Task Design, Outcome Interdependence, and Individual Differences: Their Joint Effects on Effort in Task-Performing Teams
(Commentary on Huguet et al., 1999)

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Analyses of effort problems in groups, like that of P. Huguet, E. Charbonnier, and J.-M. Monteil (1999), have implications for how tasks are designed for work teams, how outcomes are distributed, and the complex interrelations between personality characteristics of team members and their response to the work situation. Whereas group members working on uninvolving tasks tend to loaf, when task interdependence is high and the goals are meaningful individuals in groups often expend more rather than less effort. Moreover, whereas the group’s outcomes are sometimes determined by the qualities of the individuals in the groups, in other cases the experience of working collectively changes individuals (e.g., individuals who prefer to work alone change to prefer working in groups after experiencing the benefits of working collectively). In consequence, findings about individual differences are often the hardest to apply when making decisions about work group design and composition.

"Some people in this group do not carry their fair share of the overall workload." This is one of my favorite survey items, used for assessing effort problems—social loafing—in field research on task-performing teams in organizations (Allmendinger, Hackman, Kowal-Wolk, & Lehman, 1992). Huguet, Charbonnier, and Monteil’s (1999) article tells us something about the kinds of people, in the kinds of circumstances, for whom this item is most likely to get high scores. Huguet et al.’s findings, and their interpretations of those findings, suggest that work teams composed of people with strong motives to view themselves as distinctly more talented than others are likely to suffer from effort decrements—social loafing—when the task is collective and unchallenging. They noted that men, and people from individualistic cultures in particular, are most likely to have such motives.

The practical lessons that come to mind after reading Huguet et al.’s (1999) findings, then, might be that work teams of individualists should not be given collective tasks, unless those tasks are genuinely difficult. Alternatively, one might argue that work teams ought not to be composed of such individuals or, that when teams are composed thus out of necessity, it is wise to provide individual, and not collective, performance feedback. Are these practical conclusions correct? Huguet et al.’s findings thus raise three specific questions about work team design: (a) How should tasks be designed for work teams in real organization settings?, (b) how should performance feedback and other outcomes be provided to such teams?, and (c) how might individual differences play out over time for teams with different task and performance outcome designs?

Task Design and Team Performance

I would like to suggest an alternative to one of Huguet et al.’s (1999) interpretations of their findings, drawing on other studies of task-performing teams and the way that a particular concept is defined in the present research and in others’ research. Among the conclusions Huguet et al. drew in their discussion of their findings is that the degree of social loafing exhibited by particular individuals varies between coactive and collective tasks and is worse for collective tasks. In fact, however, there were no collective tasks in Huguet et al.’s study. Task interdependence was very low and was constant across conditions.

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**Task Interdependence** refers to features of inputs into the work itself that require multiple individuals to complete the work. Various scholars have identified multiple sources and types of task interdependence. Some social psychologists (e.g., Johnson & Johnson, 1989) refer to **means interdependence**, specifically, interdependence in which the actions of individual members elicit and constrain the actions of others (e.g., the movement down court of a basketball team). This form of interdependence is distinguished from **resource interdependence**, in which critical resources such as information and materials are distributed among members such that the whole task is not complete until each member has completed his or her part (e.g., an advertising design team made up of writers, artists, etc.).

Thompson (1967), in contrast, specified three types of interdependence, in increasing order of the complexity of the coordination required among unit members: (a) pooled interdependence, in which subtasks are performed separately and in any sequence (no coordination required); (b) sequential interdependence, in which subtasks are completed in a specified sequence, with no return to earlier steps (linear coordination); and (c) reciprocal interdependence, in which the completed subtask of one unit member becomes input for the second, and the second’s completed subtask becomes input for the first, and so on (complex coordination). These distinctions describe different processes by which inputs can be combined to complete a whole piece of work. They were intended to describe forms of interdependence between large units (such as divisions or departments) of entire organizations; they overlap with, but are not identical to, characterizations of task interdependence in small groups. For example, pooled interdependence among individuals is essentially the absence of any means interdependence. Individuals whose work requires only pooled interdependence with others are non-task-interdependent coactors—individuals working independently, usually in the same setting, such as a roomful of telephone salespeople—whose output is measured collectively (i.e., who are goal interdependent; see below). Sequential interdependence among individuals can exist on an assembly line. In neither of these cases would we typically define these sets of individuals as a group—people who collectively perform a whole task; rather, they are individuals operating largely independently.

There are four particular task structures that are frequently manipulated or described in research on task interdependence. These four elements are: (a) How the task is defined to the group. The task may be defined to members as a task for which the team as a collective is responsible; alternatively, particular tasks (perhaps subparts of the whole task) may be the responsibility of particular individuals. (b) Rules or instructions about process. Instructions about task process can convey that group members are expected to share resources and work together for at least part of the task; alternatively, they can convey that individuals are expected to work alone—or, of course, they can convey nothing about the level of joint action expected of members. (c) Physical technology of the task. The task technology can either demand simultaneous action by individuals, creating interdependence (e.g., one person alone cannot play a quartet), or it can prevent it (e.g., if the defined task is “writing a report,” the physical technology of using a computer prevents simultaneous action by individuals), and (d) the degree to which resources necessary for the work—such as skills, information, and materials—are distributed among individuals. These four elements together define the level of structural task interdependence among group members. They determine whether whole tasks are designed to be done by groups vs. individuals. Generally, the more of these elements that are highly interdependent, the greater the need for collaboration and cooperative behavior in the group to complete the task (Galbraith, 1987). It is the presence of one or more of these elements that creates collective tasks.

In all conditions in Huguet et al.'s (1999) research, group members worked independently of each other, with no need to rely on the inputs of others or to work interactively to accomplish their work on the task. Had dyads in the “collective” condition been instructed to brainstorm—to generate ideas together and build on each others’ contributions to come up with new uses for the target objects—they would have experienced a collective task. But neither the task definition, the process instructions, the technology, nor the resource distribution were interdependent in nature in the collective
condition. All groups in this research were groups of coactors with very low levels of task interdependence. No conclusions, theoretical or practical, can be drawn from this research about the effects of collective tasks on group members' effort levels. Thus, the earlier inclination to interpret these findings' implications in terms of avoiding collective tasks for certain types of individuals is misleading. Indeed, as I address later, collective tasks may be especially potent positive influences on the collective performance of teams—including teams composed of individuals who do not take naturally to interdependent work.

Performance Outcomes and Team Performance

The conditions under which groups performed in Huguet et al.'s (1999) differ not in task interdependence but rather in outcome interdependence. Outcome interdependence refers to the degree to which shared significant consequences of work are contingent on collective performance of the task(s). Here I include reward interdependence—tangible outcomes that accrue to the group as a whole—and goal interdependence, which refers to the measurement of collective output, regardless of whether rewards are attached to goal attainment.

Goal interdependence is a function of how performance is measured: as team performance, individual performance, or some combination of these. The term goal interdependence has sometimes been used synonymously with task interdependence (typically, pooled task interdependence; e.g., Van de Ven & Ferry, 1980). However, goal interdependence (like reward interdependence) can exist without any interdependence in the task inputs (e.g., a roomful of telemarketers may be held accountable for a collective goal, but they complete individual tasks). One can also establish individual, noninterdependent goals for members of a group with an interdependent task (e.g., hours billed by a member of a consulting team). The dyads in Huguet et al.'s (1999) research experienced collective outcomes—namely, interdependent performance measurement.

The comparison made in Huguet et al.'s (1999) study is thus most analogous to other studies of the effects of outcome interdependence, in particular the effects of group- versus individual-level outcomes for individualistic tasks (e.g., Johnson & Johnson, 1989; Rosenbaum et al., 1980; Shea & Guzzo, 1987). Group-level outcomes have been shown to have strong positive effects on the effort levels of individuals doing interdependent tasks, both in the laboratory and in the field (Mesch, Lew, Johnson, & Johnson, 1988; Rosenbaum et al., 1980; Shea & Guzzo, 1987; Wageman, 1995; Wageman & Baker, 1996). The findings surrounding individualistic tasks with collective outcomes are more mixed. The practical question thus raised, then, is how to design outcomes for groups with low-interdependence tasks.

Huguet et al. (1999) found, consistent with some other findings in the literature, that effort levels can suffer when tasks are independent but outcomes are collective (Earley & Northcraft, 1987; Miller & Hamblin, 1963; Williams, Harkins, & Latane, 1981). Most interesting, they found that this pattern held only for individuals with particular characteristics. In addition, they showed that effort decrements occurred for these individuals only when the task was unchallenging. These two findings—that individual characteristics and task difficulty moderate the effects of collective outcomes and individual tasks on member effort—may help account for some inconsistencies in previous studies. Several studies have failed to turn up loafing effects when non-task–interdependent groups are assessed or rewarded collectively (Gordon, Welch, Offringa, & Katz, 1998; Rosenbaum et al., 1980; Wageman, 1995; Wageman & Baker, 1996). Might this be because the participants in these studies had relatively weak uniqueness motives, or because the task was inherently challenging? None of the studies mentioned above provide data about individual characteristics, though the tasks themselves in each of the studies were complex, demanded the use of multiple skills, and were quite challenging. Challenge, and the opportunity to display competence that it offers, may be serving as an alternative—and wholly sufficient—motivator, even for those with strong uniqueness motives. Thus it may be that one of the findings of Huguet et al.'s research both helps to account for some inconsistencies in the literature and offers a straightforward practical implication: that teams need to be given
challenging work to do to prevent effort-related process losses in collective-goal contexts.

Individual Differences and Group Performance

In drawing on the practical implications of social psychological research for the design of work teams in organizations, findings about individual differences are often the hardest to use. The most straightforward practical step one could take on the basis of the individual-difference findings in Huguet et al.'s (1999) study is to shape group composition. If team members are to work collectively, one might argue, then the composer of the team should avoid including those with strong uniqueness motives. Alternatively, one could take the group composition as a given; indeed, in many organizational settings people with responsibility for leading a team do not have the authority to choose the members themselves. In this case, one strategy might be to assess the composition of the group and to shape task designs and performance outcomes to fit with the kinds of individuals who will be doing the work. Both options—choosing the group members on the basis of personality characteristics and shaping the task and outcome designs to fit the given personalities—are probably unworkable in most organizational settings, but for different reasons. The first reason is that there are other considerations when composing teams—namely, that particular task-relevant skills must be present for good group performance. The complexities of composing a team to have both the right personality characteristics and the right skills for the team task are daunting and impractical. The second option—shaping the tasks and outcomes to suit the composition—faces the problem of intrateam variance. What does one do about task and outcome design when team members vary in their individual characteristics? Are there forms of task and outcome design that might accommodate a range of individual characteristics?

Precisely this question engaged my own interests. In my research, I was concerned with a different but related individual-difference characteristic: the need for autonomy (Wageman, 1995). Some individuals have strong needs to work independently of other organization members, whereas other individuals are more comfortable with collective action and the necessity of relying on others to get work done together. Surely the latter group, faced with collective tasks and group rewards, would be more satisfied and productive doing teamwork than would the high-autonomy individuals. But might there be some middle ground, some kinds of task and outcome designs that suit both groups of individuals—those who are especially productive in collective settings, and those who are especially unproductive?

In this field study, I (Wageman, 1995) predicted that highly interdependent groups composed largely of individuals with strong individual preferences would perform less well and show lower levels of cooperation and individual satisfaction than would highly interdependent groups composed of individuals who prefer cooperation. In addition, I expected that hybrid designs—tasks and outcomes that each demanded some level of collective action but also permitted significant individuation—would engender the best team performance, through their ability to accommodate various individual preferences and personalities. A parallel argument could be made about the findings of Huguet et al.'s (1999) research—that providing both group and individual performance measurement might accommodate both individuals with strong uniqueness motives and individuals with weak uniqueness motives. I selected more than 150 customer service teams at Xerox that had group, individual, or hybrid tasks. I then manipulated the reward system such that some groups with each task type received pure group, pure individual, or hybrid rewards. I assessed the teams’ performance, their processes, and the characteristics of individuals both before and after the reward system intervention.

However, I was wrong on both counts. Hybrid designs underperformed relative to all other combinations of task and outcome interdependence. Providing both group and individual outcomes to teams prevented collective motivation and cooperation from developing in these teams. Such teams experienced neither the cooperation-enhancing benefits of collective designs nor the individual effort-enhancing effects of individualistic designs.

Equally important for the present discussion, the moderating effect of individual dispositions...
did not occur in these real teams. Rather, individuals who experienced collective tasks and group outcomes changed in their autonomy needs over time and exhibited equally high levels of cooperative behavior regardless of the personal dispositions of members. Collective tasks, in particular, had a powerful impact on the behavior and dispositions of team members. Personal dispositions are themselves malleable and respond to experience with task and outcome interdependence. Perhaps the strong behavioral demands of immediate structures are sufficient to establish collective behavior—and reflection on that behavior, in turn, alters personal attitudes and dispositions toward collective action. Thus one might expect that, over time, individuals with strong uniqueness motives who are faced with collective tasks and collective outcomes might well show effort levels no different from those of individuals with relatively weak uniqueness motives.

Conclusion

Huguet et al.’s (1999) findings underscore the importance of considering multilevel influences on team behavior and performance, including task design, outcome distribution, individual characteristics, and even culture. The relationships among these factors are complex and dynamic. Individuals, when they can, choose their organizational context on the basis of their personal predispositions. They respond behaviorally to the culture of that organization. Their behavior responds to the nature of immediate task and reward structures, and their personal predispositions are themselves shaped by their experiences with interdependence. Moreover, if given the latitude to shape their immediate task and outcome structures, individuals very likely will act according to their personal preferences, building individual or group tasks and outcome distribution to suit their dispositional tendencies. The demands of particular structures, especially tasks, may lead them to alter other structures to bring them into congruence. Teams with group tasks have been known, for example, to change individualistic rewards to group rewards by dividing all rewards equally among members. The relationships among all these factors—structures, personal predispositions, behavior, and culture—may thus be a self-reinforcing spiral.

Effective action aimed at creating high levels of collective effort in teams may require changes in all influenceable aspects of the system—tasks, outcomes, values, and individual characteristics—altered by means of persistent and long-term action. This kind of change requires simultaneously redesigning the immediate context in which people operate—the task they perform and the outcomes they experience—and allowing the individuals themselves to be shaped by their new experiences over time, until the new system reaches its own level of stable, self-maintaining congruence.

References


