Journal of Applied Psychology
1999, Vol. 84, No. 2, 277–285

0021-9010/99/$3.00

The Effects of Stand-Up and Sit-Down Meeting Formats on Meeting Outcomes

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The effects of meeting format (standing or sitting) on meeting length and the quality of group decision making were investigated by comparing meeting outcomes for 56 five-member groups that conducted meetings in a standing format with 55 five-member groups that conducted meetings in a seated format. Sit-down meetings were 34% longer than stand-up meetings, but they produced no better decisions than stand-up meetings. Significant differences were also obtained for satisfaction with the meeting and task information use during the meeting but not for synergy or commitment to the group's decision. The findings were generally congruent with meeting-management recommendations in the time-management literature, although the lack of a significant difference for decision quality was contrary to theoretical expectations. This contrary finding may have been due to differences between the temporal context in which this study was conducted and those in which other time constraint research has been conducted, thereby revealing a potentially important contingency—temporal context.

At 10:00 a.m. on August 28, 1914, 3.5 weeks after the beginning of World War I, General Galieni, military governor and commandant of the Armies of Paris, called a meeting of his cabinet to certify that the presence of the German Army required the institution of a "state of defense." The meeting was held with everyone standing, and "participants" were asked to refrain from discussing whether Paris should be defended or not. Instead, they were asked simply to sign the legal documents on the table, documents certifying the need for a state of defense that would expedite the implementation of decisions General Galieni felt were necessary to defend the city. The meeting lasted 15 min (Tuchman, 1962). Nearly a century later, American General William Pagonis, who led the U.S. Army's Central Support Command during the Persian Gulf War, followed Galieni's approach to meeting management by holding a 30-min meeting with his top 40 officers every morning, meetings in which everyone stood, thereby, in his view, minimizing digressions (Mitchell & Payne, 1991, pp. 42–43). Now an executive at Sears, Pagonis uses stand-up meetings by removing the chairs from his meeting rooms, thereby reducing most meetings to 15 min or less (Mitchell & Company, 1997).

The attraction of stand-up meetings, which is obvious to anyone in organizations, is that they may shorten the time spent in meetings (LeBoeuf, 1979; Mackenzie, 1972; Reynolds & Tramel, 1979). Mackenzie (1972, pp. 102–103) suggested that in stand-up meetings executives do not "get involved in too much detail concerning a problem," which is another way of saying they will not digress much. LeBoeuf (1979) and Reynolds and Tramel (1979) explained why: It is less comfortable to stand than to sit; ergo, stand-up meetings are shorter because participants work faster to reduce the time spent in the relatively uncomfortable standing position. The examples presented above seem to support this belief because the meetings lasted from 15 to 30 min.

However, the stand-up meetings described above all share a common trait: Their primary purpose was to transmit information and to give orders or instructions; none of them involved group decision making. Thus, in terms of the Vroom–Yetton–Jago model (Vroom & Jago, 1988; Vroom

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An earlier version of this article was presented at the 57th Annual Meeting of the Academy of Management, Boston, Massachusetts, August 8–13, 1997. Support for this research was provided by Summer Research Fellowships from the College of Business and Public Administration at the University of Missouri—Columbia.

We thank Bruce Barringer, Natalie Cleeton, Dan Greening, Peter Monge, and Dale Rude for their comments on earlier versions of this article and Robin Bartels, Jerry Biswell, Michelle Bondurant, Sherri Green, Melody LaPreze, Jeannie Rawson, Jim Schnyder, Keith Sigur, Shawn Sparr, and Jim Zara for their assistance in conducting the research.

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& Yetton, 1973), the forms of decision making associated with the stand-up meetings cited above were AI, AII, and occasionally CII. These three types are forms of unilateral decision making, whereby a leader makes a decision and participation by group members is limited to supplying requested information, thus reducing this type of meeting to the interaction form Schwartzman (1986, p. 241) characterized as a "lecture" (a single-party talk directed to an audience). We found no examples of type GII decision making where the leader and group members generate and evaluate alternatives and attempt to reach a consensual decision. Yet the stand-up meeting is recommended without caveats (e.g., LeBoeuf, 1979; Mackenzie, 1972), implying that it will save time for all meetings without negatively affecting any desired meeting outcomes. Without empirical evidence about the impact of the stand-up meeting format on group decision making, this universal prescription is premature, even reckless.

The study we report in this article directly addressed the effects of the stand-up meeting format on group decision making. Specifically, an experimental design allowed us to compare the speed of meetings, quality of decisions, task information use, group synergy, and levels of satisfaction and commitment to decisions between meetings where members stood and more traditional meetings where members were seated around a table.

Hypothesis Development

Meeting Speed and Decision Quality

Despite the voluminous amount of research conducted on groups (e.g., Bettenhausen, 1991; Cartwright & Zander, 1968; Guzzo & Dickson, 1996; Hackman & Morris, 1975; Janis, 1982b), we found no research comparing the effects of stand-up and sit-down meetings on group decision making. Moreover, Schwartzman (1986) noted that little research has been conducted on meetings of any type. Nonetheless, a study of individual decision making found that participants who were seated were more comfortable than those who stood (Petty, Wells, Heesacker, Brock, & Cacioppo, 1983). We could see no reason why group membership would alter the relative amounts of physical comfort in the standing and seated positions, so consistent with Petty et al. and the belief that people prefer to leave uncomfortable situations faster than more comfortable situations (LeBoeuf, 1979; Reynolds & Tramel, 1979), we hypothesized:

> *Hypothesis 1:* Stand-up meetings will be shorter than sit-down meetings.

Whether participants' postures in a meeting influences the quality of their decisions is an important question in understanding potential trade-offs between the speed and quality of decision making. Some evidence suggests that if stand-up meetings are more uncomfortable than sit-down meetings, respondents will not process information as well in the stand-up meetings, leading to lower quality decisions. For example, Petty et al. (1983) found that participants in less comfortable postures were more distracted and were less successful in detecting strong and weak arguments than individuals in more comfortable postures. Such findings are consistent with research indicating that physical distractions affect performance negatively (Sundstrom, 1986). More broadly, a long tradition of research dating back to the Hawthorne studies (Roethlisberger & Dickson, 1939) has related physical conditions to individual and work-group performance. Contemporary research (for reviews, see Sundstrom, 1986; Sundstrom & Altman, 1989) reaffirms the importance of physical conditions for work-group performance. For example, May (1992) found that groups exposed to acoustical stimulation performed more poorly than groups not exposed to acoustical stimulation, although this effect only held for complex group tasks. Nonetheless, if one sees both acoustical stimulation and a standing posture as forms of discomfort and, hence, of distraction, then participants in sit-down meetings, who are less physically distracted than participants in stand-up meetings, will process information more critically because they can more easily direct their attention to the task at hand, which should lead to higher quality decisions.

Furthermore, evidence has indicated that decision quality is influenced by the amount of time spent in decision making. For example, research investigating top-management team decision making found decisions that were made and implemented quickly were of higher quality than decisions made more slowly (Eisenhardt, 1989; Judge & Miller, 1991). If stand-up meetings are shorter, these studies suggest that stand-up meetings may produce higher quality decisions. The underlying mechanism may be that higher quality decisions are more clearly "right" and therefore take less time to select. However, other evidence has indicated that groups performed more poorly as the amount of time on the task shortened (Karau & Kelly, 1992; Kelly & McGrath, 1985; Parks & Cowlin, 1995; Sundstrom, Busby, & Bobrow, 1997) and as time pressure increased (Yukl, Malone, Hayslip, & Pamin, 1976). Moreover, as the amount of time spent making the decision was shortened, the quality of individual decision making declined (Janis, 1982a; Zakay & Wooler, 1984), and the group decision-making process was disrupted (Gladstein & Reilly, 1985). Such evidence contradicted the findings from top-management teams that decisions made quickly were better decisions (Eisenhardt, 1989; Judge & Miller, 1991). Combining these lines of research suggests that groups can spend too much or too little time on decision making, implying that there may be an optimal amount of time to spend on the task.

To summarize, we believed participants in stand-up

meetings would be more uncomfortable than participants in sit-down meetings and therefore would be less able to process information effectively; they would also feel some pressure to end the meeting quickly. Therefore, because we believed that stand-up meetings would be less comfortable for participants and shorter than sit-down meetings, and maintaining consistency with most previous research, we hypothesized:

Hypothesis 2: Sit-down meetings will produce higher quality decisions than stand-up meetings.

Group Task Information Use

An important determinant of the quality of a group's decision is the extent to which the group focuses on instrumental information about the decision rather than on tangential matters (Janis, 1982b). Karau and Kelly (1992) theorized that if the time a group devotes to a task is less than optimal, the group could limit the range of ideas considered in decision making. Individuals who are standing are thought to be more uncomfortable and therefore may take less than the optimal amount of time to make decisions so they can leave the relatively uncomfortable standing position. Moreover, individuals in the standing posture, if they are uncomfortable, may be distracted and less able to use task information to make decisions. Thus, we hypothesized:

Hypothesis 3: Groups in sit-down meetings will use more task information to make their decisions than will groups in stand-up meetings.

Synergy

Synergy, a process gain that occurs when group members produce more or better output than would have been produced by the combined efforts of each person acting alone (George & Jones, 1996, p. 341), is one of the potential advantages of group decision making. Because we believed that sit-down meetings would last longer and use more task information, we hypothesized:

Hypothesis 4: Sit-down meetings will produce more synergy than stand-up meetings.

Satisfaction With the Meeting and Commitment to the Group's Decision

We expected participants to be more satisfied with sit-down meetings because they would be more comfortable than stand-up meetings. Although people might be more satisfied with shorter meetings because their other activities would be less disrupted than with the longer sit-down meetings, we felt comfort would be the predominant factor and thus hypothesized:

Hypothesis 5: Participants in sit-down meetings will be more satisfied with their meetings than participants in stand-up meetings.

Because we believed that participants in sit-down meetings would experience more task information use to make the group's decision, and such participation would be likely to increase commitment (e.g., Likert, 1967), we hypothesized:

Hypothesis 6: Participants in sit-down meetings will be more committed to their group's decisions than participants in stand-up meetings.

To summarize, we expected stand-up meetings to be shorter, produce lower quality decisions, and use less task information, and to produce less synergy, satisfaction with the meeting, and commitment to the group's decision than sit-down meetings.

Method

Experimental Design and Study Overview

The study examined the effects of two levels of posture (standing and sitting) on group decision making. Participants reported to the experimental session, completed a pretask questionnaire, met in five-person groups, and then completed a posttask questionnaire.

Participants

Participants were 555 students drawn from an undergraduate introduction to management course who were offered extra credit for participation amounting to between 1% and 2% of the maximum points available in the course. Participants were predominantly White (91%), a majority were men (56%), and most were either juniors (69%) or seniors (27%). Ages ranged from 19 to 44 years, with a mean age of 21 years. The participants were randomly assigned to five-person groups, producing 111 groups.

Procedure

Participants reported to the session and completed a pretask questionnaire that included demographic items and the "Lost on the Moon" decision-making exercise (Hall, 1971; Hall & Watson, 1970). They completed the pretask questionnaire, gave it to the experimenter, were randomly assigned to five-member groups, and were led in their groups to a meeting room. Participants in the same experimental session were assigned to the same treatment condition, with the restriction that equal numbers of participants were assigned to each treatment condition. The same four meeting rooms were used for both conditions. Each meeting room measured 9 ft × 12 ft with an 8-ft ceiling (or 2.74 m × 3.66 m with a 2.44-m ceiling) and was finished with earth-tone carpeting and a fabric wall covering. For the seated condition, the rooms were furnished with a rectangular table (2 ft × 4.5 ft, or 0.61 m × 1.37 m) surrounded by five upholstered chairs with wood frames and arms; for the standing condition, the rooms contained no furniture. Prerecorded instructions told participants that their

task was to produce a group ranking of the 15 items from the Lost on the Moon exercise. We instructed participants in both conditions to use a consensus decision-making process in which methods such as averaging individual scores and voting were not allowed. After producing their group rankings, participants completed a posttask questionnaire, were debriefed, thanked, and allowed to leave. The posttask questionnaire included items measuring participants' perceptions of the group meeting. These items were measured on a 7-point Likert-type scale with anchors 1 (*strongly disagree*) and 7 (*strongly agree*).

The Lost on the Moon exercise presents a scenario involving a crash on the moon. Participants are asked to rank 15 pieces of equipment that survived the crash in terms of their importance for survival. The ranking by NASA astronauts and scientists is considered the correct rank ordering and provides an objective method to assess the quality of individual and group decisions. For this reason, the Lost on the Moon exercise has often been used in group decision-making research (e.g., Ganster, Williams, & Poppler, 1991; Innami, 1994).

Meeting Format

Participants in the standing condition were told "Because the room has no chairs, please remain standing for the duration of your meeting," whereas participants in the seated condition were told to "take a seat at the table, and remain seated for the duration of your meeting." Participants in both conditions were given clipboards with ranking forms that listed the 15 pieces of equipment. In the seated condition participants took their seats, which were placed evenly around the perimeter of the table so each group member could see and make eye contact easily with the other members. In the standing condition, the five group members were free to arrange themselves as they wished, but most groups tended to arrange themselves in a semicircle as they began the problem, which also allowed for easy eye contact among group members.

Manipulation Checks

Check 1. We conducted an analysis of variance (ANOVA) on these two items measured on the postmeeting questionnaire: (a) "I was seated for all of my group's meeting" and (b) "I stood for the duration of my group's meeting." The means were significantly different for both items across conditions. Specifically, for Item a the means were 1.18 and 6.81 for the standing and seated conditions, respectively, $F(1, 553) = 5{,}283.21$, $p < .001$. For Item b, the means were 6.86 and 1.48 for the standing and seating condition, respectively, $F(1, 553) = 2{,}173.64$, $p < .001$. Thus the meeting-format manipulation's integrity was supported.

Check 2. Participants indicated their level of comfort by responding to this item measured on the postmeeting questionnaire: "Physically, I was very comfortable during my group's discussion." A univariate ANOVA indicated that participants in the seated condition ($M = 6.35$) were significantly more comfortable than participants in the standing condition ($M = 5.20$), $F(1, 553) = 88.37$, $p < .001$, as we had expected.

Dependent Variables

Meeting length. The length of meetings was measured by an experimenter who unobtrusively started a stopwatch when the group began its meeting and stopped it at the meeting's conclusion. The experimenter was not present in the room during the meeting but was present out of view in the hallway outside the meeting rooms.

Group decision quality. Decision quality was the sum of the absolute differences between the groups' rankings and the experts' rankings such that lower scores indicate better quality decisions.

Synergy. Synergy was measured with Watson, Michaelsen, and Sharp's (1991) synergy ratio, which is calculated as follows: The numerator is the group score minus the best member's score, and the denominator is the maximum score possible minus the best member's score. Negative ratios indicate process losses, and positive ratios indicate process gains.

Task information use. Four items ($\alpha = .75$) measured the extent to which group members contributed task-related ideas and participated in the discussion of them: (a) "The knowledge of everyone in my group was used poorly and inadequately" (reverse scored); (b) "Everyone in my group was very involved in the group's discussion"; (c) "I got a lot of good ideas about ranking from the other members of my group"; and (d) "Everyone in my group seemed to contribute all of the ideas they had about the ranking." Because this variable was a group-level phenomenon and we would be aggregating the individual perceptions within each group, within-group agreement must be demonstrated to justify the aggregation (George, 1990). Therefore, we calculated each group's $r_{wg(j)}$ (James, Demaree, & Wolf, 1984, 1993). The resulting 111 $r_{wg(j)}$ values had a mean $r_{wg(j)}$ of .74 and a median $r_{wg(j)}$ of .83, both of which compare favorably with the .7 level George (1990) described for assessing within-group agreement.

Satisfaction with the meeting. Four items ($\alpha = .69$) measured the extent to which the participants were satisfied with the group discussion during the meeting: (a) "I really enjoyed the discussion in my group"; (b) "If given the chance, I would like to take part in a similar group discussion again sometime"; (c) "I had a miserable time during my group's discussion" (reverse scored); and (d) My group's discussion was one of the worst discussions in which I have ever taken part" (reverse scored).

Commitment to group's ranking. Five items ($\alpha = .75$) measured the participants' commitment to the group's ranking of the 15 pieces of equipment: (a) "I am very committed to my group's ranking"; (b) "I have very little confidence in the ranking my group developed" (reverse scored); (c) "I believe my group's ranking is a better ranking than the ranking I developed myself"; (d) "I would be willing to make other decisions based on my group's ranking because it is so accurate"; and (e) "I would rather rely on my group's ranking than the rankings developed by any of the other groups."

Results

Hypotheses 1–6 predicted that meeting format (stand-up or sit-down) would influence meeting length, group decision quality, task information use, synergy, satisfaction with the meeting, and commitment to the group's decision. Because Hypotheses 1–4 involved group-level dependent variables, whereas Hypotheses 5 and 6 involved individual-level dependent variables, we conducted two separate multivariate analyses of variance (MANOVAs). The

Table 1
Variable Means, Standard Deviations, and Intercorrelations

Variable	N[a]	M	SD	1	2	3	4	5	6	7	8	9	10
1. Seated[b]	555	4.00	2.99	—									
2. Stood[b]	555	4.17	2.99	−90***	—								
3. Comfortable[b]	555	5.77	1.55	35***	−32***	—							
4. Satisfaction with the meeting	555	5.79	0.87	14***	−13**	32***	(69)						
5. Commitment to the group's ranking	555	5.14	1.05	00	03	19***	46***	(75)					
6. Group task information use	111	5.43	0.62	21***	−16***	15***	30***	30***	(75)				
7. Meeting length(s)	111	687.64	297.68	31***	−30***	06	11**	00	15	—			
8. Decision quality[c]	111	29.19	9.17	−09*	07	−10*	−05	−09*	−11	09	—		
9. Synergy	111	0.10	0.40	00	00	00	00	−02	−02	−07	−51***	—	
10. Meeting format[d]	111	0.51	0.50	−95***	89***	−37***	−14***	00	−20*	−34***	10	00	—

Note. Decimals have been omitted from the correlation coefficients. The numbers in parentheses on the diagonal are coefficient alphas.
[a] Variables 1–5 are individual-level variables, so the correlations in Columns 1–5 are individual- and cross-level correlations based on an N of 555. The cross-level correlations were calculated with each individual receiving his or her group's score for the group-level variables. Variables 6–10 are group-level variables, so the correlations in Columns 6–10 are group-level correlations based on an N of 111. [b] We used the following manipulation checks: "I was seated for all of my group's meeting," "I stood for all of my group's meeting," and "Physically, I was very comfortable during my group's discussion," for Variables 1, 2, and 3, respectively. [c] Lower scores indicate higher quality decisions. [d] 0 = *seated,* 1 = *standing.*
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. All tests were two-tailed.

MANOVA for meeting format on meeting length, decision quality, task information use, and synergy was significant, $\Lambda(4, 106) = .851$, $p < .002$. The second MANOVA, for meeting format on satisfaction with the meeting and commitment to the group's decision, was also significant, $\Lambda(2, 552) = .977$, $p < .002$. Thus, as recommended by Rosenthal and Rosnow (1991), we proceeded to test the individual hypothesized relationships with univariate ANOVAs.

Table 1 presents the correlations and descriptive statistics, whereas Table 2 presents the means and standard deviations by meeting format for all of the dependent variables.

Hypothesis 1: Meeting Format and Speed

A univariate ANOVA with meeting format as the independent variable and meeting length as the dependent variable found a significant effect for meeting format, $F(1, 109) = 13.85$, $p < .001$, with groups in the seated condition meeting longer than groups in the standing condition (means of 788 and 589 s, respectively), as hypothesized. The sit-down meeting was 34% longer than the stand-up meeting.

Hypothesis 2: Meeting Format and Decision Quality

A univariate ANOVA with meeting format as the independent variable and the quality of the group's decision as the dependent variable revealed no significant effect, $F(1, 109) = 1.05$. Thus, sit-down meetings did not produce better decisions, which was contrary to our hypothesis.

Hypothesis 3: Meeting Format and Task Information Use

A univariate ANOVA with meeting format as the independent variable and task information use as the dependent variable produced a significant effect, $F(1, 109) = 4.48$, $p < .05$. More task information was used by the groups in sit-down than in stand-up meetings, as hypothesized.

Table 2
Dependent Variable Means and Standard Deviations by Meeting Format

	Stand-up meetings			Sit-down meetings			
Dependent variable	N	M	SD	N	M	SD	η^2
Meeting length(s)	56	589.04	250.10	55	788.04	310.56	.11***
Decision quality	56	30.07	9.16	55	28.29	9.16	.01
Group task information use	56	5.31	0.64	55	5.55	0.57	.04*
Synergy	56	0.10	0.27	55	0.10	0.50	.00
Satisfaction with the meeting	280	5.68	0.89	275	5.91	0.82	.02***
Commitment to the group's ranking	280	5.14	1.02	275	5.14	1.09	.00

* $p \leq .05$. *** $p \leq .001$. All tests were two-tailed.

Hypothesis 4: Meeting Format and Synergy

A univariate ANOVA with meeting format as the independent variable and synergy as the dependent variable revealed no significant effect of meeting format on synergy, $F(1, 109) = 0.00$. Contrary to our hypothesis, sit-down meetings did not produce more synergy.

Hypothesis 5: Meeting Format and Satisfaction With the Meeting

A univariate ANOVA with meeting format as the independent variable and satisfaction with the meeting as the dependent variable revealed a significant effect, $F(1, 553) = 10.29$, $p < .001$. Participants in sit-down meetings were more satisfied than participants in stand-up meetings, as hypothesized.

Hypothesis 6: Meeting Format and Commitment to the Decision

A univariate ANOVA with meeting format as the independent variable and commitment to the group's decision as the dependent variable revealed no significant effect, $F(1, 553) = 0.00$. Contrary to our hypothesis, participants in sit-down meetings were not more committed to their groups' decisions.

Discussion

We designed a study to test the time-management prescription of holding stand-up meetings rather than sit-down meetings in order to shorten meeting length and increase productivity. Stand-up meetings were shorter than sit-down meetings, but there was no difference in decision quality. Interestingly, although groups reported using more task information in the sit-down meetings, meeting format did not influence synergy. Finally, participants indicated more satisfaction with sit-down meetings, but meeting posture did not affect commitment to the group's rankings.

Temporal Context

We hypothesized that stand-up meetings would produce lower quality decisions because they would be less comfortable than sit-down meetings, and participants would therefore feel pressure to end the meeting quickly. Surprisingly, however, we found no difference in decision quality between stand-up and sit-down meetings, although previous studies found that both individual and group performance decreased as the time made available to perform a task was decreased (Janis, 1982a; Karau & Kelley, 1992; Kelley & McGrath, 1985; Parks & Cowlin, 1995; Sundstrom et al., 1997; Yukl et al., 1976; Zakay & Wooler, 1984). A fundamental difference between those studies and this study is that the time to perform the task was controlled by the experimenter in the time-constraint studies cited above, whereas the time taken to perform the task in this research was determined by the groups themselves. Even Sundstrom et al.'s research, which used survival situations similar to our situation, imposed a 40-min time limit on their groups. In our study, however, neither stand-up nor sit-down groups were given a deadline. Thus, the time-constraint studies and this research seem to have been conducted in two different temporal contexts, contexts labeled by Clark (1985) as *even-time* and *event-time.*

Even-time is the fungible time of the clock (i.e., one second is the same as any other second), and event-time is the qualitatively different times defined by activities and events (e.g., work time is different from recreation time; Clark, 1985). The groups in our research operated in an event-time context in which the end of the group's work was defined by the completion of its task rather than by an experimenter-imposed deadline set on the clock. Conversely, the participants in the time-constraint studies worked in an even-time environment in which the end of the task was defined by a deadline set on the clock rather than by the task's natural completion. Perhaps the negative relationship between work time and performance only holds when the work time is mandated by an externally imposed even-time deadline. When the time-to-task-completion depends on decisions and processes established by the group itself, the group may be increasing its efficiency rather than decreasing its effectiveness, which is what the results of our tests of Hypotheses 1 and 2 show: The stand-up groups were significantly faster, but both meeting formats were equally effective (no significant difference in decision quality).

The Decision-Making Process, Values, and Task Characteristics

Although groups in the sit-down condition used more task information than the groups in the stand-up format, meeting format was not related to synergy. Furthermore, as Table 1 indicates, task information use and synergy were not related. Such results suggest that groups in the sit-down meeting format used more information but did not use this additional information in a more effective manner than groups in the stand-up meetings (i.e., there was no differential process gain), as indicated by the lack of a relationship with synergy. Thus, when the processes are self-generated, group efficiency may increase without disrupting functions vital to group outcomes.

Meeting format might not have affected synergy because participants in both conditions might have lacked the motivation to process information sufficiently enough to generate new ideas and insights into the problem. Furthermore, it is conceivable that participants in the standing condition might have felt that the task was not very important because

they were standing while working on the task, and therefore they might have exerted less effort on the task. Although this latter explanation may provide insight into why stand-up groups reported using less information than sit-down groups, it does not explain the lack of a difference for synergy. Future research might specifically examine group processes and participants' motivations in order to learn where in the problem-solving process—discussing strategy, inviting input, or summarizing agreement (Sundstrom et al., 1997)—the link gets lost between task information use and synergy. More broadly, research is needed to investigate how meeting format influences group members' behavior and problem-solving processes.

Our results suggest that individuals holding rational goal values, which emphasize the importance of productivity and goal achievement (Quinn, 1988), may find stand-up meetings appealing because of their efficiency. Nonetheless, our results also indicate that participants used more task information in sit-down meetings and were more satisfied with them. Therefore, for individuals holding human relations values such as morale and participation (Quinn, 1988), the greater use of task information and the increased satisfaction with the meeting are good arguments for using sit-down meetings. The question of what meeting format to use depends, in part, on the decision-maker's values and the trade-off between efficiency and participant satisfaction.

In addition to the decision-maker's values, other factors, such as the type of task the group is performing, might lead one to advocate a stand-up or a sit-down meeting. McGrath (1984) distinguished eight types of group tasks, one of which, the intellective task, is explicitly identified as the type represented by survival exercises such as the Lost on the Moon exercise. McGrath suggested that groups working on intellective tasks (where the correct answer is based on the consensus of experts outside the group) may approach such problems by using a "truth much supported" decision rule (i.e., three or more group members have the right answer). Other decision rules, which are likely to be used by groups solving different tasks, include "truth rules" (one member has the right answer) and "truth with support" (two members have the right answer). Moreover, McGrath suggested that the decision rule a group uses depends, in part, on the group's task. Meeting speed, in turn, is likely influenced by the group's decision rule. Future research might investigate whether task type and group decision rules influence the relationship between meeting speed and decision quality.

Another way to distinguish group tasks is by their problem structure, which refers to how well-known a problem's present state is, the alternative courses of action required to solve it, and the goals and criteria that will be used to evaluate the alternative courses of action (Vroom & Jago, 1988). Research on the Vroom–Yetton–Jago model (Vroom & Jago, 1988) indicates that, in general, groups require more time to generate and process information for unstructured versus structured problems. Future research is necessary to investigate whether problem structure moderates the relationship between meeting format and decision quality. For example, if stand-up meetings lead to reduced generation and processing of information, then sit-down meetings may lead to better quality decisions for unstructured problems, although it is also conceivable that stand-up meetings may lead to more efficient generation and processing of information.

Thus, task type and outcome consequences might moderate several of the meeting format relationships. These contingencies should be investigated in future research that would not only address these questions but would also add to the small base of empirical research on time-management practices and performance (e.g., Britton & Tesser, 1991; Macan, 1994; Macan, Shahani, Dipboye, & Phillips, 1990; Orpen, 1994). Meeting format is one aspect of group context, a potential general factor in the group process–performance relationship (Sundstrom et al., 1997), but whose impacts are apt to be highly contingent. When a Type AI or AII decision (Vroom & Jago, 1988) is simply communicated to the group, the impacts of meeting format will probably be more straightforward, and the choice of meeting format will be less likely to generate value conflict. However, with a GII form of decision making, values and multiple context contingencies may become more salient concerns. Indeed, a way to move toward using the stand-up format for GII meetings might be to start with stand-up meetings for AI and AII decisions. Kelly and McGrath's (1985) entrainment research shows that when groups become habituated to a time frame, they tend to keep using that time frame to pace their work. Therefore, groups that become habituated to the length and pace of stand-up meetings for AI and AII decisions might transfer that same pace to GII decision making, especially if they were cued to the pace by the stand-up format. Intriguing corollary questions are (a) Would the use of the stand-up format, even if only for AI and AII decisions, ultimately speed up by means of the entrainment mechanism all of an organization's meetings, including those conducted in the sit-down format? and (b) What impact would such a context have on the process–performance relationships?

If the use of the stand-up format for some meetings speeds up other meetings, managers interested in decreasing meeting time could adopt a strategy of using the stand-up format for less interactive meetings. Such meetings are basically lectures with few group processes, and using the stand-up format only for these meetings would generate less discomfort and dissatisfaction than if it were used for all meetings. However, the hope is that the increased efficiency of the stand-up meetings will be transferred to all meetings. Furthermore, the selective use of the stand-up format allows managers to avoid having to always side with rational goal

or human relations values because they will not always have to make a choice that favors either efficiency and decision quality or participation and satisfaction. Indeed, the selective-use strategy would allow managers to emphasize both types of values by alternating the emphases in different types of meetings.

Generalizability of Results

Although no deadlines were imposed for the completion of the meetings—completion time was not even addressed in the instructions—none of the meetings lasted longer than 20 min, with the mean length of stand-up meetings being about 10 min and about 13 min for sit-down meetings. Thus, these meetings are over twice as fast as General Pagonis's already speedy 30-min meetings, though of about the same duration as General Galieni's meeting described in the introduction. Meetings in the 60–90-min range might produce different results, perhaps amplifying the effects of meeting format, and perhaps even revealing a decrement in decision quality for meetings held in the stand-up format. If so, managers would have to choose between meeting efficiency and effectiveness, and following Drucker (1974), they should chose the sit-down format for longer multiple-decision-making meetings to maximize meeting effectiveness (i.e., decision quality) rather than efficiency (i.e., meeting speed).

The meetings conducted in this study shared several other characteristics that are present in many meetings. As already mentioned, the meetings lacked set deadlines for their completion. Moreover, the quality of a group's decision had no important consequences for the group's members. Whether they produced a good ranking or a poor one resulted in neither tangible benefits nor problems for the participants. However, many meetings lack deadlines, and the decisions made in many meetings have no direct consequences for the participants—or at least the participants fail to perceive the consequences. As Sundstrom et al. (1997, p. 250) noted, many organizations use problem-solving groups that "work in short sessions and may consist of strangers assigned the task of setting priorities." So the meetings held in this study do share important characteristics with many meetings held in organizations.

Our results indicate that stand-up meetings were faster and produced decisions of similar quality to decisions produced in sit-down meetings. Thus, these results support the efficiency and effectiveness of stand-up meetings for dealing with a precisely defined though nonroutine problem that can be handled by a five-person group meeting for 10–20 min. Therefore, our results suggest that the stand-up meeting may be useful for meetings other than the meeting types employed by Generals Galieni and Pagonis. However, additional research is needed to determine whether the stand-up meeting can be used for longer meetings dealing with problems that vary in their structure. Therefore, although it is premature to generalize these results to all meetings, the present findings indicate that stand-up meetings produce favorable results (from a perspective emphasizing the values of efficiency and decision quality) in certain situations. How universal a role stand-up meetings should play, however, remains to be determined by future research.

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Received October 31, 1997
Revision received July 1, 1998
Accepted July 1, 1998 ■