol slopes. We gave each participant 12 salivettes for saliva collection and instructed them to provide one sample first thing after they woke in the morning (before they brushed their teeth) and one sample in the evening before going to bed. Participants were asked to provide evening samples at approximately the same time each night, but we allowed participants to choose the time based on their typical dinner and bedtime schedules. Because cortisol is impacted by caloric intake, we asked participants not to eat, drink, or brush their teeth an hour prior to providing each sample. At each collection time, participants completed an entry in the cortisol log provided to them by the researcher. In this log, participants recorded the time and date of the sample, any irregular circumstances that occurred around the time they provided the sample (e.g., if they recently ate, drank, brushed their teeth, and took medication), and any irregular event that occurred that day. Participants' detailed notes suggest that they were highly compliant with the study protocol. Participants stored their salivettes in the refrigerator until the end of the diary period, when they returned their samples to the researchers' laboratory. We had usable morning and evening cortisol data for 471 of the 486 diary days represented in our sample. Of the 15 diary days that did not have usable cortisol, we discarded nine of those days because participants provided insufficient saliva to assay in either the morning or evening sample; assays on the other 6 days were discarded because cortisol slopes were out of range for human populations (thus rendering the assays suspect).

Measures

Health assessment. Participants provided their age as well as their height and weight (which we used to calculate BMI). Consistent with past research, age and BMI were included as covariates in all cortisol analyses (Adam & Kumari, 2009). Furthermore, we asked female participants whether or not they used birth control, which we also controlled

for in cortisol analyses given that birth control can affect cortisol levels (Kirschbaum et al., 1999).

Daily understanding

To assess daily feelings of understanding, participants answered four different items each day. Specifically, they reported the extent to which their partner made them feel (1) understood, (2) valued, (3) cared for, and (4) validated on a 5-point scale (1 = *not at all*; 5 = *extremely*; $\alpha = .89$)

Daily misunderstanding

To assess daily feelings of misunderstanding, participants were asked to report the extent to which their partner made them feel misunderstood that day on a 5-point scale (1 = *not at all*; 5 = *extremely*).

Daily stress

Participants indicated how stressful their day was on a 5-point scale (1 = *not at all*; 5 = *extremely*). In addition to using daily perceptions of stress as an outcome variable, and consistent with past research (Crockett & Neff, 2013), we used daily stress as a control variable in all cortisol analysis.

Daily motivation

Participants' daily motivation was assessed using a single item which asked "Overall, how motivated were you to achieve your goals today?". Participants responded on a 5-point scale ranging from 1 (*Not at all*) to 5 (*Extremely*).

Daily life satisfaction

We used a single item to assess participants' daily life satisfaction: "How satisfied are you with your life today?" Participants responded on a 5-point scale ranging from 1 (*Not at all*) to 5 (*Extremely*).

Diurnal cortisol slopes

Saliva samples were assayed in the Dresden LabService laboratory to determine cortisol levels, which are reported in nmol/L (nanomoles per liter). All samples were frozen at -20°C until they were mailed overnight to Germany to be assayed. Consistent with past research (e.g., Saxbe et al., 2008), we used a natural log transformation on all cortisol values to correct for positive skewness. After we transformed the data, there were still 14 cortisol values (out of 996 total values) that were more than three standard deviations from the mean. We winsorized these values. Once outliers were addressed, we calculated

cortisol slopes by taking the difference between morning and evening cortisol values. We calculated a unique cortisol slope for each diary day.

Cortisol logs

Each time participants provided a cortisol sample, they also completed a log in which they recorded the time of the sample as well as whether or not they complied with instructions not to eat or brush their teeth an hour before the sample. Saliva collection times were included in all cortisol analyses due to the strong diurnal rhythms of cortisol (Adam & Kumari, 2009). We also accounted for whether or not participants followed instructions not to eat or drink prior to providing their saliva sample.

Analytic strategy

In the data for this study, diary day (level 1) was nested within individuals (level 2). Thus, independence of data points could only be assumed to exist from individual to individual. Therefore, we again used MLM to account for the fact that day was repeated within participants. Consistent with past work, we used the restrictive maximum likelihood method of estimation (Raudenbush & Bryk, 2002). Because we were using daily diary data, we used an autoregressive covariance type which has been commonly used in diary data (Bollen & Curran, 2004). Understanding and misunderstanding were moderately correlated with each other ($b = -.336, p < .001$). Similar to Lun et al., 2008, we ran our models with both understanding and misunderstanding as predictors of our four outcomes variables (i.e., motivation, stress, satisfaction, and diurnal cortisol). Having both understanding and misunderstanding in the same model allowed us to look at the independent contributions of understanding and misunderstanding on our outcome variables and to compare the size of their associations with each of our outcomes. Then we ran our models with understanding and misunderstanding as separate predictors.

Study 2 results and discussion

(Mis)understanding and self-reported outcomes. In order to determine whether understanding and misunderstanding predicted daily fluctuations in motivation, overall stress, and life satisfaction, we ran a mixed model ANOVA in which understanding and misunderstanding were entered as predictors of motivation (see Table 3). In these models, we controlled for diary day. Understanding was associated with higher levels of motivation, $b = .15, SE = .06, t(478.84) = 2.38, p = .018, CI(.03, .27)$,³ whereas misunderstanding was not associated with motivation, $b = -.06, SE = .051, t(458.07) = -1.08, p = .279, CI(-.16, .04)$. Further, misunderstanding was associated with higher levels of overall stress, $b = .22, SE = .06, t(475.52) = 3.84, p < .001, CI(.11, .33)$. By contrast, understanding was not associated with overall stress, $b = .03, SE = .07, t(480.86) = .45, p = .655, CI(-.10, .17)$. Finally, misunderstanding was associated with decreases in life satisfaction, $b = -.14, SE = .04, t(419.52) = -3.95, p < .001, CI(-.21, -.07)$, whereas understanding was associated with increases in life satisfaction, $b = .24, SE = .04, t(451.41) = 5.33, p < .001, CI(.15, .32)$.

Table 3. Results of Study 2 mixed models analyses with the understanding and misunderstanding in the same model.

	Intercept	<i>b</i>	<i>SE</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>CI</i>
Stress	1.99						
Understanding		0.03	.07	480.86	0.45	.655	−0.10 to 0.17
Misunderstanding		0.22	.06	475.52	3.84	<.001	0.11 to 0.33
Motivation	2.72						
Understanding		0.15	.06	478.84	2.38	.018	0.03 to 0.27
Misunderstanding		−0.06	.05	458.07	−1.08	.279	−0.16 to 0.04
Life satisfaction	3.12						
Understanding		.23	.04	451.41	5.32	<.001	0.15 to 0.32
Misunderstanding		−0.14	.04	419.52	−3.95	<.001	−0.21 to −0.07

Table 4. Results of Study 2 mixed models analyses with the misunderstanding and understanding entered in separate models.

	Misunderstanding						
	Intercept	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>CI</i>
Stress	2.13	0.21	.05	477.50	4.16	<.001	0.11 to 0.30
Motivation	3.37	−0.11	.04	455.42	−2.56	.011	−0.20 to −0.03
Life satisfaction	4.16	−0.23	.03	414.19	−7.35	<.001	−0.30 to −0.17
	Understanding						
	Intercept	<i>B</i>	<i>SE</i>	<i>Df</i>	<i>t</i>	<i>p</i>	<i>CI</i>
Stress	2.89	−0.10	.06	481.89	−1.64	.102	−0.22 to 0.02
Motivation	2.49	0.18	.05	480.79	3.37	<.001	0.08 to 0.29
Life satisfaction	2.52	0.33	.04	459.62	8.30	<.001	0.25 to 0.40

We then ran these models again, but this time, we ran two separate mixed model ANOVAs in which either understanding or misunderstanding was entered as a predictor of motivation, overall stress, or life satisfaction (see Table 4). In all models, we controlled for diary day. When understanding and misunderstanding were entered in separate models, misunderstanding was associated with lower levels of motivation, $b = -.11$, $SE = .04$, $t(455.42) = -2.56$, $p = .011$, $CI(-.20, -.03)$, whereas understanding was associated with higher levels of motivation, $b = .18$, $SE = .05$, $t(480.79) = 3.37$, $p < .001$, $CI(.08, .29)$.⁴ Misunderstanding was associated with higher levels of overall stress, $b = .21$, $SE = .05$, $t(477.50) = 4.16$, $p < .001$, $CI(.11, .30)$, whereas understanding was not associated with overall stress, $b = -.10$, $SE = .06$, $t(481.88) = -1.64$, $p = .102$, $CI(-.22, -.02)$. Finally, misunderstanding was associated with lower levels of life

Table 5. Results of Study 2 mixed models analyses with understanding and misunderstanding predicting cortisol.

	Understanding					
	<i>b</i>	<i>SE</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>CI</i>
Intercept	0.36	.42	205.75	0.87	.386	−0.46 to 1.19
Day	−0.01	.01	274.31	−0.54	.591	−0.04 to 0.02
AM cortisol	0.01	.00	392.46	6.66	<.001	0.01 to 0.02
AM time	0.08	.36	434.84	0.23	.822	−0.63 to 0.79
PM time	−0.18	.17	315.35	−1.06	.289	−0.50 to 0.15
BMI	0.02	.01	86.91	2.03	.045	0.00 to 0.05
Age	0.00	.01	91.42	0.23	.822	−0.01 to 0.02
Birth control	−0.00	.07	86.89	−0.01	.994	−0.14 to 0.14
AM brush teeth	−0.14	.14	354.09	−1.03	.305	−0.42 to 0.13
PM brush teeth	0.26	.12	334.55	2.08	.038	0.01 to 0.50
AM eat food	0.03	.12	324.46	0.24	.811	−0.21 to 0.27
PM eat food	0.00	.07	370.86	0.02	.988	−0.14 to 0.14
Overall stress	0.04	.02	393.45	2.26	.025	0.01 to 0.07
Misunderstanding	−0.06	.02	370.58	−2.87	.004	−0.10 to 0.02
Understanding	−0.02	.03	423.60	−0.75	.453	−0.07 to 0.32

satisfaction, $b = -.23$, $SE = .03$, $t(414.19) = -7.35$, $p < .001$, $CI(-.30, -.17)$, whereas understanding was associated with higher levels of life satisfaction, $b = .33$, $SE = .04$, $t(459.62) = 8.30$, $p < .001$, $CI(.25, .40)$.

(Mis)understanding and cortisol. In order to determine whether understanding and misunderstanding predicted daily cortisol slopes, we ran a mixed model ANOVA in which understanding and misunderstanding were entered as predictors of cortisol slopes (morning cortisol scores – evening cortisol scores). Because these models were predicting cortisol outcomes, in addition to diary day we also controlled for morning cortisol samples, the time that the morning and evening cortisol samples were collected, BMI, age, women's use of birth control, and whether or not participants ate or brushed their teeth prior to providing their morning and evening saliva sample. Consistent with past work (Crockett & Neff, 2013), we also controlled for perceived stress.⁵ As can be seen in Table 5, participant's reports of feeling understood by their partners did not predict their cortisol slopes, $b = -.02$, $SE = .03$, $t(423.60) = -.75$, $p = .453$, $CI(-.07, .03)$. However, as predicted, there was a significant association between misunderstanding and cortisol slopes, $b = -.06$, $SE = .02$, $t(370.58) = -2.87$, $p = .004$, $CI(-.10, -.02)$. On days when individuals felt more misunderstood by their partners, they also had shallower (i.e., less healthy) cortisol slopes than they did on days when they felt less misunderstood. Similar to our self-report outcomes, we reran these models using the same controls, but this time we entered understanding and misunderstanding separately in two different models. Misunderstanding remained a significant predictor of cortisol slopes, $b = -.05$, $SE = .02$,

$t(378.26) = -2.85, p = .005, CI(-.09, -.02)$. Feelings of understanding still did not predict cortisol slopes, $b = .02, SE = .02, t(431.55) = 0.71, p = .476, CI(-.03, .06)$.

General discussion

We were interested in whether understanding and misunderstanding would predict individuals' outcomes and whether the effects of misunderstanding would be more consistent than the effects of understanding. Our results were mixed. Study 1, which experimentally manipulated feelings of understanding and misunderstanding in stranger dyads, found that a conversation which led to feelings of misunderstanding was associated with more negative outcomes than a typical interaction comparison group. By contrast, a conversation which led to feelings of understanding did not differ from a typical interaction comparison group. That is, in Study 1, there were no differences in satisfaction, motivation, or performance for individuals in the understanding vs. typical interaction condition. The misunderstanding condition, however, consistently showed more negative outcomes for the individual.

In Study 2, which investigated daily fluctuations of feeling understood and misunderstood in already established couples, both feeling understood and misunderstood predicted individual psychological outcomes. Feeling understood predicted life satisfaction and motivation, whereas feeling misunderstood predicted life satisfaction and perceived stress. Feeling misunderstood alone predicted individual physiological outcomes (i.e., diurnal cortisol). It is particularly noteworthy that diurnal cortisol was only predicted by feeling misunderstood; even when understanding was entered into the model without misunderstanding, it did not predict physiological outcomes. Given diurnal cortisol's role in predicting long-term health outcomes such as adrenal fatigue (Roberts et al., 2004), this finding is particularly important. To date, no other study has considered the role of feeling misunderstood in predicting health outcomes, and only one other study has considered the role of feeling understood (or responsiveness) in predicting physiological outcomes (Slatcher et al., 2015).

One reason understanding might have predicted motivation and life satisfaction in Study 2 but not in Study 1 is because we collected the data for Study 2 in already established relationships as opposed to stranger dyads. Consistent with the Pollyanna principle, which states that people generally are more positive as opposed to negative in their interactions, when someone is negative in an interaction, it seems odd (Jing-Schmidt, 2007) and not in line with social convention (e.g., politeness theory, Brown & Levinson, 1987). This may be particularly true in newer or less intimate relationships. As such, it makes sense that in Study 1, where we had stranger dyads, understanding would have been the default expectation for social interactions and that when someone was misunderstanding, it had particularly profound and negative consequences. This default expectation for understanding may change when in the context of close relationships, where we expect and have experienced that our partners will misunderstand us from time to time. Although it still seems that negative interactions are taking a stronger physiological toll, perhaps the expectation that misunderstanding could occur minimized its effects on psychological outcomes. Future research should investigate this possibility.

So what does that mean for the idea that “the bad is stronger than the good,” a recurring phenomenon in which negative effects tend to be more pronounced than positive effects in studies across all fields (Baumeister et al., 2001)? In Study 1, misunderstanding was a more reliable predictor of individuals’ outcomes than was understanding. In Study 2, we see both understanding and misunderstanding predicting psychological health outcomes. Still, it is only misunderstanding that predicts physiological health consequences. Indeed, if our results are replicated in future studies, it could be that feeling misunderstood hurts individuals’ health more than feeling understood helps their health. At a minimum, it does seem clear that understanding is not simply the opposite of misunderstanding, but that these two measures (at times) have distinct consequences and thus should be studied independently (e.g., Cahn & Shulman, 1984).

Strengths and limitations

The current findings must be considered in light of our study’s limitations. First, the composition of the samples is highly homogenous; the sample consisted primarily of White women. Thus, the samples are not representative of the general population and limit the applicability of the results. Having said that, the use of a Dutch sample did extend past findings on the relationship between misunderstanding and motivation; we found a negative association between misunderstanding and motivation that had previously only been found in an Asian American (but not European American) sample (Lun et al., 2010). Second, our utilization of self-administered cortisol sample collections means the quality of our cortisol samples are subject to participants’ compliance with instructions (e.g., not to eat or brush their teeth an hour before the sample). We did ask participants about compliance and controlled for a lack of compliance in our analyses. Still, relying on participants to provide their own saliva samples no doubt increased error variance compared to what it would have been in a controlled laboratory setting. Finally, our experimental study did not control what happened in our comparison group. Because we wanted to compare understanding and misunderstanding to typical interactions, we allowed participants to interact without any instructions. We feel this protocol improved the external validity of our study because participants’ experience more closely mirrored what happens in everyday life. Still, because there were no instructions, it is possible that participants may have said things that provoked feelings of understanding or misunderstanding in our typical interaction condition. Importantly, participants perceived understanding was higher in the understanding condition than the typical interaction condition and lower in the misunderstanding condition than in the typical interaction condition. Because of this, we feel comfortable using the typical interaction condition as a comparison group. Still, future research should replicate our experiment using a true control group.

Despite these limitations, our research also has significant strengths. First, we had exceptionally high compliance rates for our diary study, with all of our participants completing every diary prior to noon the following day. This timely data collection improves the accuracy of the self-reports. Also, our multi-method approach (using

experimental and longitudinal data) increases our confidence in both the internal and external validity of our findings.

Future directions

Our findings create exciting avenues for future research. First, our results highlight the need to include measures of misunderstanding in relationship research as opposed to only measuring understanding (Cahn & Shulman, 1984). That is, our findings suggest that misunderstanding has impacts above and beyond low levels of understanding. This begs the question of whether we should consider the orthogonality of relationship constructs more broadly (cf. Brooks & Dunkel Schetter, 2011; Caughlin & Huston, 2006). For example, perceiving a lack of closeness in the relationship may be something different than perceiving distance. Similarly, scoring low on partner-specific trust may have different consequences than scoring high on partner-specific distrust. Using two independent scales to measure such constructs could lead to exciting new insights.

Future research should explore whether misunderstanding moderates the link between negative relationship events (e.g., conflict) and health. Past work has shown that understanding moderates the association between self-disclosure and health; that is, self-disclosure only improves health if met with a responsive partner (Imami et al., 2019). Just as understanding moderated the association between positive relationship events and health, it logically follows that misunderstanding could moderate the association between negative relationship events and health. For an example, a conflict may only have negative consequences if the partner is perceived as misunderstanding.

Conclusion

Our study investigated the role of understanding and misunderstanding in predicting psychological and physiological outcomes. The pattern of results across our two studies suggests that misunderstanding is an important construct to explore more fully in the relationship literature. Above and beyond not fully understanding someone, misunderstanding has unique (and perhaps more impactful) consequences.

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Supplemental material

Supplemental material for this article is available online.

Notes

1. During the preparation time, we placed sensors on the participants' hands to measure their skin conductance. We included these as a physiological measure of stress. Unfortunately, the sensors did not work, so we could not report on their data. However, we continued to use the sensors for every participant to keep the procedure equivalent.
2. We ran all analyses reported for Study 2 excluding the 60 diaries that were completed the next day. When we ran the analysis on these 486 responses, our results remained the same.
3. As can be seen in our supplemental analysis, when we control for relationship satisfaction in this model, understanding is no longer a significant predictor of motivation, $b = .04$, $SE = .07$, $t(448.78) = .56$, $p = .575$, $CI(-.10, .18)$.
4. When we control for relationship satisfaction, neither understanding [$b = .06$, $SE = .07$, $t(446.03) = .86$, $p = .392$, $CI(-.07, .19)$] nor misunderstanding [$b = -.04$, $SE = .05$, $t(455.20) = -.93$, $p = .353$, $CI(-.14, .05)$] predicted motivation.
5. When running this same model without controlling for perceived stress, the pattern of results remains identical.

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