Collegiate Psychological Sense of Community in Relation to Size of College/University and Extroversion

John W. Lounsbury and Daniel DeNeui
University of Tennessee, Knoxville

A scale to measure psychological sense of community (PSC) for colleges and universities was developed. Based on responses of 198 undergraduate students, factor-analysis was used to derive a 14-item scale (coefficient alpha = .88), which was given to another student sample of 98 undergraduates (alpha = .90). This collegiate PSC scale was administered to another nonrandom sample of 1127 undergraduates (coefficient alpha = .92) from 27 colleges varying in enrollment size. Using a subset of 774 students from psychology classes, a one-way analysis of variance revealed that students from colleges with enrollments of ≤2,000 and 2,000-9,999 had higher PSC scores than students from colleges with enrollments of 10,000-19,999 and ≥20,000. Higher PSC scores were also observed for students living on-campus versus off-campus. For all colleges combined, higher PSC scores were observed for students who were members of a fraternity or sorority. Extroversion was found to be significantly related to PSC. Both extroversion and size of school accounted for unique variance in PSC. The issues of community homogeneity and diversity were raised. Results were discussed in terms of PSC as an environmental attribute versus personological and interactionist interpretations. Future research needs were noted. © 1996 John Wiley & Sons, Inc.

The psychological sense of community (PSC) is a pivotal concept in community psychology which has been described by Sarason (1974) as an "overarching concern" of the field and more recently (1986) as a "conceptual center" for the field which helps organize action, research, and theory. The vigor of the concept of PSC can be seen in the diverse ways in which it is embedded in different community psychology topic domains and is related to disparate community structures and processes (Rappaport, 1977; Newbrough & Chavis, 1986a, 1986b). Moreover, PSC has been empirically researched in relation to a wide variety of contexts, including crime prevention (Levine, 1986), university residence halls (Pretty, 1990), citizen participation in community organizations (Chavis & Wandersman, 1990), early family experiences (Davidson, Cotter, & Stovall, 1991), student burnout (McCarthy, Pretty, & Catano, 1990), workplace attributes and employee characteristics (Klein & D'Aunno, 1986; Pretty & McCarthy, 1991), properties of small groups (Compas, 1981), person-community attitude similarity (Good, Good, & Golden, 1973), religious congregations climates (Pargament, 1983), police training (Veno & Gardner, 1979), union participation (Catano, Pretty, Southwell, & Cole, 1993), teachers' sense of efficacy (Newmann, Rutter, & Smith, 1989), subjective well-being (Davidson, Cotter, Stovall, 1991), and city residents' characteristics (Davidson & Cotter, 1986).

The present research extends the study of PSC into the college campus milieu by developing a measure of PSC with the college or university itself (hereafter, we will refer to

Address correspondence to John W. Lounsbury, Department of Psychology, University of Tennessee, Knoxville, TN 37996-0900.


CCC 0090-4392/96/040381-14

381
colleges and universities by the single term "college") constituting the frame of reference for community. This enabled us to pursue two main research questions: whether collegiate PSC is inversely related to school size and whether it is related to the personality construct of extroversion.

Colleges have been widely studied as communities (Cruz, 1987; Spitzberg, 1992; Easthope, 1975) and individual colleges have long been regarded as having a sense of community. For example, Angell (1928, p. 1) described one of the most fundamental characteristics of college campuses as the "mental unity" of life on campus. He concluded that each student "lives in a particular social situation which gives rise to common interests and problems" which are "satisfied or worked out by the entire group, not as separate individuals, but as functioning members of the organic whole." More recently, McMillan and Chavis (1986) used "the university" to exemplify how definitional elements of the sense of community can apply to an actual community. However, despite some nascent efforts to develop reliable measures of PSC (Glynn, 1981; Davidson & Cotter, 1986, 1993), we could not identify any measure of psychological sense of community which is directly applicable to the college community as a whole. Therefore, we sought to develop a measure of what we term here collegiate PSC which produces variance between-people, displays internal consistency reliability, and demonstrates replicability of reliability results across settings.

Next, we were interested in the relationship of collegiate PSC to college size. The size of the college (here defined as total undergraduate student enrollment) is, as noted by Barton (1961), a major attribute of its social structure. There is some speculation that larger schools might offer a greater sense of community than smaller schools. As Reichard (1971, p. 15), summarizes this position, "Those in favor of the advantages thought to be offered by large institutions assert that the multipurpose university is really a full-blown community, claiming that it harbors a few of all kinds of students who contribute to the educational climate and provide a variety of experiences." However, in his review of the literature on college size, Reichard (p. 17) concludes that "the great bulk of the social-psychological literature appears to favor the (college) environments associated with the smaller institutions" in terms of feelings of belongingness, participation in activities, and student satisfactions. Similarly, Chickering (1969) contends that college size strongly affects the personal and social lives of students. Along these lines, Barker and his colleagues have directly addressed the question of school size (albeit, in a high school setting) and concluded that there are substantive differences in behaviors and satisfactions between big schools and small schools (Barker & Gump, 1964). They found higher rates of student participation in activities and investments in behavior settings in small schools. Extrapolating the above findings to PSC, we hypothesized that collegiate PSC would vary inversely with college size. We also examined whether PSC differs as a function of two other characteristics which represent important structures in a student's daily life and could be related to PSC: whether the student lived on- or off-campus and whether the student was a member of a sorority or fraternity. No directional hypotheses were advanced for these variables.

There is one other important direction which we took that distinguishes this study from previous research on PSC. PSC has been treated as either: (a) an attribute of community environments, typically used to reflect differences in social/physical/geographic environments and environmental characteristics (Glynn, 1981) or "psychosocial environmental factors" (Pretty, 1990); or (b) as a direct or indirect effect, outcome, consequence, or result of community environments—here broadly construed to include territorial, geographical, relational, and organizational environments (Gusfield, 1975). From a person-environment perspective, the emphasis has been decidedly on the environment in terms of accounting for behavior variance. But PSC can also be looked at from a personological framework. What if
PSC emanates from an individual's personality and is an outcome of salient personality attributes instead of, or in addition to, community or environmental factors? At the very least, a reconceptualization of PSC would be in order, particularly with regard to construct specification and proposed nomological networks. Moreover, it might lead to reexamination of previous studies which found differences between groups and attributed these to environmental factors when personality differences could have accounted for the differences.

There is good reason to suspect that PSC variation might reflect personality differences. As it has been most typically operationalized, PSC is a perceptual measure (Glynn, 1981; Doolittle & McDonald, 1978; Davidson & Cotter, 1993). Studies in different areas of inquiry (James & Jones, 1974; Roberts & Glick, 1981; Calder & Schurr, 1981) have demonstrated that perceptually-based measures reflect individual difference variables which in turn, account for large, and sometimes the only significant, portions of variance in corresponding "environmental" or "situational" attributes. As James and Jones (1974, p. 1107) summarized the literature which used perceptual measures to represent environmental attributes, "Although this school of thought assumes that situational and individual characteristics interact to produce a third set of perceptual, intervening variables, such an assumption does not mean that perceived climate is different from an individual attribute." Moreover, there is at least one study (Davidson, Cotter, & Stovall, 1991) which reported a positive relationship between PSC and a logically related personality variable—need for affiliation. However, Davidson et al. did not discuss the implications of this result, nor did they present analyses which would shed light on the relative importance of need-for-affiliation in relation to PSC.

We investigated PSC in relation to one of the constructs from the normal personality classification system which has received the most widespread recent support from individual differences researchers—the "Big 5" personality constructs (Costa & McCrae, 1988, 1992; Digman, 1990; Goldberg, 1993). We chose the construct of extroversion for this purpose over the other four factors of the Big 5 (Neuroticism, Openness, Agreeableness, and Conscientiousness) because its definition and semantic content are most closely related to the meaning of PSC. McMillan and Chavis (1986) observed that PSC is commonly viewed as referring to feelings of belongingness, interactions of members in shared events and activities, mutual concerns and values, beliefs that community members matter to one another, reciprocal influence, and integration and fulfillment of needs. Extroversion is a personality trait reflecting a person's disposition toward other people and is typically viewed as embracing such characteristics as sociability, talkativeness, gregariousness, interpersonal warmth, positive emotions, activity, sensation-seeking, social assertiveness, and preference for groups and gatherings (Morris, 1979; Costa & McCrae, 1992; Myers & McCauley, 1985). As for the PSC-Extroversion link, drawing on the above conceptualizations, there are a number of reasons why they might be related. For example, more extroverted individuals might see an environment (i.e., a community) as higher on PSC than more introverted individuals because of their own perceptual filters and predispositions; or extroverts might be more drawn to environments which are higher on PSC; or environments which are high or low on PSC might raise or lower a person's avowed level of extroversion. In any event, our interest here is twofold: First, we wanted to determine whether there is a positive relationship between PSC and extroversion (including each of the six sub-facets specified by Costa and McCrae in their NEO measurement system for the Big 5). Second, we wanted to explore

1Instead of "extroversion," we could have used the term "introversion" or "introversion-extroversion" here, since they have both been widely employed to refer to a common construct in different personality measurement systems. We opted for the term extroversion because it is the one which has been more frequently used in recent measurement systems.
the common and unique contributions to variance in collegiate PSC by school size and extroversion.

To recapitulate, the present study had five goals:

1) To develop a reliable measure of collegiate PSC, using colleges and universities as the frame of reference for community.
2) To evaluate the hypothesis that PSC is inversely related to school size.
3) To assess differences in PSC as a function of living on- versus off-campus and membership in a fraternity or sorority.
4) To assess the relationship between PSC and extroversion, including six sub-facets of extroversion—warmth, gregariousness, positive emotions, activity, excitement-seeking, and assertiveness.
5) To determine the amount of shared and unique variance in collegiate PSC accounted for by school size and extroversion.

Study 1

Overview and Method

In the first phase, we developed a scale to measure collegiate PSC. Based on previous definitions of PSC (Sarason, 1974; McMillan & Chavis, 1986) and after examining the items developed by Doolittle and MacDonald (1978) and Glynn (1981), we developed an initial item pool of 26 items.

Responses for each item were structured on a five-point Likert-scale and organized on a one-page questionnaire along with demographic items asking about year in school, whether the student lived on- or off-campus, whether the student was a member of a fraternity or sorority, and the student’s major. This scale was administered to convenience samples of 198 undergraduates taking psychology classes. One hundred and ten students came from a large (>20,000 undergraduate enrollment) southeastern U.S. university; 88 came from two small (<2,000) southeastern U.S. colleges. Another one hundred students from the large university served as an independent sample to try to verify the results of the first study.

Results and Discussion

The 26 items were factor-analyzed using a principal components method with orthogonal rotation. One large, first-order factor emerged, containing 14 items. Using the Kaiser criterion for factor evaluation (Stevens, 1986, p. 341), this was the only factor with an eigenvalue greater than one; thus, a one-factor solution was accepted. The items within this factor formed our collegiate psychological sense of community scale.² Coefficient alpha for this scale was .88. In an effort to try to reproduce these results on an independent sample, the same scale was administered to a second sample of 98 undergraduates taking undergraduate psychology courses. Coefficient alpha for the scale in this sample was .90. These items are displayed below in Table 1 along with their corrected item-total correlations. This set of items comprised our collegiate PSC scale used in Study 2.

It should be noted that the items in this scale reflect the key meanings traditionally associated with the term PSC, including feelings of belongingness, commitment, fulfillment of needs, attachment, and overall sense of community. It is interesting to note some trends among the items which did not factor with the PSC scale. Non-PSC items included those

²There was also a second minor factor which emerged, but is not presented here, which represented five items dealing with the helpfulness, friendliness, and accessibility of college faculty, administrators, and staff.
Table 1

<table>
<thead>
<tr>
<th>Item</th>
<th>Item-total correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regarding this college university:</td>
<td>.71</td>
</tr>
<tr>
<td>I really feel like I belong here.</td>
<td>.56</td>
</tr>
<tr>
<td>There is a sociable atmosphere on campus.</td>
<td>.68</td>
</tr>
<tr>
<td>I wish I had gone to another college instead of this one. (R)</td>
<td>.47</td>
</tr>
<tr>
<td>Students feel they can get help if they are in trouble.</td>
<td>.80</td>
</tr>
<tr>
<td>I would recommend this college to students in my high school.</td>
<td>.49</td>
</tr>
<tr>
<td>My parents like this college.</td>
<td>.60</td>
</tr>
<tr>
<td>There is a strong feeling of togetherness on campus.</td>
<td>.62</td>
</tr>
<tr>
<td>I someday plan to give alumni contributions to this college.</td>
<td>.79</td>
</tr>
<tr>
<td>I really enjoy going to school here.</td>
<td>.56</td>
</tr>
<tr>
<td>Students here really care about what happens to this college.</td>
<td>.79</td>
</tr>
<tr>
<td>I feel very attached to this college.</td>
<td>.59</td>
</tr>
<tr>
<td>Campus life is very stimulating.</td>
<td>.65</td>
</tr>
<tr>
<td>If I am/were going to college next year, I would go here.</td>
<td>.66</td>
</tr>
<tr>
<td>There is a real sense of community here.</td>
<td>.95</td>
</tr>
</tbody>
</table>

Note. (R) indicates reverse scoring. Each item-total correlation was computed with the item not included in the total score. All of the item-total correlations are significant at the $p < .01$ level.

dealing with having friends on campus (e.g., “I have friends on campus who know they can depend on me” and “There are people here whom I really care about.”); accessibility, friendliness, and helpfulness of professors and administrators (e.g., “It is easy to talk to professors here outside of class” and “The administrators are friendly and helpful.”); and similarity of students (e.g., “People here have similar values.”). We also analyzed PSC by type of major and found generally large differences between majors, with psychology majors scoring higher than science and engineering or business majors. We consider the implications of this result below.

Study 2

Overview and Rationale

Before investigating school size, we first had to determine how we would sample students in the different colleges and universities. An extensive body of previous research (e.g., Feldman & Newcomb, 1969; Holland & Nichols, 1972; Medsker & Trent, 1972), as well as our own pilot data, indicates that student attitudes, values, preferences, beliefs, and personality traits differ considerably by type of major in college. Indeed, most vocational interest inventories used to plan college majors (e.g., the Strong Campbell Interest Inventory or Kuder Preference Record) are predicated on the assumption that such personal attributes will be predictive of satisfaction with and longevity in a major. To control for potential differences in PSC as a function of major, we would like to have sampled proportionately across different types of majors within each college. However, it was beyond the scope of this study (which was unfunded). As an alternative strategy for trying to minimize the effects of academic major on our PSC estimates, we recruited students from psychology classes at each school. This sampling strategy to some degree controls for major differences between colleges of different sizes, though, of course, it does so at the possible expense of external validity. Such control is especially important for the analyses comparing colleges of different
sizes, since we did not want size overly confounded with students’ major. We did, however, relax this criterion for our analyses of the relationship between PSC and extroversion. To achieve a larger sample for these analyses, we used student volunteers to administer questionnaires on campus wherever they had opportunity to do so, often in natural settings on campus.

**Participants.** The 774 participants for the PSC-size analyses were students at each of 23 colleges drawn from a psychology class (one per school). Forty-five percent of the participants were male; 55% were female. The distribution by year in school was: Freshman 29%, Sophomore 23%, Junior 21%, and Senior 26%. The average class size was 38.

The 1,121 participants for the PSC-Extroversion analyses were students at each of 27 colleges, representing the 774 students from Study 1 and an additional 347 subjects drawn on the basis of an opportunity sample at additional campuses. Forty-four percent of the participants were male; 56% were female. The distribution by year in school was: Freshman 29%, Sophomore 23%, Junior 20%, and Senior 27%.

**Procedure.** A nonrandom, convenience sample of colleges was drawn with two objectives guiding the selection process: (1) We wanted to sample colleges in order to have a wide range with respect to size (total undergraduate enrollment), including small and large schools; and (2) we wanted to obtain a sample which had geographic diversity. Although we were limited primarily by travel costs and propinquity to our institution, our final obtained sample of colleges for the size analysis had the following undergraduate enrollments: Less than 2,000 = 4, 2,000-9,999 = 5, 10,000-19,999 = 8, and greater than 20,000 = 4. For the PSC-Extroversion analysis, our final sample was drawn from colleges and universities in the following states: Illinois, Kansas, Kentucky, Michigan, North Carolina, Minnesota, New York, Ohio, Oregon, Georgia, South Carolina, Tennessee, and Wisconsin.

For the class-administered scales, the instructor typically passed out the questionnaire to students, read a prepared statement about anonymity and informed consent (including freedom to refuse to answer any or all questions), and allowed them to complete the two-page form during class time. A debriefing on the purpose of the study was then offered to the students.

**Measures.** The measures were collected in a two-page self-report questionnaire. The measures were the collegiate PSC scale and an abbreviated version of the Extroversion scale from the NEO PI-R (Costa & McCrea, 1992) for the total sample (n = 1121), coefficient alpha = .92 for the 14-item collegiate PSC scale. A summated scale score was formed by simple unit-weighting of each item after reverse-coding negatively worded items. Six items were selected from each Extroversion sub facet scale (each of which has eight items) on the basis of higher factor loadings as presented in the NEO PI-R Technical Manual and on the basis of suitability for undergraduates (e.g., an item dealing with preference for a certain kind of job was discarded in favor of an item dealing with how a person feels about social gatherings). For the total sample, the coefficient alpha for the full Extroversion scale (n = 36 items) = .83; for each 6-item Extroversion sub facet the coefficient alphas were: Warmth—.73, Gregariousness—.62, Assertiveness—.63, Activity—.62, Excitement-Seeking—.53, and Positive Emotions—.65. For the Extroversion scale and each of the six facets, a summated scale score was formed by simple unit-weighting of each item after reverse-coding the items which were phrased negatively.

**Results**

**Size Analysis.** The first consideration in the analysis of PSC in relation to college size was to determine how to classify size. In view of the relatively small number of participants
from each college, we did not want to simply correlate PSC with actual enrollment. Instead, following distinctions made by others regarding college size (Reichard, 1971; Barron's, 1992; Yale Daily News, 1994), we chose to group the colleges as noted earlier in the following manner: less than 2,000; 2,000–9,999; 10,000–19,999; and 20,000 and more.

Next, we compiled the PSC scores within each of the four size categories for the class-administered PSC sample (n = 774) and conducted a one-way analysis of variance to test for mean differences between groups. The results are shown in Table 2. As seen in this table, there was a significant mean difference in PSC scores between the four size groups (F(3,739) = 14.52, p < .01). A Newman-Keuls post-hoc procedure (Winer, 1971) revealed that the less than 2,000 and the 2,000–9,999 groups were not significantly different from each other, but were significantly different from the 10,000–19,999 and the 20,000 and above groups (which were not significantly different from each other).

Analysis by Other Structural and Demographic Variables. Using the same sample of participants as above, we analyzed PSC in relation to students living on-campus versus off-campus and students who were and were not members of a fraternity or sorority. We computed t tests on mean PSC scores between each of these dichotomous groups overall, and to control for college size because of its relation to PSC, we also performed t tests at each of the four size levels. These results are presented in Table 3.

As can be seen from these analyses, higher levels of PSC were observed for students who lived on-campus for the total sample (t(1,061) = 5.09, p < .01), for colleges under 2,000 (t(168) = 6.14, p < .01), for colleges 2,000–9,999 (t(155) = 3.07, p < .01), and for colleges at the 20,000 or more size level (t(120) = 2.15, p < .05). For the total sample, students who were members of a fraternity or sorority displayed a higher mean PSC score than did non-members (t(1059) = 6.09, p < .01). However, no significant differences were observed between fraternity/sorority members versus non-members for any of the individual four size groupings.

We also analyzed mean PSC by year in school using a one-way analysis of variance and found a significant difference (F(3, 1052) = 7.29 p < .01). A post hoc, Newman-Keuls analysis revealed that the average PSC score for Seniors (47.51) was lower than the mean PSC score for Freshmen (50.09), Sophomores (51.47), and Juniors (49.86), which were not significantly different from each other. Also, an analysis of covariance revealed that the effects for school size on PSC were retained even when the effects of year-in-school were partialed out by using it as a covariate (adjusted F(3,559) = 13.95, p < .01).

PSC-Extroversion Analysis. For the full sample (n = 1121), we correlated the PSC score with the Extroversion score and each of the six Extroversion subfacet scores. The results are

<table>
<thead>
<tr>
<th>Table 2 Mean Scores on Collegiate Psychological Sense of Community (PSC) by College Size and Results of a One-Way Analysis of Variance Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment size category</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>Less than 2,000</td>
</tr>
<tr>
<td>2,000–9,999</td>
</tr>
<tr>
<td>10,000–19,999</td>
</tr>
<tr>
<td>20,000 and above</td>
</tr>
</tbody>
</table>

Note. ** = < .01 Groups with a different superscript differ from each other at the p < .01 level.
Table 3
Average Collegiate Psychological Sense of Community (PSC) as a Function of Living On/Off Campus and Membership in a Sorority or Fraternity by University Size

<table>
<thead>
<tr>
<th>Total sample (all four size levels combined)</th>
<th>Living arrangement</th>
<th>Member of a fraternity or sorority</th>
<th>t</th>
<th>Yes</th>
<th>No</th>
<th>t**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>On campus</td>
<td>Off-campus</td>
<td></td>
<td>51.16</td>
<td>48.07</td>
<td>5.09**</td>
</tr>
<tr>
<td>PSC M</td>
<td></td>
<td></td>
<td></td>
<td>10.19</td>
<td>9.48</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td>567</td>
<td>496</td>
<td></td>
</tr>
<tr>
<td>Students from colleges under 2,000</td>
<td>Living arrangement</td>
<td>Member of a fraternity or sorority</td>
<td>t</td>
<td>Yes</td>
<td>No</td>
<td>t**</td>
</tr>
<tr>
<td></td>
<td>On campus</td>
<td>Off-campus</td>
<td></td>
<td>56.26</td>
<td>46.93</td>
<td>6.14**</td>
</tr>
<tr>
<td>PSC M</td>
<td></td>
<td></td>
<td></td>
<td>9.01</td>
<td>10.33</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td>109</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>Students from colleges 2,000–9,999</td>
<td>Living arrangement</td>
<td>Member of a fraternity or sorority</td>
<td>t</td>
<td>Yes</td>
<td>No</td>
<td>t**</td>
</tr>
<tr>
<td></td>
<td>On campus</td>
<td>Off-campus</td>
<td></td>
<td>52.51</td>
<td>47.80</td>
<td>3.07**</td>
</tr>
<tr>
<td>PSC M</td>
<td></td>
<td></td>
<td></td>
<td>8.86</td>
<td>9.78</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td>106</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Students from colleges 10,000–19,999</td>
<td>Living arrangement</td>
<td>Member of a fraternity or sorority</td>
<td>t</td>
<td>Yes</td>
<td>No</td>
<td>t**</td>
</tr>
<tr>
<td></td>
<td>On campus</td>
<td>Off-campus</td>
<td></td>
<td>47.19</td>
<td>48.16</td>
<td>-.89</td>
</tr>
<tr>
<td>PSC M</td>
<td></td>
<td></td>
<td></td>
<td>10.16</td>
<td>8.03</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td>49</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td>Students from colleges 20,000 and over</td>
<td>Living arrangement</td>
<td>Member of a fraternity or sorority</td>
<td>t</td>
<td>Yes</td>
<td>No</td>
<td>t**</td>
</tr>
<tr>
<td></td>
<td>On campus</td>
<td>Off-campus</td>
<td></td>
<td>49.40</td>
<td>45.77</td>
<td>2.15**</td>
</tr>
<tr>
<td>PSC M</td>
<td></td>
<td></td>
<td></td>
<td>8.79</td>
<td>9.42</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>72</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05; **p < .01.

Presented in Table 4 along with the means and standard deviations for each scale composite. Extroversion and each of its six facets was significantly related to PSC, with coefficients ranging from .37 for the Warmth-PSC correlation (p < .01) to .13 for the Activity-PSC correlation. It should be borne in mind that the facet correlations are underestimates because of the lower levels of internal-consistency reliability (which are in part, due to the low number of items). It is clear from these results that there is a significant relationship between PSC and extroversion with about 12% shared variance between the two measures.

**PSC in Relation to Size and Extroversion.** Given that both school size and extroversion appear to be related to PSC, we turned to questions about how PSC is related to both Size and Extroversion; in particular whether both variables accounted for unique PSC variation. First, we wondered whether Extroversion differed as a function of school size in a manner similar to PSC—with smaller schools displaying higher levels of extroversion. We repeated the one-
Table 4

Descriptive Statistics and Correlations of Extroversion Variables with Collegiate Psychological Sense of Community (PSC)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Correlation with PSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSC</td>
<td>49.71</td>
<td>10.00</td>
<td>---</td>
</tr>
<tr>
<td>Extroversion</td>
<td>129.13</td>
<td>14.49</td>
<td>.34**</td>
</tr>
<tr>
<td>Warmth</td>
<td>23.21</td>
<td>3.67</td>
<td>.38**</td>
</tr>
<tr>
<td>Gregariousness</td>
<td>20.90</td>
<td>3.80</td>
<td>.27**</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>19.42</td>
<td>3.60</td>
<td>.17**</td>
</tr>
<tr>
<td>Activity</td>
<td>20.96</td>
<td>3.38</td>
<td>.13**</td>
</tr>
<tr>
<td>Excitement-Seeking</td>
<td>21.91</td>
<td>3.26</td>
<td>.15**</td>
</tr>
<tr>
<td>Positive Emotions</td>
<td>22.40</td>
<td>3.47</td>
<td>.28**</td>
</tr>
</tbody>
</table>

**p < .01.

way ANOVA procedure for the four levels of college size separately for Extroversion and each subfacet as the dependent variable. The results of these analyses indicated one significant effect for the Assertiveness measure ($F(3,739) = 2.84, p < .05$), with the mean scores being higher for the two groups of smaller colleges than the two groups of larger colleges. There was also one marginally significant effect for the Warmth variable ($F(3,716) = 2.54, p = .0555$), again with higher mean levels for the two smaller groupings of schools than the two larger groups of schools. Thus, there is some slight tendency for there to be higher levels of extroversion facets in smaller schools.

Next, we were interested in whether the PSC differences between colleges of different size would remain after partialing out the effects of Extroversion. To do so, we performed an analysis of covariance with the four categories of school size used above serving as the independent variable, PSC as the dependent variable, and Extroversion as the covariate. The resulting $F$ ratio was reduced from the unadjusted ANOVA $F$, but was still significant ($F(3,559) = 8.89, p < .01$).

Finally, we examined the issue of joint and unique PSC variance accounted for by the Extroversion and Size variables. First, we employed a stepwise multiple regression equation with the composite Extroversion score serving as one independent variable and a dummy-coded Size variable entered as a set (Cohen & Cohen, 1983) serving as the other independent variable. The results of this analysis are displayed in Table 5 and indicate that a multiple correlation of .39 can be achieved, or 16% of the variance accounted for, in predicting PSC, with Extroversion entering the equation first, accounting for 11% of the explained variance, followed by School Size, accounting for an additional (and significant) 5% of the variance.

Analyses of the semipartial correlation results reveal that more of the unique variance in

Table 5

Results of Stepwise Multiple Regression and Semipartial Correlations for School Size and Extroversion when Accounting for Variance in Collegiate PSC

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Multiple $R$</th>
<th>$R^2$ change</th>
<th>Semipartial correlation</th>
<th>Semipartial correlation squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Extroversion</td>
<td>.337</td>
<td>.11</td>
<td>.323**</td>
<td>.10**</td>
</tr>
<tr>
<td>2</td>
<td>School Size</td>
<td>.400</td>
<td>.16</td>
<td>.202**</td>
<td>.04**</td>
</tr>
</tbody>
</table>

**p < .01.
PSC is accounted for by the Extroversion measure (10%) than by the Size variable (4%), with little common predictive variance (about 2%). These results suggest that a significant amount of variance (about 16%) was accounted for by the combination of the Extroversion and Size variables, but that Extroversion accounts for more than twice as much unique variance in PSC as does school size.

General Discussion

In this study we developed an internally consistent scale, replicated across multiple samples, to measure psychological sense of community applied to colleges and universities. Faithful to the central definitions of PSC (e.g., Sarason, 1974; McMillan & Chavis, 1986) the items in this scale encompass feelings of belongingness, togetherness, attachment, investment, commitment to the setting, positive affect, concern for the welfare of the community, and, of course, an overall sense of community.

Before turning to the issues we researched using this scale, we would like to note some implications of the scale content based on item inclusion and exclusion. First, administrators, recruiters, and others responsible for the college’s survival, operations, and quality of life should find it interesting that two of the items factoring positively with our PSC scale were “I plan to give alumni contributions to this college” and “I would recommend this college to students in my high school.” Such findings are fully consistent with McMillan and Chavis’ (1986) observations that personal investment is an important aspect of a sense of community.

The present results also touch on an issue which has received little explicit consideration in prior theorizing and research but has important ramifications—Is PSC higher in communities where there is greater member homogeneity, which can be defined in terms of values, beliefs, attitudes, lifestyles, demographics, and a host of other characteristics? McMillan and Chavis (1986), for example, emphasized the role of shared values in leading to a strong sense of community. Also, prior research has indicated a linkage between PSC and perceived similarity of group members (Compas, 1981), attitude similarity (Good et al., 1973), and even cultural and racial homogeneity (Aiba, 1975). But the proposition that member homogeneity is associated with or facilitates PSC goes against the grain of one of the key tenets of the community psychology paradigm (Rappaport, 1977) as well as one of our most pressing societal issues—diversity. Community homogeneity and diversity are incompatible, if not antithetical processes. We cannot even begin to address this issue in the present context; however, one aspect of our findings indicates that member homogeneity is unrelated to sense of community. Specifically, in our first sample, the only items bearing on student similarity or homogeneity—“People here have similar values” and “My goals in life are similar to those of most other students”—did not factor with the PSC items. If supported by further research, it would be encouraging to know that student similarity was not important for a psychological sense of community on campus.

This study also revealed that college size was inversely related to PSC. Students in smaller-size colleges reporting a stronger sense of community is consistent with previous research on college size showing the social psychological benefits of smaller colleges (Reichard, 1971). What is not clear at this point is why this is so. Following the lead of Barker and Gump (1964), we might surmise that, compared to larger universities, smaller colleges have a greater environmental press for students to become involved in different behavior settings which would lead to greater feelings of belongingness, togetherness, and so forth. Or, there might be some other attribute of smaller colleges, such as smaller class sizes or dormitory sizes, which facilitates the type of social interaction leading to a psychological sense of community. Future research could clarify the basis for the college size–PSC association.

One other finding offers a clue about the role of the campus environment in augmenting PSC. For the total sample and each college size group except 10,000–19,999, students who
reported that they lived on campus had significantly higher PSC scores than students who reported that they lived off-campus. Presumably, students who live on campus would have greater opportunities to participate in the types of activities or engage in the kinds of behavior settings which lead to PSC. The findings for fraternity and sorority membership were less clearcut, but suggest that for the sample as a whole, participation in such organizations—which emphasize belongingness, cohesion, and shared identity—is associated with a greater sense of community. It would be interesting to explore the relationship between collegiate PSC and involvement in other campus activities such as intramural or varsity sports and social events as well as membership in sub-communities of the college including different types of residence halls, clubs, and student government, inter alia.

Taken as a whole, the above findings are fully consistent with the conceptualization of PSC as an attribute of environments and as a phenomenon which flows from and is, in essence, determined by the environment. As noted earlier, this seems to be the prevalent view of PSC in the extant literature. However, the present findings suggest that a very different conceptualization is plausible. The personality trait of extroversion was positively and significantly related to PSC; that is, students who scored higher on extroversion reported higher levels of sense of community. Further, extroversion accounted for more of the variance in PSC than did college size. This raises the possibility that PSC is, at the very least, related to personality and might primarily be a function of personality attributes, not environmental attributes.

There are several ways that personality might influence a psychological sense of community. Using what we term a “passive personological” perspective, students who are more extroverted might simply see the world around them differently; for example, as being more cohesive, close-knit, socially accessible and generally fraught with a sense of community. In this vein, it should be noted that introverts and extroverts on a campus are viewing more or less the same collective entity when asked to answer the questions used in our PSC scale about qualities of the college as a whole. On the other hand, from what we term an “active personological” perspective, students who are more extroverted might engage more frequently or in a greater number of activities and settings which lead to a greater sense of PSC. For example, consistent with a priori expectations for extroverts and introverts (Morris, 1979), a more extroverted student might form more friendships, engage in a greater number of social activities, and join more clubs and organizations than a less extroverted (or introverted) student, which in turn would lead to the more extroverted student agreeing more strongly with the statements on our PSC scale, particularly ones such as “I really feel like I belong here” and “There is a sociable atmosphere on campus.” In both of the above frameworks, PSC would be determined by the student’s level of extroversion.

However, there is an alternative model which would also account for the PSC-extroversion linkage. Extroverts might be more attracted to communities which offer greater opportunities for interaction, friendship, and social cohesion and also have a stronger sense of community. As McMillan and Chavis (1986) pointed out, members are more attracted to a community where they feel that they can meet their needs. This is akin to the epidemiological models of “mobility” and “drift” (Dunham, 1970) wherein people with differential behavioral patterns consciously or unconsciously, respectively, move toward specific types of social systems which can facilitate the behavior in question.

Based on our data, it is not possible to compare these rival hypotheses concerning the relationship of PSC and extroversion. Suffice it to say that, given our findings and those of Davidson et al. (1991) who reported a significant association between PSC and need-for-affiliation, there appears to be a relationship between personality traits and PSC. There are two general implications of such a linkage for PSC research and theory-development. First, research which investigates between-community differences in PSC should also consider
between-community differences in personality characteristics. At this point, it is premature to say that such between-community differences could reflect an artifact of personality differences, but variation among communities and community characteristics might overlap with personality variation, thus obscuring any unique effect size estimation for community attributes. Second, perhaps the PSC construct should be modified to reflect less of an environmental emphasis and incorporate more of a personological viewpoint. In the present study, for example, it appears that unique PSC variation can be accounted for by both the community attribute of size and the personality attribute of extroversion.

At this juncture, we would favor an interactionist perspective (Ekehammar, 1976; Magnusson & Endler, 1977), which regards PSC as determined neither primarily by the environment (i.e., community) or the person, but by the interaction of the two. More explicitly, an interactionist model of PSC would have the following elements: (1) psychological sense of community is a function of the interaction or feedback between the person and the community in which he or she is a member; (2) personological attributes are important insofar as they mediate the meaning of communities for individuals and thus affect PSC; and (3) community attributes are important insofar as they impact PSC through psychological attributions and meanings. Using this model, one can partition PSC variance into person effects, community effects, and interaction effects as well as analyze PSC variance in terms of more complex statistical models such as reciprocal causation.

There are many directions for future research on the topics addressed by this study. This study was limited by several aspects of its sampling methods. For the size analyses we focused on psychology classes. It is an open question how well these findings would generalize to classes in other majors and to studies which used a larger and more nationally representative sampling strategy. Also, the present study did not examine other personality constructs which might be related to PSC, for example, the Big 5 constructs of openness, agreeableness, and neuroticism. Subsequent research could also use a repeated measures design to investigate whether PSC is stable and how it changes as a function of college experiences and activities. Along these lines, the present cross-sectional analysis of PSC by year in school indicates that Seniors have a lower level of PSC, for reasons that are as yet unknown, but could have to do with such factors as disengagement from campus life, shifting priorities, and lowered level of social participation. Then, too, it would be interesting to examine whether collegiate PSC is related to different types of affective experience such as loneliness, alienation, depression, satisfaction, and quality of life as well as more explicit, behavioral outcomes, such as college dropout, classroom absenteeism, grade-point-average, alumni giving, and participation rates in organizations, associations, and events.

In conclusion, our development of a measure of an internally consistent, replicated measure of collegiate psychological sense of community which varies as a function of community size and extroversion affirms the robustness and generalizability of the PSC construct. It also invites further questions about the relationship between PSC and personality characteristics and sets the stage for a reconceptualization of PSC based less on an environmental view and more of an interactionist perspective.

References


Reichardt, D. J. (1971). *Campus size (A selective review).* Atlanta, Georgia: Southern Regional Education Board.


