AN INTERPERSONAL CONCEPTUALIZATION AND QUANTIFICATION OF
SOCIAL SUPPORT TRANSACTIONS

by

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Abstract

The guiding assumption of the present research was that social support behavior, like all interpersonal transactions, could be characterized as the exchange of love and status between participants in a dyadic interaction. Returning to Cobb's (1976) original definition of social support, and applying an explicit social exchange theory (Foa & Foa, 1974) within the framework of an interpersonal circumplex model, statements were generated that reflected different support styles thought to characterize different allocations of love and status between self and other. In a series of three studies, 1040 undergraduate students were asked to complete a self-report questionnaire indicating their likelihood of performing each support behavior. A circumplex structure was obtained that was both substantively and structurally auspicious, and that provided a taxonomic framework within which 12 extant social support subscales and 15 related personality characteristics were clarified, while also providing information regarding the construct validity of the circumplex framework itself. The Support Actions Scale Circumplex (SAS-C) appears to have the potential for clarifying the relations among existing social support scales and thereby integrating many of the diverse findings within the social support literature as well as for assessing a much broader range of social support behavior than has previously been measured, including both the potentially protective and deleterious effects of interpersonal transactions. Potential applications of this framework to a variety of related areas of research are also discussed.

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INTRODUCTION

In the mid-1970s a flurry of research activity followed the papers of two epidemiologists, Cassel (1976) and Cobb (1976), that established the importance of social support in mediating health outcomes. Cassel (1976) discussed the importance of psychosocial processes in affecting vulnerability to disease:

...the existing data have led me to believe that we should no longer treat psychosocial processes as unidimensional stressors or non-stressors, but rather as two-dimensional, one category being stressors, and another being protective or beneficial (pp. 111-112)...It is suggested that the property common to these [protective] processes is the strength of the social supports provided by the primary groups of most importance to the individual (p. 113).

Encouraged by Cassel's (1976) assertion that: "Of the two sets of factors, it would seem more immediately feasible to attempt to improve and strengthen the social supports rather than reduce the exposure to the stressors" (p. 121), social psychologists, community psychologists, and a burgeoning group of health psychologists joined epidemiologists in producing a vast amount of research directed at this issue.

An expansive literature has been amassed examining the relations between social support and physiological, psychosomatic, and psychological symptoms within a diversity of medical, psychiatric, and normal populations, the

scope of which precludes a thorough review here. However, in a meta-analysis on this topic, Schwarzer and Leppin (1989) concluded that "there is no doubt that social support and health are related in a way that ill health is more pronounced for those who lack support. However, the degree of association depends on the circumstances, the population, and the concepts and measures of social support and health employed." (p. 11)

Operationalizations of Social Support

Operationalizations of the social support construct may be classified into three general categories: network measures, received support measures, and perceived support measures. A variety of measures have been developed within each of these three categories and the psychometric characteristics of 23 of the more promising of these are reviewed by Heitzmann and Kaplan (1988). It should be noted at the outset that virtually all social support measures have been formulated and employed from a recipient perspective, unlike the model proposed in the present study which utilizes the perspective of potential providers for delineating a multi-faceted taxonomy of hypothetical social support behaviors.

Network Measures. The social network approach to the conceptualization of social support arose from earlier work in the disciplines of anthropology and sociology, and was applied, primarily, by community psychologists (see Gottlieb, 1983). The structure, content, and function of interpersonal ties (e.g., Kaplan, Cassel, & Gore, 1977; Tolsdorf, 1976) were deemed important predictors of the ability to gain "access to a wider range of resources than would otherwise be

available" (Craven & Wellman, 1973, p. 84). Studies examining the relations between network characteristics and, for example, social support satisfaction (Stokes, 1983), positive and negative social interactions (Hirsch & Rapkin, 1986), and mental health (Hirsch, 1980) suggested the promise of this approach. However, it appears that some of the early popularity of network measures has dissipated due to a lack of demonstrated usefulness in examining the relations between social support and health outcomes (B. Sarason, I. Sarason, & Pierce, 1990).

Received Support. Received support conceptualizations focus on the "*actual or experienced* support that is expressed in ongoing social interactions" (Gottlieb, 1985, p. 356, *emphases in original*). Many investigators adopting a "received-support" view have conceptualized social support as involving the exchange of resources between provider and recipient (e.g., Gottlieb, 1985; Richman, Rosenfeld, & Hardy, 1993; Shumaker & Brownell, 1984; Vaux, 1988) although few have taken advantage of conceptually driven taxonomies of social exchange (cf. Cobb & Jones, 1984). Vaux (1988), however, was able to demonstrate the substantial taxonomic overlap between the Foas' conceptual categorization of the resources of social exchange (love, status, goods, services, information, and money; Foa & Foa, 1974) and many of the major social support categorizations that have been proposed (i.e., Caplan, 1974; Tolsdorf, 1976; Hirsch, 1980; Gottlieb, 1978; Barrera & Ainlay, 1983; Vaux, 1982).

The present study, although reliant on potential providers', rather than recipients', perspectives of hypothetical support behaviors, is most consistent

with received support measures. The Foa's social exchange taxonomy provides the basis for defining social support, and, consistent with Cobb (1976; Cobb & Jones, 1984), conceptual priority is given to the resources of love and status which have been characterized as the defining resources of interpersonal transactions (Foa, 1965).

Perceived Support. Perceived support measures generally assess the adequacy and/or availability of social support if needed (B. Sarason, I. Sarason et al., 1990). This conceptualization has been characterized as "embracing a psychological perspective on social support rather than a transactional perspective" (Gottlieb, 1985, p. 354) and as such, is "a cognitive representation of the phenomenon whose correspondence with social reality is uncertain" (Gottlieb, 1985, p. 356). Nonetheless, perceived support measures have demonstrated the strongest relations with health outcomes (B. Sarason, I. Sarason et al., 1990) and, for this reason, have come to be employed extensively.

Increasingly, perceived support has come to be thought of as a personality variable (B. Sarason, Pierce, & I. Sarason, 1990; see also Lakey & Cassady, 1990). Evidence has been obtained for relations with such personality characteristics as: sociability and social presence (Procidano & Heller, 1983); extraversion (Duckitt, 1984; I. Sarason, Levine, Basham, & B. Sarason, 1983), optimism, self-esteem, and a lack of neuroticism (I. Sarason et al., 1983); lack of authoritarianism and tolerance of deviance (I. Sarason & B. Sarason, 1982); social skill, and lack of loneliness, shyness, or social anxiety (I. Sarason, B.

Sarason, Shearin, & Pierce, 1987); heightened interpersonal skills, a sense of self-efficacy, low levels of anxiety, positive expectations of interactions with others, and a positive view of others' adjustment (B. Sarason, I. Sarason et al., 1990). In sum, a more consistent or prototypical description of non-neurotic extraversion is difficult to imagine. Note, however, that some have argued that personality variables (especially neuroticism) may act as a "third variable" in the relations between social support and well-being (e.g., Henderson, Byrne, & Duncan-Jones, 1981; Lakey & Cassady, 1990; Reis, 1984). Furthermore, examining social support in a way "that makes it a property of the individual, rather than an environmental resource or at least an interpersonal exchange" (Gottlieb, 1985, p. 357) does not facilitate insight into the "crucial mechanisms responsible for its health-protective effects" (p. 372) (see also Monroe & Steiner, 1986).

Relations between Received and Perceived Support. The evidence regarding the relations between received and perceived support is mixed. Dunkel-Schetter and Bennett (1990), summarizing findings from a number of studies, report that the relations between self-report received and perceived support measures vary from no relation to a moderate association ($r = .46$), depending on the measures used. Cutrona (1986a), using a daily diary methodology, reports that perceived support was predictive of helping behavior only on days in which at least one stressful event occurred. Vinokur, Schul, and Caplan (1987), using a longitudinal panel design, report that "recipients' perception of support is determined significantly and strongly by actual

interpersonal transactions, moderately by the recipients' negative outlook bias, and weakly by their anxiety and depression as indicators of their poor mental health" (p. 1137). However, it is unclear which types of support receipt are most predictive of support perceptions in studies in which a significant relation was found.

As Reis (1984) has noted, "the concept of social support will gain greater empirical and therapeutic utility when it is firmly anchored to the behaviors that engender it" (p. 29). "The task that faces researchers is to devise theoretical frameworks and assessment procedures that acknowledge the contributions of both interpersonally relevant personality traits and the social environment to a 'psychological sense of support'." (Cutrona, 1986b, p. 354) The theoretical and measurement model that comprises the focus of the current research makes a small contribution to this formidable agenda by examining the relation of providers' "interpersonally relevant personality traits" (rather than the more typical focus on recipient traits) to hypothetical social support transactions. Also, although not addressed in the present study, to the extent that feeling supported involves a sense that one is loved and esteemed (Cobb, 1976), an operationalization of the kind proposed, in which hypothetical social support behaviors are defined according to the provision or withholding of the interpersonal resources of love and status, may be expected to demonstrate stronger and clearer relations with perceived support measures.

Parameters of Social Support Research

Most of the many factors that have been postulated to affect social support processes may be conveniently subsumed under the broad rubrics of recipient factors, provider factors, and context factors.

Recipient Factors. Much of the research examining the influence of recipient factors on social support has focused on characteristics of recipients that affect their ability and willingness to access social support resources. Perhaps not surprisingly, many of the correlates of these tendencies are highly similar to those identified with respect to perceived support availability. For example, evidence is available documenting the relation between ability and/or willingness to utilize social support and: extraversion (Krause, Liang, & Keith, 1990); internal locus of control and lack of negative outlook (Dunkel-Schetter & Bennett, 1990); and, high self-esteem and high mastery (Caldwell & Reinhart, 1988; Dunkel-Schetter, Folkman, & Lazarus, 1987; Hobfoll & Lerman, 1989). Also, recipients who cope by using positive reappraisal or problem-solving, or by seeking support, may have more support available to them (Dunkel-Schetter et al., 1987). Associations have also been obtained between demographic characteristics and support availability including age, gender, race, ethnicity, and social class (Richman et al., 1993).

Provider Factors. Despite the widespread use of terms such as “dyadic”, “interpersonal”, and “interactional” in social support research, and despite admonishments by some researchers in the field that “characteristics of *all participants* may influence the phenomenon” (Shumaker & Brownell, 1984, p. 12,

emphases in original) the “provider” half of such transactions has been largely neglected; little is known about the agent of either helpful or unhelpful support attempts. A few investigators have attempted to draw inferences about provider characteristics from research in the helping behavior literature, however, that research has focused primarily upon single instances of instrumental assistance to strangers in emergency situations, and therefore has questionable generalizability to understanding support provision in close relationships (Dunkel-Schetter & Skokan, 1990; Trobst, 1991). Furthermore, research has suggested that, with the exception of provider empathy (e.g., Dunkel-Schetter & Skokan, 1990; Otten, Penner, & Altabe, 1991; Trobst, Collins, & Embree, 1994), the factors predicting support provision are likely to be different from those that have been found to be important in predicting helping behavior (Dunkel-Schetter & Skokan, 1990). The research to be reported attempts a first step toward addressing the need for a greater understanding of provider characteristics by employing the five-factor model in investigating the relations between dispositional tendencies and individual differences in hypothetical provider support styles.

Context Factors. Along with the recipient factors and provider factors just discussed, a number of other “particularizing factors” warrant consideration in attempts to elucidate the social support construct and delineate the parameters that must be taken into account when interpreting its likely effects. For example, factors such as provider characteristics (e.g., preferred resources of exchange), recipient characteristics (e.g., coping style), the relationship between provider

and recipient (e.g., role), quality of the relationship (e.g., intimacy), and characteristics of the stressor (e.g., intensity) are likely to interact in complex and important ways. A number of investigators of social support and related processes have emphasized the importance of pursuing “specificity” in order to gain a more precise (and accurate) understanding of the dynamics involved (e.g., Cutrona, 1990; Cutrona & Russell, 1990; Dunkel-Schetter & Skokan, 1990; Vaux, 1988). Unfortunately, however, current attempts at examining these more complex relations are impeded by the lack of an organizing taxonomic framework for conceptualizing and quantifying social support transactions; it is this much more modest goal that is the focus of the current research, the results of which, if found to be promising, remain to be particularized in future research.

The Need for Theory in Social Support Research

A number of writers have decried the lack of an organizing theoretical framework for guiding social support research. For example, the Sarasons, perhaps the most active and prolific researchers in this area, have stated:

We believe that a more theory-driven approach to social support is greatly needed. Particularly necessary is a wider range of vocabulary in terms of which what is now globally referred to as social support can be described. Better articulated theoretical formulations are likely to result in a broader range of empirical approaches to the various aspects of this global construct. We think the time for theory in social support has come and that with it

will come advances in our understanding of the role interpersonal processes play in personality and topics such as health and personal adjustment that have long interested social support researchers. (I. Sarason, B. Sarason, & Pierce, 1990; p. 146)

In retrospect, it would appear that the nucleus of a well-articulated theoretical framework for understanding the construct of social support was available at the inception of this research tradition. Cobb (1976), in his Presidential Address to the Society for Psychosomatic Medicine, defined social support as "*information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations*" (p. 300, emphasis added). Nonetheless, as suggested by the above quote, subsequent research in social support had a decidedly atheoretical quality, despite periodic pleas for a more explicit theoretical framework and for measurement operations corresponding to that framework.

The present paper attempts to address this need by returning to Cobb's (1976) original formulation of the social support construct and by elaborating a theoretical and empirical framework that draws upon the interpersonal circumplex and the associated social exchange traditions that have achieved widespread acceptance within personality research. For example, interpersonal circumplex models have proven useful as a framework for elucidating concepts and measures from a variety of research traditions including assortative mating (Buss, 1984), manipulation tactics in close relationships (Buss, Gomes, Higgins, & Lauterbach, 1987), complementarity (Wiggins, 1982), cross-cultural differences

(Rosen, 1992), non-verbal behaviors (Gifford, 1991), psychiatric diagnosis (Wiggins & Pincus, 1994), prediction of treatment response (Alden & Capreol, 1993), development of therapeutic alliance (Muran, Segal, Samstag, & Crawford, 1994) and attachment theory (Bartholomew & Horowitz, 1991), to name but a few (see Wiggins & Trobst, 1997a).

An Introduction to Interpersonal Theory

Amidst the many connotations of the term "interpersonal" in current psychological parlance, the radical interpersonalism of Harry Stack Sullivan (1892-1949) forms the basis of a distinctive theory of personality and psychopathology (Hall & Lindzey, 1978), a major system of psychotherapy (Anchin & Kiesler, 1982; Ford & Urban, 1963) and a major paradigm of personality assessment (Wiggins, in press). Sullivan's oft-cited definition of personality as "the relatively enduring pattern of recurrent interpersonal situations which characterize a human life" (1953; pp. 110-111) was influenced by Lewin's (1938) field-theoretic conceptualization of contemporaneous, bidirectional influences in "psychological fields", which led Sullivan (1953) to define the interpersonal situation as the basic unit of observation. "This is not the usual notion of a 'separate' personality existing in the context of a situation, nor is it simply the idea of one person interacting with another. And it is most decidedly not a statistical interaction abstracted from an analysis of person and situation variance" (Wiggins & Trapnell, 1996, pp. 114-115).

A working-definition of interpersonal behavior employed by contemporary interpersonal theorists (Carson, 1969; Foa, 1965; Wiggins, 1979) might read:

“the set of all patterned regularities of an individual’s relations with other persons (real and present, real but absent and hence “personified”, or “illusory”) that have relatively clear-cut social (status) and emotional (love) consequences for both participants (self and other).” Such a definition, although complex, has produced a theory that has survived earlier controversies surrounding “interactionism”, the nature of social exchange, and the currently heavy emphasis on information processing and allied cognitive concepts in personality and social psychology (Wiggins & Trapnell, 1996).

An Interpersonal Conception of Social Exchange

Within the Sullivanian framework, interpersonal transactions have been conceptualized as occasions for the exchange of social resources. A comprehensive taxonomy of these resources has been proposed by the Foas (Foa & Foa, 1974) and includes the resource classes of love, status, services, information, goods, and money. Of these, love (i.e., liking and acceptance) and status (i.e., esteem and regard) are thought to be the defining dimensions underlying all interpersonal behavior (Wiggins, 1979). These formulations are strikingly similar to those embraced by Cobb’s (1976) definition of social support in which the two social resources of love (“emotional support”) and status (“esteem support”) are emphasized, and the “material” resources of goods, services, and information, are deemphasized as they “do not in themselves constitute...support” (p. 301).

These two primary dimensions of love and status provide the framework for the structural model of interpersonal behavior that has come to be known as

the interpersonal circumplex and that will be used in the present conceptualization of social support transactions. The interpersonal circumplex model of personality has an extensive history, beginning with the work of Leary (1957) and his associates who attempted to translate Sullivan's basic concepts into concrete measurement procedures.

From this perspective, interpersonal transactions may be thought of as negotiations between participants involving self-esteem and security, the basic Sullivanian coordinates of social life. These two constructs form the axes of the interpersonal circumplex. At the highest level of abstraction, these axes may be interpreted with reference to Bakan's (1966) metatheoretical concepts of agency and communion, which are useful as conceptual coordinates for the understanding and measurement of interpersonal behavior both within individuals and the societies in which they live (Wiggins, 1991). At a lower level of abstraction, the axes may be interpreted with reference to the constructs of dominance and nurturance. On a more concrete level, the axes may be thought of as representing the granting and withholding of the social resources of love and status between participants in an interpersonal situation.

Figure 1 provides an illustration of the interpersonal circumplex in which the primary axes are indicated by dashed lines. The vertical axis represents a bipolar dimension with dominance at the top of the circle and submission at the bottom of the circle. The horizontal axis (nurturance) provides a bipolar contrast between love (on the right) and hate (on the left). The eight sectors of the circle (referred to as octants) divide the circle into meaningful and manageable units.

The degrees around the outside of the circle indicate the boundaries of the sectors and their midpoints. Note, however, that although the number and location of sectors represented here have become more or less standard, any number of sectors could be employed. The alphabetic labels (e.g., PA, BC, DE...) derive from the originators of the interpersonal circumplex (Freedman, Leary, Ossario, & Coffey, 1951) who originally divided the circle into 16 sectors labeled "A" through "P", and later collapsed these into eight sectors with labels of two letters each, beginning with "PA" at the top of the circle and moving in a counter-clockwise direction.

 Insert Figure 1 about here

The "content" of Figure 1 is derived from an application of Foa and Foa's (1974) social exchange theory in which the interpersonal resources of love (represented by a "♥") and status (represented by a "↑") are exchanged [either given (represented by "+") or withheld (represented by "-")] between participants in a dyadic interaction (self and other). Thus, for example, "PA" involves the granting of love and status to self and the granting of love, but not status, to the other. The love and status classification arose within the dyadic-interactional perspective on interpersonal traits (Wiggins & Trapnell, 1996), but may be applied to any circumplex-oriented measure of interpersonal behavior, and although theoretical in nature, these love and status values have been shown to

also provide a mathematical definition of a circumplex (Wiggins & Trapnell, 1996, p. 122).

A Construct-Oriented Approach to Interpersonal Assessment

The interpersonal circumplex model is based on a construct-oriented approach to test construction (Wiggins, 1973) that was first proposed by Cronbach and Meehl (1955) and more fully elaborated in the classic monograph of Loevinger (1957). In terms of the latter writer's distinctions the universe of content of interpersonal behavior may be defined as all transactions that have relatively clear-cut social and emotional consequences for both participants.

The structural model (Loevinger, 1957) of a circumplex provides both exclusionary criteria for the universe of content and a representation of the underlying organization that is postulated to be manifested in both test responses and non-test criterial situations. With respect to the former, self-reported or observer-rated behavior that does not fall within circumplex space is not, by definition, "interpersonal". Based in part on extensive empirical evidence, the circular continuum defined by the coordinates of the circumplex is postulated to be continuous and noticeable "gaps" in continua are therefore errors of sampling, rather than shortcomings of the theory. That the circumplex structure captures the organization of non-test behaviors has been amply documented in a variety of domains (Kiesler, 1996; Plutchik & Conte, 1997), including that of non-verbal behavior (e.g., Gifford, 1994).

The choice of a measurement model for item selection is a complex and somewhat controversial issue (Loevinger, 1957, pp. 661-675). From Loevinger's

“naively realistic” position on construct validity, the overriding consideration in selection of a measurement model is the structure most appropriate for representing the universe of content of non-test behavior. The interpersonal circumplex “emerged” as an unanticipated structural characteristic from direct observations of interpersonal behavior in group psychotherapy over a period of three years (LaForge, 1985). Subsequent application of this model to an extensive range of domains of personality and emotions (see Plutchik & Conte, 1997) has increased confidence in its appropriateness as a guide for item selection. Nevertheless, the “truth” of circumplex inventories ultimately resides in their external correlates.

As Wiggins (1973) observed “Regardless of the theoretical considerations which guide scale construction procedures or the mathematical elegance of item-analytic procedures, the practical utility of a test must be assessed in terms of the number and magnitude of its correlations with nontest criterion measures” (p. 413). Within the construct-oriented approach to test construction, such external considerations (Loevinger, 1957) must be evaluated within an explicit theoretical framework that is sufficiently well articulated to provide a nomological network of operationalized constructs within which empirical findings acquire conceptual significance (Cronbach & Meehl, 1955).

As Gurtman (1992) has emphasized, the interpersonal circumplex itself functions as a nomological net in which the construct validity of other interpersonal measures may be evaluated. Wiggins and Broughton (1985, 1991) have similarly emphasized the integrative function of the circumplex model in

providing a single framework for interpreting personality scales from a variety of research traditions in personality, clinical, and social psychology. The two dimensions of the circumplex have been shown to be structurally isomorphic with the first two dimensions of the five-factor model (FFM) of personality (e.g., McCrae & Costa, 1989), and it has been argued that the two higher-order factors of the FFM itself (Digman, 1991) are readily interpretable as agency and communion (Wiggins & Trapnell, 1996). The substantial empirical literature on correlates of the interpersonal circumplex model (e.g., Kiesler, 1996; Plutchik & Conte, 1997) is impressive, not only for its range, but for its interpretability.

An Interpersonal Formulation of Social Support Transactions

Elaborating on earlier formulations by Sullivan (1953) and Bowlby (1969, 1973), Baumeister (1990) developed an exclusion theory of anxiety that has served to clarify the role of anxiety in interpersonal relationships. According to this view, anxiety arises in response to the real or anticipated exclusion from a social group due to unattractiveness, incompetence, or immorality. The negative affects associated with each of these types of exclusion are characterized respectively as “social anxiety”, “performance anxiety” and “guilt”. In applying the Foas’ theory of resource exchange, Wiggins and Trapnell (1996) have discussed “social anxiety” as resulting from a loss of love, “performance anxiety” from a loss of status, and “guilt” from a loss of both love and status. From the dyadic- interactional perspective, Wiggins and Trapnell (1996) conceptualize the loss of love as producing “communal anxiety” and the loss of status as producing “agentic anxiety” and state:

...we conceive of these two dimensions of situations as being orthogonal to one another and would anticipate that most anxiety arousing situations would represent a mixture or blend of the two dimensions. We would also anticipate that a circumplex would be the model of choice for scaling situations with reference to their potential for arousing communal and agentic anxiety. (p. 112, emphasis in original)

This formulation of anxiety may be seen as analogous to Caplan's (1974) interpretation of Cassel (1974) in which Caplan states that when an individual is unable "to feel safe and valued...his autonomic nervous system and hormonal mechanisms are continually in a state of emergency arousal, so that the resulting physiological depletion and fatigue increase his susceptibility to a wide range of physical and mental disorders" (pp. 1-2). Social support transactions may then be seen as having a protective function in the relation between "anxiety" and disease to the extent that support providers offer love and status to the individual and thereby facilitate a decrease in the individual's communal and/or agentic anxiety and a return to a condition of feeling "safe and valued". This notion of generally beneficial support transactions as those which grant love and status to the recipient is consistent with the warm and respectful types of support typically characterized as "helpful" in the literature (e.g., Dakof & Taylor, 1990). And the notion that stressful situations are those which involve the real or anticipated loss of love and/or status is apparent when considering circumstances such as

divorce, bereavement, and unemployment, to name but a few [see also O'Brien & DeLongis' (1996) discussion of agentic and communal stressors].

The conceptualization of generally helpful social support transactions as involving the granting of love and status to recipients is clearly consistent with Cobb's (1976) formulation of support as "information leading the subject to believe that he is cared for and loved, [and] esteemed" (p. 300). Cobb's use of the term "information", although entirely consistent with an interpersonal communication analysis of relationships (e.g., Kiesler, 1979), has led to the unfortunate characterization of this formulation as providing a "limited definition of social support" (Barrera, Sandler, & Ramsay, 1981, p. 438), and for that reason, the term "interpersonal messages" (Leary, 1957) may better communicate the breadth Cobb intended (see Cobb & Jones, 1984). Similarly, Cobb's (1976) statement that material resources (i.e., goods, services, information) "are not of themselves information of any of the major classes mentioned above" (p. 301) may have been interpreted as an assertion that these resources are irrelevant to discussions of social support, despite his additional comments that:

This does not mean that the deferential manner of the intern may not provide esteem support or that the tender care of the nurses may not communicate emotional support. It is only to say that the services themselves do not in themselves constitute such support..." (p. 301)

From the foregoing, it would appear that Cobb did not mean to imply that material resources are not useful in social support contexts. Rather, from an interpersonal perspective, material resources may best be conceptualized as providing a medium through which interpersonal messages about love and status may be communicated. From this perspective, the provision of any given resource may take on different interpersonal meanings depending on the attributions of the recipient, the motives of the provider and the manner in which it is presented. For example, the giving of advice may be accomplished in such a way as to communicate the provider's love and esteem for the recipient, or in a way that communicates the provider's superiority over and disdain for the recipient. Whether a support transaction involves the provision of material or immaterial resources, those transactions that leave the recipient feeling worthy and loved are the ones most likely to be seen as "supportive" and those most likely to relieve "anxiety". This notion is consistent with findings of a negative correlation between social support and anxiety (e.g., B. Sarason, Shearin, Pierce, & I. Sarason, 1987; I. Sarason, Levine, Basham, & B. Sarason, 1983) and with Reis' (1984) observation that: "...physical and psychological health were more likely to stem from emotional caring and self-esteem support than from other forms of social support" (p. 39).

Love and Status in the Social Support Literature

The terms love and status, although heretofore used in a rather technical sense, resemble concepts that are pervasive in definitions of social support employed (but not explicitly operationalized) in the literature. Table 1 provides

examples of the manner in which the dual themes of love and status have appeared in various guises in writings of proponents of network, received, and perceived support approaches. For example, Cohen and Hoberman (1983) included in their discussion of social support the concepts of "belonging" and "self-esteem"; Kahn and Antonucci (1981) discuss "affect" and "affirmation" among possible forms of social support; "attachment" and "reassurance of worth" are included among the six functions of support enumerated by Weiss (1974); and being "loved" and "esteemed" are assumed to be among the components individuals strive to achieve in Hobfoll's (1988) conservation of resources model.

The intuitiveness and centrality of the concepts of love and status may be surmised from their ubiquitous inclusion in conceptions of social support by the aforementioned and other investigators, despite subtle nuances in usage and the absence of a commonly agreed upon measurement model. In the present research, a more formal theory of love and status (Foa & Foa, 1974) is employed to derive the consequences of different combinations of love and status in interpersonal exchanges.

Insert Table 1 about here

Recent attempts at theoretical formulation of the social support process have evinced a return to Cobb's (1976) original conceptualizations. Barbara and Irwin Sarason, in particular, have been at the forefront of this recent trend: "We

believe that it is the feeling of being loved and valued, the perception that our well-being is the concern of significant others, that is protective" (I. Sarason et al., 1990, p. 140). The Sarasons propose further that it is the perception of social support, conceived of as a personality variable which remains stable over time, that is most closely related to health outcomes (B. Sarason, Pierce et al., 1990). Following Bowlby (1969, 1973), individuals are postulated to develop a sense of acceptance through secure relationships with primary attachment figures, and "over time, attachment patterns and perceptions of social support become the property of the individual" (I. Sarason et al., 1990, p. 141). The underlying notion, that individuals differ in their perceptions of the love and status values befitting themselves and others, is clearly consistent with assumptions underlying interpersonal circumplex conceptualizations of dispositions, a formulation that has proven useful in elucidating attachment style types (Bartholomew & Horowitz, 1991).

B. Sarason, Pierce et al. (1990) also note that the defining aspects of perceived social support are "heightened interpersonal skills, a sense of self-efficacy leading to adaptive behavior under stress, low levels of anxiety, positive self-image, positive expectations of interactions with others, and a positive view of others' adjustment" (p. 109), a description that captures well the non-neurotic gregarious-extraverted type (NO) within the interpersonal circumplex taxonomy of dispositions. Complementarity notions within interpersonal theory would predict that such individuals would preferentially associate with others who share their world view (i.e., others who agree that they are worthy of love and status

and act accordingly). This being the case, it is hardly surprising that they view themselves as being loved and valued and therefore demonstrate high perceived support. The bipolar contrast here would seem to be that of the neurotic aloof-introverted type (FG), individuals who view neither themselves nor others as worthy of love and status, who likely interact less and disproportionately with others sharing this world-view, and who consequently do not feel loved and valued (i.e., low perceived support). Although support availability would seem to be (not inappropriately) "in the eyes of the receiver" here, this formulation considers only two of at least eight possible interpersonal types defined in terms of the exchange of love and status (see Figure 1) and leaves one wondering how the other six types might view and respond to support transactions.

The recently articulated view of Ryan and Solky (1996) is also highly consistent with Cobb's (1976) original formulations and is perhaps the most compatible of current viewpoints with that being advocated in the present paper.

We argue that social supports enhance psychological well-being because they fulfill critical and basic psychological needs...for autonomy, relatedness, and competence, and accordingly foster enhanced self-regard, self-regulation, vitality, and feelings of connectedness with others. (p. 250) ...Most obvious is that social supports help people feel connected, valued, and cared for, and thus satisfy the need for relatedness. Pursuing what is perhaps a less obvious point, however, we additionally hypothesize that unless interpersonal interactions convey to the individual respect

and support for his or her autonomy, neither relatedness nor autonomy needs will feel fulfilled. (p. 251)

In their discussion of the underlying concepts, the authors are careful to distinguish between two senses of "autonomy", stipulating that in their view autonomy refers to behavior that is agentic, volitional and self-determined, and does not refer to the opposite of relatedness (i.e., independence or detachment). The distinction between these two meanings of autonomy has also been discussed by Wiggins (1997) as autonomy₁ and autonomy₂, respectively. Ryan and Solky (1996) define the need for relatedness as "the basic human need or propensity to be securely connected to and esteemed by others and to belong to a larger social whole" (p. 251).

These two dimensions of autonomy and relatedness are isomorphic with the dimensions of agency and communion (or more concretely, status and love) that underlie the interpersonal circumplex, dimensions increasingly recognized as being orthogonal to one another. However, by including "esteemed" in their definition of relatedness, Ryan and Solky (1996) demonstrate a common tendency to provide definitions of these two dimensions that suggest a less than complete separation of the constructs. In addition, their suggestion that autonomy is a necessary condition for the full expression of relatedness reflects a return to "bipolar thinking" that is similarly common in the literature. This tendency to see one dimension as "mitigating" the other neglects their theoretical and empirical orthogonality, and in the absence of the sort of explicit structural

model provided by the interpersonal circumplex, the rules or principles for specifying the relations between these dimensions are unclear (Wiggins, 1997).

Nonetheless, despite this technical point of disagreement, Ryan and Solky's (1996) formulation is highly compatible with that presented here, and the richness of their theoretical framework embraces recent advances in attachment theory (Main, Kaplan, & Cassidy, 1985), object relations theory (Blatt & Blass, 1996), and interpersonal theory (Benjamin, 1995), among other perspectives. Their notion of the most helpful of support types, autonomy support, as that which "entails acknowledgment of the other's perceptions, acceptance of the other's feelings, and an absence of attempts to control the other's experience and behavior" (p. 252), is an impressive extension of their self-determination theory (Deci & Ryan, 1985, 1991; Ryan, 1993). This type of support clearly involves the provision of both love and status to others, the most generally helpful of support transactions within the interpersonal formulation presented here. Also consistent with the interpersonal formulation presented here is Ryan and Solky's (1996) views regarding tangible supports: "...tangible supports can be offered either in a way that feels supportive and respectful of one's autonomy or in a way that threatens autonomy, sense of competence, or other needs so as to feel psychologically unsupportive, even if practically useful" (pp. 261-262).

Understanding "Unhelpful" Support

Cobb (1975) in a paper devoted to the "exorcism of value judgments" from scientific discourse states:

Note that this is the second time that the concept of good/bad has been taken out of the terminology of our science. Above it was removed from the concepts of coping and defense and now the importance of removing it from notions of stress and strain is emphasized. Apparently we still have some demons to exorcise as we make our discipline more scientific. (pp. 333-334)

A similar approach is taken here, in which the discussion of social support transactions is not limited only to those that are "supportive" or "helpful" in nature. Rather, those behaviors that occur in response to the real or perceived distress of another, may all be considered as "support transactions" worthy of consideration, regardless of providers' or recipients' evaluations of their "helpfulness".

Recall that given the bipolarity inherent in the current model, many possible combinations of the granting and withholding of love and status to self and to other are represented in the dyadic model provided in Figure 1. The "self" in this instance refers to the provider of "support" who communicates his/her preferred interpersonal message to the "other" (the recipient of such "support"). Although the interpersonal message might ideally involve the granting of love and status to the recipient, a number of factors may militate against such a situation. Not all individuals are willing or able to put aside their own needs for the benefit of the other, nor do all individuals share a world-view in which others are seen as lovable and worthy of support. The "BC" supporter, for example, views him/herself as deserving of love and status, but does not afford others the

same consideration, and is therefore likely to convey to recipient's that they are inferior and uncared for. The "HI" supporter's dislike and disrespect of him/herself, will result in a lack of the confidence necessary to feel that he/she has something to contribute to the recipient's coping, and although he/she sees others as worthy of status they aren't particularly cared for, resulting in actions that although respectful, have a detached quality.

Additional factors leading to the provision of "unhelpful" actions include misguided perceptions on the part of the provider regarding what sorts of actions are generally helpful, or are helpful to this particular recipient in this particular context. This suggests that although the theoretical model presented here would assert that, in general, actions located on the right side of the circle will involve the provision of love and status to others, and therefore are likely be perceived as "supportive" by the recipient, there are situations in which this will not be the case. For example, a well-meaning provider may show his/her love and respect for a recently divorced friend through an invitation to a party at a time when the friend is not interested in socializing and would rather the provider made time to listen to him/her. In this instance, although the provider may have intended his/her action to convey the granting of love and status, the recipient may interpret the action as disrespectful and insensitive. Such miscommunications of interpersonal messages may be particularly likely to occur in conflict-laden relationships (Pierce, B. Sarason, & I. Sarason, 1992; B. Sarason, I. Sarason et al., 1990).

Consideration of “unhelpful” actions has been the focus of much research among social support investigators. The effects of such negative transactions on well-being have been clearly documented (Rook, 1990; Rook & Pietromonaco, 1987), and in fact, transactions involving such negative social outcomes have been found to be more consistently and more strongly related to well-being than were transactions involving positive social outcomes (Rook, 1984). Such findings underscore the importance of examining a range of support transactions that includes actions that would generally be thought of as “unhelpful” as well as those generally thought of as “helpful”.

Examples of behaviors that have often been reported by recipients as “unhelpful” in nature include: discouraging discussion and expressions of feelings, encouraging recovery, using scripted support attempts (Wortman & Lehman, 1985); minimizing or maximizing the problem (Lehman & Hemphill, 1990); physical avoidance, avoidance of open communication (Dunkel-Schetter & Wortman, 1982); and, advising, blaming, and second-guessing (Jung, 1989). Although interpretations of some of these actions (e.g., minimizing, maximizing, using scripted support attempts) are more highly particularized by recipients’ attributions regarding support transactions, others (e.g., physical avoidance, avoidance of open communication, advising, blaming) are included within the present taxonomy.

Empirical Origins of the Present Perspective

The perspective presented here had its incidental origin in some of my earlier work in which I examined characteristics of providers as determinants of

support provision (Trobst, 1991; Trobst et al., 1994). Part of this research involved preliminary construction of a Supportive Actions Scale (SAS) consisting of 31 items designed to assess the amount and kinds of support providers believed they would offer to someone in need. Dakof and Taylor's (1990) comprehensive list of helpful and unhelpful support actions received by people with cancer provided a definition of the universe of content and served as a guide for item generation. For each action, participants were asked to indicate, on a 7-point Likert scale ranging from "definitely would not do this" to "definitely would do this", the likelihood of performing each behavior, and on another 7-point Likert scale, ranging from "definitely would not be helpful" to "definitely would be helpful", the perceived helpfulness of the action were it to be performed.

Principal components analysis of correlations among the 31 items, based on a sample of 86 male and 85 female undergraduates, revealed three interpretable factors that appeared to represent stylistic differences in the types of support potential providers expected to proffer. Specifically, Factor I (Encouraging/Emotional Support, $\alpha = .87$) reflected acts of reassurance and concern and was deemed to include the most helpful actions (helpfulness rating, $\chi = 5.31$). Factor II (Directive Support, $\alpha = .60$) involved actions designed to influence and instruct the recipient and received neutral helpfulness ratings ($\chi = 4.05$). Factor III (Avoidant/Enabling Support, $\alpha = .68$) assessed tendencies to evade and enable; actions judged to be somewhat unhelpful ($\chi = 3.58$). Patterns

of mean perceived likelihood of performing the actions paralleled helpfulness ratings (i.e., Factor I: $\chi = 5.44$; Factor II: $\chi = 4.41$; Factor III: $\chi = 3.98$) (Trobst, 1991).

Closer inspection of these factors suggested possible theoretical placement within interpersonal circumplex space, although neither interpersonal theory nor circumplex methodology were considered in the creation of the original item pool. Encouraging/Emotional support, for example, assessed relatively “warm” and “nurturant” actions; a giving of love and status to one in need. Directive support, by comparison, represented “dominant” actions, involving an offering of love but a denial of status. Avoidant/Enabling support, although more difficult to place, seemed to capture elements of passivity, reminiscent of “submissive” characters in circumplex parlance, in which status is granted while love is withheld. Conjointly, these factors suggested a circumplex structure with apparent lacunae in coverage. Encouraged by these findings, I attempted to construct a full circumplex model of support transactions (Support Actions Scale-Circumplex version; SAS-C), the results of which are the focus of the current research.

Statement of Purpose

The present research attempts to address the need for theory and corresponding measurement operations in social support research by returning to Cobb's (1976) original formulation of the social support construct and by elaborating a theoretical and empirical framework that draws upon the

interpersonal circumplex and the associated social exchange traditions that have achieved widespread acceptance within personality psychology.

STUDY 1

Method

Participants

One hundred and sixty-nine University of British Columbia undergraduate students enrolled in psychology courses participated in the study, either as volunteers or in exchange for partial course credit. Questionnaires were distributed in class and were either completed there or were taken home and returned at the next class meeting.

Procedure

Initial item generation was undertaken by three expert judges who were well-acquainted with the interpersonal circumplex tradition. Items were constructed to map the eight sectors of the interpersonal circle as conceptualized by Wiggins (e.g., Wiggins, 1995). In generating items, attempts were made to capture actions likely to be undertaken by prototypic individuals of each of the eight dispositional types captured in Wiggins' (1995) Interpersonal Adjective Scales circumplex (to be discussed later) that would convey their preferred interpersonal message with respect to the granting or withholding of love and status to both self and other. The original SAS items employed in the Trobst (1991) study were rewritten, as necessary, to be more generally applicable (i.e., not specific to a particular support context), and were included in the questionnaire. A 139-item questionnaire was thus created.

All questionnaire items were responded to on a 7-point Likert scale ranging from “definitely wouldn’t do this” to “definitely would do this”. Instructions were stated as follows:

We are interested in how people typically respond when a friend or family member is in need of help or support. In answering the questions that follow please try to be as accurate as possible in assessing how you typically or characteristically respond when someone close to you has a problem. Please think about times when people in your life have encountered difficulties and the types of things you have said or done in such situations. For each of the items listed please indicate your likelihood of performing this particular behavior, by circling the number next to the item that best corresponds to your answer.

Results and Discussion¹

All items were subjected to a principal components analysis extracting two factors defining an expected circumplex space. Factor scores were obtained for each participant for each of the two factors. Each of the 139 items in the current pool of SAS items was then correlated with these two factors. As can be seen from Figure 2, the correlations may be interpreted as defining the location of each item within circumplex space, such that one correlation represents the distance from the origin along the x-axis and the other represents the distance from the origin along the y-axis. The angular location (θ) of each item within

circumplex space could then be determined by computing the arctangent of the value obtained by dividing the correlation of the item with Factor II (r_2 = y-axis location) by the correlation of the item with Factor I (r_1 = x-axis location) such that $\theta = \arctan (r_2 / r_1)$. The communality (h^2) of each item (i.e., the distance of the item from the center of the circle) represents the extent to which an item is related to the two primary dimensions of the circumplex and was computed from the sum of the squares of the item's correlations with each of the two factors: $h^2 = (r_1)^2 + (r_2)^2$.

 Insert Figure 2 about here

For example, let's assume the foregoing analyses were being conducted with respect to a hypothetical support action "I would socialize with them", and that this item is found to have correlations of .50 with Factor I and .50 with Factor II. Angular location would then be calculated as: $\theta = \arctan (.50/.50) = 45^\circ$, indicating an angular location for this item of 45° . Communality of this item would then be computed as: $h^2 = (.50)^2 + (.50)^2 = .50$. This item would, therefore, be known to have a placement at the center of the octant representing a blend of dominant and nurturant tendencies (NO octant) and a substantial communality value.

¹ Factor-analytic results for Study 1 are reported in the appendix.

Selection of items for octant scales was then undertaken with consideration of both an item's angular location and its communality. Ideally, octant scales are developed in such a way as to obtain equal spacing (i.e., 45°) between them (e.g., LM = 0°, NO = 45°, PA = 90°, BC = 135°, DE = 180°, FG = 225°, JK = 270°). Therefore, items are selected that cluster around the mid-point of each octant, and/or those spread along the arc of that octant, such that the items are equidistant on either side of the mid-point. Items at the mid-point are considered "prototypical" of that octant, whereas those at the border of two octants represent a blend of the two tendencies represented by the octants. Items are also selected on the basis of their communality values, with preference given to higher values in order to maximize the extent to which the two primary axes (Dominance and Nurturance) are represented in the final item set.

Octant scales are then computed by summing selected items within each scale. Factor scores for each subject are computed with reference to the following formulas (where "z" indicates use of standardized octant scores):

$$\text{DOM} = .3[(z\text{PA} - z\text{HI}) + .707(z\text{NO} + z\text{BC} - z\text{FG} - z\text{JK})]$$

$$\text{LOV} = .3[(z\text{LM} - z\text{DE}) + .707(z\text{NO} - z\text{BC} - z\text{FG} + z\text{JK})].$$

This is equivalent to conducting a two-factor principal components analysis with varimax rotation and then performing a Procrustes rotation of the resulting factors in order to orient them into the desired location (e.g., PA at approximately 90°, with exact placement depending on the appropriateness of the items

selected and the relation of this octant scale to all other octant scales) (Wiggins & Broughton, 1991).

The loading of each octant scale on the two factors may then be used to plot that octant scale's location within circumplex space. To the extent that an octant's angular location deviates from the theoretical ideal (e.g., NO octant location = 52° , rather than the ideal of 45°), attempts may be made to correct this placement through the deletion of items at one end of the range of angular locations under consideration and the addition of items at the opposite end in order to "pull" the scale into the desired location. Selection of items defining octant scales is thus an iterative procedure, ideally resulting in the creation of eight scales with high communality values that are placed within the circumplex at a distance of 45° apart.

In this preliminary study, the distribution of items around the circumplex permitted the construction of relatively distinct and clearly defined octants; however, 41% of the items were discarded on the basis of insufficient communality values (i.e., $< .20$) and consequently, it was not possible to construct eight octant scales with a sufficient number of items per scale. In addition, the NO octant was noticeably displaced from the desired location of 45° , with placement closer to the LM octant.

STUDY 2

Method

Participants

Three hundred and eighty-nine undergraduate students enrolled in psychology courses participated in the study, either as volunteers or in exchange for partial course credit. A portion of the sample received questionnaires that were distributed in class to be completed at home and returned during a subsequent class. The remainder of the sample was called and asked to participate, or signed up via a recruitment bulletin board, and completed the battery of questionnaires in an on-campus laboratory.

Procedure

The 82 items retained from Study 1 were combined with an additional 58 items that were generated in the same manner described earlier, with particular attention to the generation of items in the upper-right quadrant (strong-warm) in an attempt to "move" NO toward its desired location. The resultant 140-item questionnaire was included in a larger battery of tests administered in a cooperative research program and employed the instructions and the 7-point Likert format used in Study 1.

Results²

Examination of item communality resulted in the deletion of 20 items with communalities of $<.30$. Examination of the angular location of remaining items revealed a gap in coverage reflecting an insufficiency of items assessing actions

characterizing a blend of warm and submissive tendencies (JK). In addition, generation of a preliminary circumplex revealed that the NO and LM octants were still too close together. Additional generation of items was thus required.

STUDY 3

Method

Participants

Four hundred and eighty-two undergraduate students (36.8% male, 63.2% female; age range 16-44 with mean age = 20 years) volunteered to participate in a questionnaire study in exchange for partial course credit. Questionnaire packets were distributed in class and returned in a subsequent class meeting or were brought to a designated location (80.3% of distributed packets were returned).

Procedure

The remaining 120 items from Study 2 were combined with an additional 40 items that were generated in an attempt to increase representation of warm and/or submissive actions one might perform when responding to someone in need. The resultant 160-item questionnaire employed the 7-point Likert format and the instructions used in studies 1 and 2. Participants were also asked to complete commonly employed inventories of social support behaviors and personality characteristics.

² Factor-analytic results for Study 2 are reported in the appendix.

Social Support Scales

Because the social support literature has tended to examine social support behaviors from the perspective of the recipient, the format of each of the following scales was changed to reflect the perspective of the support provider. For example, the item “Expressed interest and concern in your well-being” was reworded “I would express interest and concern in their well-being”. For ease of completion, and for metric comparability, all items were administered in the same 7-point Likert format employed in the SAS-C.

Social Support Behavior Questionnaire. The Social Support Behavior Questionnaire (SSBQ; Johnson, Hobfoll, & Zalcberg-Linetzy, 1993) was designed to be completed by support recipients and consists of two subscales, one assessing helpful actions (six items), the other assessing unhelpful actions (nine items), performed by a support provider. A “total” score is calculated by subtracting the unhelpful score from the helpful score.

Social Support Behaviors. The Social Support Behaviors scale (SS-B; Vaux, Riedel, & Stewart, 1987) is a 45-item scale designed to measure five modes of support (i.e., emotional support, socializing, practical assistance, financial assistance, and advice/guidance). This scale is normally administered to support recipients with instructions to indicate, on a 5-point Likert scale from “no one would do this” to “most family members/friends would certainly do this”, how likely it is that each behavior would be performed by a family member and how likely it is that it would be performed by a friend.

Inventory of Socially Supportive Behaviors. The Inventory of Socially Supportive Behaviors (ISSB; Barrera et al., 1981) is 40-item inventory that assesses tangible (e.g., provision of goods and services) and intangible (e.g., guidance and expressions of esteem) forms of assistance using a 5-point Likert scale from “not at all” to “about every day”, to assess the frequency with which each action occurred during the preceding month. Factor analysis of these items was interpreted as providing a four-factor solution, with subscales of directive guidance, non-directive support, positive social interaction, and tangible assistance (Barrera & Ainlay, 1983).

Personality Scales

Interpersonal Reactivity Index. Davis' (1980) Interpersonal Reactivity Index (IRI) is a 28-item questionnaire consisting of four subscales assessing different aspects of trait empathy (i.e., empathic concern, perspective-taking, personal distress, and fantasy). Items were presented on a 7-point Likert scale from “not true” to “very true”. This scale had been found previously to be substantially related to social support (Trobst et al., 1994).

Interpersonal Adjective Scales. The Interpersonal Adjective Scales (IAS; Wiggins, 1995), Big Five version (IAS-B5; Trapnell & Wiggins, 1990) was employed as a measure of dispositional tendencies. The IAS-B5 is a five-factor model (FFM) inventory consisting of 124 adjectival items requiring respondents to rate the descriptiveness of each item on an 8-place Likert scale from “extremely inaccurate” to “extremely accurate”. The IAS-B5 includes octant scales for the interpersonal circumplex formed by the dimensions of Dominance

and Nurturance as well as markers of the remaining three five-factor model domains of Neuroticism, Conscientiousness, and Openness to Experience.

Results and Discussion³

Construction of the Support Actions Scale Circumplex

The preliminary SAS octant scales obtained in Study 2 comprised 61 items which were employed as initializing scales in the present study. The eight octant scales from Study 2 were subjected to a principal components analysis extracting two factors defining the circumplex space. Factor scores were obtained for each participant for each of the two factors. Each of the 160 items in the current pool of SAS items was then correlated with these two factors. Angular location and communality were calculated for each item and new octant scales were developed using the procedures outlined earlier.

The SAS circumplex (SAS-C) presented in Figure 3 resulted following four rounds of item selection. The black squares within each octant depict the placement of each octant scale within circumplex space. Note that each square is located close to its theoretical ideal (i.e., mid-point of the octant), and that all squares are relatively equally spaced around the outer edge of the circle, with communality values of approximately 0.80, suggesting that the two circumplex dimensions (Dominance and Nurturance) are well-captured by these scales.

³ Correlations among all Study 3 variables are reported in the appendix.

 Insert Figure 3 about here

Beginning at the top of the circumplex and proceeding in a counter-clockwise direction, the angular location, communality value, and alpha coefficient of each scale is: PA ($\theta=92^\circ$, $h^2=.80$, $\alpha = .75$); BC ($\theta=134^\circ$, $h^2=.82$, $\alpha = .83$); DE ($\theta=180^\circ$, $h^2=.80$, $\alpha = .85$); FG ($\theta=224^\circ$, $h^2=.84$, $\alpha = .77$); HI ($\theta=267^\circ$, $h^2=.73$, $\alpha = .76$); JK ($\theta=315^\circ$, $h^2=.74$, $\alpha = .71$); LM ($\theta=4^\circ$, $h^2=.85$, $\alpha = .78$); NO ($\theta=44^\circ$, $h^2=.84$, $\alpha = .80$). The overall circumplex structure compares favorably with what is considered by Kiesler (1996) to be the best circumplex reported in the literature; the Interpersonal Adjective Scales (IAS; Wiggins, 1995). The percentage of variance accounted for by the SAS circumplex coordinates is 64.5% (Nurturance factor = 33.7%; Dominance factor = 30.8%), as compared with the IAS (Nurturance factor = 35.5%; Dominance factor = 35.6%; Total = 71.1%). The average communality value (.80) of the eight SAS-C octant scales is similar to that obtained for the IAS octant scales (.84), and the average SAS-C octant scale alpha coefficient (.78) is comparable to the average IAS octant scale alpha coefficient (.83). The absolute average angular displacement (i.e., distance from ideal angular location) of the SAS-C octant scales is 1.5° and also compares favorably with the IAS circumplex (absolute average angular displacement = 3°).

Advantages of Circumplex Methodology

Although the procedures whereby circumplex scales are constructed may seem rather esoteric, it is important to note that these scales may be used in the same manner as any multi-scale inventory. The advantage of circumplex methodology lies in the theoretical underpinnings of this model that provide a framework for interpretation of resulting scale scores in which the relations among scales is known and theoretically meaningful. With most personality inventories, resultant profiles display normative results of scales arranged in an arbitrary order lacking conceptual significance. For example, the “conversion-V” of the MMPI would have taken a different form, and been given a different label, had the arbitrary ordering of MMPI scales been different (Gurtman & Balakrishnan, 1994).

An additional advantage of circumplex methodology is the opportunity provided for classifying individuals (or groups) within typological categories (LaForge, Leary, Nabors, Coffey, & Freedman, 1954). With other multi-scale inventories, an individual's scale scores are typically viewed dimensionally and in isolation. Circumplex methodology, alternatively, allows for the use of trigonometric procedures to compute a mean directional tendency by averaging an individual's standardized scores on each of the eight octants [obtaining a mean vector with a particular angular location and the distance of that vector from the center of the circle (vector length)].

Determination of an individual's angular location requires computation of the following formulas (identical to those used during scale construction for determining the angular location of octants):

$$\text{DOM} = .3[(z\text{PA} - z\text{HI}) + .707(z\text{NO} + z\text{BC} - z\text{FG} - z\text{JK})]$$

$$\text{LOV} = .3[(z\text{LM} - z\text{DE}) + .707(z\text{NO} - z\text{BC} - z\text{FG} + z\text{JK})].$$

Where "z" indicates the use of standardized octant scores, DOM assesses an individual's tendency with respect to dominant behaviors (i.e., their standing on the y-axis) and LOV assesses the individual's tendency with respect to nurturant behaviors (i.e., their standing on the x-axis). Angular location is then computed via the following formula:

$$\text{Angular Location} = \arctan (\text{DOM}/\text{LOV}).$$

Vector length (comparable to "communality" discussed with respect to item placement) involves calculation of:

$$\text{Vector Length} = [(\text{DOM})^2 + (\text{LOV})^2]^{1/2}.$$

An illustrative profile will be presented and discussed following the next section.

Content and Conceptualization of the SAS-C

The items contained within each of the eight octants (and item angular locations and communalities) are presented in Table 2. Consideration of item content within each octant suggested the summarizing substantive labels given to each octant in Figure 3. In addition, the "interpersonal message", in terms of the granting and withholding of love and status with respect to both self and

others, also becomes evident from consideration of the content of items defining each octant.

 Insert Table 2 about here

Directive (PA). These items describe actions in which the provider actively takes on the problem, offers advice, and emphasizes his/her competence in, and resources for, doing so. The interpersonal message would appear to involve the granting of love and status to self (provider), in that the provider sees him/herself as both likeable and capable, and the granting of love but not status to the other (recipient), in that the provider likes the recipient enough to assist in dealing with the problem, but asserts his/her superiority in doing so.

Arrogant (BC). These items describe providers who take over the problem, emphasize their personal qualifications in so doing, take control of the situation, make decisions for the recipient, and actively persuade the recipient to change his/her behavior. The interpersonal message reflects a granting of love and status to self in the positive self-regard on the part of the provider, and the withholding of both love and status from the other, as demonstrated in the competitive need to take over for the recipient in his/her ineffective coping efforts.

Critical (DE). These items reflect a tendency to blame the recipient and criticize his/her emotionality, to minimize the problem, and to indicate a

reluctance to either take the problem seriously or encourage further discussion of it. The interpersonal message conveys a granting of status, but not love, to self, and neither love, nor status, to the other. Likeability of self or others is not apparent in the content of the items located here, although one is left with the sense of a feeling of superiority on the part of the provider.

Distancing (FG). These items reflect attempts on the part of the provider to avoid expressions of concern in order to distance him/herself from the problem and thereby preclude involvement in it. Love and status are withheld, in this instance, from both the provider (self) and the recipient (other). Item content suggests a tendency to reject the other, without a sense of superiority, and to disregard feelings (both one's own and the feelings of the other).

Avoidant (HI). These items describe actions which reflect a desire to avoid stating opinions, giving advice, making recommendations, and challenging or changing the recipient's opinions or behaviors. Love and status are denied to self, as evidenced in the lack of consideration for one's own emotional appeal or competencies. Status, but not love, is granted to the other, as seen in the lack of desire to usurp the other's competence, but failure to express concern or show empathy for the other's plight.

Deferential (JK). These items denote attempts on the part of the provider to indicate his/her willingness to listen without judging, arguing, or advising. Neither love, nor status, are granted to self, with items reflecting a selfless lack of regard for one's own feelings or competencies. Both love and status are granted

to the other, as evident in the attention given to the other and the deference given to the other's values and judgments.

Nurturant (LM). These items reflect desires to provide emotional support and affection, active listening, and to be patient with the recipient by not pressuring or putting demands on him/her. Love, but not status, is granted to self, as seen in the confidence in one's own emotional appeal, but lack of superiority expressed in the item content. Love and status are granted to others, as evidenced in the affection and respect afforded to recipients.

Engaging (NO). These items reflect enthusiasm in helping, active social involvement, expressions of concern, protectiveness, and provision of useful information. Love and status are granted to both self and other as evident in the items suggesting that providers put themselves on an equal footing with recipients and demonstrate liking for both self and other.

Item Endorsement and Desirability

Table 3 presents the mean item endorsement for SAS-C and IAS octant scales obtained in the current sample. These means are highly similar across the two measures. Although no attempt was made to assess "desirability responding" in the present study, an extensive investigation has been performed with the IAS scales (Wiggins, 1995). Wiggins asked a group of participants to rate the desirability of each IAS adjective on an 8-place scale. These ratings were used to calculate the mean desirability rating of each octant and to order the IAS scales on the basis of these ratings from relatively desirable to relatively undesirable. These rankings, as one would expect, corresponded to the rank

order of IAS scale endorsements. This is expected because what is frequent is generally desirable and what is infrequent is generally undesirable (note that this is not the same thing as assessing “socially-desirable responding” in individual respondents).

On the basis of a representative sample of normal adults (N=377), university students (N=2,988) and a sample of adults who completed the IAS under conditions of employment selection (N=362), Wiggins (1995) determined, unambiguously, that the university sample, in every comparison, tended to produce the least “desirable” IAS protocols. Hence, it is unlikely that the results obtained in the present sample on both IAS and SAS are heavily contaminated by attempts to foster a favorable impression. The rank ordering of octants by item endorsements are highly similar across the two measures. In general, octants on the right (warm) side of the circle are endorsed more highly than those on the left (cold) side of the circle. Although these are likely the same octants that would be preferentially endorsed by individuals attempting to create a favorable impression, they also seem, intuitively, to represent the more common action-tendencies in social support situations.

Insert Table 3 about here

An Example of a SAS-C Profile

An example of a well-differentiated SAS-C profile is presented in Figure 4. The individual is a 21 year-old male, who was categorized within the Critical (DE)

category, with an angular location of 180° (prototypical DE) and a vector length of 1.8 standard deviations above the mean (T-score = 68, relatively extreme). (The angular location and vector length are illustrated by the arrow extending from the center of the circle). This individual clearly demonstrates the “characteristic configuration” of a circumplex profile (Wiggins, Phillips, & Trapnell, 1989) in which the primary elevation occurs on the defining octant (i.e., DE) with secondary and equal elevations occurring on adjacent octants (i.e., BC, FG), with decreasing elevations occurring up to a highly truncated opposite octant (i.e., LM). In this case, the individual reports a relatively extreme tendency to behave in a critical (DE) fashion, with a somewhat elevated tendency to behave in arrogant (BC) and distancing (FG) ways, an average likelihood of performing directive (PA) and avoidant (HI) actions, below average tendencies toward engaging (NO) and deferential (JK) behaviors, and a striking likelihood of not behaving in a nurturant (LM) fashion.

 Insert Figure 4 about here

Parenthetically, when this project first began, there was general skepticism regarding the likelihood of obtaining sufficient item endorsement to mark the negative pole of nurturance, given the clearly “unsupportive” actions involved. Examination of the distribution of items obtained during the scale construction phases put this issue to rest. Nonetheless, the present, well-

configured (and extreme) DE profile, gives further support to the notion that individuals offering such "support" exist and admit it!

Gender Differences in Support Actions

Although not designed as a study of gender differences, the present data appear compatible with several observations that have been made in that literature. Eagly and Crowley (1986) indicated that the norms governing helping are quite different for males and females, and therefore, men and women may be expected to differ in their ability or willingness to provide support to an individual in need (see also Trobst et al., 1994). Griffith (1985), in a study of demographic characteristics of support providers, found that women are somewhat more likely than men to be relied on for support and Flaherty and Richman (1989) "contend that women are the more supportive, nurturing, and affectively-connected sex" (p. 1221).

A summary of SAS-C gender differences is provided in Table 4 that includes the percentage of variance in scale scores accounted for by gender (i.e., squared correlation of gender with each scale X 100), and the proportions of males and females classified into each of the octants. Examination of these data indicates that gender accounts for a significant proportion of the variance for six of the octants, with males receiving higher scores than females on scales assessing arrogant, critical, and distancing actions, and females receiving higher scores than males on scales assessing deferential, nurturant, and engaging actions. With respect to octant classification, the greatest differences were found

in classification within the critical and distancing octants (primarily males) and the nurturant and deferential octants (primarily females).

 Insert Table 4 about here

House and Kahn (1985) observed that, "Evidence suggests that relationships with women may be more supportive and health promoting than relationships with men" (p. 93), and Reis (1984) noted that "physical and psychological health were more likely to stem from emotional caring and self-esteem support than from other forms of social support" (p. 39). These notions are consistent with the gender differences reported here, as well as with the theoretical model presented. It appears that women are more likely than men to provide support that conveys the granting of love (emotional caring in Reis' terms) and status (self-esteem support in Reis' terms) to others. That these two types of support are the ones most likely to demonstrate relations with physical and psychological health is consistent with the theoretical notions presented earlier in this paper.

Conceptualizing Social Support Constructs within the SAS-C Framework

Having established, on a preliminary basis, both the substantive and structural promise of the SAS-C as a measure of individual differences in response to support situations, its relation to extant measures of social support behaviors will now be considered. The focus here will be upon the relations between a subset of existing measures of social support behavior and the two

well-established dimensions of interpersonal behavior (Dominance and Nurturance), as represented within the SAS circumplex. The interpersonal circumplex model provides a taxonomic framework for the precise geometric classification of other scales with reference to their relative loadings on the primary interpersonal dimensions of Dominance and Nurturance (Wiggins & Broughton, 1991). In other words, one may determine, by examining the placement of any given scale within circumplex space, the degree to which that scale assesses dominant and/or nurturant tendencies (i.e., tendencies that have, theoretically and empirically, been found to define the universe of content of interpersonal behaviors). Within this context, the interpersonal circumplex may be viewed as a nomological net within which the construct validity of other scales may be evaluated, while also establishing the construct validity of the circumplex measure itself (see Gurtman, 1992).

The procedures for "projecting" a scale onto an interpersonal circumplex are the same as those employed for determining the location of an individual; a scale's correlation with DOM and LOV is determined, as is its communality (interpreted, and computed, as vector length in the case of the individual). The result is a point, within the two-dimensional circumplex space, representing both angular location (i.e., specific placement within a particular octant) and communality (i.e., distance of the point from the center of the circle--assessing the extent to which it is related to dominant and nurturant tendencies).

Social Support Behavior Questionnaire. Johnson et al.'s (1993) Social Support Behavior Questionnaire (SSBQ) consists of two subscales, one

assessing helpful actions that may be performed by a support provider, the other assessing unhelpful actions, with a total score obtained by subtracting the unhelpful score from the helpful score. The projections of these two subscales, and the total score, onto the SAS circumplex are presented in Figure 5.

 Insert Figure 5 about here

The location of the “helpful” subscale suggests that it represents a strong tendency toward Nurturance and a moderate tendency toward Dominance. Its position, although within the NO (engaging) octant and clearly indicating a granting of love and status to both self and others, is closer to the LM border, reflecting a relatively more nurturant, and less dominant, tendency. With respect to the SAS-C item content within this location, Johnson et al.’s “helpful” scale is related to enthusiastic and concerned helping and social involvement, which would seem congruent with lay-notions of supportiveness and which also provides evidence for the construct validity of their scale. The location of the “unhelpful” subscale suggests that it represents moderate tendencies toward both Dominance and negative Nurturance, and its placement within the BC (arrogant) octant indicates the granting of love and status to self and the granting of neither love nor status to other. The SAS-C item content within this location suggests that Johnson et al.’s “unhelpful” subscale is related to tendencies to assert superiority over the recipient, and to take control over his/her coping with the problem. The SAS-C delineates a number of behavior patterns that might be

deemed “unhelpful” by recipients, and this scale clearly captures one of the more blatant types. The total helpfulness score, which essentially removes tendencies towards dominant and arrogant actions from engaging/nurturant actions, clearly falls within the nurturant (LM) octant. This finding enhances the construct validity of the total score as an index of helpful support actions and, as mentioned earlier, suggests the appropriateness of the SAS circumplex as a criterion against which measures of social support might be evaluated.

Social Support Behaviors. Vaux et al.’s (1987) Social Support Behaviors scale (SS-B) is a 45-item scale designed to measure the five subscales of emotional support, socializing, practical assistance, financial assistance, and advice/guidance. The projections of these five subscales onto SAS-C space, shown in Figure 6, suggest that advice represents a relatively strong tendency toward Dominance (and a slight tendency toward Nurturance), falling clearly within the Directive (PA) category, which is quite consistent with SAS-C formulations of that category. Within the engaging (NO) octant, one finds: “financial assistance”, which represents moderate tendencies toward Dominance and slight tendencies toward Nurturance; “practical assistance” which demonstrates moderate tendencies toward both Dominance and Nurturance; and, socializing, which represents moderate tendencies toward Dominance and relatively strong tendencies toward Nurturance. “Emotional support” is located at the border between nurturant (LM) and engaging (NO) octants and represents slight tendencies toward Dominance, and strong tendencies toward Nurturance, consistent with SAS-C conceptualizations in which individuals grant love and

status to both self and others, express concern, give affection, and demonstrate respect.

The Vaux et al. (1987) scales are thus clearly differentiated on the basis of their relative standings on the Dominance and Nurturance axes of the SAS-C; however, three of the five subscales fall within the NO (engaging) octant, and the other two fall close to the border of that octant. These results suggest that although the Vaux et al. subscales distinguish different classes of resources provided in a support context, they do not differentiate among the possible support styles described here, since most of the resources appear to be provided primarily by individuals who report that they would adopt an “engaging” support style.

 Insert Figure 6 about here

Inventory of Socially Supportive Behaviors. Barrera et al.'s (1981)

Inventory of Socially Supportive Behaviors (ISSB) contains subscales of directive guidance, non-directive support, positive social interaction, and tangible assistance (Barrera & Ainlay, 1983). Projections of these subscales onto SAS-C space, shown in Figure 7, revealed that directive guidance yielded moderate associations with Dominance and slight associations with Nurturance, falling on the border between directive (PA) and engaging (NO) actions. Tangible assistance demonstrated moderate associations with both Dominance and Nurturance, and fell within the engaging (NO) octant, as did positive social

interaction. Non-directive support, although also falling within the engaging (NO) octant, demonstrated moderate relations with Dominance and relatively strong relations with Nurturance. Again, as demonstrated with respect to the Vaux et al. (1987) scales, although Barrera et al.'s (1981) subscales may be seen as discriminable in conceptually consistent and meaningful ways, all convey the granting of both love and status and span a total of 39° of the SAS-C defined territory of stylistic differences in response to hypothetical support situations.

 Insert Figure 7 about here

Personality Characteristics and the SAS-C

Interpersonal Reactivity Index. Empathy has previously been shown to be an important determinant of support provision (e.g., Trobst et al., 1994). In the present context, Davis' (1980) four subscales of trait empathy (i.e., empathic concern, perspective taking, personal distress, and fantasy) were assessed and projected onto SAS circumplex space, as shown in Figure 8. As expected, empathic concern demonstrated the strongest association with the interpersonal circumplex dimensions, with a slight association with Dominance and a relatively strong association with Nurturance, suggesting that of the empathy subtypes assessed by Davis, it is the one most likely to be associated with nurturant support transactions. Perspective-taking was not significantly associated with Dominance and demonstrated a moderate association with Nurturance. Fantasy

had a slight association with Nurturance and was not associated with Dominance, and personal distress, although slightly negatively correlated with Nurturance was largely unassociated with either axis and therefore largely unrelated to the stylistic differences in support transactions reported here. Because of their weak associations with the two circumplex axes underlying support transactions, the latter two types of empathy (i.e., fantasy and personal distress) appear to have little predictive validity in determining the quantity or quality of love- and status-based support behaviors.

 Insert Figure 8 about here

Interpersonal Adjective Scales-Big 5 Version. As stated earlier, the IAS-B5 includes, in addition to the two dimensions (Dominance and Nurturance) of the interpersonal circumplex, the remaining dimensions of the five-factor model which have been called Neuroticism (or Emotional Stability), Conscientiousness, and Openness to Experience (which some investigators have interpreted as "Intellect"). The structure of the IAS circumplex, within the present sample, is depicted in Figure 9, in which IAS octant scales were correlated with IAS factor scores (i.e., DOM and LOV). Although deviating somewhat from the structure reported in Wiggins' (1995) sample (N=2,988), the angular location and communalities of the octant scales indicate a clear circumplex structure with empirically and conceptually distinct scales.

Insert Figure 9 about here

In this unique instance of having two clear circumplex structures to compare, the relations between the dispositional and support style tendencies measured here may be examined in two ways: (a) by examining the projections of SAS-C octant scales onto IAS circumplex space, and (b) by examining the projections of IAS octant scales onto SAS-C space. The former would suggest the extent to which IAS dispositional tendencies can be predicted from knowledge of SAS-C support style tendencies. The latter would suggest the extent to which SAS-C support style tendencies are predictable from IAS dispositional tendencies.

The projections of SAS-C octant scales onto IAS circumplex space is illustrated in Figure 10. This figure presents a striking example of the way in which the context parameter may qualify or particularize circumplex interpretation (Wiggins & Trobst, 1997b). Despite the well-documented two-dimensional circumplex structure of individual differences in support style tendencies, the projections of SAS-C octants onto IAS dispositional space suggests that the "Dominance" axis of the SAS-C collapses (i.e., is relatively unrelated to "Dominance" as measured in a dispositional context). Thus, knowledge of an individual's self-reported support style tendency is predictive only of his/her relative standing on the dispositional "Nurturance" axis, and gives little information regarding his/her dispositional dominance tendencies. A similar

phenomenon might be expected to occur if one were to examine relations between dispositional tendencies and self-reported leadership style--in which case, leadership tendencies would likely predict dispositional dominance tendencies, but be relatively unrelated to nurturant tendencies (Wiggins & Trobst, 1997b).

 Insert Figure 10 about here

As might be expected from the foregoing results, the projection of IAS octant scales onto SAS-C circumplex space, illustrated in Figure 11, displays a highly similar pattern. Information regarding dispositional dominance tendencies has little predictive value in determining self-reported support styles, whereas knowledge of dispositional nurturance tendencies allows one to determine relative standing on the Nurturance axis of SAS-C support styles. It should be noted that (in terms of the social exchange of love and status, angular orientation within a clear-cut interpersonal circumplex, face validity, and the empirical correlates reported thus far), a well-established Dominance axis has been identified within the realm of self-reported social support styles. That this Dominance axis is unrelated to IAS dispositional dominance may be surprising, but it highlights the importance of context in defining and interpreting interpersonal behavior; PA type support behaviors are "dominant", they just aren't performed disproportionately by "dominant" individuals, and the same is true of "submissive" support behaviors. "Nurturant" support behaviors,

alternatively, are performed, disproportionately, by “nurturant” individuals, and “critical” support behaviors by “cold” individuals.

 Insert Figure 11 about here

In examining the relations between the remaining three dimensions of the five-factor model of personality (Neuroticism, Conscientiousness, and Openness to Experience) and the SAS-C, it should be borne in mind that, in principle, the dimensions of the five-factor model are orthogonal to one another, and hence, substantial relations were not anticipated. In practice, less than complete orthogonality has often been reported (e.g., Block, 1995). In examining these relations, only correlations of .25 or greater were deemed to be worth noting. The only correlation obtained in this range was that between critical (DE) support behaviors and Openness to Experience ($r = -.29$). Although no great emphasis is placed on this result, it might be speculated that, in this context, individuals who fall essentially at the opposite pole from the nurturant dimension (LM) may tend to be closed to possible ways in which others might be supported.

Conceptualizing Social Support Constructs within the IAS Framework

Individuals classified in the warm-agreeable (LM) octant of the IAS are said to “provide material or emotional benefits to others who are in trouble, who need help, who are ill, or who are otherwise in need of care and support” (Wiggins, 1995, p. 26). This characterization is borne out by the projections of social support scales onto the IAS circumplex.

Figure 12 presents projections of the Social Support Behaviors Questionnaire (Johnson et al., 1993) scales onto the IAS circumplex. As can be seen from this figure, the subscales are tightly aligned along the Nurturance axis. "Helpful" behaviors are performed by warm-agreeable individuals. The "total" score is less strongly related to dispositional Nurturance, and the "unhelpful" scale falls close to the center of the circle and is essentially unrelated to dispositional Dominance and Nurturance. With respect to the relations of these scales with the IAS-B5 dimensions of Neuroticism, Conscientiousness, and Openness to Experience, the only noteworthy correlation is that between the "total" score and Openness to Experience ($r = .27$).

 Insert Figure 12 about here

Projections of the Social Support Behaviors scales (Vaux et al., 1987), as seen in Figure 13, indicate that these scales are also tightly aligned along the Nurturance axis. Emotional support, socializing, and practical assistance are likely to be provided by dispositionally warm-agreeable individuals. Advice and financial assistance are not significantly related to dispositional Dominance or Nurturance. Relations of these scales with Neuroticism, Conscientiousness and Openness to Experience revealed a correlation of .26 between emotional support and Openness to Experience.

 Insert Figure 13 about here

Warm-agreeable individuals are also likely to provide the kinds of support measured by Barrera et al.'s (1981) Inventory of Socially Supportive Behaviors. As seen in Figure 14, "non-directive support", "positive social interaction", "directive guidance", and "tangible assistance" all fall within the LM octant, suggesting again, that dispositionally nurturant individuals are those most likely to provide support of many kinds. No relation was found between these scales and Neuroticism, Conscientiousness, and Openness to Experience.

 Insert Figure 14 about here

In the projections of the Interpersonal Reactivity Index (Davis, 1980) empathy subtypes onto IAS circumplex space, in Figure 15, the empathic concern scale seems to be substantially related to nurturant traits, as, to a lesser extent, is perspective taking. The placement of the personal distress scale in the unassured-submissive (HI) octant of the IAS is not surprising, given that these individuals have "a disposition to be timid, fearful, and submissive in social transactions and to be lacking in self-esteem" (Wiggins, 1995, p. 25). The fantasy subscale is unrelated to dispositional Dominance and Nurturance. Openness to Experience was found to correlate .26 with empathic concern, .32 with perspective taking, -.31 with distress, and .28 with fantasy. In addition,

personal distress was found to correlate $-.26$ with Conscientiousness and $.44$ with Neuroticism.

Insert Figure 15 about here

General Discussion

Ideally, how social support is assessed should grow out of how it is conceptualized.

I. Sarason et al. (1990, p. 134).

In some circumstances, the fit between the circumplex model and many constructs from classical and contemporary interpersonal theory has been so close that one can hardly distinguish the theory from the model.

Wiggins & Trobst (1997b, p. 57).

The guiding hypothesis of the present research was that support transactions, like all interpersonal transactions, could be characterized as the exchange of love and status between participants in a dyadic interaction. Within the framework of an interpersonal circumplex model, statements were generated that reflected different support styles thought to characterize disposition-based allocations of love and status between self and other. After several attempts to maximize empirical fit within the heretofore unexplored context of support

transactions, a circumplex structure was obtained that was both substantively and structurally auspicious.

The resultant SAS circumplex provided a taxonomic framework within which existing measures of social support behavior and related personality characteristics could be clarified, while also providing information regarding the construct validity of the circumplex framework itself. This is especially important within the area of social support research in which "assessment of the adequacy of existing or proposed measures, especially their *construct validity*, requires a theoretical framework to give clarity and meaning to the concepts being measured" (House & Kahn, 1985, p. 84, emphases in original). The 12 social support scales and 15 related personality measures that were clarified with respect to the present circumplex framework are clearly not exhaustive of extant measures. Nevertheless, the distinctions among these scales (or lack of same) were conceptually and empirically meaningful and demonstrate the potential of the present taxonomic system.

From the social support scales included in the present study, it would appear that there is widespread agreement on what might be a prototype of "helpful" social support that encompasses a narrow range of possible interpersonal transactions. Despite the intuitive distinctiveness of such classes of support as "financial", "practical", "advice", "socializing", "emotional", etc., all of these actions are performed, disproportionately, by individuals who report a tendency to adopt "nurturant" and "engaging" support styles, individuals whose dispositions are best described as "warm-agreeable". Individuals falling within

other dispositional types report tendencies to adopt other modes of support behavior, as evidenced in the hypothetical range of interpersonal responses to requests for support captured by the SAS-C. Although Cassel (1976) suggested that social supports represent a "protective" process, less than ideal support transactions may, in fact, act as "stressors" which might be expected to contribute synergistically to negative health outcomes. The SAS-C provides a framework for examination of both the potentially protective and deleterious effects of interpersonal transactions.

The present research examined support transactions from the perspective of the potential provider, and substantial relations between interpersonal dispositions and support styles were expected. The findings, however, suggest that such relations are complex. Although dispositional warmth/coldness is a strong predictor of stylistic support provision tendencies, dispositional dominance/submissiveness is not. However unexpected, these findings are compatible with the strong "context" effects obtained in other investigations of interpersonal behavior (e.g., Moskowitz, 1994). In the face of such a strong interaction between dispositional tendencies and situational context it would be unwise to substitute "personality" measures for traditional social support measures as predictors of support style tendencies. The alternative conceptualization and quantification provided by the SAS-C would seem to strike a balance between uncontextualized dispositional tendencies and an overemphasis on situational constraints. Overall, the findings of the present

research appear promising, but that promise can only be established through further research.

One study has been conducted that provides some evidence regarding the potential usefulness of the SAS-C in applied social support research. Hemphill (1996) employed an earlier version (i.e., the 61-item version derived in Study 2) of the SAS-C in his investigation of social support processes within a sample of 85 individuals diagnosed with Myalgic Encephalomyelitis (M. E.; also known as chronic fatigue syndrome) and one of their significant others. The SAS-C was administered in both the provider format discussed in this paper and a heretofore unexplored recipient format. Although this preliminary version is inferior to the present version in terms of internal consistency of, and equal spacing among, octant scales, findings from the Hemphill (1996) study may serve to elucidate the applicability and potential usefulness of this scale within a non-student population.

Correlations between provider and recipient responses are reported for each of the SAS-C octant scales and these are generally consistent with those reported with established personality assessment instruments such as the NEO PI-R (Costa & McCrae, 1992; see Piedmont, 1994, for a discussion of NEO PI-R peer-self correlations). Among other findings, correlations between recipients' self-reported (FFM) personalities and their reports of providers' SAS-C support behaviors and correlations between providers' self-reported (FFM) personality and their self-reported support behaviors are discussed. In general, greater relations are obtained between providers' dispositional and support style ratings

than between recipients' dispositions and their reports of providers' support behaviors. Additional research is needed to further examine the psychometric characteristics of a SAS-C recipient format, as well as to provide further evidence regarding the usefulness of the SAS-C in applied contexts.

Directions for Future Research

A Geometric Taxonomy of Social Support Scales. The potential of the SAS-C as a taxonomic framework for clarifying the interpersonal "meaning" of a given scale in terms of the allocation of love and status to self and others, and for clarifying the relations among scales has been demonstrated. The placement of a vast array of social support scales and closely related personological constructs (e.g., nurturance, agreeableness, altruism, "femininity", affiliation, trust) remains to be investigated. In so doing, progress may finally be made in integrating many of the diverse findings within the social support literature.

Perceptions of Social Support. In reviewing the diversity of behaviors endorsed by normal young adults in response to hypothetical requests for support, the question naturally arises as to how helpful these individuals believe their actions to be. Similarly, one wonders if recipients have uniform perceptions of what constitutes "helpful" support. Individuals performing less intuitively helpful actions may endorse such behavior despite the realization that such actions are less than optimal, or, such individuals may have different notions of what actions are generally called for. Recipients differing in their preferred interpersonal definition of the situation (i.e., whether or not they feel deserving of love and status) may differ in what forms of support they wish to receive.

Also, the nature of the stressor may itself have a strong contextualizing effect. For example, Blatt and Zuroff (1992) have theorized that two subtypes of depression arise out of two different sets of stressful circumstances; one type (autonomous or self-critical) arises in response to a failure to meet excessively high standards and ambitious goals, whereas the other type (dependent or sociotropic) arises in response to a perceived threat of social rejection by, and loss of support from, others. The former appears to call for a reaffirmation of status, and the latter a reaffirmation of love. These notions are similar to those of agentic and communal anxiety (Wiggins & Trapnell, 1996) discussed earlier. The SAS-C provides a useful framework for examination of how the nature of the stressor may influence what type of support individuals would prefer to receive, or are most likely to benefit from.

Interpersonal Messages. The conceptual framework in which the SAS-C is embedded places a heavy emphasis on the "interpersonal messages" conveyed to/received by support recipients. This line of thought may be traced to Kiesler's (1988) theory of interpersonal communication in psychotherapy and to its operationalization in the Impact Message Inventory (IMI; Kiesler, 1987). The basic idea is that recipients have covert reactions to interpersonal messages which, upon reflection, may be identified as direct feelings, action tendencies, and perception of evoking messages. These covert reactions, in turn, have been linked to specific sectors of the interpersonal circumplex. Thus, for example, in the presence of a highly dominant person, recipients may feel "bossed around", may wish to "tell him to give someone else a chance to make a decision", and

perceive the evoking message of "He thinks he's always in control of things". In the present context, it is suggested that support recipients may also be able to identify their covert reactions to providers and that these reactions may be linked to each of the eight categories of support style. Information of this kind would allow for more direct assessment of the impact different support styles have upon recipients.

A Transactional Conceptualization of Social Support. Leary (1957) originally classified depressed individuals as falling within the hostile-submissive quadrant of the interpersonal circle. He noted that a two-stage process occurs within providers interacting with a depressed individual over time; initial sympathy is followed by irritation, disapproval, and rejection. Coyne (1976) elaborated this idea, and Kiesler (1986) placed this formulation more specifically within the context of the Interpersonal Circle. The SAS-C's comprehensive assessment of the universe of content of love- and status-based support transactions would appear to make it a promising instrument for examining what Kiesler calls the "Maladaptive Transaction Cycle", and for examining other changes in support transactions that occur over time.

Psychotherapeutic Interventions. The interpersonal assessment tradition originated in the context of psychotherapy and, perhaps more than any other assessment tradition, has contributed to an understanding of the therapeutic process itself (Kiesler, 1996). In their formulations of the role of social exchange in interpersonal transactions, the Foas' (1974) considered the psychotherapeutic setting as an "institution" that "provides an opportunity for the exchange of

certain resources, while barring certain others" (p. 152). Similarly, Andrews (1989) discusses differences among schools of psychotherapy within the framework of Leary's (1957) circumplex model. Regardless of orientation, psychotherapeutic procedures clearly involve the provision of "social support" as broadly conceived in the present formulation. This model may prove useful in elucidating differences in "support provision" between the various schools of psychotherapy, in enhancing clinician awareness of his/her own "support style" and in examining differential use and effectiveness of interventions depending upon the characteristics of the client and/or the presenting problem.

Limitations of the Present Research

The present circumplex findings require replication in other than university populations. Studies of self-reported interpersonal traits have found that university students, as compared with adult community samples, tend to be less socially desirable in their self-evaluations. This may, or may not, account for the relatively high level of endorsements of octants on the left (i.e., cold) side of the SAS circumplex in the present study. Although most of the SAS items were cross-validated in successive samples of university respondents, the generalizability of a number of new items that were added during Study 3 remains to be investigated.

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Table 1 Love and Status in the Social Support Literature

Author	Love	Status
Caplan (1974)	Emotional mastery	Feedback
Weiss (1974)	Attachment	Reassurance of worth
Cobb (1976)	Love	Esteem
Tolsdorf (1976)	Intangible	Feedback
Gottlieb (1978)	Concern	Respect
Hirsch (1980)	Emotional support	Social reinforcement
Barrera et al. (1981)	Intimate interaction	Feedback
House (1981)	Emotional support	Appraisal support
Kahn & Antonucci (1981)	Affect	Affirmation
Cohen & Hoberman (1983)	Belonging	Self-esteem
Shumaker & Brownell (1984)	Affiliative needs	Self-esteem enhancement
Cutrona (1986)	Emotional support	Esteem support
Hobfoll (1988)	Love	Esteem
Vaux (1988)	Love and affection	Esteem and identity
B. Sarason, I. Sarason et al., (1990)	Love	Esteem
Ryan & Solky (1996)	Relatedness	Autonomy

Table 2 SAS-C Items and Their Angular Location and Communality Values

Angles	SAS-C Items	Comm
	PA Directive (67°-112°; Midpoint = 90°)	
	<i>I would...</i>	
80°	...tell them that their problem is my problem too	.49
85°	...give advice	.61
88°	...advise them to take advantage of the resources I can provide	.47
92°	...tell them they came to the right person	.36
93°	...tell them to let me help with their problem	.54
95°	...tell them what I would do	.48
104°	...tell them I'm in a good position to help	.48
106°	...take over any matters I felt they couldn't deal with	.48
	BC Arrogant (112°-157°; Midpoint = 135°)	
	<i>I would...</i>	
126°	...advise them to pay attention to what I have to say	.51
129°	...emphasize how well qualified I am to help	.47
135°	...tell them explicitly what to do step-by-step	.63
135°	...make decisions for them	.63
135°	...insist that they let me take care of things	.55
137°	...persuade them to change their behavior	.48
139°	...tell them to let me take care of everything	.54
140°	...take control of the situation	.61
	DE Critical (157°-202°; Midpoint = 180°)	
	<i>I would...</i>	
171°	...tell them that they have to learn to live with it	.49
174°	...remind them that whining doesn't help	.54
175°	...remind them that people sometimes get what they deserve	.57
179°	...tell them I'm not surprised that they have these problems	.58
182°	...tell them that nobody likes a cry-baby	.54
183°	...suggest that they not complain too much	.65
198°	...tell them that I don't like discussing personal matters	.59
199°	...tell them I have my own problems to deal with	.62
	FG Distancing (202°-247°; Midpoint = 225°)	
	<i>I would...</i>	
210°	...try not to show too much concern	.60
213°	...distance myself	.61
215°	...try to stay "at arms' length"	.49
215°	...tell them I don't want to get involved	.58
226°	...try to keep them from leaning on me too much	.49
230°	...avoid getting too involved	.60
241°	...not comment on their situation	.55
242°	...help in any way that didn't get me personally involved	.44

Table 2 (continued)

Angles	SAS-C Items	Comm
	HI Avoidant (247°-292°; Midpoint = 270°) <i>I would...</i>	
258°	...avoid giving any advice	.57
263°	...avoid making recommendations	.47
265°	...shy away from making suggestions	.48
268°	...avoid trying to change their view of the situation	.36
268°	...keep from stating any opinions	.49
268°	...avoid intruding on their problem	.38
277°	...avoid challenging their point of view	.29
281°	...avoid influencing their course of action	.50
	JK Deferential (292°-337°; Midpoint = 315°) <i>I would...</i>	
296°	...not give my opinions unless asked	.53
304°	...let them make all the decisions	.41
306°	...let them do all the talking	.34
315°	...not impose my values on them	.48
321°	...refrain from any criticism	.42
323°	...not argue with them	.33
327°	...remain non-judgmental	.51
330°	...just listen quietly	.42
	LM Nurturant (337°-22°; Midpoint = 0°) <i>I would...</i>	
340°	...not put any demands on them	.48
342°	...let them deal with things at their own pace	.36
355°	...be careful not to pressure them	.45
10°	...let them know I'm listening	.63
11°	...be patient with them	.63
14°	...give them a hug	.58
14°	...just try to be there	.62
19°	...provide them with emotional support	.70
	NO Engaging (22°-67°; Midpoint 45°) <i>I would...</i>	
33°	...attempt to keep in regular contact with them	.64
38°	...try to involve them in social activities	.61
38°	...enthusiastically help out	.66
38°	...check up on them frequently	.54
47°	...tell them that I'm worried about them	.50
50°	...eagerly help in any way they asked me to	.61
59°	...do my best to protect them	.43
62°	...learn whatever I could about the problem and pass this knowledge on to them	.53

Table 3 Item Endorsement of SAS-C and IAS Octant-Scales

Octant	SAS-C Mean	IAS Mean	SAS-C SD	IAS SD	SAS-C Range	IAS Range
PA	4.20	4.28	.90	.88	1.13-6.50	1.65-6.90
BC	2.87	2.85	1.02	1.16	1.00-5.75	1.00-6.24
DE	2.35	2.05	.99	.91	1.00-5.50	1.00-6.56
FG	2.97	2.60	.88	1.00	1.00-5.75	1.00-6.34
HI	3.44	3.33	.83	.99	1.50-6.25	1.00-6.34
JK	4.47	4.24	.88	1.00	1.63-6.63	1.00-6.56
LM	5.67	5.29	.76	.80	2.75-7.00	2.41-7.00
NO	5.10	5.08	.81	.89	1.00-7.00	1.86-7.00

Table 4 Gender Differences in SAS-C Scale Scores and in Octant Classification

SAS-C Scales	Percentage of scale-score variance accounted for by gender	Proportion of males classified in octant	Proportion of females classified in octant	Absolute difference between proportions	Male octant scale mean	Male octant scale SD	Female octant scale mean	Female octant scale SD
Directive (PA)	.8	11.3	11.3	0	34.38	6.96	33.04	7.22
Arrogant (BC)	5.6	12.0	10.5	1.5	**25.38	7.44	21.44	8.08
Critical (DE)	3.8	26.0	10.2	15.8	**20.85	7.87	17.66	7.69
Distancing (FG)	3.7	15.3	7.0	8.3	**25.58	6.94	22.75	6.95
Avoidant (HI)	.1	10.0	12.1	2.1	27.38	6.65	27.75	6.77
Deferential (JK)	10.1	8.7	15.6	6.9	34.96	6.68	*36.41	7.13
Nurturant (LM)	12.1	3.3	18.4	15.1	42.63	6.34	**47.00	5.30
Engaging (NO)	3.4	13.3	14.8	1.5	39.27	6.97	**41.74	5.90

* significantly higher than other gender $p < .05$

** significantly higher than other gender $p < .001$

Figure 1. Patterns of Social Exchange within Circumplex Octants

Figure 2. Projection of a Variable onto the Interpersonal Circumplex

Figure 3. Circumplex Structure of SAS-C Octant Scales

	PA	BC	DE	FG	HI	JK	LM	NO	Angular location = <u>180°</u>
T-Score	49	60	65	56	52	40	30	41	Vector length T-score = <u>68</u>

Figure 4. An Example of a Well-Differentiated SAS-C Profile

Figure 5. Projections of Social Support Behavior Questionnaire Subscales onto the SAS Circumplex

Figure 6. Projections of Social Support Behaviors Subscales onto the SAS Circumplex

Figure 7. Projections of Inventory of Socially Supportive Behaviors Subscales onto the SAS Circumplex

Figure 8. Projections of Interpersonal Reactivity Index Empathy Subscales onto the SAS Circumplex

Figure 9. Circumplex Structure of the IAS Octant Scales

Figure 10. Projections of SAS Octant Scales onto the IAS Circumplex

Figure 11. Projections of IAS Octant Scales onto the SAS Circumplex

Figure 12. Projections of Social Support Behavior Questionnaire Subscales onto the IAS Circumplex

Figure 13. Projections of Social Support Behaviors Subscales onto the IAS Circumplex

Figure 14. Projections of Inventory of Socially Supportive Behaviors Subscales onto the IAS Circumplex

Figure 15. Projections of Interpersonal Reactivity Index Empathy Subscales onto the IAS Circumplex

APPENDIX

Factor Analysis of Intercorrelations among Study 1 SAS Octant Scales

	FACTOR 1	FACTOR 2
Eigenvalue	2.82	2.37
% of Variance	35.3	29.6
Octant	Loadings of Octant Scales on First 2 Factors ¹	
PA	.74	-.20
BC	.56	-.60
DE	.15	-.73
FG	-.48	-.69
HI	-.76	-.25
JK	-.43	.53
LM	.32	.78
NO	.56	.63

Note: N = 170. ¹Factors were rotated by an orthogonal Procrustes transformation to a least squares fit to theoretical location.

Factor Analysis of Intercorrelations among Study 2 SAS Octant Scales

	FACTOR 1	FACTOR 2
Eigenvalue	2.87	2.35
% of Variance	35.9	29.4
Octant	Loadings of Octant Scales on First 2 Factors ¹	
PA	.71	.07
BC	.44	-.43
DE	-.17	-.63
FG	-.65	-.53
HI	-.75	-.02
JK	-.30	.40
LM	.23	.77
NO	.57	.59

Note: N = 444. ¹Factors were rotated by an orthogonal Procrustes transformation to a least squares fit to theoretical location.

Correlation Matrix of Study 3 Variables for the Total Sample

	SASPA	SASBC	SASDE	SASFG	SASHI	SASJK	SASLM	SASNO	IASPA	IASBC	IASDE	IASFG	IASHI	IASJK
SASPA	1.00													
SASBC	.62	1.00												
SASDE	.15	.52	1.00											
SASFG	-.28	.08	.49	1.00										
SASHI	-.31	-.22	.15	.46	1.00									
SASJK	-.22	-.40	-.24	.07	.48	1.00								
SASLM	.09	-.38	-.53	-.40	.02	.46	1.00							
SASNO	.53	.09	-.32	-.54	-.20	.10	.56	1.00						
IASPA	.11	.15	.10	.07	-.11	-.08	-.05	-.03	1.00					
IASBC	.11	.35	.35	.23	-.02	-.29	-.38	-.18	.42	1.00				
IASDE	-.02	.27	.39	.36	.10	-.26	-.53	-.35	.23	.68	1.00			
IASFG	-.07	.13	.23	.22	.07	-.24	-.39	-.24	-.25	.25	.52	1.00		
IASHI	.01	-.01	.05	.05	.16	.01	-.04	.02	-.69	-.17	.03	.52	1.00	
IASJK	-.07	-.30	-.24	-.16	.05	.29	.34	.16	-.46	-.81	-.50	-.08	.33	1.00
IASLM	.22	-.15	-.33	-.37	-.11	.22	.56	.48	-.08	-.44	-.73	-.45	.02	.39
IASNO	.15	-.12	-.23	-.20	-.07	.24	.43	.32	.35	-.12	-.42	-.81	-.48	.05
NEUR	.06	.15	.10	.03	-.01	-.22	-.11	.02	-.21	.08	.08	.31	.40	-.07
CONS	.09	-.01	-.08	-.08	-.10	.03	.18	.11	.26	-.12	-.19	-.32	-.23	.00
OPEN	.00	-.14	-.29	-.20	-.16	.08	.20	.11	.35	.05	-.17	-.25	-.40	-.15
HELP	.35	-.09	-.36	-.45	-.15	.16	.63	.66	-.00	-.22	-.36	-.26	-.01	.20
UNHEL	.45	.49	.48	.14	-.06	-.18	-.14	.14	-.02	.16	.09	.09	.15	-.07
TOTAL	-.22	-.49	-.63	-.36	-.01	.26	.47	.23	.02	-.26	-.26	-.22	-.14	.17
ADV	.55	.29	-.04	-.30	-.47	-.18	.26	.44	.14	-.03	-.12	-.11	-.08	.08
EMOT	.24	-.24	-.47	-.47	-.18	.23	.75	.62	.02	-.27	-.42	-.31	-.07	.24
PRACT	.37	.02	-.24	-.39	-.23	.07	.40	.58	-.01	-.18	-.26	-.14	-.03	.14
FINAN	.40	.15	-.03	-.25	-.17	.04	.20	.43	-.04	-.06	-.15	-.04	.06	.08
SOCIAL	.28	-.13	-.35	-.43	-.21	.12	.62	.66	-.00	-.22	-.34	-.25	-.01	.19
DIREC	.48	.20	-.03	-.23	-.33	-.07	.32	.47	.10	-.06	-.16	-.16	-.06	.11
NOND	.39	-.11	-.38	-.46	-.13	.20	.68	.68	.00	-.23	-.35	-.25	-.01	.21
TANG	.32	.02	-.23	-.33	-.17	.09	.32	.48	-.05	-.14	-.24	-.10	.00	.13
POSSO	.26	-.10	-.22	-.30	-.12	.16	.53	.54	.01	-.20	-.30	-.22	.01	.17
EMP	.15	-.18	-.36	-.38	-.15	.19	.52	.48	-.16	-.40	-.61	-.31	.06	.35
PERSP	.13	-.08	-.26	-.26	-.04	.28	.33	.31	-.07	-.25	-.38	-.21	.01	.24
FAN	.07	-.08	-.14	-.12	-.07	.07	.23	.14	-.06	-.09	-.16	-.04	.06	.11
DIST	.02	.11	.19	.15	.18	-.02	-.05	-.02	-.33	-.06	-.02	.18	.38	.11

NOTE: SASPA=SAS-C PA Directive; SASBC=SAS-C BC Arrogant; SASDE=SAS-C DE Critical; SASFG=SAS-C FG Distancing; SASHI=SAS-C HI Avoidant; SASJK=SAS-C JK Deferential; SASLM=SAS-C LM Nurturant; SASNO=SAS-C NO Engaging; IASPA=IAS PA Assured-Dominant; IASBC=IAS BC Arrogant-Calculating; IASDE=IAS DE Cold-hearted; IASFG=IAS FG Aloof-Introverted; IASHI=IAS HI Unassured-Submissive; IASJK=IAS JK Unassuming-Ingenuous; IASLM=IAS LM Warm-Agreeable; IASNO=IAS NO Gregarious-Extraverted; NEUR=IASR-B5 Neuroticism; CONS=IASR-B5 Conscientiousness; OPEN=IASR-B5 Openness to Experience; HELP=SSBQ Helpful; UNHEL=SSBQ Unhelpful; TOTAL=SSBQ Total; ADV=SS-B Advice/guidance; EMOT=SS-B Emotional support; PRACT=SS-B Practical assistance; FINAN=SS-B Financial assistance; SOCIAL=SS-B Socializing; DIREC=ISSB Directive guidance; NOND=ISSB Nondirective support; TANG=ISSB Tangible assistance; POSSO=ISSB Positive social interaction; EMP=IRI Empathic concern; PERSP=IRI Perspective taking; FAN=IRI Fantasy; DIST=IRI Personal distress.

Correlation Matrix of Study 3 Variables for the Total Sample (continued)

	IASLM	IASNO	NEUR	CONS	OPEN	HELP	UNHEL	TOTAL	ADV	EMOT	PRACT	FINAN	SOCIAL	DIREC
IASLM	1.00													
IASNO	.52	1.00												
NEUR	-.06	-.29	1.00											
CONS	.23	.30	-.05	1.00										
OPEN	.22	.32	-.13	.13	1.00									
HELP	.46	.34	-.01	.13	.16	1.00								
UNHEL	.00	-.02	.13	-.02	-.20	.14	1.00							
TOTAL	.23	.20	-.11	.08	.27	.42	-.84	1.00						
ADV	.25	.17	.07	.14	.13	.47	.34	-.06	1.00					
EMOT	.48	.39	-.01	.14	.26	.78	-.02	.44	.48	1.00				
PRACT	.34	.21	.05	.09	.21	.67	.09	.28	.52	.66	1.00			
FINAN	.23	.06	.07	-.01	.09	.49	.22	.06	.38	.44	.74	1.00		
SOCIAL	.39	.30	.03	.15	.15	.70	.07	.32	.43	.77	.68	.46	1.00	
DIREC	.29	.23	.01	.14	.14	.57	.35	-.02	.79	.49	.55	.39	.46	1.00
NOND	.44	.34	-.03	.13	.19	.81	.11	.34	.47	.80	.62	.46	.74	.57
TANG	.28	.15	-.01	.02	.18	.60	.05	.28	.39	.54	.84	.79	.56	.44
POSSO	.34	.32	.01	.12	.13	.62	.18	.17	.40	.67	.53	.38	.75	.45
EMP	.64	.31	.09	.12	.26	.51	-.04	.30	.26	.53	.37	.22	.42	.31
PERSP	.38	.25	-.18	.13	.32	.32	-.02	.19	.20	.33	.28	.21	.23	.28
FAN	.16	.06	.16	-.04	.28	.29	.04	.11	.18	.30	.17	.12	.22	.18
DIST	-.04	-.18	.44	-.26	-.31	-.04	.26	-.25	-.04	-.10	-.10	-.05	-.05	-.06

	NOND	TANG	POSSO	EMP	PERSP	FAN	DIST
NOND	1.00						
TANG	.56	1.00					
POSSO	.68	.46	1.00				
EMP	.49	.30	.37	1.00			
PERSP	.31	.25	.22	.43	1.00		
FAN	.30	.18	.22	.36	.16	1.00	
DIST	-.04	-.10	.01	.06	-.12	.11	1.00

NOTE: SASPA=SAS-C PA Directive; SASBC=SAS-C BC Arrogant; SASDE=SAS-C DE Critical; SASFG=SAS-C FG Distancing; SASHI=SAS-C HI Avoidant; SASJK=SAS-C JK Deferential; SASLM=SAS-C LM Nurturant; SASNO=SAS-C NO Engaging; IASPA=IAS PA Assured-Dominant; IASBC=IAS BC Arrogant-Calculating; IASDE=IAS DE Cold-hearted; IASFG=IAS FG Aloof-Introverted; IASHI=IAS HI Unassured-Submissive; IASJK=IAS JK Unassuming-Ingenuous; IASLM=IAS LM Warm-Agreeable; IASNO=IAS NO Gregarious-Extraverted; NEUR=IASR-B5 Neuroticism; CONS=IASR-B5 Conscientiousness; OPEN=IASR-B5 Openness to Experience; HELP=SSBQ Helpful; UNHEL=SSBQ Unhelpful; TOTAL=SSBQ Total; ADV=SS-B Advice/guidance; EMOT=SS-B Emotional support; PRACT=SS-B Practical assistance; FINAN=SS-B Financial assistance; SOCIAL=SS-B Socializing; DIREC=ISSB Directive guidance; NOND=ISSB Nondirective support; TANG=ISSB Tangible assistance; POSSO=ISSB Positive social interaction; EMP=IRI Empathic concern; PERSP=IRI Perspective taking; FAN=IRI Fantasy; DIST=IRI Personal distress.

Correlation Matrix of Study 3 Variables for Males

	SASPA	SASBC	SASDE	SASFG	SASHI	SASJK	SASLM	SASNO	IASPA	IASBC	IASDE	IASFG	IASHI	IASJK
SASPA	1.00													
SASBC	.60	1.00												
SASDE	.03	.44	1.00											
SASFG	-.38	-.04	.56	1.00										
SASHI	-.33	-.16	.27	.52	1.00									
SASJK	-.17	-.38	-.20	.08	.40	1.00								
SASLM	.22	-.29	-.61	-.49	-.06	.41	1.00							
SASNO	.58	.12	-.42	-.60	-.22	.11	.62	1.00						
IASPA	.06	.05	-.02	.04	-.05	.03	.03	.01	1.00					
IASBC	.08	.30	.28	.20	.09	-.19	-.23	-.08	.39	1.00				
IASDE	-.05	.24	.40	.38	.23	-.23	-.46	-.31	.23	.62	1.00			
IASFG	-.02	.15	.24	.15	.10	-.32	-.31	-.17	-.22	.23	.55	1.00		
IASHI	.03	-.03	.03	.01	.13	.00	-.01	.04	-.66	.22	.02	.49	1.00	
IASJK	.02	-.26	-.18	-.17	-.01	.22	.28	.14	-.42	-.80	-.43	-.06	.39	1.00
IASLM	.25	-.16	-.40	-.38	-.18	.25	.57	.47	-.03	-.38	-.72	-.43	.08	.41
IASNO	.16	-.07	-.26	-.11	-.10	.28	.36	.30	.37	-.05	-.43	-.72	-.38	.07
NEUR	.11	.12	.11	.06	.01	-.18	-.21	-.10	-.24	.02	.14	.39	.45	.01
CONS	.09	.02	-.14	-.11	-.10	.02	.14	.12	.35	.01	-.13	-.28	-.24	-.15
OPEN	.02	-.20	-.31	-.21	-.26	.12	.19	.15	.29	.05	-.15	-.22	-.35	-.13
HELP	.48	-.02	-.49	-.55	-.26	.15	.70	.72	-.04	-.18	-.35	-.17	.09	.26
UNHEL	.43	.40	.29	-.02	-.01	-.08	.02	.31	-.13	.07	-.01	.15	.17	.04
TOTAL	-.08	-.39	-.62	-.37	-.15	.19	.46	.22	.11	-.18	-.22	-.26	-.11	.14
ADV	.63	.24	-.24	-.47	-.49	-.13	.41	.53	.06	-.06	-.11	-.06	.00	.16
EMOT	.39	-.15	-.57	-.51	-.28	.21	.73	.65	-.03	-.19	-.35	-.21	.02	.25
PRACT	.46	.03	-.36	-.43	-.28	.09	.45	.59	-.10	-.20	-.29	-.08	.15	.24
FINAN	.47	.12	-.10	-.30	-.16	.16	.29	.48	-.16	-.11	-.23	.01	.19	.19
SOCIAL	.35	-.11	-.48	-.50	-.22	.13	.63	.68	-.07	-.23	-.33	-.12	.09	.27
DIREC	.58	.18	-.25	-.44	-.40	-.01	.48	.63	.03	-.09	-.19	-.10	.06	.20
NOND	.50	-.06	-.50	-.56	-.25	.20	.74	.74	-.01	-.16	-.32	-.15	.07	.21
TANG	.41	.07	-.26	-.38	-.24	.10	.37	.51	-.11	-.16	-.28	-.07	.14	.19
POSSO	.31	-.09	-.29	-.37	-.17	.21	.54	.52	-.07	-.18	-.24	-.05	.14	.25
EMP	.24	-.17	-.42	-.47	-.22	.26	.52	.50	-.15	-.38	-.61	-.29	.12	.36
PERSP	.26	-.09	-.29	-.28	-.02	.33	.39	.41	-.06	-.26	-.44	-.27	.01	.29
FAN	.26	.02	-.07	-.17	-.13	.14	.23	.20	-.11	-.11	-.08	.03	.12	.12
DIST	.02	.13	.21	.08	.19	-.00	-.17	-.07	-.44	-.19	-.04	.21	.44	.19

NOTE: SASPA=SAS-C PA Directive; SASBC=SAS-C BC Arrogant; SASDE=SAS-C DE Critical; SASFG=SAS-C FG Distancing; SASHI=SAS-C HI Avoidant; SASJK=SAS-C JK Deferential; SASLM=SAS-C LM Nurturant; SASNO=SAS-C NO Engaging; IASPA=IAS PA Assured-Dominant; IASBC=IAS BC Arrogant-Calculating; IASDE=IAS DE Cold-hearted; IASFG=IAS FG Aloof-Introverted; IASHI=IAS HI Unassured-Submissive; IASJK=IAS JK Unassuming-Ingenuous; IASLM=IAS LM Warm-Agreeable; IASNO=IAS NO Gregarious-Extraverted; NEUR=IASR-B5 Neuroticism; CONS=IASR-B5 Conscientiousness; OPEN=IASR-B5 Openness to Experience; HELP=SSBQ Helpful; UNHEL=SSBQ Unhelpful; TOTAL=SSBQ Total; ADV=SS-B Advice/guidance; EMOT=SS-B Emotional support; PRACT=SS-B Practical assistance; FINAN=SS-B Financial assistance; SOCIAL=SS-B Socializing; DIREC=ISSB Directive guidance; NOND=ISSB Nondirective support; TANG=ISSB Tangible assistance; POSSO=ISSB Positive social interaction; EMP=IRI Empathic concern; PERSP=IRI Perspective taking; FAN=IRI Fantasy; DIST=IRI Personal distress.

Correlation Matrix of Study 3 Variables for Males (continued)

	IASLM	IASNO	NEUR	CONS	OPEN	HELP	UNHEL	TOTAL	ADV	EMOT	PRACT	FINAN	SOCIAL	DIREC
IASLM	1.00													
IASNO	.59	1.00												
NEUR	-.13	-.34	1.00											
CONS	.22	.29	-.15	1.00										
OPEN	.20	.34	-.16	.13	1.00									
HELP	.48	.30	-.07	.11	.20	1.00								
UNHEL	.12	.06	.21	-.08	-.09	.35	1.00							
TOTAL	.22	.17	-.24	.13	.23	.38	-.73	1.00						
ADV	.34	.19	.05	.11	.13	.61	.29	.15	1.00					
EMOT	.47	.33	-.08	.07	.21	.84	.19	.42	.61	1.00				
PRACT	.41	.19	.06	.05	.21	.73	.26	.27	.64	.69	1.00			
FINAN	.28	.04	.12	-.01	.11	.58	.37	.06	.47	.51	.80	1.00		
SOCIAL	.44	.23	-.05	.08	.23	.74	.24	.29	.52	.75	.69	.53	1.00	
DIREC	.40	.23	-.01	.06	.13	.74	.38	.16	.85	.67	.67	.50	.61	1.00
NOND	.45	.30	-.04	.09	.17	.87	.29	.35	.65	.84	.67	.53	.78	.73
TANG	.35	.17	-.03	.02	.17	.67	.25	.23	.51	.55	.87	.83	.60	.56
POSSO	.34	.20	-.02	.06	.20	.62	.34	.11	.44	.64	.53	.49	.73	.52
EMP	.64	.37	.01	.08	.20	.58	.23	.18	.32	.58	.48	.42	.51	.38
PERSP	.47	.32	-.29	.13	.38	.48	.14	.20	.23	.38	.37	.31	.38	.37
FAN	.13	.01	.23	-.06	.34	.36	.23	.03	.21	.32	.29	.36	.26	.24
DIST	-.06	-.20	.53	-.36	-.40	-.13	.25	-.32	-.08	-.11	-.07	-.02	-.07	-.10

	NOND	TANG	POSSO	EMP	PERSP	FAN	DIST
NOND	1.00						
TANG	.59	1.00					
POSSO	.69	.48	1.00				
EMP	.56	.43	.50	1.00			
PERSP	.43	.40	.35	.49	1.00		
FAN	.29	.30	.34	.42	.27	1.00	
DIST	-.06	-.11	-.06	.09	-.18	.11	1.00

NOTE: SASPA=SAS-C PA Directive; SASBC=SAS-C BC Arrogant; SASDE=SAS-C DE Critical; SASFG=SAS-C FG Distancing; SASHI=SAS-C HI Avoidant; SASJK=SAS-C JK Defertential; SASLM=SAS-C LM Nurturant; SASNO=SAS-C NO Engaging; IASPA=IAS PA Assured-Dominant; IASBC=IAS BC Arrogant-Calculating; IASDE=IAS DE Cold-hearted; IASFG=IAS FG Aloof-Introverted; IASHI=IAS HI Unassured-Submissive; IASJK=IAS JK Unassuming-Ingenuous; IASLM=IAS LM Warm-Agreeable; IASNO=IAS NO Gregarious-Extraverted; NEUR=IASR-B5 Neuroticism; CONS=IASR-B5 Conscientiousness; OPEN=IASR-B5 Openness to Experience; HELP=SSBQ Helpful; UNHEL=SSBQ Unhelpful; TOTAL=SSBQ Total; ADV=SS-B Advice/guidance; EMOT=SS-B Emotional support; PRACT=SS-B Practical assistance; FINAN=SS-B Financial assistance; SOCIAL=SS-B Socializing; DIREC=ISSB Directive guidance; NOND=ISSB Nondirective support; TANG=ISSB Tangible assistance; POSSO=ISSB Positive social interaction; EMP=IRI Empathic concern; PERSP=IRI Perspective taking; FAN=IRI Fantasy; DIST=IRI Personal distress.

Correlation Matrix of Study 3 Variables for Females

	SASPA	SASBC	SASDE	SASFG	SASHI	SASJK	SASLM	SASNO	IASPA	IASBC	IASDE	IASFG	IASHI	IASJK
SASPA	1.00													
SASBC	.62	1.00												
SASDE	.23	.55	1.00											
SASFG	-.25	.08	.42	1.00										
SASHI	-.31	-.25	.10	.47	1.00									
SASJK	-.25	-.40	-.23	.12	.53	1.00								
SASLM	.06	-.39	-.41	-.26	.05	.46	1.00							
SASNO	.55	.14	-.20	-.49	-.23	.04	.46	1.00						
IASPA	.12	.15	.11	.03	-.13	-.10	-.01	-.16	1.00					
IASBC	.08	.29	.32	.17	-.04	-.29	-.36	-.28	.41	1.00				
IASDE	-.03	.25	.32	.29	.07	-.20	-.48	-.25	.18	.67	1.00			
IASFG	-.09	.13	.18	.23	.08	-.18	-.40	-.01	-.31	.23	.49	1.00		
IASHI	.01	.02	.10	.11	.18	-.00	-.10	.11	-.71	-.13	.07	.56	1.00	
IASJK	-.09	-.24	-.21	-.08	.07	.29	.30	.30	-.46	-.80	-.50	-.07	.29	1.00
IASLM	.20	-.14	-.22	-.31	-.11	.13	.47	.40	-.06	-.43	-.69	-.42	-.04	.35
IASNO	.14	-.14	-.19	-.23	-.07	.20	.44	.30	.39	-.12	-.40	-.85	-.55	.00
NEUR	.05	.22	.13	.05	-.03	-.26	-.13	.07	-.19	.17	.09	.30	.37	-.16
CONS	.10	-.02	-.04	-.04	-.10	.03	.20	.10	.20	-.22	-.24	-.33	-.22	.12
OPEN	-.01	-.12	-.28	-.20	-.12	.05	.20	.06	.39	.07	-.17	-.25	-.44	-.17
HELP	.32	-.06	-.20	-.35	-.10	.12	.50	.60	.09	-.15	-.28	-.26	-.08	.06
UNHEL	.44	.51	.57	.19	-.06	-.22	-.21	.07	-.02	.16	.12	.08	.19	-.08
TOTAL	-.25	-.49	-.61	-.32	.02	.27	.43	.21	.05	-.20	-.23	-.18	-.20	.10
ADV	.52	.37	.10	-.18	-.46	-.25	.12	.38	.19	.01	-.10	-.12	-.12	.00
EMOT	.22	-.22	-.37	-.40	-.14	.20	.71	.56	.13	-.20	-.38	-.34	-.15	.15
PRACT	.35	.06	-.16	-.36	-.19	.04	.37	.59	.06	-.14	-.23	-.15	-.13	.06
FINAN	.37	.16	.01	-.26	-.16	-.00	.19	.44	-.00	-.06	-.13	-.05	.02	.05
SOCIAL	.31	-.06	-.23	-.35	-.22	.06	.56	.63	.09	-.13	-.29	-.29	-.09	.07
DIREC	.43	.24	.11	-.11	-.29	-.14	.21	.36	.15	-.03	-.11	-.17	-.13	.05
NOND	.40	-.04	-.25	-.34	-.08	.14	.56	.61	.09	-.15	-.26	-.26	-.07	.13
TANG	.30	.03	-.20	-.30	-.12	.08	.31	.49	-.01	-.13	-.23	-.09	-.05	.09
POSSO	.29	-.03	-.15	-.25	-.11	.09	.49	.56	.09	-.13	-.26	-.29	-.07	.07
EMP	.14	-.11	-.24	-.25	-.15	.07	.40	.40	-.10	-.30	-.53	-.26	-.01	.27
PERSP	.06	-.06	-.22	-.24	-.07	.22	.27	.22	-.04	-.20	-.30	-.16	-.00	.18
FAN	-.02	-.08	-.11	-.01	-.04	-.01	.10	.04	-.02	.00	-.11	-.01	.04	.05
DIST	.02	.12	.24	.25	.19	-.05	-.07	-.06	-.27	.10	.07	.21	.35	-.00

NOTE: SASPA=SAS-C PA Directive; SASBC=SAS-C BC Arrogant; SASDE=SAS-C DE Critical; SASFG=SAS-C FG Distancing; SASHI=SAS-C HI Avoidant; SASJK=SAS-C JK Defertential; SASLM=SAS-C LM Nurturant; SASNO=SAS-C NO Engaging; IASPA=IAS PA Assured-Dominant; IASBC=IAS BC Arrogant-Calculating; IASDE=IAS DE Cold-hearted; IASFG=IAS FG Aloof-Introverted; IASHI=IAS HI Unassured-Submissive; IASJK=IAS JK Unassuming-Ingenuous; IASLM=IAS LM Warm-Agreeable; IASNO=IAS NO Gregarious-Extraverted; NEUR=IASR-B5 Neuroticism; CONS=IASR-B5 Conscientiousness; OPEN=IASR-B5 Openness to Experience; HELP=SSBQ Helpful; UNHEL=SSBQ Unhelpful; TOTAL=SSBQ Total; ADV=SS-B Advice/guidance; EMOT=SS-B Emotional support; PRACT=SS-B Practical assistance; FINAN=SS-B Financial assistance; SOCIAL=SS-B Socializing; DIREC=ISSB Directive guidance; NOND=ISSB Nondirective support; TANG=ISSB Tangible assistance; POSSO=ISSB Positive social interaction; EMP=IRI Empathic concern; PERSP=IRI Perspective taking; FAN=IRI Fantasy; DIST=IRI Personal distress.

Correlation Matrix of Study 3 Variables for Females (continued)

	IASLM	IASNO	NEUR	CONS	OPEN	HELP	UNHEL	TOTAL	ADV	EMOT	PRACT	FINAN	SOCIAL	DIREC
IASLM	1.00													
IASNO	.47	1.00												
NEUR	-.05	-.28	1.00											
CONS	.24	.29	-.01	1.00										
OPEN	.22	.32	-.12	.11	1.00									
HELP	.38	.31	.01	.13	.13	1.00								
UNHEL	-.06	-.07	.12	-.00	-.27	.04	1.00							
TOTAL	.21	.20	-.10	.05	.30	.41	-.89	1.00						
ADV	.16	.14	.08	.14	.11	.36	.37	-.18	1.00					
EMOT	.44	.39	-.01	.16	.29	.69	-.12	.42	.39	1.00				
PRACT	.30	.20	.05	.10	.19	.63	-.01	.29	.42	.64	1.00			
FINAN	.24	.04	.08	-.00	.08	.46	.13	.09	.33	.45	.73	1.00		
SOCIAL	.32	.32	.05	.18	.09	.65	-.01	.31	.37	.76	.65	.46	1.00	
DIREC	.19	.21	.03	.18	.13	.46	.33	-.10	.75	.37	.45	.33	.34	1.00
NOND	.34	.33	-.06	.13	.19	.72	.04	.30	.34	.74	.58	.47	.69	.46
TANG	.27	.12	.01	.01	.17	.57	-.05	.31	.31	.57	.83	.78	.55	.36
POSSO	.30	.37	-.00	.13	.08	.61	.13	.16	.36	.65	.53	.35	.74	.39
EMP	.59	.24	.10	.12	.29	.37	-.14	.30	.19	.41	.30	.15	.30	.26
PERSP	.30	.20	-.13	.13	.29	.18	-.08	.16	.17	.29	.22	.18	.12	.23
FAN	.08	.03	.11	-.08	.26	.16	-.03	.10	.13	.19	.06	-.00	.12	.14
DIST	-.10	-.21	.36	-.22	-.29	-.05	.30	-.29	-.03	-.19	-.13	-.06	-.09	-.05

	NOND	TANG	POSSO	EMP	PERSP	FAN	DIST
NOND	1.00						
TANG	.57	1.00					
POSSO	.65	.46	1.00				
EMP	.35	.23	.23	1.00			
PERSP	.20	.19	.14	.37	1.00		
FAN	.23	.10	.11	.25	.07	1.00	
DIST	-.08	-.08	.02	-.05	-.14	.07	1.00

NOTE: SASPA=SAS-C PA Directive; SASBC=SAS-C BC Arrogant; SASDE=SAS-C DE Critical; SASFG=SAS-C FG Distancing; SASHI=SAS-C HI Avoidant; SASJK=SAS-C JK Defertential; SASLM=SAS-C LM Nurturant; SASNO=SAS-C NO Engaging; IASPA=IAS PA Assured-Dominant; IASBC=IAS BC Arrogant-Calculating; IASDE=IAS DE Cold-hearted; IASFG=IAS FG Aloof-Introverted; IASHI=IAS HI Unassured-Submissive; IASJK=IAS JK Unassuming-Ingenuous; IASLM=IAS LM Warm-Agreeable; IASNO=IAS NO Gregarious-Extraverted; NEUR=IASR-B5 Neuroticism; CONS=IASR-B5 Conscientiousness; OPEN=IASR-B5 Openness to Experience; HELP=SSBQ Helpful; UNHEL=SSBQ Unhelpful; TOTAL=SSBQ Total; ADV=SS-B Advice/guidance; EMOT=SS-B Emotional support; PRACT=SS-B Practical assistance; FINAN=SS-B Financial assistance; SOCIAL=SS-B Socializing; DIREC=ISSB Directive guidance; NOND=ISSB Nondirective support; TANG=ISSB Tangible assistance; POSSO=ISSB Positive social interaction; EMP=IRI Empathic concern; PERSP=IRI Perspective taking; FAN=IRI Fantasy; DIST=IRI Personal distress.