THE SCIENCE AND PRACTICE OF TEAM DEVELOPMENT: IMPROVING THE LINK

LYNN R. OFFERMANN
REBECCA K. SPIROS
George Washington University

Qualitative and quantitative data from team development practitioners were used to examine the link between the science and the practice of team development. Differences between academic and full-time practitioners were found in the value placed on empirical knowledge sources. Familiarity with recent relevant literature was associated with better intervention outcomes, and practitioners who valued empirical outlets reported greater short-term success than those who did not. Suggestions for improving the integration of science and practice with teams are presented.

Work teams are becoming very big business. Recently, 82 percent of companies with 100 or more employees reported using team structures (Gordon, 1992), and 68 percent of *Fortune* 1000 companies were reportedly using self-managing teams (Lawler, Mohrman, & Ledford, 1995). Research has been encouraging in that the use of teams has led to desirable performance improvements for numerous organizations in a variety of industries (e.g., Banker, Lee, Potter, & Srinivasan, 1996; Cannon-Bowers, Oser, & Flanagan, 1992; Wellins, Byham, & Dixon, 1994), although teams obviously do not always work well (e.g., Hackman, 1990).

The scientific base for understanding teamwork has relied heavily on social psychological models derived from laboratory research with short-lived groups of students that often poorly mirror organizational environments. Although good-quality organizational research based in field settings is now starting to accumulate (Cohen & Bailey, 1997), comparisons across settings and types of teams are difficult, and many important areas related to team effectiveness remain understudied. Research needs to more clearly identify the mechanisms that make teams work, as well as how to make them more effective (Cohen, 1993; Sundstrom, de Meuse, & Futrell, 1990).

Meanwhile, the increasing organizational reliance on teams, coupled with a literature criticized for limited utility to real-world problems, is pushing a practice in which practitioners allegedly favor shotgun approaches that combine multiple intervention strategies in the hope that something will work. It is a large practice as well: an examination of 310 planned organization change efforts showed team building to be the most frequently used intervention (Covin & Kilmann, 1991). As with other applied organizational areas, practitioners complain that academic research is not relevant to their needs, while academics denigrate the quality of research done by practitioners (Hyatt et al., 1997), creating a distressing gap between science and practice. Indeed, Woodman (1993) argued that the major schism between the practitioner and academic worlds of organization development (OD) represents the single greatest impediment to progress in OD. Both practitioners and researchers need to do better at forging stronger connections between the production and application of knowledge, and team development is a prime content area in which to examine ways to improve these connections. Discovering ways to create better science-practice links regarding work teams would be useful in its own right and would also potentially serve as a model for similar improvements in science-practice connections in other content areas.

Doing better at integrating the science and practice of team development requires a clear understanding of what occurs in practice, what the needs of organizational practitioners in terms of a research agenda are, and how science could better serve practice. The current research was designed to do this. Doing so may also clarify how practice can serve to inform future science, accomplishing what Schön (1983) theorized as bringing the art of managing into management science. In the present study, we carefully examined current organizational science and practice that might be classified under the rubric of "team development" or that of "team building," assessing information on who is doing team development work, how often, and with what training or background. Although team

development and team building can be distinguished conceptually on the basis of identified targets and outcomes (see Kinlaw, 1991), they typically are not. Hence, we use the term "team development" in this article in the broad sense of practice work with teams for the purpose of improving performance or attitudes, subsuming both team development and team building. We also sought information on the sizes of the groups and teams that are being developed, how interdependent they are, and what their major problems are. The desired goals of group interventions were also examined, as well as their achievement.

We sought to discover opportunities to improve the link between the science and informed practice of work teams by examining what existing theoretical models or approaches, broadly defined, practitioners are applying, the perceived utility of available research, and the assessment techniques being used. One particular aspect of scientific knowledge that may facilitate or inhibit dialogue between academic and practitioner worlds is empirical focus. Thus, we assessed whether academics and practitioners differentially valued empirical sources of organizational knowledge. We also assessed whether familiarity with the literature in general, and with empirical knowledge in particular, was related to success in practice. Finally, we examined gaps in the research literature as perceived by practitioners and their recommendations for better connections between the science and practice of team development.

One key issue for research and practice is the appropriate use of the term "team." Theoretically, teams are distinguished from other collectives by the characteristic of shared interdependent work (e.g., Dyer, 1977, 1994; Katzenbach & Smith, 1993; Salas, Dickinson, Converse, & Tannenbaum, 1992). In comparison, the more generic terms "group" or "work group" are usually more broadly constituted to include work collectives whose members may see themselves and be seen by others as social entities and who may have common goals (as teams do), but looser task connections.[1] Task interdependency is expected to limit the practicable size of teams to a number of members below that permitted by the broader definition of group. However, common parlance often fails to make this distinction, with "team" and "group" used interchangeably (Cohen & Bailey, 1997; Guzzo & Dickson,

1996). This is a substantial problem for knowledge transfer in that, without clarifying the nature of group interdependence, it becomes difficult to generalize findings across settings and to have confidence in the application of research. Diversity in terminology can be a source of both conceptual and practical confusion that makes it difficult for practitioners to identify research relevant to their particular concerns. We expected that our respondents would confirm that much of what is being done with organizational work groups of many types, levels of interdependency, and degrees of shared commitment is coming under the rubric of "team practice."

Hypothesis 1a. Defining teams as task-interdependent work groups was expected to show that team practice work is being undertaken with a variety of collectives of individuals, only some of which fit the interdependent definition of team.

Hypothesis 1b. Teams, defined by required task interdependence, were predicted to be significantly smaller as measured by number of members than groups.

For both teams and groups, the nature of the goals desired from team development interventions will certainly affect the relevance of particular types of knowledge. For example, a focus on systemic business issues requires a different knowledge base than a primary concern for interpersonal dynamics within a team. As a major form of OD intervention, team development draws heavily from theory in organization development and change, and there is evidence in the OD literature that intervention goals may be changing. Traditional OD theory is rooted in core humanistic values (Burke, 1982; Margulies & Raia, 1990). Yet as the field of OD has developed, charges of straying from its initial value base and of being co-opted by organizational clients have ensued. Sashkin and Burke (1987) predicted that future OD work would see a change in focus, with a decreased focus on the quality of interpersonal relations as an end in and of itself, and that process skills would instead be used to facilitate organizational effectiveness. Indeed, OD efforts are being increasingly tied to organizational business goals, at the risk of traditional OD values taking a back seat to organizational effectiveness (Fagenson & Burke, 1990). Practitioners now perceive the field as more focused on business effectiveness than on the humanistic concerns of the past (Church, Burke, & Van Eynde, 1994). This evidence suggests that practitioners may be more likely to see relevance in research that

---

[1] Differences in terminology appear even here, with authors such as Guzzo and Dickson (1996) using "task interdependency" as part of their definition of "work group."

focuses on performance outcomes rather than on attitudinal change. However, attaining business goals need not require abandoning humanistic values. In fact, Church and Burke (1995) suggested that the humanistic roots of organization development are still present among practitioners, even as the emphasis has shifted toward business outcomes. In view of this work, we expected that team development efforts would similarly be emphasizing performance goals as primary outcomes, although interpersonal goals would continue to be valued in addition to performance.

> *Hypothesis 2. Goals of team development interventions will reflect primary concern for organizational performance outcomes; improvements in interpersonal relations among team members, while valued, will be a secondary concern.*

The large volume of the literature in the area of work groups and teams has been noted in previous reviews (e.g., Cannon-Bowers et al., 1992). A comparative literature search of the ABII and PsychLit databases for the years 1990 and 1997 under the keyword "team" showed a 108 percent increase in volume between those years in the number of ABII citations and a 27 percent increase for PsychLit citations. The voluminous amount of information on teams (some of which may have more fairly been called groups) poses a tremendous challenge for those who seek to remain current in their understanding of the literature. The difficulties in remaining current with the research-based literature may be particularly challenging for full-time practitioners; presumably, academically based practitioners have additional resources and support for maintaining currency that are less available to non-academics in full-time practice.

Given the volume of choices, it is unclear whether reading preferences separate academics and full-time practitioners, as has been suggested (Hyatt et al., 1997). One knowledge characteristic that may differentiate preferences is empirical focus, with academics valuing the rigors of quantitative measurement more than practitioners. In U.S. academic circles, contributions devoid of quantifiable verification are often less valued for evaluating the quality of academic work (Easterby-Smith, Snell, & Gherardi, 1998). Publication in outlets with a qualitative focus is often discounted in promotion and tenure decisions, a phenomenon that Davenport and Markus referred to as a component of "institutional pressures toward irrelevance" (1999: 19). Although controversial, this charge does highlight the problems inherent in rewarding academics solely for empirical contributions. Al-

though one advantage of good measurement is presumably the efficiency of communication among scientists (e.g., Nunnally, 1967), its advantage for communication between scientist and practitioner is less clear.

Some people are simply not comfortable with quantitative data (Alkin, Daillak, & White, 1979), and hence exclusive publication in empirical sources may limit the reach of findings into practice. Furthermore, the rapid proliferation of esoteric new statistical methods (McIntyre, 1990) and the use of highly sophisticated analytic techniques when simpler ones would suffice may make the results of some empirical research less comprehensible to many who might otherwise be interested, thereby guaranteeing decreased application. To the extent that practitioners find that the rigors of quantification limit the discovery of answers to practical questions, or lead to an avoidance of organizationally important but "messy" areas (Boehm, 1980), they will likely seek information elsewhere. And without overlap in exposure to scientific literature, opportunities for transfer of knowledge from research to practice will be far more limited. This limited transfer, in turn, may bode poorly for organizations, in that there is evidence that use of academic research sources, but not practitioner-oriented ones, can be significantly related to organizational profitability (Terpstra & Rozell, 1997).

> *Hypothesis 3a. Academics practicing with teams will report themselves as being more up-to-date on the relevant scientific literature than full-time team practitioners.*

> *Hypothesis 3b. Academics and full-time practitioners will differ in preferred information sources on teams, with academics placing higher value on empirical sources.*

In addition to sheer volume, the current literature on teams comes from a wide variety of perspectives and sources (e.g., Guzzo & Shea, 1992). Our database search showed that in 1997, sources identified represented work published in 128 different ABII-referenced journals and 54 PsychLit–referenced journals (with 9 overlaps), for a combined total of 173 unique literature sources representing many different disciplinary and theoretical perspectives. These figures may reflect the OD literature in general, which has been described as lacking coherence among theoretical contributions (Sashkin & Burke, 1987). Woodman (1989) noted that theoretical diversity can be expected in applied change domains like OD. Yet overarching theories of team phenomena from which practi-

tioners can develop on-site variations may be among the most useful of research contributions (Schön, 1983). Breadth of approach can present a confusing array of possibilities unless clear guidelines for implementation are provided. Broad theoretical diversity also has significant implications for practitioners in that it creates confusion among organizational clients who do not know what to expect in terms of approach when hiring a consultant. As with OD in general, we expect it unlikely that any consistent framework of team development is represented; rather, an eclectic mix of theoretical underpinnings for interventions was hypothesized.

Hypothesis 4. Team development practice will reflect a diversity of theoretical underpinnings with no clearly accepted, preeminent model.

Evaluating the success of team development efforts is often a difficult proposition. Some studies have documented positive effects (e.g., Bushe & Coetzer, 1995; Eden, 1986; Walsh, Garbs, Goodwin, & Wolff, 1995), and others have not (e.g., Eden, 1985; Pandiani & Maynard, 1993). Although there is general support for a pattern of positive changes in attitudes or satisfaction (Neuman, Edwards, & Raju, 1989), many evaluations have used less rigorous designs that prohibit drawing firm conclusions linking improvements to team development efforts (de Meuse & Liebowitz, 1981; Woodman & Sherwood, 1980). Indeed, many team development interventions accompany other organizational efforts, making it difficult to separate out the impact of teams from other, simultaneous, changes (Guzzo & Dickson, 1996; Wellins, Byham, & Wilson, 1991).

Given the nature of individual self-serving biases (Fiske & Taylor, 1991), it is assumed that most practitioners believe in the efficacy of what they are doing and are likely to see their efforts with teams as resulting in positive effects. Further, if science really does contribute to informed practice, as it theoretically should, then increasing familiarity with the literature on teams would be expected to be associated with greater reported intervention success. Indeed, Terpstra and Rozell (1997) found that organizations that made greater use of information related to academic research were more profitable. If empirical knowledge in particular is of value to team practice, practitioners accessing empirical journals should report greater success than those accessing solely nonempirical sources.

Hypothesis 5a. Most practitioners will see their interventions as successful at altering both the attitudes and the performance of group members.

Hypothesis 5b. Practitioners reporting greater familiarity with the current team literature will also report greater success in achieving positive organizational outcomes than those who are less up-to-date.

Hypothesis 5c. Practitioners who perceive value in empirical sources of knowledge will report greater success in achieving positive organizational outcomes than those valuing only nonempirical sources.

Despite many calls from experts advocating the value of evaluation as a way to develop the science of team development (e.g., Woodman, 1993), we expect that most interventions are not externally verified through formal evaluation and that, where evaluation is done, less rigorous designs are the norm. Using objective criteria of success was predicted to be uncommon, with the more widely available but subjective judgments of team members and sometimes their managers predominating. Prevalence of these subjective outcome assessments may affect both knowledge production and dissemination by generating less confidence in results and limiting publication opportunities and outlets. We expected that academic practitioners would have greater incentive than practitioners to document effective work with teams in the hopes of publishing results, presumably a rewarded academic activity. Full-time practitioners may be less likely to be rewarded for competent outcome evaluation, and hence less likely to include evaluation in their work with groups.

Hypothesis 6a. Most team interventions will not be evaluated in an objectively verifiable manner.

Hypothesis 6b. Academic practitioners will be more likely to formally evaluate their interventions than full-time practitioners.

METHODS

Sample

Respondents were 442 members of the Academy of Management's Organizational Development and Change Division; 69 percent were men, and 32 percent were women. Sample demographics appear in Table 1.

Measures and Procedures

A five-page, 29-item mailed questionnaire assessed demographic information, experience in OD, practice experience with groups and teams,

TABLE 1
Demographic Characteristics of Sample

Characteristic	Percentage	Mean	s.d.
Gender			
Male	69		
Female	32		
Highest degree held			
Ph.D.	66		
Master's	29		
Bachelor's	5		
Major area of degree			
Management, business administration, or related	51		
Industrial/organizational psychology	23		
Other psychology	12		
Other major area	16		
Occupational status			
Academic	54		
Full-time practitioner	43		
Retired or unemployed	3		
Years since completing highest degree		12.75	10.70
Years in OD practice		10.00	9.33
Percentage of work time spent in practice		29.47	36.35
Percentage of practice time spent with groups		21.77	30.15

perceptions of teams and team development needs, and resources used to inform practice with teams. We distinguished between work groups and teams on the basis of task interdependency, defining a work group as follows: "Any identifiable group of persons within an organization charged with accomplishing organizational tasks. Membership may be defined by job title, department, role, appointment, etc." Teams were "work groups who *must* rely on group collaboration if each member is to experience the optimum of success and achievement (Dyer, 1977)." The questionnaire further specified that "team members are interdependent and must truly work collaboratively to succeed." Respondents were asked to indicate what percentage of the groups they worked with fit the definition of a team and both the groups' and the teams' maximum, minimum, and average size. They also indicated the primary and secondary goals of their group work, the percentage of their interventions that achieved positive effects on short- and long-term group attitudes and performance, the percent

of interventions that were evaluated, and the means of evaluation.

Eleven areas of potential team problems were listed. Seven of these came from three widely accepted models of team development: the goal-setting model, the role model, and the interpersonal model (Beer, 1976). Goal and role issues were each listed as single problem areas. Because of its breadth, the interpersonal model was broken down into five component areas: communication, diversity, problem solving, decision making, and conflict management. Given the prevalence of self-managing teams, we added empowerment, total quality management, rewards, and resource management (Guzzo & Shea, 1992). We also included spaces in which respondents could specify additional team problem areas they had encountered. For each problem area, respondents indicated the perceived adequacy of the theoretical and empirical basis for intervention. They also indicated the issues for which they felt more research was needed to support an informed practice. Respondents were asked what theories or models (broadly defined) they found most and least helpful in their practice, the instruments they used, and the journals and books they found most helpful; responses were open-ended. Space for open-ended suggestions and comments about the connection between the science and practice surrounding teamwork was also included. The overall response rate was 31 percent.

RESULTS

Characteristics of Team Developers

Our primary interest was in the 245 respondents who reported that they worked with groups or teams in their practice (referred to here as team developers). More of the team developers held full-time practice positions than academic positions (59% vs. 41%), and the other respondents (non-team-developers) were 23 percent full-time practitioners and 77 percent academics ($\chi^2_1 = 53.58$, $p < .01$). Mean practice experience was 13.01 years for team developers and 6.01 years for non-team-developers ($t_{415} = 8.14$, $p < .01$), and the mean percentage of work time spent in practice was 46 percent for team developers versus 8 percent for non-team-developers ($t_{388} = 13.68$, $p < .01$). Thus, team development appears to be undertaken by more experienced practitioners within the Academy's OD division. The following results are based solely on data from the team developers.

What Is a Team?

Groups versus teams. Distinguishing between work groups and teams on the basis of task interdependency, team developers reported that on average 48 percent of the work groups they had worked with fit the definition of team. As one respondent noted, "The distinction between work group and team you make here is a very critical one . . . teams should be seen as having interdependent tasks." Thus, although practicing team developers are able to distinguish between work groups and teams, more than half of current "team" development practice is with groups that are not task interdependent, providing support for Hypothesis 1a.

Group size. We also asked team developers to report the typical size of the work groups and teams with which they worked. Consistent with Hypothesis 1b, team developers reported that teams were significantly smaller than groups, both in maximum size and average size (see Table 2). Although two of the respondents reported a maximum team size in excess of a 1,000 members (with the next largest maximum size being 150), the vast majority of respondents reported teams averaging 9 members, with a range of 5 to 19. Thus, although a few people may believe that an entire organization or large division can be considered a team, most practitioners seem to define task-interdependent teams as necessarily fairly small.

What Needs Developing?

Demand for team development. Practitioners who included team or group work as part of their practice reported a notable increase in the demand for work with groups and teams. Forty-four percent of team developers reported an increase in team interventions over the past three years; 41 percent reported no change; and only 15 percent reported a decrease. The results of a chi-square analysis of the distribution of respondents over the three categories was significant ($\chi^2_2 = 32.65$, $p < .01$). Of those reporting an increase, the mean increase was a striking 53 percent. More than 17 percent of the team developers reported they spent 100 percent of their time in practice. This, plus the substantial portion of long-experienced respondents in our sample, suggests that the "no change" responses may reflect a ceiling effect, an indication that a notable portion of practitioners have made team practice a strong staple of their consulting portfolios for some time. In any case, the overall mean percentage of practice time spent helping work groups improve was 40 percent, suggesting substantial organizational needs for assistance with implementing and improving teams. Thus, team practice appears to be thriving, potentially creating many opportunities for advancing both science and practice in the area.

Goals of team development. As predicted, most team developers reported that the primary goal of group interventions was improved group performance (54%). Other primary goals included improved group process (23%), improved group affect (6%), and a combination of two or more of the above (8%). Of the 54 percent indicating group performance as the primary goal, 79 percent indicated improvements in group process as an additional goal, and 57 percent indicated improved group affect as an additional goal (respondents could choose more than one additional goal). Thus, Hypothesis 2 was supported. This suggests that although group performance has indeed come to

TABLE 2
Comparison of Team and Group Sizes

Level	All Respondents				Minus Outliers[a]			
	Mean Reported Team Size	Mean Reported Group Size	*t*	*df*	Mean Reported Team Size	Mean Reported Group Size	*t*	*df*
Maximum	29.20	112.32	5.94**	177	19.05	107.77	5.94**	175
Minimum	4.97	5.60	1.55	174	4.97	5.60	1.56	172
Average	9.16	13.85	6.46**	162	9.02	13.79	6.39**	160

[a] Two respondents reported maximum team sizes in excess of 1,000, with the next-highest maximum reported to be 150. Given the sensitivity of means to large outliers, data from these two respondents (outliers) were removed from the sample, and the resulting analysis is presented under this heading.

** $p < .01$

the forefront in most practitioners' minds, the traditional organization development values of humanism and relationships have not been lost. Of the 29 percent who reported improved process or affect as the primary goal of interventions, 81 percent also listed performance as an additional goal, suggesting that performance was still very much on the minds of those not seeing it as primary. Other reported goals included team culture, mission/vision, and relationships of team members. Differences between academic and full-time practitioners in desired outcomes were neither predicted nor found.

Team problems. Team developers reported that they had dealt with an average of 9 of the possible 11 issues and problems listed in their own practices. Table 3 presents the frequencies with which team developers reported they had dealt with each issue and the percentage of respondents who listed each issue as one of the three most common. Several other issues were written in, the most common of which was leadership, identified by 16 respondents. As shown, team developers face a wide variety of practice issues that often draw on separate and distinct areas of research. This breadth of prac-

tice places high knowledge demands on practitioners wishing to stay current in the field.

Resources for a Science-Based Practice

When asked to what extent they felt up-to-date on the literature on work groups and teams (1, "not at all," to 7, "completely"), the mean response for team developers was 5.2 (s.d. = 1.16). Contrary to Hypothesis 3a, the mean for academics did not differ significantly from that for full-time practitioners ($\bar{x}$'s = 5.32 and 5.14, respectively, t_{197} = 1.10, p = .27). Not surprisingly, most respondents rated themselves at or above the midpoint of the scale. Table 4 lists the publication outlets team developers reported they used to stay up-to-date in their practices. Although a few respondents indicated that no journals or books were particularly helpful in their practice with teams, the average numbers of helpful journals and books cited by those completing this question were 3.61 (s.d. = 2.09) and 3.79 (s.d. = 2.19), respectively. Together, team developers mentioned a total of 129 different journals or periodicals and 270 different books as helpful resources, more evidence of a burgeoning literature. Given that the sample was composed of members of the Academy of Management, it should not be surprising that three of the four top-rated journals were Academy publications. Overall, the empirical *Academy of Management Journal (AMJ)* was used more than either the *Executive* or the *Harvard Business Review,* both of which presumably cater to a more practitioner-oriented audience.

As shown in Table 4, the frequency with which academic and nonacademic team developers reported specific journals as helpful to their practices differed. We conducted a multivariate analysis of variance (MANOVA) comparing the preferences for the top nine journals of academic and nonacademic practitioners. The difference in the pattern of academics' and applied team developers' preferences was significant (Wilks's $\lambda_{9, 140}$ = 0.81, $p < .01$). Although both groups favored *Organizational Dynamics,* the *Academy of Management Journal,* and the *Academy of Management Review,* full-time practitioners also favored the more practitioner-oriented *Executive* and *Harvard Business Review,* whereas the academic practitioners favored more empirical journals, such as the *Journal of Applied Behavioral Science* and *Group and Organization Management.* Similarly, a MANOVA was run comparing academic and nonacademic practitioners' preferences for the top ten books. There were differences between the two groups' expressed preferences among the books cited as useful, but the overall pattern of preferences did not differ signif-

TABLE 3
Problems and Issues Dealt With in Practice with Groups

Problem	Number Reporting	Percentage Reporting	Percentage of Times Mentioned as One of Three Most Common Problems
Goal issues	192	91.0	46.2
Communication	190	90.0	46.4
Role issues	187	88.6	36.6
Problem solving	185	87.6	27.5
Decision making	178	84.3	24.5
Conflict management	167	79.0	26.6
Empowerment	149	70.5	16.0
Reward systems	120	56.7	10.6
Total quality management (TQM)	118	56.2	15.5
Diversity	100	47.6	4.3
Resource management	98	46.2	7.2

TABLE 4
Most Commonly Cited Published Resources Used by Team Developers[a]

Resource	Percent of Team Developers Who Listed Source as Helpful		
	All Respondents	Full-Time Practitioners	Academic Practitioners
Journals and other periodicals			
Organizational Dynamics	34.44	36.67	32.20
Academy of Management Journal	32.45	33.33	32.20
Executive	29.80	37.78	18.64
Academy of Management Review	27.15	25.56	30.51
Harvard Business Review	25.17	31.11	16.95
Journal of Applied Behavioral Science	23.18	13.33	38.98
Group & Organization Management	12.58	4.44	25.42
Journal of Applied Psychology	12.58	10.00	16.95
Human Relations	11.26	8.89	15.25
Books			
Katzenbach and Smith, *The Wisdom of Teams: Creating the High-Performance Organization*	17.12	18.18	16.07
Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization*	11.64	13.64	7.14
Dyer, *Team Building: Issues and Alternatives*	10.27	6.82	16.07
Schein, *Process Consultation: Its Role in Organization Development*	10.27	10.23	10.71
Weisbord, *Productive Workplaces: Organizing and Managing for Dignity, Meaning, and Community*	6.16	5.68	7.14
Hackman, *Groups That Work and Those That Don't: Creating Conditions for Effective Teamwork*	5.48	4.55	7.14
Block, *Stewardship: Choosing Service over Self-Interest*	5.48	3.41	8.93
Block, *Flawless Consulting: A Guide to Getting Your Expertise Used*	4.79	5.68	3.57
French and Bell, *Organization Development: Behavioral Science Interventions for Organization Improvement*	4.79	3.41	7.14
Schwartz, *The Skilled Facilitator: Practical Wisdom for Developing Effective Groups*	4.79	4.55	5.36

[a] For the periodical sources, *n*'s for all respondents, full-time practitioners, and academic practitioners were 149, 90, and 59, respectively. For the books, the comparable *n*'s were 144, 88, and 56.

icantly between the academics and the full-time practitioners (Wilks's $\lambda_{10, 68} = 0.88$, $p > .05$). Thus, Hypothesis 3b was supported for journals, but not for books.

Journals cited as helpful were further categorized as either empirically or nonempirically focused on the basis of editorial policy and journal content. For our purposes, journals encouraging and publishing empirical research papers were coded as empirically focused even if they also accepted

some nonempirical contributions. On the basis of the journals they reported to be helpful, we categorized respondents as valuing only empirical knowledge sources, valuing only nonempirical sources, or valuing both (when they reported at least one empirical and one nonempirical source as helpful). As Hypothesis 3b predicts, there was a significant difference in the value attached to empirical journals by academic and full-time practitioners ($\chi^2_2 = 11.62$, $p < .01$). Less than 5 percent of academics reported only nonempirical sources as helpful, whereas 31 percent of full-time practitioners did so. The proportion of academics who found value solely in empirical sources was twice that of full-time practitioners (17% vs. 8%). Most respondents—79 percent of the academics and 61 percent of the full-time practitioners—reported valuing a combination of empirical and nonempirical journals, suggesting wide interest in understanding the best of both perspectives.

In addition to the published literature, team developers reported several sources of continuing education that facilitated their practices with teams. The most common source of continuing education reported was colleagues (21%). Additional sources mentioned included workshops and seminars (18%), the OD Network (13%), the Academy of Management (12%), team members themselves (9%), and university course work (9%).

What Is Being Done?

Team assessments. Of the 176 respondents who listed psychological tests and/or assessment devices as parts of their team practices, a majority (55%) included the Myers-Briggs Type Inventory (MBTI), making the MBTI far and away the most commonly used instrument in team development practice. There was no significant difference in MBTI use between academic or full-time practitioners. Other common responses included customized surveys/instruments (29%), FIRO-B (17%; Hammer & Schnell, 2000), 360-degree feedback instruments (17%), the Thomas-Kilmann Conflict Mode Instrument (13%; Thomas & Killmann, 1974), interviews (9%), and the Learning Styles Inventory (7%).

Theories and models. Many theories and models were mentioned by the respondents as being helpful for their practice with groups and teams. The 150 respondents to this question reported a combined total of 250 different models or theories. The most frequently mentioned approaches were Tuckman's model (16%), systems theory (13%), and Bion's model (12%). Additional models cited included Argyris's (10%), Hackman's (9%), Schein's

(9%), and sociotechnical systems (7%). These low percentages show there to be no unifying theoretical perspective in the field of team development, supporting Hypothesis 4. On the contrary, the theoretical underpinnings of the practical work of team development are extremely varied.

What Effect?

Self-evaluated attitude and performance effects. Team development practitioners estimated the effects of their interventions on groups' positive attitudes (that is, morale, cohesion, and satisfaction) and performance (productivity, customer service, and quality). Table 5 shows the averages of respondents' estimates of the percentage of their interventions that resulted in an increase, a decrease, or no change in both types of effects. As predicted, practitioners felt that both positive attitudes and performance increased in the majority of interventions, supporting Hypothesis 5a. To compare attitude and performance effects, we conducted within-subjects *t*-tests on team developers' self-reports of the effects of their interventions. Team developers reported that, on the average, positive attitudes increased in significantly more interventions than did performance over the short term ($\bar{x}$'s = 71.51% vs. 61.95%, $t_{185} = 5.16$, $p < .01$). With regard to long-term effects, respondents' estimates of the percentage of interventions that resulted in decreased positive attitudes were significantly greater than their estimates of the percentage of interventions resulting in decreased performance outcomes over time ($\bar{x}$'s = 6.67% vs. 4.21%, $t_{157} = 3.65$, $p < .01$). Thus, although negative attitudinal results were more commonly reported than performance decrements, both of these undesirable outcomes were perceived as occurring rarely. Comparing short-term and long-term effects, we found that favorable short-term effects were reported as

TABLE 5
Perceived Effects of Group Interventions[a]

Intervention Outcomes	Positive Attitude Effects		Performance Effects	
	Short-Term	Long-Term	Short-Term	Long-Term
Increase	71.51	52.16	61.95	52.53
No change	21.93	39.42	32.00	40.65
Decrease	4.85	6.67	4.36	4.21

[a] Values are mean percentages.

significantly more common than long-term effects for both attitudes ($\bar{x}$'s = 71.51% vs. 52.16%, t_{178} = 10.43, $p < .01$) and performance ($\bar{x}$'s = 61.95% vs. 52.53%, t_{174} = 6.09, $p < .01$), with both positive attitude change and performance increases achieving comparable perceived long-term levels of 52 percent.

Currency in the literature published in any source was expected to be associated with greater success in practice. As predicted, correlations between reported intervention success and being up-to-date in the teams literature were significant for all four measures of success: short-term attitude improvement ($r = .17$, $p < .05$), as well as long-term attitude improvement and short- and long-term performance improvement (r's = .21, .28, and .31, respectively, all p's < .01). Thus, Hypothesis 5b was supported.

We further examined whether a preference for empirical or nonempirical sources corresponded with perceived intervention success. There was a significant main effect ($F_{2, 107}$ = 5.71, $p = .02$), indicating that respondents valuing empirical sources of knowledge (either exclusively or in combination with nonempirical sources) reported a higher proportion of successes in increasing short-term team performance than those exclusively valuing nonempirical outlets (65% vs. 50%). No differences were found for attitudinal improvement, short- or long-term, or long-term performance improvement. Thus, Hypothesis 5c was supported only for short-term performance improvement. It is interesting to speculate whether the predominance of short-term studies in the empirical literature has helped practitioners work more effectively with organizations on immediate performance problems but left other key, long-term issues less well understood.

Evaluation. Team developers reported that an average of 50 percent of their interventions were evaluated by some means. Of those evaluated, an average of 58 percent involved team member ratings, 33 percent involved objective criteria, and 29 percent involved supervisor ratings. Thus, Hypothesis 6a was supported in that objectively verifiable evaluations occurred in only a minority (one-third) of evaluated team interventions. Hypothesis 6b, in which we predicted that academic practitioners would be more likely to evaluate their efforts and be more likely to use objective criteria in their evaluations, was not supported. Neither the mean reported percentage of interventions that were evaluated nor the percentage of evaluations that included objective criteria differed significantly between academic and nonacademic practitioners. However, academic practitioners did report a sig-

nificantly higher use of member ratings for evaluation than did nonacademics (mean difference of 13.3%, t_{183} = 2.19, $p < .05$).

How to Improve Practice

The proportion of respondents reporting adequate theoretical and empirical bases for interventions relating to each of the 11 common problems areas ranged from 28 to 70 percent, as shown in the first column of Table 6. Goal-setting, communication, and decision-making interventions were perceived as having the most adequate bases in the literature, whereas resource management, diversity issues, and empowerment interventions were perceived as having the least adequate bases. A MANOVA was run comparing the proportions of academic and full-time practitioners who reported that issues required further study. Results showed that the overall pattern of reported research needs did not differ significantly for academic and full-time team developers (Wilks's $\lambda_{11, 191}$ = 1.49, $p = .14$), suggesting consensus on the areas most needing research. However, the one-way analyses of variance (ANOVAs) were significant for 6 of the 11 issues, revealing level differences between academic and full-time practitioners. Table 6 also shows that the proportion of full-time practitioners reporting a need for additional research was lower than the proportion of academic practitioners for 10 of the 11 issues, and it was significantly less for communication, goal issues, problem solving, conflict management, reward systems, and empowerment.

Respondent comments on how to improve the link between the science and practice of teams were extremely informative, with many reporting that the practice of team development had surged ahead of theory and empirical research. The most common suggestion was that researchers initiate projects with an applied focus in mind. What questions need answers? What will the research tell us that can help practitioners intervene successfully with teams? At a more basic level, when are teams needed, and when not? Some respondents noted that most models of teams imply that teams are good in and of themselves; others noted that teams have become a trend and are being promoted in situations in which they are neither necessary nor desirable.

Respondents wrote that for research to contribute to an informed team practice, it must be conducted with real organizational teams, and that the context in which the teams exist should be recognized and noted. The importance of team context—and the relative lack of research on it—was noted multiple

Academy of Management Journal

TABLE 6
Evaluations of Adequacy of Theoretical Bases for Understanding Common Team Problems and Issues

Problems and Issues	Percentage of All Respondents Who Saw Bases as Adequate	Respondents Who Saw Research as Needed[a]	
		Percentage of Academic Practitioners	Percentage of Full-Time Practitioners
Goals	69.71	25.00	13.40*
Communication	66.83	31.60	14.20**
Decision making	62.50	27.60	15.70
Problem solving	62.02	30.30	16.50*
Conflict management	60.10	32.90	19.70*
Role issues	60.10	28.90	22.00
Reward systems	48.08	51.30	36.20*
Total quality management (TQM)	46.63	38.20	27.60
Empowerment	40.38	59.20	43.30*
Diversity	33.17	55.30	48.80
Resource management	27.88	27.60	27.60

[a] Comparison of proportions of academic and full-time practitioners rating each issue as needing additional research. Results of an ANOVA for each issue are reported. Overall $n = 203$ (76 academic practitioners, 127 full-time practitioners).
   * $p < .05$
   ** $p < .01$

times. How do you overcome the individualistic tendencies of many Americans in implementing teams? How do volatile organizational environments affect teaming prospects? What do we know about temporary teams or movement in and out of teams? Respondents also indicated interest in greater use of longitudinal designs that would allow teams to be examined at different points of maturity, because practically, working with a mature team is likely to vary significantly from working with a new team.

Some respondents also expressed a desire for more consistent sharing between researchers and practitioners. Several academics requested to be hooked up with full-time practitioners, offering to do the research required. Other respondents requested information about both experiential and academic conferences or workshops dealing with team issues and urged professional associations to become more active in facilitating academic-practitioner links.

DISCUSSION

This study was undertaken with the goals of determining: (1) the current state of team develop-

ment practice, (2) what an informed team practice needs from its research base, and (3) ways to improve the link between the science and practice of team development. Our findings highlight both strengths and weaknesses in the state of science-based practice with teams and suggest many areas for improvement. Our comparison of practice needs with scientific support (Table 6) identifies areas in which future research on work teams is needed. Our data suggest numerous ways to improve connections between science and practice in the teams area and, by extension, in other organizational research areas as well.

Practitioners who work with groups report that, on the average, 39 percent of their practice time involves work with teams or groups, and almost half of them report that the demand for team development has increased over the past three years. This high demand can provide increasing opportunities for empirical research with organizational teams that could advance both science and practice. Less than half of the groups with whom our team developers worked could be considered teams in the sense of being task interdependent. Teams are considered to be smaller in size than work groups, with an average size of 9 members, which is

similar to the average team size of between 6 and 12 found in a survey on self-directed teams in more than 500 organizations (Wellins et al., 1991). Differences in the nature of an intervention's target (that is, group or team) can create conceptual confusion for scientists and practitioners alike. The tendency for published research to ignore the distinction between team and group and treat all groups as teams muddies the waters as to generalizability, making it difficult for practitioners to determine the relevance of particular research findings to specific teams in practice. It may also make it difficult to help organizational clients understand that teams are not always needed and, in some cases, could be dysfunctional.

Although in practice the terms "team" and "group" may be hopelessly interchangeable, it is important for future researchers to describe the "teams" in their samples in considerably more detail, at a minimum specifying the type of team and level of interdependent effort required so that appropriate generalizations may be made. Applied research suggesting practically meaningful, behaviorally anchored categorizations of teams in terms of levels of development and interdependence that could be used to describe samples would help translate research into practice. Practitioners would also welcome specific information on the context of teamwork—for instance, on the nature of the organization sampled and the support and rewards for teams—and on the maturity level of the teams. Because organizational teams vary and there is no uniformity of team development interventions either across organizations or across teams within an the organization, the ability to generalize research findings to practice depends on the clear and detailed description of research samples, contexts, and intervention methods. Editors and reviewers should insist on such detailed descriptions. On the practice side, care can be taken to see that team development interventions be undertaken only for interdependent collectives, whatever an organization cares to call them. Team building has become faddish in some organizations, and practitioners may need to explain why these interventions are inappropriate for groups of people who do not really need much intercoordination.

Team developers generally agree on the most common problems dealt with in team interventions. These include a focus on group goals, communication, roles of group members, and managing conflict. Although, as expected, team developers reported that improved group performance is now the most common primary goal of interventions, increases in positive attitudes of group members are believed to be achieved more often than perfor-

mance effects. Perhaps this is due to the more traditional strengths of OD—and, correspondingly, OD practitioners—in emphasizing interpersonal relations as opposed to organizational outcomes. In any case, success on either or both of these criteria is believed to be the typical outcome, at least by the practitioners themselves.

Examination of the results shown in Table 5 suggests that although team development often fails to achieve desired increases in attitudes or performance, it is seldom seen to harm the team on these dimensions. In as much as these perceptions represent respondents' recollections of past interventions and not actual assessment data, it is possible that negative effects are underestimated here. It is also possible that, typically, team development interventions are not being adequately assessed in terms of the types of outcomes on which negative effects may occur or with enough long-term data. Although practitioners are aware that some effects may be short-lived, with 10–20 percent of positive effects seen as dropping to "no change" in the long run in this study, they nonetheless appear to regard team development as a strategy with good prospects for success.

Obviously, caution should be exercised in interpreting such self-evaluated outcomes. Yet despite the opportunity for social desirability bias, the percentages of self-rated long-term success found here are a bit more conservative than the impact percentages reported in a study examining 63 evaluated social factors interventions (Porras & Robertson, 1992).[2] Hence, respondents did not seem to be reporting unreasonable degrees of success. And in organizations, perceptions of success are the primary source of evaluation, with both academic and full-time practitioners reporting that over half of the team interventions were not evaluated in any systematic way. Of those that were evaluated, most used team member ratings only, ratings that are open to numerous biases. Practitioners need to help

---

[2] In Porras and Robertson's (1992) categorization, team building falls under "social factor" interventions. Their impact rates for social factor interventions with social factor targets (such as attitudes, which we addressed in the present study) were 56.4 percent positive change, 39.8 percent neutral, and 3.8 percent negative change. Our comparable long-term success rates for attitude changes were 52.2, 39, and 7 percent, respectively. Their impact rates for organizational outcomes were 56.8 percent positive, 43.2 percent neutral, and 0 percent negative, whereas our performance effect rates were 52.5, 41, and 4 percent. Thus, our respondents were slightly more conservative in their long-term success claims than the averages in Porras and Robertson's review.

develop consistent evaluation procedures that will yield generalizable information on what works and what doesn't in team interventions and to then be willing to share this information in some public way.

Our data clearly show that there is no commonly held theory or even set of theories/models driving the field of team development. We found extensive diversity in practitioner perspectives, ranging from the psychoanalytic perspective of Bion to Hackman's organizational psychology orientation. Given these disparate perspectives, it is not surprising that there is extensive disagreement among practitioners as to the value of various theoretical models. Models that were reported to be the most helpful by some were described as the least helpful by others. This diversity can have both positive and negative effects, stimulating creativity along with considerable practical confusion. As Woodman (1989) pointed out, the goal of a single, unified theory is probably misdirected; rather, attempts to integrate the wide array of existing knowledge through usable frameworks or categorizations would be more profitable for facilitating transfer to practice. A good example of this kind of contribution is Cohen and Bailey's (1997) review of the group effectiveness literature, in which they used a heuristic framework to sort the literature by relevant contextual headings and type of team for easier comprehension.

As different as our respondents' views were, they may underestimate the diversity of organizational practice in that they reflect the perspectives of people who share at least one professional organizational affiliation. Our results, based on a sample of Academy of Management members, cannot be presumed to generalize to all group practitioners. We suspect that, given the nature of the Academy and its products, our sample may reflect the high end of science-based practice and that whatever problems are experienced by this sample's members might be worse elsewhere. In this respect, the diversity found within the Academy is probably an underestimation of the diversity in perspective and approach experienced by our organizational clients.

One practical implication of this diversity is the difficulty it generates for prospective organizational clients who are less versed in the different schools of thought. Clients may be unable to make informed decisions about choosing appropriate consultants for their needs or even to differentiate skilled practitioners from the unskilled. One of our respondents chillingly reported that a relative trained in finance, with limited intellectual and people skills, was doing team building. The respondent concluded that, "Anybody seems to think they are expert enough to do team building. The most complex of entities—a social group—is seen as easier to fix than a broken leg." For the practitioner, the diversity of approaches taken by qualified and unqualified practitioners underscores the need to share one's background and perspective with clients prior to organizational entry, differentiating them as necessary from others to which the client may have been exposed. Doing so can hopefully ensure fit and commitment to the intervention process and reduce unpleasant surprises for either side.

Our data show that the MBTI is by far the instrument most used in team practice, even though some researchers have questioned its value. In their comprehensive review, Gardner and Martinko (1996) concluded that current claims for the usefulness of the MBTI for team building lack adequate documentation, which apparently has not deterred the many who are using it. In our sample, MBTI use was reported somewhat less often by academic practitioners than by full-time practitioners, but not significantly less often (49% vs. 60%). Clearly, there are reasons for the instrument's practical popularity that overcome questions about scientific validation. Given particular criticism of the MBTI as a performance enhancement measure (e.g., Druckman & Bjork, 1991), it would be important for future research to determine when and how the MBTI is being used—that is, whether it is being used for attitude or performance improvement. Customized instruments were also reported to be very popular, second only to the MBTI. Although these instruments may be valuable because of the degree of their individualized focus, they provide the field with limited ability to accumulate knowledge across organizations.

The diversity of practices with teams highlights an important problem—the lack of shared best practices. Team developers reported that their colleagues were their most popular source of continuing education. Thus, knowledge of what works in team interventions may be communicated informally, leading to a lack of publicly held knowledge. Those developing the science through research and practice need to give greater focus to the goal of delineating and disseminating best practices for team development interventions. Mechanisms other than formal publications need to be further explored, such as practitioner forums at conferences, informal interest groups, and greater use of professionally oriented "listservs" and Internet chat rooms. As Schön (1983) noted, the development of an action science cannot be achieved when researchers are removed from action contexts or when practitioners are not able to reflect on their

expertise and share it to help generate practically meaningful research. Along these lines, Hyatt and colleagues (1997) suggested sabbaticals in industry for academics and greater involvement of reflective practitioners in graduate education. One measure of success in these promising endeavors may be the absence of talk in professional circles about "academics versus practitioners," as more academics become involved in practice and more full-time practitioners become actively involved in academic life. Collaborative efforts combining teams of researchers, consultants, and managers are showing strong promise for producing more transferable knowledge (Roth, 1999). Unfortunately, competitive, proprietary, temporal, and, ultimately, financial concerns may limit opportunities for collaboration, regardless of its form.

Future research informing and improving the practice of team development is sorely needed. Given the broad range of group problems, practitioners need to stay up-to-date on a wide variety of discrete areas of research. Generally, our Academy practitioner sample, academics and nonacademics alike, felt relatively up-to-date on the teams literature. Although self-serving inflation in mean currency estimates cannot be ruled out, a general trend toward self-inflation presumably would have raised means for academics and full-time practitioners alike while preserving any differences between them. Thus, we should be cautious about the absolute numerical accuracy of the mean scores, but more confident that both groups were comparably satisfied with their knowledge bases. However, comparable currency will not necessarily make for easier knowledge transfer between groups if currency is being attained through use of different information sources. In fact, information on desirable human resource practices found in academic research sometimes conflicts with recommendations found in more practitioner-oriented sources (Terpstra & Rozell, 1997).

Literature currency was significantly associated with better short- and long-term success rates for interventions, suggesting a clear role for science in good practice. Again, this association may reflect the nature of our sample and not reflect team practitioners as a whole. Yet the Academy journals and other significant research outlets appear to be fulfilling a needed role in disseminating information on teams and groups for this sample, though improvements are needed. In particular, the *Academy of Management Journal* and the *Academy of Management Review* were favored information sources for both academics and practitioners, thus providing a common platform for information transmission and needed crossover, whereas other journal outlets were more differentially favored by one group or the other.

In particular, almost a third of our full-time practitioners rejected empirical journals. Respondents reporting value from at least one empirical source also tended to report better short-term performance outcomes. This finding suggests both the potential value of empirical work and its likely lower rate of transmission from researchers to practitioners. Dunnette (1995), among others, suggested that the most influential organizational experts publish in both scientific and technical journals to reach the broadest audience and transcend academic-practitioner gaps and also promote their knowledge to business executives through face-to-face forums. For academics, this may mean reassessing the criteria used in academic evaluation and placing greater value on attempts to disseminate knowledge broadly to practitioner as well as to academic audiences.

Surveyed practitioners suggested that the best way researchers could improve practice was to include more of an applied practice focus in research. In their words, increasing such a focus means gearing research toward practice in context; using real-world situations, field studies, and longitudinal designs; and writing reports in plain language that includes "how and when to's." Numerous respondents noted that the majority of published research on teams is not read, not appreciated, and not used to guide organizations. Increasing the applied focus in research could help remedy this situation. Having researchers maintain greater on-site contact with the teams they study may help generate the kinds of applied research that would be more trusted and more confidently applied by managers (Beyer, 1997). Combining consulting with research (Walton, 1990) is a strategy that may enhance relevance to both theory and research by providing researchers with greater access to meaningful organizational data while increasing client motivation to participate, to give feedback, and to later apply findings. Expanding the use of qualitative methods may also make it more likely that research will have organizational impact (Beyer, 1997; Van de Vall, Bolas, & Kang, 1976). At the same time, we agree with Aldag (1997) that research relevance should not be sought in ways that jeopardize basic research or enhance organizational fads in the name of relevance. Basic research is not inherently irrelevant; rather, the relevance of both basic and application-focused research needs to be more effectively communicated to their likely consumers through appropriate mechanisms. We believe that these suggestions, although made in the context of

team research and practice, generalize to other organizational research areas as well.

On the research side, the literature in some areas of team concern was viewed as well-developed and suitable for guiding interventions, but other areas were seen as in need of more research. Taken together, the data in Tables 3 and 6 indicate that the most commonly identified team problems also tend to be those problems with the best theoretical bases in the literature. The present data cannot determine whether these commonly identified problems may have helped generate more solid theoretical bases, or whether the existence of better theory may have influenced practitioner perceptions and identification of team problems. We hope that influence flows in both directions. In any case, the teams literature does seem to be on the mark in focusing on the most commonly experienced real-world concerns. It would seem prudent for other research areas to solicit practitioner feedback on the adequacy of their literatures as well.

Still, there are gaps, which may help explain respondent comments indicating considerable frustration with the quality of the science of teams. This study has presented numerous considerations relevant to understanding and improving the connection between the scientific literature in areas relevant to teams, groups, and the practice of working with groups in an organizational environment. Particular team development issues that were identified as needing further research included these: reward systems (how to reward teams and individuals within teams), diversity and cross-cultural issues within teams, and empowerment. Although not seen as occurring as frequently as goal or communication issues, these less-researched topics were still identified by 48–71 percent of the respondents as problems they had faced in their practice with groups. Thus, they are common issues for practitioners, and the fact that the literature is perceived as inadequately supporting practice in these areas should not be dismissed lightly. Focusing on these prime areas for future application-oriented research is yet another important way in which the link between science and practice can be strengthened.

REFERENCES

Aldag, R. J. 1997. Moving sofas and exhuming woodchucks: On relevance, impact and the following of fads. *Journal of Management Inquiry,* 6: 8–16.

Alkin, M. C., Daillak, R., & White, P. 1979. *Using evaluations.* Beverly Hills, CA: Sage.

Beer, M. 1976. The technology of organization development. In M. D. Dunnette (Ed.), *Handbook of indus-*trial and organizational psychology: 937–985. Chicago: Rand McNally.

Beyer, J. M. 1997. Research utilization: Bridging a cultural gap between communities. *Journal of Management Inquiry,* 6: 17–22.

Banker, R. D., Lee, S., Potter, G., & Srinivasan, D. 1996. Contextual analysis of performance impacts of outcome-based incentive compensation. *Academy of Management Journal,* 39: 920–948.

Block, P. 1981. *Flawless consulting: A guide to getting your expertise used.* San Diego: University Associates.

Block, P. 1993. *Stewardship: Choosing service over self-interest.* San Francisco: Berrett-Kohler.

Boehm, V. R. 1980. Research in the "real world": A conceptual model. *Personnel Psychology,* 11: 495–503.

Burke, W. W. 1982. *Organization development: Principles and practices.* Boston: Little, Brown.

Bushe, G. R., & Coetzer, G. 1995. Appreciative inquiry as a team-development intervention: A controlled experiment. *Journal of Applied Behavioral Science,* 31: 13–30.

Cannon-Bowers, J. A., Oser, R., & Flanagan, D. L. 1992. Work teams in industry: A selected review and proposed framework. In R. Swezey & E. Salas (Eds.), *Teams: Their training and performance:* 355–377. Norwood, NJ: Ablex.

Church, A. H., & Burke, W. W. 1995. Practitioner attitudes about the field of OD. In W. A. Pasmore & R. W. Woodman (Eds.), *Research in organizational change and development,* vol. 8: 1–46. Greenwich, CT: JAI Press.

Church, A. H., Burke, W. W., & Van Eynde, D. F. 1994. Values, motives, and interventions of organization development practitioners. *Group and Organization Management,* 19: 5–50.

Cohen, S. 1993. New approaches to teams and teamwork. In J. R. Galbraith, E. E. Lawler III & Associates (Eds.), *Organizing for the future:* 194–226. San Francisco: Jossey-Bass.

Cohen, S. G., & Bailey, D. E. 1997. What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management,* 23: 239–290.

Covin, T., & Kilmann, R. 1991. Profiling large scale change efforts. *Organizational Development Journal,* 9: 1–8.

Davenport, T. H., & Markus, L. 1999. Rigor vs. relevance revisited: Response to Bebasat and Zmud. *MIS Quarterly,* 23: 19–23.

de Meuse, K. P., & Liebowitz, S. J. 1981. An empirical analysis of team-building research. *Group & Organization Studies,* 6: 357–378.

Druckman, D., & Bjork, R. A. 1991. *In the mind's eye:*

Enhancing human performance. Washington, DC: National Academy Press.

Dunnette, M. 1995. *Where are we going in the practice of organizational psychology?* Paper presented at the annual meeting of the Academy of Management, Vancouver.

Dyer, W. 1977. *Team building: Issues and alternatives.* Reading, MA: Addison-Wesley.

Dyer, W. 1994. *Team building: Current issues and new alternatives* (3rd ed.). Reading, MA: Addison-Wesley.

Easterby-Smith, M., Snell, R., & Gherardi, S. 1998. Organizational learning: Diverging communities of practice? *Management Learning,* 29: 259–272.

Eden, D. 1985. Team development: A true field experiment at three levels of rigor. *Journal of Applied Psychology,* 70: 94–100.

Eden, D. 1986. Team development: Quasi-experimental confirmation among combat companies. *Group & Organization Studies,* 11: 133–146.

Fagenson, E. A., & Burke, W. W. 1990. Organization development practitioners' activities and interventions in organizations during the 1980s. *Journal of Applied Behavioral Science,* 26: 285–297.

Fiske, S. T., & Taylor, S. E. 1991. Attribution theory: Theoretical refinements and empirical observations. In S. T. Fiske & S. E. Taylor (Eds.), *Social cognition* (2nd ed.): 57–95. New York: McGraw-Hill.

French, W. L., & Bell, C. H., Jr. 1990. *Organization development: Behavioral science interventions for organization improvement.* Englewood Cliffs, NJ: Prentice-Hall.

Gardner, W. L., & Martinko, M. J. 1996. Using the Myers-Briggs Type Indicator to study managers. *Journal of Management,* 22: 45–83.

Gordon, J. 1992. Work teams: How far have they come? *Training,* 29: 59–65.

Guzzo, R. A., & Dickson, M. W. 1996. Teams in organizations: Recent research on performance and effectiveness. In J. T. Spence, J. M. Darley, & J. Foss (Eds.), *Annual review of psychology,* vol. 47: 307–338. Palo Alto, CA: Annual Reviews.

Guzzo, R. A., & Shea, G. P. 1992. Group performance and intergroup relations in organizations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed.), vol. 3: 269–313. Palo Alto, CA: Consulting Psychologists Press.

Hackman, J. R. 1990. *Groups that work and those that don't: Creating conditions for effective teamwork.* San Francisco: Jossey-Bass.

Hammer, A., & Schnell, E. 2000. *FIRO-B technical guide.* Palo Alto, CA: Consulting Psychologists Press.

Hyatt, D., Cropanzano, R., Finfer, L. A., Levy, P., Ruddy,

T. M., Vandaveer, V., & Walker, S. 1997. Bridging the gap between academics and practice: Suggestions from the field. *Industrial Psychologist,* 35(1): 29–32.

Katzenbach, J. R., & Smith, D. K. 1993. *The wisdom of teams: Creating the high-performance organization.* Boston: Harvard Business School Press.

Kinlaw, D. C. 1991. *Developing superior work teams: Building quality at the competitive edge.* Lexington, MA: Heath.

Kolb, D. A. 1976. *Learning styles inventory.* Boston: McBer & Co.

Lawler, E. E. III, Mohrman, S. A., & Ledford, G. E., Jr. 1995. *Creating high performance organizations: Practices and results of employee involvement and total quality management in Fortune 1000 companies.* San Francisco: Jossey-Bass.

Margulies, N., & Raia, A. P. 1990. The significance of core values on the theory and practice of organization development. In F. Massarik (Ed.), *Advances in organization development,* vol. 1: 27–41. Norwood, NJ: Ablex.

McIntyre, R. M. 1990. Our science-practice: The ghost of industrial-organizational psychology to come. In K. Murphy & F. Saal (Eds.), *Psychology in organizations: Integrating science and practice:* 25–48. Hillsdale, NJ: Erlbaum.

Myers, I. B. 1962. *Manual: The Myers-Briggs Type Indicator.* Palo Alto, CA: Consulting Psychologists Press.

Neuman, G., Edwards, J., & Raju, N. 1989. Organizational development interventions: A meta-analysis of their effects on satisfaction and other attitudes. *Personnel Psychology,* 42: 461–489.

Nunnally, J. C. 1967. *Psychometric theory.* New York: McGraw-Hill.

Pandiani, J. A., & Maynard, A. G. 1993. Vermont's local interagency teams: An evaluation of service coordination and system change. *Community Alternatives: International Journal of Family Care,* 5(1): 85–97.

Porras, J. I., & Robertson, P. J. 1992. Organizational development: Theory, practice, and research. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed.), vol. 3: 719–822. Palo Alto, CA: Consulting Psychologists Press.

Roth, G. L. 1999. Crossing theory and practice boundaries to create new knowledge. *ODC Newsletter,* Summer: 8–11.

Salas, E., Dickinson, T. L., Converse, S. A., & Tannenbaum, S. I. 1992. Toward an understanding of team performance and training. In R. W. Swezey & E. Salas (Eds.), *Teams: Their training and performance:* 3–29. Norwood, NJ: Ablex.

Sashkin, M., & Burke, W. W. 1987. Organization devel-

opment in the 1980s. *Journal of Management,* 13: 393–417.

Schein, E. H. 1969. *Process consultation: Its role in organization development.* Reading, MA: Addison-Wesley.

Schön, D. A. 1983. *The reflective practitioner: How professionals think in action.* New York: Basic Books.

Schwartz, O. 1994. *The skilled facilitator: Practical wisdom for developing effective groups.* San Francisco: Jossey-Bass.

Senge, P. M. 1990. *The fifth discipline: The art and practice of the learning organization.* New York: Currency Doubleday.

Sundstrom, E., de Meuse, K. P., & Futrell, D. 1990. Work teams: Applications and effectiveness. *American Psychologist,* 45: 120–133.

Terpstra, D. E., & Rozell, E. J. 1997. Sources of human resource information and the link to organizational profitability. *Journal of Applied Behavioral Science,* 33: 66–83.

Thomas, K. W., & Killmann, R. H. 1974. *The Thomas-Killmann Conflict Mode Instrument.* Palo Alto, CA: Consulting Psychologists Press.

Van de Vall, M., Bolas, C., & Kang, T. S. 1976. Applied social research in industrial organizations: An evaluation of functions, theory, and methods. *Journal of Applied Behavioral Science,* 12: 158–177.

Walsh, P. L., Garbs, C. A., Goodwin, M., & Wolff, E. M. 1995. An impact evaluation of a VA geriatric team development program. *Gerontology & Geriatrics Education,* 15(3): 19–35.

Walton, R. E. 1985. Strategies with dual relevance. In E. E. Lawler III, A. M. Mohrman, Jr., S. A. Mohrman, & G. E. Ledford, Jr. (Eds.), *Doing research that is useful for theory and practice:* 176–221. San Francisco: Jossey-Bass.

Weisbord, M. R. 1987. *Productive workplaces: Organizing and managing for dignity, meaning, and community.* San Francisco: Jossey-Bass.

Wellins, R. S., Byham, W. C., & Dixon, G. R. 1994. *Inside teams: How 20 world-class organizations are winning through teamwork.* San Francisco: Jossey-Bass.

Wellins, R. S., Byham, W. C., & Wilson, J. M. 1991. *Empowered teams: Creating self-directed work groups that improve quality, productivity, and participation.* San Francisco: Jossey-Bass.

Woodman, R. W. 1989. Organizational change and development: New ideas for inquiry and action. *Journal of Management,* 15: 205–228.

Woodman, R. W. 1993. Observations on the field of organizational change and development from the lunatic fringe. *Organization Development Journal,* 11(2): 71–75.

Woodman, R. W., & Sherwood, J. J. 1980. The role of team development in organizational effectiveness: A critical review. *Psychological Bulletin,* 88: 166–186.

Lynn R. Offermann (Ph.D., Syracuse University) is a professor of industrial/organizational psychology at the George Washington University. Her research interests include leadership and teams, with a particular emphasis on the impact of diversity and technology on leader-follower and team relationships.

Rebecca K. Spiros is a doctoral candidate in industrial/organizational psychology at the George Washington University. Her current research interests include individual difference predictors of distance learning effectiveness, implicit theories of effective team members, and leadership.