Communities of Practice:
Thinking and *Acting* within the Territory

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The map is not the territory.

- Alfred Korzbyski
The Little Zen Companion

Introduction

Canadian Officership in the 21st Century (Officership 2020): Strategic Guidance for the Canadian Forces Officer Corps and the Officer Professional Development System outlines strategic objectives and initiatives needed to transform the Officer Corps in order to meet the anticipated challenges and demands of the coming decades. Key among these is the requirement to develop officers' ability to apply critical thinking skills in the development of innovative solutions to complex problems and situations. In articulating the vision for officer professional development, *Officership 2020* emphasizes the acquisition of *formal* education and training as key to the development of the individual's professional knowledge and achievement of their intellectual potential.

This paper explores the potential contribution of *informal* learning processes to realization of the strategic vision for officer professional development and the transformation of the Canadian Forces into a learning organization. Specifically, this paper explores the concept and practice of *communities of practice*. It defines the

concept, characteristics and structural elements *of communities of practice*, and the relationship between them and the three dimensions of organizational social capital: structural, relational and cognitive. In focusing on *communities of practice* as a mid-level unit of analysis mediating between individuals and the organization, the discussion highlights the role of *communities of practice* in the development of both human (intellectual) capital *and* organizational intellectual capital. It suggests that the development and maintenance of organizational intellectual capital is the key to transforming the Canadian Forces into a true learning organization.

Defining Communities of Practice

Etienne Wenger, often credited with coining the term "communities of practice" defines them as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis."[1] Bennett similarly describes a community of practice as a "self-organizing group of people with expertise, experience, and interest in a particular practice area who share valuable insights about the practice area."[2] While Wenger does not limit the concept of communities of practice to the work environment,[3] other definitions situate communities of practice explicitly within the organizational context. For example, Nichols defines communities of practice as "groups of people in organizations that form to share what they know, to learn from one another regarding some aspects of their work and to provide a social context for that work."[4] Sawhney and Prandelli describe a "community of practice" as "a sustained, cohesive group of people with a common purpose, identity for members, and a common environment using shared knowledge,

language, interactions, protocols, beliefs, and other factors not found in job descriptions, project documentation or business processes."[5]

While the literature includes various definitions of communities of practice and a plethora of terms to describe similar phenomena,[6] all share a common emphasis on groups of people informally bound together by their shared knowledge, expertise and passion for a topic or enterprise.[7]

Characteristics of Communities of Practice

It is important not to confuse communities of practice with other types of organizational groups (e.g. project teams, formal work groups, task forces, and networks). "A community of practice is not just an aggregate of people defined by some characteristic. The term is not a synonym for group, team, or network. Membership is not just a matter of social category, declaring allegiance, belonging to an organization, having a title, or having personal relations with some people. A community of practice is not defined merely by who knows whom or who talks with whom in a network of interpersonal relations through which information flows. … [A community of practice derives from sustained] dense relations of mutual engagement organized around [a domain]."[8]

Table 1 summarizes the differences between communities of practice and the various other types of groups within a work environment in terms of their functions, basis of membership, basis of cohesion and duration.

Table 1

**Comparison of Communities of Practice
and Other Group Types[9]**

Group Types	Function / Purpose	Basis of Membership	Basis of Cohesion	Duration
Communities of Practice	Develop members' capabilities; build and exchange knowledge	Self-selected	Passion, commitment and identification with the group's expertise that forms the basis of the practice	As long as members have an interest in improving the practice and maintaining the community
Formal Work Groups/Teams	Perform the ongoing work that has been assigned to the team (e.g. produce and deliver a product or services)	Everyone who has been assigned to the team / everyone who reports to the group's manager	Job / performance requirements and continuing, common goals	Until the work or the organization is reorganized
Project Teams and Task Forces	Accomplish a specific task or assignment, usually during a particular time frame	As assigned by management	Project milestones and goals	Until the task or assignment has been completed
Informal Networks	Collect and share information of common interest	Reciprocal value and acceptance, that is, members obtain and provide information of value	Mutual needs; perceived value in belonging and participating	As long as people have a reason to connect and share information

While communities of practice are distinct from other types of work groups, there is no one set of characteristics that clearly distinguishes a community of practice. For example, communities of practice may be either self-organizing (i.e. spontaneous) or sponsored by the organization (i.e. intentional). While most communities of practice are self-organizing, increasingly organizations are sponsoring the development of specific communities of practice to steward a needed capability.[10]

Somewhat related to the distinction between spontaneous and intentional communities of practice is the relationship a community of practice has to the organization. The nature of these relationships can range from completely unrecognized to largely institutionalized.[11] For example, the community of practice of 'medical claims processors' studied by Wenger, was invisible (i.e. unrecognized) to the organization.[12] In other organizations, like the World Bank, the thematic groups have proved so valuable that they have been incorporated into the official structure of the organization. As Wenger notes, there is a wide range of possible relationships on the spectrum between invisibility and institutionalization.[13]

Some communities of practice may consist of only a few experts or specialists in a topic area or enterprise. Other communities of practice may involve hundreds of members. These large communities of practice are typically subdivided according to geographic region and/or subtopic to encourage the active participation of all members. The World Bank Institute (WBI)[14], for instance, currently has seventeen 'thematic groups' whose members regularly meet on line to share knowledge and expertise regarding specific topics relevant to the international development community. In addition, the WBI currently has four 'Community of Practice' sites on its on-line

Development Forum (with more under development). These 'Community of Practice' sites provide an on-line workspace where practitioners from around the world share ideas, information, knowledge and experience to address specific development challenges.

While engaging in a practice around a topic or enterprise requires regular interaction, the form that communication takes varies from one community of practice to the next. In communities where members are in geographical proximity to one another (i.e. co-located), face-to-face interaction occurs on a regular basis. Other communities of practice may be geographically distributed (as noted above) with members connecting via phone, letter, e-mail or web-based forums and discussion groups. As Wenger notes, "…new technologies and the need for globalization are quickly making distributed communities of practice the standard rather than the exception."[15] What is important here is not the particular form of communication used to interact, but the existence of a shared practice that enables members to share their ideas, expertise, best practices, etc.

Communities of practice also vary in terms of the level of formality that characterizes the interactions of their members. While one might suspect that self-organizing communities of practice are more informal than sponsored communities of practice, the degree of formality in the interactions of community members is not determined by whether the community forms spontaneously or is sponsored by the organization. " Whether a community is spontaneous or intentional does not dictate its level of formality. Some highly active and mature communities remain very informal while others are highly structured, calling meetings, setting agenda, defining specific roles, and creating community artifacts such as Web sites or knowledge bases."[16]

Communities of practice also vary in terms of the homogeneity/heterogeneity of their members. Some communities of practice are homogenous, comprised of people from the same discipline (e.g. sociology) or job-related function (e.g. XEROX technicians). Other communities of practice are heterogeneous, bringing people together with diverse backgrounds. For example, the WBI's "communities of learning" are comprised of teachers and trainers, government officials, researchers, students, World Bank staff, and others. Wenger suggests that while it is often easier to start a community among people with similar backgrounds, what makes engagement in practice possible and productive is as much a matter of diversity as it is of homogeneity. Since the group 'coherence' which arises out of mutual relations of engagement is based on the competence of members in the community's practice, these relations of engagement are as likely to give rise to differentiation as to homogenization."[17] "Homogeneity is neither a requirement for, nor the result of, the development of a community of practice. …"[18]

Since membership in a community of practice is based on participation and not on social category, status, title, or personal relations in a network of people, communities of practice are not bounded by organizational or institutional structures or hierarchies. Communities of practice can exist within a business unit or cut across intra-organizational divisions. They can also transcend organizational boundaries.

The life span of communities of practice also varies widely, with some existing several years while others (e.g. communities of artisans) may exist centuries, with members passing their craft from generation to generation. Irrespective of the life span of the community, communities of practice develop through clearly identified stages.

Figure 1 below identifies the activities that typically occur at each developmental stage in the life cycle of a community of practice.

Figure 1[19]
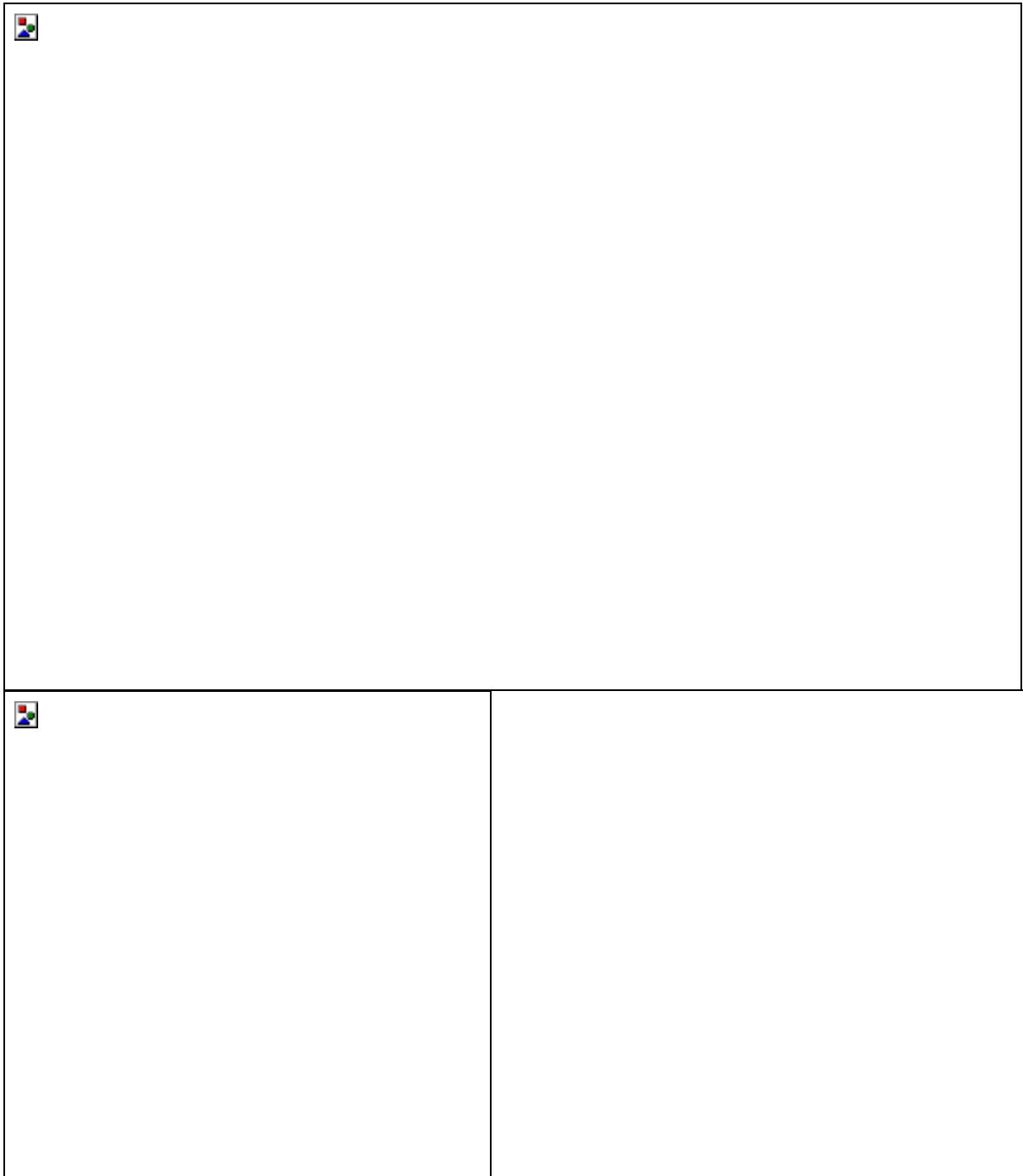
Structure of Communities of Practice

Irrespective of differences in their characteristics, contemporary communities of practice all share a common structure comprised of three basic elements*: a domain,* which defines a set of issues; a *community* of people who care about this domain; and the shared *practice* they are developing to be effective in this domain. A community of practice is a unique combination of these three elements.[20]

Domain refers to the specific subject area, topic or enterprise around which the community of practice is organized. The domain is the raison d'être of the community. While it is easier to define a domain around an established 'professional' discourse (e.g. the profession of arms), it is important to recognize that communities of practice may also form around domains related to work roles and functions (e.g. airframe technician, 'command and control' function). It is not the subject matter of the particular topic, subject area or enterprise that determines whether a community of practice will form, it is the commitment to, and interest in, the domain that determines whether people come together to share their knowledge, experience, best practices, and discuss pertinent issues within the domain. "A shared domain creates a sense of accountability to a body of knowledge and therefore to the development of a practice. … members' shared understanding of their domain – its purpose, its resolved issues, its open questions - … guides the questions [members] ask and the way they organize their knowledge."[21]

A well-developed domain "becomes a statement of what knowledge the community will steward. It is a commitment to take responsibility for an area of

expertise and to provide the organization with the best knowledge and skills that can be found. In turn, when an organization acknowledges a domain it legitimizes the community's role in stewarding its expertise and capabilities."[22]

The *domain* also "defines the identity of the community, its place in the world, and the value of its achievements to members and to others."[23] As Wenger notes "The most successful communities of practice thrive where the goals and needs of an organization intersect with the passions and aspirations of participants. If the domain of a community fails to inspire its members, the community will flounder, … if the topic lacks strategic relevance to the organization, the community will be marginalized."[24]

Wenger defines *community*, the second structural element of a community of practice, as "a group of people who interact, learn together, build relationships, and in the process develop a sense of belonging and mutual commitment."[25]

While the term "community" is consistently used with positive connotations, Wenger emphasizes that the interrelations within the community of practice context "arise out of engagement in practice and not out of an idealized view of what a community should be like. In particular, connotations of peaceful coexistence, mutual support, or interpersonal allegiance are not assumed, though of course they may exist in specific cases. Peace, happiness and harmony are therefore not necessary properties of a community of practice."[26]

Brown and Duguid similarly observe that while the concept of communities of practice has been taken up with a remarkable amount of enthusiasm, much of the concept's appeal turns on the word *community,* which can be a deceptive but "warmly

persuasive word."[27] "Communities of practice are … as likely to be cold as warm, may sometimes be coercive rather than persuasive, and are occasionally explosive."[28]

The third structural element in communities of practice is *practice*,[29] defined as "undertaking or engaging fully in a task, job, or profession."[30] In their discussion of the concept of community of practice, Brown and Duguid suggest that too much attention is often paid to the notion of *community*, and too little to the implications of *practice*.[31] They argue that one of the problems in our understanding of the concept of practice is the ambiguity of the term itself. For example, we use *practice* to signify the work itself (e.g. a legal *practice*), the performance of the work (e.g. to *practice* medicine), or the repetitive rote tasks or exercises designed to develop a skill (e.g. piano practice, target practice).[32] From a community of practice perspective, the term *practice* "connotes doing … in a historical and social context that gives structure and meaning to what we do. … practice is always social practice."[33] Fundamentally, the notion of *practice* as used within a communities of practice context is concerned with the "social production of meaning."[34]

From a community of practice perspective, then, the central issue in learning is *becoming* a practitioner not learning *about* practice. Such a view is summed up in the Spanish proverb: It is not the same to talk of bulls as to be in the bullring.[35] *Practice's* emphasis on "learning in doing" focuses on how individuals learn to function within a community (e.g. acquire the particular community's subjective viewpoint, learn to speak its language), rather than on the transmission and absorption of abstract, "objective" knowledge. "Learners are acquiring not explicit, formal "expert knowledge," but the embodied ability to behave as community members. … This approach draws attention

away from abstract knowledge and cranial processes and situates it in the practices and communities in which knowledge takes on significance."[36] *Practice* then refers preeminently to an adaptive, improvisational, knowledge-producing activity embedded within communities of practice, rather than to the increasing refinement of existing knowledge or skills through formal education and training.

This concept of *practice* includes "both the explicit and the tacit. It includes what is said and what is left unsaid; what is represented and what is assumed. It includes the language, tools, documents, images, symbols, well-defined roles, specified criteria, codified procedures, regulations, and contracts that various practices make explicit for a variety of purposes. But is also includes all the implicit relations, tacit conventions, subtle cues, untold rules of thumb, recognizable intuitions, specific perceptions, well-tuned sensitivities, embodied understandings, underlying assumptions, and shared world views. Most of these may never be articulated, yet they are unmistakable signs of membership in communities of practice…"[37]

The focus on the social context in which learning occurs and identity is formed points to the importance of communities of practice as a mid- or meso-level unit of analysis between the individual (micro level) and larger formal organizational structure (macro level). "Looking at learning and identity through the lens of practice shifts attention from… structural or organizational perspectives to … perspectives of participation. … practice-focussed analysis brings investigation of knowledge and identity in organizations closer to the point at which working life is lived, work done, and so working identities created, than analysis focused either on autonomous self-interest, on

the one hand, or on … the more abstract and distant sociological "slabs" such as class or organization, … on the other.[38]

Communities of practice mediate "between individuals and large formal and informal social structures, and between organizations and their environment, they are where a good deal of the work in knowledge creation and learning gets done."[39] As Lesser and Storck suggest, "the mechanism through which communities of practice are able to influence organizational performance is the development and maintenance of social capital among community members."[40] It is not coincidence that the structural elements of communities of practice roughly parallel the three dimensions of social capital that form the basis for the discussion that follows.

Social Capital

Woolcock suggests that while 'social capital' is arguably the most influential sociological concept to emerge in the past decade, the term has assumed a variety of meanings and has been adopted indiscriminately, adapted uncritically and applied imprecisely.[41] Leana and Van Buren similarly argue that while the term social capital has received considerable attention from scholars in a variety of fields, researchers have used the term in competing and often contradictory ways.[42] The use, or misuse, of the concept of social capital is perhaps best summarized by Baron and Hannan, who argue that scholars from different sociological traditions "have begun referring to virtually every feature of social life as a form of capital."[43] The indiscriminate applications of 'social' and other 'capital' have led them to disparage the recent emergence of the "plethora of capitals."[44]

A cursory examination of the literature underscores the definitional and conceptual problems associated with the use of the term 'social capital.' For example, Adler and Kwon provide twenty-three definitions of 'social capital' from the literature which, "while broadly similar … express some significant nuances. First, the definitions vary depending on whether they focus on the substance, the sources, or the effects of social capital. Second, they vary depending on whether their focus is primarily on (1) the relations an actor maintains with other actors, (2) the structure of relation among actors within a collectivity, or (3) both types of linkages."[45]

On a micro level, some scholars view social capital as an attribute of individual actors who realize advantages owing to their relative status[46] or location[47] in a group or in industry networks.[48] On a macro level, scholars have described social capital as an attribute of communities,[49] and nations.[50] Still others more broadly define social capital as a "resource that is derived from the relationships among individuals, organizations, communities, or societies."[51]

As an organizational phenomenon, social capital has received comparatively less attention.[52] For example, Prusak and Cohen use the term *social capital* to refer to the "strong relationships that make organizations work effectively."[53] In directly linking social capital and organizational performance, Prusak and Cohen describe the benefits of social capital for organizations: engagement, collaboration, loyalty, persistence, and dedication. They argue that these benefits enable organizations that invest in social capital to attract and retain talent, and contribute to performance.[54]

Nahapiet and Ghoshal provide a particularly useful framework for understanding social capital within the organizational context.[55] Defined as "the sum of the actual and

potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit,"[56] Nahapiet and Ghoshal explore the role of social capital in the creation of intellectual capital (their primary focus), in terms of the structural, relational and cognitive dimensions of social capital.

Much social capital theory and research has tended to focus exclusively on the structural or relational aspects of social capital. Nahapiet and Ghoshal's inclusion of a cognitive dimension is of particular importance for discussion of the potential contributions of communities of practice to learning, knowledge creation and identity in organizations.

Structural Dimension of Social Capital

Nahapiet and Ghoshal define the structural dimension of social capital as the "overall pattern of connections between actors"[57] (i.e. who you reach and how you reach them). Their concept of the structural dimension of social capital draws on Granovetter's discussion of structural embeddedness, which focuses on the properties of the social system and the network of relations as a whole.[58] Thus, the concept of structural embeddedness "describes the impersonal configuration of linkages between people or units."[59] Nahapiet and Ghoshal identify the presence or absence of network ties between actors; and the network configuration or morphology, which describes the pattern of linkages in terms of such factors as density, connectivity, and hierarchy; and appropriable[60] organization as important aspects of the structural dimension of social capital.[61]

While Lesser and Storck define the structural dimension of social capital in terms of the "ability of individuals to make connections to others within an organization,"[62] this

intra-organizational focus is too narrow in its focus. Others definitions focus on the structure and strength of interpersonal relations in *social systems*, thus, broadening the discussion to include the individual's ability to make inter-organizational connections.[63]

For example, some social network researchers argue for the value of "strong ties" among individuals within cohesive and bounded social networks or communities.[64] Others contend that such ties lead to inflexibility and inhibit complex task coordination, and argue that individuals can best develop social capital by pursuing numerous and strategically positioned "weak ties" within a social system.[65] Such an approach suggests that individuals who are able to take advantage of "brokerage opportunities" within a social system to bridge gaps between otherwise disconnected others (i.e. fill "structural holes") will enhance their stores of social capital.[66]

Since the 'brokerage opportunities' formed by weak ties result in less network closure and greater access to a wider variety of informational sources, one could argue that organizations operating in complex and dynamic environments would benefit more from filling structural holes than from cohesive ties in a closed network. For example, in complex, dynamic and often ambiguous modern peacekeeping environments, inter-organizational linkages (i.e. social networks) characterized by weak ties would help to ensure access to the broader range of information sources and inputs generally associated with differentiation strategies. Conversely, in the relatively stable and simple traditional peacekeeping environments of the past, cohesive ties within a closed social network helped to ensure access to timely information needed for the control and coordination required to implement rather constrained strategies.

Dess and Shaw note that in the business world, inter-organizational linkages are becoming more intense and organizational boundaries less distinguishable through strategic alliances, outsourcing, sole supplier relationships, increased customer involvement in product design, and so forth.[67] Nahapiet and Ghoshal suggest that in this type of dynamic and fluid environment, "Organizations high in social capital may become ossified through their relatively restricted access to diverse sources of ideas and information."[68]

What is important here is that it is the relative strength and structure of intra- and inter-organizational ties that provide the channels for information transmission (i.e. who you know affects what you know). As Nahapiet and Ghoshal argue this "structural dimension of social capital influences the development of intellectual capital primarily (though not exclusively) through the ways in which its various facets affect access to parties for exchanging knowledge and participating in knowing activities."[69] To the extent that the properties of the network structure -- density, connectivity and hierarchy – are features associated with flexibility and the ease of information exchange, the overall configuration of the network structure may impact the development of intellectual capital.

Relational Dimension of Social Capital

If the structural dimension of social capital is concerned with the number and strength of relationships within a social network, then the relational dimension of social capital is concerned with the *content* of those relationships. Nahapiet and Ghoshal use the concept of the relational dimension of social capital to refer to "those assets created and leveraged through relationships."[70] Their concept here is informed by Granovetter's

notion of "relational embeddedness," which describes the nature of the personal relationships people develop with each other through a history of social interaction.

Nahapiet and Ghoshal suggest that there are four components to this relational dimension of social capital: obligations and expectations; norms and sanctions; trust and trustworthiness; and identity and identification[71] In identifying both a *social identity* component and a *normative guidance* component to the relational dimension of social capital, their analysis of the *content* of relations roughly parallels Wenek's identification of the functional elements of the "military ethos."[72]

Thus, as Nahapiet and Ghoshal suggest, "The patterns of linkages and the relationships built through them are the foundation of social capital…. [This is] a complex and dialectical process in which social capital is created and sustained through exchange and in which, in turn, social capital facilitates exchange."[73] What is important here is how "the particular relations people have, such as respect and friendship, … influence their behavior."[74]

Trust and trustworthiness are key facets of the relational dimension of social capital.[75] This focus on the content of relationships – respect, friendship, trust – and the asserted link to individual behavior (i.e. performance) is consistent with the analyses of *social cohesion* that have dominated the military sociological literature. Such analyses have emphasized the importance of affect-laden relationships based upon shared social characteristics for morale and performance in military units.[76]

While most of the research literature on social capital emphasizes its positive consequences, more recent analyses have identified at least four negative consequences of social capital: exclusion of outsiders, excess claims on group members, restriction on

individual freedoms, and downward leveling of norms. As Portes notes: "the same strong ties that bring benefits to members of a group commonly enable it to bar other from access."[77]

Performance-focused trust (*task cohesion* in the military sociological literature) would appear to avoid the negative consequences associated with the trust engendered by the "deep civic engagement"[78] underlying analyses of the relational dimension of social capital (and *social cohesion* in military organizations). For example, in their analysis of social capital in Silicon Valley, Cohen and Fields conclude that performance-based trust may be superior to the relational trust envisioned by social capital theorists precisely because it avoids the pitfalls associated with social capital. Thus, performance-focused trust is "open to outsiders [and] can be extended, rather quickly, to people from other places and other cultures, and even to people with different ideas."[79]

Cognitive Dimension of Social Capital

The third dimension of social capital delineated by Nahapiet and Ghoshal is the cognitive dimension, which refers to "those resources providing shared representations, interpretations, and systems of meaning among parties."[80] In identifying these resources as a distinct dimension of social capital, Nahapiet and Ghoshal point to the increasing significance of this set of assets in the strategy domain[81] and their importance in the analysis of the development of organizational intellectual capital.[82]

Nahapiet and Ghoshal use the term "intellectual capital" "to refer to "the knowledge and knowing capability of a social collectivity, such as an organization, intellectual community, or professional practice. … because of its clear parallel with the

concept of human capital, which embraces the acquired knowledge, skills and capabilities that enable persons to act in new ways."[83]

The definition of organizational intellectual capital posited by Nahapiet and Ghoshal is important for two reasons: (1) its distinction between organizational *knowledge* and *knowing*, and (2) its implicit linkage between the development of individual intellectual capital (i.e. human capital) and the intellectual capital of organizations.

The distinction between organizational *knowledge* and *knowing* reflects the dichotomization of knowledge into *explicit* and *tacit* dimensions.[84] As Cohen notes: "The noun "knowledge" implies that knowledge is a *thing* that can be located and manipulated as an independent object or stock. It seems possible to "capture" knowledge, to "distribute," "measure," and "manage" it. The gerund "knowing" suggests instead a process, the action of knowers and inseparable from them. It may be feasible to "promote," "motivate," "encourage," "nurture," or "guide" knowing, but the idea of trying to capture, distribute, or measure it seems senseless."[85]

Underlying the current interest in "knowledge management" and intellectual capital is a view of knowledge that sees it as something reasonably tangible. Most efforts at knowledge management consist of "investing in knowledge repositories such as intranets and data warehouses, building networks so that people can find each other, and implementing technologies to facilitate collaboration. These are all activities that treat knowledge pretty much like steel or any other resource, to be gathered, shared, and distributed."[86]

As Pfeffer and Sutton note, this conception of knowledge as something explicit and quantifiable "draws a problematic distinction between knowledge as a tangible good and the use of that good in ongoing practice. The emphasis that has resulted has been to build the stock of knowledge, acquiring or developing the intellectual *property* under the presumption that knowledge, once possessed, will be used appropriately and efficiently."[87]

McDermott suggests that "To know a topic or a discipline is not just to possess information about it. It is the ability to *use* that information. The art of professional practice is to turn information into solutions. … professionals *piece information together*, *reflect* on their experience, *generate* insights, and *use* those insights to *solve* problems. Thinking is at the heart of professional practice. … *thinking* is key to making information useful. Thinking transforms information into insights and insights into solutions. … Professionals do not just cut and paste "best practice" from the past to the current situation. They draw from their experience to *think about* a problem. … Professional practice is … a kind of improvisation within a territory … To know a field or a discipline is to be able to *think within its territory*"[88](emphasis mine*).

The second and related issue identified by Nahapiet and Ghoshal in their analysis of organizational intellectual capital concerns the linkage between the development of individual intellectual capital (i.e. human capital) and the intellectual capital of organizations.[89] As Cohen notes: "The natural place for knowledge to reside is in the individual. The important question is how to convert individual knowledge to organizational knowledge."[90] Kim similarly suggests that the crucial issue for organizational learning is the process through which "individual learning becomes

embedded in an organization's memory and structure. … Once we have a clear understanding of this transfer process, we can actively manage the learning process to make it consistent with an organization's goals, vision and values."[91]

Cole argues that underlying the taxonomic dimensions of knowledge is the "additional complexity that knowledge carried by individuals only reaches its full potential to create [value] … when it has been converted into organizational knowledge."[92] Precisely because most organizations view knowledge as a tangible resource (like steel), organizations have focused their efforts on developing and deploying information technologies and knowledge management systems in attempts to centralize and compile repositories of objectified explicit knowledge. As Glaser notes, "'Knowledge management' usually comes down to building an intranet."[93] The result has been the creation of what McDermott refers to as "information junkyards."[94] For Cole, "the "buzz" produced by the technology far exceeds the benefits in knowledge creation and transmission promised [because] firms take the tried and true mode of investing in hard technology rather than investing in the more ambiguous realm of restructuring social relationships."[95]

In part, the gap between "data warehousing" and knowledge creation stems from the fact that information and knowledge are only loosely coupled. In part, it stems from the failure to adequately distinguish between individual learning and organizational learning. "While knowledge is carried in the heads of individuals, it must be imbedded in organizational routines to more fully maximize its utility. Much of the use of the new information technologies has been oriented to moving information from "one head to another" rather than imbedding it in organizational routines."[96] Thus, while the use of the

new information technologies has "strongly tended toward increasing the flow of information ... relatively few firms have attempted the kind of thoroughgoing cultural and organizational restructuring that would lead to dramatic improvements in knowledge creation and knowledge transmission."[97]

Communities of Practice and the Canadian Forces

The remainder of this paper will briefly explore how communities of practice may assist in realizing some of the strategic objectives for the Canadian Forces (CF) outlined in *At a Crossroads*[98] and *Officership 2020*.[99]   Fundamentally, *Officership 2020* is about increasing organizational social capital within the Canadian Forces, in what Nahapiet and Ghoshal describe as the relational and cognitive dimensions. A key way for the Canadian Forces to invest in social capital in these dimensions is through fostering communities of practice.

In articulating the vision for officer professional development, the Chief of the Defence Staff emphasizes the acquisition of knowledge and training as key to the development of the individual competencies required for modern military leaders. For example, *At a Crossroads* emphasizes "adding rigour to professional military education, enabling Canadian Forces personnel to achieve their intellectual potential;"[100] and encouraging members to pursue "personal studies to enhance their professional knowledge."[101]

While the cognitive knowledge (or *know-what*)[102] acquired through formal education and training programs is essential to achieve a basic mastery of the profession's body of knowledge, the emphasis on individual knowledge acquisition as the *sine non qua* of officer professional development is problematic for a number of reasons.

Most importantly, from a community of practice perspective, it fails to take into consideration the social context in which officers *practice* their profession, i.e. the ability to *think* and *act* within the territory. "Learning … is a complex social process, one that cannot simply be captured in the notion that "all learning takes place inside individual human heads." Learning … doesn't just involve the acquisition of facts about the world, it also involves acquiring the ability to act in the world in socially recognized ways.[103]

The community of practice view that knowledge and learning are socially constructed emphasizes the importance of putting knowledge back into the context in which it has meaning. Such a view rejects the more pedagogical approach to knowledge and learning articulated in *Officership 2020*. As Brown and Duguid argue "The theories of learning implicated in the documentation and training view learning from the abstract stance of pedagogy. Training is thought of as the *transmission* of explicit, abstract knowledge from the head of someone who knows to the head of someone who does not in surroundings that specifically exclude the complexities of practice and the communities of practitioners."[104]

The importance of the social context of officer professional development is reflected in the opinions of CF members who participated in a process of consultation and discussion as part of the development of HR 2020. Participants expressed concern that experience was being neglected in favour of academic studies, and questioned the value and applicability of a formalized education to the military context. Academic studies were not seen as necessarily providing the skills needed by Canadian Forces leaders today (or in the future).[105]

The underlying assumption in strategies to increase individual intellectual capital is that this cognitive knowledge will be translated into superior individual and, ultimately, organizational performance. The concerns expressed by CF members above would appear to be justified, as there is little empirical evidence to suggest that the assumption is valid. For example, Pfeffer and Sutton note (within the business context) that "There is little evidence that being staffed with people who have an advanced education in business is consistently related to outstanding organizational performance."[106] Numerous researchers have found that "little of what is taught in college or even business schools really prepares would-be managers for the realities of managing."[107]

In his critique of the Officer Professional Development System (OPDS), Beare argues that the education and training-centric focus has undermined the experience *(know-how)* pillar of the system.[108] Clearly the ability to apply knowledge and training to complex real-world situations is essential to the successful execution of tasks within any profession. The centrality of experience in professional knowledge creation is at the heart of Einstein's oft-quoted maxim "Knowledge is experience. Everything else is information."

From a community of practice perspective, however, knowledge is **not** experience. Rather, knowledge (i.e. *knowing*) is created through the active and on-going shaping of information and experience in a dynamic group process (i.e. through mutual engagement in *practice* within a community of practice). "Knowledge is the residue of thinking. Knowledge comes from experience. However, it is not just raw experience. It comes from experience that we have reflected on, made sense of, tested against other's experience. It is experience that is *informed* by theory, facts and understanding. It is

experience we make sense of in relationship to a field or discipline. Knowledge is what we retain as a result of thinking through a problem, what we remember from the route of thinking we took through the field. … *From the point of view of the person who knows, knowledge is a kind of sticky residue of insight about using information and experience to think.* Knowledge is always *recreated* in the present moment."[109] Quinn et al. refer to this level of knowledge as *know why* or *systems understanding*, a "deep knowledge of the web of cause-and-effect relationships underlying a discipline."[110] In essence, this *systems understanding* knowledge refers to the critical thinking skills required to solve large and complex problems. "The ultimate expression of systems understanding is highly trained *intuition*"[111] (emphasis mine). Communities of practice contribute to the development of intuitive knowledge (i.e. *knowing*) through the on-going mutual engagement in practice that is an essential feature of a knowledge-creating environment.

The final level of professional intellect discussed by Quinn et al. is *care-why*, – i.e. will, motivation, and adaptability.   It is the development of this self-motivated creativity that enables organizations to "simultaneously thrive in the face of today's rapid changes and renew their cognitive knowledge, advanced skills, and systems understanding in order to compete in the next wave of advances."[112] Quinn et al. note that while *know-what, know-how* and *know-why* can exist in "an organization's systems, databases, or operating technologies, … *care-why* is often found in its culture. … Yet most enterprises focus virtually all their training attention on developing basic (rather than advanced) skills and little or none on systems or creative skills."[113]   Communities of practice add value to organizations because *practice* is most precisely focussed on developing members' abilities to think and act within the territory.

Communities of Practice and Identity

From a community of practice perspective, learning processes are intrinsically social and collective phenomena. Thus, while learning is inevitably implicated in the acquisition of knowledge, it is also implicated in the acquisition of identity. People do not simply learn *about*; they also learn to *be*. … what individuals learn always and inevitably reflects the social context in which they learn it and in which they put it into practice.[114] Thus, "The identity and knowledge that people acquire when joining an organization, then, while they might appear to be those of an organization as a whole, are more likely to be those of the particular practice through which the individual joins the organization."[115]

This view accepts that while large organizations (like the CF) may provide some degree of common culture for their members, the cultural forces most salient for members are probably those arising "through and at the point of an individual's engagement in the organization and its work."[116] While CF members will share knowledge and insight by virtue of their membership in the organization as a whole, much of the practice that forms identity is more local and dynamic. This view suggests "a need not only to look beyond explanations that take knowledge as a well-defined substance, but also to look beyond explanations that take the cultural unity of the firm for granted."[117] Feldman similarly notes that workgroup loyalty is often a much stronger force than commitment to "an amorphous, distant, and sometimes threatening corporate entity."[118]

The point here is that because large organizations consist of webs of communities of practice (often reflecting their functional division of labour), there are multiple

cultures at the level of individuals' engagement in practice that contribute to their identity formation, job satisfaction and retention. Wenger uses the concept of "imagination" to refer to a "process of expanding our self by transcending our time and space and creating new images of the world and ourselves. … It is through imagination that we recognize our own experience as reflecting broader patterns, connections, and configurations."[119] This concept of imagination is similar to Anderson's notion of an *imagined community*: "*imagined* because, although the members cannot all know one another, "in the minds of each lives the image of their communion"; and *community* because, "regardless of the actual inequality … that may prevail in each, [it] is always conceived as a deep, horizontal comradeship."[120]

While leadership is the burning issue for all kinds of organizations, the notion of identification or *imagined community* highlights that leadership must be seen for what it is: part of a duality of a relationship with followers. The literature on followership suggests that followers follow leaders who give them a feeling of significance in their work, a sense of *community*, and an sense of excitement – a feeling of *being engaged* in the world.[121]

Communities of Practice in the Canadian Forces

What might a community of practice sponsored by the Canadian Forces look like? While the possibilities are endless, for illustrative purposes, we will focus on the development of a community of practice whose subject area (i.e. domain) is *work/life balance.* Every public sector organization and private sector employer wants to attract and retain the brightest and the best. Everyone talks *about* being "an employer of choice." The challenge is to *become* one.

The Canadian Forces Leadership Institute (CFLI) invites selected senior leaders from the three environments to participate in the work/life balance community of practice. It also invites ADM (HR-Mil) and ADM (HR-Civ) to join along with a CF social worker, padre, and Senior NCM's who are 'at the coal face' of work-life issues in the CF. The CFLI invites representatives from international militaries who are trying to position themselves within their national environments as 'employers of choice' (e.g. Australia and the United States). United Nations agencies (e.g. UNHCR), whose members face the same work-life issues and challenges as the CF, are invited to participate, as are some of the Non-Governmental Organizations (NGOs) involved in international humanitarian relief operations (e.g. CARE Canada, Doctors Without Borders, OXFAM). Representatives from the other federal government departments (e.g. Treasury Board Secretariat) and the not-for-profit sector with noted expertise in this area (e.g. Conference Board of Canada, the Vanier Institute of the Family, Family Resource Programs Canada, etc.) are invited to participate. Finally, (since the CF is competing with them for talent), the CFLI invites representatives from some of the more progressive companies in the area of work-life balance (e.g. Xerox Canada, DuPont Canada, Bell Canada, Manulife Financial, IBM Canada).

This community of approximately 20 members meets every two months to discuss challenges, assess new demographic information and trends, debate issues, compare experiences, and gather information on best practices in other organizations. In between their meetings, community members phone and e-mail to discuss specific topics and issues within their domain of practice.

By the end of six months, the CF members of the community realize that there are some work-life balance initiatives (e.g. employer-sponsored family care, mummy tracking) that could help the CF position itself as an employer of choice now and in the future. They realize that policies and programs are non-existent in other areas that are critically important for some families (e.g. 'special needs' families) and propose potential solutions to the organization. Because they've discussed trends, they're able to anticipate what some of the work-life balance issues may be in the near future (e.g. comprehensive elder care) and begin developing appropriate policies and programs to meet the needs of CF members in this area.

They also realize that work-life balance isn't just about developing 'family-friendly' policies and programs, and providing benefits to assist families in specific areas of their lives. It's about changing corporate culture … a subject area that is the domain of another community of practice within the CF.

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[1] Etienne Wenger, Richard McDermott and William W. Snyder, *Cultivating Communities of Practice: A Guide to Managing Knowledge*, (Boston, MA: Harvard Business School Press, 2002), 4. See also, J. Lave and E. Wenger, *Situated Learning: Legitimate Peripheral Participation*, (New York: Cambridge University Press, 1991) and Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (New York: Cambridge University Press, 1998).

[2] William Bennet, Federal Energy Regulatory Commission, cited in Jenny Ambrozek and Lynne Bundesen Ambrozek, "Building Business Value through "Communities of Practice"," *Workforce*, (December 2002).

[3] While Wenger indicates that communities of practice don't necessarily involve people who work together, virtually all of the ethnographic studies of communities of practice have focussed on the work-related/organizational environment. See, for example, Orr's study of XEROX technicians, J. Orr, *Talking about Machines: An Ethnography of a Modern Job* (Ithaca, NY: IRL Press) 1996.

[4] Fred Nicols, *Communities of Practice: Definition, Indicators and Identifying Characteristics*, (2000) http://hme.att.net.

[5] Mohanbir Sawhney and Emanuela Prandelli, "Communities of Creation: Managing Distributed Innovation in Turbulent Markets," *California Management Review*, 42, no. 4 (Summer 2000): 24-54, 51, fn. 31.

[6] See, for example, "invisible colleges" (D. Crane, *Invisible Colleges: Diffusion of Knowledge in Scientific Communities,* (Chicago: University of Chicago Press, 1972); "occupational communities" (J. Van Maanen and S. Barley, "Occupational Communities: Culture and Control in Organizations," in *Research in*

Organization Behavior, vol. 6, ed. B. M. Staw and L. L. Cummings (Greenwich, CT: JAI Press, 1984); "communities of practitioners" (C. Argyris, R. Putnam, and D. M. Smith, *Action Science*, (San Francisco, CA: Jossey-Bass, 1987), and D. A. Schön, *Educating the Reflective Practitioner*, (San Francisco, CA: Jossey-Bass, 1987); "cognitive communities" (J. F. Porac et al., "Competitive Groups as Cognitive Communities: The Case of the Scottish Knitwear Manufacturers," *Journal of Management Studies* 26 [1989]: 397-416); "epistemic communities" (P. Haus, "Introduction: Epistemic Communities and International Policy Coordination," *International Organization* 46, no. 1 [1992]:1-36); "communities of knowing" (R. J. Boland and R. V. Tenkasi, "Perspective Making and Perspective Taking in Communities of Knowing," *Organization Science* 6, no. 4 [1995]:350-372); "occupational cultures" (E. H. Shein, "Three Cultures of Management: The Key to Organizational Learning," *Sloan Management Review* 38, no. 1 [1999]: 9-20); "knowledge communities" (J. Botkin, *Smart Business* [New York: Free Press, 1999]); "guilds" (D. Leonard and W. Sway, "Gurus in the Garage, *Harvard Business Review,* November-December 2000, 71-79); "communities of creation" (Mohanbir Sawhney and Emanuela Prandelli, "Managing Distributed Innovation in Turbulent Markets," *California Management Review*, 42, no. 4 (2000): 24-54.

[7] If the term "community of practice" (and its many variations) is relatively new, the concept is not. In his preface to the second edition of *The Division of Labour in Society,* the French sociologist, Emile Durkheim traced the history of "corporations" or 'occupational groups' from ancient Roman times through the end of the twentieth century. According to Durkheim, the corporations of trades workers and craftsmen in ancient Rome functioned primarily as religious organizations and mutual aid societies. As a corollary to their religious character, these "occupational cults" also functioned as burial societies for their members. Unlike their Roman counterparts, the corporations or "guilds" of the Middle Ages had a clearly defined business function, establishing rules and regulations regarding the respective duties of employers, workmen and apprentices, as well as the duties of employers toward each other, for each occupation; and a system of rules designed to guarantee occupational honesty. Like their Roman counterparts, these occupational 'communities of interests' also constituted a 'moral environment' for their members, often establishing themselves in the parish house, or a particular chapel and putting themselves under the innovation of a saint who became the patron saint of all the community. Emile Durkheim, *The Division of Labor in Society.* (New York: The Free Press, 1964): 1- 31.

[8] Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (New York: Cambridge University Press, 1998): 73-74.

[9] Table 1 is adapted from Etienne C. Wenger and William M. Snyder, "Communities of Practice: The Organizational Frontier," *Harvard Business Review,* 78, no. 1 (January-February, 2000): 139-145, 142 and Fred Nickols, "Communities of Practice: Definition, Indicators & Identifying Characteristics (2000). Military units (e.g. troops, flight crews, etc.) are more closely identified with what Wenger and Nickols describe as formal work teams or groups.

[10] A partial list of organizations sponsoring communities of practice include the World Bank, Daimler Chrysler, Shell Oil, McKinsey & Company, Microsoft, Hallmark Cards, Procter & Gamble, Johnson & Johnson, Xerox, Hewlett-Packard, Ben & Jerry's and British Petroleum.

[11] Etienne Wenger, Richard McDermott and William W. Snyder, *Cultivating Communities of Practice: A Guide to Managing Knowledge*, (Boston, MA: Harvard Business School Press, 2002), 27.

[12] Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (New York: Cambridge University Press, 1998).

[13] Etienne Wenger, "Communities of Practice: Learning as a Social System." *IBM Systems Thinker* (June 1998).

[14] The World Bank Institute is the learning arm of the World Bank. Its site is located at www.worldbank.org/wbi.

[15] Etienne Wenger, Richard McDermott and William W. Snyder, *Cultivating Communities of Practice: A Guide to Managing Knowledge*, (Boston, MA: Harvard Business School Press, 2002), 25.

[16] Wenger, McDermott and Snyder, p. 26.

[17] Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (New York: Cambridge University Press, 1998): 75-76. The interrelations involved in the mutual engagement of a community of practice are more closely associated with Durkheim's notion of "organic solidarity" than the notion of "mechanical solidarity." While the former was based on the functional interdependence of tasks/positions in social organization (i.e. differentiation), the latter was based on the similarity of group characteristics and roles.

[18] Ibid., p. 76. In her analysis of the sources of innovation in firms, Leonard-Barton similarly observes that innovation comes from the right combination of *cohesiveness* (shared context, ideas, and language) and *diversity* – a balance she refers to as "creative abrasion." Leonard-Barton suggests that diversity without cohesiveness leads to disorder, while cohesiveness without diversity leads to 'groupthink.' See Dorothy Leonard-Barton, *Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation* Boston, MA: Harvard Business School Press, 1995). The notion that the coherence in the relations of mutual engagement in a community of practice is based on competence rather than on the social characteristics of members is somewhat similar to Pinch's discussion of the relationship between 'task cohesion' in military units and performance. See Franklin C. Pinch, *Selected Issues and Constraints on Full Gender Integration in Elite Ground Combat Units in Canada,* (Kingston, ON: Queen's University, n.d.): 1- 27.

[19] Figure 1 is reproduced from Etienne Wenger, "Communities of Practice: Learning as a Social System." *IBM Systems Thinker* (June 1998).

[20] Wenger, McDermott and Snyder, p. 27.

[21] Ibid., p. 30.

[22] Ibid., p. 32. Wenger suggests that mapping domains and defining their content and scope is an art. Many communities create an explicit 'knowledge map' of their domain by generating issues, categorizing them, and drawing connections between them. These knowledge maps help the community to define their learning agenda and organize projects. See Ibid., p. 241, fn. 8.

[23] Ibid., p. 31.

[24] Ibid., p. 32.

[25] Ibid., p. 34. The definition of community reflects the sociological concept of community: "A community involves a limited number of people in a somewhat restricted social space or network held together by shared understandings and a sense of obligation. Relationships are close, often intimate, and usually face to face. Individuals are bound together by affective or emotional ties rather than by a perception of individual self-interest. There is a 'we-ness' in a community; one is a member." T. Bender and S. M. Kruger, *Community and Social Change in America* (Baltimore: Johns Hopkins University Press, 1982): 7-8, cited in Etienne Wenger, Richard McDermott and William W. Snyder, *Cultivating Communities of Practice: A Guide to Managing Knowledge*, (Boston, MA: Harvard Business School Press, 2002), 241, fn. 10. Etzioni identifies similar characteristics of communities, including a web of affect-laden relationships, commitment to shared values, norms and meaning, a shared history and identity and a relatively high level of responsiveness to both members and the world. A. Etzioni, "The Responsive Community: A Communitarian Perspective," *American Sociological Review*, 61, no. 1 (1996): 1-11. In his earlier writing on communitarianism, Etzioni assumed that globalization inevitably implied a loss of community. See A. Etzioni, *The Spirit of Community: The Reinvention of American Society* (New York: Crown) 1993.

[26] Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (New York: Cambridge University Press, 1998): 76-77.

[27] John Seely Brown and Paul Duguid, "Knowledge and Organization: A Social-Practice Perspective," *Organization Science*, 12, 2 (March-April 2001): 198-213, 203.

[28] Ibid., p. 203. A recent article in the Ottawa Citizen described relations in the scientific publishing 'community' as ridden with jealousy, bullying, half-truths, paranoia and revenge. Ottawa Citizen, March 2002.

[29] The notion of practice has a long intellectual history. The work of Bourdieu on the nature of practice has helped to establish its importance as an influential sociological framework. P. Bourdieu, *Outline of a Theory of Practice.* Cambridge: Cambridge University Press): 1977.

[30] John Seely Brown and Paul Duguid, "Knowledge and Organization: A Social-Practice Perspective," *Organization Science*, 12, 2 (March-April 2001): 198-213; 203.

[31] John Seely Brown and Paul Duguid, "Knowledge and Organization: A Social-Practice Perspective," *Organization Science*, 12, 2 (March-April 2001): 198-213.

[32] This latter notion of practice is synonymous with the emphasis in military organizations on *training* and *exercises* designed to assist participants learn the work (e.g. live-fire exercises, precision drill training, weapons training, etc.). Such training does not constitute *practice* in the context in which the term is used in the literature on communities of practice.

[33] Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (New York: Cambridge University Press, 1998): 47. The concept of practice reflects the Marxist notion of *praxis* – learning in doing.

[34] See, for example, P. Berger and T. Luckman, *The Social Construction of Reality* Garden City, NJ: Doubleday, 1966) ; H. Blumer, *Society as Symbolic Interaction in Human Behavior and Scoail Processes.* (Boston, MA: Houghton Mifflin, 1962); H. Garfinkel, *Studies in Ethnomethodology.* (Englewood Cliffs, NJ: Prentice-Hall, 1967); E. Goffman, *The Presentation of Self in Everyday Life.* Garden City, NJ: Doubleday, 1959); G. H. Mean, *Mind, Self and Society.* Chicago, IL: University of Chicago Press, 1934).

[35] Quoted in Karol W. J. Wenek, *Defining Effective Leadership in the Canadian Forces: Content and Process Frameworks,* Kingston, ON: Canadian Forces Leadership Institute, n.d.

[36] John Seely Brown and Paul Duguid, "Organizational Learning and Communities of Practice: Toward a Unified View of Working, Learning, and Innovation," *Organization Science,* 2, no. 1 (February 1991): 40-57, 48.

[37] Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (New York: Cambridge University Press, 1998): 47.

[38] John Seely Brown and Paul Duguid, "Knowledge and Organization: A Social-Practice Perspective," *Organization Science*, 12, 2 (March-April 2001): 203. In proposing communities of practice as the unit of analysis mediating between the individual and the organization, Lave and Wenger actually come closer to the sociology of Toennies (1971) than to Marx, Durkheim or Weber.

[39] John Seely Brown and Paul Duguid, "Knowledge and Organization: A Social-Practice Perspective," *Organization Science*, 12, 2 (March-April 2001): 198-213.

[40] E. L. Lesser and J. Storck, "Communities of practice and organizational performance," *IBM Journals,* 40, no. 4 (2001). Lesser and Storck acknowledge that while they and others assert that communities of practice create organizational value, there has been relatively little systematic study of the linkage between community outcomes and the underlying social mechanisms that are at work.

[41] Michael Woolcock, "Social capital and economic development: Toward a theoretical synthesis and policy framework," *Theory and Society,* 27 (1998): 151-205, p. 155, p. 196, fn.22. Portes similarly notes that the concept of social capital has become on eof the most popular exports from sociological theory into everyday language.   See Alejandro Portes, "Social Capital: Its Origins and Applications in Modern Sociology," *Annual Review of Sociology,* 24 (1998): 1-24.

[42] Carrie R. Leana and Harry J. Van Buren III, "Organizational Social Capital and Employment Practices," *Academy of Management Review,* 24, no. 3 ((1999): 538-555.

[43] James Baron and Michael Hannan, "The impact of economics on contemporary sociology," *Journal of Economic Literature,* 32 (September 1994): 1111-1146, p. 1122-1124.

[44] Other researchers have commented on the inconsistent and indiscriminant use of 'social capital.' It has been described as an "umbrella concept" P. M. Hirsch and D. Z. Levin, "Umbrella advocates versus validity police: A life-cycle model." *Organization Science,* 10 (1999): 199-212; "a wonderfully elastic term" F. M. Lappe and P. M. Du Bois, "Building Social Capital without looking backward." *National Civic Review,* 86 (1997): 119-128:119; a notion that means "many things to many people" D. Narayan and L. Pritchett, *Cents and sociability: Household income and social capital in rural Tanzania* (Washington, DC: World Bank) (1997): 2; and a concept that has taken on "a circus-tent quality" X. De Souza Briggs. "Social capital and the cities: Advice to change agents." *National Civic Review,* 86, no. 2 (1997): 111-117: 111, cited in Paul S. Adler and Seok-Woo Kwon, "Social Capital: Prospects for a New Concept." *Academy of Management Review,* 27, no. 1 (2002: 17-40: 18.

[45] Paul S. Adler and Seok-Woo Kwon, "Social Capital: Prospects for a New Concept." *Academy of Management Review,* 27, no. 1 (2002: 17-40: 19. Portes and Woolcock also provide partial summaries of the various definitions of social capital used by different scholars. See Alejandro Portes, "Social Capital: Its Origins and Applications in Modern Sociology," *Annual Review of Sociology,* 24 (1998): 1-24; Michael Woolcock, "Social capital and economic development: Toward a theoretical synthesis and policy framework," *Theory and Society,* 27 (1998): 151-205, p. 155, p. 189, fn 2.

[46] M. Useem and J. Karabel, "Pathways to Top Corporate Management," *American Sociological Review,* 44 (1986): 184-200.

[47] R. S. Burt, "The Contingent Value of Social Capital," *Administrative Science Quarterly,* 42 (1997): 339-365.

[48] G. Walker, B. Kogut and W. Shan, "Social Capital, Structural Holes, and the Formation of an Industry Network," *Organizational Science*, 8 (1997):109-125.

[49] R. Putnam, "The Prosperous Community: Social Capital and Public Life," *The American Prospect,* 13 (1993): 35-42.

[50] F. Fukuyama, *Trust: The Social Virtues and the Creation of Prosperity,* (New York: Free Press), 1995.

[51] Mark C. Bolino, William H. Turnley and James M. Bloodgood, "Citizenship Behavior and the Creation of Social Capital in Organizations," *Academy of Management Review,* 27, no. 4 ((2002): 505-522, 505.

[52] J. Nahapiet and S. Ghoshal, "Social Capital, Intellectual Capital, and the Organizational Advantage," *Academy of Management Review,* 22 (1998): 242-266.

[53] Laurence Prusak and Don Cohen, "How to Invest in Social Capital," *Harvard Business Review*, 79, no. 6 (June 2001): 86-93.

[54] Ibid., p. 92.

[55] Janine Nahapiet and Sumantra Ghoshal, "Social Capital, Intellectual Capital, and the Organizational Advantage," *Academy of Management Review,* 23, no. 2 (1998): 242-266. Other researchers have proposed alternative frameworks. See, for example, P. Bordieu, "The forms of capital," in J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (New York: Greenwood, 1986): 241-258; J. S. Coleman, "Social Capital in the Creation of Human Capital," *American Journal of Sociology*, 94 (Supplement): S95-S120; C. R. Leana and H. J. Van Burn III, "Organizational Social Capital and Employment Practices," *Academy of Management Review*, 24 (1999): 538-555.

[56] Janine Nahapiet and Sumantra Ghoshal, "Social Capital, Intellectual Capital, and the Organizational Advantage," *Academy of Management Review,* 23, no. 2 (1998): 243.

[57] Janine Nahapiet and Sumantra Ghoshal, "Social Capital, Intellectual Capital, and the Organizational Advantage," *Academy of Management Review,* 23, no. 2 (1998): 244. See also, R. S. Burt, "Structural Holes: The Social Strucutre of Competition." (Cambridge, MA: Harvard University Press) 1992.

[58] M.S. Granovetter, "Problems of explanation in economic sociology," in N. Nohria and R. Eccles (Eds.), *Networks and organizations: Structure, form and action* (Boston: Harvard Business School Press, 1992): 25-56.

[59] Nahapiet and Ghoshal, p. 244.

[60] The term appropriable organization refers to the existence of networks created for one purpose that may be used for another. See J. S. Coleman, "Social capital in the creation of human capital," *American Journal of Sociology,* 94 (1998): S95-S120.

[61] Janine Nahapiet and Sumantra Ghoshal, "Social Capital, Intellectual Capital, and the Organizational Advantage," *Academy of Management Review,* 23, no. 2 (1998): 244.

[62] Lesser and Storck, p. 7 of 15

[63] For example, J. S. Coleman, "Social Capital in the Creation of Human Capital." *American Journal of Sociology* 94 (1988): S95-S120; W. Baker, "Market Networks and Corporate Behavior." *American Journal of Sociology,* 96 (1990): 589-625; R. S. Burt, "The Contingent Value of Social Capital." *Adminstrative Science Quarterly* 42 (1997): 339-365; 1997; R. S. Burt, "A Note on Social Capital and Network Content." *Social Networks,* 19 (1997): 355-373.

[64] F. Fukuyama, *Trust: The Social Virtues and the Creation of Prosperity,* (New York: Free Press), 1995. Coleman similarly notes the importance of a closed system in maintaining social capital. See J. Coleman, *Foundations of Social Theory,* (Cambridge, MA: Harvard University Press, 1990) and J. Coleman, "Social Capital in the Creation of Human Capital," *American Journal of Sociology,* 94 (1988): S95-S120.

[65] M. Granovetter, "The Strength of Weak Ties," *American Journal of Sociology,* 78 (1973): 1360-1380; M. Granovetter, "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology,* 91 (1985): 481-510; R. S. Burt, *Structural Holes: The Social Structure of Competition.* (Boston, MA: Harvard University Press, 1992).

[66] R. S. Burt, *Structural Holes* (Cambridge, MA: Harvard University Press, 1992); R. S. Burt, "The Social Structure of Competition," in N. Nohria and R. Eccles (Eds.), *Networks and Organizations: Structure, Form and Function* (Boston: Harvard University Press, 1992): 57-91; R. S. Burt, "The Contingent Value of Social Capital," *Administrative Science Quarterly,* 42 (1997): 339-365.

[67] Gregory G. Dess and Jason D. Shaw, "Voluntary Turnover, Social Capital, and Organizational Performance." *Academy of Management Review,* 25, no. 3 (2001): 446-456. Similar trends are evident in the Canadian Forces, the result of downsizing and re-engineering processes.

[68] Nahapiet and Ghoshal, p. 260.

[69] Ibid., p. 251.

[70] Ibid., p. 244.

[71] Ibid., p. 244.

[72] Karol Wenek, *Wanted: A Military Ethos for the Postmodern Era.* Paper presented at the Leadership in the Armies of Tomorrow and the Future Conference, 6-7 February 2002, Land Force Doctrine and Training System, Kinston, ON, p. 5.

[73] Nahapiet and Ghoshal, p. 250.

[74] Ibid., p. 244.

[75] For example, in their analysis of organizational social capital, Leana & Van Buren make a distinction between *fragile* and *resilient* trust. While the former is based on a strategy of reciprocity and the immediate likelihood of rewards, the latter refers to the deeper, on-going reciprocal norms that create "expectations that bind" people to organizations. Carrie R. Leana and Harry J. Van Buren III, "Organizational Social Capital and Employment Practices," *Academy of Management Review,* 24, no. 3 ((1999): 538-555.
See also, Gregory G. Dess and Jason D. Shaw, "Voluntary Turnover, Social Capital, and Organizational Performance." *Academy of Management Review,* 25, no. 3 (2001): 446-456.

[76] For a critique of this literature, see David R. Segal and Meyer Kestnbaum, "Professional Closure in the Military Labor Market: A Crtitique of Pure Cohesion" in Don M. Snider, Gayle L. Watkins, and J. Lloyd (eds), *The Future of the Army Profession.* (USA: The McGraw-Hill Primis Custom Publishing, Inc.), 2002.

[77] Alejandro Portes, "Social Capital: Its Origins and Applications in Modern Sociology," *Annual Review of Sociology,* 24 (1998):15. Portes' discussion of the social capital's role in excluding outsiders is based on Waldinger's analysis of social capital among ethnic groups. Waldinger noted that the social capital generated by bounded solidarity and trust were at the core of the various ethnic groups' economic advantage. These same social relations, however, implicitly restricted outsiders. See R. Waldinger, "The "Other Side" of Embeddedness: A Case Study of the Interplay between Economy and Ethnicity." Et*hnic and Racial Studies*, 18 (1995): 555-580. See also Segal and Kestnbaum for discussion of how *social cohesion* functions to exclude 'outsiders' in military organizations.

[78] This term stems from Robert Putnam's work on social capital, which emphasizes the importance of dense and rich 'networks of civic engagement' based on shared history, and complex and deep social ties within a community. See Robert D. Putnam, *Making Democracy Work: Civic Traditions in Modern Italy* (Princeton, NJ: Princeton University Press, 1990); "The Prosperous Community: Social Capital and Public Life." *American Prospect* 13 (1993): 35-42; "Bowling Alone: American's Declining Social Capital." *Journal of Democracy* 6 (1995): 65-78.

[79] Stephen S. Cohen and Gary Fields, "Social Capital and Capital Gains in Silicon Valley." *California Management Review* 41, no. 2 (Winter 1999): 108-130: 127.

[80] Nahapiet and Ghoshal, p. 244.

[81] See, for example, K. R. Connor and C. K. Prahald, "A Resource-based Theory of the Firm: Knowledge versus Opportunism," *Organization Science,* 7 (1999): 477-501; B. Kogut and U. Zander, "Knowledge of the firm, Combinative Capabilities and the Replication of Technology," *Organization Science,* 3 (1992): 383-397; B. Kogut and U. Zander, "What do firms do? Coordination, Identity and Learning," *Organization Science,* 7 (1996): 502-518.

[82] These assets include among other things shared language, codes and narratives.

[83] Nahapiet and Ghoshal, p. 245.

[84] While there is an enormous literature that deals with these two dimensions of knowledge, the following provide good overviews of the topic. G. Ryle, *The Concept of Mind* (London: Hutcheson, 1949); Michael Polanyi, *The Tacit Dimension* (London: Routledge and Kegan Paul, 1967 (first published in 1966); J-C Spender, "Competitive Advantage from Tacit Knowledge?: Unpacking the Concept and its Strategic Implications" in B. Moingeon and A Edmondson (eds.), *Organizational Learning and Competitive Advantage* (London, UK: Sage): 1996; Scott D.N. Cook and John Seely Brown, "Bridging Epistemologies: The Generative Dance Between Organizational Knowledge and Organizational Knowing." *Organization Science* 10, no. 4 (July-August 1999): 381-400.

[85] Don Cohen, "Toward a Knowledge Context: Report on the First Annual U. C. Berkeley Forum on Knowledge and the Firm." *California Management Review*, 40, no. 3 (Spring 1998): 22-39: 24.

[86] Jeffrey Pfeffer and Robert I. Sutton, "Knowing "What" to Do is Not Enough: Turning Knowledge into Action." *California Management Review,* 42, no. 1 (Fall 1999): 83-108: 89. Cohen similarly observes that most knowledge management efforts focus on collecting, distributing, re-using and measuring existing codified knowledge and information. See Don Cohen, "Toward a Knowledge Context: Report on the First

Annual U. C. Berkeley Forum on Knowledge and the Firm." *California Management Review*, 40, no. 3 (Spring 1998): 22-39.

[87] Jeffrey Pfeffer and Robert I. Sutton, "Knowing "What" to Do is Not Enough: Turning Knowledge into Action." *California Management Review,* 42, no. 1 (Fall 1999): 83-108: 89. Cohen argues that most knowledge practice focuses on collecting, distributing, re-using, and measuring existing codified knowledge and information. Don Cohen, "Toward a Knowledge Context: Report on the First Annual U. C. Berkeley Forum on Knowledge and the Firm." *California Management Review*, 40, no. 3 (Spring 1998): 22-39.

[88] Richard McDermott, "Why Information Technology Inspired But Cannot Deliver Knowledge Management." *California Management Review,* 41, no. 4 (Summer 1999): 103-117:106.

[89] That the collective knowledge of organizations is not the sum total of the knowledge of its individual members is a fundamental sociological insight of group theories.

[90] Don Cohen, "Toward a Knowledge Context: Report on the First Annual U. C. Berkeley Forum on Knowledge and the Firm." *California Management Review*, 40, no. 3 (Spring 1998): 23.

[91] Daniel H. Kim, "The Link between Individual and Organizational Learning." *Sloan Management Review* (Fall 1993): 37-50: 37.

[92] Robert E. Cole, "Introduction to Toward a Knowledge Context: Report on the First Annual U. C. Berkeley Forum on Knowledge and the Firm." *California Management Review*, 40, no. 3 (Spring 1998): 15-21: 17.

[93] Rashi Glazer, quoted in Don Cohen, "Toward a Knowledge Context: Report on the First Annual U. C. Berkeley Forum on Knowledge and the Firm." *California Management Review*, 40, no. 3 (Spring 1998): 22-39: 36.

[94] Richard McDermott, "Why Information Technology Inspired But Cannot Deliver Knowledge Management." *California Management Review,* 41, no. 4 (Summer 1999): 103-117:104.

[95] Robert E. Cole, "Introduction to Toward a Knowledge Context: Report on the First Annual U. C. Berkeley Forum on Knowledge and the Firm." *California Management Review*, 40, no. 3 (Spring 1998): 15-21: 19.

[96] Ibid., p. 20.

[97] Ibid., p. 20.

[98] Department of National Defence, At *a Crossroads, Annual Report of the Chief of the Defence Staff 2001-2002, 2002.*

[99] Department of National Defence, *Canadian Officership in the 21st Century (Officership 2020): Strategic Guidance for the Canadian Forces Officer Corps and the Officer Professional Development System,* (hereafter referred to as *Officership 2020*), February 2001.

[100] Department of National Defence, At *a Crossroads, Annual Report of the Chief of the Defence Staff 2001-2002,* (2002): 8.

[101] Department of National Defence, At *a Crossroads, Annual Report of the Chief of the Defence Staff 2001-2002,* (2002): 8.

[102] The discussion that follows uses the concepts *know-what, know-how, know-why* and *care-why* to refer to different levels of professional intellect (i.e. capital) of an organization. James Brian Quinn, Philip Anderson and Sydney Finkelstein, "Managing Professional Intellect: Making the Most of the Best." *Harvard Business Review* (March-April 1996): 71-80.

[103] John Seely Brown and Paul Duguid, "Knowledge and Organization: A Social-Practice Perspective," *Organization Science*, 12, 2 (March-April 2001): 200.

[104] John Seely Brown and Paul Duguid, "Organizational Learning and Communities of Practice: Toward a Unified View of Working, Learning, and Innovation," *Organization Science,* 2, no. 1 (February 1991): 40-57, 47.

[105] B. McKee and T. Wait, *D Strat HR Research Note 07/02, HR2020: Consultation Results.* Ottawa, ON: Department of National Defence, ADM (Human Resources – Military), Directorate of Strategic Human Resources (December 2002): 6-7.

[106] Jeffrey Pfeffer and Robert I. Sutton, "Knowing "What" to Do is Not Enough: Turning Knowledge into Action." *California Management Review,* 42, no. 1 (Fall 1999): 84.

[107] Morgan W. McCall Jr, Michael M. Lombardo, and Ann Morrison, *The Lessons of Experience* (Lexington, MA: Lexington Books, 1988), p. 19, quoted in Jeffrey Pfeffer and Robert I. Sutton, "Knowing "What" to Do is Not Enough: Turning Knowledge into Action." *California Management Review,* 42, no. 1

(Fall 1999): 85. Stephen Leacock, noted Canadian satirist, provides a humorous account of the relationship between formal education and career performance. "I have noted that of my pupils, those who seemed the laziest and the least enamoured of books are now rising to eminence at the bar, in business, and in public life; the really promising boys who took all the prizes are now able with difficulty to earn the wages ofa clerk in a summer hotel or a deck hand on a canal boat." Stephen Leacock, *Sunshine Sketches of a Little Town* (Toronto: McClelland & Stewart): 1989, p. viii.

[108] Colonel Stuart A. Beare, CD, "Experience in Officer Professional Development: A Pillar in Peril." *The Army Doctrine and Training Bulletin,* 4, no. 4 (Winter 2001-2002): 36- 48.

[109] Richard McDermott, "Why Information Technology Inspired But Cannot Deliver Knowledge Management." *California Management Review,* 41, no. 4 (Summer 1999): 103-117:106.

[110] . James Brian Quinn, Philip Anderson and Sydney Finkelstein, "Managing Professional Intellect: Making the Most of the Best." *Harvard Business Review* (March-April 1996): 71-80: 72.

[111] Ibid., p. 72.

[112] Ibid., p. 72.

[113] Ibid., p. 72.

[114] John Seely Brown and Paul Duguid, *Knowledge and Organization,* p. 200-201.

[115] Ibid., p. 201.

[116] Ibid., p. 201.

[117] Ibid., p. 200.

[118] D.C. Feldman, "From the Me Decade to the Flee Decade." In C. R. Leana and D.M. Rousseau (eds.), *Relational Wealth: The Advantages of Stability in a Changing Economy* (Oxford: Oxford University Press, 2000): 169-182: 179, quoted in Gregory G. Dess and Jason D. Shaw, "Voluntary Turnover, Social Capital, and Organizational Performance." *Academy of Management Review*, 26, no. 3 (2001): 446-456: 448.

[119] Etienne Wenger, *Communities of Practice*, p. 175-178.

[120] Benedict Anderson, *Imagined Communities*, rev. ed. (London: Verso Press, 1991): 6-7, quoted in David R. Segal and Meyer Kestnbaum, *Professional Closure in the Military Labor Market: A Critique of Pure Cohesion*, p. 454.

[121] Robert Goffee and Gareth Jones, "Followership: It's Personal, Too." *Harvard Business Review* 79, no. 11 (December 2001): 148.