CHAPTER 2

WIRING GROUPS INTO ORGANIZATIONS AND SOCIETY

W e have groups to thank for civilization. Had we never found our way to living together in small clans and bands, we would never have grown into communities, towns, and cities. We would never have developed complex language and culture. That means no Jane Austen, no *Wizard of Oz*, no Aretha Franklin, no New York Yankees.[1]

Linnda Caporael, a professor of science and technology, has drawn on research in paleontology, anthropology, and psychology to account for the development of groups and social life in early human history. Writing with a team of colleagues, she lays out the basic logic of how groups shaped our evolution:
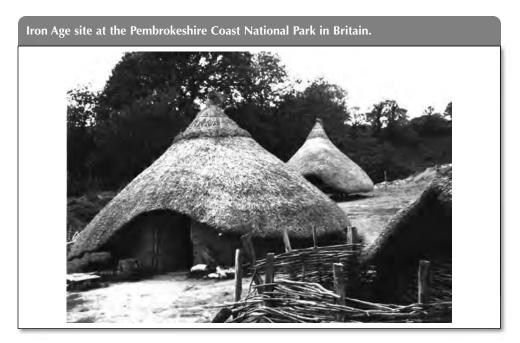
> Natural selection is a process that adapts organisms to their environments. For group living to evolve, the advantages would have to outweigh the disadvantages. Basically, individuals who grouped would have more offspring compared to individuals who lived solitary lives.[2]

Caporael points out that grouping together has inherent disadvantages: "Parasites and disease spread more easily in groups than among solitary critters" and groups always face the problem of "free riders" who draw energy and resources from the group but give little in return. For humans, as for other creatures from crows to coyotes, however, the benefits of group living outweighed the drawbacks. Groups

provided more effective defense against formidable predators, facilitated effective foraging and hunting, and permitted a specialization of labor that made it possible to care for our "slow-growing offspring," whom some group members could tutor and guard while others gathered and killed the group's food.[3]

Grouping for self-preservation may have brought an even greater benefit by sparking the development of language and, more fundamentally, the brain itself. Caporael and other researchers have traced the expansion of the neocortex, a part of the mammalian brain that aids perception, movement, spatial reasoning, conscious thought, and language. When we became interdependent with others, we evolved into "gossip groups," which served the new purpose of exchanging useful information about our fellow group members.[4]

As we developed stable groupings, an even more dramatic change took place: Our groups settled into normative behavioral patterns that began to shape the life courses of future generations. "Natural selection," Caporael explains, results from "behavioral variation regardless of whether it is genetic or cultural in origin." As a result, "norms and culturally acquired traits can result in forms of evolutionary change that could never happen by genetic evolution alone." Unlike the hapless children in *Lord of the Flies,* adult human groups tend to develop—and generally abide by—a set of norms that crystallize into formal laws and regulations. Fortunately, prosocial and altruistic behavioral

Iron Age site at the Pembrokeshire Coast National Park in Britain.

Credit: Photo by Richard Dunmore.

rules tend to prevail in the longer span of time, as groups that can effectively cultivate those practices become internally cohesive and formidable opponents for other groups that might seek to rob, kill, or enslave them.

Over the course of millennia living in such groups, an even more remarkable change took place, according to the cultural evolution theory advanced by environmental scientist Peter Richerson and his colleague in anthropology, Robert Boyd. In their view, early humans thrived in groups to the extent that they demonstrated and rewarded two "social instincts," a responsiveness to moral persuasion and attunement to ingroup identity. Those groups whose members could perceive their group's boundaries accurately and adhere to its norms had greater chances of survival than rival groups, thereby increasing their chances to produce healthy offspring and further strengthen their group's position. Over the generations, this resulted in humans ever more adept at grouping together. The development of these instincts explains how humans managed to make the dramatic leap to the large-scale societies that have prevailed even to this day.[5]

In the modern world, humans continue to live and work in very small groups. Even large residential communities consist of houses, condominiums, and apartments. The largest companies subdivide themselves into units and teams. Political parties, unions, and nongovernmental associations live and breathe through local chapters or micronetworks that give their millions of members a manageable number of proximate human connections. Unlike the earliest human groups, however, these small units exist in the midst of vast organizations and social systems. This chapter presents a theoretical perspective that helps us understand those connections. We will examine the interplay between group and society, how groups interact with their organizational environments, and how groups adopt and adapt to changing technology.

Building a Theoretical Framework

To understand how small groups behave and how they relate to larger social systems, we begin by building an abstract theoretical framework, like the skeleton of timbers, piping, and wires that frame a house. Even after its framework is fully in place, a house could end up with many different finishes and furnishings, but its frame gives a general idea of how it will appear when it is done.[6] A good framework meets similar criteria to those presented in Chapter 1 for evaluating theories, but its core empirical claims may represent well-established *axioms,* basic propositions that, once clearly defined, may be self-evident. Assembling such understandings into a full framework has two advantages. It makes certain that theories built on that frame have an empirically sound foundation, and it makes it easier to see the structural similarities and potential relationships among a wide variety of theories.

The Group System

The input-process-output framework is the simplest one group researchers currently use.[7] This approach separates every variable into three categories: input variables, process variables, and output variables. The term *variable* simply refers to any measurable entity or property that varies in degree, amount, or kind, from a group member's age or cultural identity to the rate of interruption in a discussion to a level of intimacy. The inputs, such as the group's tasks or its structure, have effects on the process and outputs but are not themselves subject to change. The output variables, such as the quality of a group decision, depend on the inputs and the group process. Finally, the process variables, which include the group's discussion and its members' ongoing thoughts and feelings, "mediate" the relationship between inputs and process; they represent the conduit between inputs and outputs.

Because of the variety of contexts in which groups exist, it is helpful to add a fourth type of variable, commonly referred to as a *moderator* or *moderating factor*. These variables have an effect on the *relationship* between inputs, processes, or outputs. Thus, one kind of input (members' speaking skills) might generally improve a group's discussion process, but this effect could be *moderated* by the degree to which the group's leader permits members to speak during group meetings. When a group has an autocratic executive, the membership's rhetorical abilities go untapped (thus, no relationship between input and process), whereas we do expect to observe members' skills aiding the discussion when a more egalitarian leader is present.

Along with the addition of moderating factors, we can continue to extend the input-process-output framework by drawing on one of the broadest and oldest approaches to studying small groups, the systems perspective.[8] This approach assumes that the different facets of groups interrelate as parts of a system, such that changes in one variable reshape others, often in complex ways.

The most comprehensive and compelling work in this tradition comes from small-group researchers Holly Arrow, Joseph McGrath, and Jennifer Berdahl, who present a comprehensive model of group behavior in *Small Groups as Complex Systems*.[9] Trained in social psychology and organizational behavior, these scholars see groups both as internally complex social-psychological processes and as organizationally embedded entities. They begin with the premise that groups represent complex, adaptive, and dynamic systems, which means (roughly) that one can expect a group to develop increasingly complex structural properties as it adapts to changing circumstances over time.

Recalling the "unit of analysis" challenge discussed in Chapter 1, their system model stresses that group research must look at the elements of groups (e.g., individual members), the group as a coherent entity in itself (the group-system), and the social contexts in which groups are placed or "embed" themselves. Most of all,
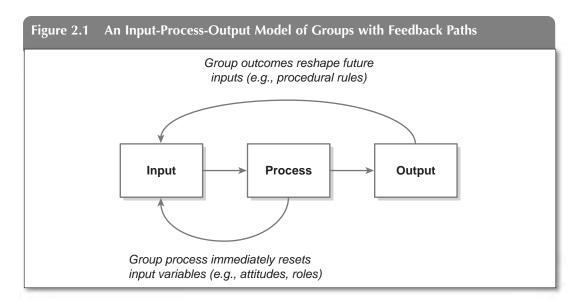
researchers conceptualizing groups as systems must recognize the interplay among each of these levels of analysis.

To see these connections more clearly, Figure 2.1 adapts the input-process-output model to demonstrate the feedback loops back from group process and outputs to the inputs. First, note that from the systems perspective, an output of group discussion often reshapes the inputs that feed into the next discussion. Today's dependent variable (input → output) is tomorrow's independent variable (output → input). A nonprofit board of directors, for instance, might hold a meeting that concludes with the revision of its ethics rules regarding conflicts of interest; those new rules become an input into its next meeting, wherein a member asks to recuse herself from a discussion in light of the new ethical guidelines. Second, the group process itself can change the inputs that continuously feed into the group's ongoing discussion. For instance, a cult's new members might begin a session wary of the extreme views of their discussion leader. As a result of seeing the other members repeatedly endorse the leader's viewpoint, though, these newcomers might come to share the leader's opinions. That attitude shift might enable the group to reach a consensus decision that would have been impossible when the discussion began. In other words, the process (group discussion) changed what were originally inputs (attitudes) and, thereby, changed the final output (decision).

Organizational Context

To expand this framework further, it is necessary to look more closely at the contexts in which groups exist. The bona fide group perspective advanced by communication scholars Linda Putnam and Cynthia Stohl sheds light on the importance of thinking about groups in their organizational settings. This perspective highlights the fact that most groups emerge within or are built into rich organizational networks. As a result, the members of a given group already have membership in *other* groups, and these groups may have interdependent relationships, where neither can reach its goals (or their shared goals) without coordinating its actions with the other. In this sense, we would have trouble drawing rigid boundaries around any one group, as the individuals simultaneously exist within and *outside* that border by virtue of their other memberships.[11]

Cynthia Stohl and her colleague Kasey Walker ask us to consider the case of a modern commercial organization that requires tremendous coordination among different units that may be distributed geographically. Moreover, effective development and marketing of a new product may require collaboration with other companies. The development of the desktop personal computer, which has made the writing of this book possible, required cooperation from Hewlett-Packard, IBM, Sun Microsystems, and many other companies. For such interorganizational efforts to succeed, the

Figure 2.1   An Input-Process-Output Model of Groups with Feedback Paths

*Group outcomes reshape future
inputs (e.g., procedural rules)*

Input	Process	Output

*Group process immediately resets
input variables (e.g., attitudes, roles)*

companies first need to create a hospitable *organizational context.* The various part-ners in the collaborative venture need to work out what Stohl and Walker call a "nego-tiated temporary system," which includes rules and procedures for sharing knowledge, assigning responsibility, making decisions, and so on. More informally, such a system would also have to build trust and commitment in the venture.[12]

One could simply call this organizational system another "input" in the model in Figure 2.1, but it will prove useful to distinguish the larger organizational context from the more proximate inputs into group discussion, such as group rules or member characteristics. In the system terms introduced earlier, the organization really consti-tutes a distinct level of analysis—a larger socially constructed entity that houses within it different small groups, just as the groups themselves contain within them different individuals.

The Interplay of Group and Society

At this juncture, we can now add essential concepts from British sociologist Anthony Giddens' theoretical framework, which he dubbed *structuration.*[13] Giddens aimed to reconcile conflicting sociological theories of structure, which emphasized the power of larger social forces, with theories of agency, which stressed the ability of individuals ("agents") to make their own choices even in the midst of powerful social pressures. In Giddens' own words, he hoped to clarify "how it comes about that social activities become 'stretched' across wide spans of time-space" to the point that small individual choices form the bricks and mortar of stable and far-reaching social institu-tions and practices.[14]

According to Giddens, the core of any social system consists of individuals making choices of how to act in light of their own goals and their understanding of their circumstances. Giddens explains that in any given social event, though particularly in the midst of a small group gathering, "individuals are very rarely expected 'just' to be co-present," that is, merely present but not paying attention. Instead, the others there with us expect every person present to monitor one another's actions carefully. A social occasion "demands a sort of controlled alertness." As participants in any small group encounter, we monitor the beliefs and aspirations of the others who are present and, more importantly, any shifts in the rules that govern the group's behavior. To the extent that our group develops a common understanding of its rules and routine practices, it becomes integrated as a more coherent and system-like entity. Ultimately, the systemic properties of small-scale social encounters feed back into the larger social system, which may encompass and shape the behavior of not a dozen but *millions* of people.[15]

Social structures and institutions, though, do not simply emerge from the voluntary behavioral choices of individuals. After all, any time we choose to say something at a social gathering, we do so in consideration of our *circumstances.* In the present day, for instance, if a person strongly opposed gun control laws, she might express her views more freely at an afternoon Republican Party meeting than at that same evening's public forum on school violence at the local high school. In fact, her behavior would likely differ across those two settings in more subtle ways, such as how she took turns to speak and what metaphors she might employ. In these and all other social contexts, we govern our behavior such that our words and deeds come across as meaningful, appropriate, and legitimate. The forces shaping those behavior choices are *social* forces.

Social structural forces establish meanings (e.g., language), power relations (e.g., authority), and norms (e.g., etiquette). The most powerful social forces influence our behavior in ways we may not even perceive. Consider, for example, all the laws that exist in your own society. There are millions of regulations on your behavior, from local ordinances to state and federal restrictions and requirements. On a conscious level, you may know few of these, and even fewer come to your awareness at a given time. A quick glance at the speed limit sign while driving down the freeway counts as one of the rare occasions when we deliberately check our behavior against a specific law, one that our government mentions via signposts every mile or so along the road.

More pervasive than explicit laws, however, are the broad social conventions that we come to recognize more clearly only when we step outside our society. What happens when you walk hand-in-hand with a friend, shout during a disagreement, ignore an elder, or use an expletive depends critically on the time and place of your action. In one geographic location at a specific point in history, your actions could have consequences dramatically different from another—not because of written and enforced laws but because of widely shared social conventions and understandings.[16]
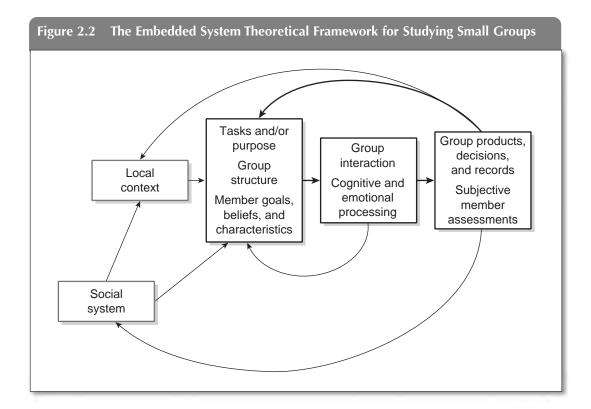
Social structures not only constrain us but they also *enable* us to live together. Returning to the evolutionary context at the opening of this chapter, it was only through developing shared ways of talking, stable power relationships, and a set of behavioral norms that we managed to build clans, then communities, then civilizations. In the context of our modern society, for instance, the aforementioned speed limits not only *prevent* you from driving faster but also *enable* you to travel safely by making the velocity of the other cars on the road more predictable.

The Embedded System Approach

Pulling together these theoretical concepts and axioms, Figure 2.2 introduces the structure of the *embedded system theoretical framework.* This framework derives its name from the idea of an "embedded system," a term used commonly in computer science and engineering to refer to a subsystem built into a larger device designed to perform a specific range of tasks.[17] Recast in social terms, we can think of groups as embedded within larger social entities, such as organizations, communities, cultures, or nations. These larger systems depend on the groups within them, because the group's behavior can shape the character of the larger system. In turn, each group generally has a limited range of objectives, and its members even begin with a set of loose rules and instructions analogous to software. Those directives and guidelines, in turn, come from the larger systems within which the group finds itself embedded.[18]

As explained earlier when describing theoretical frameworks, the *relationships* (arrows) shown in Figure 2.2 represent basic axioms. They serve as straightforward assumptions, already established as empirically valid and requiring no further investigation when presented at this level of abstraction. Also note that this figure, and others like it, draws causal arrows from one *set* of variables to another. In formal theory, it is necessary to specify more precise relationships among individual variables, whereas this framework aims to simplify the graphic representation of complex theories to better enable us to see their general features—the direction the river flows, rather than the precise course of its tributaries.[19] Throughout this book, the embedded system framework will be used to display sets of more specific empirical theories that *have* required more precise formulation and direct empirical testing.

Aside from the relationships among variable sets, such as social system and local context, it helps to consider briefly what *constitutes* those elements of embedded system theory. Each of these individual concepts will receive greater attention later in this text, but reviewing them now makes it easier to see how they fit into the larger theoretical frame. Proceeding from left to right, the *social system* consists of regularized structures of meaning (e.g., language, symbol systems, discourses), power (e.g., economic and political institutions, patterns of domination), and norms (e.g., legal institutions, morality, etiquette).[20] In conjunction with these rules, social systems also

Figure 2.2 The Embedded System Theoretical Framework for Studying Small Groups

structure the distribution of resources, from information to job titles to physical materials and capital (tractors, buildings, water, etc.).

A given individual can live within a single social system, but in this era of globalization and cultural diversity, a person typically feels the pull of multiple social systems operating simultaneously. Jess Bahmra, the heroine in Gurinder Chadha's film *Bend It Like Beckham,* joins a football (soccer) team, driven by Britain's national convention of equal-opportunity athleticism and football worship, but at the same time, her parents' transmission of Indian heritage pulls Jess away from the team and back toward the obligations of family. In this example, two different social systems impinge on the success of two groups—Jess' family and her football team. In turn, how those groups resolve their conflicts will, in its own small way, feed back into both systems.

All groups embed themselves within one or more social systems, but most groups embed much more precisely into a *local context.* Typically, a group emerges in an organizational setting: A construction company assembles a work team, a governor authorizes a commission, a union organizes a local shop, a nonprofit opens a new chapter, a tribe elects its council, and jurors assemble in response to a summons. Like

a social system, these commercial, political, civic, and legal organizations all have characteristics analogous to social systems. They have their own rules of meaning, power, and norms, and they allocate resources in conjunction with those rules.

Not every group forms within a coherent organization. In response to a viral text-message invitation, for instance, a spontaneous group may form as a small "flash mob" without any significant organizational properties.[21] The most significant instance of a group forming outside an organizational context might be an immediate family. Imagine that two gay men form a civil union and adopt two ten-year-old boys. They live as a group unto themselves, but unless separated by death or separation from all of their relatives, they still exist within a larger family network. This larger unit does not consist of a formal organization, but it does stand as an intermediary between the four-person family and the vast society. Compared to the larger social system, one can expect the network of relatives to have a more direct and powerful influence on the new family's choices about how to raise the sons or where to live. Owing to situations like these, we can say that groups always exist embedded in a *local* context, but not necessarily within an organizational one.

The next part of Figure 2.2 encompasses features of the group and its members that earlier fell into the loose category of "inputs." As defined in Chapter 1, every group has some kind of *shared purpose,* which often (but not always) entails the completion of specific *tasks,* which range from solving engineering problems to scoring goals. Like larger social systems and the local organizational contexts, groups also have their *structure*—their own set of rules and allocation of resources. These structures locate authority (i.e., with a formal group leader or equally across all group members), identify and assign the different group roles, establish the medium of communication (online or face-to-face) and discussion procedures, distribute information, and more. Finally, at the individual level of analysis, the groups consist of individual agents, the individuals who make up its membership. How the group ultimately behaves will depend not only on its task and structure but also on these individuals' conscious goals and unconscious drives, their *beliefs* about group, organizational, and societal structures, and their many other *characteristics*—personality, skills, knowledge, background, and so on. Taken together, these individual characteristics return us to the group level to note the group's *composition,* the size and diversity of the group that the combination of its members yields.

All of these features feed into a group's process, which manifests itself in the *interaction* of the group members. These interactions consist principally of communication; the broader term *interaction* can also encompass physical behaviors relevant to the group, such as a sailor tying a sail when told to do so by a ship's captain. While the group visibly interacts, *cognitive and emotional processing* takes place within the minds of each group member. Individuals each interpret what is said, take offense or feel encouraged, consider arguments, daydream, change their opinions of other members, rethink the group's task, and so on. These often surface in new suggestions,

emotional outbursts, observations, and the like, but even through the group member who sits silently through a two-hour planning flows a river of cognitive and emotional material.

Every group encounter yields what we once called "outcomes," though the chain of cause and effect flows through them, rather than ending with them. The most self-evident outcome for groups may be decisions, which signal the completion of a specific decision-making task, as in the case of a jury's verdict. Even when a group reaches no decision, however, it may also produce formal and informal records of its meeting. These help to define what it is the group did during its time together, and this can have ramifications for the group. For instance, a task force's meeting minutes can shape how the group members think about their future work, or (once interpreted by a manager) the group's minutes might affect how its superiors assess its performance.

In addition, any kind of group also produces a more ambiguous and difficult-to-trace outcome, the individual group members' *subjective assessments* of what the group accomplished. Some of the most important subjective assessments include members' satisfaction with the group's discussion, sense of group cohesion, judgments of the skills and motivations of other members, and commitment to the group and its larger organization. All of these impinge on future group interaction and can even potentially reshape the structure of the group's organization or, in subtle ways, the social system itself. In this way, microscopic social experiences, such as playing soccer with a squad of multiracial teammates, can make a small contribution toward reducing prejudice at the macrosocial level.[22]

Small-Group Archetypes

In addition to presenting the embedded system framework, this chapter also provides a way of managing the dizzying variety of group types and contexts. After all, the definition of small group presented in Chapter 1 allows for such a wide range of small groups that it is necessary to organize and categorize them in a way that helps us see their most significant commonalities and differences. To accomplish this task, we can pull out of the pool of small groups a manageable number of *group archetypes* and arrange them in relation to sets of related empirical theories.

Archetypes Defined

In any given society, there exist more or less coherent institutions and routine sets of practices characteristic of that social system. If a member of Australian society wants to invite some friends to play a game of Australian-rules football, everyone knows what this entails. It means somebody brings an egg-shaped ball, and they will play by a

specific set of rules for kicking, hitting, and catching that ball. It implies many other informal cultural practices—from the coarseness of each player's language to what the players will drink during and after the game.

Practices like these follow routine patterns and, therefore, lend themselves to systematic description. Thus, researchers have developed apt descriptions and explanations of many complicated but patterned features of social life, from how marital relationships affect parent-child bonds[23] to the intricacies of exchanging ritualized insults.[24]

In the case of small groups, there exist specific archetypical groups in any given society. The archetypes are those group forms that regularly occur in a society with a broadly recognized set of meanings, power relations, and norms. An archetypical group is an image or model of a particular kind of group, idealized in the sense that members of a society imagine the group in a form that has coherence and regularity in its members' behavior, though not necessarily stability in its likely outcomes or trajectories. Moreover, these group archetypes do not constitute *universal* group types that transcend time and space; rather, they are the product of a particular pattern of development that has occurred in one or more specific societies.[25]

Returning to the metaphor of an embedded system, these group archetypes are the particular forms of group behavior that have found a particular niche in a society; they fit into society and, more tightly, into its particular subsidiary institutions, such as educational, professional, legal, and social associations and organizations. Time and again, these groups form as a matter of routine practice or to serve particular needs; whether helpful or harmful, the particular group forms continue to appear and reappear across the full expanse of the society for long enough stretches of time that they secure their status as social archetypes.

One indication that a group has achieved the status of social archetype is that it has a name in the vernacular by which we categorize instances of group life that fall within its boundaries. In the context of the United States, straightforward examples of archetypical groups include the support group, athletic team, and jury. Each of these arises in a particular local (often organizational) context and comes with a set of conventional meanings, authority relations, and norms. When we become a member of one of these groups, we use social conventions to govern our behavior in the group. Any such group may ultimately diverge from these regularized patterns of behavior, and for its deviance, it may earn either a derogatory label, as in the case of the "runaway jury" or the "dysfunctional family," or accolades, as in the case of a "dream team" or simply "exceptional support group."[26]

Juxtaposing Theories and Archetypes

The validity of small-group theories probably varies considerably as we move from one set of archetypes to another. To the extent that theories describe behavioral

patterns and regularities, they may prove apt only in the particular social contexts that give rise to particular kinds of groups. Thus, a theory built to explain jury behavior may prove useless when studying support groups—even when looking exclusively at decision-making practices in both group settings. By contrast, those theories that describe and explain systematic relationships between contextual variables and group processes may be able to account for a wider range of group practices, since variation in context can correspond to variation in group archetype. Even those theories, however, may encompass a relatively restricted range of social contexts. A theory may, for instance, prove powerful at explaining differences in the outcomes of project groups in hierarchical versus egalitarian workplaces but not provide a coherent or predictive account of differences in authority relationships within families. In the language introduced in Chapter 1, it will likely prove to be the case that most small-group theories have sufficient validity only when their scopes narrow to encompass a set of closely related group archetypes.

The power of social archetypes reaches even farther. As a matter of social convention, people routinely invoke specific group archetypes as metaphors in systematic ways that link particular concepts and theories with unduly specific contexts.[27] Thus, when we talk of leadership, we routinely draw on the metaphor of a military unit with a strict internal chain of command. As is normally the case with metaphors, we may not mean to make a *strong* comparison between our workplace and a platoon of soldiers, but the invocation of the military unit archetype carries with it unintended associations. After repeated invocations, a particular group archetype can become linked more generally to particular group features and processes, as the military group has become stuck to the very *idea* of leadership. In similar ways, we have tethered the bonds of family to group cohesion, the jury to group deliberation, and group therapy to personal growth.[28]

These patterns of language and behavior can extend the explanatory and predictive power of theories built to understand particular kinds of groups. Thus, when a group imagines itself in a different social and organizational context than its "real" present setting, the group's behavior may be captured best by a theory built to account for groups in the *imagined* context. When an expeditionary team, for example, begins to think of itself as a family, theories of family behavior may provide relatively apt descriptions of its emerging behavioral patterns. Those same accounts of family-group life might also capture some of the reality of a small business that also starts to think of itself as an extended family. The ease with which group members draw on a group archetype outside their present context may even constitute one indicator of the *potency* of that archetype as a social force.[29]

Systematically identifying a comprehensive set of archetypes and synching those with corresponding sets of theories would constitute a worthwhile journey in itself. At this point, we hope only to launch such an undertaking by making some straightforward connections. Table 2.1 shows how this book arranges archetypes and theories

from the present chapter to the ninth. The archetype introduced in the final section of this chapter provides a further explication of the embedded system framework and the archetype concept. Thereafter, each of the next seven chapters mixes discussions of theories with the introduction of various archetypes, from how juries make decisions to how athletic teams deploy leadership to how support groups promote personal growth. In each case, we will be able to see how particular small-group contexts dovetail with particular lines of theory and research. By the end, we will both have a better appreciation of these diverse group forms and a deeper knowledge of how those groups behave and interact with their local contexts and larger societies.

Illustration: Self-Managed Work Teams

The first body of research presented within the embedded system framework offers a glimpse of how its different elements can be specified more concretely to organize a testable, explanatory theory of group behavior in a specific context. The "self-managed work team" provides this first exercise in theory building. This modern corporate group form also constitutes the first kind of archetype described herein. Also called "autonomous work groups," "self-directed work teams," "employee involvement teams," "quality circles," and many other quasi-technical terms, these groups consist of roughly three to fifteen members who are responsible for both accomplishing particular tasks and planning and monitoring their group performance.[30] In its archetypical form, managers or administrators in a larger (typically hierarchical) organization establish a self-managed work team to accomplish particular tasks that serve the organization's broader goals. In the terms of our theoretical framework, we could say that managers draw on their understanding of the work team archetype to create and embed a new group within their organizational structure.

These self-managed work teams appear with ever-increasing frequency in the largest companies in the United States and have attained tremendous popularity owing to their potential gains in productivity, innovation, and employee morale.[31] Just as no two snowflakes are alike, so are no two self-managed work teams identical. There are real differences, for instance, in the nature of many self-managed groups' tasks (e.g., serving a meal versus building a laptop), and it would be foolish to make precise predictions about these teams that do not take such factors into account. Within the embedded system framework, some of these differences can be built into our theory, such as by taking into account differences in the nature of the work teams' organizational environment. To sustain sufficient theoretical scope without undue complexity, however, we can set aside some finer distinctions to develop generalizations about self-managed work team behavior.[32] After all, even snowflakes have more in common than the aphorism admits.

Table 2.1 **The Distribution of Group Archetypes and Their Distinctive Contextual Features in Relation to the Theoretical Foci of Small-Group Theories in Each Chapter**

Chapter	Group archetypes	Distinctive contextual features of the archetype(s)	Theoretical foci
2	self-managing work team	quasi-independent group in complex organization seeking efficiency	group competence and task effectiveness
3	deliberative jury	zero-history groups seeking unanimity on specific legal questions	social influence and decision making
4	groupthink (in committee), consensual democracy, and parliamentary council	committees/councils with ongoing decision-making responsibility	effective discussion procedures
5	task force, heist team, and X-team	ad hoc groups subject to external forces demanding innovation	diversity, creativity, and information flows
6	athletic team	teams with well-established role conventions pursuing narrow goals	teamwork, leadership, roles, and status
7	harmonious/acrimonious family, (music) band, social and criminal gang	intimate and relationally charged entities with pressure toward unity	relational communication, cohesion, and interpersonal conflict
8	consciousness-raising and activist groups	countercultural sites of identity invention and/or affirmation	norms, socialization, symbolic convergence, and social identity
9	support, play, therapeutic, and collaborative learning groups	safe, exploratory spaces promoting personal growth	unconscious behavior, individual learning, and group development

Health Care Team Success (and Failure)

When one thinks of the range of tasks that self-managed work teams undertake, medical care may not come to mind. In the United States, the corporate model of service delivery has spread rapidly to encompass not only commercial health care providers but also public hospitals, which routinely fashion themselves on corporate principles.[33] In the modern practice of medicine, health maintenance organizations and other providers have come to recognize the power of bringing together doctors, nurses, and other specialists to form interdisciplinary teams that simultaneously treat every facet of an illness. Numerous societal-level influences have led to the team emphasis, ranging from consumer advocates who press for more comprehensive and effective medical care to new legal regulations designed to promote efficient, systematic care delivery.[34]

To study self-managed work teams in the health care industry, a team of communication scholars headed up by Randy Hirokawa recently surveyed a diverse array of providers and obtained 137 accounts of teams that succeeded or failed to work effectively. Whether these work teams were making a medical assessment, conducting an organ transplant, or providing geriatric care, common themes emerged in their surveys. Hirokawa and his colleagues used these reports to build a *grounded* theory, a tentative theory built from a set of exploratory observations (as opposed to a theory deduced from past research and validated using original data).[35]

Hirokawa and his colleagues found that a range of factors appeared frequently in the success stories, with effective group structure being the most frequent theme. For instance, one survey respondent wrote that team success "was based on the fact that each one of us had a very specific job with clearly specified responsibilities and assignments." With clear group roles delineated, "We could move in, set up, and be performing surgery within a day."

The survey respondents most often traced team failure back to the attributes of the team members. The main reason given for failure was "member incompetence." Regardless of the particular medical team, the interviews suggested that team effectiveness depended on member expertise being at least as advanced as the complexity of the medical challenges teams faced.
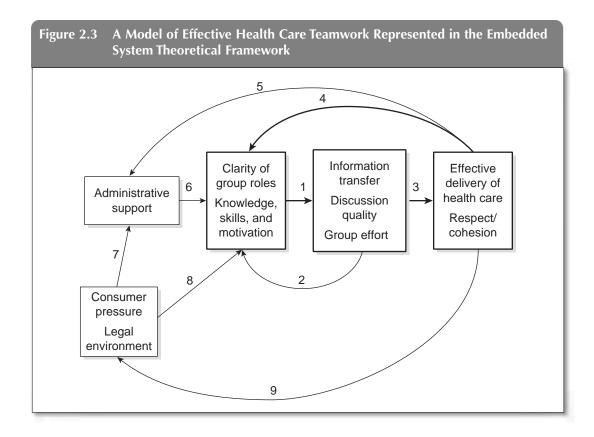
Both success and failure depended, in part, on the quality of the team's interaction process. Those teams that exchanged information easily, conducted honest and thoughtful discussions, and put considerable effort into their group tasks typically reported successful outcomes. By contrast, medical providers who reported team failure often saw its roots in poorly distributed information, hasty and haphazard meetings, and a general lack of group effort. The two other common predictors of success or failure included the quality of personal relationships and group cohesion among the team members and the extent to which administrators gave the group useful feedback and necessary resources.

Army orthopedic surgeons and a nurse work together to repair a patient's congenital hand deformity.

Credit: Air Force photo by Tech. Sgt. Sonny Cohrs.

Figure 2.3 summarizes these findings and shows how readily the embedded system framework can organize this study's findings into a more coherent model of effective health care teamwork. In this figure, the most critical variables and relationships appear in bold. In addition, the figure enumerates the paths between each factor, and we shall consider each briefly, starting with number "1."

The first path shows that a key predictor of effective group process is a combination of group structure (clarity of member roles and responsibilities) and member characteristics (medical knowledge and skills, plus motivation). The group's timely and careful processing of information and ideas, along with effortful coordination of members' physical tasks, feeds back into member characteristics by building up the team's knowledge and skill base (path 2). More importantly, effective group process ultimately yields effective medical care, along with a heightened sense of group cohesion (path 3). As

Figure 2.3   A Model of Effective Health Care Teamwork Represented in the Embedded System Theoretical Framework

members' develop a mutual respect, that feeds back along path 4 to reinforce their motivation to work with the team.

The foregoing relationships represent the strongest relationships Hirokawa and his colleagues discovered, but others are apparent in their research. Path 5 suggests that effective performance can increase the likelihood of administrative support, which, in turn, provides necessary training and other forms of support (path 6). Though not the focus of their study, Hirokawa and his colleagues noted at the outset that administrators' interest in building teams came in response to larger social forces, such as consumer advocacy groups (path 7). It is also likely that these external forces could motivate (or de-motivate) the individual team members themselves (path 8), depending on whether they felt moved in response to external pressure or resentful of outside intrusion into their organization's internal process. Finally, one can hope that, over time, the relative success or failure of these medical teams would feed back into the larger social system, possibly resulting in legal refinements (e.g., amending

malpractice statutes or Medicare coverage) to ensure that medical providers can work most effectively together.

Research from widely divergent organizational settings parallels the results shown in Figure 2.3. One such study examined five different organizations in the Western United States, ranging from banks to public utilities. This investigation collected confidential surveys from fifty-nine employees situated in ten different task groups, which included all but *one* of the persons initially contacted by the researchers.[36] Researchers distinguished among three types of outcomes: accomplishing the task on time and to specification, achieving the highest quality in the team's work, and producing a decision acceptable to all relevant stakeholders outside the group. The quality of the outcome flowed directly from the rigor of the group's process, leadership (role specialization), and member skill. The task accomplishment and acceptability assessments, however, could be traced back to organizational factors, such as the project managers' commitment to and support of the group and its work on the task.

How Organizations Train Work Teams

There exists an even larger body of research consistent with the basic relationships presented in Figure 2.3.[37] Many of these concepts resurface in much greater detail later in this volume, such as the dynamics and impacts of group discussion (Chapter 3), structure (Chapter 4), and cohesion (Chapter 7). Given the present chapter's emphasis on how larger social units connect with the small group, the remainder of this chapter explores two ways in which self-managed work teams are embedded in their organizational contexts.

Recall that one predictor of a self-managed work team's success was the degree to which the larger organization gives the team the resources it needs to succeed. Since a self-managed work team's success often depends on the capabilities and cohesion of its membership, team training constitutes an important way an organization can offer support. After all, employee burnout flows not from being overworked so much as from failing to receive the training necessary to work effectively on a team with clear roles and responsibilities.[38]
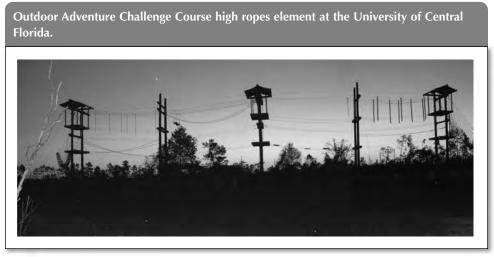
Industrial/organizational psychologist Dana Sims and her colleagues inventoried the range of training methods and found sixteen different approaches in use. Team building and cross training represent two of the more effective training methods used in organizations. Sims explains that the team-building approach to group training "focuses on the processes of teamwork to assist individuals and groups in examining their own behavior and inter-relationships."[39] In the popular imagination, the "ropes course" epitomizes the spirit of team building. In such a training exercise, team members work through acrobatic challenges, like an aerial obstacle course, to learn better how to communicate and coordinate their actions, ideally developing a sense of accomplishment and trust in the end. Fostering stronger team bonds may seem like

an indulgence, like taking a Friday afternoon off for a company barbeque, but without strong member ties, external pressures can cause teams to disintegrate, which can prove catastrophic for firefighters or other teams that work in extreme circumstances.[40]

Research on team building shows that these exercises do, indeed, change individual member attitudes, social skills, and problem-solving abilities,[41] but the more important question is their impact on overall group productivity. A meta-analysis of eleven different studies of team building—in contexts from mining and manufacturing to research and development—found that team building did have a clear and strong effect on both subjective member assessments of performance and objective measures thereof.[42]

At this point, it is helpful to introduce an additional methodological convention in social science—that of the *effect size.* Individual studies and meta-analyses typically report not simply *whether* one independent variable could predict a dependent variable but also *to what degree.* Effect sizes estimate the strength of association between two variables, such that we can get past vague generalities and begin to compare relative impacts. Statistician Jacob Cohen did the world a favor when he developed conventions that allow us to distinguish systematically small, medium, and large effect sizes across a wide range of different statistics, and we will use his conventions herein.[43] In Cohen's terms, it turns out that most small-group effects turn out to be of medium size.[44] Roughly speaking, this means that the presence or absence of a dichotomous independent variable (e.g., male vs. female group leader) might increase or decrease the dependent variable's value by 10% (e.g., raising or lowering discussion

Outdoor Adventure Challenge Course high ropes element at the University of Central Florida.

Credit: Public domain.

time by so many minutes). At times, it will be necessary to use such conventions, but whenever possible, we can find straightforward ways of translating statistical indicators into plain English.

In the case of the present meta-analysis, we can say that the typical team-building training regimen made the average trained group outperform three-quarters of the untrained groups.[45] Though the average effects of training were significant across the board, results did vary depending on a few key moderating variables, with the best combination of circumstances raising the average group to the ninetieth percentile or higher compared to untrained comparison groups. The strongest effects came from targeted interventions designed to address group-level problems in a smaller, partici-patory organization. Additional benefits accrued if a consultant provided the impetus for the training, with the support of the work team's immediate supervisor.

The preceding meta-analysis also found that team building's effectiveness increased when combined with other interventions, and a second, complementary educational strategy identified by Sims and her colleagues was *cross training.* Sims explains that this entails "training each individual member on the tasks of all other team members."[46] When given this form of training, work teams experienced 12–40% increases in their productivity owing to members' better ability to work as a coopera-tive, coordinated team.

To see more clearly the power of these interventions, consider the series of exper-iments conducted by a team of scholars from psychology, business, and industrial administration. In a controlled laboratory setting, the researchers gave three-person groups different types of training to teach them how to work as a team to build an AM radio from component parts. All the different groups could produce something that looked like a radio in roughly the same amount of time, but only one kind of team did so with a low error rate. One set of groups arrived at the radio-assembly session hav-ing been trained only as individuals. A second set received training as individuals but then took part in a team-building exercise before moving to the team-assembly stage. A third set received their training in a group, only to be reassigned to a new team when the day came to assemble the radio. The fourth set of groups, who went through both their training and the assembly task as a stable group, produced AM radios with *half* as many errors as the other work teams.

Led by psychologist Richard Moreland and organizational behaviorist Linda Argote, the investigators in this study produced evidence consistent with their *trans-active memory system* explanation:

> Training coworkers together not only provides each person with the information needed to perform tasks well, but it also helps him or her to discover what everyone else in the group knows about those tasks. . . . When group members know more about each other, they can plan their work more sensibly, assigning tasks to the people who will perform them best.[47]

Having been trained together, members of a group not only have access to their own memories but also benefit from other group members' stored memories. Thus, we may not know which cable to attach to the blue transistor, but we *do* recall which team member demonstrated that knowledge during our training session. We can exchange individual memories to produce a more accurate and complete shared memory of how to do our task.

Once again, the most effective course of action for supervisors building work teams appears to be designing multidimensional, realistic training exercises that keep intact the same groups that will have to manage themselves in the real workplace. In this way, groups not only develop trust and cohesion but also an accurate understanding of one another's competencies. Placed back into the embedded system framework, we can expect self-managing work teams to demonstrate significant increases in the quality of their work when the organization that creates them takes responsibility for developing not only team members' task competencies but also their ability to effectively coordinate roles, responsibilities, and information. In Figure 2.3, this amounts to a significant elaboration on the claim that administrative support improves the clarity of group roles, member skills, knowledge, and transactive memory.

How Teams Reshape Organizations

Whereas the organization can influence the success of work teams, the same embedded groups can have a reciprocal influence on their host's overall performance. Returning to the original context of health care, nursing teams play a critical role as a hospital's front-line employees. They see the operational details of the organization in a way that doctors and managers do not, and if the organization hopes to improve, much of its insight into the scope and nature of its deficiencies must come from the observations and feedback these nurses provide.

According to management scholar Zhike Lei, the unfortunate reality is that many hospitals fail to encourage long-term problem solving among their self-managing work teams. Too often, the scope of a team's responsibilities remains localized such that their members solve the problems at hand and do not have the time or incentive to step back and think about how to prevent or mitigate these problems by changing larger organizational rules and resource allocations. The catch is that work teams like these nursing squads are only likely to begin engaging in long-term problem solving when the larger organization takes the initiative to redefine their jobs such that this becomes a normal part of their regular, paid working lives, rather than simply one more burden on their already overloaded workday.[48]

Small teams also serve a critical role in any organization as a site where workers develop their perceptions about the larger organization. For instance, if one asks an employee at a large corporation whether his company promotes basic principles of fairness within its workplace, he probably will answer with reference to his own experience in his *part* of the organization, which for many employees will

mean their immediate work team. Moreover, the employee's perception of team-level fairness probably depends on not only his own assessment but also his perceptions of how other team members would answer the question. That is, he may consider his workplace unfair simply because he knows and respects a teammate who feels that way.

A survey of employees at Taiwanese manufacturing and service companies found precisely this result.[49] Translated into the terminology used in business and management, work team members reported on their perceptions of the "procedural justice climate" within their groups. Each employee's justice ratings, *along with those of his or her closest workmates,* predicted employees' commitment to the larger organization and their "organizational citizenship behavior"—employee actions taken for the good of the organization without any expectation of reward.

The effect was even stronger, though, when employees and their fellow team members believed that their supervisors should give them latitude and treat them as equals. In other words, those employees who expected a more democratic work environment were most strongly influenced by the procedural justice perceptions of their work team. Thus, an organization made up of self-managing work teams can expect that it is in these teams that employees will develop their judgments about the larger organizations' fairness, which, in turn, will either spark or dampen their commitment and service to the organization.

Viewed within the embedded system framework, this conclusion makes perfect sense. Organizations, the teams within them, and the individuals who make up those teams interconnect so powerfully that the effective development of a self-managing work team requires that everyone from front-line employees to top management work together. Finally, moving up to the level of the social systems in which these organizations operate, it is important to remember that the cultural context itself shapes the prospects of self-management. To take the example of the Taiwanese companies, cultures promoting a more egalitarian outlook toward work life will raise the stakes even higher for companies developing self-managing teams, for these new teams will quickly judge the fairness of their company based on their local experience as teammates. In a more hierarchical cultural setting, commitment to the organization will not rise and fall so quickly based on the fortunes of their individual teams. Thus, in the end, to understand what makes for a successful group requires simultaneously understanding the behavior of the organization and the larger norms and practices of the culture, or cultures, in which it exists.

Discussion Questions

1. There are specific archetypical groups in any given society. Where do you see archetypical groups functioning in your own social world? What other archetypes might you identify at work, on campus, or in the larger community?

2. Using the embedded system theoretical framework as a template, try drawing the connections to and from any single group "outcome," such as the quality of a group's decision or the level of member satisfaction the group produces. Trace possible connections among social structures to the local context to group inputs and process variables.

Notes

1. Some would say we could do without the Yankees, but that is beside the point. In any case, even a cultural anthropologist who *hates* the Yankees would have to admit that they provide a harmless ritual means of displacing our internal and collective frustrations.

2. Caporael et al. (2005), pp. 374–75. For a very readable introduction to evolution, particularly as it applies to social life, see Wilson (2007). Hermann (1998) provides a more academic application of sociobiology to political life, including such small-group processes as "study circles."

3. Caporael et al. (2005), pp. 375, 377. One approach to looking into early human history is to study contemporary nomadic or hunter-gatherer communities; Dunbar (1993), for instance, found these populations to gather in groups of thirty to fifty, which could qualify as a kind of small group, as defined in Chapter 1.

4. These and the quotes that follow are from Caporael et al. (2005), pp. 382, 384, 386–87.

5. See Richerson and Boyd (2005). Their argument stresses the advantage of these instincts for *the group,* more than particular individuals. Thinking about the genetic survival of a group, as opposed to individuals, may sound unusual, but debates about levels of analysis are common in evolutionary theory (see Caporael et al., 2005).

6. Small-group scholars, and social scientists generally, use *theoretical framework* loosely. Unlike *hypothesis* or *methodology*, researchers use the term only occasionally and to convey varying meanings. Contractor and Seibold (1993), for instance, use *framework* to refer to theories that yield concrete hypotheses but have connections back to more abstract metatheory or even *grand theory*, such as Giddens' (1984) structuration theory.

7. See, for example, Pavitt (1999). For an earlier version, see McGrath (1964).

8. In the mid-twentieth century, one of the earliest pioneers in systems theory, Ludwig von Bertalanffy (1976), advanced a systems perspective that could apply across a range of disciplines. Mabry (1999) provides an overview of the systems perspective applied to small groups. He refers to this approach as the "systems metaphor" to emphasize that small groups have system-like qualities but are not literally systems in a strict and exclusive sense. It is in that sense that I incorporate the systems perspective herein. For a treatment of the systems perspective on groups from a more social psychological perspective, see Agazarian and Gantt (2005).

9. Arrow, McGrath, and Berdahl (2000), esp. 39, 207–8, 250–51, ultimately draw out this theory far beyond the elements included here. Among the most radical implications is the push to use computational models, simulations, and nonlinear analyses more regularly in small-group research. For more on these methods, see Wheelan and Williams (2005), Guastello (2005), and Arrow (2005).

10. Jamie Moshin points out that "this mirrors the co-orientational approach to argumentation, which discusses how a claim can be accepted by the audience, thus dropping below the level of dispute and becoming evidence itself." Thus, "arguments vary depending on how they are accepted by their audience" (personal communication, March 12, 2008). On the co-orientational approach, see Inch, Warnick and Endres (2005).

11. The original formulation of this perspective appeared in Putnam and Stohl (1990) but has been elaborated since then, such as in Putnam and Stohl (1996) and Stohl and Putnam (2003).

12. Stohl and Walker (2002), pp. 241, 243.

13. Giddens (1984) provides a comprehensive account of structuration, which he admits is an "unlovely term at best" (p. xvi). For a thorough and somewhat sympathetic description and critique of his theory, see Cohen (1989) and Craib (1992). It is important to stress that structuration is not a *theory* in the sense described in Chapter 1 of this volume. It clearly exists at a higher level of abstraction, as a framework. One indirect form of evidence supporting this view is that frustration about the ultimate utility of structuration comes from its extreme level of abstraction (a necessary feature of a framework)—not problems with its logic or clarity (solidified with Giddens' 1984 book), validity (it is largely axiomatic), scope (universal), or parsimony (remarkable, given its scope and depth). Even concerns about its falsifiability really stem from the fact that it doesn't make more *specific* predictions; its empirical claims (e.g., that the details of human history do not follow a logical evolutionary path; Giddens, 1984, pp. 236–43) simply have widely accepted validity (i.e., are axiomatic at this point).

14. Giddens (1984), p. xxi. Giddens' theory is certainly a theory of social *systems,* but he does not present it in the terminology of systems theory. For an account of small groups that interlaces structurational and systems theories, see Salazar (2002), esp. pp. 188–92.

15. Giddens (1984), pp. 28, 79.

16. Giddens (1984), p. 24, acknowledges that societies "are not necessarily unified collectives," but let's leave that detail aside for the moment. The point is that there exist relatively stable social systems that span across time and space, even if they do not conform to simple political-geographic borders.

17. See Vahid (2003). The link here to engineering and software is to imbue the term with a stronger metaphoric power, which is helpful to make this level of theoretical abstraction more comprehensible.

18. This framework has its most immediate roots in structuration theory (Giddens, 1984), rather than systems theory. Both approaches use the notion of "embeddedness" and emphasize the systemic qualities of social units, from small groups to large-scale societies, but the structurational approach eschews concepts and language that ascribe intentionality or requirements to social entities (Giddens, 1984, p. xxxi). See, for example, Fuchs' (2003) structurational critique of contemporary notions of "self-organizing" systems. To be clear, though, small-group theorists created models including the basic elements of the embedded system framework *decades ago*; see, for example, McGrath and Altman (1966), p. 38, or Hare (1976), pp. 8–9.

19. Thus, Sutton and Staw (2003) admonish that "diagrams are not theory" and that "the least theoretical representations are ones that simply list categories of variables" (p. 25). The

embedded system approach is a *theoretical framework,* not a precise theory, and hopefully it avoids the higher-level abstraction of, say, structuration theory, thereby making it more useful for researchers as an aid to building their own concrete causal models.

20. This understanding parallels that of structuration theory; for a clear overview of these concepts, see Craib (1992), pp. 50–58.

21. Rheingold (2003).

22. Gaertner, Rust, Dovidio, Bachman, and Anastasio (1996).

23. Erel and Burman (1995).

24. Hecht, Jackson, and Ribeau (2003).

25. In this sense (and many others), the social archetypes described herein differ from the personality archetypes described by Jung (1981/1934). It is striking that the idea of *group* archetypes has not been developed very well in the social sciences. In the organizational literature, the notion of archetypes has had some attention (e.g., Mitroff, 1983), and Chapter 6 of this volume describes Moxnes' (1998, 1999a, 1999b) work on the archetypal *roles* people play in groups.

26. This volume does not attempt to develop a systematic inventory of the group archetypes in any one society, but this surely is an element of the theory subject to exploration, development, and testing. One approach could begin inductively, generating a large list of potential archetypes from popular and scholarly writings on groups, complemented by interviews and surveys. A follow-up survey could then assess the degree to which members of a given society could consistently recognize and recount in detail how different archetypical groups typically behave, based solely on the archetype's name (and, perhaps, a six- to ten-word label). It could prove revealing, indeed, to see how the set of archetypes—and their expected behaviors—varied across different cultures. (Strong inconsistencies *within* a society would indicate that a shared archetype did not exist, or that one needs to look more closely at the subculturally distinct archetypes within that society.)

27. The inspiration for this argument is Bormann's (1996), pp. 101–4, notion of "special theories" emerging in a larger society as a result of patterns of regularized convergence across many groups.

28. This may hold as true for researchers as for group members, in that these group metaphors likely inform the theories we construct in a way that limits our vision beyond the periphery of that implicit metaphor (see Morgan, 1986, who makes this argument in relation to organizations).

29. It follows that theories built to account for behavior within the most potent archetypical group settings may be the most robust and useful theories, as their scope can safely extend into any social setting where groups invoke the theory's original archetypical setting.

30. Yeatts and Seward (2000), p. 359.

31. For a review of the popularity of these groups, see Moreland, Argote, and Krishnan (1998), pp. 37–38. For their history, particularly from the Total Quality Management perspective, see Sexton (1994). More generally, see Hirokawa (2003), p. 125.

32. For instance, there may be important differences between groups performing service versus assembly tasks (Spreitzer, Cohen, & Ledford, 1999).

33. Wolper (2004).

34. See Miccolo and Spanier (1993). Yeatts and Seward (2000) provide an example of research that advocates the expansion of self-managed work teams in health care organizations, particularly in nursing homes.

35. This section references Hirokawa, DeGooyer, and Valde (2003), esp. pp. 151–55.

36. Bushe and Johnson (1989). Such a high response rate is unusual in any research setting; this one owes its thanks to the researchers coordinating their study with the managers overseeing the employees they contacted. In large-scale survey research, a conventional response rate might be as low as 20%, though rates approaching 50% can be obtained through more steadfast (and expensive) recruiting of participants. On designing surveys for optimal response rates, see Dillman (2000).

37. In the organizational context, relevant contemporary research can be accessed quickly in Thompson (2003).

38. Elloy, Terpening, and Kohls (2001).

39. Sims, Salas, and Burke (2005), p. 421.

40. Weick (1993).

41. Sims, Salas, and Burke (2005), p. 421, summarize studies showing individual effects, as well as some showing mixed results for group productivity. Svyantek, Goodman, Benz, and Gard (1999), however, provide stronger multistudy evidence of an overall positive effect.

42. Svyantek et al. (1999). More generally, when an organization creates self-managed teams, their success (and member commitment and satisfaction) depends on receiving necessary expertise along with the new responsibilities (Kuipers & Vallas, 2007). On the satisfaction benefit of self-managing work teams generally, see van Mierlo, Rutte, Kompier, and Doorewaard (2005).

43. Cohen (1988).

44. Across twenty-seven meta-analyses, the average group research effect size is $r = .32, SD = .15$ (Richard, Bond, & Stokes-Zoota, 2003, p. 337 [Table 1]). The same source shows a slightly lower average effect size for social psychological findings in general (avg. $r = .21, SD = .15$).

45. Svyantek et al. (1999), pp. 277–78.

46. Sims, Salas, and Burke (2005), pp. 419–20.

47. Moreland, Argote, and Krishnan (1998), p. 41. For a broader overview of this line of research, see Moreland (2006). Research outside the laboratory has clarified the role of transactive memory in established groups (Austin, 2003) and groups that form quickly in the field, as in disaster relief settings (Majchrzak, Jarvenpaa, & Hollingshead, 2007). Also, see Chapter 5 of this volume.

48. Lei (2007).

49. Yang, Mossholder, and Peng (2007).