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### Explaining Gender Differences in the Perception of Support Availability: The Mediating Effects of Construct Availability and Accessibility

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# Explaining Gender Differences in the Perception of Support Availability: The Mediating Effects of Construct Availability and Accessibility

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*Perceived support availability (PSA), a general belief about the likelihood that social support will be available when needed, is associated with numerous processes and outcomes of supportive communication. Currently, however, there is little understanding of the factors that contribute to this belief. Numerous studies have reported gender differences in PSA, with women generally indicating that they see support as more available than do men; in turn, gender differences in PSA have been cited to explain gender differences in the production and interpretation of supportive messages. In an effort to explain gender differences in PSA and, more broadly, understand the social-cognitive factors that contribute to individual differences in PSA, this article proposes and reports a test of a theoretical model that treats PSA as the outcome of the availability and accessibility of cognitive schemata for construing social situations. Participants (150 men and 271*

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women) completed instruments providing assessments of PSA, construct availability (cognitive complexity), and construct accessibility (expressive and instrumental orientations). Bootstrap procedures for the simultaneous assessment of multiple mediators found that construct accessibility generally was a stronger mediator of gender differences in PSA than construct availability. However, a cooperative suppression effect was found for 1 index of construct accessibility, complicating the interpretation of mediation effects.

*Keywords:* Cognitive Complexity; Expressive Orientation; Gender Differences; Instrumental Orientation; Social Support

Perceived support availability (PSA), a general belief about the likelihood that social support will be available when needed (Sarason, Sarason, & Shearin, 1986), is associated with numerous underlying processes and outcomes of supportive communication (Burleson & MacGeorge, 2002; Lakey & Cohen, 2000). Specifically, PSA “operates in part as a cognitive personality variable that influences how supportive transactions with others will be interpreted and remembered” (Lakey & Cassady, 1990, p. 341). Consistent with this view, PSA has been found to influence individuals’ sensitivity to the quality of specific supportive messages (e.g., Kaul & Lakey, 2003; Servaty-Seib & Burleson, 2007) and to affect the nature of attributions made for inadequate or “failed support” (Ross, Lutz, & Lakey, 1999). In addition, studies have found that people with high levels of PSA tend to seek and receive support more frequently than people with low PSA (Cutrona, 1986; Ptacek, Pierce, & Ptacek, 2002; Trees, 2005).

Because PSA has profound effects on perceptions of supportive communication, it is both theoretically and pragmatically important to understand the factors that contribute to the sense that support is available. In other words, why do some people have a chronic sense that others are available and helpful when needed and others do not? Some research has found that women often see support as more available than do men (see a review by Reevy, 2007); this gender difference appears to be quite pervasive, having been found in samples across the lifespan (e.g., Chong, Huan, Yeo, & Ang, 2006; Thuen & Eikeland, 1998; Weckwerth & Flynn, 2006). These gender differences in PSA may, in turn, underlie gender differences found in numerous aspects of supportive communication (for reviews, see Barbee et al., 1993; Burleson & Hanasono, 2010; Burleson & Kunkel, 2006). In an effort to explain gender differences in PSA and, more broadly, understand the social-cognitive factors that contribute to it, this article proposes and reports a test of a theoretical model that treats PSA as the outcome of the *availability* and *accessibility* of cognitive schemata for construing social situations.

One important aspect of social cognition is whether particular categories (schemas, constructs) exist in the cognitive system; if a category exists (usually residing in long-term memory), that category is said to be *available* (Higgins & Bargh, 1987). The constructivist analysis of cognitive complexity (for a review, see Burleson & Caplan, 1998) provides one way of conceptualizing and operationalizing individual

differences in category availability. Specifically, some people possess more numerous and nuanced sets of cognitive categories for particular domains of life (e.g., the social world) than do other people. Those with more differentiated category systems have more constructs *available* to them for interpreting aspects of experiences falling in that domain of life. Following Crockett (1965), constructivist researchers refer to persons with more categories available to them within a domain as comparatively cognitively complex in that domain. Hence, persons with more constructs available that pertain to the properties of the self, others, relationships, and social situations are regarded as having a higher level of *interpersonal cognitive complexity* (ICC). Research on ICC indicates that it is an important index of social information processing capacity (see Burleson & Caplan, 1998) and supportive communication responses (Bodie et al., 2011; Burleson et al., 2009).

Research consistently finds that women have somewhat higher levels of ICC than do men (e.g., Samter, 2002; Woods, 1998). We propose that at least some of the gender differences in PSA may stem from underlying gender differences in interpersonal construct availability (i.e., ICC). Specifically, because of their greater acuity in social perception and their greater capacity to process social information, individuals with higher levels of ICC may be better able to recognize and understand the diverse ways in which social network members provide support. In contrast, individuals with lower levels of ICC may fail to notice and validate the support that is available from social network members. Consistent with these speculations, research indicates that persons high in ICC process support situations and messages more deeply than do less complex perceivers (Bodie et al., 2011). Collectively, these findings suggest that those high in ICC will come to believe that social support is available to them, when needed. Thus, we hypothesized the following:

H1: Women will exhibit higher levels of PSA than men.

H2: Women will exhibit higher levels of ICC than men.

H3: ICC and PSA will be positively associated.

H4: ICC will mediate the effect of gender on PSA.

Although people differ in the numbers of constructs that are *available* to them, they also may differ in construct *accessibility* (i.e., the propensity to think about and *apply* one construct over another). Accessibility is one key factor in determining the likelihood of actually using an existing cognitive structure in a given situation. Higgins, Rholes, and Jones (1977) defined accessibility as “the readiness with which a person classifies information in terms of [a particular] category” (p. 141). Thus, as cognitive structures become more accessible, they are more closely situated at the forefronts of our minds and are more likely to be applied in social perception and interpretation processes (Bargh, 1988).

Expressive and instrumental orientations (see Spence & Helmreich, 1978) may chronically influence the accessibility of cognitive constructs relevant to the provision of social support and, thus, may influence PSA. These orientations are conceptualized as generally stable differences in the way people see themselves and behave in social situations (Spence & Buckner, 1995). Individuals who report higher levels of

expressivity see themselves as kind, affectionate, sympathetic, and warm, whereas individuals who report higher levels of instrumentality see themselves as independent, decisive, and assertive (Spence & Helmreich, 1978). Having an expressive orientation, thus, chronically primes a set of constructs that are relevant to support and, therefore, may lead individuals with this orientation to believe they have higher levels of support available to them than persons low in this orientation. In contrast, having an instrumental orientation may lead to the chronic priming of constructs not particularly relevant to PSA, such as assertiveness or task accomplishments (Wang, Heppner, & Berry, 1997). Thus, instrumentality is probably either irrelevant to or inversely related to PSA.

Traditionally, expressivity has been associated with “femininity,” and instrumentality has been associated with “masculinity” (Prentice & Carranza, 2002); women tend to rate themselves as more expressive than men, and men tend to rate themselves as more instrumental than women (Feingold, 1994). Given this, we posed the following hypotheses and research question:

*H5: Women will report higher levels of expressive orientation than men.*

*H6: Men will report higher levels of instrumental orientation than women.*

*H7a: Expressivity will be positively associated with PSA.*

*H7b: Instrumentality will be either unassociated or negatively associated with PSA.*

*H8: Expressivity will mediate the relationship between gender and PSA.*

*RQ1: Does instrumentality mediate the relationship between gender and PSA?*

We also sought to determine whether (a) ICC and expressivity *simultaneously* mediate the effect of gender on PSA and (b) whether one of these two potential mediators exerts a stronger mediating effect than the other. Furthermore, instrumentality may independently contribute to the mediation of gender differences in PSA, and may exert a stronger (or weaker) mediating effect than ICC and expressivity. Thus, we posed the following research questions:

*RQ2: When jointly evaluated, do ICC and expressive and instrumental orientations independently contribute to the mediation of gender differences in PSA?*

*RQ3: When jointly evaluated, do ICC and expressive and instrumental orientations differ in the extent to which they mediate the effect of gender on PSA?*

## Method

### *Participants*

Participants were 433 college students (150 men and 271 women) from classes at a large, Midwestern university (78.2% White, 75.8% upperclassmen, mean age = 20.2 years).

### *Procedure*

All participants completed a packet of questionnaires that assessed (a) demographic information (i.e., age, gender, ethnicity, year in college, and academic major), (b)

expressivity and instrumentality, (c) ICC, (d) PSA, and (e) several other variables unrelated to this study.

### *Instrumentation*

*Expressive and instrumental orientations.* Participants completed the short form of Spence and Helmreich's (1978) Personal Attributes Questionnaire to assess levels of self-perceived expressivity and instrumentality. Eight 5-point semantic differential scales ( $\alpha = .79$ ) were used to assess expressivity (e.g., ranging from "not at all emotional" to "very emotional" and "not at all kind" to "very kind"), and another eight 5-point semantic differential scales ( $\alpha = .74$ ) were used to assess instrumentality (e.g., ranging from "very passive" to "very active" and "not at all independent" to "very independent"); participants identified the points on the scales best describing themselves.

*ICC.* Participants completed a standard, two-role version of Crockett's (1965) Role Category Questionnaire to assess their ICC. Participants wrote descriptions of a liked peer and a disliked peer for 5 min each, focusing on their habits, traits, and personality characteristics. Using standard coding procedures (see Burleson & Waltman, 1988), three trained research assistants, blind to this study's hypotheses, scored participants' descriptions for the number of interpersonal constructs they contained. Interrater reliabilities, assessed by intraclass correlations, ranged from .94 to .98 for pairs of the three coders; disagreements in coding were resolved by the second author.

*PSA.* Participants completed the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) to assess the extent to which they generally perceived social support as available when needed. Participants responded to 12 items on a 5-point Likert scale to tap the extent to which they saw support as available from friends, family, and "special persons"; higher scores indicate greater levels of PSA. To increase the scale's internal reliability, one "family source" item was removed from the scale, resulting in good internal reliability ( $\alpha = .84$ ) among the 11 remaining scale items. Scores were then averaged across the retained 11 items to generate an overall index for PSA.

### **Results**

We predicted gender differences in the outcome variable (PSA) and proposed mediators (ICC, expressivity, instrumentality). A multivariate analysis of variance (MANOVA) confirmed a significant gender difference in the set of four variables: Wilks's  $\Lambda = .774$ ;  $F(4, 415) = 30.34$ ,  $p < .001$ . Follow-up univariate analyses evaluated gender differences for each of these four variables. Confirming *H1*, women ( $M = 4.10$ ,  $SD = 0.57$ ) were higher in PSA than men ( $M = 3.73$ ,  $SD = 0.61$ ),  $F(1, 418) = 36.38$ ,  $p < .001$  ( $\eta^2 = .09$ ). Confirming *H2*, women ( $M = 24.29$ ,  $SD = 9.07$ ) were higher in ICC than men ( $M = 18.54$ ,  $SD = 6.91$ ),  $F(1, 418) = 45.56$ ,  $p < .001$ .

**Table 1** Intercorrelations Among the Variables in the Study

Variable	Participant gender	Expressive orientation	Instrumental orientation	Cognitive complexity	PSA
Expressive orientation	.30*	—			
Instrumental orientation	-.16*	-.03	—		
Cognitive complexity	.31*	.09	-.04	—	
PSA	.28*	.32*	.17*	.18*	—

Note.  $N=421$ . For participant gender, men = 0 and women = 1. PSA = perceived support availability.

\* $p < .001$ .

( $\eta^2 = .12$ ). Confirming *H5*, women ( $M = 4.05$ ,  $SD = 0.57$ ) were higher in expressivity than men ( $M = 3.69$ ,  $SD = 0.57$ ),  $F(1, 418) = 41.64$ ,  $p < .001$  ( $\eta^2 = .09$ ). Confirming *H6*, men were higher in instrumentality ( $M = 3.77$ ,  $SD = 0.57$ ) than women ( $M = 3.58$ ,  $SD = 0.56$ ),  $F(1, 418) = 10.97$ ,  $p = .001$  ( $\eta^2 = .03$ ).

Intercorrelations among the variables appear in Table 1. As predicted by *H3*, ICC and PSA were positively associated,  $r = .18$ ,  $p < .001$ . As predicted by *H7a*, expressivity and PSA were positively associated,  $r = .32$ ,  $p < .001$ . Unexpectedly, instrumentality was significantly and positively associated with PSA ( $r = .17$ ,  $p < .001$ ), leading to the rejection of *H7b*.

Bootstrapping procedures<sup>1</sup> developed by Preacher and Hayes (2008a, 2008b) were used to assess the extent to which the gender difference in PSA was mediated by ICC (*H4*), expressivity (*H8*), and instrumentality (*RQ1*). We also used these procedures to determine whether these variables collectively mediated this gender difference (*RQ2*), as well as to determine whether these variables differed in the magnitudes of their mediating effects (*RQ3*). The results of these analyses are summarized in Table 2. The overall indirect effect for the three potential mediators was statistically significant ( $p < .008$ ), explaining about 25% of the gender-related variance in PSA; however, the direct effect for gender on PSA remained statistically significant ( $p < .001$ ), indicating that mediation was partial, rather than complete. The unstandardized regression coefficients reported in Table 2 indicate that expressivity and instrumentality were each significant partial mediators of gender differences in PSA. ICC was a marginally significant ( $p < .08$ ), partial mediator of gender differences in PSA. Further complicating the picture, the associations among gender, PSA, and instrumentality indicated a cooperative suppression effect (Cohen & Cohen, 1983) for the latter variable; that is, the negative association of instrumentality with gender had the consequence of making its mediating effect on PSA greater than its zero-order effect, as well as making the sign for the mediating effect of instrumentality negative. Contrasts comparing the magnitudes of the effects for each of the mediators indicated that expressivity was a significantly ( $p < .05$ ) stronger mediator than was cognitive complexity, and was a marginally ( $p < .10$ ) stronger mediator than instrumentality; the mediating effects for cognitive complexity and instrumentality did not differ in magnitude.



**Table 2** Summary of Bootstrapping Tests of the Mediating Effects of Cognitive Complexity, Expressive Orientation, and Instrumental Orientation for Gender Differences in Perceived Support Availability

	Indirect effect		Total effect	Direct effect							
	Unstandardized regression coefficients	associated with gender of participant									
Perceived support availability	0.360***	0.269***	74.80%	0.091**	25.2%	0.034 <sup>†</sup>	9.4%	0.098**	27.2%	−0.042*	11.7%

*Note.* Gender of participant was coded as men = 0, women = 1. Percentages refer to the percentage of the total effect explained by a particular variable or effect.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . <sup>†</sup>  $p < .10$ .

## Discussion

Drawing from the social support and social cognition literatures, this study proposed and assessed explanations for gender differences in PSA, a key cognitive factor that influences both processes and outcomes of supportive communication. Specifically, we hypothesized that construct availability, indexed by cognitive complexity, mediates gender differences in PSA. We also predicted that expressive and instrumental orientations, which were seen as affecting chronic accessibility, mediate gender differences in PSA. As expected, women were both more cognitively complex and expressive than men, replicating a host of previous findings (e.g., Samter, 2002; Spence & Helmreich, 1978). Moreover, both of these variables were also, as predicted, significantly and positively correlated with PSA. More important, we found that expressivity was a significant mediator of the effect of gender on PSA, explaining about 25% of the gender-related variance in PSA. ICC was a near-significant mediator, explaining about an additional 10% of the gender-related variance in PSA. Expressivity was a significantly stronger mediator than ICC; implications of this result are discussed in the following.

The most surprising findings of the study involved instrumentality. As expected, instrumentality was negatively associated with being female (i.e., men scored higher on instrumentality than did women). Unexpectedly, instrumentality was positively associated with PSA; we had anticipated that it would be negatively associated with PSA, or perhaps unassociated with it. The pattern of associations among gender, instrumentality, and PSA created a cooperative suppression effect, which occurs when two independent variables are negatively correlated with each other, but positively associated with the dependent variable.<sup>2</sup>

So, what does this mean? Given that the three mediators were minimally intercorrelated (see Table 1), they each had an independent mediating function with regard to the effect of gender on PSA. Thus, if the variance in PSA explained through the mediation of instrumentality is added to that explained through the mediation of expressivity and cognitive complexity (rather than subtracted due to its negative regression coefficient), the three mediators collectively explain about 48% of the gender-related variance in PSA, rather than about 25% of this variance.

Theoretically, the results are important for indicating that indexes of construct *accessibility* are stronger mediators of gender differences in PSA than an index of construct *availability*. This finding suggests that when it comes to general judgments about PSA, the chronically accessible constructs one frequently uses for construing the self, others, and social situations exert a stronger influence than does overall social information processing capacity. This result is consistent with the emphasis that social cognition researchers have placed on construct accessibility in recent years in explanations of behavioral interpretation, stereotyping, arousal and reported mood, evaluative judgments, and a host of related phenomena (see reviews by Fiske & Taylor, 2007; Moskowitz, 2005).

Although these findings have considerable theoretical interest, we draw attention to several issues that merit attention in future research. First, although there were

significant gender differences in PSA, these differences were not exceptionally large. Indeed, gender explained only about 9% of the total variance in PSA. These results are congruent with literature (see reviews by Burleson & Kunkel, 2006; Cutrona, 1996) showing there are statistically significant, albeit modest, gender differences in supportive communication processes (seeking, providing, and responding to support) and outcomes. Furthermore, the magnitude of the effect observed for gender with respect to PSA is quite typical of the effect sizes for gender reported in most communication research (Canary & Hause, 1993; Dindia, 2006). As Allen and Valde (2006) observed, effects of this size, although not large in an absolute sense, may still be important for both theoretical and pragmatic reasons.

Second, gender and the three mediators jointly explained only about 20% of the total variance in PSA. Clearly, efforts to provide a more complete understanding of PSA and its determinants will have to look beyond the factors examined in this study. Future research may wish to examine other factors that could be affiliated with the availability and accessibility of PSA, such as attachment styles and quality of received support in close relationships (see Sarason et al., 1986). Studies could also employ experimental designs and priming techniques to manipulate the effects of construct accessibility on PSA. Third, the mediators examined in this study collectively explained only about 25% of the gender-related variance in PSA (48% if the negative sign for the instrumentality coefficient is ignored), which indicates that further conceptual work will need to be done to fully explain gender differences in PSA.

Although the findings of this study are subject to limitations, our results provide promising support for a new and useful explanation of gender differences in PSA and, thus, many gender differences in supportive communication processes and outcomes. We have offered a theoretically innovative and empirically supported account for gender differences in PSA, and future theory and research should be able to build on the framework introduced here. In particular, explorations of the links among gender, PSA, construct accessibility, and availability may provide deeper insights about numerous aspects of supportive communication.

## Notes

- [1] The bootstrapping procedure simultaneously estimates the effect for multiple mediators, is not shackled by assumptions of normal sampling distributions, and tends to provide more accurate Type 1 error rates than more traditional procedures (MacKinnon, Lockwood, & Williams, 2004).
- [2] Because of their negative association, each of the independent variables removes or “suppresses” the variance it shares with the other independent variable, and this has the effect of increasing the magnitude of its association with the dependent variable above its validity coefficient (i.e., its zero-order association) with the dependent variable (see Cohen & Cohen, 1983). Moreover, although instrumentality was positively associated with perceived support availability (PSA), the indirect effect for instrumentality (i.e., its mediation of the effect of gender on PSA) had a negative sign, in effect subtracting variance from the collective indirect effect attributable to the three mediators (see Table 2).

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