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THE EFFECTS OF SOCIALLY RELEVANT REPRESENTATIONS IN CONTENT ON MEMBERS' IDENTITIES OF PARTICIPATION AND WILLINGNESS TO CONTRIBUTE IN DISTRIBUTED COMMUNITIES OF PRACTICE

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ABSTRACT

A major challenge for sustaining distributed communities of practice (DCoPs) is generating contributions of content from experienced members. This study examines whether textual content in a DCoP can be written to increase members' identity of participation and willingness to contribute. In a post-test-only, control-group experiment, members of a DCoP of U.S. Army junior officers read and responded to content relevant to their practice. Using Hoadley's concept of socially relevant representations (SRRs) (1995, 1999, 2004), a set of SRRs termed "cues of participation" were embedded into the experimental treatments. The study finds that participants who read content embedded with the SRRs reported higher levels of identification with the community and higher levels of identity of participation overall (Wenger 1990, 1998), although they reported no significant difference in willingness to contribute overall. Of interest to leaders of DCoPs is that the SRRs affected members' differentially, based on their level of experience. Among members with low levels of experience, the presence of the SRRs in content decreased their expressed willingness to contribute their own content. Among members with high levels of experience, exposure to the SRRs in content related positively with their expressed willingness to contribute. In this way, the presence of SRRs in content appears to foster an epistemology in DCoPs that values contributions from the most experienced practitioners.

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Chapter 1

Historical Background and Context

This research study is a natural outgrowth of my long-term involvement with a group that started and continues to lead two online communities for U.S. Army officers—*CompanyCommand* and *PlatoonLeader*. What I chose to study, how I designed and conducted the research, how its participants responded to me, and how its findings will be used to make a difference for educators cannot be understood adequately without some knowledge of my background and context. Especially in naturalistic educational research, an understanding of context enables other researchers to evaluate its validity (Mishler 1990)and judge its applicability and replicability (Hoadley 2002). Although this dissertation is not written as a "design narrative" (Hoadley 2002), this opening chapter is intended to create a context within which the experiment and its results can be more meaningfully interpreted.

The *CompanyCommand* and *PlatoonLeader* Professional Forums

The genesis of this study can be traced to a sunny afternoon in September, 1999, in West Point, New York. I was sitting in a park adjacent to my government quarters, intently reading a magazine and half-heartedly supervising my young children, when a neighbor of mine, Tony Burgess, approached and asked for a favor. Would I edit a book that he and another one of our West Point classmates, Nate Allen, had written about their recent experience of being company commanders?[1] At the time, I was serving as an instructor of philosophy and composition, so he figured that I must know something about writing. (Tony taught military skills to the cadets.)

That evening as I read the draft, I was overwhelmed by the great, practical advice offered in the book. For example, Tony and Nate described how they had prepared themselves to become commanders by taking to lunch, one at a time, many of the company commanders in Hawaii, where they were stationed. They asked questions that drew out the experienced commanders' knowledge—"What is one thing you know now that you wish you'd known then? What are some ideas you've put into place that have worked well? Would you be willing to share with us the computer files of the things you've written? Can you tell us about something that challenged you, how you responded, and what you learned from it?" Tony and Nate wrote down the multiple perspectives they heard, thought about them, and talked about how to integrate the ideas into their own practices as leaders. They read and exchanged books about leadership, adding to each other's margin notes in different colors of pen. By the time they became commanders of their respective units, they had plans in place and were mentally prepared for most of the challenges they would face. The two friends continued to spend countless evening hours talking with each other on their *lanai* (the term for front porches in Hawaii), sharing their lessons and products, and bouncing ideas off each other. Needless

[1] The company is the basic unit of organization for the U.S. Army. Every soldier is assigned to a company, which is commanded by an officer who is usually a captain with 4-10 years of experience. A company commander is wholly responsible for the training and welfare of his soldiers and their families. Companies range in size from 50-300 personnel. Almost every commissioned officer commands a company for 1-2 years, and success as a commander is requisite for a successful military career.

to say, they were both very effective and successful commanders. Over time, they came to appreciate how their relationship and conversations were helping each other and their units. As their tenures as commanders came to a close, they thought, “Wouldn’t it be great if every commander could learn from more experienced leaders and each other, just like we’ve been able to do?”

The book I read that night was their attempt to share their knowledge with the succeeding generations of Army company commanders, just as they had learned from their predecessors over lunches. The book draft soon created a buzz around West Point. The faculty there is composed mostly of officers who are recent company commanders. The book seemed to create for them a venue to revisit and reflect upon their own experiences of command. Over the course of conversations, the idea emerged to post the book on the Internet, so the next generation of officers could learn from it despite its numerous rejections from book publishers. Another instructor and West Point classmate, Steve Schweitzer, volunteered to create a Web site and serve as webmaster.

Tony and Nate’s experiences served as the basis for the design of the site, www.companycommand.com. Just as they had learned from numerous experienced commanders over lunch and had stayed in touch with many of them, they wanted the site to be a place where commanders past, present, and future could meet voluntarily in a spirit of cooperation and shared mission. Just as they had listened to stories over lunch and told their own on their *lanai*, the site provided a space for the sharing of “Ideas and Stories.” Just as they had avoided needlessly reinventing the wheel by borrowing files of successful training plans, standard operating procedures, and other products, the site had a “Tools” section where people could post their own files for others to download, compare, modify, and reuse. Just as they had read and discussed books on leadership, the site had a section dedicated to professional reading. Just as they had used each other as sounding boards, *CompanyCommand* included a threaded discussion forum.

The *CompanyCommand* online professional forum (CC) launched in March, 2000, supported primarily by a team of 12 volunteer officers, including me. Our vision was, as it is today, "Every company commander worldwide connected in a vibrant conversation about growing and leading combat-ready units." That month, *CompanyCommand* logged 427 unique visits, and we were thrilled. Word of the site spread like a virus. In January, 2001, it logged 12,000 unique visits; in January, 2002, the number was 24,000; and one year later, unique visits numbered 46,000. In February, 2004, to better serve the needs of company commanders, we restricted access to the site to registered members, and restricted membership to commissioned U. S. Army officers. Currently, *CC* consistently accepts around 400 new members and logs around 5,000 unique visits and 70,000 page views per month. Figure **1-1** provides a snapshot of the current look, feel, and topics of discussion on *CompanyCommand*. Note that the original book, *Taking the Guidon*, is still available for free to members of the forum.

Figure **1-1**

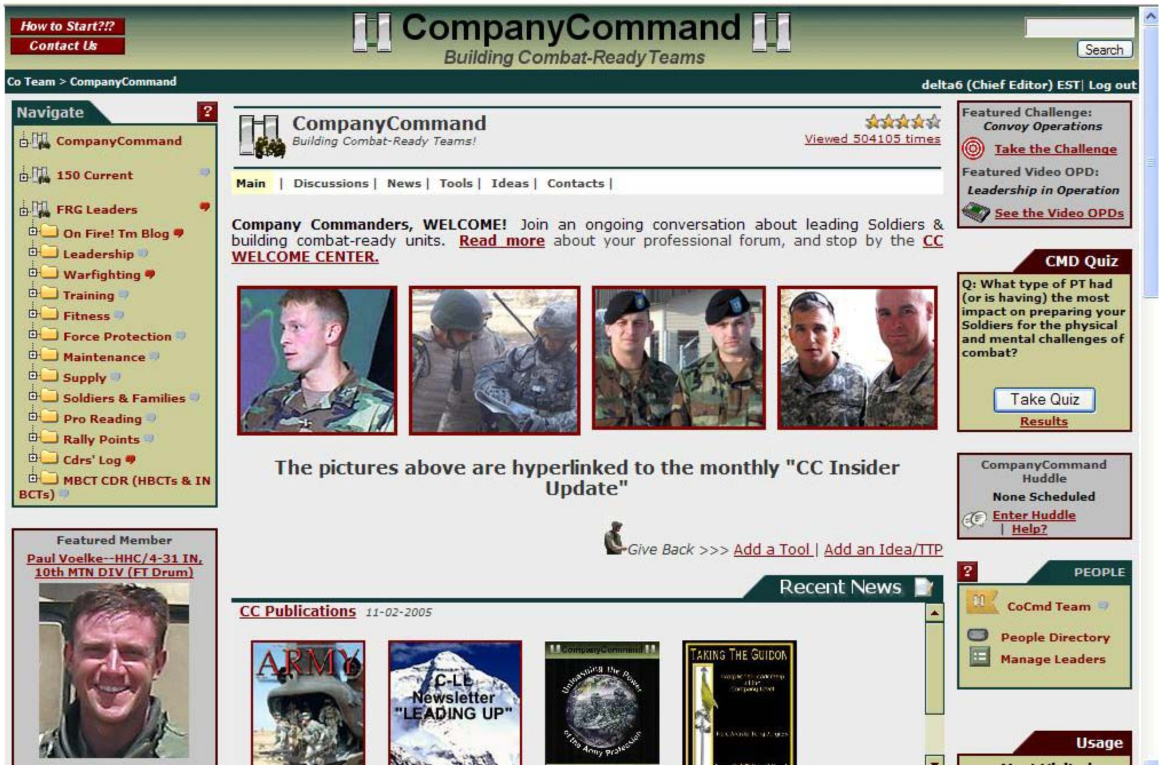


Figure **1-1**: Screen shot of a *CompanyCommand* Topic Page, April 2006

In 2001 *CompanyCommand* spawned a sibling site for platoon leaders,[2] www.platoonleader.org. Like *CompanyCommand*, *PlatoonLeader* (PL) is designed with sections for discussions, tools, stories, and professional reading. The pseudonymous members of *PlatoonLeader* consistently log around 110,000 page views, post around 1,500 discussion comments, and contribute 10 or so pieces of quality content, such as an interview or tool, each month.

[2] Platoons are subordinate elements of companies and are led by lieutenants, usually as their first job in the Army. There are 3-6 platoons in a company. Platoon leaders are responsible for the training and welfare of 15-40 soldiers.

One persistent shortcoming of *PlatoonLeader* has been the active participation of members who have no experience as platoon leaders—cadets. Cadets are eager to participate in the forum of those doing the job they are preparing to do; however, many actual, experienced platoon leaders are uninterested in the questions of cadets and turned away by the occasional advice of cadets. The PL software has lacked not only the capability to restrict the participation of cadets, but also the capability to link member profiles to their contributions, so it is often impossible to know who is saying what. Still, a contributor's level of experience is usually transparent. As cadets and inexperienced lieutenants have participated in large numbers, a comparatively smaller proportion of actual, experienced platoon leaders have. Consequently, the *de facto* emphasis of discussions in *PlatoonLeader* is the transition from being a cadet to becoming an officer more so than on becoming a more effective platoon leader, which is *PL*'s stated purpose. See (Kilner and Hoadley 2005) for a recent study on *PL* and its efforts to foster discussion that is valuable to its members who are experienced practitioners. Figure **1-2** provides a snapshot of the current look and feel of *PlatoonLeader*.

Figure **1-2**

Figure **1-2**: Screen shot of *PlatoonLeader* Main Page, April 2006

My Role as Content Editor

My role on the *CC/PL* team has always revolved around supporting the communities with quality content that is generated primarily from the members themselves. The *CC/PL* team distinguishes between content, conversations, and connections, which we believe interact to grow a healthy community of professionals (Dixon, Allen et al. 2005; Hoadley and Kilner 2005). Tony and Nate are exceptional social connectors and conversation facilitators. Steve is a Web-technology guru. I prefer content. Initially, my main role on the team was to edit submissions for language correctness. That soon grew into a role of working with members to write their ideas and stories for posting. In 2003, I had the opportunity to travel around Iraq with the Army History Team. There, I interviewed dozens of commanders and platoon leaders, and in the process discovered interviews' remarkable ability to generate personal, powerful stories. Soon after my return, I established sections on both sites to invite and collect combat-leader interviews, of which there are now well over 100. In February, 2004, I took over responsibility for leading the *PlatoonLeader* team. I have worked to generate and feature content that will help move the focus of the forum towards the actual practice of being a platoon leader.

I consider myself now to be a content broker and "knowledge-venture capitalist." My role in the forums provides me a window through which I can help to identify and meet the information needs of the members. I no longer possess much knowledge that is relevant to company-level officers, but I do have a good sense of who needs what and who knows what. I get great satisfaction from helping others shape their ephemeral, individual experiences into enduring, collective goods. For example, a commander who had just returned from Iraq when I spent time with him in 2003 told me several anecdotes about decisions he faced in combat. I worked with him to craft a story, "To Kill or Not to Kill," (See Appendix E) that has been read by thousands and which conveys the harsh realities of war and the proud values of our profession in a way that no PowerPoint presentation ever could.

I believe that all text, but especially narrative, possesses a power that exceeds the sum of its points of information. Perhaps it is because I am an admirer of short stories that I appreciate how subtle distinctions in a few words can have a disproportionately large effect on how readers make sense of a text as a whole. Perhaps it is my background in philosophy that makes me acutely aware that there is no “view from nowhere.” Texts have authors. The written word is never mere information; more is always communicated, consciously or not.

In my experience, content in online communities plays several largely unnoticed roles. Content communicates the tone, subject matter, ownership of knowledge, and epistemology of the community. It does so without trying, and with few people taking conscious notice. Is the content serious or whimsical? Focused on business or sociability? Written by members of the community or outsiders? Present THE answer or one perspective among many? Tied specifically to a practice, or generic across practices? I have long suspected that the non-informational aspects of content have a greater impact than many designers and leaders of online communities realize.

The U. S. Military Academy and CALDOL

By the fall of 2002, it was apparent that supporting *CompanyCommand* and *PlatoonLeader* required more resources than our team of volunteers could sustain. Since participation in the forums had by then become part of the fabric of learning for Army junior officers, the senior leadership at West Point made a commitment to support our efforts. West Point created the Center for the Advancement of Leader Development and Organizational Learning (CALDOL) and appointed four of the team members—Tony, Nate, Steve, and me—as permanent faculty to lead the center. We transferred legal ownership of the sites to West Point in early 2003, although we have always believed that the forums are owned by all members of the profession of arms. We merely serve as their caretakers.

The Army gave me the opportunity to study at Penn State so I could prepare for my long-term role with CALDOL. The mission of CALDOL is to serve the communities of company-level officers while also supporting the larger Army with R&D on organizational learning and leader development. We will develop and test models of distributed peer-to-peer learning and leader development for company-level officers. Whatever is successful we will document for evaluation and possible adoption by the Army's larger, more formal education system. Whatever is unsuccessful we will document so the Army does not waste its resources on it.

The Army established in 2004 a large knowledge-management infrastructure, the Battle Command Knowledge System (https://bcks.army.mil), to develop online communities for hundreds of different Army practices, based on the CC/PL model. As of this writing, there are more than 70 fledgling communities associated with the BCKS, although only one of them is comparable to CC/PL in member participation. The CC/PL professional forums of CALDOL are partnered with, but operate autonomously from, the many BCKS forums, which operate out of the U.S. Army's Combined Arms Center at Fort Leavenworth, Kansas. The CC/PL team's gut intuitions and experiences have limited ability to transfer to the designers and leaders of BCKS forums. It is time for us to generate and communicate meaningful knowledge about the design of distributed communities of practice.

On the day that CALDOL was approved, the academic dean of West Point at the time, Brigadier General Kaufman, looked me in the eye and said, “If you do things the same way the Army already does them, you’re wasting my time…If you don’t fail sometimes, you’re not being creative enough…If you don’t fundamentally change the way the Army educates its leaders, you will have betrayed my trust. So, good luck and have fun!” I feel both empowered to make a difference and daunted by the sustained effort that doing so will require.

This Study and My Research Agenda

Given our ongoing projects, I expect to do a lot of design-based research (Design-Based Research Collective 2003) with my CALDOL partners in the upcoming years. They are currently studying for PhDs in Knowledge Management, Organizational Development, and Information Sciences and Technology, and two of them have already conducted their research using in-depth phenomenological interviewing. Nate interviewed commanders in Iraq to gain understanding on how they learn “in the experience,” and Tony interviewed many of the newer core team members of CC to gain insight on how they moved from the peripheral to the core of the community. In this research study, I have chosen to answer questions that call for an experimental approach. As a whole, the CALDOL team seeks to develop the skill set to engage in sustained design-based research.

This research study brings together my experience working with company-level officers, my gut feelings about the significance of social cues in written information, and my mission to learn how to design more effective distributed communities of practice.

Chapter 2

Statement of the Research Problem

Is the Internet an encyclopedia or a conversation? Does it disseminate information or connect people? As a whole, it is both and does both. However, the way that Internet users make sense of any particular Internet experience can be influenced by design (Smith and Kollock 1999; Cuthbert, Clark et al. 2002; Hoadley and Pea 2002). This study looks at whether or not, and if so, how, content in Internet-enabled, distributed communities of practice (Lave and Wenger 1991) can be designed to support not only valuable content repositories, but also vibrant, sustainable communities (Schlager, Fusco et al. 2002; Schwen and Hara 2003).

This study is significant because distributed communities of practice have enormous potential to facilitate individual and collective learning (Allee 2003; Barab, Kling et al. 2004; Hoadley and Kilner 2005), foster innovation (Kahan 2004; Hildreth and Kimble 2005), and further professional competence and commitment (Wenger and Snyder 2000; Hakkarainen, Palonen et al. 2004; Dixon, Allen et al. 2005). However, a decade after the rise of the Internet, this form of online community has yet to realize this potential. Many, if not most, intentionally designed and implemented distributed communities of practice have failed to gain and sustain participation from their members (Schwen and Hara 2003; Gongla and Rizzuto 2004; Lee and Neff 2004; Stuckey and Smith 2004), yet there is very little research on the design of sustainable, distributed communities of practice (Barab, Kling et al. 2004; Dube, Bourhis et al. 2005) This study proposes to examine one aspect of designing sustainable, distributed communities of practice.

Communities of Practice and Networks of Practice

Communities of practice (CoPs) are imbedded in the fabric of society, and most people are members of multiple CoPs throughout the course of their lives (Lave and Wenger 1991). A CoP is a voluntary, on-going association of people whose personal interactions develop, disseminate, sustain, and evolve the norms, knowledge base, and repertoire of an activity that they all engage in (Wenger 1998; Barab and Duffy 2000). In CoPs, members' relationships and experiences continuously shape their identities and contribute to their shared practice. So, for example, when the copier repairmen at a large company gathered regularly over lunch to informally share "war stories" about everything from ways to deal with impatient office managers to ways to troubleshoot the latest technologies—to the extent that their interactions and relationships shaped their own identities and contributed to their collective competencies and norms—they comprised a community of practice (Orr 1990; Brown and Duguid 1991).

A network of practice (NoP) is similar to a CoP in that its members are linked by a shared practice; however, in a NoP, there is less member interaction and less sense of community (Brown and Duguid 2000). Typically, the members of a NoP are geographically dispersed and communicate through mediated means such as newsletters and journals. Professional associations exemplify the role of NoPs. Members of an association "interact" indirectly, asynchronously and infrequently, sharing their knowledge through “weak ties” (Granovetter 1983; Haythornthwaite 2002). However, the members of the NoPs get socialized into the roles, norms, knowledge, and activities of their practice primarily through face-to-face interactions in their local, workplace-based CoPs.

CoPs and NoPs have different strengths and limitations. CoPs are relational (Wenger 1998); NoPs, primarily informational (Brown and Duguid 2000). In CoPs, members’ proximity supports the development of strong ties, enables the interactivity of sustained conversations among multiple members, and often involves collaborative activities. In a mutually constitutive process, CoPs shape their members’ identities as the members shape their practices. CoPs are naturally occurring, informal, and tend to propagate existing practice. In NoPs, on the other hand, communications are less frequent and more reified. Even though the members of a NoP engage in similar activities, they are less likely to have awareness of what their fellow practitioners are learning and doing. NoPs tend to be intentionally designed, formal, and engaged in building the explicit knowledge base of their domain through newsletters and journals.

Both forms of practice-based associations—CoPs and NoPs—involve trade-offs. CoPs support meaningful learning, but the scope of the learning is limited to those in their local community. Consequently, CoPs are prone to parochialism, and the benefits of their learning are not experienced by members of the wider practice (Wenger, McDermott et al. 2002). NoPs, for their part, include diverse perspectives from a larger, even global community, but they often lack the type of human connection, reciprocity, and dialogue necessary to leverage the full potential of members’ knowledge and character (Brown and Duguid 2000).

The Internet offers the tantalizing promise that NoPs can overcome limitations of time and space or, conversely, that CoPs can overcome limitations of scale and perspective (Kilner 2002). As a medium that can support many-to-many, real-time, personal communications (Rheingold 1993; Locke, Levine et al. 2000), the Internet could potentially enable members of a NoP to participate with an immediacy and intimacy that rival face-to-face communications. Researchers have described such Internet-supported NoPs as distributed communities of practice (Wenger, McDermott et al. 2002), virtual communities of practice (Ardichvilli, Page et al. 2003; Davies, Duke et al. 2003; Callahan 2004; Dube, Bourhis et al. 2005), practice-based learning communities (Riel and Polin 2004), and Internet-mediated communities of practice (Stuckey 2005). In this study, I will refer to these promising structures as distributed communities of practice (DCoPs).

The Challenge of Designing Sustainable DCoPs

Attempts to leverage the Internet to support DCoPs that generate CoP-like participation have met disappointing results. Many, if not most, intentionally designed, Internet-based DCoPs either devolve into social conversation unfocused on practice, end up as mere document repositories, or become forgotten about and wither (Wenger, McDermott et al. 2002; Schwen and Hara 2003; Gongla and Rizzuto 2004). As one team of online community researchers described it, most intentionally designed DCoPs experience a “mayfly life” (Cox and Morris 2004).

There is much to be learned about the challenges of designing sustainable DCoPs. Most of the research in the field focuses on their design and implementation, not on sustaining them (Kimble and Hildreth 2004; Stuckey 2005), perhaps because there are relatively few sustained DCoPs to study. However, research does indicate that one common cause of the failure of many DCoPs is their inability to generate participation that sustains a "core group" (Gongla and Rizzuto 2001; Bruckman and Jensen 2002). Every CoP needs a core group of members whose passion, expertise, and network of relationships fuel the participation of other practitioners (Preece 2000; Bruckman and Jensen 2002; Wenger, McDermott et al. 2002; Saint-Onge and Wallace 2003; Stuckey and Smith 2004; Dixon, Allen et al. 2005). For a CoP to remain vibrant, then, the natural attrition of core-group members must be offset by the emergence of members whose in-bound trajectories of participation bring them to full participation in the CoP as core-group members.

Identities of Participation

What draws members of a DCoP to the core group? Wenger (2002) recommends that existing core-group members "actively recruit people who would appreciate an opportunity to take a more active role in the development of their discipline" (p. 107). In a case study of the core group in one successful DCoP, Dixon et al. (2005) identified three factors that led, over a period of months and years, several peripheral members of a DCoP to become core-group members. The factors were: the members' personal interactions with the core group; their sense that they had "creative license" to impact the community; and their intrinsic desire to make an impact on the profession.

These factors that drew members to greater involvement in the community can be understood in terms of their development of "identities of participation" (Wenger 1990; Wenger 1998). Drawing on his extensive research on CoPs, Wenger argues that practitioners develop identities of participation in a CoP based on two processes: identification, which is their sense of belonging in the community; and negotiability, which is their sense of having the ability to influence the community. Members who identify strongly with a community and feel valued and empowered within it will have a strong identity of participation. Conversely, members who feel like outsiders and who sense they have no voice in the shaping of the community will have a strong identity of non-participation. This identity is not static; a person's identity of participation is continuously being shaped by their activities and interactions (Barab and Duffy 2000). Of particular interest to designers and leaders of DCoPs is that every interaction involving a member and the DCoP affects the member's ever-evolving identity of participation (Wenger 1990).

Wenger's theoretical construct explains the factors he and Dixon et al. identified for DCoPs. Peripheral members of a DCoP who "interact with the core team" are able to identify with those fully participating members of the community. Moreover, members who are given the opportunity to "take a more active role in the development of their discipline" and to exercise "creative license" will sense that their voice really does matter in the community. Finally, members who act upon an "intrinsic desire to make an impact on the profession" likely identify with their profession, as well as believe that they can influence its direction.

When one considers the essential role that fostering identities of participation plays in sustaining a CoP, the daunting challenge of designing sustainable DCoPs becomes more apparent (Cox and Morris 2004). In a face-to-face CoP of 25 members, for example, core-group members can easily connect with peripheral members and convey to them that their voice matters. In a DCoP of 2,500 or even 25,000 members, however, such personal interactions are much more difficult, if not impossible. Moreover, members will likely interact first, most often, and perhaps solely with the information that is posted in the Web space, i.e., its content—and not initially interact directly with other members of the community such as the core group (Powazek 2002). Consequently, it is reasonable to conclude that the ways in which members of a DCoP engage with the content in a DCoP could play a significant role in their development of identities along the spectrum of full participation to no participation.

Designing for Identity

How can designers of DCoPs influence the ways that members engage with a DCoP's content to foster identification and negotiability? Interface design is part of the equation. For example, a Web space that lacks tools of social presence is missing opportunities to engender identification (Hoadley and Pea 2002), just as a member who cannot figure out technically how to participate will likely not feel a great sense of negotiability (Schlager, Fusco et al. 2002).

Less well recognized is the potential for the particulars of the content in a DCoP to affect identities of participation. In the case of information-based content such as documents, there is reason to believe that they do. “Information by itself does not produce identities of participation,” Wenger tells us (1990, p. 113). “It is just as likely to generate identities of non-participation” if identification and negotiability are absent, because “what is constructed is not just a set of cognitive structures, but a way of belonging” (118). If this is so, then one important goal for designers of DCoPs should be to find a way to present information in a manner that communicates to members that they belong in the community and can influence it.

Before introducing the research questions and hypotheses that this study proposes to answer and test, respectively, it might be helpful to review the argument presented thus far. Table 2-1 lists the nine main claims of the argument.

2-1

2-1: *Summary of Argument Linking DCoP Sustainability and Cues of Participation*

1. A DCoP can sustain over time only if its core group sustains.
2. Sustainment of a core group requires the inflow of new core-group members.
3. Inflow of new core-group members requires that a sufficient number of peripheral members of the DCoP move toward full participation.
4. A member's moving toward full participation both results from and gives rise to their identity of participation. The process is mutually constitutive.
5. In any encounter with the DCoP, a member will make meaning of the experience in a way that leads towards a greater or lesser identity of participation.
6. An identity of participation develops from two processes: identification with the community, and negotiability in influencing the community.
7. Therefore, to sustain a DCoP, a sufficient number of members must identify with the group and believe that they have a role to play in its development.
8. One of the main ways that members come into contact with and experience a DCoP is by reading its content, which is the information available in the community.
9. Therefore, it would be worthwhile to investigate whether or not content in a DCoP can be designed to lead members to identify with the group (identification) and to believe that they have a role to play in its development (negotiation).

One way to design content to support the processes of identification and negotiability would be to embed it with *socially relevant representations* (Hoadley 1999; Hoadley and Kirby 2004) that contribute social-context information that acts as *cues of participation*. This study proposes, justifies, and tests two claims that follow from the argument:

1. Content that is embedded with certain socially relevant representations will lead members to identify with the group and to believe that they have a role to play in its development, i.e., the representations will lead the members to construct greater identities of participation.
2. Members who have greater identities of participation will express a greater willingness to contribute their own knowledge to the DCoP as content.

Purpose and Significance of the Study

The purpose of this study is to investigate whether or not content in a distributed community of practice can be embedded with socially relevant representations to foster members' development of identities of participation and thus to increase their willingness to contribute their own knowledge as content. As such, this study informs both the practice and theory of distributed communities of practice and socially relevant representations. At the practical level, this study informs DCoP designers and leaders about whether or not they should include certain socially relevant representations (i.e., the cues of participation used in this study) in their toolkits for growing sustainable communities. A likely second-order effect of any positive relationship between socially relevant representations and willingness to contribute will be an increased appreciation for the situatedness of DCoPs. Theoretically, this study contributes to the nascent literature on the effects of incorporating socially relevant representations into online design. This study might also renew interest in the seminal theoretical concepts of CoPs, such as identity of participation.

Research Questions

The questions this study is designed to answer are:

1. In a distributed community of practice, does exposure to content that is embedded with a certain set of socially relevant representations (SRRs) increase members' identities of participation?

2. Do members of a distributed community of practice who report higher levels of identities of participation also report a greater willingness to contribute content?

Design of the Study

The study is conducted as a control-group, post-test only experiment using treatments and instruments developed by the researcher. Participants are a convenience sample of members of a distributed community of practice—company-grade officers in the U.S Army—randomly assigned to either a control or treatment condition. The control group reads content with information relevant to their practice that is presented authoritatively as bulleted prescriptions from an unspecified author to an unspecific audience (Appendix A). The treatment group reads content with the same information as the control group, but the information is embedded with a set of socially relevant representations that act as cues of participation. These cues of participation are: the author is listed as a member of the DCoP, and the author's audience is explicitly stated to be the members of the DCoP; the content is written in first-person voice, in a non-authoritative tone, includes some elements of narrative, and invites other perspectives and feedback (Appendix B). The independent variable is the presence of these cues of participation. The dependent variables are survey-based measures of identity of participation and willingness to contribute.

Hypotheses

H1: There is a significant difference between the impact of content embedded with cues of participation (CUES) and content without those SRRs on the members of a distributed community of practice's identities of participation.

H1a: There is a significant difference between the impact of content embedded with cues of participation (CUES) and content without those SRRs on the members of a distributed community of practice's sense of identification with the community.

H1b: There is a significant difference between the impact of content embedded with cues of participation (CUES) and content without those SRRs on the members of a distributed community of practice's sense of negotiability in the community.

H2: There is a significant relationship between members' identities of participation and their expressed willingness to contribute their own knowledge or experience to their distributed community of practice.

Chapter 3

Review of the Literature and Theoretical Framework

This study examines whether *content* in a distributed community of practice can be designed to foster *member contributions* by being embedded with a set of *socially relevant representations* that act of *cues of participation* to increase members' *identities of participation.* This chapter will review the respective concepts in that order. The nature of content receives very little attention in the community-of-practice literature, so this chapter begins by offering a typology for content that raises awareness of the roles that content can play in generating participation and sustaining a distributed community of practice (DCoP). Then, the more voluminous literature on generating contributions in online communities is reviewed. There appears to be a consensus on factors that discourage and motivate members to contribute to distributed communities. The third section of this chapter describes Wenger's concept of identity of participation as a coherent framework for understanding the factors related to contribution in online communities. The fourth section outlines Hoadley's concept of socially relevant representations (SRRs) as social-context cues that enhance sense-making of information in distributed environments. Finally, this chapter justifies the selection of the set of SRRs hypothesized to affect participants' identities of participation in this study when they are embedded into content.

A Typology of Content in DCoPs

Content in an online community has different meanings to different people and in different contexts. This section will attempt to classify the meanings and uses of content so that the particular use of the term as it relates to this study can be understood clearly.

By one use of the term, content is everything a user encounters in an online space (Powazek 2002). This very broad definition can make it difficult to study content. After all, a photo and a synchronous-conversation comment have very different characteristics. A more specific way to categorize what a user encounters in an online space is by content, conversations, and connections (Dixon, Allen et al. 2005), where content is defined as information that is transmitted one-to-many, such as stories or tips of the trade; conversations are defined as many-to-many exchanges such as those that occur in discussion forums; and connections are defined as one-to-one communications between participants in the community, such as emails or private messages.

Content as Conversation

There are online communities in which conversation is the only form of content. Listservs and bulletin-board systems (BBS), for example, support distributed discourse among their participants, but generally do not enable the permanent posting of articles as content or make available information that leads to connections among members. The widespread availability of free technologies that support listservs and BBS (e.g., Yahoo Groups, UseNet) has led to the development of literally tens of thousands of online communities that equate content with conversation.

These types of communities are very effective at facilitating members' relationships and exchanges of ideas (Kim 2000; Preece 2000). Successful communities of this sort tend to be empathetic support groups and interest groups (Matzat 2004) that do not bear the responsibility of stewarding a practice. The effect of this approach to content is what could be described with a big "C" and little "p"—a DCop—a strong distributed community, but one that is not efficient at advancing a practice through knowledge building. The domain-knowledge building that is a hallmark of CoPs is facilitated by a critical mass of "reified artifacts" (Wenger 1998) that consolidate consensus learning and become stepping stones for new ideas and conversations (Pea 1994; Scardamalia and Bereiter 1996; Bell and Winn 2000). Such artifacts may be derived from conversations (Saint-Onge and Wallace 2003), but they are a different type of content than conversations are.

The second and third approaches to content that are addressed in the next two sections conceive of content in a fundamentally different way. According to these approaches, content is distinct from online conversations. Content is *codified, explicit, one-to-many resources of information* such as documents, photos, or video clips. Content is essentially static material, presented to the community as a monologue (Hoadley and Enyedy 1999). Such content tends to be more deliberately expressed and produced than are online conversations (Crystal 2001).

Content as Externally-Generated Resource

A second way that DCoPs view content is as external resources imported into the community. This is content that is not generated by members of the DCoP, nor is it generated specifically for members of the DCoP, but it is imported into the community space because it is relevant to members of the community. Much of the literature on implementing DCoPs recommends that leaders identify, collect, import or link to as many sources of pre-existing content as possible (Le Moult 2002; Davies, Duke et al. 2003; Callahan 2004; Kimble and Ladd 2004). For example, Kimball and Ladd recommend that CoP leaders "post links to popular websites, conferences…white papers…anything relevant to your area that you think participants would benefit from by having easy access" (p. 213). A critical success factor for DCoPs is that they provide immediate value to their members (Wenger, McDermott et al. 2002; Borberly and Perrin 2004). A DCoP that harvests and consolidates relevant content from multiple sources and then makes it available in a "one-stop shop" of relevant documents, tools, references, etc., will likely provide value to its members by saving them time.

A common theme in research on DCoPs that emphasize using imported resources as its primary content is that members of the DCoP must be involved in keeping the content accurate, current, and relevant. Both Lesser and Fontaine (2001) and Borbely and Perrin (2004) recommend that subject-matter experts within a DCoP review and approve all contributed content to assure its quality and relevance. Kondratova and Goldfarb (2004) urge that DCoPs dedicate specific personnel resources to actively harvest content. The role of these "knowledge workers" would be to extract information from multiple, internal and external sources and aggregate it into content that is relevant to community members. Making a similar argument, Callahan et al (2005) suggest that the personnel be called "gardeners, summarizers, [and] synthesizers" (p.7). In my experience, communities that emphasize the use of external content are characterized by a small "c" and big "P"—DcoPs where members feel little sense of connection or community with other members but do visit to access resources for their practice.

Content as Member-Generated Resource

The third approach to content in a DCoP is that it is member generated, but not simply as a by-product of conversation. This approach is discussed least in the literature but generates the most passionate support from DCoP practitioners. The book that I co-authored with the CALDOL team, Dixon et al (2005), advocates member-generated content as most likely to be timely, relevant, and rich in context, and thus most catalytic for building community. In that book, noted DCoP expert Hubert Saint-Onge is interviewed. He states:

> The community itself must build the knowledge. Keep the voices of the contributors. Keep the richness of the language. Cut and paste, don't summarize. *Extract, don't abstract*. In my opinion, 90% of all lessons learned efforts in organizations are useless, because the knowledge is extracted by someone who doesn't understand the knowledge domain, organized into a taxonomy that doesn't make sense, and delivered as abstract bullets. It is important to keep the voice, the context, and the richness that make the information usable within the domain.
>
> One of the dangers of having strong and active topic leads is that they inadvertently create the sense that they own the knowledge, that they own the domain. It is essential that, while they take responsibility for their domain, topic leads keep in mind that they are *custodians, not owners*, of the domains. I want topic leads to create leadership within the community

> that is more disparate than themselves. I want them to be distributors of leadership, and distributors of a sense of ownership for what the community does. All members of a professional community are owners of their knowledge domain. All are responsible for building the knowledge domain. (p. 174)

In “Lessons from Five-Plus Years of Knowledge Management,” Borbely and Perrin (2004) are quite explicit about the need for any successful DCoP to “generate and maintain the content it requires” (p. 322). They lament that “content is typically assumed, sometimes overlooked, and the effort to sustain it is frequently underestimated” (p. 322). Over a recent period of five years, their organization experienced great success by using content managers within the communities to identify, collect, summarize and provide context to, organize, and classify their members’ own knowledge into content that is posted in their DCoPs.

The Echo Effect of Content in a DCoP

Each of the three approaches to content that the designers of a DCoP can use—either treating it solely as conversation, collecting it from outside the community, or generating it from current members—could have an effect on participation in a DCoP because of how people respond to content in an online environment. Powazek (2002) describes the phenomenon:

> If I’ve learned anything from my years of observing and creating online communities, it’s that the tone of the content you give your users is replicated and amplified a thousand times in the responses it generates. It works almost like an echo: If you scream into a canyon, you’ll hear three screams back. If you content is pushy and opinionated, you can count on pushy and opinionated responses. If your content is personal and genuine,

> you'll get personal and genuine responses back. And as the responses grow, that tone is multiplied with each post. (p. 20)

Analogous to Powazek's observation, this study hypothesizes that members of a DCoP will give what they get. If they read content generated by and for them and their community, then they will become more inclined to contribute content back to their community. However, if they receive content generated primarily by and for someone outside their community, even if it contains valuable information, then they will become less inclined to contribute to their own community, because they will feel less a sense of ownership for and obligation to their community.

This study compares how members of a DCoP respond to content that appears to be externally generated and content that appears to be member generated. Content-as-conversation is not studied here. Therefore, for the remainder of this paper, the use of the term content refers to content that transmits information one-to-many, not to conversation.

Factors Affecting Members' Participation in DCoPs

The term "participation" covers a wide spectrum of activity. A member of a DCoP who passively observes the community's activities is, minimally, a participant. The common term for such a member is "lurker," although, based on extensive studies of such members, a more accurate term might be "non-public participant" (Nonnecke and Preece 2003). At the other end of the participation scale are core-group members who contribute content to the community, encourage others to contribute, and feel a deep sense of responsibility for the community's well being (Stuckey and Smith 2004). A critical threshold of participation is when a member contributes his or her knowledge to a community (Wegerif 1998). DCoPs cannot sustain without contributions, and members do not move towards full participation and leadership without contributing (Wenger 1998; Wenger, McDermott et al. 2002; Dixon, Allen et al. 2005).

Most members in most large, online communities never contribute directly to the community (Preece, Nonnecke et al. 2004). Although a large community will suffer from information overload if too many members contribute (Preece 2000; Jones, Ravid et al. 2002), a more common problem for a large distributed community is generating sufficient contributions to sustain member involvement (Preece 2000). The following sections review the literature on the barriers and motivations to contributing to online communities.

Literature on Barriers to Contribution to Online Communities

There are no frameworks or organizing principles in the literature on barriers to contributing to online communities. In this section I will address a representative overview of the literature, focusing on that related to voluntary, distributed online communities.

In an extensive study of three successful DCoPs in a large multi-national corporation, Ardichvilli, Page, and Wentling (2003) identified several barriers to contribution among the members. The barriers can be categorized as informational, social, or procedural. The most significant barrier was informational—the members' were unsure if their knowledge was sufficiently important, relevant, or accurate to contribute. A second set of barriers was social. Members expressed concern that they had not "earned the right" to post. Other social barriers cited were that members were not sure if what they had to offer was needed or appropriate, they feared they might be misjudging the situation, and they worried that an inappropriate response would cause them to "lose face" in front of their peers. A third type of barrier identified in the study was both procedural and social. The members' objected to how their contributions were reviewed and approved by a manager before they were posted.

Barriers to contribution are arguably most apparent in lurkers, who are members of a community who rarely, if ever, contribute. In a large survey-based study of online-community lurkers, Preece, Nonnecke et al. (2004) identified reasons that lurkers give for not posting. The top six reasons are: just reading/browsing meets their needs; they are still learning about the group; they are shy about posting; they have nothing to offer; the community has no requirement to post; and contributing members of the community already provided any needed information. In a smaller, qualitative study (2005a) of lurkers in the *CompanyCommand* DCoP, I discovered that lack of confidence in their own knowledge, concerns about appearing self-serving, and lack of time were the main reasons that members gave for not contributing their own content.

Research also indicates that members' sense of ownership of a DCoP can impact their participation. Schwen and Hara (2004) describe several case studies in which organizations attempted to create DCoPs with the help of external consultants or by adding network technology to expand existing CoPs. In all cases, the organizational interventions to create or leverage DCoPs failed due to lack of participation, despite even the "threats of management" (p. 262) in one case. The researchers surmise that the lack of participation was a sign that the communities' members had been disenfranchised by the decisions of non-members.

Finally, based on her work as a knowledge-management consultant, Goman (2002) advises that the main barriers to contributing are people's insecurities about how others will use their contribution and whether others will do their part and reciprocate, a reference to the *free-rider problem* that can occur with any public good (Smith and Kollock 1999).

Literature on Fostering Contributions to Online Communities

The literature on eliciting contributions from members of DCoPs can be divided into two groups—what studies have found, and what researchers and practitioners recommend. This section will address each in turn.

There is a significant body of research on participation in DCoPs and other form of online community, but there is not a consensus theoretical perspective on either the problems or the solutions. Some of the theories used to support studies on contribution include Collective-Effort Model from Utility Theory (Ling, Beenen et al. 2005), Social Exchange Theory (Chan, Bhandar et al. 2004), and Social Capital Theory (Burgess 2004). Other researchers developed their own constructs, e.g., social and professional affiliation (Faraj and Wasko 2005), while other research was descriptive without recourse to theory (Ardichvilli, Page et al. 2003). The findings from the diverse approaches offer a representative view of the state of the field.

Ardichvilli, Page, and Wentling (2003) found that members contributed when they viewed knowledge as a public good and felt a moral obligation to share it. They also reported that members contributed to enhance their own reputations as experts, to give back to their practice, and to mentor younger practitioners. Faraj and Wasko (2005) found that factors of intrinsic motivation had significant and positive effects on participation in DCoPs. They report that members' sense of expertise, identification with the community, and understanding of group norms were predictive of contributing to online communities. In a study of one month's worth of contributions to *CompanyCommand*, Burgess (2004) found that those who contributed were significantly more likely to know a contributing member of the community. The study also indicated that each new contributor is not only influenced by interacting with an active contributor, but also in turn influences his own social network, making them more likely to contribute as well. Based on years of research on *The Math Forum*, Renninger and Shumar (2004) conclude that members' senses of belonging and shared purpose in the community are "more critical than site design in getting participation" (p. 204). Their conclusion is consistent with Sharatt and Usoro (2003), who developed a model of knowledge sharing that includes "sense of community" as one of the major factors affecting knowledge sharing.

Four recent experiments by Ling et al (2005) found that people contribute more often to online communities when they believe that their contributions offer unique perspectives. Chan et al (2004) identified three different forms of perceived recognition that occur in a DCoP—identity, expertise, and tangible recognition—and studied the relationship between recognition and participation. The first form of recognition, identity, which is the sense of being acknowledged as an individual, was the most important form of recognition for participants. Second to that was recognition of their competence or expertise. The least important form of recognition was tangible recognition, such as awards or accolades; this type of recognition was significant to participation only when the recognition came from within the community. The study also indicated that all three forms of recognition resulted in increased sense of community, obligation, and self efficacy among members, which in turn resulted in increased participation by them.

Kollock (1999) lists and discusses various motivations to contributions that he derived from the literature and applied successfully to two case studies. Generalized reciprocity is a factor that can be increased by an online design that shows members how other members have cooperated with each other in the past. Another motivation is gain of reputation, especially in communities in which members stay involved for long periods of time and where members also have face-to-face contacts. Kollock also contends that a sense of efficacy may drive some contributors' behavior, if they see that they can make a difference in the community. In such cases, the larger the community, the greater potential sense of efficacy. Finally, for those who are motivated by altruistic reasons, a high degree of group attachment matters. Group attachment is enhanced by, among other things, clearly articulated and communicated group goals.

Feelings of belonging and attachment to a group are associated with the willingness to contribute to the welfare of a group (Blanchard and Markus 2002). Although developed before the rise of online communities, the Sense of Community (SOC) framework developed by McMillan and Chavez is noted for its theoretical and empirical support. The SOC framework has four dimensions: feelings of membership; feelings of influence; feelings of being supported by others while also supporting them; and shared emotional connection (McMillian and Chavis 1986). Blanchard and Markus (2002) found that this framework applies appropriately to building and evaluating virtual communities as well.

The literature on participation also includes recommendations for fostering contributions in online communities based on the authors' practical experience, not academic research. Dixon et al (2005) suggest ways to "pull" knowledge from members, such as interviewing them, conducting an email survey, or posting an online quiz. The authors also offer a five-step guideline for all communications between the core group and more peripheral members:

> ✓ Continually share purpose. Reinforce why the professional forum exists and whom the team is serving.
>
> ✓ Specifically communicate the impact that the person is having, and thank them for it. Without feedback, people may be unaware of the value they are providing, the difference they are making.
>
> ✓ Pass on a tip or lesson learned.
>
> ✓ If the person doesn't have something specific "to do" for the team, get them engaged. Describe what that person can do—something that will make a real and practical difference—and ask them to do it.
>
> ✓ Convey a genuine interest in the person as a person, beyond just their work with the forum. (p. 123)

In an interview in the Dixon et al. text, noted DCoP designer Hubert Saint Onge states that the most effective motivation to participation is when the members recognize that they are building their own practice's knowledge base. He advises DCoP leaders:

> "One of the great sources of motivation for community members is when they see that they are *building a knowledge domain*. When topic leads convert a discussion's main learning points into content, when they create new knowledge objects from conversations or other knowledge objects, they are building the expertise of the community. The community can then have conversations about that new knowledge object, and the knowledge grows even more, it moves forward. When members see this sort of knowledge-building progress, and especially when they have been able to contribute to that progress, they become very motivated. They take pride in building their profession's knowledge domain. So, it is important that community leaders develop this sense of communal knowledge building. (p. 173-174)

Echoing Saint-Onge's emphasis on the role that members' sense of ownership has on their motivation to contribute, Wenger et al (2002) advise that although populating a database is a good way to get members to visit a DCoP, getting them to feel "related and responsible to other community members is a far stronger force for increasing participation" (p. 133).

Finally, DCoP practitioners emphasize efforts to increase trust and reduce risk among potential contributors. Goman (2002) urges facilitators to encourage respect, model openness and honesty, and recognize the value of each person's perspective. Le Moult (2002) commends facilitators not to be too strict in judging contributions. "New members often hesitate to post requests and upload documents for fear of outing themselves as non-experts," she advises. "Accept their contributions and honor them—they will get better!"

The literature on participation in DCoPs is not amenable to simple categorization. A recent attempt to synthesize the factors motivating contributions to online communities into a single model (Tedjamulia, Dean et al. 2005) nonetheless includes nine factors in the model—self-efficacy, intrinsic motivation, need to achieve, trust, system usability, group identity, personal responsibility, personal goals, and commitment, all of which have sub-factors. In Appendix F, I have listed in a table the barriers and motivators to contribution identified in this chapter. There is a remarkable equivalence between factors that have been identified as barriers to participation and factors that have been found or recommended to facilitate participation by contribution.

A laundry list of factors that motivate participation in a DCoP is, of course, not sufficient to design for participation. The theory of motivational crowding informs us that more is not necessarily better when it comes to introducing factors to motivate desired behaviors, because motivational factors can cancel each other out (Osterloh and Frey 2000). Design involves prioritization and consistency, both of which can be supplied by a theoretical framework. The next section will introduce an organizing, theoretical framework that can describe the current state of literature and prescribe the way forward to designing sustainable distributed communities of practice.

Communities of Practice and Identities of Participation

The great interest in designing, implementing, and sustaining distributed communities of practice can be attributed to their potential to unleash the full learning and performance potentials of their members (Wenger, McDermott et al. 2002; Allee 2003; Dixon, Allen et al. 2005; Hildreth and Kimble 2005). A fully participating member of a CoP does not require external incentives to motivate her to share her knowledge and continue to develop her expertise. Because she is invested in a community that she values and that values her, she is simply being herself—acting freely in accord with her identity—when she supports the goals of her community of practice.

Of course, not all members of a large, distributed community of practice will participate fully. In all likelihood, not all of them could. People need their voice to matter, and it is hard for anyone to feel influential if everyone is influential. That is why exceptionally healthy communities tend to spawn sub-communities where members can participate fully and meaningfully around a more specific aspect of the practice (Wenger, McDermott et al. 2002; Dixon, Allen et al. 2005). As discussed earlier in this proposal, a DCoP needs at least some members who are fully invested and who participate fully in the community—who comprise the core group. Why is it that healthy communities of practice grow fractally (Wheatley 1999) while other DCoPs struggle to sustain a minimum core group? Wenger's concept of identity of participation provides an explanation.

In his seminal work *Communities of Practice: Learning, Meaning, and Identity* (1998), Wenger describes his construct of "identity of participation" (p. 56), which refers to how a person views himself in relation to his ability to participate in a particular community. This identity is constitutive of participation. That is, a person is likely to participate in a community consistent with his identity of participation, and his identity of participation is a product of his past participation and his anticipation of future participation. In other words, people choose to engage with other people and activities based on how they view themselves, even as it is engagements with other people and activities that have shaped their current view of themselves ((Jonassen 2000) offers a similar analysis from the perspective of Activity Theory). Identity of participation assumes that people are always in the process of becoming (Wenger 1990), and that who people are and what they do are nearly constitutive of each other, although there always exists human agency.

Identification and Negotiability

Wenger proposes that identities of participation, as well as identities of non-participation, are formed through processes of identification and negotiability. Identification is "the process through which modes of belonging become constitutive of our identities by creating bonds or distinctions in which we become invested" (1998, p. 191). Identification involves identifying as or with something or someone. It is the process of labeling oneself as part of a larger group, e.g., a Baptist, a Penn State fan, or a carpenter. Fundamental to identification is an experience of mutuality, i.e., recognizing something of ourselves in each other, such as shared background, activities, beliefs, or goals. The process of identification defines which meanings matter to people. For example, people who identify themselves as Penn State football fans care whether or not their team wins. People who do not identify themselves as fans do not care.

The second component of identity of participation, negotiability, refers to the degree of control someone has to influence a group. It is "the ability, facility, and legitimacy to contribute to, take responsibility for, and shape the meanings that matter in a social configuration" (p. 197). Negotiability describes a person's sense that her voice matters in a community because her competence is valued, so she in some way shares ownership of the community. Central to negotiability is an experience of efficacy.

In any interaction with a CoP, a person's identity of participation is shaped by the experience (Wenger 1998). If the experience is one of belonging—characterized by terms like inclusion, affinity, solidarity, trust, and acceptance—then identification will increase. If, however, the person experiences marginalization—characterized by terms like exclusion, stereotypes, rejection, and mistrust—then identification will decrease. The process is similar for negotiability. Experiences such as access to people and information, speaking and being heard, having ideas adopted, and sharing responsibilities lead to an increased sense of negotiability. Conversely, experiences of compliance to authority, invisibility, and impotence to effect needed change, perhaps best expressed by environments where people are told, "You're not paid to think," are likely to result in a person's decreased sense of negotiability.

The processes of identification and negotiability can be accomplished through each other. "We tend to identify most strongly with those communities in which we develop the most ownership of meaning," Wenger states (p. 207). Likewise, someone who identifies closely with a community is likely to have relationships that enhance negotiability. Still, the two processes are not necessarily correlated. A junior member of a profession may identify greatly with the community yet have little influence on it, just as an external consultant to a community may have negotiability yet not experience identification.

We are now in a position to see how the identify-of-participation construct can provide conceptual coherence to the literature on generating participation in online communities discussed in the previous section. Tables **3-1** and **3-2** display how the barriers and motivators of contribution to online communities can be grouped in terms of issues of identification and negotiability, respectively.

Table **3-1**

Table **3-1**: *Identity of Participation Construct Subsumes Barriers to Contribution*

<u>Issues of Identification</u>
Fear of appearing self serving
Still learning about group
Shyness about contributing
Distrust of how others will use contribution
Distrust that others will not do their share
Fear of being ridiculed
<u>Issues of Negotiation</u>
Contribution subject to rejection
Lack of confidence in knowledge
Not confident that contributing is appropriate
Have not earned the right to post
Others will make the contribution
DCoP is externally mandated
Not enough time

Table **3-2**

Table 3-2: *Identity of Participation Construct Subsumes Motivators of Contribution*

<u>Issues of Identification</u>
Shared sense of purpose
Concern for reputation in community
Sense of belonging/Feelings of membership
Sense of responsibility to community members
Sense of alignment with community goals
Being recognized as an individual
Relationship with leadership team
Sense of duty to organization/profession
<u>Issues of Negotiability</u>
Self confidence in expertise
Belief that contribution is unique
Respect afforded to every contribution
All contributions welcomed
Individual invitation to contribute from core group
Understanding of DCoP norms
View of knowledge as a public good.
Sense of professional self efficacy
Feelings of Influence

Identity of Participation and Socially Relevant Representations

The congruence between the body of research on motivating participation in online communities and the identity-of-participation framework supports the proposition that designs of DCoPs should pay attention to issues of identification and negotiability. “Design creates fields of identification and negotiability,” says Wenger, “that orient the practices and identities of those involved to various forms of participation and non-participation” (1998, p. 235). The identity-of-participation framework also entails that no engagement between a member and a DCoP is neutral. Every engagement will affect the member’s identity of participation, for better or worse. A challenge for DCoP designers, then, is to support members’ processes of identification and negotiability in as many ways as possible. The purpose of this study is to test one approach to supporting those processes. This section justifies how this study attempts to create fields of identification and negotiability within content in a DCoP using socially relevant representations that act in context as cues of participation.

Socially Relevant Representations

A socially relevant representation (SRR) is any representation that contributes social-context information that is not part of the domain-area information in question (Hoadley and Berman 1995; Hoadley 1999; Hoadley and Kirby 2004). SRRs provide the social cues that are taken for granted in face-to-face interactions but can easily be overlooked in the design of distributed communications.

Until this time, SRRs have been studied only in the context of learning. It is hypothesized that they support learning by motivating learners, serving as mnemonics, aiding contextualized interpretation, and affording perspective taking that is especially helpful in supporting conceptual change (Hoadley and Kirby 2004). This study will be the first known application of SRRs to community building.

The particular set of SRRs that will serve as the experimental treatment in this study I have termed the cues of participation, because they are SRRs chosen for their theoretical link to fostering identities of participation in the context of members of a DCoP.

The SRRs serving as cues of participation in this study are:

- The author of the content is identified as a member of the DCoP
- The author states he is writing specifically for other members of the DCoP
- The text is written in the first-person voice
- The author uses the authentic language of the practice, such as acronyms
- The text includes narrative about practice-related activity
- The text is written in a non-authoritarian tone
- The author invites other perspectives on the topic

Justification of the SRRs Used to Cue Identity of Participation

The author of the content is identified as a member of the DCoP. This SRR supports processes of identification and negotiability. “At the core of processes of identification,” says Wenger, “is the direct experience of mutuality…of recognizing each other as participants" (1998, p. 193). Information in a CoP should have "a view from *someone*: someone in the activity in the context of some practice in the context of some community of practice" (1990, p. 125). Not only does this facilitate identifying with another person, but it also conveys that members are contributors to the community, which can serve as peer modeling to support the member's self efficacy to contribute (Pajares 1995).

The author states he is writing specifically for other members of the DCoP. This SRR supports the process of identification by allowing the members to feel spoken to, as opposed to feeling like voyeurs listening in a conversation meant for others (Wenger 1990). It also fosters a sense of community by directing the message to those within the bounds of the DCoP (Wenger 1998).

The text is written in the first-person voice. This SRR supports identification by making clear that the information comes from a person with whom mutuality (Wenger 1998) is possible. It also conveys negotiability when combined with a non-authoritarian tone.

The author uses the authentic language of the practice, such as acronyms. Shared language is a strong source of identification. Also, authentic language supports negotiability as efficacy by being less intimidating to compose (Kilner 2005b).

The text includes narrative about practice-related activity. Storytelling is very powerful means to identification with both the author and the values espoused by the author (Wenger 1998; Brown and Duguid 2000; Powazek 2002; Brown, Denning et al. 2005). Additionally, the particular, situated perspective of narrative supports negotiability.

The text is written in a non-authoritarian tone. Negotiability involves the permission and ability to make a difference. A non-authoritarian tone conveys that other voices are welcomed (Wenger, 1998, p. 210).

The author invites other perspectives on the topic. Sometimes, the only thing people need is an invitation to contribute (Dixon 2000; Preece 2000; Hoadley and Pea 2002; Dixon, Allen et al. 2005; Kilner 2005). Invitations are the yeast of negotiability.

Results and Lessons from Pilot Study

The pilot study of this research was conducted in the Fall of 2005, on the same population (different sample) as this study—company-level Army officers. The study tested whether or not content in a distributed community of practice could be manipulated to increase factors that are associated with a sustainable DCoP. Using Wenger's (1998) concept of the participation/reification duality of meaning as its theoretical basis, the study used a 2 (concreteness of information) x 2 (similarity of contributor) x 2 (authenticity of voice) factorial design to examine the impact of those factors on community members' sense of identification with the author, self efficacy to contribute their own knowledge, and perceived value of the content. The study found that when high levels of the independent variables were included in content, the CoP members identified more with the authors of the content and had higher self efficacy to contribute their own content to the CoP.

One lesson learned from the pilot study is that the SRRs interact to produce higher levels of identification. Another lesson is that the effects of the variables overlapped each other. The 2x2x2 factorial structure resulted in eight conditions and thus eight unique treatments. This reduced the overall power of the study and conflated the effects of variables. For example, when authenticity-of-voice and concreteness (i.e., narrative) SRRs were present, the participants interpreted similarity in the author, even when that SRR was not present, most likely because someone who tells a story about a practice in the authentic language of the practice presumably must be a member of the practice.

Based on these lessons from the pilot study, in this study there are only two conditions, one of which has the entire set of relevant SRRs that are free to interact, and the other of which has none of those cues of participation and serves as the control.

Chapter 4

Research Design

Introduction

The purpose of this study is to test several hypotheses about relationships involved in fostering participation in distributed communities of practice (DCoPs), using a sample from one DCoP in order to make knowledge claims that are generalizeable to the larger population of other DCoPs. Therefore, a quantitative method was appropriate (Creswell 2003). Moreover, this study sought specifically to test the impact of a treatment on an outcome, so it was appropriate to utilize an experimental design (Creswell 2003). Finally, because I had access to a large sample size, could achieve a random distribution of treatments, and could test for identified possible covariates, a pre-test with its attendant risks to validity was not necessary, so I used a post-test-only design (Krathwohl 1998).

Design

The experimental treatment in the study is the inclusion of a set of socially relevant representations (SRRs) in the textual content of articles relevant to members of a DCoP. This experiment tests whether the presence of the cues of participation increases members' identities of participation (H1), and whether there is a relationship between members' identities of participation and their expressed willingness to contribute their own knowledge as content (H2). Two other hypotheses (H1a, H1b) test the validity of the identity-of-participation construct by examining the effects of cues of participation on the components of the construct, namely members' sense of identification with the community and their sense of negotiability within it.

Figure **4-1**

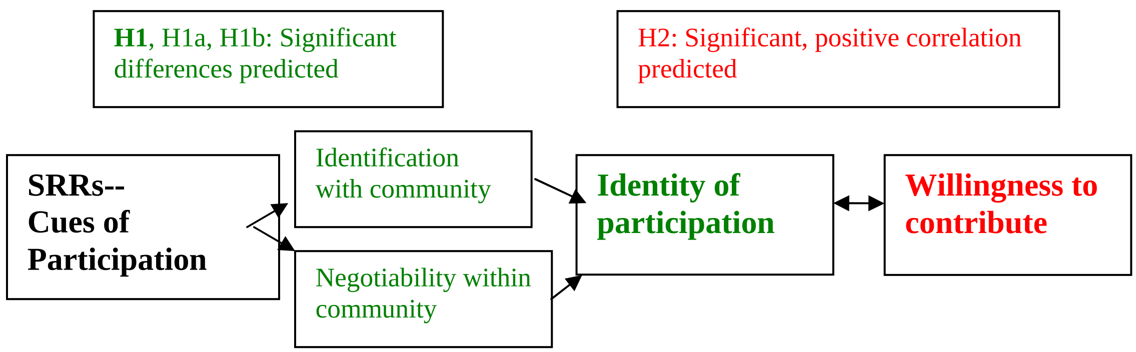


Figure **4-1**: Visual Model of the Hypothesized Relationships

Variables

As Table 4-1 indicates, the independent variable (CUES) is the presence of cues of participation in the treatment content. The values of the dependent variables are the averages of both topics within each treatment. The dependent variables used to test the main hypotheses are the participant's identity of participation (IDPAR) and willingness to contribute (CONTRI). The variable for identity of participation is constructed from four subordinate dependent variables—two that measure the members' sense of identification with the community (IDEN) through the treatment content, and two that measure their sense of negotiability (NEGO) within the community through the treatment content. Participants' levels of prior experience with the topics of the content (EXPER) is controlled for, because the pilot study indicated that a person's experience with a topic has a significant effect on their identification with the author of an article on that topic and with their own sense of self-confidence to contribute their own knowledge to the community (Kilner 2005b).

Tables **4-1** and **4-2** list the variables used in the study, what constructs they represent, what type they are, and how they are measured or constructed.

Table **4-1**

Table **4-1**: *Variables Measured Directly from Responses on Instrument*

Var.	Construct	Type	Operational measure for treatment/instrument
CUES	Cues of Participation	Nominal (2 conditions)	Experimental treatments are authored in first-person by member of DCoP; written for members of DCoP; written in authentic language of CoP; include narrative; use non-authoritative tone; invite other contributions.
IDauth	Sense of ID with the author	Interval; measured with Likert-like scale	To what extent do you identify with the author of this article?
IDactiv	Sense of ID with the activity	Interval; measured with Likert-like scale	How likely is it that you could face a situation similar to the one that is addressed in this article?
NEcomm	Sense of negotiability with community	Interval; measured with Likert-like scale	To what extent do you think this article invites other perspectives on the issue?
NEauth	Sense of negotiability with author	Interval; measured with Likert-like scale	To what extent are you inclined to give feedback of any kind to this author?
Contri	Willingness to contribute	Interval; measured with Likert-like scale	How willing are you to contribute, now or in the future, your own knowledge or experiences via an article like this one to a professional forum of company-level officers?
Value	Value of the article	Interval; measured with Likert-like scale	How valuable is this article to you?
Exper	Prior experience with topic	Interval; measured with Likert-like scale	How much personal experience do you have with this topic?
CCpart	Participation on CC or PL	Interval; measured with Likert-like scale	To what extent do you participate in the CompanyCommand or PlatoonLeader professional forums?
OLpart	Participation on other OLCs	Interval; measured with Likert-like scale	To what extent do you participate in other online communities (e.g., list-serves, yahoo groups)?

Table 4-2,

Table 4-2: *Variables Constructed Arithmetically from Other Variables*

Var.	Construct	Operational measure for treatment/instrument
sIDauth	Identification with author, across topics	(IDauth in translator content+ IDauth in death content) / 2
sIDactiv	Identification with activity, across topics	(IDactiv in translator content+ IDactiv in death content) / 2
sNEcomm	Negotiability with community, across topics	(NEcomm in translator content + NEcomm in death content) / 2
sNEauth	Negotiability with author, across topics	(NEauth in translator content + NEauth in death content) / 2
EXPER	Prior experience with topics, across topics, overall	(Exper in translator content + Exper in death content) / 2
VALUE	Perceived Value of Content, across topics, overall	(Value in translator content + Value in death content) / 2
IDEN	Identification overall	(sIDauth + sIDactiv) / 2
NEGO	Negotiability overall	(sNEcomm + sNEauth) / 2
IDPAR	Identity of Participation overall	(IDEN + NEGO) / 2
CONTRI	Willingness to Contribute, overall	(Contri in translator content + Contri in death content) / 2

Participants

Participants in the study are commissioned officers in the United States Army assigned to resident schools at either Fort Wood, MO; Fort Benning, GA; or Fort Knox, KY. The schools participating are the U. S. Army's Military Police, Chemical, Engineer, Infantry, and Armor schools. Almost all participants are company-grade officers in the rank of lieutenant or captain attending their branch-specialty Officer Basic Course or Captains' Career Course. A small number of their instructors also chose to participate. I gained access to the students by using my social network within the Army, which included instructors at all of the schools.

The sample is representative of the cohort of company-level officers in the U.S. Army, which is roughly 80% male and evenly split between combat-arms and combat-support specialties. The participants are also representative of the membership of the *CC* and *PL* DCoPs, with 92% of the participants identifying themselves as registered members of at least one of them, although the majority of the participants (56%) also report that they rarely log onto the sites.

Table **4-3**

Table 4-3: *Demographics of Participants*

(N = 404)

Military rank	2nd lieut	1st lieut. or Capt.	Maj. or Lt. col.
	(n = 212)	(n = 184)	(n = 8)
Age	18-24	25-29	30 or older
	(n = 103)	(n = 173)	(n = 113)
Specialty	Combat Arms	Combat Support or Service Support	
	(n = 204)	(n = 197)	
Sex	Male	Female	
	(n = 351)	(n = 43)	

Data-Collection Procedures

Participation in the study was voluntary. During instructional time, the instructors introduced me and gave me the opportunity to describe my research. I told the students that I was interested in learning how to develop and present information more effectively for the *CompanyCommand* and *PlatoonLeader* forums. I did not mention the variables of interest, so as not to prejudice their responses. I then gave the students the opportunity either to take a 30-minute break or to participate in the study, which I told them would take about 20 minutes, and then enjoy a shorter break. The great majority of students chose to participate.

The participants received either the control packet or the experimental packet. The packets were distributed in an order determined previously by a random-number generator. In all, 405 officers participated, with 208 reading and responding to the control treatment, and 197 to the experimental treatment. The size of the groups taking the study at any one time ranged from 8 to 62; the typical sample was a platoon-size element of 20-30 students. Forty-three of the participants provided a total of fifty-three voluntary written feedback comments in the areas provided in the packets (See Appendices C and D for the comments). Ninety-two percent of the participants reported that they either learned something from the study (n=97), were happy to help with it (n=40), or both (n=241); only 1% (n=5) reported that their participation in the study was a waste of their time.

Most participants who participated in the study were in classroom environments and recorded their responses on optical test score sheets. However, approximately 100 participants were outdoors. I allowed them to record their responses on the instrument itself by circling their responses. Later, I transcribed their responses onto scan sheets.

Materials

Treatment

I developed the study's control and experimental treatments, both of which were measured using the same instrument (see Appendices A and B, respectively). Each treatment was comprised of two, distinct, one-page articles on two different topics. In the control packets, the articles were written without the cues of participation. In the experimental packets, the articles were embedded with the cues. Each article was followed by the same seven questions of the measurement instrument. Together, each set of treatment articles and their corresponding measurement instruments comprised a packet. Demographic information on the participants was also collected.

The six-page packets, then, consisted of, in order: a cover sheet; an article on using a local-national translator for military operations in Iraq; an instrument to assess the participant's responses to the translator article; an article on dealing with the death of a soldier; the same instrument to assess the participant's responses to the death-of-a-soldier article; and, finally, questions to collect demographic and possible covariate information. The substance of the articles on each respective topic for the control and treatment groups was as identical as possible. The only distinction between the two versions of the treatments was that the articles in the experimental version were embedded with the experiment's independent variable whereas the control treatment's articles lacked the cues of participation. The order of the topics was the same in all packets.

Two different topics were used in the treatments to increase the study's internal validity. In the pilot study, only one topic (use of a local-national translator) had been used, and one challenge to its validity was the possible role of subject-matter in affecting the measures. With the dependent measures gathered from responses to two distinct and unrelated areas of content, the study could claim more confidently whether any variance in the dependent variables was due to the effect of the independent variable and not due to any confounding factors in the domain-area content of the articles.

The topics of the treatments' articles were selected also to provide value to the participants. This accomplished two purposes. First, it served the interests of the participants, and as a representative of the leadership of the *CompanyCommand* and *PlatoonLeader* forums, I felt obligated to adhere to our ethic of service to our members. Second, high-quality content also supported the internal validity of the study. In actual practice, participation in *CC* or *PL* is totally voluntary. Members read only what they choose to read; they are self motivated and self regulated. To replicate that experience in my study, I had to offer them content that they would have been motivated to read even if they were not obligated to read it for the study.

Choosing the topics to include in the study's articles involved a familiar process. As part of my role as a content editor for the *CompanyCommand* and *PlatoonLeader* communities, I routinely identify information needs that are not currently being met by the formal Army education system, and then I try to leverage the knowledge of the community members themselves to meet their own needs. Based on observations of online discussion on those forums, in late 2005 I identified requirements among company-level officers for them to know more about how to use local-national translators on military operations and how to respond to combat deaths in their units. Then, based on focused conversations and email exchanges with numerous officers who had experience in the topic areas, I developed a set of learning points, which I then scripted into the two versions of the treatment. While planning the study, I sent the articles to several company-level officers, including those who had experience with the topics and those who did not, to get their feedback on the quality of the content and the usability of the treatments. I had also used the translator article in my pilot study (n=162) conducted with Army company-level officers at Fort Lee, VA, in December, 2005, and no issues of the treatment's validity or value arose in that study. For an account of how the information for the death-of-a-soldier treatments was developed, see Appendix G.

Measurement instrument

The measurement instrument was the same in both treatments. After each treatment article, participants were asked to respond to seven likert-style questions to provide data for the covariate and dependent variables. The first question asked the participants to report on their prior experience with the topic of the article. The second question measured the value that the participants judged the article to provide. The third and fourth questions measured the participants' identification constructs—the extent to which they identified with the author and activity, respectively, of the article. The fifth and sixth questions measured the participants negotiability constructs in relation to the article—the extent to which they felt that their voice was welcomed by the community and by the article's author, respectively. Finally, the seventh question after each article measured the participants' self-reported willingness to contribute, now or in the future, to the community of practice that provided them the articles. Table 4-1 lists the questions related to the treatments.

Table **4-4**

Table **4-4**: *Questions Asked to Measure Participants' Responses to the Treatments*

1. How much personal experience do you have with this topic?

2. How valuable is this article to you?

3. To what extent do you identify with the author of this article?

4. How likely is it that you could face a situation similar to the one that is addressed in this article?

5. To what extent do you think this article invites other perspectives on the issue?

6. To what extent are you inclined to give feedback of any kind to this author?

7. How willing are you to contribute, now or in the future, your own knowledge or experiences via an article like this one to a professional forum of company-level officers?

The final page of the packets collected data that was unrelated to the articles. Two likert-style questions measured the participants' self-reported experience with distributed communities. One measured their levels of participation on either the CompanyCommand or PlatoonLeader DCoPs, and the other measured their participation in any other online communities. These factors would be tested against the data as possible covariates to identity of participation or willingness to contribute.

Demographic data was collected as multiple-choice categories to assess the representativeness of the sample—the participants' gender, age, rank, and branch specialty. Finally, the participants were asked to report on their experience of the study—whether it had been a learning experience, something they were happy to do, neither, or both. The purpose of their final question was to recognize the participants as individuals, to give them a way for their experience to be heard, to demonstrate my concern for providing value to them, and to assess my own performance at providing them high-quality content. Table 4-5 lists these questions.

Table **4-5**

Table **4-5**: *Questions Asked to Measure Potential Covariates and Record Demographic Information*

15. To what extent do *you participate* in the CompanyCommand or PlatoonLeader professional forums?

16. To what extent do you participate in *other online communities* (e.g., list-serves, yahoo groups)?

17. What is your gender?

18. What is your age?

19. What is your rank?

20. How is your branch categorized?

21. Final question: Now that it's over, what do you think of participating in this study?

Data Analysis Procedures

Analysis of covariance (ANCOVA) was the appropriate statistical procedures to test three of this study's four hypotheses (H1, H1a, H1b). ANCOVA is used to determine whether or not there is a statistically significant difference between the control and experimental conditions in the outcomes of the respective dependent variables, controlling for any covariates.

A partial correlation test was used to determine and measure the hypothesized, non-causal relationship between identity of participation and willingness to contribute (H2), controlling for the covariate.

To develop a more robust understanding of all the relationships between the variables, correlations were measured between all of the dependent variables that were measured on a likert-type scale. The results of the correlations gave rise to more tests. Correlations were run separately for the control and experimental conditions, and with and without experience as a covariate. To gain better insight on the data, a nominal variable was created—level of experience, with high and low levels—and tests were run with level of experience as a fixed condition. To gain insight on the generalizability of the results over different content areas, separate ANCOVAs were run on the separate topics—use of a translator and death of a soldier. Finally, to identify variables predictive of the main construct of interest, willingness to contribute, a multiple regression was run.

Testing the data against the assumptions for parametric statistical tests

Both ANCOVA and bivariate correlation are parametric tests that include claims of statistical significance and thus are based on certain assumptions about the data. For the tests to be accurate, the dependent variable must be measured on an interval scale, observations must be independent, data must be from a normally distributed population, and variances in each condition must be fairly similar (Field 2005). In this study, all of the dependent variables were measured on interval scales, and independence of observations (i.e., participants' responses) was not at risk.

To test for normal distribution, descriptive statistics were tabulated and plotted as histograms along with normality plots. Then, the Kolmogorov-Smirnov and Shapiro-Wilk tests were run to compare the distribution of dependent variables within each condition to those expected in a normal distribution. A Normal Q-Q Plot was also run to compare the data converted to z-scores with that expected in a normal distribution. The homogeneity of variance was tested first by using Levine's Test and then by examining the ratio of variances between the groups with the largest and smallest variances. A Brown-Forsythe F-ratio, which calculates statistics differently to account for heterogeneity of variances, was also run to compare its results with ANCOVA.

Finally, ANCOVA requires homogeneity in regression slopes to insure that the covariate affects both the control and experimental groups similarly (Field 2005). This was tested by observing scatter plots between conditions and the covariate, by comparing the regression lines between conditions and the covariate, and by testing for an interaction effect between the condition and covariate.

Chapter 5

Results

Introduction

This chapter reports the results of data analyses conducted to test this study's hypotheses. All of the data analysis is conducted using the Statistical Package for the Social Sciences (SPSS, version 13.0).

Assumptions of Parametric Tests

Normality of Distribution

Histograms show the data to be fairly normal, although both identity of participation and willingness to participate, under both conditions, are mildly bi-modal around their means. Q-Q plots of normality indicate that most plotted values for all groups were on the 45-degree line, an indication that they are approximately normally distributed. The Kolmogorov-Smirnov and Shapiro-Wilk tests both indicate that, with the exception of the identity of participation control group, the groups are not normally distributed. However, one limitation of these tests is that they are very sensitive to large sample sizes (Tabachnick and Fidell 2001; Field 2005). A preliminary analysis of the data, comparing descriptive results with inferential ones, indicates consistency. For example, where correlation tests indicate a relationship between variables, so do the corresponding scatter plots. Given the demonstrated robustness of ANCOVA and the correspondence between parametric and non-descriptive analyses, it is appropriate to accept the assumption of normality of distribution.

Homogeneity of Variances

The assumption of homogeneity of variances is also met. Although Levine's test for unequal variances shows unequal variances, the variance ratio between the highest and lowest variances among the groups is less than 4:1, which falls within acceptable limits (Tabachnick and Fidell 2001). The near equality of group/cell sizes also serves to limit any effects of unequal variances. Preliminary comparative analyses of the data using the more conservative Brown-Forsythe and Welch tests produce results that correspond to regular ANOVA tests, indicating an acceptable homogeneity of variances (Field 2005).

Homogeneity of Regression Slopes

Analysis indicates no statistically significant interaction between the covariate, experience, and the dependent variables across groups, so the requirement for homogeneity of regression slopes is met.

Preliminary Data Analysis

Table 5-1 presents an overview of the central tendency of the dependent variables. In the experimental condition, the mean values are generally higher, with the exception of identification with the activity, value and, willingness to contribute. The standard deviations are generally larger in the control condition.

Table 5-1

Table 5-1: *Means Values of Dependent Variables, by Condition*

	Control		Experimental	
Variable	*M (1-5)*	*SD*	*M*	*SD*
Identification with author	3.06	.93	3.13	.81
Identification with activity	4.02	.67	3.99	.59
Identification	3.54	. 64	3.55	.55
Negotiability with community	2.80	.98	3.51	.69
Negotiability with author	2.68	.99	2.76	.93
Negotiability	2.74	.84	3.13	.67
Identity of participation	3.14	.62	3.35	.48
Value of content	3.75	.71	3.68	.66
Willingness to contribute	3.64	.86	3.47	.92

Tests of Hypotheses

Effects of Cues of Participation on Identity of Participation

H1, that there is a significant difference between the impact of content embedded with cues of participation (CUES) and content without those SRRs on the members of a distributed community of practice's identities of participation, is supported by the data.

The covariate, participant's prior experience with the topic, is significantly related to the participant's identity of participation, $F(1, 401) = 7.879$, $p < .01$. There is also a significant effect of CUES on identity of participation, $F(1, 401) = 14.443$, $p < .001$.

Table **5-2**

Table **5-2**: *Analysis of Covariance for Identity of Participation*

Condition	*n*	*M (1-5)*	*SD*
Control	207	3.13	.62
Experimental	197	3.35	.48

Source	*df*	*F*	*r*
		Between subjects	
Experience (co-variate)	1	7.879***	.14
CUES	1	14.443***	.19

Note. ***p < .001

Effects of Cues of Participation on Identification

H1a, that there is a significant difference between the impact of content embedded with cues of participation (CUES) and content without those SRRs on the members of a distributed community of practice's sense of identification with the community, is not supported by the data.

The covariate, participant's prior experience with the topic, is significantly related to the participant's sense of identification with the community, $F(1, 401) = 36.00$, $p < .001$. However, CUES, after controlling for the covariate, are not significantly related to members' sense of identification with the community, $F(1, 401) = .031$, $p > .05$.

Table **5-3**

Table **5-3**: *Analysis of Covariance for Sense of Identification*

Condition	*n*	*M (1-5)*	*SD*
Control	207	3.54	.64
Experimental	197	3.55	.55

Source	*df*	*F*	*r*
	Between subjects		
Experience (co-variate)	1	36.00***	.28
CUES	1	0.031	.00

Note. ***p < .001

Effect of Cues of Participation on Negotiability

H1b, that there is a significant difference between the impact of content embedded with cues of participation (CUES) and content without those SRRs on the members of a distributed community of practice's sense of negotiability in the community, is supported by the data.

The covariate, participant's prior experience with the topic, is not significantly related to the participant's sense of negotiability with the community, $F(1, 402) = .16$, $p > .05$. However, CUES, after controlling for the covariate, are significantly related to participants' sense of negotiability in the community, $F(1, 402) = 28.81$, $p < .001$.

Table **5-4**

Table **5-4**: *Analysis of Covariance for Sense of Negotiability*

Condition	*n*	*M (1-5)*	*SD*
Control	207	2.73	.84
Experimental	198	3.13	.67

Source	*df*	*F*	*r*
		Between subjects	
Experience (co-variate)	1	0.16	.00
CUES	1	28.81***	.26

Note. ***p < .001

Relationship between Identity of Participation and Willingness to Contribute

H2, that there is a significant relationship between members' identities of participation and their expressed willingness to contribute their own knowledge or experience to their distributed community of practice, is supported by the data.

There is a positive relationship, controlling for their prior experience with the topics, between a person's identity of participation and their expressed willingness to contribute to their community of practice, now or in the future, $r = .38$, p (one-tailed) < .001. The relationship is stronger in the experimental condition, $r = .47$, p (one-tailed) < .001 than in the control condition, $r = .35$, p (one-tailed) < .001 The scatter plot in Figure 5-1 illuminates the relationships between condition, identity of participation, and willingness to contribute.

Figure **5-1**

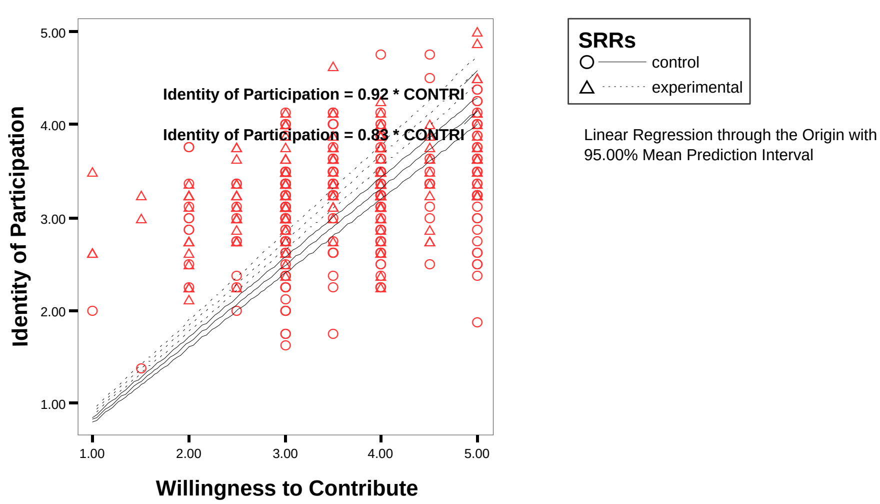


Figure **5-1**: Scatter Plot of Identity of Participation and Willingness to Contribute

Unplanned Post-Hoc Analyses

The analyses of the hypotheses provided so far answers this study's questions. However, the data is so rich that I chose to conduct unplanned post-hoc analyses to interrogate the data more completely and gain more insight from it.   In this section, I report the results of the additional analyses that are most relevant to my initial questions.

Effect of Cues of Participation on Willingness to Contribute

Given that cues of participation in content lead to increased identities of participation, and given that identities of participation relate positively with willingness to contribute, an ANCOVA was run to test whether socially relevant representations lead to an increased willingness to contribute. As Table 5-5 indicates, SRRS do not increase members' willingness to contribute, although the covariate experience does affect it.

Table **5-5**

Table 5-5: *Analysis of Covariance for Willingness to Contribute*

Condition	*n*	*M (1-5)*	*SD*
Control	207	3.64	.86
Experimental	198	3.47	.92

Source	*df*	*F*	*r*
		Between subjects	
Experience (co-variate)	1	10.00**	.45
CUES	1	3.58	.18

Note. ***p < .01***

Predictive Effects of Variables on Willingness to Contribute

This study was not designed to look at predicting willingness to contribute from the individual variables that were manipulated by the treatments and measured by the instruments. Still, a multiple regression analysis can examine those relationships. The analysis indicates that four variables—the perceived value of the content, sense of negotiability with the author, sense of identification with the activity, and inverse level of experience—account for 25% of the variation in willingness to contribute, $p < .001$.

Table 5-6

Table 5-6: *Summary of Simultaneous Multiple Regression Analysis for Variables Predicting Willingness to Contribute* (*N = 402*)

Variable	*B*	*SE B*	β
Constant	1.07	.31	
Value of Content	.28	.07	.22***
Negotiability w/ Author	.23	.05	.25***
Identification w/ Activity	.28	.07	.20***
Experience with topics	-.10	.04	-.11*

Note: $R^2 = .25$. *$p < .05$, ***$p < .001$

Effect of Cues of Participation on Perceived Value of the Content

Given the effect of perceived value of the content on participants' willingness to contribute, an ANCOVA was run to test whether cues of participation (CUES) make a significant difference on the value that participants perceive from content, controlling for the effects of their experience.

The covariate, participant's prior experience with the topic, is significantly related to the value the participants ascribed to the content, $F(1, 401) = 37.505$, $p < .001$. However, there is no significant effect of CUES, after controlling for the effect of prior experience, on the value that participants ascribed to the content, F(1, 401) = .805, p > .05.

Table 5-7

Table 5-7: *Analysis of Covariance for Perceived Value of Content*

Condition	*n*	*M (1-5)*	*SD*
Control	206	3.75	.71
Experimental	198	3.68	.66

Source	*df*	*F*	*r*
		Between subjects	
Experience (co-variate)	1	37.51***	.29
CUES	1	0.35	.02

Note. ***p < .001

Impacts of Prior Participation in the Online Communities

Correlation tests were run to measure the effects of participants' levels of prior and current participation in online communities. A statistically significant relationship exists between participation in the *CompanyCommand* or *PlatoonLeader* (*CC/PL*) forum and participation in other online communities, r = .28, p < .001.

However, the relationships between prior participation in *CC/PL* or other online communities and the dependent variables are few and weak. Participation on *CC/PL* is found to correlate to identification with the author, r = .16, p < .01, while participation on other online communities is related significantly only to participants' sense of negotiability with the author, r = .13, p < .01.

No Differences by Gender

ANCOVA were run to test for differential effects of the treatments on the dependent variables by gender. There are no statistically significant differences between the way that male and female participants responded to the treatments.

Relationships among Dependent Variables

The interrelatedness of the constructs in this study invite a closer look at all their interrelationships. Partial correlation tests were run on all the variables in the study, accounting for the effects of participants' prior experience with the topics. Bivariate correlations were also run between experience and the other variables. Because the purpose of this study is to identify the effects of the experimental treatment, and because there are considerable differences in many of the relationships between the control and experimental conditions, the correlations are reported separately, by condition.

Table 5-8

Table 5-8: *Correlations Between Variables*

Control Condition (no Cues)

	ID auth	ID activ	IDEN	NE comm	NE auth	NEGO	ID PAR	VALUE	CONTRI	EXPER
ID auth	1	.23**	.85***	.323***	.44***	.44***	.73***	.40***	.20**	.27**
ID activ	.24**	1	.71***	.08	.23**	.19**	.49***	.37***	.28***	.07
IDEN	.85***	.71***	1	.27***	.44***	.42***	.79***	.49***	.29***	.23**
NE comm	.32***	.08	.27***	1	.46***	.86***	.71***	.26***	.22**	-.12
NE auth	.44***	.23**	.44***	.46***	1	.86***	.80***	.27***	.30***	.08
NEGO	.44***	.19**	.42***	.85***	.85***	1	.89***	.31***	.31***	-.02
ID PAR	.73***	.48***	.79***	.71***	.80***	.89***	1	.46***	.35***	.11
VALUE	.40***	.37***	.49***	.26***	.27***	.31***	.46***	1	.34***	-.31***
CONTRI	.20**	.28***	.29***	.22**	.30***	.31***	.35***	.34***	1	-.23***
EXPER	.27**	.07	0.23**	-.12	.08	-.02	.11	-.31***	-.23***	1

Experimental Condition (with Cues)

	ID auth	ID activ	IDEN	NE comm	NE auth	NEGO	ID PAR	VALUE	CONTRI	EXPER
ID auth	*	.18**	.83***	.11	.14*	.16*	.57***	.19**	.04	.37***
ID activ	.18**	*	.70***	.33***	.17**	.29***	.58***	.31***	.36***	.70***
IDEN	.83***	.70***	*	.26***	.21**	.28***	.74***	.31***	.25***	.36**
NE comm	.11	.33***	.27***	*	.35***	.76***	.68***	.42***	.34***	-.09
NE auth	.14*	.17**	.21**	.35***	*	.88***	.73***	.30***	.44***	.04
NEGO	.15*	.29***	.28***	.76***	.88***	*	.86***	.43***	.49***	-.02
ID PAR	.57***	.58***	.74***	.68***	.73***	.86***	*	.47***	.47***	.19***
VALUE	.19***	.31***	.31***	.42***	.30***	.43***	.47***	*	.32***	-.27***
WILLING	.04	.36***	.25***	.34***	.44***	.48***	.47***	.32***	*	-.08
EXPER	.37**	.16	.36***	-.09	.04	-.02	.19**	-.27***	-.08	*

Grouping Participants by Level of Experience

The discrepancy in the correlations between the participants' experience-and willingness to contribute in the control (r =.-.23, $p < .001$) and experimental conditions ($r = -.08$, $p > .05$) warranted further analysis. I transformed the interval data of the experience variable into a new nominal variable—level of experience. Mean scores for experience of 1-2.99 (*no experience* to *some experience*) equated to a low level of experience, and mean score for experience of 3.0-5 (*some experience* to *a wealth of experience*) equated to a high level of experience. Among the participants, 72% (n = 291) fell into the low-experience group, and 28% (n = 114) qualified as high experience. Splitting the sample in this manner enabled the relationships between condition, level of experience, and willingness to contribute to be seen with greater clarity.

Willingness to Contribute, by Level of Experience

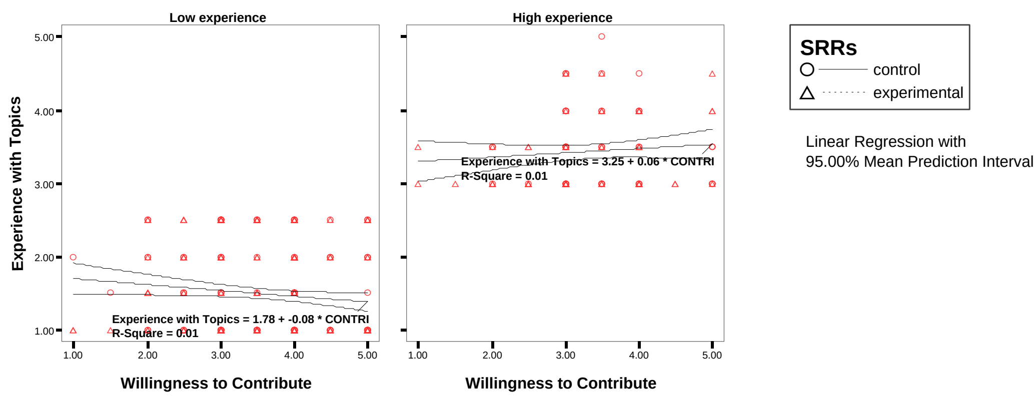
In terms of willingness to contribute, those with low levels of experience are more willing to contribute than those in the high-experience group. On average, participants with low levels of experience express a greater willingness to contribute (M = 3.63, SE = .05) than participants with high levels of experience (M = 3.35, SE = .08). This difference is statistically significant $t(403) = 2.90$, $p < .01$, with a small effect size of r = .14.

In the control condition, the difference is significant (*M* = 3.72, *SE* = .07, compared to *M* = 3.43, *SE* = .10, *t*(204) = 3.79, *p* < .001) with a medium effect size, *r* = .25, but in the experimental treatment (*M* = 3.55, *SE* = .05, compared to *M* = 3.26, *SE* = .09, t(196) = 3.20, *p* > .05), there is no statistically significant difference in willingness to contribute between high and low experience members.

When it comes to willingness to contribute, then, the CUES make a difference to those with low experience, causing them to be less willing to contribute, but the presence of those SRRs cause no difference in willingness to contribute among those with high levels of experience.

Figure 5-2 illustrates the difference in the relationships of level of experience and willingness to contribute between participants with low levels of experience and those with high levels of experience. Variance is greatest (*SD* = .94) among those with high levels of experience who responded to the experimental condition, as the triangle icons on the left and right extremes indicate.

5-2



5-2: Scatter Plots of Experience and Willingness to Contribute, by Level of Experience

Table 5-9 illustrates how the relationships between other variables and willingness to contribute differ by treatment condition and participant's level of experience. The relationship between experience and willingness to contribute within each group is noteworthy.

Among participants with minimal experience who are in the control condition, there is a statistically significant, negative correlation (r = -.22, p < .01) between experience and willingness to contribute. Alternately, among participants with significant experience who are in the experimental condition, there is a statistically significant, positive correlation (r = .27, p < .05) between experience and willingness to contribute. The low-experience/experimental and high-experience/control groups have very small, statistically insignificant correlations. Table 5-9

Table 5-9: *Correlations of Variables with Willingness to Contribute, by Condition and Level of Experience*

Control Condition

	Low level of experience	High level of experience
	Willingness to contribute	
Identification	.31**	.15
Negotiability	.31**	.26*
Identity of Participation	.36**	.27*
Value	.39**	.28*
Experience	-.22**	-.11

Experimental Condition

	Low level of experience	High level of experience
	Willingness to contribute	
Identification	.24**	.33*
Negotiability	.51**	.39**
Identity of Participation	.48**	.44**
Value	.38**	.11
Experience	-.01	.27*

Note: *p < .05, **p < .01.

Perceptions of Value, by Level of Experience

In terms of perceiving value in the content, those with low levels of experience find the content to be more valuable to them than those in the high-experience group. On average, participants with low levels of experience perceive greater value from content (M = 3.82, SE = .04) than participants with high levels of experience (M = 3.46, SE = .06). This difference is statistically significant $t(402) = 4.94$, $p < .001$, with a medium effect size of $r = .24$.

This difference exists in both the control treatment (M = 3.87, SE = .06, compared to M = 3.47, SE = .09, $t(204) = 3.79$, $p < .001$), and in the experimental treatment (M = 3.77, SE = .05, compared to M = 3.44, SE = .09, t(196) = 3.20, $p < .01$).

When it comes to perceiving value in content, then, a participant's prior experience level has a greater effect than does the presence or absence of the cues of participation.

No Interaction Effect between SRRs and Level of Experience on Identity of Participation

Although a member's prior experience with a topic is statistically significant as a covariate, there is no statistically significant interaction effect between the condition and experience on identity of participation. A two-way ANOVA found that there was no significant interaction effect, F(1, 403) = .027, $p = .87$, $r = .00$.

Comparisons of the Translation and Death-of-Soldier Treatments

The subject matter of the two topics addressed in the treatments is very different. Using a local-national translator is a business task, whereas dealing with the death of one of your soldiers is inherently emotional and personal. Emotional context is a form of SRR (Hoadley and Kirby 2004). To investigate whether the two different types of subject matter lead to different effects from the embedded CUES, ANCOVA was run on each topic for each major hypothesis, controlling for the participant's experience with the particular topic.

In the death-of-a-soldier treatments, there are no significant differences on any of the hypotheses. The emotion-laden subject-matter of the information appears to have acted as an SRR. The less-emotional translator treatments provide the margin of difference that give the combined constructs their significant effects on H1 and H1b. Table **5-10**

Table **5-10**: *Comparisons of Treatment Effects in Different Subject Matters*

	Translator			Death of Soldier		
	Mean			Mean		
	Control	Exper	*F*	Control	Exper	*F*
H1 (IDPAR)	3.03	3.40	30.895***	3.23	3.29	1.070
H1a (IDEN)	3.55	3.67	1.237	3.53	3.45	0.725
H1b (NEGO)	2.51	3.13	53.701***	.94	3.13	4.246
H3 (VALUE)	3.53	3.47	0.078	3.97	3.89	1.252

Note. ***p < .001

An Unplanned Measurement of Actual Contributions, by Condition and Subject Matter

After each article in the treatments, at the end of the multiple-choice questions, the measurement instrument read, “If you have any comments you would like to add about this article or the questions above, please do so here:” Forty-four of the participants voluntarily wrote a total of fifty-three comments. No attempt is made to analyze the comment qualitatively, but the distribution of condition/subject-matter articles that inspired written feedback is interesting.

Table **5-11**

Table **5-11**: *Number of Voluntary Written Feedback Comments*

	Subject Matter	
Condition	Translator	Death of Soldier
Control	18	14
Experimental	14	7

The more SRRs in the treatment, in both subject matter and writing style, the less likely the participants were to provide feedback on it.

Summary of Findings

1) Cues of participation in content increase members' identities of participation, controlling for members' experience.
2) Cues of participation in content increase members' sense of negotiability in a community, controlling for members' experience.
3) Cues of participation in content have no effect on members' sense of identification with the community, controlling for their experience.
4) Cues of participation have no direct effect on members' stated willingness to contribute.
5) Cues of participation have no effect on the value that members perceive from content.
6) There is a medium, positive relationship between a member's identity of participation and willingness to contribute content.
7) Members' sense of negotiability with the author, perceived value in the content, sense of identification with the activity, and relative inexperience account for 25% of their willingness to contribute.
8) The more experience members have with a topic, the more they identify with the author of an article on that topic.
9) Members' experience has no effect on their sense of negotiability.
10) Members' experience does affect their willingness to contribute. Overall, the less experience a member has, the more willing they are to contribute.

11) Members' experience does have an effect on the value they perceive. The less experienced they are with the topic of the content, the more valuable they perceive the content to be.

12) Members with low experience perceive the content to be more valuable and are more willing to contribute than members with high levels of experience, regardless of cues.

13) Among those with low experience, cues of participation decrease their willingness to contribute.

14) Among those with high experience, cues of participation have no significant effect on their willingness to contribute, but there is a positive correlation between their experience and willingness to contribute.

15) Levels of members' participation in CC/PL have a small-to-medium correlation with their levels of participation in other online communities.

16) Gender is not a statistically significant factor when measuring the effects of the cues of participation on identity of participation or willingness to contribute.

Chapter 6

Discussion of Results and Recommendation for Future Research

Major Relationships Tested in the Study

Cues of Participation, Identity of Participation, and Willingness to Contribute

The purpose of this research is to determine whether socially relevant representations embedded into content in a DCoP will increase members' identities of participation and consequently their willingness to contribute their own knowledge to their community. Expressed as a logic equation, A > B >< C, where A = cues of participation, B = identity of participation, and C = willingness to contribute. The unstated conclusion is that, if the relationships hold, then A > C.

According to the results of this study, A does indeed lead to B. There is a statistically significant difference in identity of participation between those who read the content embedded with cues of participation and those who read similar information without those socially relevant representations (SRRs). Those exposed to the cues report higher levels of identity of participation. See Table 5-2.

Moreover, the results indicate the B >< C. There is a medium-sized, positive correlation between identity of participation and willingness to contribute. See Figure 5-1.

Yet, A does not lead to C. See Table 5-5. The presence of cues of participation in content does not lead to an increased willingness to contribute. Mathematically, this is not an issue. The positive correlation between identity of participation and willingness to contribute refers only to each participant's position relative to each of the construct's mean values, not to the relationship between the two means themselves. See Table 5-5 and Figure 5-1.

Still, the lower mean value for willingness to contribute is evidence that there are factors not measured in this study that acted as barriers to participants' expressed willingness to participate despite their identities of participation. As discussed in Chapter 3, a member's self-efficacy for writing (Kilner 2005b) and understanding of the norms for contributing (Ardichvilli, Page et al. 2003) also affect willingness to contribute, yet those factors are not addressed by this study's treatment.

Figure 6-1 proposes a more complete graphic of the factors affecting contribution that is consistent with the findings of this study and the literature. The cues of participation in this study were not selected to increase a member's sense of self efficacy, although the pilot study (Kilner 2005b) did show that a hybrid combination of SRRs in a treatment —conversational tone combined with an abstract-bulleted presentation of information—can increase participants' self efficacy to contribute. Similarly, the treatment did not include information addressing the norms within the DCoP for contributing.

Figure **6-1**

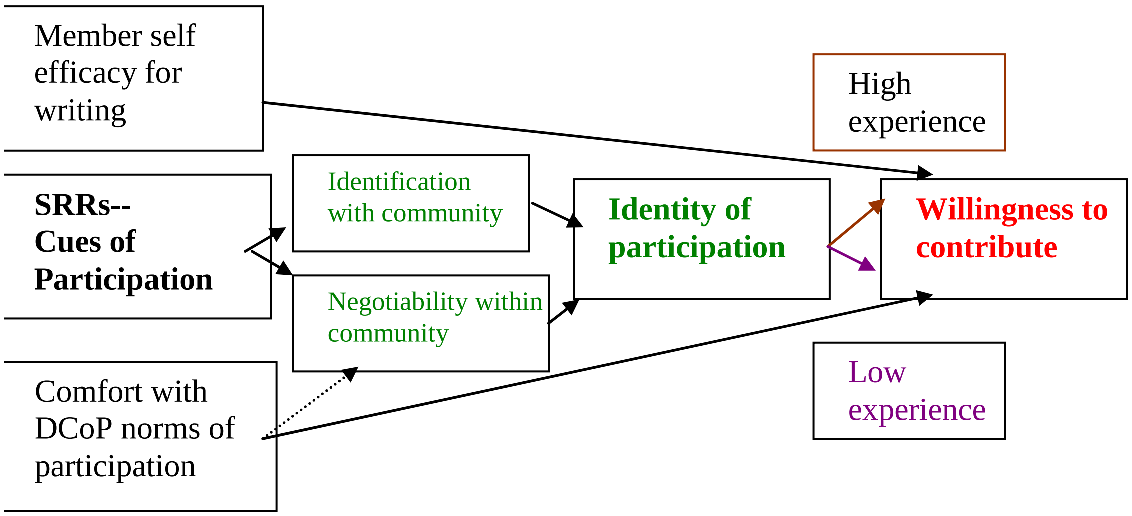


Figure 6-1: Updated Visual Model of Factors Affecting Participation by Contribution

Evaluating the Identity-of-Participation Construct

Another finding of this study is that the identity-of-participation construct, which is operationalized from theory for the first time in this study, measures what it is designed to measure. The construct produced the hypothesized relationships on both sides of the equation. On the left, the presence of cues of participation in content resulted in higher levels of identity of participation; on the right, identity of participation related positively with willingness to contribute. In fact, the identity-of-participation construct correlated more strongly to the other major constructs (i.e., cues of participation and willingness to contribute), in the directions hypothesized by theory, than did any of its eight subordinate variables (See Table 5-8). In other words, the sum of identity of participation corresponds with theory greater than its component parts do. This is evidence that this study's operationalization of the identity-of-participation construct is valid.

Identity of (Knowledge-based) Participation

The unexpected major finding of this study is that cues of participation in content lead to identities of participation that in general do not increase the members' willingness to contribute; in fact, the cues of participation approach statistical significance in depressing members' willingness to contribute overall ($p = .06$). This result was not expected or predicted.

Upon reflection, perhaps this result should have been expected and predicted. A recent study (Kilner 2005) of *CC* members who had never posted content on *CC* found that the reason they had not posted was that they judged themselves to lack the requisite competence and experience to post. The study concluded:

> The current commanders who don't post on *CC* should not be derided as "lurkers"; they are busy commanders who value and appreciate the information that those with more experience and time make available to them. Neither should the he future commanders who don't post on *CC* be looked down upon as "lurkers"; they are officers who recognize that they don't have much experience to share, and they don't want to crowd the forum with low-quality musings. As strange as it sounds, the appropriate role of those that the *CC* forum is designed to serve—current company commanders—may be to act in a way that is often criticized—to "lurk" as non-public participants.

The study found that one of the major reasons that relatively inexperienced members had not yet contributed content was their deference to more experienced commanders. This reflects an unwritten norm in *CC* where, as it turns out, the majority of content is submitted by very experienced current commanders and recently past commanders. Arguably, it is the preponderance in *CC* of content embedded with cues of participation that leads members to perceive such a high threshold to contribution.

Cues of participations' effects of decreasing the willingness to contribute of members with low experience can be seen as a good thing for distributed communities of practice. DCoPs thrive on the experience-based knowledge of their members. Learning in DCoPs is characterized by legitimate peripheral participation, a process by which less experienced members learn the practice from their interactions with more experienced members (Lave and Wenger 1991). Cues of participation apparently can help to prevent the problem of DCoPs becoming reservoirs of "pooled ignorance," as they are derided by noted instructional-design researcher M. David Merrill (Merrill 2005). To the extent that cues of participation dampen inexperienced members' eagerness to contribute their own content, it is fair to say that the cues privilege quality over quantity.

If cues of participation limit the overall number of contributions to a DCoP by discouraging contributions from novices, they may also make it more likely that members will stay involved with the community until they are experienced and ready to contribute most productively. Research suggests that the number of posts to an online community and its long-term membership are inversely related (Jones, Ravid et al. 2002); the more postings on a site, the shorter the involvement of members. Fewer, high-quality postings maintain a healthy signal-to-noise ration and thus are less likely to cause members to quit a community in response to perceived chaos and information overload.

This study finds that, in the absence of cues of participation, members respond to high-quality content by being willing to contribute their own information, proportionate to the value they feel they gain from the content. Not surprisingly, those with less experience with a topic find content about it to be more valuable. As Table 5-9 shows, in the absence of cues, members express a willingness to contribute that is negatively related to their competence to contribute (i.e., experience) , $r = -.23$, $p < .001$. Those in the low-experience group who read the treatments without any cues of participation express the highest willingness to contribute.

Conversely, in the presence of the cues in content, members generally express a lower willingness overall to contribute. However, content with cues of participation appears to increase the willingness to contribute of at least some members of one sub-population—those with very high levels of experience. Among those in the high-experience group who received the experimental treatments, there is a positive correlation between experience and willingness to contribute, $r = .27$, $p < .05$, and the scatter plot in Figure 5-2 appears to show that the positive correlation is the result of some very high experience members who responded to the experimental treatment with a very high willingness to contribute.

Overall, this study finds that cues of participation in content generally decrease the willingness to contribute of members with the low levels of experience, and there's evidence that they cause some members with very high levels of experience to be very willing to contribute. This is consistent with Hoadley's notion of SRRs improving individual learning via "raising the stakes" of engagement (Hoadley & Kirby, 2004).

The Effect of Perceived Value on Willingness to Contribute

As the multiple regression reported in Table 5-6 illustrates, value matters when it comes to willingness to contribute. The value that a member perceives from content is significantly and inversely related to his level of experience (see Table 5-8).

Content, SRRs, Reciprocity, and Epistemology

Overall, low-experience members perceive the content in both treatments to be more valuable than high-experience members judge it. Low-experienced members are also more willing than high-experience members to contribute. Their higher willingness to contribute can be understood in terms of *generalized reciprocity.* Generalized reciprocity is the phenomenon by which people who benefit from a group feel compelled to give back to the group (Constant, Sproull et al. 1996; Wellman and Gulia 1999). By the same logic, experienced (and presumably more knowledgeable) members of the community perceive the content as less valuable to them, and thus feel less sense of obligation to reciprocate to the community by contributing.

The group that judged the content to be most valuable was low-experience participants who had the control treatment. Their high esteem for the information can be understood in terms of clarity of presentation and generalized reciprocity. At a deeper level, it may also be that the information without SRRS appeals to inexperienced members more than to experienced ones because it is disembodied. It is information presented independent of practical experience, so it is less likely to communicate a boundary that could make a novice feel like an outsider. The novice is able to apply the abstracted information to his own context, real or imagined, however limited it may be. In terms of willingness to contribute, content that is information without cues of participation may implicitly communicate to its readers that experience is not necessary in order to contribute in the community.

Less experienced members' preference for content without cues of participation harkens back to what I referred to in Chapter 1 as the way content communicates an epistemology of knowledge in a community. What qualifies as appropriate knowledge claims? What is the threshold for contributing? If a CoP's content lists prescriptions for action without tying them to the experiences that gave rise to them, then the epistemology communicated is that contributing (i.e., making a knowledge claim) does not require actual experience in the practice. This may be why polls and quizzes are such great ways to foster online discussions (Kim 2000; Preece 2000; Dixon, Allen et al. 2005). Polls and quizzes put forth (collective) opinions—disembodied opinions—that convey, like a desperate employer, "No experience necessary; all (opinions) are welcome." Polls are a low threshold way to elicit contributing participation, and they are very effective tools for generating discussion. However, the data of this study suggests that a community culture in which information is divorced from the experiences and knowers that generated it unwittingly puts out a red carpet to novices to contribute their opinions.

Content that is embedded with cues of participation, on the other hand, communicates a very different epistemology to a DCoP's members. Content in which the author is an experienced member of the practice telling his or her own story about the activity of the practice connects with other experienced members as much as it may create a barrier with those who do not share the author's experience. In this study, the identification construct correlates most strongly with willingness to contribute among high-experience members who respond to the experimental treatment (see Table 5-9.). Perhaps the positive relationship between experience and willingness to contribute in this population is because the contributor serves as a peer model for the experienced members, increasing their self efficacy to contribute (Pajares 1995). At any rate, the content embedded with cues of participation may communicate implicitly that the community's epistemology is one in which real experience matters—such a message is implicit in the real details of the stories, told by real practitioners to help their less experienced peers.

An alternative, or complimentary, explanation of why less experienced participants responded to the content with cues of participation with a decreased willingness to contribute is that they sensed, as did the commanders in the *CC* study on lurkers, that they were not yet worthy to contribute, because they did not have the experience required to make a valid knowledge claim in the community. In sum, the data is consistent with the claim that content embedded with cues of participation communicates an epistemology that reminds inexperienced members of how much they still have to learn.

Implications of this Study

This study is a cautionary tale for designers and leaders of distributed communities who seek to develop distributed CoPs in which the members are stewards of their practice. After all, compared to content with cues of participation, content devoid of those SRRs is likely easier to obtain, will be perceived as equally if not more valuable by members, and will generate a greater willingness to contribute among many members. Yet, it is arguably much less "their" knowledge than is content embedded with cues. It's not so surprising that DCoPs take content for granted, as was discussed in Chapter 3. Generic content seems to be more efficient than member-generated content.

This study makes clear the great challenge faced that those who seek to grow true DCoPs. It is easier to design and manage Internet-mediated *networks* of practice, where the focus is on the dissemination of information and the learning is primarily cognitive. NoPs can be adequately supported by content that lacks cues of participation.

CoPs, and by extension DCoPs, are different than NoPs—they are about identity. CoPs are characterized by members engaging with each other and their shared practice in a way that transforms their identity. Without human connection, there is no community. Without shared activity, there is no practice. The lifeblood of DCoPs, where members do not have face to face interactions, is its SRRs such as the cues of participation, not its information value.

This study also challenges us to think about what *value* means in and to a community of practice. If something is valuable, does that mean it's interesting, relevant, informative…or meaningful, transformational? By what justification does a designer of a DCoP spend time and effort generating content embedded with cues of participation when that kind of content is not perceived to be any more valuable? By what measures of effectiveness will a DCoP be evaluated? The word "value" has such instrumental connotations. If I were to ask, "How valuable is your relationship with a particular person?" would your immediate response be to list instrumental, tangible benefits? Even if the relationship means much more that that to you?

Limitations of the Study

This study was conducted in an already existing, voluntary, distributed community of professional practitioners who share a strong identity as Army officers. The applicability of these findings to other kinds of distributed communities, i.e., its generalizability to other forms of online communities, will have to be determined by additional research.

Another potential threat to validity is that the treatments were conducted with paper and pencil, yet the research question and findings refer primarily to Internet-mediated communications. I believe that the fact that the treatments were on monologic explicit content, and not on a dialogue that would involve engagement, and the fact that I presented myself and the treatments as representative of the online community, discounts any effects from media differences. The study was designed to lead the participants to engage the material as if they were reading from the online DCoP.

Perhaps the greatest limitation of this study was that its designer fell into the trap of thinking that information-value is equivalent to content value in a DCoP, even as he was hypothesizing the opposite. As a consequence, one of the major constructs—value provided by the content—is open to many interpretations. In fact, the way I worded the assessment likely led participants to adopt a more instrumental approach to *CC/PL*.

Another significant shortcoming was the assumption that an increased level of identity of participation would lead to increased willingness to contribute. By not anticipating the opposite result, I missed opportunities to measure related responses, such as why the participants responded as they did.

This study also was limited by its narrow interpretation of identity of participation. There are many forms of participation that do not involve contributing content, such as telling others about the community, emailing content to colleagues, etc., but they were not measured. Consequently, novices who perceived the most value from content, and thus were most inclined to 'give back' by generalized reciprocity, could only express their inclinations by indicating a willingness to contribute. Perhaps if other options for them to reciprocate were included in this study, novices would have been less willing to express a willingness to contribute.

This study did not account for a likely confounding variable affecting willingness to contribute. The first is the role of efficacy for writing skills. Although in the pilot study it was not found to be significant, it is hard for me to believe that a person's self-efficacy for writing would not affect their expressed willingness to contribute. The participants did not know that I had written the experimental treatment, just as they do not know that I have written most content on *CC/PL* that includes narrative. The participants are members of a profession that writes almost all correspondence in bullet-style, third-person voice that they saw in the control treatment. The participants very likely felt a lower sense of self-efficacy to contribute in the narrative style of the experimental treatment, which then would have affected their expressed willingness to contribute. I should have measured and controlled for self efficacy in writing skills.

Finally, my participation in the study may have skewed its results. My association with *CC/PL* brought to the treatments a great reservoir of trust. Not all DCoPs will have that benefit. More generally, there are few professions that have the sense of community and trust that military officers enjoy.

Future Research

This is the first known study that examines the impact of SRRs in DCoPs. It only scratches the surface. If DCoPs are going to survive demands from sponsors to produce for tangible value (i.e., return on investment), researchers of DCoPs will have to find ways to measure the apparently intangible effects of including SRRs such as cues of participation into the content of the community. Intuitively, cues of participation should be essential to cultivating DCoPs, because SRRs infuse information with its social context, and CoPs are inherently social structures.

One promising thread of research would be to examine how SRRs such as the cues of participation impact DCoP members differently based on the member's trajectory in the community. What do the social cues mean to novices? To experts? Do they notice the cues in the same ways? I think it is very important that researchers of DCoPs recognize that members are not homogeneous. The most successful DCoPs will be those that serve their members at all stages of their participation with the community.

Another promising thread of research would be to examine when SRRs might be productively (if temporarily) withheld, for instance, when attempting to generate input specifically from inexperienced members. *CC* has had difficulty getting young commanders to blog about their "first 90 days in the job." In this situation, the relative abundance of cues of participation in the community space could be impeding their willingness to contribute even though their contributions would serve the DCoP well.

The question of value in a DCoP demands further research. Why do members join and participate? Do their reasons change over time, or as their trajectories change? Is there value that the members themselves are not consciously aware of?

A fourth line of valuable research could look into ways to lower the barriers to generating content that is rich in SRRs, such as providing scaffolding to increase members' self efficacy to contribute. In the "can't-text-message-you-now-because-I'm-blogging" generation, there have to be ways to inspire members to generate high-quality content that reflects their own knowledge and character. In fact, *PlatoonLeader* will begin experimenting next month with member blogs (called "leader journals"), which embody a different set of SRRs using different tools.

A fifth line of follow-on research could investigate how to design a DCoP to measure the identity-of-participation construct of each member and to scaffold the member towards trajectory-appropriate modes of participation.

Finally, studies could examine how to foster DCoP members' awareness of their own trajectories of identity of participation. Kilner (2005a) and Burgess (2006) both indicate that member self-awareness can lead to increased participation.

Conclusion

This study raises awareness of and provides insight into two very important but underappreciated concepts in the life of distributed communities of practice—socially relevant representations in content and members' identities of participation. This study has demonstrated that a certain set of SRRs embedded in content in a DCoP does affect the ways that members respond to the content. Also, the identity-of-participation construct is operationalized in a way that appears to be consistent with its theory, and its effects on members are, surprisingly, to dampen their expressed willingness to contribute. This study has raised as many questions as it has answered, and it points the way to future research on socially relevant representations in distributed communities of practice.

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Appendix A

Control Treatment

Packet # ______

I appreciate your willingness to participate in this study. It should take about 25 minutes. You will do three things:

1. Read one 1-page article about using a translator and answer a few questions about your response to it.
2. Read and do the same for an article about dealing with the death of a soldier.
3. Enter some demographic information (branch, rank, etc.), but nothing that identifies you.

Please record your **packet #** (found on the top right of this page) in the space for **sec. no**. on the scan sheet.

Please record your responses to all the multiple-choice questions on the red scan sheet.

Please feel free to add any written comments on the questionnaire in the spaces indicated.

The purpose of this study is to help your fellow officers who produce the CompanyCommand and PlatoonLeader professional forums to develop content that serves you and the Army most effectively.

Peter G Kilner
MAJ, IN
Founding member of CompanyCommand/PlatoonLeader team
PhD student, Penn State University

Using a local national translator in Iraq

Prepared for the Dept of Defense

Use of a translator is very important to military operations in Iraq. The following details the procedures that military personnel should employ while using a local national translator in Iraq.

Prior to an operation that employs a local-national translator:

- It is imperative that speakers know the religious demographics of their interpreters and employ them appropriately—Sunni with Sunni, Shiite with Shiite, etc.
- It is preferable that a translator be of the same sex as the Iraqi in the conversation.
- Speakers should include their translators in operational rehearsals, to the extent that operational security allows.
- Translations can be interpretive or word-for-word. Speakers should insist on word-for-word translations until a translator demonstrates competence and trustworthiness.

During an operation that employs a translator:

- The speaker should maintain unobstructed eye contact with the Iraqi he is talking to.
- The speaker should maintain facial expressions appropriate to the message being conveyed.
- The speaker should position his translator slightly behind him and to the side. This allows the translator to hear and be heard, but it also conveys that the speaker—not the translator—is the authority.
- Sequential translation should be used. The speaker should speak in short clips to allow time for his translator to respond.
- The speaker should use simple sentence construction and avoid military jargon to facilitate accurate translation.
- The speaker should use first-person voice and speak directly to the Iraqi.
- The speaker should take action as necessary to maintain eye contact with the Iraqi.
- The speaker should assign an observer to note any non-verbal communications that occur outside his field of vision.
- The speaker should abide by cultural norms of inter-gender communication when speaking with an Iraqi female. Greater distance should be afforded Iraqi women. In such situations, the Muslim translator should be positioned closer to the Muslim woman than the non-Muslim speaker is.
- The speaker should remain cognizant of the many challenges that local-national translators face, and not work the translator beyond his or her capacity.

After an operation:

- The speaker should conduct a review (After Action Review) of the translation operation after each activity that uses a translator. Both the translator and observer should be included.

1. How much personal experience do you have with this topic—using a local national translator?
A. No experience
B. Minimal experience
C. Some experience
D. Significant experience
E. A wealth of experience

2. How valuable is this article to you?
A. Not at all valuable
B. Minimally valuable
C. Somewhat valuable
D. Significantly valuable
E. Exceptionally valuable

3. To what extent do you identify with the author of this article?
A. Do not identify at all
B. Identify minimally
C. Identify somewhat
D. Identify significantly
E. Identify very strongly

4. How likely is it that you could face a situation similar to the one that is addressed in this article?
A. Not a chance
B. Unlikely
C. Somewhat likely
D. Very likely
E. Practically guaranteed

5. To what extent do you think this article invites other perspectives on the issue?
A. Not at all
B. A little bit
C. Somewhat
D. Significantly
E. Totally

6. To what extent are you inclined to give feedback of any kind to this author?
A. Not at all
B. A little bit
C. Somewhat
D. Significantly
E. Totally

7. How willing are you to contribute, now or in the future, your own knowledge or experiences via an article like this one to a professional forum of company-level officers?
A. Not at all willing
B. A little bit willing
C. Somewhat willing
D. Significantly willing
E. Totally willing

If you have any comments you would like to add about this article or the questions above, please do so here:

Leaders Guide to Responding to Fatalities in War

- Waging the Global War on Terror causes leaders to face situations that that are difficult to train for, such as the death of a soldier. The death of a soldier is traumatic event for a unit. The following guidance is provided to help unit-level leaders respond appropriately.

- In the immediate aftermath of a death, leaders should give their subordinates time to talk among themselves, with the unit ministry team, and with combat stress teams about their feelings.
- Soldiers will react and grieve the loss of their friend in many different ways. Some will need to talk; others will prefer to grieve quietly. Leaders should participate in this process.
- Leaders should conduct an after action review to determine whether or not any operational tactics, techniques or procedures involved in the deadly incident need to be updated.
- After official notification has been made, commanders in the deceased's chain of command are encouraged to telephone the service member's next of kin (NOK) to express their sympathy and support.
- Unit leaders are responsible for returning the deceased's personal property to the NOK. This is more than an administrative requirement. It is an opportunity to honor the soldier before his family. Leaders should remove offensive material that has no sentimental value, such as pornographic images on the deceased's computer. They are also encouraged to have the deceased's fellow soldiers add personal notes and photos to the locker. Leaders should keep in mind that the deceased's loved ones will open and see whatever is shipped to them.
- The battalion-level leadership is usually responsible for executing a memorial ceremony. The ceremony should occur as soon as possible, usually within 24-48 hours of the death. A well planned, well executed memorial ceremony is an important step in a unit's recovery from the death of one of its personnel. The ceremony should be videotaped, and the tape, along with the ceremony's printed program and any appropriate photos, should be sent to the NOK.
- During their comments at the memorial ceremony, officers should limit their remarks to brief, personal statements that acknowledge the deceased as an individual who was a valuable part of the organization. Clichés come across as impersonal and should be avoided. Longer addresses should be reserved for the deceased's close friends. They are the soldiers affected most by the death.
- Leaders should write a thoughtful letter of condolence to the NOK.
- After the memorial ceremony, leaders should get the affected unit back into its operational routine. This keeps the soldiers' minds off their loss, and contributes to the mission they are deployed to accomplish. Leaders should communicate that the best way to honor the fallen is to accomplish the mission they died fighting for.
- Leaders may need to lead from the front initially to set the example and enforce standards. Specifically, their presence can help their soldiers to overcome the natural fears caused by the death, as well as reduce the risk of soldiers' anger leading to mistreatment of non-combatants.
- Leaders should pro-actively welcome the soldier's replacement into the unit. The soldiers in the deceased soldier's unit may resent the replacement. Leaders must help their soldiers to understand that while the deceased soldier as a person can never be replaced, the deceased soldier's fighting capability must be replaced as soon as possible. A proven way to convey this message is for the unit commander and first sergeant to introduce the replacement soldier to the unit and to welcome him or her as part of the team.

- Leaders who suffer casualties in war have to accept the fact that anyone could get killed in war. Deaths in war, in most cases, are not anyone's fault. Leaders should not allow their soldiers to feel guilty, and they must overcome their own tendency to feel guilty.

- Good leaders will feel responsible for those who die under their leadership. This is not guilt for wrongdoing; it is the rightful burden of command. A good leader will not forget any soldier who dies under their command.

8. How much personal experience do you have with this topic—dealing with the death of a soldier?
A. No experience
B. Minimal experience
C. Some experience
D. Significant experience
E. A wealth of experience

9. How valuable is this article to you?
A. Not at all valuable
B. Minimally valuable
C. Somewhat valuable
D. Significantly valuable
E. Exceptionally valuable

10. To what extent do you identify with the author of this article?
A. Do not identify at all
B. Identify minimally
C. Identify somewhat
D. Identify significantly
E. Identify very strongly

11. How likely is it that you could face a situation similar to the one that is addressed in this article?
A. Not a chance
B. Unlikely
C. Somewhat likely
D. Very likely
E. Practically guaranteed

12. To what extent do you think this article invites other perspectives on the issue?
A. Not at all
B. A little bit
C. Somewhat
D. Significantly
E. Totally

13. To what extent are you inclined to give feedback of any kind to this author?
A. Not at all
B. A little bit
C. Somewhat
D. Significantly
E. Totally

14. How willing are you to contribute, now or in the future, your own knowledge or experiences via an article like this one to a professional forum of company-level officers?
A. Not at all willing
B. A little bit willing
C. Somewhat willing
D. Significantly willing
E. Totally willing

If you have any comments you would like to add about this article or the questions above, please do so here:

15. To what extent do *you participate* in the CompanyCommand or PlatoonLeader professional forums?
A. Not at all
B. Minimally; I’m a registered member but rarely if ever log on
C. Somewhat; I browse around the site(s) occasionally
D. Significantly; I visit the site(s) regularly
E. I am an active participant who has contributed comments or content

16. To what extent do you participate in *other online communities* (e.g., list-serves, yahoo groups)?
A. Not at all
B. Minimally; I’m a registered member of one or some, but I rarely log on and never contribute
C. Somewhat; I’m a registered member of one or some, and I browse around the site(s) and occasionally post a comment
D. Significantly; I am an active member of one or several, and I contribute frequently
E. I am a leading member of one or more other online communities

17. What is your gender?
A. Male
B. Female

18. What is your age?
A. 18-24
B. 25-29
C. 30 or older

19. What is your rank?
A. 2LT
B. 1LT
C. CPT
D. MAJ
E. other

20. How is your branch categorized?
A. Combat arms
B. Combat support
C. Combat service support

21. Final question: Now that it’s over, what do you think of participating in this study?
A. Waste of my time
B. Didn’t learn anything, but I’m happy to help
C. I learned something
D. I learned something *and* I’m happy to help

Thank you for your willingness to support the efforts of the PlatoonLeader & CompanyCommand teams to serve you, our fellow professionals, more effectively.

Pete Kilner
MAJ, IN
Peter.kilner@us.army.mil

Appendix B

Experimental Treatment

Packet # _____

I appreciate your willingness to participate in this study. It should take about 25 minutes. You will do three things:

1. Read one 1-page article about using a translator and answer a few questions about your response to it.
2. Read and do the same for an article about dealing with the death of a soldier.
3. Enter some demographic information (branch, rank, etc.), but nothing that identifies you.

Please record your responses to all the multiple-choice questions on the red scan sheet.

Please record your **packet #** (found on the top right of this page) in the space for **sec. no**. on the scan sheet.

Please feel free to add any written comments on the questionnaire in the spaces indicated.

The purpose of this study is to help your fellow officers who produce the CompanyCommand and PlatoonLeader professional forums to develop content that serves you and the Army most effectively.

Peter G Kilner
MAJ, IN
Founding member of
CompanyCommand/PlatoonLeader team
PhD student, Penn State University

Using a terp in OIF

Contributed by CPT Alan Miller, company commander in 3ID and member of the CompanyCommand professional forum, http://companycommand.army.mil

I found it to be incredibly important as a commander to know how to use local national interpreters, called "terps," in OIF. I don't pretend to have it all figured out, but maybe this story of how I handled my terp on a cordon-and-knock operation near Ramadi in AUG 05 will be useful for a fellow commander.

Prepping for the mission:

- My terp was a 28-year old, male Sunni named Amed. A little younger than I'd like, especially when dealing with sheiks, but since we expected to deal mostly with Iraqi males, it was good to have a male. He was a Sunni in a Sunni AO, so he felt more comfortable.
- Amed was relatively new without a track record, so I didn't trust him with any more info than he needed. I went over the mission and intent with him, and we discussed some key terms to make sure he was ready with accurate translations, but I didn't include him at the operational rehearsal. He didn't need to know our scheme of maneuver.
- I told him to translate word-for-word both my words and the words of the Iraqis. I wasn't sure that he could "interpret" accurately, so I left that part up to me, not him, at least until I got to know him better.

During ops:

- When I was actually talking with Iraqis using my terp, I made sure to maintain direct eye contact the whole time with the person I was talking with. I looked at him; he looked at me. I didn't want either of us looking at the terp.
- I placed Amed slightly behind me and to the side, close enough so he could hear, but far enough so it was clear that I was in charge. I spoke in short clips, using simple sentences and avoiding acronyms that wouldn't translate well. That way, also, I could be sure to have a facial expression that was appropriate to what I had just said. This is called sequential translation.
- I not only looked directly at the Iraqi I was talking to, but I also spoke directly to him. For example, I said, "I want you to do something," while looking at the Iraqi. I didn't say, "Tell him that I want him to do something" while looking at Amed.
- At one point, an Iraqi I was talking to began to look at Amed as he translated. I casually moved into his field of vision and gently put my hand on his shoulder, which is acceptable in Arabic culture, to get his attention back on me.
- I assigned my RTO, SPC Wilson, to keep an eye out for any non-verbal communications that I didn't see.
- One of the locals I interviewed was a female. It would have been best to have a female interpreter, or at least an older male, but all I had was Amed. In deference to Iraqi culture, I allowed more distance between me and her, and I placed Amed, a Muslim male, slightly in front of me.
- I tried to keep note, and I asked Wilson to help me, to see how Amed was holding up. Translating is mentally demanding, and if the Iraqis were sympathetic to the insurgents, they would likely see Amed as a traitor, and that combined with his youth could have led to an intimidating situation. I was careful not to wear him out. We could always return another day, if need be.

After the op:

- I conducted an AAR with Amed to get his impressions, share mine, and get his input on how we could work together better the next time. After I dismissed him, I asked Wilson for his observations, who noted some disconnects between my facial expressions and Amed's. Amed and I worked that out before our next mission.

Like I said, this was just my experience. I know that other commanders may have had different situations. I'd love to hear other TTPs on using terps.

1. How much personal experience do you have with this topic—using a local national translator?
A. No experience
B. Minimal experience
C. Some experience
D. Significant experience
E. A wealth of experience

2. How valuable is this article to you?
A. Not at all valuable
B. Minimally valuable
C. Somewhat valuable
D. Significantly valuable
E. Exceptionally valuable

3. To what extent do you identify with the author of this article?
A. Do not identify at all
B. Identify minimally
C. Identify somewhat
D. Identify significantly
E. Identify very strongly

4. How likely is it that you could face a situation similar to the one that is addressed in this article?
A. Not a chance
B. Unlikely
C. Somewhat likely
D. Very likely
E. Practically guaranteed

5. To what extent do you think this article invites other perspectives on the issue?
A. Not at all
B. A little bit
C. Somewhat
D. Significantly
E. Totally

6. To what extent are you inclined to give feedback of any kind to this author?
A. Not at all
B. A little bit
C. Somewhat
D. Significantly
E. Totally

7. How willing are you to contribute, now or in the future, your own knowledge or experiences via an article like this one to a professional forum of company-level officers?
A. Not at all willing
B. A little bit willing
C. Somewhat willing
D. Significantly willing
E. Totally willing

If you have any comments you would like to add about this article or the questions above, please do so here:

My experience of Dealing with the Death of one of my Soldiers

By CPT Dean Williams, 25th ID

I doubt that anything could fully prepare a company commander to deal with the death of one of their soldiers. I always knew that it could happen, but I never saw anything written about it. As I learned, it happens, and it demands a lot from commanders. I don't pretend to know all the answers, but here's my experience, put on paper for my fellow CPTs who might find yourselves in a similar situation. Take it for what it's worth.

After SPC H. was killed, I pulled his platoon in and talked with them. These were his closest friends. Some needed to vent, some needed time just to think and grieve. The chaplain spent a lot of time with them, and I coordinated for the CST to come. People were angry and questioned everything. We did a good AAR to see if there were any TTPs we needed to adjust. There weren't. I let them know that I was hurting, too, but I also tried to keep my head up. The mission had to go on, and I was the commander.

I had the 1SG work with the soldier's PSG to inventory his equipment and prep his personal gear for shipment to his NOK. As a task-organized unit, we had to sort out some issues of chain of custody of equipment. Thankfully, someone had the great idea to sanitize the soldier's laptop and locker to remove porn and other stuff his family didn't need to see. We tried to keep in mind that the locker we sent home would be one of his family's few tangible keepsakes of the man the Army and the war took from them. We wanted it to be like a shrine. Things were folded and packed neatly. Some of his friends added personal notes and photos to the locker for the family to see.

I talked with the other platoons, too. They wanted to help out, but the platoon that suffered the loss needed their space and didn't want others involved. I made the PLs and PSGs aware of the mixed feelings. I don't know if I could have done more.

The BN took lead on planning a first-class memorial ceremony, which was incredibly important to the whole unit getting a sense of closure. At the MC, I kept my remarks short but personal; an MC is not the time to be generic or talk in clichés. His friends took longer to speak, as they should. We videotaped the ceremony and sent the tape, along with the program and photos from the ceremony, to his family.

The MC took place about 26 hours after the death. Six hours later, I sent his platoon back outside the wire. The down time had been needed, but now they had to get busy again. They were angry, scared, sad. I talked to them about honoring our fallen by completing the mission. I told them that I needed them to be professionals, to keep their heads in the game. We knew by then that even if we did everything right, we could suffer casualties, but I reminded them that our odds are better if we stay focused on the mission at hand and maintain our standards. I offered to the PL and PSG to join them on that first mission. It would have been a way to show that I'm not afraid to go back out and to ensure that people didn't take out their anger on non-combatants. They seemed to appreciate the offer but declined.

Soon after notification, my BC and I had both called the soldier's family. I followed up a few days later, as they prepared for the funeral back in CONUS. Of course the parents are going to blame you at some level, but they really appreciated the calls. We talked about what a great person their son was. I wrote them a pretty long letter, aware that they'll likely keep it their whole lives. I've heard that some CO's haven't written letters. IMO, a thoughtful letter to the NOK is an absolute must! It's the toughest thing I've ever had to write.

The arrival of SPC H's replacement required my attention. The concern was that some soldiers in the PLT seemed to think that this poor PVT was trying to replace their buddy and was just a "FNG." The

1SG and I spoke with all of them about how their friend was irreplaceable, yes, but his combat power HAD to be replaced asap, and our new soldier was now part of our team.

I'll never forget SPC H., nor should I. His photo sits on my desk as I write this. I now understand the things I'd heard about the burden of command. But I've come to accept the fact that anyone could get killed in war; it's no one's fault. I don't let my other soldiers feel guilty about his death, and I try to remember that myself.

I wouldn't wish this experience on any leader. I hope this helps some commander out there be a little better prepared than I was when the bad news comes over the net.

8. How much personal experience do you have with this topic—dealing with the death of a soldier?
A. No experience
B. Minimal experience
C. Some experience
D. Significant experience
E. A wealth of experience

9. How valuable is this article to you?
A. Not at all valuable
B. Minimally valuable
C. Somewhat valuable
D. Significantly valuable
E. Exceptionally valuable

10. To what extent do you identify with the author of this article?
A. Do not identify at all
B. Identify minimally
C. Identify somewhat
D. Identify significantly
E. Identify very strongly

11. How likely is it that you could face a situation similar to the one that is addressed in this article?
A. Not a chance
B. Unlikely
C. Somewhat likely
D. Very likely
E. Practically guaranteed

12. To what extent do you think this article invites other perspectives on the issue?
A. Not at all
B. A little bit
C. Somewhat
D. Significantly
E. Totally

13. To what extent are you inclined to give feedback of any kind to this author?
A. Not at all
B. A little bit
C. Somewhat
D. Significantly
E. Totally

14. How willing are you to contribute, now or in the future, your own knowledge or experiences via an article like this one to a professional forum of company-level officers?
A. Not at all willing
B. A little bit willing
C. Somewhat willing
D. Significantly willing
E. Totally willing

If you have any comments you would like to add about this article or the questions above, please do so here:

15. To what extent do *you participate* in the CompanyCommand or PlatoonLeader professional forums?

A. Not at all
B. Minimally; I'm a registered member but rarely if ever log on
C. Somewhat; I browse around the site(s) occasionally
D. Significantly; I visit the site(s) regularly
E. I am an active participant who has contributed comments or content

16. To what extent do you participate in *other online communities* (e.g., list-serves, yahoo groups)?

A. Not at all
B. Minimally; I'm a registered member of one or some, but I rarely log on and never contribute
C. Somewhat; I'm a registered member of one or some, and I browse around the site(s) and occasionally post a comment
D. Significantly; I am an active member of one or several, and I contribute frequently
E. I am a leading member of one or more other online communities

17. What is your gender?

A. Male
B. Female

18. What is your age?

A. 18-24
B. 25-29
C. 30 or older

19. What is your rank?

A. 2LT
B. 1LT
C. CPT
D. MAJ
E. other

20. How is your branch categorized?

A. Combat arms
B. Combat support
C. Combat service support

21. Final question: Now that it's over, what do you think of participating in this study?

A. Waste of my time
B. Didn't learn anything, but I'm happy to help
C. I learned something
D. I learned something *and* I'm happy to help

Thank you for your willingness to support the efforts of the PlatoonLeader & CompanyCommand teams to serve you, our fellow professionals, more effectively.

Pete Kilner

MAJ, IN
Peter.kilner@us.army.mil

Appendix C

Written Comments on Control Treatments

Death-of-Soldier Topic

- I didn't identify because I've never lost a soldier.
- The military has certain preset regulations regarding notification of NOK. This tends to alleviate some of the stress on the process.
- The instructions on how to handle deceased's belongings is important.
- Very informative.
- I feel a good leader can also not feel responsible for a soldier's death.
- On the sixth bullet of the article>I think this is a thin line to walk, interfering with the personal effects. I think if letters are sent home it should be done in a separate fashion, mailed quickly. Getting into what is offensive/sentimental could widely vary amongst different people. For example, a wife who sends nude pictures to her husband could be devatated [sic] to think that he did not receive them or that someone else may have seen them.
- In my experience, the unit's memorial either shouldn't be shared with the family, or it should be put out prior to the ceremony that the family will be viewing. (A group of alpha males in a combat zone, who have been separated from loved ones for months, express their grief much differently that a family will, safe and secure at home.)

- The article seems like it would serve as a good foundation in dealing with the death of a soldier, and then others could contribute differences and nuances.
- This is just a general comment about the 2 websites--great idea and resource, and I have spend very little time on them, but I am concerned about information overload and also the quality of submissions--does someone screen the articles/comments to ensure they are good, not bad advice?
- If I experienced it, I may be able to comment more.
- Article very impersonal for this subject, a more personal article is probably better.
- Very insightful ideas to help the process.
- Could be extremely helpful.
- Identify high risk soldiers (mentally distressed); possible operational stand down for unit; having a forum where commanders could share personal experiences would help this.
- Nowadays, war seems to be more focused on operations involving at least 85% contact with locals, which triggers a need for commanding officers, even at company level, to have appropriate knowledge to act in each situation. It also seems that most of the time we fail to do the best job due to the lack of knowledge of such rules listed in the article.

Comments on the Use of a Translator

(Participant number in parentheses)

- Great format. It would be great to add more do's and don'ts, and if possible, some examples.
- A short quote from an Iraqi translator would be a meaningful way to reinforce the points made by the author.
- Clarify/define the parties used in the articles (i.e., speaker, translator, local). The first bullet about religion as a factor is confusing because it does not clarify who should be of the same religion.
- Would need to know who prepared the article to respond. Is a how-to guide more than a forum for discussion. Where do they get their facts?
- In preparation for my upcoming deployment, I would like to see an actual class on this article.
- Add techniques about using non-similar interpreters to the Iraqis you are trying to talk to (Sunni to Shia, female to male). After all, as a CO in combat, you won't have a pool of interpretros [sic] to draw from to tailor to each mission.
- Something needs to be mentioned as to the importance of cultural relationships in Iraq. We had many problems with the "information" that our local translator was providing to us via the local population who offered information about "Fedayeen" in the area. Many times our operations against the "Fedayeen" safe houses or cache locations were based on false information. Basically, the local

translator and his neighbors were carrying out a vendetta against rival neighbors by sending us into the neighbors home conducting cordon and searches. This was at Taji Airfield during OIF-1 May-July 03. End state was the violations of the trust between any locals and U.S. forces in sector.

- What about the hiring of translators?
- I disagree with the statements in 1st section. In many situations, the opposite TTP is the best technique. As for the whole article, there are many techniques that can afford the "speaker" greater success…depends on situation and personality factors (CAT I or CAT II, familiarity, intent of translation, etc).
- Prompts more questions, examples, or "real life" stories would be helpful.
- Good basic information, but more involved, personal article would be good.
- Too much use of "the speaker should", very annoying to read.
- I would not write the article in this fashion. This is written more like an FM/TM. I would write this as a first-person testimonial account of when I used a translator.
- Good use of bullets, easier to read.
- Ethnic group to ethnic group should be specifically mentioned not just shiite to shiite or sunni to sunni, i.e., kurd to kurd.
- I think it should also discuss trust building. Actions to take if you believe your OPSEC has been compromised and interpreter recruitment.
- Please address the pay issue, the other reasons as to why the local national will translate (motivating factors).

Appendix D

Written Comments on Experimental Packets

Death-of-Soldier Topic

(Participant number in parentheses)

- I didn't understand some of the acronyms used, but I understood their context.
- Interesting the author notes that "it's no one's fault." Perhaps this is why he is able to deal with the death in such an equinanimous fashion. Also, he seems to have the NOK in mind at all times by considering the items they'll keep and treasure.
- I received virtually the same account from my brother, who as a company commander lost a soldier 12 months ago.
- Good article. As a lieutenant I didn't realize at first how a terp could be a disservice to yourself. I found a lot of terps tried to present themselves as the one in charge. I personally like to position the terps behind the person that I'm talking to. It makes it much more difficult for the person to intimidate the terp.
- Would have been interested to hear more of the soldier-level effects from the CDR's action, to hear from their perspective what worked and what did not.
- The author's includions of how this affected him personally was much easier to read and I understand the depth and complexity this situation presents to a CO. This information was more accessible and "user friendly" than an FM or TM.
- Another good example of a clear and concise message being passed.

Use of Translator

(Participant number in parentheses)

- It would also be helpful to have articles from females in the same situation as CPT Miller due to difference in culture for men and women.
- I have some experience in dealing with translators in Bosnia. However, I was not in charge and just viewed from a distance on situations. I feel that it will not be the case in future engagements with translators.
- Info on hand, gestures is valuable, as is eye contact.
- Some interesting tips to keep in mind--speaking directly & placement of interpreter specifically.
- Most "terps" have been living in the AO longer, much longer than the soldiers rotating through the AO. Cantron [sic] needs to be taken to absorb lessons learned from them but through filters.
- The article was useful insofar as it confirmed TTPs taught during my deployment in Iraq are taught/being used in other units. A mention of the results of the TTPs may have been useful. My guess is that the author didn't have any negative results from the experience, i.e., confused interpretation on the part of the Iraqi he spoke with.
- Did anyone proofread this? IR looks like a 7th grader worte [sic] it. A profession [sic] officer needs to write like a professional. If he were speaking to children, then it would have been appropriate. He needs to write to his audience.

- Mainly I get a sense of distrust from this article and not many helful [sic] tips/ttps. When it comes to dealing with a terps, not much use for research materials.
- Try having a Turkman, Sunni Arab, KDP Kurd, and PUK Kurd translator at the same time in order to conduct business. Politics merge with ethnic/cultural differences.
- I realize now that I made a lot of errors while working with terps. This article, combined with a professional language/culture expert's analysis, would be helpful.
- CPT Miller is effective in presenting his techniques for using "terps." He is careful to use language like "I tried this..." or "this worked for me…" and told why he did certain things.
- A very good example of how a message can get out quickly, clear and to the point.
- Article could use some "indicators" of interpreters not performing correctly, things to watch for. Also thought the author was too apologetic about this being just his experience, wasn't needed to keep stating that.
- This article was very interesting. I thought CPT Miller did many good things. As a person who interprets and has spent a considerable amount of time using a translator, I would caution people from translating "word for word" as the captain did. Rarely does a language translatre [sic] directly to another. It can cause confusion and misunderstandings. American English is full of slang.

Appendix E

Example content: “To Kill or Not to Kill”

“Fire,” said CPT Dan Hubbard to his gunner in their M1A1 tank, their sights fixed on a small white car speeding towards them.

Nothing.

“Fire!” he again commanded.

Nothing.

Looking down in the turret, Hubbard saw his gunner looking in his sights, his finger on the trigger yet unresponsive.

Hubbard immediately took control with his commander’s override and fired a warning shot over the oncoming vehicle. The car continued its assault, so Hubbard engaged it with bursts of 7.62 coax. The car crashed to a halt, its occupants dead.

“What the hell was that?” the tank commander asked his gunner. “Why didn’t you fire?”

The gunner still didn’t move or say a word, but the tank’s loader responded in a slow, numbed voice. “You’re…you’re killing people,” he said to his company commander, his voice a mix of shock and dismay. “And it doesn’t even seem to bother you.”

“No, it doesn’t,” replied Hubbard. “These people are trying to kill me, you, and all of us. It doesn’t bother me at all.” Looking at the photos of his wife and children in the turret, he added, “They’re the reason we’re away from our families.”

Hubbard had his gunner take a break and get some sleep. Later that day, when Hubbard took his tank to the R2 point, he dropped off his loader. Perhaps they just needed a break after three consecutive days of combat at Objective Larry, a highway interchange on the outskirts of Baghdad. After all, the two soldiers had always performed their duties in combat for the first 17 days of the war.

But the last three days had been the worst so far. Their unit, B Company Tank, Task Force 3-15 Infantry, had been fighting from a static position at Larry since they seized it on April 6th. The Syrian fighters came in droves, wave after wave, charging across their comrades' bodies to their own certain deaths. Now, hundreds of enemy dead, and their body parts, lie strewn all around the company team's perimeter, in plain sight of those who had killed them. The corpses had begun to bloat and smell. It was bothering his soldiers.

That evening, Hubbard saw a motorcycle speeding towards his perimeter. The two men on it carried AK-47s and RPGs. He opened up with his coax, hitting his target. He continued to scan his sector.

The next morning, Hubbard ordered his ACE driver to add the night's destroyed enemy vehicles to the field-expedient protective obstacle that the engineer had created initially with palm trees and light posts, and had improved ever since with destroyed enemy vehicles. Hubbard accompanied the ACE as security. When they came to the motorcycle, Hubbard noticed that one of the motorcycle attackers was still alive. The man had bullet holes through both his knees, but he was alive, and he no longer had access to his weapons.

Hubbard immediately dismounted, picked up the man, placed him on his tank, and evacuated him to medical support. Some of his soldiers were furious. "Why didn't you kill the fucker, sir? He wanted to kill us."

"You know that wouldn't be right," said Hubbard. He'd always preached to his soldiers the importance of doing what's right, even if no one is watching. It's right to kill attacking, armed enemy; it's also right to give medical aid for enemy casualties. One day his soldiers would understand.

*Researcher's note: Although this is not written in the first-person voice, the fact that it is posted to the CC forum by Dan Hubbard himself communicates that it is *his* story. Also, although this article lacks another of the cues of participation—an invitation for others to contribute their own stories —it is posted in CC with related content that has elicited good discussion from other combat veterans, but not from combat novices. The level of first-person detail, the dialogue, and the clear message without being preachy give this article a powerful effect on other company-level officers.

Appendix F

Barriers to and Motivations for Contributing to an Online Community

Barriers to Participation/Contributing	**Factors that Support Participation/ Contributing**
Lack of confidence in knowledge Nothing to offer Not accurate (Ardichvilli, Page et al. 2003; Kilner 2005)	Self confidence in expertise Respect the value in every contribution (Goman 2002; Chan, Bhandar et al. 2004; Dixon, Allen et al. 2005; Faraj and Wasko 2005)
Fear of appearing self serving (Kilner 2005)	Duty to organization/profession Individual invitation to contribute from core group Continually share purpose of community Enhance own reputation (Hoadley and Pea 2002; Ardichvilli, Page et al. 2003; Teigland and Wasko 2004; Dixon, Allen et al. 2005)
Not confident that contributing is appropriate	Understanding of DCoP norms Point out one specific, tangible way the member can contribute. (Dixon, Allen et al. 2005; Faraj and Wasko 2005)
Have not earned the right to post (Ardichvilli, Page et al. 2003)	Sense of belonging Individual invitation to contribute from core group (Hoadley and Pea 2002; Renninger and Shumar 2004; Dixon, Allen et al. 2005)
Still learning about group (Nonnecke, Preece et al. 2004)	Identify with the group Sense of belonging in the community (Renninger and Shumar 2004; Faraj and Wasko 2005)
Other will say it (Nonnecke, Preece et al. 2004)	Believe contribution is unique (Ling, Beenen et al. 2005)
DCoP is externally mandated (Schwen and Hara 2003)	View knowledge as a public good. Moral obligation to org/profession Feel good to give back/mentor (Ardichvilli, Page et al. 2003; Dixon, Allen et al. 2005)
Shyness about contributing (Nonnecke, Preece et al. 2004)	Relationship with leadership team Self efficacy (Burgess 2004; Chan, Bhandar et al. 2004)

Contribution subject to rejection (Ardichvilli, Page et al. 2003)	Don’t be too strict Respect and value every contribution (Goman 2002; Le Moult 2002)
Distrust of how others will use contribution (Goman 2002; Ardichvilli, Page et al. 2003)	Sense of shared purpose View of knowledge as a public good. Sense of alignment Show interest in member as a person (Wenger, McDermott et al. 2002; Ardichvilli, Page et al. 2003; Renninger and Shumar 2004)
Distrust that others will not do their share	Sense of Reciprocity Feel responsible to other members (Teigland and Wasko 2004)(Wenger, McDermott et al. 2002)
Just browsing No requirement to post (Nonnecke, Preece et al. 2004)	Moral obligation to organization or profession Feel responsible to community members Sense of reciprocity (Wenger, McDermott et al. 2002; Ardichvilli, Page et al. 2003; Teigland and Wasko 2004)
Not enough time (Nonnecke, Preece et al. 2004; Kilner 2005)	Moral obligation to organization or profession (Ardichvilli, Page et al. 2003)

Appendix G

Account of How Death-of-Soldier Treatment was Generated

It is easy to populate a community space with content that was generated by non-members for other audiences. A Google search can quickly find content on almost any topic.

On the other hand, content that is embedded with the SRRs used in this study takes more effort to produce. Content that is written by a member of the DCoP, for other members of the DCoP, in the language of the DCoP, about the activity that binds the members of the DCoP, and that presents one member's perspective, is unlikely to be generated on its own. A review of *CC*'s content finds that of approximately 150 articles that meet the criteria for this study, more than 100 of them are interviews with members. Almost all of the other content with high levels of SRRs is articles in which a core team member worked with a *CC* member to develop his or her story. In a few cases, members had written emails to friends that they then contributed to *CC*. In my experience, content with SRRs almost always takes time and effort to produce.

To illustrate what goes into developing content with SRRs, I will use as an example the story of how I generated this study's experimental treatment on dealing with the death of a soldier. I began by contacting several members of *CC* whom I knew had experienced at least one combat death in their units. I felt comfortable contacting them because I knew each of them. I routinely read the profiles of *CC* members who are online, and I write emails to those who are experienced commanders, inviting them to share their knowledge. Doing so establishes a relationship between them and the CC core team and makes them much more likely to contribute. I had previously written all of them at least once, and most of them had subsequently contributed interviews or discussion posts. Figure G-1 shows the information that a CC profile makes available to other members.

Figure G-1

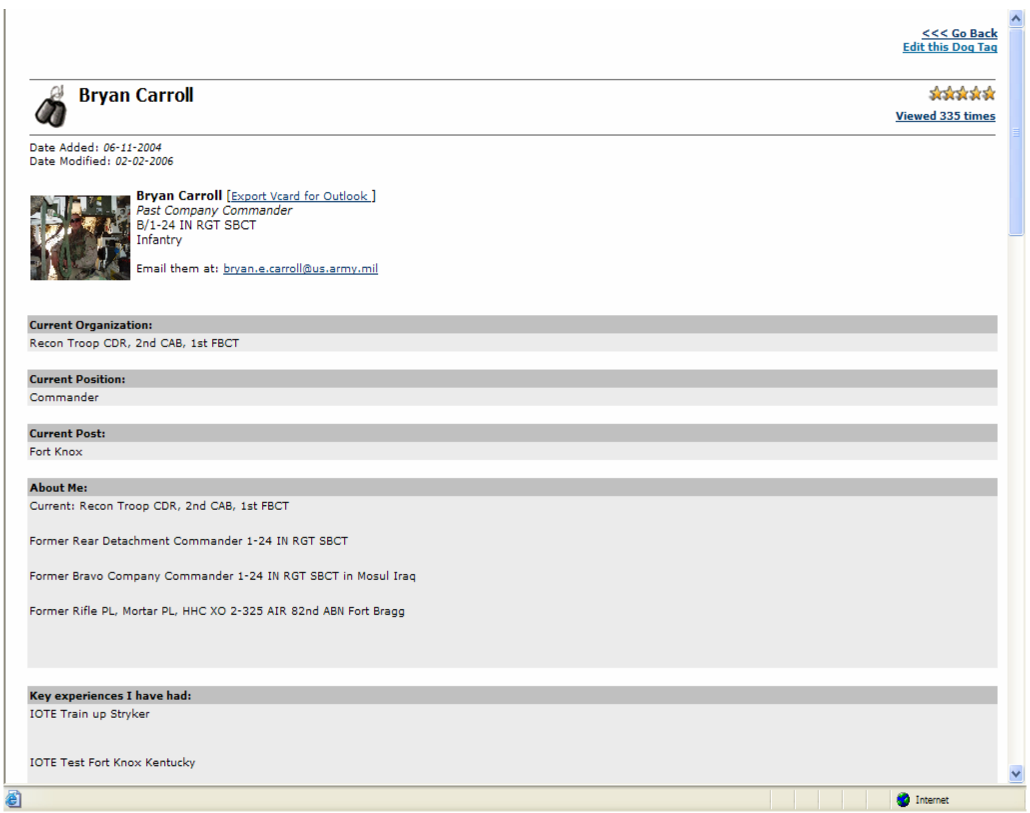

Figure G-1: Example of CC Member Profile

The note I wrote each of the experienced commanders relied on our previous relationship. Here is one example.

Matt:

Pete Kilner here, from the CompanyCommand team. I hope things are going well for you. You still in cmd in 7SFG?

I'm writing today because, in thinking about a buddy of mine who had several Marines KIA in Iraq, it occurred to me that we don't have any resource on CC or PL that helps leaders prepare for and deal with that tragic event. I looked around the Soldiers & Families topic, but all I can find are links to regs; there's nothing that talks from CPTs to CPTs, that talks about dealing with emotions, and the mission, and subordinate leaders, and families, etc.

If memory serves me right, I know that, unfortunately, you have experience in this area.

I don't have the relevant knowledge or experience, but I do know excellent leaders like you who do. I've decided to do something about this lack of peer resource. I'm wondering if you'd be willing to jot down or talk with me on the phone about your experience. One way to think of it might be, "What are 10 things a cdr should know about preparing for the dealing with the death of a Soldier in combat?"

I realize that this is a suck topic, and I understand if you don't want to talk about it. But if you're willing, I'd be honored to do the footwork to provide a resource to commanders on this hardly talked about topic.

Leadership counts!

Pete

Matt responded almost immediately from his post in Afghanistan.

Unfortunately, I am deployed yet again in Afghanistan until next February, so phone calls would be difficult. But, I would be more than willing to help on the subject. After 4 combat tours, I have definitely seen plenty of death and been a part of it many times. It is a very difficult subject to talk about and even harder one to deal with.

[…1700 words later…]

I really appreciate the opportunity to pass on some of the harder lessons I have had to learn during my commands of a team and a headquarters company. I really don't believe that I am a subject matter expert on the

> issue, just an unlucky leader that has had to deal with it. But, if you think [my experience] will help, by all means use it.

The responses from some of the other experienced members I contacted reveal their willingness to share their hard-earned knowledge when they trust how their knowledge will be put to use.

> "Pete- I would love to be able to help out. I will give you a call tomorrow, and I will think about it tonight and maybe send some points on it as well. I was thinking the same thing after I lost my first soldier. Hopefully I can help someone else with this hard subject. --Chris"

> Pete,
> good to hear from you...you are right, it is a very difficult subject and one that unfortunately I did face a couple of times. In fact when I did my right seat with the guys from 2ID that replaced us, I sat down with the other captain (who was a good friend of mine) and went over this very subject…Bottom line, sure, I'll help. Yes, it isn't a fun topic, but as a leader it is important. And it being a very personal topic, I know each commander will have a different approach, so I think providing some baseline "thoughts" would be helpful and perhaps help each figure out in their own way how they may want to approach it. --Nick

> Brother I would love to do what I can to help out here. I think everyone handles this shit differently. I call it shit because that is what it makes you feel like. No one understands the loneliness of command better than brother commanders and even though you may have some excellent support there unless they themselves have lost soldiers they really don't understand." …[400 words later]… Not sure if that was as helpful as you wanted? If you need more just drop me a line and let me know.
> Mike

After I crafted the members' experiences into the articles, I wrote them to solicit their feedback and approval.

> Guys:
>
> I talked with all of you about the experience of dealing with the combat deaths of your soldiers. I tried to consolidate your great input into two short articles for CC and PL.
>
> I wrote the information in two different ways because I have found in my

> research that different people have different preferences--some like bullets, others connect with stories. I also plan to use these as part of my dissertation study.
>
> After my study is complete, I would like to post these on the sites, but first I'd love to have you all read them over, give any feedback, and give a thumbs up to your names being associated with them. My ego's not tied up in this; I just want to help leaders, so be brutally honest. Thx,
>
> Pete

The contributors each replied to my email, developing further our relationship. This excerpt of one reply shows how the generation of content on the death of a soldier could lead to additional opportunities for content on psychological operations in Iraq.

> Pete,
> Again, thank you for the opportunity to share some of my experiences with your team and other leaders. I really liked your composite story and is right on target…You can attached my original e-mail to [the composite article],that's not a problem.
>
> I'm currently back at Fort Bragg going through the Psychological Operations Officer' pipeline and will be heading back to IZ this summer.
>
> Hope to stay in touch.
> O

As this example illustrates, generating high-quality content that is embedded with SRRs takes time, effort, trust, and relationships. An implication of this is that DCoPs need to be resourced with leaders who can commit time to generating content and who can engage with the social milieu of the community.

Appendix H

Approval from Office of Research Protections

Dated 3/9/2006

SUBJECT: IRB# 22831 - "Content that Cultivates Community: Designing Content to Foster Identities of Participation in a Distributed Community"

Hi Peter,

The Office for Research Protections (ORP) has reviewed the above-referenced study and determined it to be exempt from IRB review. You may begin your research. This study qualifies under the following category(ies):

Category 2: Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observations of public behavior unless: (i) information obtained is recorded in such a manner that human participants can be identified, directly or through identifiers linked to the participants; **and** (ii) any disclosure of the human participants' responses outside the research could reasonably place the participants at risk of criminal or civil liability or be damaging to the participants' financial standing, employability, or reputation. [45 CFR 46.101(b)(2]

PLEASE NOTE THE FOLLOWING:

- Include your IRB number in any correspondence to the ORP.

- The principal investigator is responsible for determining and adhering to additional requirements established by any outside sponsors/funding sources.

- **Record Keeping**
  - The principal investigator is expected to maintain the original signed informed consent forms, if applicable, along with the research records for at least three (3) years after termination of the study.
  - This will be the only correspondence you will receive from our office regarding this modification determination.
    - **MAINTAIN A COPY OF THIS EMAIL FOR YOUR RECORDS.**

- **Consent Document(s)**

- The exempt consent form(s) will no longer be stamped with the approval/expiration dates.
- The most recent consent form(s) that you sent in for review is the one that you are expected to use.

- **Follow-Up**
  - The Office for Research Protections will contact you in three (3) years to inquire if this study will be on-going.
  - If the study is completed within the three year period, the principal investigator may complete and submit a **Project Close-Out Report**. (http://www.research.psu.edu/orp/areas/humans/applications/closeout.rtf)

- **Revisions/Modifications**
  - Any changes or modifications to the study must be submitted to the Office for Research Protections on the Exempt Modification Request Form available on our website: http://www.research.psu.edu/orp/areas/humans/applications/exemptmod.rtf

Please do not hesitate to contact me if you have any questions or concerns.

Thank you,
Jodi

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Appendix I

Definitions of Key Terms

Community of practice (CoP): a voluntary, on-going association of people whose interactions develop, disseminate, sustain and evolve the norms, knowledge base, and repertoire of an activity they all engage in (Wenger 1998).

Content: in a CoP or DCoP, content is static information such as documents, photos, or video clips that a member encounters in the community space. The defining characteristic of content is that it involves a one-way communication of information (Hoadley and Enyedy 1999; Hoadley and Kilner 2005).

Distributed community of practice (DCoP): a practice-related community whose members are geographically distributed widely as in a NoP, but whose participation is personal and reciprocal approaching that of a CoP.

Identity of participation: a person's self assessment of the extent to which she or he belongs in a CoP and is able to contribute to shaping it (Wenger 1998; Blanchard and Markus 2002).

Network of practice (NoP): a practice-related association of people who are geographically dispersed and whose interactions are infrequent, usually mediated through print media, and directed primarily to disseminating information (Brown and Duguid 2000).

Socially relevant representations (SRRs): representations that contribute information that is not part of the traditional domain-area content; instead, the representations situate the information in its social context (Hoadley 1999; Hoadley and Kirby 2004). In this study, the set of SRRs being studied are called the cues of participation, and they are: the author is listed as a member of the DCoP, and the author's audience is explicitly stated to be the members of the DCoP; the content is written in first-person voice, in a non-authoritative tone, includes some elements of narrative, and invites other perspectives and feedback

VITA

Peter G. Kilner

Pete Kilner is a U.S. Army officer and professor of leader development and organizational learning at the U.S. Military Academy, West Point, New York. Prior to studying Instructional Systems at Penn State, he was awarded an M.A. in Philosophy from Virginia Tech in 1998 and a B.S. in Political Science from West Point in 1990. His military education and training includes completion of the Command and General Staff College, the Public Affairs Officer Course, the Infantry Officer Advanced Course, Jumpmaster School, and Ranger School.

Pete is part of the team of volunteer Army officers who founded and continue to support peer-to-peer professional forums for U.S. Army company commanders and platoon leaders. The value of these forums has been recognized by *Harvard Business Review*, *CNN*, *New Yorker*, *Fast Company*, the U.S. Army CIO, and many others.

Pete is also very interested in the moral justification for war and killing in war. His masters thesis was entitled, "Soldiers, Self Defense, and Killing in War," and he has continued to research and write on morality, warfare, and the psychological effects of engaging in combat.

In his career, Pete has commanded a paratrooper company, taught courses on philosophy and composition at West Point, and published articles on leadership, organizational learning, and professional ethics in a variety of media, to include *The SIGGROUP Bulletin*, *CSCL 2005 Proceedings*, *Military Review*, *Infantry Journal*, and the *Washington Post.*