

Emotion and support perceptions in everyday social interaction: Testing the “less is more” hypothesis in two cultures

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Abstract

The study examined emotional experience and perceived social support during naturally occurring social interactions in Greece and Britain. Multilevel analyses found that people in Greece (a more interdependent culture) perceived less support and experienced less positive and more negative affect in social interactions than those in the UK (a more independent culture). Positive relationships between positive affect and perceptions of support were stronger in Greece than in the UK. Global perceptions of social support did not differ between the two samples, and global perceptions were weakly related to perceived support in interaction. The results support the “less is more” hypothesis (Oishi, S., Diener, E., Choi, D. W., Kim-Prieto, C., & Choi, I. (2007). The dynamics of daily events and well-being across cultures: When less is more. *Journal of Personality and Social Psychology*, 93, 685-698) concerning cultural differences in social support and distal and proximal antecedents of interaction-level relational processes.

Keywords

affect, culture, emotion, social interaction, social support, well-being

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Similarly to other socially – or relationally – embedded phenomena, social support is best understood from a multilevel perspective within which such phenomena are conceptualized as nested within interactions, relationships, groups, and cultures (e.g., Hinde, 1995; Sarason & Sarason, 2009). As part of an increasing interest in cross-cultural differences in relational processes, considerable attention has been paid to cultural differences in social support processes, most notably differences in support in countries with high or low collectivist values (e.g., Kim, Sherman, & Taylor, 2008; Taylor et al., 2004). Although such multilevel frameworks have been discussed for some time, few studies have been conducted that have examined social support processes within such a framework. The present study extends this line of research by examining how culture may influence social support perceptions in naturally occurring social interactions *directly*, but also *indirectly*, through influencing factors proximal to support perceptions. In particular, we focused on cultural differences in proximal influences of emotional experience on support perceptions.

The hypotheses regarding cultural patterns in the relationship between emotional experience and social support (culture's indirect effects on support perceptions) were motivated by the "less is more" hypothesis (e.g., Oishi, Diener, Choi, Kim-Prieto, & Choi, 2007). Oishi et al. found that in more collectivist societies in which daily positive experiences were less common, relationships between daily positive experiences and daily life satisfaction judgments were stronger than they were in a more individualist society in which daily positive events were more common. They reasoned that in interdependent cultures a positive event is more "powerful" in its impact on satisfaction judgments by its mere "novelty." We extended this logic to relationships between emotional experience and social support in social interactions based also on research that people in collectivist societies experience less positive emotion in their day-to-day life and relationships (e.g., Matsumoto et al., 2008). We reasoned that relationships between emotion¹ and support would be stronger in a society in which people experienced less positive emotion and less support in social interaction than in a society in which people experienced more positive emotion and more support.

The present study was designed to examine three questions regarding cultural differences in emotional experience and perceptions of social support. (1) Do people who live in countries characterized by a more interdependent structuring of the self perceive less support in their daily social interactions than people living in countries with a more independent structuring of the self? (2) Do people who live in countries characterized by a more interdependent structuring of the self perceive less positive emotion in their daily social interactions than people living in countries with a more independent structuring of the self? (3) As discussed previously, do relationships between emotion and support perceptions vary across cultures in ways that are consistent with the "less is more" hypothesis? Are relationships between positive emotional experience and perceived support stronger (positive emotion more influential) in interdependent cultures, compared to independent cultures, given that the positive emotion people experience (and expect) in social interaction in interdependent cultures tends to be lower? Answers to these questions can inform discussions regarding cross-cultural differences in social support processes (e.g., Kim et al., 2008; Uchida, Kitayama, Mesquita, Reyes, & Morling, 2008).

Cultural differences in social support

In cultures with individualist values, people define themselves independently of others, whereas in more collectivist cultures, people define themselves more in terms of their relationships with others (Oysermann, Coon, & Kimmelmeier, 2002). Such a relational element has been an important influence on research and theorizing about cultural differences in social support. Initially, theorists focused on the importance of close supportive relationships in collectivist cultures that promote an interdependent sense of self (e.g., Markus & Kitayama, 1991). Initial evidence, based on global self-report measures within different cultures (but not explicitly addressing cross-cultural differences in social support) suggested that people in interdependent cultures had greater needs for affiliation (Hui & Villareal, 1989) and reported closer and more supportive networks (Triandis, Bontempo, & Villareal, Asai, & Lucca, 1988) than individuals in independent cultures. This research led Triandis (2000) to conclude that “collectivism is associated with high levels of social support” (p. 29).

Nevertheless, studies that have explicitly addressed cultural differences in social support have not always found such differences. For example, using a global measure of social support, Goodwin and Plaza (2000) found no differences in social support between UK and Spanish samples (more individualist versus more collectivist, respectively). Moreover, differences in the opposite direction (i.e., more support in independent versus interdependent cultures) is suggested by more recent research on seeking social support practices when coping with stress. In a series of studies, Taylor, Kim, and colleagues (Kim, Sherman, Ko, & Taylor, 2006; Taylor et al., 2004) found that Asians and Asian Americans were less likely than European Americans to use social support to cope with stress. The authors reasoned that people from interdependent cultures may seek support less than people from independent cultures because they are more concerned about maintaining social harmony in their relationships. Within this framework, seeking support is seen as demanding and imposing one’s troubles upon others.

However, Uchida et al. (2008) argued that the cultural differences in social support found by Kim and colleagues may have been due to how they defined social support, that is, as a means of coping with stress. In a recent review, Kim et al. (2008) discussed the possibility that cultural differences in perceived (or implicit) social support may not be the same as the cultural differences in support elicitation. Taken together, the above studies call for research that examines cross-cultural differences in *perceived social support*.

The present study was designed to address the issues raised by Kim et al. (2008) and Uchida et al. (2008) in an ecologically valid way by examining cultural differences in support perceptions in naturally occurring social interactions. We approached social support as perceptions or experiences of care, value, and assistance from others or from one’s own social network (Cutrona, 1986) in social interaction, because social support primarily occurs within the context of social interaction. The role of context in the support process has been stressed by some (e.g., Badr, Acitelli, Duck, & Carl, 2001; Sarason, Sarason, Shearin, & Pierce, 1994), but empirical work, particularly work taking into account cultural differences in the interpersonal context, is scant.

Cultural differences in emotion in social interaction

The present study extends existing research also by examining cultural differences in the proximal context of support perceptions to do with emotion experience. There is accruing evidence suggesting that cultural values and rules that are associated with regulating relationships (e.g., harmony, egalitarianism, embeddedness) are related to the suppression of emotion intensity in cultures high on interdependence (Matsumoto et al., 2008). Similarly, members of interdependent cultures have been shown to suppress their emotions more in face-to-face social interactions than members of independent cultures (Butler, Lee, & Gross, 2007). Suppression of emotion may be one factor associated with a reduced quality of social interaction and positive affect in more collectivist cultural contexts than some research has found.

Although relatively little research has examined cultural differences in emotional experience in social interaction per se, the available research suggests that positive emotion is experienced less frequently and less strongly in interdependent than in independent cultures. At the intrapersonal level, individualist values and independent self-construal have consistently been found to be associated with more intense and more frequent positive affect, whereas interdependent views of the self have been found to be associated with lower positive affect (Diener, Diener, & Diener, 1995). In a recent meta-analysis, individualism was positively related to positive affect and emotion across different cultures (Van Hemert, Poortinga, & Van de Vijver, 2007). In an event-sampling study, Scollon, Diener, Oishi, and Biswas-Diener (2004) found that people experienced more positive emotional intensity in independent compared to interdependent cultures. Similarly, in a daily diary study, Nezlek et al. (2008) found that Japanese participants reported lower positive emotion than North American participants (USA and Canada).

Affect and support perceptions in social interaction

Although social support may be shaped directly by distal influences, such as cultural values, it can also be shaped by proximal aspects of social interaction, such as emotional experience. The present study focused on the affective component of social interaction, perhaps the most important dimension of social interaction (Darwin, 1872/1965; Forgas, 2001). Affect should be distinguished from discrete emotions in that discrete emotions concern affective reactions in relation to one's goals (Frijda, 1986), whereas affect refers to an overarching positive or negative valence of one's feelings. Affect is conceptualized as a more global construct, encompassing numerous specific emotions (Russell & Carroll, 1999) and is closely linked to action tendencies, as well as to physiological/behavioral indices of arousal (Cacioppo & Bernston, 1999).

Positive and negative affect in social interaction can influence and shape cognitions and perceptions during the encounter (Forgas, 2001). Along these lines, the affect as information theory suggests that affective experiences inform peoples' judgments (Schwarz & Clore, 1983), and this can generalize to perceiving others as supportive or not (Burlinson & Planalp, 2000). Burlinson and Planalp argue that models of how mood may influence message construction demonstrate that such effects occur. For example, MacGeorge (2001) found that changes in support providers' sympathy or irritation led to

an increase or a decrease (respectively) in communicative goals related to social support (feeling understood, sympathetic, feeling better).

Moreover, as states of action readiness (“the individual’s readiness or unreadiness to engage in interaction with the environment,” Frijda, Kuipers, & ter Schure, 1989, p. 213), positive and negative affect can have affiliative or socially distancing functions, and these functions can influence perceived support indirectly, through shaping the behavior of the other person. For example, Iida, Seidman, Shrout, Fujita, and Bolger (2008) found that support providers’ anxious mood was an important predictor of support in couples’ interactions. Therefore, it is logical to expect that in social interactions positive affect will lead to more support perceptions and negative affect to lower perceptions of other persons as supportive.

It is noteworthy that, partly as a result of examining social support as a type of disposition, few studies have examined social support as a consequence rather than a cause of social processes, despite long-standing calls for such an examination (e.g., House, Landis, & Umberson, 1988). In this regard, it is important to note that within-person relationships (such as we examined in this study) are mathematically independent of between-person relationships (e.g., Nezlek, 2003), the level of analysis used in the vast majority of studies. Furthermore, between- and within-person relationships between similar constructs may represent meaningfully different psychological processes (Affleck, Zautra, Tennen, & Armeli, 1999). Nevertheless, perceptions of support may also lead to emotional outcomes (e.g., Uchida et al., 2008), but in its design and rationale the present study focused on the emotional antecedents of perceived support. We address this issue in the discussion section.

The “less is more” hypothesis

Examining social interaction phenomena with a repeated measures event-sampling design allows testing hypotheses regarding proximal correlates of support perception not easily addressed with other methods. The rationale is informed by the “less is more” hypothesis on cultural differences in relationships between positive events and judgments of life satisfaction (Oishi et al., 2007). Using a repeated measures (daily) design, Oishi et al. found that in life satisfaction judgments, relationships between positive events and those judgments were more apparent in cultural contexts in which positive events were less common. Oishi et al. (2007) reasoned that in their judgments and evaluations, participants in cultural contexts in which positive events are less salient (i.e., interdependent cultures) are influenced by the novelty of positive events via a process similar to that suggested by Taylor (1991) for explaining reductions in the influence of negative events: unexpected positive events or memories have a disproportionate influence on subsequent evaluations in comparison to negative events or memories (the minimization effect). The effect cannot be observed in studies using trait-level questionnaires, since evaluations concern a longer period of time and it is not possible to assess change in relationships between possible cognitive or affective antecedents to those evaluations.

Similarly, we expected that if social interactions are less positive in affective terms in independent cultures (as previously discussed research suggests), according to the “less

is more” hypothesis, relationships between positive affect and support perceptions will be stronger in interdependent cultures. Unexpected positive events or memories will have a disproportionate influence on subsequent evaluations in comparison to negative events or memories. More positive emotion in those cultural contexts will be associated with an increase in perceptions of others as more supportive.

The present study

The present study included samples from two countries (Greece and the UK) that are known to differ in cultural constructions of the self corresponding to more interdependent and more independent, respectively (see Hofstede, 2001). Using a variation of the Rochester Interaction Record (Wheeler & Nezlek, 1977), participants described the positive and negative emotions they felt in their daily social interactions, and they described the social support they believed was available to them from the person with whom they were interacting each time. They also provided a retrospective measure of global social support, the type of measure used in most previous research.

Beyond allowing testing relationships between social interaction components, this data-intensive method has significant advantages over global, single-time assessments. As discussed by Reis and Gable (2000), the types of global, single assessment measures that have typically been used in the past are prone to various biases. For example, Reis and Gable discussed how recent experiences are generally recalled better than temporally distant ones and may therefore influence retrospective reports more than temporally distant experiences and how more distinctive, important, and personally relevant experiences are likely to influence retrospective reports more than more common or mundane experiences will. See Robinson and Clore (2002) for similar cautions about global, retrospective reports of emotion. In addition to providing a more accurate description of social support processes than the descriptions provided by global, retrospective measures (Bolger, Davis, & Rafaeli, 2003), the intensive repeated measures design we adopted allowed us to test Oishi et al.’s (2007) “less is more” hypothesis about social interaction-level phenomena in the two cultural contexts.

Aims and hypotheses

The focus of our study was to examine how culture informs support perceptions directly and through influencing proximal facets of emotion experience in social interactions. In terms of formal hypotheses, we expected that both social support perceptions and positive affect would be lower in the more interdependent cultural context (Greece) than in the more independent (UK) cultural context (Hypothesis 1). We expected positive relationships between positive affect and support perceptions and negative relationships between negative affect and support perceptions (Hypothesis 2). Provided that supportive evidence for H1 and H2 were found, our third hypothesis posited that relationships between affect and support perceptions would be consistent with the “less is more” hypothesis. Namely, relationships between positive affect and support perceptions will be stronger in the more interdependent culture (Greece) than in the more independent

culture (UK) (more positive affect will lead to more support perceptions in Greece). We did not have specific hypotheses regarding the relative impact of positive and negative affect and support perceptions.

We also wanted to examine how cultural differences in perceived social support might vary as a function of how support was measured and so we included single assessment, global measures of social support. Given the lack of relevant theory and research, we examined the influence of method of assessment on cultural differences somewhat speculatively.

Method

Participants

Participants were 49 university students from a national university in south Greece (32 women and 17 men, mean age = 22.1, $SD = 2.2$) and 23 British university students from a university in south-east England (19 women and 4 men; mean age = 22.9, $SD = 6.4$). Participants were all of Greek and of British ethnic background, respectively, and none was a member of an ethnic minority. Participants were recruited through posters and calls in lectures with no monetary or course credit offered as compensation.

In terms of defining Greece as a more interdependent culture than the UK, we relied primarily upon the work of Hofstede (2001). Nevertheless, our participants also completed the Self-Construal Scale (Singelis, 1994), a measure of individual-level independence and interdependence. A comparison of mean interdependence scores for the two samples (controlling for differences in the number of men and women in the two samples) found that Greek participants were more interdependent than UK participants (Greece, $M = 4.68$, $SE = .08$, UK, $M = 4.42$, $SE = .10$, $F(1, 71) = 4.16$, $p < .05$). There were no significant differences in independent self-construal.

Measures

All measures were translated into Greek by a native Greek speaker and back-translated into English by another translator. A few items were adapted to enhance the naturalism of the translations. Social support was assessed with the short-form social support questionnaire (SSQ6; Sarason, Sarason, Shearin, & Pierce, 1987). For each of six questions, participants listed all those who can provide support of the type described in the question (min. 0, max. 9), and they indicated how satisfied they were with that support (on a six-point scale). Hence, the scale provides a measure of size of support network and global satisfaction with support.

Procedure

All participants attended introductory sessions in groups of 7–10, where they completed a set of questionnaires and were briefed about the diary study, which they were told was about emotion in daily social interaction. Instructions for maintaining the RIR were modeled after those introduced by Wheeler and Nezlek (1977). Participants were told to use the RIR to describe every social interaction they had that lasted 10 minutes or longer.

An interaction was defined as any encounter in which the participants attended to one another and adjusted their behavior in response to one another. They were instructed to fill out the forms as soon as possible after an interaction and received additional guidelines (e.g., how to describe the other persons present in the interaction).

For every social interaction participants had, they rated their emotional experience using 10 adjectives in response to the statement “*during the course of the encounter I felt . . .*,” using seven-point scales with endpoints labeled “not at all” and “very much.” Positive affect was measured with five items (happy, enthusiastic, relaxed, attentive, and active) that were averaged to form a single measure (reliability = .59), and negative affect was also measured with five items (anxious, distressed, sad, angry, and rejected) that were averaged to form a single measure (reliability = .68). Interaction-level reliabilities were estimated using three-level models in which responses (items) were nested within occasions (interactions), which were then nested within persons (see Nezlek, 2011).

Participants subsequently answered nine questions assessing social support perceptions. These included *emotional* support “Do you feel s/he has provided you with valuable emotional support;” *practical* support “Do you feel s/he has provided you with valuable practical support;” and support *satisfaction* “How satisfied were you with the support s/he provided.” Six questions were adapted from the SSQ6, such as “Is s/he a person you can really count on to distract from worries when you feel under stress.” The responses to these six questions were averaged to create a support *reliance* measure (reliability = .81). For the social support questions we used seven-point scales with endpoints labeled “not at all” and “very much.” When more than one other person was present in an interaction, participants were told to answer these questions in terms of the person in the interaction who was the most important to them.

Greek participants were asked to maintain the diary for 10 days, and they described a total of 1235 interactions over an average of 8.7 days, mean per day = 2.96, $SD = 1.35$. UK participants were asked to maintain the diary for two weeks, and they described a total of 905 interactions over an average of 11.2 days, mean per day = 3.57, $SD = 1.69$. Note that the multilevel analyses we report below took into account individual (and by extension, country-level) differences in the number of interactions participants described. In terms of the types of relationships participants reported, in the Greek sample, social interactions occurred with family members (11.9%), acquaintances (20.8%), friends/close friends (45%), and best friends/partners (22%). In the UK sample the equivalent distribution was: family members (23.3%), acquaintances (13.6%), friends/close friends (33.1%) and best friends/partners (29.9%). We also measured social support by using a single assessment measure, the SSQ6 (Sarason et al., 1987), which includes two subscales: number of supportive persons (Greece alpha = .84, UK alpha = .74) and satisfaction with social support (Greece alpha = .67, UK alpha = .73).

Results

The data from this study constituted a nested data structure in which interactions were treated as nested within people, and the data were analyzed using a series of multilevel random coefficient models (Nezlek, 2003). The primary analyses were two-level models

Table 1. Multilevel summary statistics

	Mean	Variance	
		between persons	within persons
Emotional support	3.88	.79	2.46
Practical support	3.85	1.07	2.42
Support satisfaction	3.88	.79	2.45
Support reliance	4.50	.83	2.31
Positive affect	4.05	.74	.91
Negative affect	1.83	.30	.93

in which interactions were the level 1 units of analysis, and people were the level 2 units. All the analyses reported below were also conducted with participant sex included at level 2. Adjusting for participant sex did not change the results of the analyses, and in the interest of parsimony, we present the results of the analyses without participant sex. To provide a context for understanding the present results, descriptive statistics for the interaction measures were estimated by a series of *unconditional* models. In these models, there were no predictors at either level 1 or level 2. These analyses provided estimates of the mean for each measure, and, more importantly, they provided estimates of the within-subject (level 1, the interaction-level) and between-subject (level 2) variances. These descriptive statistics are presented in Table 1.

The model is below. In these analyses there were i observations of dependent measure y (a measure of support) nested within j persons. The mean for each of j persons is represented by the β_{0j} coefficient:

$$y_{ij} = \beta_{0j} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

Country-level differences in means of interaction-level measures

To test our first two hypotheses, we examined differences between our Greek and UK samples in means of our interaction measures. Such differences were examined at level 2 with the following model:

$$y_{ij} = \beta_{0j} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{UKGR}) + U_{0j}$$

Differences between Greece and the UK were examined at level 2 (the person level) using a contrast-coded variable (Greece = 1, UK = -1). This variable was entered uncentered. A significant γ_{01} coefficient meant that the means for the two countries differed. The results of these analyses, including estimated means for each sample, are summarized in Table 2. As expected, these analyses found that compared to UK participants,

Table 2. Interaction measures by country

	Coefficient	t	Means	
			Greece	UK
Emotional support	-.28	2.76**	3.70	4.25
Practical support	-.33	2.98**	3.63	4.31
Support satisfaction	-.36	3.33**	4.14	4.86
Support reliance	-.22	2.05*	4.35	4.80
Positive affect	-.46	5.02**	3.74	4.66
Negative affect	.13	2.12*	1.92	1.66

Note: * $p < .05$, ** $p < .01$

Greek participants reported lower levels on all measure of social support, and they reported less positive and more negative affect.

Within-person relationships between affect and social support. Within-person relationships between affect and social support were examined by including measures of positive and negative affect at level 1. Measures of affect were entered group-mean centered. Following guidelines suggested by multilevel modelers (e.g., Nezlek, 2008), we tested this hypothesis using a forward-stepping procedure in which positive and negative affect was entered separately, and if both were significant, they were combined into a single analysis. All slopes (the coefficients representing relationships between support and affect) were modeled as random. The model was as follows:

$$y_{ij} = \beta_{0j} + \beta_{1j}(\text{Affect}) + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

The results of these analyses were quite clear. When included in isolation, positive affect was significantly and positively related to all four measures of social support. The coefficients were: emotional support, $\gamma_{10} = .82$ ($t = 15.2, p < .001$); practical support, $\gamma_{10} = .63$ ($t = 13.2, p < .001$); support satisfaction, $\gamma_{10} = .82$ ($t = 15.2, p < .001$); and support reliance, $\gamma_{10} = .59$ ($t = 10.3, p < .001$). In contrast, when included in isolation, negative affect was significantly and negatively related to all four measures of support. The coefficients were: emotional support, $\gamma_{10} = -.42$ ($t = 8.7, p < .001$); practical support, $\gamma_{10} = -.30$ ($t = 6.3, p < .001$); support satisfaction, $\gamma_{10} = -.50$ ($t = 10.5, p < .001$); and support reliance, $\gamma_{10} = -.30$ ($t = 5.2, p < .001$).

Given that positive and negative affect were significantly related to all four measures of support, we next conducted a series of analyses in which support was modeled as a function of both affect measures. These models were structurally similar to the models used to examine each measure of emotion on its own, except that there were two predictors at level 1. The results of these analyses were also quite clear. For three of the four

Table 3. Coefficients representing relationships between social support and measures of positive and negative emotion analyzed together

	Positive	Negative
Emotional support	.78***	-.08
Practical support	.63***	-.06
Support satisfaction	.73***	-.18**
Support reliance	.58***	-.05

Note: ** $p < .01$, *** $p < .001$

measures of support, emotional support, practical support, and support reliance, when positive and negative affect were included simultaneously, the relationship between support and negative affect was not significant (all p values $> .15$). In the analysis of support satisfaction, the coefficients for positive and negative affect were both significant. A test of fixed effects indicated that the relationship between positive affect and support satisfaction was stronger (in terms of absolute value) than the relationship between negative affect and support satisfaction ($\chi^2(1) = 35.2, p < .001$).² The results of these analyses are summarized in Table 3.

It should be noted that, with the exception of support satisfaction, the coefficients for positive affect in these analyses were virtually identical (differing by .01) to the coefficients estimated in the original (single-predictor) analyses.

Country-level differences in within-person relationships between affect and social support. Our third hypothesis concerned differences between our Greek and UK samples in the within-person (interaction-level) relationships between affect and social support. Given the results of the analyses in which positive and negative affect were included together as predictors of support, these analyses included only positive affect at level 1, except for support satisfaction, in which both positive and negative affect were included. Differences between the two samples were examined by including at level 2 a contrast-coded variable representing country as described previously. These models are presented below:

$$y_{ij} = \beta_{0j} + \beta_{1j}(\text{Affect}) + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{UKGR}) + U_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}(\text{UKGR}) + U_{1j}$$

Consistent with our expectations, the analyses found that relationships between positive affect and social support were stronger in the Greek sample than they were in the UK sample. The coefficient testing this difference was significant in the analyses of emotional support and satisfaction with support, and approached conventional levels of significance in the analysis of practical support. The results of these analyses are summarized in Table 4. Finally, none of the relationships between negative affect and

Table 4. Relationships between social support and positive emotion by country

	Coefficient	<i>t</i>	Greece	UK
Emotional support	.13	2.39*	.93	.66
Practical support	.08	1.72†	.71	.54
Support satisfaction	.13	2.16*	.83	.57
Support reliance	-.06	1.02	.63	.51

Note: * $p < .05$, † $p < .10$

social support were moderated by country, either when negative affect was analyzed alone or in combination with positive affect (all t values < 1).

Although there were no sharp differences between our two samples in the distribution of the types of relationships participants had with their co-interactants, we conducted a series of analyses that controlled for the type of relationship participants had with their co-interactants. This was done by adding a series of contrast-coded variables representing the presence or absence of acquaintances, family, friends, and best friends/partners. The effects we report above were not meaningfully changed when taking into account nature of relationship. All the effects that were significant remained significant (and were in the same direction), and all non-significant effects remained non-significant.

Trait-level measure of social support. We also measured social support by using a single assessment measure (Sarason et al., 1987). Consistent with some previous research, there were no significant differences between the two samples in means for the number of supportive persons subscale, Greece, $M = 22.7$, $SD = 8.4$, UK, $M = 25.7$, $SD = 6.9$, $t(71) = 1.48$, $p = .14$ or the satisfaction with social support subscale, Greece, $M = 31.4$, $SD = 3.5$, UK, $M = 30.5$, $SD = 3.7$, $t(71) = 1.00$. It is important to note that the lack of differences between the two samples on these measures contrasts with the differences that were found for all measures of social support obtained using the social interaction diary.

We also examined relationships between these global measures of social support and social support as measured by the social interaction diary. This was done using a model in which interaction measures of support were the dependent measures at level 1, and global social support was included in the model at level 2. Measures of global support were standardized prior to these analyses. These models also included a contrast variable representing the difference between the two samples and a term representing the interaction between global support and the sample. The model is below:

$$y_{ij} = \beta_{0j} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{UKGR}) + \gamma_{02}(\text{Global Support}) + \gamma_{01}(\text{UKGR} * \text{Global support}) + u_{0j}$$

The results of these analyses were quite clear. There were no statistically significant relationships between the number of supportive persons subscale and any of the four

measures of social support measured in social interaction, all t values ≤ 1 . Similarly, there were no statistically significant relationships between the satisfaction with support subscale and any of the four measures of social support measured in social interaction, at the traditional .05 level. Using a more relaxed criterion, there were positive relationships between global satisfaction with support and emotional support in interaction ($\gamma_{02} = .17$, $t = 1.64$, $p = .11$), practical support in interaction ($\gamma_{02} = .21$, $t = 1.72$, $p = .09$), and support reliance in interaction ($\gamma_{02} = .17$, $t = 1.68$, $p = .10$). Country did not moderate the above relationships in all cases (i.e., the interactive term of country by global social support was not significant).

Discussion

In line with a multilevel understanding of individual behavior nested within social interactions, relationships, and cultures (e.g., Hinde, 1995), the study addressed distal (culture) and proximal (emotional experience) correlates of social support perceptions in naturally occurring social interactions. As expected, we found that people in a more interdependent culture (Greece) perceived less social support from others (in emotional, practical, reliance, and satisfaction terms) and reported less positive and more negative affect in their daily social interactions than people in a more independent culture (UK). Also as expected, we found that affect in social interaction was associated with support perceptions. Importantly, relationships between positive affect and support perceptions in social interactions confirmed the “less is more” hypothesis (Oishi et al., 2007). Relationships between positive affect and perceived support were stronger in an interdependent culture in which social interactions were characterized by lower levels of positive affect. We discuss each of these major findings below.

Cultural differences in perceived support

Several authors have suggested that people in more collectivist or interdependent cultures should have more socially supportive social interactions than people in independent cultures (e.g., Hui & Villareal, 1989; Markus & Kitayama, 1991; Triandis, 2000). Quite clearly, our results do not support this position; we found the opposite pattern: in comparison to the UK, in social interactions in Greece people perceived other persons as providing less emotional and practical support and participants were also less satisfied and reported relying less on support. It is important to keep in mind that we obtained measures of social support from social interactions that involved the people who are the usual and likely source of social support for individuals (friends, partners, etc.). To our knowledge, ours is the first study to report cultural differences in social support as it occurs in naturally occurring social interaction, and these results inform meaningfully and in an ecologically valid fashion recent work linking the cultural structuring of the self with social support exchanges (Kim et al., 2008; Taylor et al., 2004).

The differences in means we found between our samples suggest that cultural values and the rules of social behavior associated with the independent and the interdependent self may influence not only behavior in supportive exchanges per se (Taylor et al., 2004), but also influence the perceptions of the availability of support in social relationships.

Our findings support Taylor et al.'s (2004) supposition that in interdependent cultures in which norms dictate relying upon others less in times of trouble or stress (compared to the norms in independent cultures), these norms may generalize to perceptions about how supportive others are in general. Such a possibility may constitute a socially shared "self-fulfilling prophecy" in which norms lead people to seek less support, which in turn leads them to perceive support as less available (a hypothesis that deserves addressing by future research).

These mean differences may also be important in terms of their implications for other psychological outcomes. For example, it is well-established that how much support people perceive is available to them is related more strongly to other outcomes, such as well-being, than other aspects of support, such as how much support people actually receive and their use of support (Badr et al., 2001). The mere perception of having social support can reduce stress levels even when the support has not been requested or received (Thoits, 1995). Moreover, such perceptions may influence other behaviors, such as helping behavior and organizational and institutional support.

The differences in mean levels of positive affect in social interactions between the two samples we found are consistent with results from previous studies (Scollon et al., 2004), which also found that in independent cultures in their day-to-day experience people report experiencing positive affect more intensely. Interestingly, our findings are also consistent with studies showing that individualist cultural values are associated with more positive emotion when emotions are defined intraindividually, that is, not within a relational context (e.g., Van Hemert et al., 2007). Nevertheless, to our knowledge, ours is the first study to report cultural differences in positive and negative affect intensity levels within social interactions. Taken together, the results of this and of previous studies suggest that cultural norms and values are associated with the experience of emotion both within and outside the context of social interaction. Further research is needed, however, to identify the extent to which cultural differences in the emotion people experience in their day-to-day lives is due to processes at the interpersonal and intrapersonal levels and how the two may be related.

Relationships between affect and social support

In both samples, positive affect was positively related to perceived support and negative affect was inversely related to perceived support, pointing to close links between affective components of the emotion experience and consequent perceptions (here support perceptions) in social interaction (Burlinson & Planalp, 2000; MacGeorge, 2001). More broadly, these findings are in keeping with related models of affect in social interaction as a proximal cause of cognitions and perceptions during the encounter (Forgas, 2001; Schwarz & Clore, 1983) and answer to the call for more research on emotion in social interaction (Fischer & Van Kleef, 2010). Positive emotions may "prime" other people to behave more supportively. Moreover, positive affect was the more important antecedent of support perceptions in social interaction. The difference in the strength of these relationships could also be explained by the fact that positive affect may have stronger effects at lower levels of activation than negative affect (Cacioppo & Bernston, 1999), which is the case with affect experience in the context of naturally occurring social interactions.

Cultural differences in relationships between positive affect and support perceptions: The “less is more” hypothesis

One of the important findings of the present study was that relationships between positive affect and support perceptions varied meaningfully between cultures in a fashion that was consistent with the “less is more” hypothesis (e.g., Oishi et al., 2007). Positive affect was more strongly related to support perceptions in the cultural context (Greece), where lower levels of evaluating positive affect and support were found compared to the context (UK) in which higher levels of those evaluations were found. These results suggest that, in cultures with less intense positive affect in social interactions, the significance of this factor for support perceptions may be greater than it is in cultures in which people experience more positive affect in social interaction. In line with Oishi et al.’s rationale, in interdependent cultures positive affect may be more “powerful” in its impact on support perceptions by its mere “novelty.” In the cultural context where lower expectations of positive affect exist, the existence of more positive affect in social interactions may lead to a disproportionate influence on further judgments of other persons as supportive. Unexpected positive experience or memories may have a disproportionate influence on subsequent evaluations in comparison to negative experience memories, what has been termed “the minimization effect” (Taylor, 1991).

These findings highlight possible differences between cultures in the motivational and cognitive mechanisms underlying social support perceptions. For example, implicit, culturally embedded expectations of emotion and support may influence perceptions of support in a given social interaction. Such processes may be automatic, and if they are, understanding such processes may inform our understanding of social support above and beyond the understanding we can obtain through information that is readily and consciously accessible. This “less is more” phenomenon also has obvious implications for improving social support perceptions among communities through the use of positive emotion interventions.

Theoretically, the current study attests to the importance of recognizing that social settings (at different levels of analysis) are fundamental components of any socially situated cognition, emotion, or behavior (Reis & Gosling, 2010). In contrast, we did not find that culture moderated the negative relationships between negative emotion and perceptions of social support and this can be equally explained by the minimization effect (Taylor, 1991), where more negative affect does not have the “minimizing” function that positive affect has.

Taken as a whole, the above findings may also account for the apparent disparity between research indicating that people in interdependent cultures use social support less than people in independent cultures (Taylor et al., 2004), while at the same time, using trait-level measures, relationships between emotional support and well-being are stronger in more interdependent cultures than they are in more independent cultures (Uchida et al., 2008). We further discuss these issues in the following section.

Differences in measures of support at different levels of analysis

The results of the present study have implications for how to study cultural patterns of complex social phenomena, such as social support. Numerous scholars (e.g., Badr et al.,

2001; Sarason et al., 1994) have called for examining social support within a more explicitly interpersonal context; yet, few studies have done this. In contrast to the consistent cross-cultural differences in our contextualized (interaction-level) measures of social support, we found no differences in global self-report measures in support. Moreover, such global perceptions were only weakly related to perceptions of support in social interaction.

The fact that a global self-report measure of social support was not related to measures of social support in actual social interactions and that there were no cultural differences in the global measures of support raise important questions about exactly what one-time, trait-like measures of social support are measuring. The fact that people's descriptions of the social support they have available to them did not correspond (at all) to the social support they have available to them in their social interactions suggests that global report of social support may partly reflect broader interpersonal constructs or broader facets of social support, such as implicit social support (e.g., beliefs that one could draw on persons or groups as opposed to actual perception of social supportive acts, Kim et al., 2008). This evidence contributes to ensuing discussions regarding the validity of one-time global self-reports in cross-cultural research (e.g., Oishi & Roth, 2009).

Given the relative lack of research and theory on differences between different levels of analysis of social support (e.g., as it is contextualized in naturally occurring social interaction versus global measures), it is difficult to speculate as to the exact reasons for the specific results we found. Clearly, more research about this topic is needed. Nevertheless, differences in the results for these two types of measures of social support are consistent with Affleck et al.'s (1999) contention that although constructs measured at different levels of analysis may appear to be the same because of the content and focus of the measurements per se (e.g., similar wording of items), the fact that they are measured at different levels of analysis may mean that they are meaningfully different constructs.

Limitation and conclusions

To maximize the comparability of the samples in the two countries, we used student samples that were of approximately the same age and station in life. Nevertheless, the influence on our results of socio-economic or other cultural factors was probably less than it would have been if we had examined community samples from the two countries. As is often the case with student samples, our samples limit the generalizability of our conclusions. For example, we cannot say for certain if we would have obtained the same results if we had studied older people. Further research is needed to understand the influence of those contextual factors (e.g., status, socio-economic factors) on support perceptions, and of course to examine the likely influence of the latter on well-being and health. Furthermore, we studied only two countries. More countries and a more rigorous establishment of differences in cultural values would provide a better basis for inference. In addition, although we discussed causal sequences among our measures, a different type of research design is needed to provide the data necessary for a better basis for casual inference. Finally, the results we found make sense in

terms of individualism/collectivism, but one should be sensitive to the possibility that they could be the result of some other variable.

Nevertheless, to our knowledge, this is the first study to examine cultural differences in support processes in a multilevel fashion that includes the proximal social context within which supportive acts and perceptions occur, naturally occurring social interactions. The present study is one of the first to demonstrate cultural differences in relationally grounded social support perceptions situating support perceptions and emotions within their immediate social context within different cultures. Such an examination is consistent with suggestions (e.g., Matsumoto, 2001) that cross-cultural differences in social phenomena should be examined within their respective context, and social interaction studies of the type we have done are capable of doing this. Answers to these questions can inform discussions about cross-cultural differences in social support processes (see Uchida et al., 2008), and they can address important methodological questions regarding the validity of measuring constructs, such as social support, within or outside the social context (Heine, Lehman, Peng, & Greenholtz, 2002).

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Notes

1. We use the term “emotion” to refer to a wide range of affective phenomena, including affect within social interaction.
2. Differences between these coefficients were tested by examining the impact on the fit of the model of constraining the coefficients to be equal. Using such a procedure, a significant change in the fit of the model is interpreted to mean that the constraint leads to a poorer fitting model, and consequently, that coefficients are different (e.g., Nezlek, 2011).

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