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Sense of Community in Science Fiction Fandom: Part 1 Understanding Sense of Community in an International Community of Interest

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Abstract

Within the discipline of community psychology there is debate as to the dimensions underlying the construct psychological sense of community (PSOC). One of the few theoretical discussions is that of McMillan and Chavis (1986), who hypothesized four dimensions: Belonging; Fulfillment of Needs; Influence; and Shared Connections. Discussion has also emerged in the literature regarding the role of identification within PSOC. It has been suggested that differences in PSOC may be understood in terms of the degree to which members identify with their community (Fisher & Sonn, 1999). However, few studies have explored the place of identification in PSOC. In addition, while PSOC has been applied to both communities of interest and geographical communities, little research has looked in depth at PSOC within communities of interest. The current study therefore explored PSOC in science fiction fandom, a community of interest with membership from all over the world, by means of a questionnaire distributed at an international science fiction convention ($N = 359$). In an endeavor to clarify the underlying dimensions of PSOC, the questionnaire included several measures of PSOC, and measures of identification with the community. Results showed that science fiction fandom reported high levels of PSOC. Support emerged for McMillan and Chavis' (1986) four dimensions of PSOC, with the addition of a fifth dimension, that of Conscious Identification. These results, and implications for PSOC research, are discussed.

NOTE: All tables are at the end of this document.

Sense of Community in Science Fiction Fandom: Understanding Sense of Community in an International Community of Interest

Much has been written on the idea of community, from many perspectives, resulting in a plethora of definitions and uses of the term. Hillery (1955), in a detailed examination of uses of the term 'community', discovered no less than 94 distinct definitions. The term is highly familiar to the general population and is used frequently in everyday conversation.

Within the psychological framework, a field of psychology has come to be known as community psychology. From this framework of working within communities came the need to define in psychological terms what was meant by 'community'. In 1974, Sarason presented the concept of psychological sense of community (PSOC) as the overarching value by which community psychology itself should be defined. At the same time he recognized the inherent difficulties associated with the empirical study of the concept. He noted that it necessarily implies a value judgment not compatible with hard science and yet he stated "you know when you have it and when you don't" (p. 157). Sarason (1977) noted the basic characteristics of sense of community as "The perception of similarity with others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for others what one expects from them, the feeling that one is part of a larger dependable and stable structure" (p. 157).

Gusfield (1975) distinguished between two major uses of the term community. The first is the territorial or geographical notion of the word. In this sense community refers to a neighborhood, town, city or region, thus sense of community implies a sense of belonging to particular area. The second is a more relational usage, concerned with quality and character of human relations without reference to location. This is the sense we use community when we refer to communities of interest, for example work settings, hobby clubs or religious groups. Of course, these two uses are not mutually exclusive; many interest groups are also community (location) based. However, as Durkheim (1964) observed, modern society appears to develop community around interest rather than locality. This has been shown to be true particularly in large urban centers, where choice is much broader, population density high and the need for interdependence for survival lessened.

Within the psychological field, the development of scales to measure PSOC have necessarily added to its definition, with the majority of scales developed subjected to factor analysis to examine the underlying factor structure of PSOC. The development and adjustment of such scales has been an ongoing process. Bardo (1976) was one of the earliest to examine community feelings, through an exploration of community satisfaction. He found the construct to have several underlying dimensions: Quality of Interaction, Belongingness, Courtesy, Physical Attraction, Institutional Responsibility, Entertainment, Comparative Housing Quality, Adequacy of Housing and Income, and Status Affect.

Glynn (1981), based on the work of Hillery (1955), identified 202 behaviors or sub concepts relating to sense of community. From these he developed 120 items to examine the construct in terms of both real and ideal communities. Factor analysis revealed six underlying dimensions: Evaluation of Community Structure, Supportive Relationships in the Community, Similarity of Community Members, Individual Involvement in Community, Quality of Community Environment, and Security. Nasar and Julian (1995) revised Glynn's scale to be a more convenient instrument to use, reducing the 60 items examining real communities to 11 items, and showed the shortened scale retained the same dimensions and remained a valid and reliable instrument.

McMillan and Chavis (1986) conducted an in depth review of the literature on PSOC, and found that this work was being conducted in the absence of any overarching theoretical base. They developed the first psychological theory of PSOC, which to date has remained one of the few theoretical discussions of the concept and still the most widely used and accepted one.

They suggest that PSOC consists of four elements: Membership, Influence, Integration and Fulfillment of Needs, and Shared Emotional Connection. Membership refers to the feeling of belonging, of being part of a collective. A major part of membership is boundaries; if you belong to a particular community, this implies there are those who do not. This concept seems to be intuitively a necessary part of any definition of community; to have a sense of community, first you must belong to a community. From the earliest sociological research into communities this notion of membership and boundaries has been present (e.g., Parks & Burgess, 1921). McMillan and Chavis (1986) extend the concept to include emotional safety derived from membership, the sense of belonging and identification with the community of interest, personal investment in the community, leading to stronger bonds, and some kind of common symbol system, which unites a community.

The second dimension is that of Influence, a bi-directional concept, as for a group to be attractive, an individual must feel they have some control and influence over it, while, on the other hand, for a group to be cohesive it must also influence its individual members. McMillan and Chavis (1986) state that pressure of conformity from community members actually comes from the needs of individual members for consensual validation. In turn conformity serves as a force for cohesiveness.

The third dimension, Integration and Fulfillment of Needs, refers to the idea that for a community to maintain a positive sense of togetherness, the individual-group association must be rewarding for the individual members. Some of the more obvious rewards examined in their paper are status of membership, success of the community, and the perceived competence of other members.

The last dimension is that of Shared Emotional Connection. McMillan and Chavis (1986) suggest that this is in part based on a sense of shared history and identification with the community. The authors suggest that the more people interact, the more likely they are to form close relationships. The more positive this interaction, the stronger the bond developed. Investment in the community determines the importance to individuals of the community's success and current status. Those who give time and effort to community organizations and events will be more concerned about seeing the positive effects of these events than are those who have not been involved.

McMillan and Chavis (1986) state that these aspects of community contribute to create each of the dimensions, which in turn work dynamically together to create and maintain an overall sense of community. Based on this theory, Chavis, Hogge, McMillan and Wandersman (1986), using a Brunswick's lens methodology, developed the twelve item Sense of Community Index (SCI) from the responses of 1200 adults in a Neighborhood Participation Project. The development of the SCI set the stage for the widespread use of the theory. This theory and questionnaire are to date the most widely used theoretical base and instrument in PSOC research, especially within community psychology.

McMillan (1996) revisited the theory developed in 1986 in the light of ten years' research into the area. Membership was reinterpreted as Spirit, emphasizing friendship and belonging over boundaries. Influence was replaced with Trust, emphasizing the development of community norms leading to order, and the equal distribution of power leading to authority

based on principle and clear decision making capacity, all of which allow spirit to grow and flourish. Fulfillment of Needs was replaced with Trade, acknowledging the myriad kinds of rewards individuals gain from belonging to communities. The importance of similarity between members was also highlighted as an important bonding force previously neglected in this dimension. The final dimension, Shared Emotional Connection, was replaced with Art, or collective memories, which McMillan (1996) described as stories of shared dramatic moments in which the community shares in common experiences representing the community's values and traditions.

However, the primacy of contact and of quality interaction to emotional connection is again highlighted in McMillan's (1996) reinterpretation. These dimensions work together to create an overall PSOC. Art supports Spirit, Spirit with respected authority becomes Trust, Trust forms the basis of social Trade, and together these elements create a shared history symbolized by Art. In this way, McMillan's four elements of PSOC are linked together in a reinforcing circle.

From a more human ecological perspective, researchers have worked on the concept of communities as a social unit. To what extent and under what conditions they exist has come to be examined under the construct of neighborhood cohesion. For example, Buckner (1988) developed the 18 item Neighborhood Cohesion Index. This measure attempts to combine the individual's sense of community and the overall social cohesion of their community. Buckner conducted an extensive review into the literature on cohesion, both the social psychological literature on small group processes and the sociological tradition examining cohesion within neighborhoods. From this he drew three dimensions of importance to cohesion: Residents' Sense of Community, Residents' Degree of Attraction to being a part of and remaining in the community, and the degree of Member Interaction. However, in a factor analysis during the development of his scale, he found that only one factor emerged, and hypothesized that the concept of neighborhood cohesion subsumed these individual level dimensions. He concluded that the Neighborhood Cohesion Index could be used to examine these individual level dimensions, and that a mean neighborhood cohesion score could also be derived for whole communities to also indicate the strength of cohesion at the system level. Several researchers (e.g., Robinson & Wilkinson, 1995) have used, commended and presented validating data in several contexts for Buckner's NCI.

Skjaeveland, Garling, and Maeland (1996) aimed to develop a measure of community that extended on previous efforts by introducing the possibility of negative community relations, and by including the traditionally environmental psychological concept of place attachment, which highlights the importance of the sociophysical environment to social interactions and positively experienced bonds (Brown & Perkins, 1992). They operationalized the construct of neighboring as the positive and negative aspects of social interactions, expectations, and attachments of individuals with the people living around them and the place in which they live. They hypothesized six dimensions underlying neighboring: Overt Social Interactions, Weak Social Ties, influenced by physical and spatial features of the environment, Psychological Sense of Community, Sense of Mutual Aid, Neighborhood Attachment, and Neighbor Annoyance. Analysis of their data revealed only four distinct dimensions. As proposed, Weak Social Ties, Neighborhood Attachment and Neighborhood Annoyance emerged as distinct factors. However, Overt Social Acts, Sense of Mutual Aid, and Sense of Community amalgamated into a single factor, which the authors labeled Supportive Acts of Neighboring, tapping similar dimensions to Buckner's (1988) Neighborhood Cohesion Index. The 14 item four-dimensional Multidimensional Measure of Neighboring (MMN) was the result of the study.

While the developments reviewed above have added to our understanding of PSOC, and have seen scales developed for many specific contexts, they have also resulted in methodological confusion and lack of strong theory building in this area. In a recent article on this topic, Chipuer and Pretty (1999) suggest that research into PSOC has consequently become stuck in a construct definition and measurement phase, restricting the comparability of results across settings. It could be argued that the results of much of this research has in fact been an artifact of the specific orientation of the researchers, as factor analytic techniques can only pull out what has been included in the analysis in the first place.

However, many authors feel that as one of the few integrative theories of PSOC, that of McMillan and Chavis (1986) provides the best foundation on which to build our understanding of communities. Several investigators have found support for McMillan and Chavis' hypothesized dimensions. However, such support tends to come from qualitative studies (e.g., Brodsky, 1996; Plas & Lewis, 1996; Sonn & Fisher, 1996) rather than from quantitative factor analytic studies. In a recent exception, Chipuer and Pretty (1999) examined the psychometric properties of the SCI in neighborhood and workplace settings and found that the SCI tended to factor into dimensions different from those hypothesized by McMillan and Chavis. However, Chipuer and Pretty conclude that the SCI provides a good foundation for further PSOC research, and suggest taking a theory driven, integrative approach to PSOC, which should include examining how items from other scales may combine with those from the SCI to better represent McMillan and Chavis' four dimensions. In a recent overview Chavis and Pretty (1999) again suggest that much theoretical insight can be gained by persisting in collaborative scale development.

Chipuer and Pretty (1999), as well as other recent theorists (Chavis & Pretty, 1999; Fisher & Sonn, 1999; Puddifoot, 1995), also suggest that differences in levels of PSOC may be understood in terms of the degree to which members identify with their community, with identification with the community an important aspect of PSOC dimensions such as McMillan and Chavis' Membership. Yet few PSOC studies to date have explored the role of identification or incorporated measures of identification with the community. One exception is Fisher and Sonn (1999), who found suggestive evidence that identification with the community may be an important aspect of PSOC. However, such studies are not grounded in relevant theory relating to identification. Social identity theory (SIT), a well-established theory of group processes and intergroup relations (Abrams & Hogg, 1990; Hogg & Abrams, 1988; Tajfel & Turner, 1979), may provide an appropriate theoretical framework from which to examine the role of identification in PSOC.

According to SIT, when an individual is strongly aware of their group membership and it is of strong value and emotional significance to them, they are said to have strong ingroup identification (Hogg, 1992). Thus ingroup identification has both affective and cognitive consequences. Ingroup identification is strongly associated with, amongst other things, group cohesiveness (Hogg & Hains, 1996) and stronger influence by the group (Terry & Hogg, 1996; Terry, Hogg & White, 1999), both clearly related to McMillan and Chavis' conception of PSOC. Hogg (1992) suggests that while McMillan and Chavis conceptualize PSOC largely in terms of mutually reinforcing interpersonal processes, an important role is given to identification or belonging to a normatively bounded social entity. However, the social psychology of this idea has not largely been pursued.

One of the few studies that has looked at PSOC and ingroup identification, using geographical communities, incorporated SIT measures of identification as well as more traditional PSOC measures (Smith, Zinkiewicz & Ryall, 2000). Identification emerged as distinct from other PSOC dimensions, and was also a significant predictor of overall PSOC.

The present study follows up Smith et al.'s study, using measures and insights derived from SIT in its investigation of identification and PSOC, but here within a community of interest.

One important feature of SIT is that the processes it investigates, including ingroup identification, apply not only to small groups, where all members interact, but also to larger groups and social categories, where it is impossible to interact with or even know all the members of the group (Hogg, 1992). SIT is therefore clearly applicable to both geographical communities and communities of interest, where community is more relational without reference to location (Gusfield, 1975).

Within traditional PSOC research, while considerable work has been done on territorial or geographical communities, less research has looked in depth at PSOC within communities of interest. While some PSOC researchers (e.g., Hill, 1996; Puddifoot, 1995) see the territorial/relational distinction as an essential division and the cause of much conceptual and methodological confusion, others (e.g., McMillan & Chavis, 1986) feel it does not necessarily affect the definition of PSOC, which can be applied equally to both types.

Work that has been done on relational rather than geographical communities has tended to focus on the workplace (Klein & D'Aunno, 1986; Lambert & Hopkins, 1995; Pretty & McCarthy, 1991; Royal & Rossi, 1996). While findings in these studies have been disparate, they have all shown that PSOC can be applied to such relational communities. However, no PSOC study to date has looked at a community that is even less clearly bounded by geographical limitations (Chipuer & Pretty, 1999; Heller, 1989), despite the fact that the advent of the internet and the new possibility of virtual communities has brought increasing attention to the meaning of community and sense of community (Rheingold, 1991).

The current study focused on a unique kind of community of interest, namely science fiction fandom (SF fandom). This community is of particular interest, as it is a community with membership from all over the world, yet one that is clearly aware of its own identity and history. SF fandom began when Hugo Gernsback launched *Amazing Stories* magazine in the US in April 1926 (Hansen, 1994). In the June 1926 issue Hugo Gernsback, its editor, noted that many of those buying the magazine had little or no chance of contacting each other and so, when printing their letters to the magazine in its 'Discussions' column, started giving their full names and addresses. This led to correspondences springing up between readers, the beginnings of a sense of community, and eventually, to the formation of the first fan groups. From that time SF fandom grew into the extensive network it is today, a community described in a number of cultural studies texts including Bacon-Smith (2000).

Fans get together at events ranging from local gatherings and conventions through to the huge world SF conventions, where thousands of fans from all over the world gather for events, panels and discussions. However, fannish interaction is not restricted to face-to-face contact. Although SF fandom was in existence well before the advent of the internet, the internet has become its major communication channel. Thus daily interaction with other members can occur from the comfort of home, even if those members live on another continent. Such online communities bring a whole new meaning and application to the word 'community'.

The present study is the first of a series based on a research project designed to develop and clarify the theoretical underpinnings of the concept of PSOC. The project attempts to extend research into PSOC in a number of ways. Firstly, by using many of the measures and perspectives highlighted in the PSOC literature, it endeavored to clarify the dimensions underlying PSOC, and in particular to investigate how these dimensions related to

those hypothesized by McMillan and Chavis (1986). It attempted to sample the broad array of work that has been conducted in the conceptual domain of PSOC by including measures developed by many researchers in the area. In this way, rather than revising or adding dimensions, as many past authors have done, the project sought to bring much of this past work together in a cohesive manner. In addition, the project provided an initial examination of the role of identification within PSOC. Finally, the project examined PSOC in both geographical communities and a non geographically based community of interest.

Thus a series of papers have been generated, of which this paper is the first. The present paper examines the underlying dimensions of PSOC in an international community of interest, science fiction fandom. In this study, several existing measures of PSOC were utilized: the Sense of Community Index (Chavis et al., 1986); the Psychological Sense of Community Scale (Glynn, 1981; short form: Nasar & Julian, 1995); the Neighborhood Cohesion Instrument (Buckner, 1988); the Community Satisfaction Scale (Bardo & Bardo, 1983); the Multidimensional Measure of Neighboring (Skjaeveland et al., 1996); and the Urban Identity Scale (Lalli, 1992). Measures of identification taken from a SIT framework were also utilized, to examine the role of identification in PSOC. Whether community members primarily interacted with each other face-to-face/on the phone or through various text based media (internet, letters, fanzines), and how this related to PSOC, was also explored.

The second paper in this series also examines PSOC of members of SF fandom, but extends on the first study in two ways. Firstly, the structure of PSOC with participants' community of interest is compared with that of PSOC with their geographical communities. This study uses only the SCI and identification measures. Further, the second paper assesses the contributions of the PSOC dimensions in generating and maintaining sense of community, the consistency of these dimensions, and the use of these dimensions across the two types of communities.

The third and final paper in the series reports a large scale study using multiple measures of PSOC (as in the current paper), conducted in rural, regional and urban geographical communities, and examines whether the dimensions found in the present study are confirmed in such a geographical sample. Further, the third study examines the influence of demographic factors on PSOC dimensions, and their interrelationship in developing overall PSOC.

Method

Participants

Participants were 359 members of SF fandom attending Aussiecon 3, the 1999 World Science Fiction Convention, held in Melbourne, Australia during September 1999. Ages of participants ranged from 18 to 79 years, with a mean age of 39.5 years ($SD = 10.8$ years). Of those that specified their gender, 186 (52%) were male and 173 (48%) female. Length of membership in fandom ranged from 1 year to 65 years, with a mean membership length of 15.7 years ($SD = 10.4$ years). Of the sample, 45% were American, 37% Australian, 5% British, 5% Canadian, 3% New Zealand, 2% Japanese and 3% from other countries (e.g., Singapore, Hong Kong, Germany). The sample was representative of convention attendees as a whole in terms of gender (54% male and 46% female) and nationality (50% American, 34% Australian, 5% British, 3% Canadian, 3% New Zealand, 2% Japanese, and 3% other).

In terms of occupation, 56% were professionals, 13% employed in clerical/sales/service occupations, 10% in management/administration, 8% as students, and 3% in each of the categories trades, retired, unemployed, and primary carer. In relation to education, 27% held postgraduate degrees, 46% undergraduate degrees, 13% trades or vocational diplomas, and 13% high school certificates. In relation to income, 6% stated they had an insufficient income, 60% a sufficient income, and 34% a more than sufficient income.

Materials

Research materials consisted of a questionnaire containing the following measures. Twelve items assessed basic demographics: gender, age, nationality, ethnicity, marital status, financial status, education, length of membership in fandom, and major form of contact with fandom. Fifty-nine items assessed dimensions of PSOC. These were based on a combination of the following measures: the Sense of Community Index (Chavis et al., 1986); the Psychological Sense of Community Scale (Glynn, 1981; short form: Nasar & Julian, 1995); the Neighborhood Cohesion Instrument (Buckner, 1988); the Community Satisfaction Scale (Bardo & Bardo, 1983); the Urban Identity Scale (Lalli, 1992); and the Multidimensional Measure of Neighboring (Skjaveland et al., 1996). These scales were included to assess a wide range of hypothesized dimensions of PSOC, as for the community being examined it was unclear which dimensions would emerge as being important. In cases where scales had similar items, the item was included only once.

Twenty-two items to assess levels of identification with the SF community were also included. These items were taken from the Three Dimensional Strength of Group Identification Scale (Cameron, 1998) and the Strength of Ingroup Identification Scale (SIIS) (Brown, Condor, Mathews, Wade & Williams, 1986). The SIIS has been widely used in SIT research, and has been shown to be a reliable and valid measure of ingroup identification. Cameron's (1998) scale has only recently been developed, and was included because it taps into different aspects of identification: affective aspects (Ingroup Affect subscale), consciousness of group membership (Centrality subscale), and sense of connection with other ingroup members (Ingroup Ties subscale).

Two questions assessing self reported overall feelings of sense of community were also included (e.g., "In general, I feel that SF fandom has a strong sense of community"). These were included to assess feelings of global sense of community. Such measures have been used in previous research (e.g., Wilson & Baldassare, 1996).

All items were responded to on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). All items were modified to suit SF fans. All scales contained a number of negatively worded items, which were reverse scored before analysis.

Procedure

After development the questionnaire was piloted on SF fans from Australia, Canada, USA and the UK. The final, revised, questionnaire and associated consent form were included in the information packs given to all convention delegates when they registered. In this manner all 1200 convention attendees were given the opportunity to participate in the research. The researcher staffed a research information table at the convention site, in order to answer any questions regarding the research. Additional copies of the questionnaire were available at this table. The consent form detailed the nature of the study and required participants to transfer a number from the questionnaire to the consent form to show active consent was given. Participants placed their completed questionnaire in one of two sealed boxes (similar to those used at polling stations) placed at the study information table and near the convention registration desk. In total, 359 of the 1245 members attending the convention returned completed questionnaires, representing an approximately 30% response rate.

Results

Overall Sense of Community

To assess the overall sense of community with SF fandom the two questions tapping this concept were combined. The mean score was 5.79 (SD = 1.18), where a score of 1 indicated the weakest possible sense of community, and 7 the strongest. This mean suggests that there was a high level of sense of community within SF fandom.

Dimensions of Sense of Community in SF Fandom

All 81 items measuring PSOC and identification with SF fandom were entered into a principal components analysis. Inspection of communalities and correlation matrices

indicated that the data were suitable for this analysis. This was confirmed by a KMO sampling adequacy of .94. Inspection of eigenvalues and the scree plot revealed that a five factor solution was the most adequate and parsimonious factor structure.

The five factor solution accounted for 55.6% of the variance in the data and was based on factors with eigenvalues greater than 2.5. The solution was subjected to an orthogonal varimax rotation as none of the correlations between factors were greater than .4. Twenty-nine items loaded above .40 on the first factor, which accounted for the majority of variance (28.2%). Items dealt with being attached to, a part of, or belonging to SF fandom (e.g., "I feel like I belong in SF fandom", "I feel at home and comfortable in SF fandom", "SF fandom is a good thing to be a part of"). Some ingroup identification items tapping the concept of belonging also loaded on this factor (e.g., "I really fit in SF fandom", "I feel a part of SF fandom"). This factor was thus labeled Belonging.

Fourteen items loaded above .40 on the second factor, which accounted for a further 8.1% of the variance in the data. Items loading on this factor were those relating to similarity of members (e.g., "I have a lot in common with other members of SF fandom", "Most members of SF fandom agree about what is important in life") and the ability to work together and get things done (e.g., "If there was a problem, fandom members could get together and solve it"). Two items stating that fandom was better than other groups also loaded on this factor. This factor was labeled Cooperative Behavior and Shared Values.

Twenty-one items loaded above .40 on Factor 3, which accounted for 7.3% of the variance in the data. Items loading on this factor were to do with emotional support and friendship (e.g., "If I need a little company, I can contact a fellow fan", "My friends in fandom are part of my everyday activities"). This factor was labeled Friendship and Support.

Five items loaded above .40 on Factor 4, which accounted for 6.4% of the variance in the data. Items loading on this factor appeared to deal with conscious identification with fandom (e.g., "I often think about being a part of SF fandom", "I am conscious of the fact that I am a member of SF fandom"). This factor was labeled Conscious Identification.

Seven items loaded on the fifth factor, which accounted for 5.6% of the variance in the data. These items related to influence over the organization and leadership (e.g., "Fan leaders don't hear the voices of ordinary fans", "I have almost no influence over what SF is like"). The direction of loadings on this factor suggest that the factor actually tapped disaffection with leadership and lack of influence. This factor was labeled Leadership and Influence. Five items did not load above .40 on any factor. See Appendix A for details of items loading on each factor, and the scales from which items were taken.

The items loading on each factor were then subject to reliability analysis using Cronbach's alpha. As can be seen from Table 1, the alpha values for each factor ranged from moderate to high. Thus new composite variables were made for each factor by taking the mean of all items loading on that factor. Mean scores for each factor are shown on Table 1.

Contact with Fandom

In relation to primary form of contact with other fans, over a third (34%) of participants reported making contact with other SF fans mainly at local gatherings, 18% made most frequent contact at conventions, and 14% had most contact through personal get-togethers and phone calls. Of those using text based forms of communication, 26% of the sample made most frequent contact through the internet, while 8% made most contact through magazines and mail. Interestingly no differences in levels of PSOC emerged between fans whose major contact with other fans was face-to-face and those whose contact was text based.

Discussion

The results of this study show that members of SF fandom felt high levels of PSOC. This is an important finding, suggesting that PSOC can be a strong facet of communities of interest. This may be due to the fact that members choose to belong to such communities and

are drawn together for a common interest. In the present study this finding is of particular significance, as SF fandom operates on an international basis with fewer geographical connections than other relational communities. In fact, over a quarter of the sample in this study report interacting with other fans primarily over the internet rather than face-to-face. Furthermore, the fact that no significant differences emerged in the PSOC of those whose major contact was text based rather than face-to-face suggests that regular face-to-face contact is not essential to the development and maintenance of PSOC. Thus, strong PSOC can exist in the absence of geographical proximity, even in the absence of regular face-to-face contact.

In examining the dimensions that underlie PSOC in SF fandom, the factors that emerged in the factor analysis support those theorized by McMillan and Chavis (1986), with the addition of a Conscious Identification dimension.

The first factor, labeled Belonging, tapped items dealing with being attached to, a part of, or belonging to SF fandom. Some ingroup identification items also loaded on this factor. This factor fits with McMillan and Chavis' (1986) dimension of Membership and McMillan's (1996) more recent concept of Spirit, the underlying sense of belonging and identification with the community.

Items loading on the second factor were those relating to similarity of members and the ability to work together and get things done. This factor was labeled Cooperative Behavior. This factor fits with McMillan and Chavis' notion of Fulfillment of Needs, which taps the idea that PSOC allows individuals to get their needs met through cooperative behavior within the community, thereby reinforcing individuals' appropriate community behavior. It also reinforces the importance of similarity to this dimension, which McMillan (1996) includes in his newer notion of Trade.

Factor 3 was labeled Friendship and Support. It tapped items to do with emotional support and friendship. This factor fits with McMillan and Chavis' notion of Shared Emotional Connection, again highlighting the importance of contact, seen also in McMillan's (1986) updated dimension Art. Finally, the factor labeled Leadership and Influence, tapping items related to influence over the organization and leadership, is similar to McMillan and Chavis' notion of Influence. This is the idea of needing a reciprocal relationship between individuals and the community in terms of their impact on one another.

However, in these data another factor emerged beyond the four theorized by McMillan and Chavis. Items loading on this factor appeared to deal with conscious identification and awareness of fellow members. This factor was thus labeled Conscious Identification. While many identification items were subsumed within Belonging, it would appear that this very conscious awareness of membership is a separate dimension.

These findings are consistent with those of Smith et al. (2000), who found that identification emerged as a separate dimension to PSOC in their examination of geographical communities. This is also consistent with Cameron (1998), who found that ingroup identification consisted of three dimensions: Ingroup Ties, the sense of connection with other group members; Ingroup Affect, the affective component of identification, the feeling of fitting in; and Centrality or Awareness of Group Membership, the extent to which group membership contributes to self-definition. Interestingly, the items from Cameron's scale measuring Ingroup Ties fell mainly into the factors of Friendship and Support, and Belonging, while the items measuring Ingroup Affect fell into the Belonging factor. The items from Cameron's scale which measured Centrality were those that formed the basis of the factor Conscious Identification. These results suggest that separate aspects of identification may relate to different dimensions of PSOC. While identification's more affective components and connection with other members are subsumed within McMillan and Chavis' theorized dimensions of PSOC, knowledge and awareness of group membership is a separate and important dimension of PSOC.

The findings of this study have important implications for future PSOC research. Firstly, they suggest that identification measures, taken from the social identity perspective,

are useful in expanding our understanding of the role of identification in PSOC, by allowing an in depth examination of the different aspects of identification. However, more importantly, they indicate that identification does play an important role in PSOC, and that the centrality aspect of identification is not subsumed within McMillan and Chavis' (1986) existing PSOC dimensions. More investigation is needed within PSOC research into the importance and role of identification with the community.

Although this study did not serve as a direct test of the Sense of Community Index, in that many other measures of PSOC were also included in the questionnaire, the results of the current study are encouraging in terms of theory building. McMillan and Chavis (1986) have provided one of the few theoretical bases from which to understand the dimensions underlying PSOC. This study provides empirical support for McMillan and Chavis' theorized dimensions, in a relational community that operates internationally. In this light it shows that their theory is applicable to many kinds of communities, beyond the ones in which it was developed. The findings contrast with those obtained in previous studies using only the SCI, which have failed to show clear support for their dimensions (Chipuer & Pretty, 1999), and suggest that while the theory is applicable to many kinds of communities, the SCI itself may still need some expansion and development.

In conclusion, this study has found some quantitative evidence for McMillan and Chavis' theorized dimensions of PSOC. However, it also suggests that the role of identification needs clarification within that theoretical framework. Future research in this area could benefit by using an integrative framework, including measures and understanding of identification developed through SIT research, only touched on in the current study.

In terms of its wider societal implications, this study also provides some positive outlook. While much current rhetoric points to the danger of the internet in destroying community and promoting social isolation, the present results suggest that community and a strong sense of community can exist among those interacting within cyberspace. This may have an important impact in reducing the social isolation of those who currently find themselves isolated due to living in remote areas or to physical disabilities. Perhaps rather than technology breaking down communities, communities themselves are evolving in meaning and spirit, in line with technological and societal trends.

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Table 1
Reliability Analyses and Scale Means for Factors

Factor	<u>n</u> items	α	Mean	<u>SD</u>
Belonging	29	.85	5.43	0.84
Cooperative Behavior	14	.85	4.77	0.87
Friendship and Support	21	.75	5.12	1.06
Conscious Identification	5	.76	4.24	1.19
Leadership and Influence	7	.69	3.68	0.93

Note. Mean scores range from 1 (low levels of variable) to 7 (high levels of variable).

Appendix A: Items Loading on Factors

Factor 1: Belonging

Item	Scale	Loading
I plan to remain a member of SF fandom for a number of years.	UIS NCI SCI	.85
In general I'm glad to be a member of SF fandom.	CIA SGIS	.84
Given the opportunity I would like to leave SF fandom.	NCI	.83
I think SF fandom is a good thing for me to be a part of.	SCI	.82
I see myself as belonging to SF fandom.	UIS SGIS	.80
Generally I feel good when I think about being a member of SF fandom.	CIA	.74
SF fandom plays a part in my everyday life.	UIS CC	.74
SF fandom is a good thing to belong to.	CSS	.69
It is important to me to be a part of SF fandom.	SCI	.67
SF fandom is a part of me.	UIS	.66
I feel at home and comfortable in SF fandom.	UIS MMN SCI	.64
I feel strongly attached to SF fandom.	MMN	.62
I feel like I belong in SF fandom.	NCI	.61
Overall I am very attracted to being a part of SF fandom.	NCI	.60
I often regret that I am a member of SF fandom.	CIA	-.59
I would rather belong to a different group.	SGIS	-.58
SF fandom plays a part in my future plans.	UIS	.58
I have strong feelings for SF fandom.	UIS	.56
I don't care if SF fandom does well.	PSCS	-.55
SF fandom is dull.	CSS	
I don't feel comfortable in SF fandom.	MMN	.53
I make excuses for belonging to SF fandom.	SGIS	-.52
There is not enough going on in SF fandom to keep me interested.	CSS	-.50
I really fit in SF fandom.	CIT	.49
I feel loyal to people in SF fandom.	NCI	.48
Thinking about being a member of SF fandom sometimes makes me annoyed.	CIA SGIS	-.46
I can recognize most people who are members of SF fandom.	SCI	.45
I consider SF fandom to be important.	SGIS	.41
I am looking forward to seeing future developments in SF fandom.	UIS	.41

Note. SGIS = Strength of Group Identification Scale (Brown et al., 1986). CIA = Ingroup Affect Subscale (Cameron, 1998). CIT = Ingroup Ties Subscale (Cameron, 1998). CC = Centrality Subscale (Cameron, 1998). SCI = Sense of Community Index (Chavis et al., 1986). PSCS = Psychological Sense of Community Scale (Glynn, 1981). NCI = Neighborhood Cohesion Instrument (Buckner, 1988). MMN = Multidimensional Measure of Neighboring (Skjaeveland et al., 1996). CSS = Community Satisfaction Scale (Bardo & Bardo, 1983). UIS = Urban Identity Scale (Lalli, 1992).

Factor 2: Cooperative Behavior and Shared Values

Item	Scale	Loading
I would be willing to work together with others to improve SF fandom.	NCI	.82
I feel good when my fellow fans do good things.	PSCS	.81
If there is a problem in SF fandom fans can get it solved.	SCI PSCS	.76
People know that they can get help from others in SF fandom if in trouble.	PSCS	.68
I think I agree with most people in SF fandom about what is important in life.	NCI	.65
If members of SF fandom were planning something, I'd think of it as something <u>we're</u> doing rather than something <u>they're</u> doing.	NCI	.64
Members of SF fandom get along well.	SCI	.55
I am quite similar to most members of SF fandom.	NCI PSCS	.53
I have a lot in common with other members of SF fandom.	CIT	.49
SF fandom is well maintained by its members.	CSS	.45
As compared to other groups SF fandom has many advantages.	UIS	.44
SF fandom is better than any other group I've been a member of before.	CSS	.43
Other fans and I want the same things from SF fandom.	SCI	.42
People in SF fandom do not share the same values.	SCI	.41

Note. CIT = Ingroup Ties Subscale (Cameron, 1998). SCI = Sense of Community Index (Chavis et al., 1986). PSCS = Psychological Sense of Community Scale (Glynn, 1981). NCI = Neighborhood Cohesion Instrument (Buckner, 1988). CSS = Community Satisfaction Scale (Bardo & Bardo, 1983). UIS = Urban Identity Scale (Lalli, 1992).

Factor 3: Friendship and Support

Item	Scale	Loading
I rarely contact individual members of SF fandom.	NCI	-.83
I have no friends in SF fandom on whom I can depend.	PSCS	-.82
If I need a little company, I can contact a fandom member I know.	MMN	.78
I often help my fellow fans with small things, or they help me.	MMN	.75
If I have a personal problem, there is no one in SF fandom I can turn to.	MMN PSCS	-.74
I contact fellow fans often.	NCI	.71
My friends in SF fandom are part of my everyday activities.	PSCS	.66
I exchange favors with fellow members of SF fandom.	MMN NCI	.65
If I feel like talking I can generally find someone in fandom to chat to.	PSCS	.65
If I need advice about something I could ask someone in SF fandom.	NCI	.57
The friendships I have with other people in SF fandom mean a lot to me.	NCI	.52
I care about what other fans think about my actions.	SCI	.52
I find it difficult to form a bond with other members of SF fandom.	CIT	-.50
A feeling of fellowship runs deep between me and other people in SF fandom.	NCI	.48
Very few members of SF fandom know me.	SCI	-.46
I don't feel a sense of being connected with other SF fans.	CIT	-.45
I feel a strong sense of ties to other members of SF fandom.	CIT SGIS	.43
I have made new friends by joining SF fandom.	MMN	.42
SF fandom is very familiar to me.	UIS	.41
I chat with my fellow fans when I can.	MMN	.41
If I had an emergency, even people I don't know in SF fandom would help.	NCI PSCS	.40

Note. SGIS = Strength of Group Identification Scale (Brown et al., 1986). CIT = Ingroup Ties Subscale (Cameron, 1998). SCI = Sense of Community Index (Chavis et al., 1986). PSCS = Psychological Sense of Community Scale (Glynn, 1981). NCI = Neighborhood Cohesion Instrument (Buckner, 1988). MMN = Multidimensional Measure of Neighboring (Skjaeveland et al., 1996). UIS = Urban Identity Scale (Lalli, 1992).

Factor 4: Conscious Identification

Item	Scale	Loading
I often think about being a member of SF fandom.	CC	.71
I am not usually conscious of the fact that I am a member of SF fandom.	CC	-.69
Being a member of SF fandom is an important part of my self image.	CC	.61
Being a member of SF fandom has little to do with how I feel about myself in general.	CC	.53
The fact that I am a member of SF fandom rarely enters my mind.	CC	.50

Note. CC = Centrality Subscale (Cameron, 1998).

Factor 5: Disaffection with Leadership and Influence

Item	Scale	Loading
I have almost no influence over what SF fandom is like.	SCI	.70
People in SF fandom give you a bad name if you insist on being different.	CSS	.65
Fan leaders run fandom to suit themselves.	CSS	.61
Leaders of fandom don't hear the voice of ordinary fans.	CSS	.59
No one seems to care how SF fandom is going.	CSS	.53
SF fan leaders care about what happens in SF fandom.	CSS	-.49
The leaders get very little done in SF fandom.	CSS	.47

Note. SCI = Sense of Community Index (Chavis et al., 1986). CSS = Community Satisfaction Scale (Bardo & Bardo, 1983).

Items Not Loading on a Factor

Item	Scale
Few people in SF fandom make a decent income.	CSS
I am often irritated with some of my fellow fans.	MMN
Lots of things in SF fandom remind me of my past.	UIS
SF fandom is seen as having prestige.	UIS
SF fandom lacks real leaders.	CSS

Note. MMN = Multidimensional Measure of Neighboring (Skjaeveland et al., 1996). CSS = Community Satisfaction Scale (Bardo & Bardo, 1983). UIS = Urban Identity Scale (Lalli, 1992).