

# The Experienced “Sense” of a Virtual Community: Characteristics and Processes

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## Abstract

*E-commerce strategists advise companies to create virtual communities for their customers. But what does this involve? Research on face-to-face communities identifies the concept of “sense of community:” a characteristic of successful communities distinguished by members’ helping behaviors and members’ emotional attachment to the community and other members. Does a sense of virtual community exist in online settings, and what does it consist of? Answering these questions is key, if we are to provide guidance to businesses attempting to create virtual communities.*

*The paper explores the concept of sense of virtual community in a newsgroup we call Multiple Sports Newsgroup (MSN). We first demonstrate that MSN does indeed have a sense of virtual community, but that the dimensions of the sense of community in MSN differ somewhat from those reported for physical communities. The nature of these differences is plausibly related to the differences between electronic and face-to-face communication. We next describe the behavioral processes that contribute to the sense of virtual community at MSN—exchanging support, creating identities and making identifications, and the production of trust. Again, these processes are similar to those found in non-virtual communities, but they are related to the challenges of electronic communication. Lastly, we consider the question of how sense of community may come about and discuss the implications for electronic business.*

**ACM Categories:** K4.3, H4.3, K4.4

**Keywords:** Virtual Communities, Sense of Community, Sense of Virtual Community, Electronic Commerce

## Introduction

Electronic commerce strategists suggest that one route to business success is the creation of virtual communities among consumers of a company’s products (Hagel & Armstrong, 1997). For example, Amazon.com is noted for the book reviews its members contribute, and the Kaiser Permanente health care maintenance organization has discussion forums for members with various medical conditions.

From reading the e-commerce strategy literature, one sometimes gets the impression that creating virtual communities is easy: if a company builds a virtual meeting place, customers will come, and a community will form. But research on human communities suggests that the outcome is by no means guaranteed. *Only some* geographic neighborhoods are real communities, characterized by feelings of belonging and attachment—known as a “sense of community”

(Burroughs & Eby, 1998; McMillan & Chavis, 1986). Indeed, research shows that the members of one's "personal community" may not even be in one's neighborhood (Wellman, 1996).

It is similarly possible that *only some* virtual groupings represent real virtual communities, characterized by a "sense of *virtual* community". Therefore, it is important to know whether a sense of community exists in particular online settings, and what attributes and processes characterize this sense of community, when it occurs. In this paper, we examine these issues through an intensive study of a successful, established, virtual community we call Multiple Sports Newsgroup (MSN).

MSN was formed by like-minded individuals; it was not formed under the aegis of a business organization. However, MSN has some members who sell products related to community interests: A few active and respected MSN members are business owners and executives whose businesses have directly benefited from their participation in MSN. Further, MSN is self-maintaining—a goal towards which the sponsors of many discussion lists aspire. It is also an example of hobby-oriented virtual communities (e.g., sports, books), which have great potential for revenue generation. Thus, MSN is an instructive example for people interested in business-sponsored virtual communities.

In this study, we demonstrate that the members of MSN experienced MSN as a community, similarly to the way people experience effective face-to-face communities. In addition, we show that the experienced sense of community in MSN is characterized by social processes of 1) exchanging support, 2) creating identities and making identifications, and 3) the production of trust. These processes are similar to those that non-virtual community theorists posit as contributing to the formation of sense of community. Therefore, we propose that these three processes represent what has to happen for a sense of virtual community to develop, if and when it does. Additionally, we hypothesize that a sense of virtual community will not form in the absence of these processes.

## Theoretical background

We start this section by defining, and differentiating between, place-based neighborhoods and communities. The literature suggests that not all neighborhoods are communities, and that neighborhoods only become communities when an *experienced sense of community* and *community behaviors* occur. We argue that there may be a similar distinction between *virtual* neighborhoods (which Jones, 1997, calls "settlements") and virtual

communities. We next describe what is known about the sense of community concept, its applicability to virtual settlements, and how sense of virtual community develops. Finally, we present our research questions.

### Place-based Neighborhoods versus Communities

Most of us believe we know a community when we see one (Mann, 1978). However, a comprehensive definition of community has been difficult to construct (Jones, 1997). Both place-based communities (e.g., neighborhoods) and communities of interest (e.g., stamp collectors) have been studied, but place-based communities are often taken as the standard in community research.

Recent research challenges the notion that all place-based neighborhoods are communities. Community feelings and behaviors, such as the giving and receiving of help and emotional support, do not always exist in place-based neighborhoods. For instance, Wellman (1996; Wellman et al., 1988) found that members of a geographic neighborhood constructed "personal communities" of people, often living far outside the neighborhood, who provided emotional, domestic, and financial support. Therefore, it is important to differentiate between place-based neighborhoods and communities (and indeed between face-to-face interest groups and communities), and it is important to understand the attributes and processes that differentiate them.

### Virtual Settlements versus Virtual Communities

Borrowing from anthropological usage, Jones (1997) made similar points about the differences between *virtual settlements* and *virtual communities*. According to Jones (1997), virtual settlements can be said to exist when objective measures of computer-mediated interaction—such as the number of messages, the proportion of public communications, the proportion of active members, and continuity of participation—exceed some threshold levels. However, only those virtual settlements in which the members have developed affective bonds qualify as virtual communities (Jones, 1997). Thus, similar to the literature on place-based communities, Jones concludes that not all virtual settlements are virtual communities, and that what distinguishes between the two is the presence of affective bonds.

### Sense of Community

The term used by place-based community theorists to refer to the affective bonds that differentiate between neighborhoods and true communities is "sense of community" (SOC). Community researchers have been interested in SOC since at least the 1960s,

because SOC is believed to have beneficial outcomes that do not result when SOC is absent. In work organizations, for example, SOC has been found to increase job satisfaction and organizational citizenship behavior—loyalty, civic virtue, altruism, and courtesy (Burroughs & Eby, 1998). In place-based communities and face-to-face communities of interest, SOC leads to satisfaction and commitment and is associated with involvement in community activities and problem-focused coping behavior (McMillan & Chavis, 1986).

In spite of the importance of SOC, a consensus definition does not exist. In the first place, SOC has sometimes been understood as an *outcome* of living in a community and sometimes as the *definition* of community itself (García et al., 1999). This conceptual confusion is especially understandable in “communities of interest” where membership is defined not by location, but rather by members’ interactions. (This definitional problem also arises in virtual settings and is reflected in the low adoption of Jones’ (1997) distinction between settlements and communities.)

In this mode, we distinguish between a virtual social grouping and its SOC (which may or not be present). We define SOC as McMillan and Chavis (1986, p. 9) did: SOC is “a feeling that members [of a group] have of belonging, a feeling that members matter to one another and to the group, and a shared faith the members’ needs will be met through their commitment to be together.” We also distinguish between SOC as an *affective* response and the set of *behaviors* that can be observed when SOC is present, but not when it is absent.

A second definitional problem arises because the subjective quality of the experience labeled SOC may be “highly particular and localized” (Rapley & Pretty, 1999) or even unique to each community (Sarason, 1986). Consequently, community researchers have sought reliable ways to *describe* the varying manifestations of SOC in particular communities. McMillan and Chavis’ (1986) SOC descriptive framework has been widely accepted for studies of both place-based communities and communities of interest because of its theoretical base and its qualitative empirical support. This framework has four dimensions:

- **Feelings of membership:** feelings of belonging to, and identifying with, the community.
- **Feelings of influence:** feelings of having influence on, and being influenced by, the community.
- **Integration and fulfillment of needs:** feelings of being supported by others in the community while also supporting them.

- **Shared emotional connection:** feelings of relationships, shared history, and a “spirit” of community.

### Sense of *Virtual* Community

SOC has not been a particular focus in studies of virtual communities. However, some virtual community researchers have described behaviors we would expect to observe when a sense of virtual community (SOVC) exists. For example, empirical research on virtual communities has identified evidence of the following behaviors:

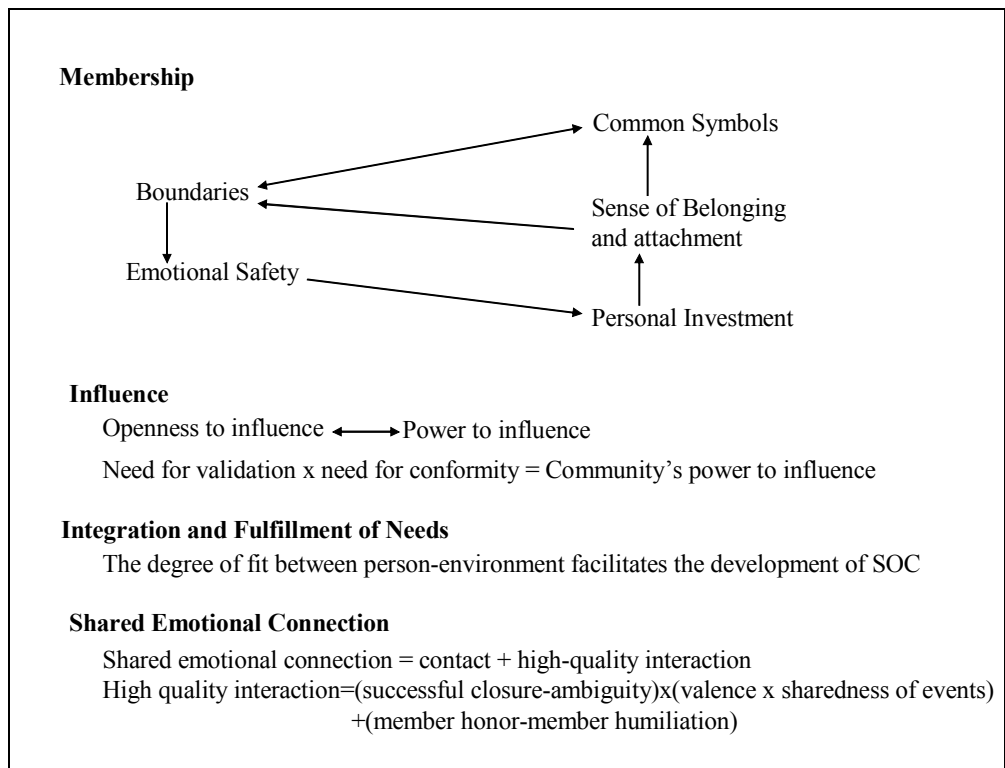
- Membership, boundaries, belonging, and group symbols (Baym, 1995, 1997; Curtis, 1997; Greer, 2000; Herring, 1996; Kollock & Smith, 1994; Markus et al., 2000; Phillips, 1996)
- Influence, in terms of enforcing and challenging norms (Baym, 1997; Kollock & Smith, 1994; Markus, 1994a, 1994b; McLaughlin et al., 1995; Pliskin & Romm, 1997)
- Exchange of support among members (Baym, 1997; 5; Greer, 2000; Preece, 1999; Rheingold, 1993)
- Shared emotional connections among members (Greer, 2000; Preece, 1999; Rheingold, 1993).

Clearly, objective behaviors corresponding to the lived experience of SOC occur in at least some virtual settlements. The questions remain: do members of at least some virtual settlements actually experience a clear sense of virtual community similar to the sense of community observable in some non-virtual human collectives? We next consider the question of how SOC develops and is maintained over time.

### The Origins of Sense of Community

In addition to their descriptive framework of SOC dimensions, McMillan and Chavis (1986) proposed a theoretical model that hypothesizes 1) the origins of each SOC dimension (considered independently) and 2) how the dimensions interrelate to produce SOC. In brief, the hypothesized origins of the four dimensions are:

- **Feelings of membership:** arise from community boundaries (deviants help establish boundaries), perceptions of emotional safety, members’ sense of belonging to, and identification with, the group, personal investment of time into group, and a common symbol system.
- **Feelings of influence:** emerge from processes of maintaining norms within the group.



**Figure 1. McMillan and Chavis (1986) Elements of a Sense of Community and Their Hypothesized Relationships. (Copyright © 1986. Reprinted by permission of John Wiley & Sons, Inc.)**

- **Integration and fulfillment of needs:** come from the rewards of being a member such as status in the group, competence in functioning in the group, shared values, and meeting other's needs while having one's own needs met.
- **Shared emotional connection:** develop from frequent interaction, high quality interaction, discrete events, shared history and crisis, investment of time and resources, the effect of honor and humiliation for members, and spiritual bonds among members.

The hypothesized origins of the dimensions and relationships among them are depicted in Figure 1.

Clearly, this is a complicated model, and McMillan and Chavis did not attempt to test it. Much of the subsequent research on SOC has not attempted to validate the model either. Instead, research has focused on validating McMillan and Chavis' definitional measure of SOC, while examining some small part of the explanatory model (e.g., García et al., 1999; Zaff & Devlin, 1998) or on modifying the SOC measure (Burroughs & Eby, 1998; Hughey et al., 1999). Other community researchers have tried to create their own new measures of SOC (Royal & Rossi, 1999; Schuster, 1998; Skjæveland et al., 1996). Even McMillan (1996) later reconceptualized SOC to include more of the "spirit" and "art" of communities. The

following paragraphs highlight some recent SOC literature.

García and her colleagues (1999) thoroughly tested McMillan and Chavis' original measure of SOC, finding evidence for all the components of SOC in a Caracas barrio. In testing the SOC explanatory model, they concluded that the community's history was an important factor. Zaff and Devlin (1998) explicitly examined factors contributing to SOC as defined by McMillan and Chavis, although they did not use McMillan and Chavis's explanatory model. They found that the amount of interaction between members and components of the physical environment led to SOC.

Burroughs and Eby (1998) used McMillan and Chavis's SOC measure to develop their own definition of SOC inside an organization. They also tested a framework of the antecedents and consequences of their new SOC measure. Although they hypothesized that employees' need for affiliation and tenure, size of workgroup, number of friends, transactional contracts (e.g., benefits) and relational contracts (i.e., intrinsic motivations) would lead to SOC, only relational contracts made a significant positive contribution. Hughey and his colleagues (1999) also based their measure of SOC in a community organization on McMillan and Chavis' measure, but they did not examine factors contributing to SOC.

Other researchers used their own SOC measures and tested factors contributing to them. Royal and Rossi (1999) found that organizational variables (perceived orderliness of students and support for innovation) and time related variables (employee tenure and time spent with students and other staff) led to SOC (as they defined it) in a school. Schuster (1998) examined the processes of exchanging support that led to SOC (as she defined it) in a writers' group in an assisted care home for the elderly. Chipuer and Pretty (1999) criticized these and other researchers' continual redefinitions of the SOC concept, arguing that such efforts do not build on the theoretical strengths McMillan and Chavis's model of SOC.

### Toward a Theory of SOVC Origins

McMillan and Chavis' (1986) conceptual model currently stands, largely unchallenged, as the last word on the origins of SOC. No one has effectively replaced it, but no one has tried to test McMillan and Chavis' explanatory model of SOC formation as a whole. This is likely because of the model's complexity. Each of the four interacting factors hypothesized to make up SOC is said to have different determinants. Furthermore, some of the propositions have a troubling circularity (for example, feelings of influence are hypothesized to result from the process of maintaining norms—a process which involves the exercise of influence). Despite these limitations, the theoretical and empirical work on SOC supports the following conclusions about SOVC:

- SOVC—a feeling of belonging and attachment—should not be expected to occur in all virtual social grouping or “settlements”. When it does occur, we call the social grouping in which it occurs a *virtual community*.
- When SOVC is present, a number of social processes and behaviors should also be present, such as providing support, developing and maintaining norms and boundaries, social control, etc.

What we do not know from the literature is whether the processes of SOVC cause SOVC feelings, whether the feelings cause the processes, or whether the feelings and the processes emerge together. McMillan and Chavis' theoretical model implies the last alternative. We propose that the processes come first. In our view, virtual community members begin enacting community-like behaviors (e.g., helping and support) and processes initially in order to achieve some other goal (e.g., to share information about a hobby). SOVC results from the continued production of these community-like behaviors. Because SOVC is intrinsically satisfying to members, they continue to perform the behaviors that create it, so that, once started, SOVC is self-sustaining. SOVC can, however,

decay or even be extinguished, if members cease performing community-like behaviors, as might occur if leaders drop out, if new members with different values join, if a crisis occurs and is not successfully resolved, etc.

Our theory of SOVC origins is a “process theory” as opposed to a variance theory (Mohr, 1982; Markus, & Robey, 1988), and it is also a functional explanation (Stinchcombe, 1968; Douglas, 1986). This theoretical structure is particularly well suited to problems in which the outcome does not always occur (Mohr, 1982) and when it takes on different qualities in different environments (Stinchcombe, 1968) (as prior research has shown for SOC, Rapley, & Pretty, 1999; Sarason, 1986). While this theory of SOVC origins can only be fully tested through prospective longitudinal research, it is possible, after the fact, to test an important implication of the theory—namely, that when SOVC occurs, community-like behaviors and processes are present.

### Summary and Research Questions

Prior theory and empirical research on geographic neighborhoods and communities of interest argues that sense of community—defined as feelings and affective bonds of various types among members—is an important concept, because it is associated with beneficial outcomes like civic participation and support-giving behavior. SOC does not always occur in physical communities, and, when it does occur, it takes different forms in different communities. There is relatively strong agreement about the dimensions of SOC (membership, influence, support, and emotional connection), but much less is known about its emergence and maintenance.

Prior empirical research on *virtual* communities implies that behaviors corresponding to an experienced sense of virtual community (e.g., boundary maintenance, norm enforcement, the exchange of support) exist in some virtual settings. In other words, a sense of virtual community may develop, transforming some virtual settlements into virtual communities. Thus, the literature raises two research questions about SOVC:

- Does a clear sense of virtual community (a feeling of membership, influence, need fulfillment and emotional connection) exist in some virtual settings, analogous to the sense of community observed in some physical neighborhoods and communities of interest?
- When SOVC is present, do community members exhibit community-like behaviors and processes (e.g., maintaining norms, exchanging support)?

We answer these questions through an intensive study of a single virtual settlement, called Multiple Sport Newsgroup or MSN.

## Method

Studying *how SOVC develops* requires longitudinal observations of virtual settlements over time. But longitudinal research designs entail the risks that the observed virtual settlements would fail or that SOVC would not develop. Furthermore, for both theoretical and practical reasons, we believe that the more important issue is *how SOVC is maintained* so that community-like behaviors do not collapse. Sponsors of business-oriented virtual communities are naturally interested communities that are self-sustaining so that they do not constantly require infusions of external resources. Because we were interested in the processes of SOVC maintenance, we chose to study an *established* virtual settlement, where the likelihood that SOVC existed was greater.

The virtual settlement studied was a newsgroup called Multiple Sport Newsgroup<sup>1</sup> (MSN), founded in the early 1990's for people interested in training for, and participating in, multiple sport events (e.g., triathlons). This settlement was not business sponsored, but it is otherwise analogous to the kinds of virtual "communities" of interest (e.g., hobby or affiliation groups) that businesses might try to establish—indeed, MSN's members included several sports equipment dealers.

Preliminary participant observation indicated that MSN met the objective criteria, proposed by Jones (1997), for a virtual settlement with the potential to be a virtual community. MSN is very "active" with an estimated 17,000 daily readers (Atkinson, 1995) and an average of 100 messages posted per day. A large number of different people (called "posters") routinely post messages to the newsgroup. However, as with all such newsgroups, there are many "lurkers" (who read, but never post). Posters often make direct references to each other's messages and carry on intelligible "discussions." Members appear to have knowledge of each other, indicating a history of membership. Additionally, during the initial observations, some members displayed a camaraderie that suggested the presence of a sense of community among members.

The research approach was naturalistic inquiry (Lincoln & Guba, 1985), using participant observation and member interviews as our primary methods of data collection. Participant observation over a period of seven months consisted of examining characteristics of the newsgroup's software, recording impressions of the group and its conversations, and collecting posts sent to the group.

We conducted semi-structured interviews with three types of members: leaders (active, well-respected posters), participants (active to occasional posters),

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<sup>1</sup> A pseudonym.

and lurkers (readers only).<sup>2</sup> We interviewed this range of members to determine if different types of participants experienced SOVC differently. Ten people were interviewed. Interviews were conducted over the telephone for about 1 ½ hours. Interviews were tape recorded with the interviewees' permission and professionally transcribed.

Analyses were conducted using an iterative process of data collection, synthesis, and validation (see Miles & Huberman, 1994). Methodological quality was assessed using Lincoln and Guba's (1985) checklist for trustworthiness. Through strategies such as prolonged engagement, triangulation of methods and data, negative case analysis, thick description, an audit trail, and an outside review of data and analyses, this methodology and its analyses met the criteria for trustworthiness in qualitative research.

## Findings

We start with a brief description of MSN. Next we consider evidence related to our first research question—whether MSN members experience a clear sense of virtual community and, if so, what it is. Next, we present findings related to the community-like behaviors and processes by enacted by MSN members.

### MSN Background

Multiple Sports Newsgroup (MSN) is a newsgroup for people interested in participating in, and training for, multiple sport events such as triathlons. MSN is comprised primarily North Americans, which is typical of many Usenet newsgroups. Most participants posted their messages in English<sup>3</sup> and the majority of email addresses and organizational affiliations originated from the United States. Other countries from which posts were observed include (in declining frequency) Canada, the United Kingdom, Australia, Germany, Portugal, Denmark, and Finland.

Although many members are athletes, others are simply interested in learning about multiple sports. Several prominent members are vendors of specialized sporting equipment. These sporting goods vendors, though, are expected to be "community members" first and vendors second. Other MSN members appreciate their views on equipment, but vendors lose credibility if they appear to participate in MSN primarily to promote their own products. By adhering to this "good member" policy, one vendor reported that on the days he posted a message to

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<sup>2</sup> Lurkers were recruited for interviews by means of a posting to the newsgroup.

<sup>3</sup>One post in Finnish prompted an English translation, several humorous replies, and a reprimand to respect the international nature of the group.

MSN, he could expect an additional 4000 hits on his web site.

As an electronic newsgroup, MSN involves asynchronous communication in which members post messages at one point in time and others read the messages later. The types of messages exchanged in MSN include: asking for, and providing, help (e.g., about training for triathlons or buying equipment); sharing personal experiences (e.g., at sporting events); commercial transactions (e.g., selling equipment); and discussions about multiple sport issues. The content of messages ranges from the purely informational (e.g., "how do I stop cramps in my calf while swimming?") to the frankly emotional (e.g., "I just finished my first triathlon and here's what happened!"). MSN considers itself to be a "family friendly" virtual community, where cursing is not allowed, and flaming (i.e., very hostile and negative messages) is rare.

We identified three types of MSN members: leaders, participants, and lurkers. *Leaders* are members whom we identified as being influential in the group, who identified themselves as leaders, and whom other participants identified as leaders. At the time of the study, there were 3-5 primary leaders out of an estimated 17,000 members. Interestingly, these members are referred to as the "core group" in MSN emphasizing the non-hierarchical nature of their influence. Leaders performed a greater share of community maintenance activities than other members.

*Participants* are members who post messages but who do not identify themselves and were not identified by others as leaders. We observed approximately 260 unique participants during our observations. Therefore, the vast majority of MSN's 17,000 members are *lurkers*, members who do not post messages to the group.

We observed two distinct types of *participation* styles: active vs. passive and public vs. private. *Active* participation is defined as posting and responding to messages. Leaders and participants engage in active participation. Some participants were actually more active than the leaders, posting more messages than the leaders did. *Passive* participation, then, is merely reading the messages. Although all members engage in passive participation, lurkers may *only* participate passively.

*Public* participation refers to posting messages to the entire group; *private* participation refers to sending messages directly to a particular member through a personal email message. Many MSN messages are exchanged in public where the entire group can read them. However, a good deal of communication in MSN also occurs in private. Leaders and participants reported that they often received more private than

public responses to their public postings. Some private messages came from other publicly active members. But some messages also came from "unknown" others, presumably lurkers. Prior research on newsgroups has often regarded lurking negatively because lurkers do not contribute to the virtual community; but this research shows that at least some publicly passive lurkers are privately active.

### Sense of Virtual Community in MSN

MSN members of all types believe that MSN is a virtual community. However, their sense of community is not uniform. Some members experience MSN as a community *of which they are active members*. One leader reported learning a great deal from the community, receiving a great deal of support for training, and meeting people with whom she had developed relationships. This leader even admitted, embarrassedly, to quasi-religious feelings about MSN:

*[T]he fact [is that] out of the whole huge community of people, you will find a couple of people who are so...[supportive, but] there's more to it than that. Because of the devotion to the sport, and it's a good group of people. Oh! I don't know. It's just spiritual! (Laughter) [I know it] sounds corny!*

Other members experienced MSN as a community *in which they were not as involved as other* members. In describing the types of posts members exchange, one participant said:

*[MSN] lets you share with other people, like-minded people. So those kinds of posting [sharing experiences] do a lot more to build the community and build up feeling people that you're connected to other people...you're reaching out there to people in a personal way. And more like having a conversation with a friend rather than just leaving a message for whoever might be interested... [However,] I don't want to go too far. You know, in calling it a community...I don't even know if I'd say I'd made friendships over the newsgroup. Because I certainly don't feel about any of these people on the newsgroup the way I feel about the people I race with and train with. Although I get the feeling that other people in the newsgroup are closer to each other than I am to them. So I think there are a lot of different levels of connection in [MSN]. And so, it's like...it's community-like.*

Finally, some members experienced MSN as a community *in which other people were active*. One lurker said:

*Yes, I think it is [a community] and actually I think a bunch of [MSN] people know each other personally. I mean I know with one of the latest triathlons, the Wildflower one, they all planned to get together. Like at a specific meeting point before the race, you know, and introduce one another. Then get together after the race and compare results or commiserate depending what was needed. So I mean there have been a number of little in jokes going on about the people who met each other at Wildflower. So I think things like that make it seem like, oh you know this is a real community people have made connections with one another on more than just an artificial basis.*

This lurker was unambivalent about her perceptions of MSN as a community, although she herself was not actively engaged in what she considered its community-like behavior.

Clearly, therefore, MSN members believed that their newsgroup was a community. However, their attachment to the community varied with their participation. To further understand conceptualizations of MSN as a community, we examined members' reasons for believing MSN was a community. We identified the following reasons, ordered by frequency of citation by interviewees. The least frequently cited reasons were mentioned only by the most active participants.

**Recognition.** Members viewed MSN as a community because they could recognize other members. At the most basic level, this means the members recognized other members' names in postings. All interviewees reported that recognizing individual members is an important condition of MSN as a community. Recognition appears to be an important first step in experiencing SOVC.

**Identification.** Identification goes a step beyond simply recognizing names. Members reported creating an identity for themselves through their postings, and they reported developing an understanding of other members' identities. Identification enabled members to anticipate others' responses to issues and posts. One member described how he began to identify other members:

*[[It's] the people [who are the] most vocal to start out...then as I started to learn a little bit more about "who was who" in the [group,] there were people's opinions who became a little more important to me...[Now] I have an idea of how they portray themselves [and] how they think...Some people at a minimum I [just] recognize their names. Some people I recognize their thought process and how they [will] react to something.*

**Support.** Members reported that a good deal of informational and socio-emotional support was exchanged in MSN and that support was an important part of the community. Interestingly, *socio-emotional* support was not considered most important, nor was it the type of support most frequently exchanged. Rather, *informational* support ("what happens if I get a cramp while swimming in the ocean?") was considered most important. Although only a few MSN members actively participated in asking for, and providing, support, *all members* benefited from publicly offered support. One lurker reported that he never asked for help because if he waited long enough someone else would ask the question and he would benefit from the answer also.

**Relationship.** Members with a stronger SOVC believed the newsgroup was a community because they had developed personal friendships with other members. These relationships often developed through private online communication, and they sometimes moved into face-to-face interactions. One leader reported that he presented a public persona in his communication to the group but revealed a more intimate and personal side in his private communications and relationships.

Not everyone in MSN experienced close relationships. Lurkers, in particular, did not appear to form them. However, all types of members reported *observing* relationships among community members and believing that relationships were an important aspect of community life.

**Emotional Attachment.** Members experienced various levels of attachment to the community as a whole. Attachment to the community is more than relationships with other *individual members*. It involves connection to the community *qua community*. Some members reported that their involvement in MSN was important to them, while others were more ambivalent about their attachment. Although the more active members reported being more attached to MSN, level of activity alone was not the major factor in experienced attachment—perception of personal benefit was also an issue. For example, one work-at-home lurker reported that MSN was an important way for her to keep in touch with other people. It served as a way to "see" other people, even when she was home alone. Attachment, then, was related both to activity level and also to the benefits that members obtain from membership.

**Obligation.** Finally, members experienced various levels of *obligation* to MSN. Leaders expressed greater obligation to MSN than the less active participants or lurkers. One leader even described a *need* to "give back" to a group that had given her so much. Participants and lurkers felt less obligation to MSN. However, they observed the effects of the leaders'



higher levels of obligation and felt it was an important part of MSN. One lurker reported:

*Like the main players or participants, kind of the core, core group who keeps things going who also when someone posts a question, there's a certain group who takes time to respond to it. It probably is the tenth time over two years that they respond to the same question so you've to figure there are people with the commitment to the group, in general, that they take the time to do that.*

This member points out that it is the core group of leaders who keep the group going by their commitment to continually answer the same question as new members enter and want to learn more about multiple sports.

In sum, MSN members reported experiencing MSN as a community, but their sense of community varied with their levels of participation in the community and their perceived benefits from participating. Members gave many reasons for believing that MSN was a community—reasons that can be viewed as the dimensions of their sense of community. These included: recognition of other members, identification of themselves and others, the giving and receiving of (primarily informational) support, relationship with other members, emotional attachment to the community, and obligation to the community. In the next section, we discuss how the SOVC in MSN is maintained.

### Community Behaviors and Processes in MSN

MSN members exhibit three types of community-like behaviors and processes: the exchange of support, the creation of identities and making of identifications, and the production of trust.

**Exchanging Support.** Many MSN members participated in the public and private exchange of information and socio-emotional support, and all members observed the public exchange of support. The giving and receiving of support contributed to the sense that MSN was more than a virtual settlement, it was something one *belonged to* and to which one had *a sense of attachment or obligation*.

MSN members considered information exchange as the most important behavior in MSN. Information exchange contributed to the belief that membership in the community was useful for meeting members' needs. Nonetheless, the exchange of socio-emotional support was also valued. However, members reported that their most emotionally supportive messages were exchanged through private email and not posted to the group. Additionally, when members observed others' public exchanges of socio-emotional support, they interpreted them as evidence of established personal

relationships among group members. When they themselves experienced both public and private socio-emotional support, they interpreted it as evidence that they were accepted and valued members in the community.

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     \           /
      \         /
       \       /
        \     /
         \   /
          \ /

*****
"REAL Triathletes don't draft."
*** Ironman [RACENAME AND YEAR]- 13:04:09 ***
http://www.[UNIVERSITY].edu/~[NAME]
```

Figure 2. Example of sig file

A common communication during race season was a "race report" in which members posted long (greater than 1000 words) essays about their races. These posts contained detailed descriptions of their mental, physical and emotional experiences and were often self-deprecating and humorous. From an objective standpoint, these posts were self-serving ("look what I went through"). But to MSN members, they were an exciting, inspirational, and important part of their community. They allowed members to put themselves in a vulnerable position by exposing their weaknesses and then to be supported by the group. Nearly every single race report generated at least one public response of praise and support.

Responses to posts were important. When members did not receive public or private responses to a post they felt rejected. One active member vividly recalled a message he sent that did not elicit the anticipated response. Exchange of support, then, reinforces the SOVC in MSN and was also probably instrumental in developing it initially.

**Creating Identities and Making Identifications.** MSN members created an identity for themselves through their postings. While the frequency and content of their postings was an important way to establish identity, members could also make creative use of the limited options available to them in text-based newsgroups. Some members created signature files (sig files) that were automatically attached to their postings. The sig file in Figure 2 comes from a group member<sup>4</sup>.

<sup>4</sup> This sig file is used with permission with particular identifying information changed or deleted.

This sig file contains the member's multiple sport credentials, a link to the poster's homepage, and an important normative message to members of the group. The injunction not to "draft" is also a subtle differentiation between community members ("real triathletes") and non-members. In addition to sig files, members also created identity by including a witty quote or pun at the end of a post. These quotes were dynamic and often related to the content of the post.

Sig files and witty sayings enabled other members in the community to identify the personality or opinions of those who used them. Some members did not like the sig files, calling them static and boring. Nonetheless, these same members could describe what others' sig files "said" about their authors. Members had additional ways of identifying the authors of posts. They also reported getting to know the "voice" and opinions of various members by reading their posts.

By creating identities for themselves and making identifications of others, MSN members crafted a community out of an anonymous and largely invisible mass of potential members. The nameless and faceless became the recognized and known—people to whom one feels attachment and mutual obligation.

**The Production of Trust.** A third process by which a sense of community was reinforced in MSN was the production of trust. People who communicate electronically with unknown others are understandably concerned whether the others actually are who they say they are. This is especially important if members hope to develop the meaningful relationships associated with "community". MSN members likewise expressed a healthy skepticism that people with whom they were communicating through computer-mediated communication were always "real" and trustworthy. As one lurker said "[Y]ou can pick and chose whatever personality you want to have." A female member reported posting to another sports newsgroup and "some creepy guy" privately emailed her wanting to meet for ice cream.

In MSN, members used several ways to produce trust. First, there was a strong norm in MSN that members would use their real name either in their email addresses or in their signatures. In addition, members publicly discussed their face-to-face interactions with other community members. Some MSN members trained together and met at races. They then described their interactions in posts *to the group*. Although relatively few community members actually met others face-to-face, discussions of "real world" interactions helped members trust each other and contributed to their sense of membership in a community. Face-to-face communication is often viewed as a necessary precondition for trusting online relationships. Interestingly, in our research, relationships formed

online sometimes expanded into off-line meetings, and public reports of such meetings became part of the social life of the online community.

Finally, members felt that posts were a good way to determine others' trustworthiness. Some members reported that members' posts had to "ring true" or match their own experiences in order to be trustworthy. Others reported being very careful about what they posted to increase their own level of trustworthiness. One member who had recently increased his level of activity reported:

*That's one way that it's different in [MSN]. As a result I think I think more about what I post in [MSN] than others. Because I meet these people. Something I really might want to say, I might be a little bit more carefree with my words on some of the other newsgroups. Sometimes I've logged on to, offhand, Howard Stern and half the people in there are just like personas anyway. They make up things about themselves and stories and stuff so it's a totally different atmosphere. I know I'll never meet any of those people and I wouldn't care if I did anyways. But the people in [MSN] are some of my close friends. So I do think I think more about what I post there because of that.*

Because he may meet other members face-to-face, because some of them are his close friends this member takes care to post message that will reflect better upon himself and make him more trustworthy.

In sum, MSN members enacted three community-like social processes: the giving and receiving of support, the creation of identity and the making of identifications, and the production of trust. These processes are clearly related to an SOVC characterized by recognition, identification, support, relationship, attachment, and obligation. However, it is not possible from our data to say whether the SOVC or these processes came first or whether they emerged together.

## Discussion

In this section, we discuss some of the theoretical and practical issues raised by our findings.

### Theoretical Implications

The two questions that informed this research were: Can a sense of community similar to that found in some face-to-face communities be observed in some virtual settings? And, once established, is SOVC accompanied by community-like behaviors?

Regarding the first question, we found that SOVC had developed in MSN and that it generally looked quite

similar to the SOC found in some geographic communities and communities of interest. Table 1 compares McMillan and Chavis's (1986) descriptive dimensions of SOC with those we found in MSN.

McMillan & Chavis' (1986) Dimensions of SOC	MSN's Dimensions of SOVC
Feelings of membership	Recognition of members
Feelings of influence	
Integration and fulfillment of needs	Exchange of support
Shared emotional connection	Attachment
	Obligation
	Identity (self) and identification (of others)
	Relationship with specific members

**Table 1. Comparison of SOC and SOVC**

Overall, the correspondence between McMillan and Chavis' descriptive framework and our own observations of MSN's SOVC are quite close. "Feelings of membership" are experienced in MSN as recognition of other members. "Integration and fulfillment of needs" maps closely to the MSN experience of support. "Shared emotional connections" of two types were experienced in MSN: attachment to the group as a whole, and sense of obligation to "give back" to the group.

There were two exceptions to the close correspondence between McMillan and Chavis' definition and our observations of MSN. First, McMillan and Chavis' "feelings of influence" did *not* figure prominently in MSN's sense of community. It is possible that MSN members had so internalized community norms (e.g., no profanity, flaming, or overt product selling) that members were no longer aware of influencing and being influenced. Even the *most* influential members (whom we referred to the leaders) were referred to in MSN as "the core group", rather than leaders, indicating either that the influence they exerted was perceived as non-hierarchical or that it was not particularly salient to members. Although we did not observe influence processes at work in MSN when we studied it, it is likely that mutual influence processes were active in the early days of the community (cf., Markus et al., 2000) and that the dimension of influence may have been an important part of MSN's sense of community at that time.

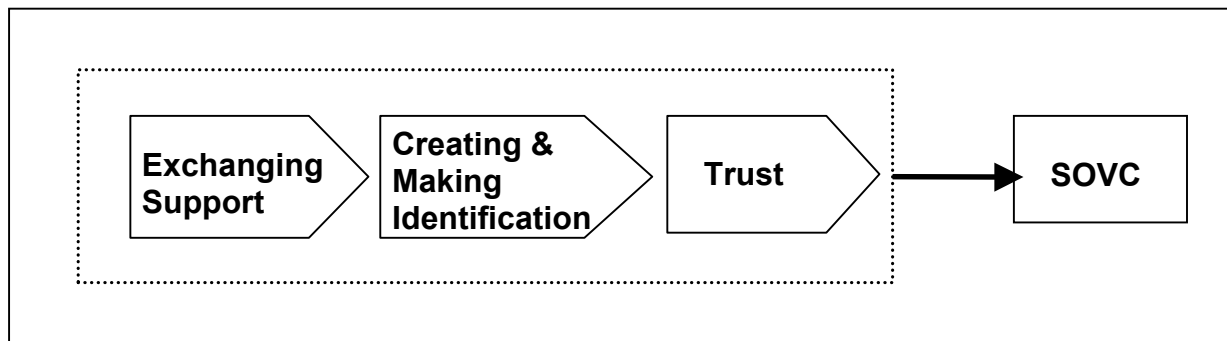
Second, two important aspects of MSN's sense of community did *not* figure in McMillan and Chavis' framework. First, the creation of identity and the identification of other members in MSN are quite different from McMillan and Chavis' "feelings of

membership"—defined as feelings of belonging to and identifying *with the group*. Whereas McMillan and Chavis described identification with the community, we observed members creating their identity *within* the group and members' ability to identify individual members *in the group*. For example, we observed emerging members creating identities that would be accepted by the group, and we observed the more established participants and leaders trying to distinguish themselves from the group. McMillan and Chavis' concept is one of *sharing in group identity*; ours is one of *individuation from group identity*. This distinction may have something to do with the fact that participants in virtual communities can appear and feel much more anonymous than members of physical communities. ("On the Internet, no one knows you're a dog.") Thus, it may be psychologically necessary to establish oneself as a distinct someone in a virtual community.

Another dimension of sense of community in MSN that did not figure in McMillan and Chavis' framework is relationships with individual community members. Undoubtedly, most members of physical communities (where sense of community has developed) also experience relationships with other members. But in physical communities, relationships with others do not necessarily form part of the sense of community. By contrast, it may be that, in the anonymous world of cyberspace, the experience of personal connections with specific people is an important way to differentiate between a virtual settlement and a virtual community.

With respect to our second research question, we found that three interrelated social processes were important in MSN. These processes are: the exchange of support, the creation of identity and the making of identifications, and the production of trust. Again, the exchange of support process is similar to that proposed by SOC theorists and empirical researchers, but the creation of identity/making of identifications process and the production of trust process seem to be specific to the problems of *virtual* communities.

Unlike McMillan and Chavis, we felt no need to identify individual causes for each dimension of MSN's sense of community. We posit that the three processes work well together to jointly produce the outcome. Thus, for example, the MSN SOVC dimension of identity is undoubtedly the product of both the process of creating identity and making identifications and the process of trust production. Further, each process can produce multiple outcomes in terms of SOVC dimensions. For example, the process of exchanging support undoubtedly contributes not only to the MSN SOVC dimension of *support* but also to the MSN SOVC dimensions of *relationship* and *obligation*.



**Figure 3. Processes by which SOVC develops.**

At the same time, we posit a temporal ordering of the processes. Exchanging informational and emotional support is the impetus for community formation. But members must trust the support they receive, and trust requires belief in the support-givers' identities. [See Figure 3 for our hypothesized temporal ordering of processes in virtual community formation.]

In other words, we argue for a much simpler explanatory model of SOVC than McMillan and Chavis' SOC model. In our process model, sense of virtual community does not always occur in virtual settlements. When it does occur, it arises from a set of interacting social processes that also serve to maintain the SOVC. The characteristics of SOVC may differ qualitatively from one virtual community to the next, but, because of the nature of electronic communication, we expect individuation of identity and relationships to be more important than in physical communities. Also the specific forms of the development and maintenance processes in virtual communities may vary, but we have no doubt that the processes will address in some way the three "basics" of group dynamics: membership, influence, and intimacy (Bion, 1961). We make no claims that SOVC will endure or that it will remain unchanged: chance events and changes in membership influence the evolution of virtual communities as they do in physical ones (which have been observed to exhibit growth, decline, death, and renewal).

A final theoretical implication deserves brief mention. Because community feelings (a sense of community) and behaviors do not always exist among people who interact with each other online, the term virtual community should be reserved for those in which SOVC has been observed. All others should be referred to as virtual groupings, collectives, or settlements.

### **Practical Implications**

What do these findings imply for electronic business? We consider this question in three parts: 1) To what

extent is MSN a representative virtual community for discussions of electronic business strategy? Put differently, how does it compare to Amazon or CNN or Dell? 2) Why would an electronic business want to foster a virtual community in the sense we've used the term here? Why or when wouldn't a virtual settlement be good enough for commercial purposes? And 3) What would we recommend to businesses that want to develop a virtual community?

Is MSN representative? MSN is a virtual community of members interested in a particular type of sport. We believe MSN is typical of many hobbyist newsgroups. Hobbyist newsgroups are quite different from the likes of Amazon.com and CNN, which may call themselves virtual communities but are actually virtual settlements. These virtual settlements may exhibit active member participation, but their members do not share a sense of virtual community. Their members do not form online or offline personal connections, nor do they exchange socio-emotional support. While MSN is not similar to Amazon.com, it is similar to other hobbyist organizations with significant e-business profit potential, and it may be similar to business-relevant support groups such as those established by Kaiser Permanente. Therefore, the lessons of MSN are highly applicable to those interested in electronic commerce.

Should these virtual settlements try to develop into virtual communities? Not necessarily. Certainly, some virtual communities fulfill unmet needs and have significant profit potential. An example would be the Oprah Winfrey book of the month club conducted through electronic media instead of television.

However, other organizations may find that a virtual settlement, like Amazon.com's online book reviews, meets their business objectives perfectly well. Further, our research suggests that simple attempts to convert virtual settlements into virtual communities (e.g., by adding an online book club to Amazon.com) may be unsuccessful. Recall that MSN members expected vendors to be community members first, and product vendors second. A virtual book club might have a

better chance of thriving if it were not directly controlled by a commercial interest, and electronic businesses must be very careful that their involvement is perceived as benefiting the virtual community, not solely their business.

Our suggestions beg the question of how to develop a virtual community. Although our research examined a successful, *established* virtual community, it does offer insights for would-be developers of virtual communities. Virtual communities need leaders or facilitators who have the interest and time to provide a good deal of public communication to the group. Leaders are particularly important early on to shape the virtual community's culture and norms.

The job of the leaders is to create a public *conversation*. They should not just post announcements or information that is one-sided; they should encourage and reward others' contributions. Providing helpful information and emotional support is key, but members also need a safe, "family friendly" environment in which they can participate without fear, can identify other members' individual voices, and can learn to trust others.

In some virtual settings, participant anonymity may be necessary, as in health support groups. But rules and norms that establish member legitimacy (are you really one of us?) and member identity (e.g., the same member name every time) are likely to be important. Wherever feasible, leaders and/or other members should be encouraged to participate under their own names and provide enough personal information to support relationship formation.

Virtual communities may need a sizable number of members for sustained participation, because the proportion of lurkers is likely to be high, and private communication among members may occur. New members may initially participate passively and gradually become more active as they learn the norms of the group.

## Conclusion

Electronic commerce strategists often argue that the creation of virtual communities among the consumers of a company's products or among its suppliers is a key to business success (Hagel & Armstrong, 1997). One sometimes gets the impression that the requirements for virtual community development are few: build a virtual meeting place and they will come. Our research shows that there's more to it than that. Building a virtual meeting place may produce a virtual settlement. But a virtual community is a virtual settlement in which a sense of virtual community co-exists with a set of community-like behaviors and processes.

Community-like processes and sense of virtual community are outcomes that are not certain to occur. They require people to enact them and to continue enacting them over time. Thus, understanding how such processes get started, become established, and are maintained should remain high on the agenda for research in the virtual communities tradition.

In addition, electronic businesses must give special consideration to the type of virtual settlement or virtual community they want to create. Member-supplied book reviews may endow an online bookstore with virtual settlement characteristics. True virtual community may require the greater personal involvement of an online book club or salon. It may be difficult or impossible to create true virtual communities under the aegis of a commercial venture. Further, it may be possible to achieve adequate commercial rewards *without* creating a virtual community—a virtual settlement may suffice. Therefore, future research on the business aspects of virtual "communities" should attempt to clearly distinguish between virtual settings that exhibit a sense of virtual community and those that do not.

## References

- Atkinson, K. (1995) *Usenet Info Center: Newsgroup Info Center [on-line]*. [http://metalab.unc.edu/usenet-i/groups-html/\[multi.sport.newsgroup\].html](http://metalab.unc.edu/usenet-i/groups-html/[multi.sport.newsgroup].html)
- Baym, N. (1995). "The emergence of community in computer mediated communication," In S. G. Jones (Ed.) *Cybersociety: Computer mediated communication and community*. Thousand Oaks, CA: Sage.
- Baym, N. (1997). "Interpreting soap operas and creating community: Inside an electronic fan culture," In S. Keisler (Ed.) *Culture of the Internet*, Manhaw, NJ: Lawrence Erlbaum Associates.
- Bion, W. R. (1961). *Experiences in Groups*. London,:Tavistock.
- Burroughs, S. M. and Eby, L. T. (1998). "Psychological sense of community at work: A measurement system and explanatory framework". *Journal of Community Psychology*, Vol. 26, pp. 509-532.
- Chipuer, H. M. and Pretty, G. H. (1999). A review of the sense of community index: Current uses, factor structure, reliability and further development. *Journal of community psychology*, 27, 643-658.
- Curtis, P. (1997). "Mudding: Social phenomenon in text-based virtual realities," In S. Keisler (Ed.) *Culture of the Internet*, Manhaw, NJ: Lawrence Erlbaum Associates.
- Douglas, M. (1986). *How institutions think*. Syracuse, NY: Syracuse University Press.
- García, I., Giuliani, F., and Wiesenfeld, E. (1999). "Community and sense of community: The case of an urban barrio in Caracas," *Journal of Community Psychology*, Vol 27, pp. 727-740.

- Greer, B. G. (2000). "Psychological and social functions of an e-mail mailing list for persons with Cerebral Palsy," *CyberPsychology*, Vol. 3, pp. 221-233.
- Hagel, J. and Armstrong, A. G. (1997) *Net gain : Expanding markets through virtual communities*. Boston : Harvard Business School Press.
- Herring, S. C. (1996). *Computer-mediated communication: Linguistic, social, and cross-cultural perspectives*. John Benjamins Publishing Co.
- Hughey, J., Speer, P. W., and Peterson, N. A., (1999) Sense of community in community organizations: Structure and evidence of validity. *Journal of Community Psychology*, 27, 97-113.
- Jones, Q. (1997). "Virtual communities, virtual settlements, and cyber-archaeology: A theoretical outline," *Journal of Computer-Mediated Communication*, 3, [on-line]. Available at <http://www.ascusc.org/jcmc/vol3/issue3/jones.html>.
- Kollock, P. and Smith, M. (1994). *Managing the virtual commons: Cooperation and conflict in computer communities* [on-line]. Available at <http://www.sscnet.ucla.edu/soc/csoc/vcommons.htm>.
- Lincoln, Y. S., and Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park: Sage.
- Mann, P.A. (1978). *Community psychology: Concepts and Applications*. New York: The Free Press.
- Markus, M. L. (1994a). "Electronic mail as the medium of managerial choice," *Organization Science*, Vol. 5, pp. 502-527.
- Markus, M. L. (1994b). "Finding a happy medium: Explaining the negative effects of electronic communication on social life at work," *ACM Transactions of Information Systems*, Vol. 12, pp. 119-149.
- Markus, M. L., Manville, B. and Agres, C. (2000). "What Makes a Virtual Organization Work—Lessons from the Open Source World," *Sloan Management Review*, Vol. 42, pp. 13-26.
- Markus, M. L., and Robey, D. (1988). "Information Technology and organizational change: Causal structure in theory and research," *Management Science*, Vol. 34, pp. 583-598.
- McLaughlin, M. L., Osborne, K. K., and Smith, C. B. (1995). "Standards of conduct on Usenet," In S. G. Jones (Ed.) *Cybersociety: Computer mediated communication and community*. Thousand Oaks, CA: Sage.
- McMillan, D. W. (1996). "Sense of community," *Journal of Community Psychology*, Vol. 24, pp. 315-325.
- McMillan, D. W., and Chavis, D. M. (1986). "Sense of community: A definition and theory," *Journal of Community Psychology*, Vol. 14, pp. 6-23.
- Miles, M. B., and Huberman, A. M. (1994). *Qualitative data analysis (2<sup>nd</sup> Edition)*. Thousand Oaks: Sage.
- Mohr, L. B. (1982). *Explaining organizational behavior*. Thousand Oaks, CA: Sage.
- Phillips, D. J. (1996). "Defending the boundaries: Identifying and countering threats in a Usenet newsgroup," *The information society*, Vol. 12, pp. 39-62.
- Pliskin, N. and Romm, C.T. (1997). "The impact of e-mail on the evolution of a virtual community during a strike," *Information and Management*, Vol. 32, pp. 245-254.
- Preece, J. (1999). "Empathic communities: Balancing emotional and factual communication," *Interacting with computers*, Vol. 12, pp. 63-77
- Rheingold, H. (1993). "A slice of life in my virtual community," In L. M. Harasim (Ed.) *Global Networks: Computers and international communication*. Cambridge, MA: The MIT Press.
- Rapley, M., and Pretty, G. M. H. (1999). "Playing Procrustes: The interactional production of a 'psychological sense of community'," *Journal of Community Psychology*, Vol. 27, pp. 695-713.
- Royal, M. A. and Rossi, R. J. (1999). "Predictors of within-school differences in teachers' sense of community," *Journal of educational research*, Vol. 92, pp. 259-267.
- Sarason, S. B. (1986). "Commentary: The emergence of a conceptual center," *Journal of Community Psychology*, Vol. 14, pp. 405-407.
- Schuster, E. (1998). "A community bound by words: Reflections on a nursing home writing group," *Journal of aging studies*, Vol. 12, pp. 137-148.
- Skjæveland, O., Gärling, T., Mæland, J. G. (1996) "A Multidimensional Measure of Neighboring," *American Journal of Community Psychology*, Vol. 24, pp. 413-435....
- Stinchcombe, A. (1968). *Constructing social theories*. New York: Harcourt Brace & World.
- Walther, J. B. (1996). "Computer mediated communication: Impersonal, interpersonal and hyperpersonal interaction," *Communication Research*, Vol. 23, pp. 3-43.
- Wellman, B. (1996). "Are personal communities local? A dumptarian reconsideration," *Social Networks*, Vol. 18, pp. 347-354.
- Wellman, B. Carrington, P. and Hall, A. (1988) "Networks as Personal Communities," In B. Wellman and S.D. Berkowitz (Eds.) *Social structures: A network approach*. Cambridge: Cambridge University Press.
- Zaff, J. and Devlin, S. (1998). "Sense of community in housing for the elderly," *Journal of Community Psychology*, Vol. 26, pp. 381-398.

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