Effects of Task Difficulty and Task Uniqueness on Social Loafing

Stephen G. Harkins
Northeastern University

Richard E. Petty
University of Missouri—Columbia

Previous research has shown that subjects taking part in either physical (Latané, Williams, & Harkins, 1979) or cognitive (Petty, Harkins, & Williams, 1980) tasks alone and/or in groups put out less effort in groups, an effect called social loafing. Recent research has shown that this loafing can be eliminated by telling subjects that their individual outputs can be identified even when they perform in groups (Williams, Harkins, & Latané, 1981). In the present research, we demonstrate that loafing can also be reduced either by increasing the difficulty (challenge) of the task (Experiments 1 and 2), or by giving each subject a different task to perform (Experiments 3 and 4). Despite the fact that these subjects felt as unidentifiable as subjects working on the typical loafing task, they performed as well as participants with identifiable outputs. These results suggest that when individuals perceive that they can make a unique contribution to a group effort, social loafing is reduced even if individual contributions remain unidentifiable.

Over 50 years ago, Ringelmann, a German researcher, found that on a rope-pulling task, group productivity failed to reach the levels predicted on the basis of individual performances. As Steiner (1972) pointed out, this discrepancy between potential and actual productivity in rope pulling could result from coordination loss and/or from reductions in individual efforts. Ingham, Levinger, Graves, and Peckham (1974) showed that reductions in individual effort contribute to this failure of a group to achieve its potential. This reduction in effort that occurs when people are jointly responsible for a task has been termed social loafing by Latané, Williams, and Harkins (1979) and has been found to characterize the behavior of both females and males (Harkins, Latané & Williams, 1980) in between- as well as within-subjects designs (Harkins et al., 1980; Kerr & Bruun, 1981) and on cognitively and physically effortful tasks (Petty, Harkins, & Williams, 1980; Petty, Harkins, Williams, & Latané, 1977).

Although it is clear that various features in the experimental designs of these studies are sufficient to lead to reductions in individual effort, the complex nature of these designs obscures the cause(s) of the effect. In the present article, we will examine two features of the experimental designs that could contribute to social loafing. First, to illustrate the factors that enter into the "group" manipulation, we briefly summarize studies of social loafing in which tasks requiring physical (Latané et al., 1979) or cognitive effort (Petty et al., 1977) have been used.

In a typical social loafing study that requires physical effort, Latané et al. (1979) asked subjects to shout as loudly as they could alone, in pairs, and in groups of six. The subjects wore blindfolds and headsets over which they were given the experimental instructions. On each trial, after the letters of the subjects who were to perform were called out there was a countdown, followed by the prerecorded sound of people shouting. This sound served as a guide for how long...
the subjects were to shout, but more important, provided a masking noise that prevented subjects from hearing each other as they performed. The subjects took part in five types of trials. They shouted alone, in pairs, in sixes, in “pseudopairs,” and in “pseudosixes.” On the latter two types of trials, each subject was told he was performing with one or five other people but was actually performing alone. This subterfuge was accomplished by switching what the subject was hearing to a second track on a stereo tape, so that while the other subjects were told that the target person was to perform alone, the subject heard that he would shout with one or five other people. This stratagem allowed for the separation of the effects of coordination loss (Steiner, 1972) and reductions in effort, because on the pseudogroup trials, each participant thought that he was shouting with one or five other people but was actually shouting alone. On these pseudogroup trials, the participants produced substantially less noise than when they shouted alone. In pseudopairs, they produced 82% as much noise as when alone, and in pseudosixes, only 78% as much noise.

In a task requiring cognitive effort, Petty et al. (1977) asked subjects to evaluate a poem and an essay ostensibly written by another student. The subjects were told (a) that they alone were responsible for this evaluation; (b) that they shared this responsibility with 3 others; or (c) that the responsibility would be shared with 15 others. In the group-evaluation conditions, the subjects were also told that their ratings would be combined with those of the 3 or 15 other people to form an overall rating. Group-evaluation subjects reported putting less effort into their evaluations and evaluated the communications less favorably than did subjects who were informed that they alone were evaluating the essay.

At least two aspects of these designs could lead to social loafing. One feature common to all previous studies on physical and cognitive effort is that the participants’ efforts are combined in the group conditions. For example, when performing the sound-production tasks, the participants think that on the group trials the sound-level meter will record the total sound output of the group. When performing the cognitively effortful tasks, the subjects are told that their reactions will be combined with those of the others to form an overall rating. Thus, on all of the tasks the subjects are led to believe that their individual outputs will not be identifiable. They receive neither credit nor blame for their performances, and lacking this motivation for performance, the subjects loaf.

Williams, Harkins, and Latané (1981) tested this possibility by manipulating the identifiability of individual performances within the group in two experiments. In the initial phase of the first experiment, subjects shouted alone and in pseudogroups. As has been the case in previous research, when the subjects shouted alone their outputs were individually identifiable, but when they performed in a group their outputs were unidentifiable. In the second half of the experiment, subjects were asked to wear individual microphones that ostensibly permitted the monitoring of individual outputs even when the subjects performed in groups. Consistent with previous research (Latané et al., 1979), in the first half of the experiment subjects shouted more loudly when performing alone than when they thought they were shouting with others. However, when they were told that their individual efforts could be monitored even when they performed in groups, no loafing occurred. Subjects shouted as loudly when they thought they were shouting with others as when they were alone. In the second experiment, a between-subjects design was used in which subjects were told that (a) they would shout alone and in groups—identifiable alone; (b) they would shout alone and in groups while wearing microphones that allowed the monitoring of their individual performances in groups as well as alone—always identifiable; or (c) they would shout alone and in groups, but because interest centered on the group’s performance, their individual performances would be summed and the group totals would be examined—never identifiable. Replicating the social loafing effect, subjects shouted more loudly when they were alone than when they thought they were unidentifiable and shouting with others. Also, replicating the previous study, when the participants thought that their outputs could always be identified, they shouted as loudly
in groups as when they were alone. Finally, when led to believe that the experimenters were interested in group totals, subjects put out as little effort when they were alone as when they were in groups. Thus, consistent with the identifiability notion, when the experimenters could monitor the subjects' individual outputs, subjects worked as hard in groups as when they were alone, and when the experimenters monitored only the group performances, subjects worked as little when they were alone as when they were in groups.

These studies suggest that social loafing is, at least in part, the result of the subjects' lack of identifiability when participating in groups. When subjects can neither be praised nor blamed for their individual efforts, they loaf. If the lack of identifiability is the sole determinant of social loafing, it suggests that effort is determined primarily by external factors (i.e., the possibility of obtaining rewards and praise or the fear of punishment or embarrassment) and that the loafing effect in groups may be controlled only through the presence of monitoring observers who can dole out rewards and punishments. However, an examination of the tasks used in previous loafing research suggests at least two features of the tasks themselves that may also be required to obtain the loafing effect.

First, in the loafing research, all of the subjects shared the responsibility for working on a relatively simple task. Shouting, clapping, and rope pulling are all easily accomplished. Even though the subjects are to produce as much as they can—a maximizing task in Steiner's (1972) terminology—and each person's contribution adds to the group total, subjects undoubtedly realize that virtually anyone could perform these tasks. On the cognitive tasks, the subjects are asked to evaluate materials that are easily understood. After all, the subjects are told that the essays were written by their fellow students. On this optimizing task (Steiner, 1972), the subjects may feel that their efforts are redundant: The reactions they come up with are likely to be similar to those generated by others in their group. Thus, even though their reactions will contribute to the overall rating, subjects may feel that their particular contributions are not really needed. This analysis suggests that if the task was made more difficult and challenging, subjects might not loaf in groups even if their individual inputs remained unidentifiable, because on a challenging task subjects would perceive that their contributions are not easily duplicated by someone else.

Second, in previous loafing research, in addition to the task being simple, the task was also identical for all group members (subjects pulled on the same rope, evaluated the same essay, etc.), and this may have contributed to social loafing by enhancing subjects' perceptions that their efforts were not needed. For example, an investigator could tell subjects that their evaluation of essays would be combined to form one overall class evaluation, as in previous research (Petty et al., 1977), but that each subject would be evaluating a different essay from the class. Even if the task were simple and subjects remained unidentifiable—in that each contributed unrecognizably to one group evaluation—loafing might not occur because all subjects have their own unique subtask. Thus, subjects would likely perceive that their contribution was valuable and was not duplicated by another group member.

Our analysis suggests that because in previous social loafing research, responsibility has been shared for one simple task, the subjects may not have felt motivated to exert their maximal effort unless their work was identifiable. In other words, if the task itself does not enhance subjects' motivation to perform their best, social loafing will occur if it cannot be detected. On the other hand, if the task itself provides sufficient motivation for performance, loafing may not occur even if the subjects' work remains unidentifiable. Therefore, lack of identifiability may not be a sufficient condition for social loafing. loafing may also require that subjects feel that the group task does not afford them an opportunity to make a contribution substantial enough to warrant their best efforts. Our major point in this article is to demonstrate that although making people identifiable is one way to reduce social loafing, changing the nature of the task performed is another.

In four experiments we sought to test the notion that if subjects feel that they can make a worthwhile contribution to the group performance, loafing will be reduced, even if the
subjects' outputs are not identifiable. Of course, there are undoubtedly a number of ways in which subjects could be led to believe that their efforts are needed. In the present research, we attempted to manipulate this perception in two ways. In the first two experiments we manipulated the difficulty of the task, testing the notion that increasing task difficulty would lead the subjects to feel that their efforts were needed because the task presented a challenge. In the second two experiments, we manipulated whether subjects worked on tasks identical to the tasks of others or had their own task on which to work, testing the notion that making the participants' efforts nonredundant would make them feel needed. We expected that social loafing would occur only when the task was simple and nonchallenging or required subjects to make responses that were redundant with the contributions of other group members. When the tasks were more challenging (Experiments 1 and 2), and/or required nonredundant responses (Experiments 3 and 4), we expected that social loafing would not occur, even if subjects' responses were completely unidentifiable.

Experiment 1

In our first experiment, the subjects' task was to generate uses for an object. In this brainstorming task, the subjects were told either they alone were responsible for listing as many uses for an object as they possibly could or that they shared this responsibility with nine other people whose uses for the object would be combined with their own. This task, though requiring cognitive effort, is functionally equivalent to the physically effortful tasks used in previous research (e.g., Latané et al., 1979) in that the subjects were to generate as many uses as they could for the same object and, in the shared-responsibility conditions, were told that their uses would be combined to arrive at a group product.

Crossed with this manipulation, half of the subjects were given an object that pretesting had revealed would be difficult to generate uses for—a detached doorknob—whereas the other half were given an object for which it was easy to generate uses—a knife. For the easy object, we predicted the typical social loafing effect: More uses would be generated by the individually responsible subjects than by those who were told the responsibility was shared. For the difficult-object task, however, which presented a challenge, we expected that shared-responsibility subjects would work as hard as those who were individually responsible.

Method

Subjects. Sixty-four undergraduates received partial course credit for taking part in the experiment. The design was a 2 (group size of 1 or 10) × 2 (difficult or easy object) factorial. Five subjects were allowed to sign up for each experimental session; thus, the number of subjects per session varied from one to five. Each subject within a session was randomly assigned to one of the four conditions. All sessions were conducted by a male experimenter.

Procedure. When subjects arrived they were seated at a semicircular table with partitions that prevented them from seeing each other but that gave the experimenter an unimpeded view of each of them. Subjects were told to raise their hands at any point if they had questions and then were given envelopes from which they were asked to remove the top sheet, which read as follows:

Today you will take part in what is called a brainstorming task. You will be given the name of an object and your task will be to come up with as many uses for this object as you can. Don't be concerned about the quality of your reactions. The uses can be ordinary or unusual. Simply list as many as you can.

In the alone condition, the subjects then read, "You are the only person who will be listing uses for this object. Thus, you alone are responsible for listing the uses for this object, so try to list as many uses as you can." In the group condition, subjects read, "You are one of ten persons who will be listing uses for this object. Thus, you share the responsibility for listing the uses for this object with nine other persons whose uses will be combined with yours, so try to list as many uses as you can."

Subjects were then asked to remove the second sheet from the envelopes, on the top of which was written, "You are to generate as many uses as you can for ———. Remember to try to generate as many uses as you can." In this blank was handwritten either "knife" or "detached doorknob." Pretesting indicated that it was easy for subjects to generate uses for the former object but more difficult to generate uses for the latter object.

Once the experimenter gave a signal the subjects began listing uses for the objects. The subjects were allowed to continue writing until 1 minute passed during which no one wrote down a use. If at least 45 seconds passed with no uses being written down and then a subject wrote something, an additional 45-second period of nonactivity was allowed to pass, at which time the subjects were told to stop and remove from their envelopes a sheet of rating scales. After completing these measures, subjects were debriefed, thanked, and dismissed.
Results

Each of the following analyses was performed using 2 x 2 analyses of variance (ANOVAs) with group size (1 vs. 10) and object difficulty (difficult vs. easy) as between-subjects factors.

Analysis of the number of uses revealed a significant object-difficulty main effect, \( F(1, 60) = 20.4, p < .01 \), which was a consequence of the fact that more uses were generated for the easy object (\( M = 14.4 \)) than for the difficult one (\( M = 8.59 \)). This analysis also yielded a significant Group Size x Object Difficulty interaction, \( F(1, 60) = 4.94, p < .05 \). A Newman-Keuls a posteriori means test (Kirk, 1968) revealed that, as predicted, subjects who alone were responsible generated more uses for the easy object (\( M = 16.56 \)) than did subjects who shared the responsibility (\( M = 12.19, p < .05 \)). However, there were no reliable differences (\( p > .20 \)) in the number of uses generated between alone (\( M = 7.94 \)) and group (\( M = 9.25 \)) subjects for the difficult object.

Analysis of the ancillary measures revealed that, consistent with the success of the difficulty manipulation, subjects generating uses for the easy object rated the task less difficult (\( M = 4.63 \)) than did subjects generating uses for the difficult object (\( M = 7.10 \), \( F(1, 60) = 18.7, p < .001 \)). Subjects generating uses for the difficult object also rated their uses as more unusual (\( M = 7.10 \)) than did subjects generating uses for the easy object (\( M = 3.94 \), \( F(1, 60) = 23.85, p < .001 \)). There were no other reliable findings on the ancillary measures.

Experiment 1: Replication

The previous experiment was replicated using different objects, with the addition of several measures detailed below. Half of the 56 subjects generated uses for another object, a box, for which pretesting had shown it would be easy to generate uses, and the other half generated uses for a burnt-out light bulb, an object for which pretesting had shown generating uses would be more difficult. Included among the ancillary measures were two additional questions. Subjects were asked to rate (a) the extent to which their uses represented a unique contribution unlikely to be duplicated by other participants responding to the same object and (b) the likelihood that the uses the subjects generated would be the same as those generated by another person responding to the same object.

Finally, additional data were collected to evaluate an alternative explanation for the loafing effect. Our interpretation of loafing on simple tasks suggests that subjects may put out less effort because they feel that their efforts are not needed. However, in the previous study, subjects who shared the responsibility for generating uses for an easy object may have felt that their uses would duplicate those of the others, and so, instead of listing all of the uses that came to mind, they may have listed only the ones they thought were unusual and unlikely to be duplicated. Thus, they could have been working as hard as subjects who thought that they alone were generating uses for their object and still have generated fewer uses. To test this possibility, the different uses generated by the 56 subjects were rated for unusualness on a 7-point scale anchored by “not at all” and “very” by four judges (two rated the uses generated for the easy object and two rated those for the difficult object). Because the interrater reliabilities were high for both sets of judges (easy object, \( r = .91 \); difficult object, \( r = .90 \)), the judges’ ratings were averaged for each use, and an average unusualness rating was determined for each subject. In addition, after listing the uses for the objects, subjects rated the unusualness of each of their own uses on the same 7-point scale, and these ratings were averaged for each subject.

Results

Once again, the dependent measures were analyzed in 2 x 2 ANOVAs with group size and object difficulty as factors. This analysis revealed main effects for group size, \( F(1, 52) = 4.88, p < .05 \), and object difficulty, \( F(1, 52) = 41.74, p < .001 \). Solely responsible subjects generated more uses (\( M = 12.1 \)) than did group subjects (\( M = 9.21 \)), and more uses were generated for the easy object (\( M = 14.8 \)) than for the difficult one (\( M = 6.46 \)).

More interesting, however, was the appearance of a Group Size x Object Difficulty interaction, \( F(1, 52) = 6.17, p < .02 \). As in
the previous study, although alone subjects generated more uses for the easy objects \((M = 17.86)\) than did group subjects \((M = 11.79, p < .05)\), there were no differences for the difficult object alone, \(M = 6.28\); group, \(M = 6.64\).

Once again, consistent with the success of the difficulty manipulation, analysis of the question requesting the subjects to indicate the difficulty of generating uses revealed a significant object-difficulty main effect, \(F(1, 52) = 14.25, p < .001\). Difficulty-object subjects rated their objects more difficult to generate uses for \((M = 7.4)\) than did easy-object subjects \((M = 5.14)\). Subjects exposed to the easy object felt it more likely that the same uses would be generated by another person responding to the object \((M = 7.66)\) than did difficult-object subjects \((M = 5.64)\). \(F(1, 52) = 8.97, p < .005\). Consistent with the previous finding, subjects developing uses for the difficult object felt that their uses represented a unique contribution unlikely to be duplicated by other persons to a greater extent \((M = 5.43)\) than did easy-object subjects \((M = 3.78), F(1, 52) = 6.31, p < .02\).

Analysis of the judges' ratings of the unusualness of the subjects' uses revealed a significant task-difficulty main effect, \(F(1, 52) = 170.91, p < .001\). The uses generated for the difficult object were judged to be more unusual \((M = 3.96)\) than those for the easy one \((M = 1.83)\). There were no other reliable effects. A direct contrast of the alone/easy-task and shared-responsibility/easy-task conditions yielded no reliable difference \((p > .20)\).

Subjects working on the difficult object rated their own uses as more unusual \((M = 4.10)\) than did easy-task subjects \((M = 2.84), F(1, 52) = 21.54, p < .001\). Once again, there were no other reliable effects. A direct contrast of the alone and shared-responsibility cells under easy-task conditions was not reliable \((p > .20)\). These data provide no support for the notion that "group" subjects faced with the easy task generated fewer, yet more unique, uses than "alone" subjects. Neither the judges nor the subjects themselves rated the group uses any more unusual than those generated in the alone condition. However, both judges and subjects agreed that the uses generated for the difficult object were more unusual than those listed for the easy one. The average within-cell correlation of the judges' and subjects' ratings of the uses was reliable but modest, \(r(48) = .37, p < .01\).

**Discussion**

In both studies, consistent with other research on social loafing using physically effortful (Harkins et al., 1980; Ingham et al., 1974; Kerr & Bruun, 1981; Latané et al., 1979; Williams et al., 1981) and cognitively effortful tasks (Petty et al., 1977, 1980), subjects who were individually responsible for originating uses for the easy object generated more uses than did subjects who were told that they shared this responsibility with nine other subjects. In addition, the difference in the number of uses generated did not result because the shared-responsibility subjects generated fewer, but more unusual, uses than solely responsible subjects. However, when subjects worked on the difficult object, no reliable differences were obtained between individual and group conditions in either study.

The present data suggest that when group subjects are presented with a difficult task, these subjects work as hard as individually responsible subjects, even though their outputs are not identifiable. Results from the ancillary measures suggest that generating uses for the difficult object is more challenging than generating uses for the easy one. Subjects exposed to the former stimulus felt that their uses were more unusual, less likely to be duplicated, and represented a more unique contribution than did subjects working with the easy object. These results are consistent with the notion that when subjects are presented with a simple task and share this responsibility with others, they may loaf because they may feel that their best efforts are not really required because their contributions are likely to be the same as those of the others. If anyone can do it, why should an effort be made? However, when faced with a more difficult task, the participants may feel that they can make a unique contribution, and so they work even when their contributions are not identifiable.

However, why should the participants feel that they can make a greater contribution when the task is difficult and presents a chal-
challenge? Research from several sources suggests that people see themselves as above average on many dimensions. For example, Myers (1980) reports that 70% of the 829,000 high school students who recently took the Scholastic Aptitude Test felt that they were above average in leadership ability, and 0% rated themselves as below average in ability to get along with others (60% saw themselves in the top 10%, 25% in the top 1%). Jellison and Riskind (1970), in their test of the notion that risk taking is seen as an indicator of ability, found that, on the average, subjects rated themselves as more capable, clever, competent, creative, ingenious, innovative, and insightful than average. Goethals and Zanna (1979), in their study of the role of social comparison in choice shifts, found that among subjects asked to compare themselves to an average person on the dimensions of talent, creativity, and ability, 72% rated themselves as above average, 17% saw themselves as average, and one subject (1%) felt moderately below average. When taking part in a simple task, subjects may not be motivated to make use of their above-average abilities, because they may feel the task can be done equally well by anyone, and others are there to do it. However, when faced with a more challenging task, subjects may feel that their contribution is needed, because they are better able than the average person to perform the task.

Before proceeding, it is necessary to consider an alternative to this interpretation. Perhaps the equivalence in performance in the difficult-object conditions was the result of a floor effect that prevented the emergence of any significant differences. Given the present data, this argument does not seem plausible. The individually responsible difficult-object subjects in both experiments generated a reasonable number of uses, an average of 7.94 in Experiment 1 and 6.28 in its replication. This level of performance left the group subjects ample opportunity to perform more poorly than individually responsible subjects. Specifically, in Experiment 1 the group subjects needed to generate only five or fewer uses, and in the replication of Experiment 1, only four or fewer uses, to have generated reliably fewer uses than the individually responsible subjects. However, in both experiments the group subjects' mean performance, if anything, exceeded (although not significantly) that of the individually responsible subjects (Experiment 1, 9.25 vs. 7.94; replication, 6.64 vs. 6.28).

Another possibility is that the individually responsible subjects generating uses for the difficult object were at a ceiling and were unable to generate any more uses no matter how hard they tried. Of course, if the individually responsible subjects' performances were at a ceiling, the group subjects' performances were at the same ceiling because there were no reliable performance differences between these experimental groups. Once again, because the individually responsible subjects' level of performance left the group subjects ample room to have generated reliably fewer uses, it seems unlikely that the performance equivalence is a ceiling artifact. In addition, in Experiment 1 there was no reliable difference in the number of uses generated under the difficult and easy conditions by the shared-responsibility (unidentifiable) subjects. This finding strongly suggests that group subjects worked harder when faced with the difficult object than with the easy one.

Experiment 2

We argue that these brainstorming results are most plausibly accounted for by an interpretation that suggests that the tendency toward social loafing when a group has responsibility for a task can be reduced by giving group members the perception that their unique talents and skills are required—talents and skills that may not be available to every other group member. However, a question may be raised as to the generalizability of this finding. Perhaps the motivation generated by exposure to the difficult object only occurs with brainstorming, which engages the creative spirit more fully than tasks like shouting, clapping, or rope pulling. To test the generalizability of the finding that increasing the difficulty of the task alone is sufficient to reduce social loafing, we replicated the basic design using a task much like those requiring physical effort. The subjects simply watched a television screen and reported seldomly occurring signals by pressing a key. As with the noise-production and rope-pull-
ing tasks, identifiability was manipulated by combining the subjects’ responses or by collecting them separately. Thus, the subjects’
responses were collected either on individual counters or on a group counter. Difficulty was manipulated by using two contrast levels
that made the signals either easy or more difficult to detect. At the high-contrast level, because the task was easy, we predicted that the
typical social loafing effect would occur: Better performance would result (i.e., fewer false alarms and misses) when the subjects’
outputs were identifiable than when the outputs were pooled. At the low-contrast level, when the task was more difficult, we predicted
that the subjects whose efforts were not identifiable would work as hard as those whose efforts were identifiable, because the
task presented a challenge.

Method

Subjects. The subjects were 122 male and female undergraduates who participated in the experiment as a means of earning partial course credit. The design was a 2 (identifiable vs. unidentifiable performance) × 2 (easy task [high contrast] vs. difficult task [low contrast]) factorial. Subjects were run in groups of three or four by two experimenters, and groups were randomly assigned to one of the four conditions. Because all of the subjects in a given session were assigned to the same condition and were subject to the same extraneous influences within the experimental context, the group was used as the unit of analysis in this experiment as well as in the other experiments that follow. In appropriate cases a Newman-Keuls a posteriori means test (Kirk, 1968) was used.

Procedure. Subjects sat in a semicircle, separated by partitions that prevented them from seeing each other. They were then given instruction sheets that read as follows:

We are interested in studying the performance of groups and individuals on vigilance tasks. The vigilance task requires you to watch for a dot to flash on the TV screen. When you see the dot, you are to signal by pressing a button.

All of you will be observing the same one-fourth of the TV screen. Thus, you share the responsibility for reporting the signals in this one-fourth of the screen. We will keep track of your performance with the equipment in the box behind you, which we will show you in a minute.

Then, if the group was in the individually identifiable condition, the members read, “Since we are interested in your performance in the group, each person’s responses will be recorded on a separate counter in this box. Remember, we will be measuring your performance in the group, so please try as hard as you can to see and report all of the signals.” If the group was in the com-

bined-performance condition, its members read, “Since we are interested in the performance of the group, all of the group’s responses will be recorded on a single counter in this box. Remember, we will be measuring the group’s performance, so please try as hard as you can to see and report all of the signals.”

A 12 inch (3.3m) black and white Sony television monitor, the screen of which was divided with tape into four quadrants of equal size, was located approximately 7 feet 4 inches (2.24m) from each subject. After reading the instructions, all of the groups were randomly assigned one of the four quadrants to watch. The groups were then shown three examples of the signals they were to report. These signals consisted of a period flashed in one of three locations in the quadrant for one videotape frame (1/30th second). The three locations formed an equilateral triangle on its tip, and the signals, which came at 15-second intervals, flashed once in each of these locations during the example period.

After viewing the example signals, the subjects were told that when the actual task began, the signals could appear at any point in the quadrant and at any time. (The signals actually occurred in one of the three locations used in the example period.) Next, the subjects were asked to plug in their response keys. In the individually identifiable condition (one counter per person), the subjects were assigned numbers 1 through 4 and were told to plug their response keys into the appropriate sockets labeled 1 through 4 on the front of a sound-attenuated enclosure (25 inches × 17 inches × 17 inches; .64 m × .43 m × .43 m) that was located approximately 4 feet (1.22 m) behind them. They were then invited to look into the box to see how their responses would be collected. In the box was a BRS card file with various digital components, among which were four double counters labeled 1 through 4. The subjects were told that this apparatus allowed the experimenters to keep track of two aspects of their performance: hits (i.e., those occasions when the signal occurred and they pressed their keys) and false alarms (i.e., those occasions when the signal did not occur but they pressed their keys). To demonstrate the false alarm count, subjects were invited to press their keys and see counts appear on the appropriate counters. Subjects were then told that the equipment included a timing circuit that was started at the same time as the videotape. The occurrence of a signal corresponded to the activation of a red light. They were then asked to press their keys when this light flashed on, at which point counts appeared on the hit registers of their respective counters. Subjects were then reminded that this equipment allowed us to tell exactly how many hits and false alarms each of them registered.

In the combined-performance condition (single counter), subjects plugged their keys into a junction box with unlabeled sockets from which a single wire ran to the attenuated enclosure. These subjects were also shown the box, but in their case, rather than four pairs of counters, only a single double counter was present. They were told that one register kept track of the group’s hits, and the other, the group’s false alarms. The system of record keeping was also demonstrated for these subjects, except that when all subjects pressed their keys for false alarms and hits, multiple counts appeared on each register. These subjects were then reminded that this equipment
allowed the experimenters to tell exactly how many hits and false alarms the group registered.

The counters were then cleared, the box closed, and the subjects seated. Experimenter A, who had delivered the instructions up to this point, then turned the proceedings over to Experimenter B and left the room. Experimenter B reminded the subjects of which quadrant they were to watch and asked them to hold their response keys in their laps to avoid disturbing their neighbors. Experimenter B then started the videotape and simultaneously threw a switch that disabled all of the circuitry in the enclosure. During this time, Experimenter A had walked to an adjacent room and turned on a four-pen chart recorder that, unknown to the subjects, was connected to their response keys by a cable running into the back of the attenuated enclosure. In this way, we kept track of exactly how each subject performed even in the combined-performance condition.

The subjects then saw a 14-minute tape in which 14 signals occurred in their quadrant. During tape construction, the 14-minute task had been divided arbitrarily into twenty 30-second segments. In half of these segments, a period of one frame duration (1/30th sec) was flashed. The 14 segments in which this occurred were randomly determined, as was the time within the segment (1 to 30 seconds) and the location of the dot that appeared in it. The same procedure was followed for each of the other three quadrants with one constraint: No signal occurred within 2 seconds of another signal, either across or within quadrants. Thus, while all of the subjects were monitoring the same quadrant, signals were appearing in the other three quadrants. Part of the subjects’ task was to ignore these potentially distracting stimuli.

Crossed with the identifiability manipulation, half of the subjects saw the tape at high contrast (easy task), whereas the other half viewed it at low contrast (difficult task). During the task, Experimenter B quietly sat behind the subjects. After the 14 minutes had elapsed, Experimenter B stopped the tape, and the subjects responded to a set of ancillary measures.

The charts were scored for the two types of errors subjects could make, misses and false alarms, using chart keys made up for each quadrant. Because both misses and false alarms could be taken as evidence of poor performance, these two types of errors were summed, and the combined error index was used in the subsequent analyses of loafing on the task. After completing the questionnaire, subjects were debriefed and dismissed.

Results

Preliminary analysis of the combined error index revealed substantially greater variability in performance for the difficult task (low contrast) than for the easy one (high contrast), \( F_{\text{max}} = 20.8, p < .01 \). Two approaches were used to attack this problem: First, the basic hypotheses were tested separately at each difficulty level; and second, a logarithmic transformation was used to minimize the differences in variability, and a \( 2 \times 2 \) ANOVA with identifiability and task difficulty as factors was performed on these transformed data.

As predicted, on the easy task, subjects whose individual outputs were identifiable made fewer errors (\( M = 1.68 \)) than did subjects whose outputs were unidentifiable (\( M = 4.13 \), \( t(14) = 4.83, p < .01 \)). This finding replicates previous social loafing research in which simple tasks were used. However, on the difficult task, identifiability made no difference. Subjects whose outputs were not identifiable made as many errors (\( M = 7.00 \)) as those whose scores were identifiable (\( M = 7.62 \), \( t(14) = .37, p > .20 \)).

The logarithmic transformation reduced the variability substantially, \( F_{\text{max}} = 4.96, p > .05 \), leading to acceptance of the homogeneity of variance assumption. The \( 2 \) (identifiable vs. unidentifiable) \( \times 2 \) (difficult task vs. easy task) analysis performed on the transformed combined-error index revealed main effects for both difficulty, \( F(1,28) = 31.82, p < .0001 \), and identifiability, \( F(1,28) = 5.11, p < .05 \). Subjects exposed to the difficult task made more errors (\( M = .81 \)) than those exposed to the easy one (\( M = .39 \)), and subjects whose scores were identifiable made fewer errors (\( M = .51 \)) than did those whose scores were not identifiable (\( M = .68 \)). However, these main effects must be interpreted in terms of the significant Identifiability \( \times \) Difficulty interaction, \( F(1,28) = 11.1, p < .01 \). Subjects who performed the easy task under the identifiable conditions performed better on the task than did subjects in the other three cells (\( ps < .05 \)) among which there were no reliable differences.\(^1\)

The ancillary measures were also analyzed in \( 2 \times 2 \) ANOVAs. These analyses revealed a task-difficulty main effect for the percentage

\(^1\) Separate analyses of false alarms and misses revealed similar patterns of results. On the easy task, identifiable subjects, compared to unidentifiable subjects, missed fewer signals (\( M = 1.00 \) vs. 2.19), \( t(14) = 3.5, p < .01 \), and made fewer false alarms (\( M = .68 \) vs. 1.94), \( t(14) = 2.43, p < .05 \). On the difficult task, there were no reliable differences as a function of identifiability: misses, \( t(14) = .43, p > .20 \); false alarms, \( t(14) = .21, p > .20 \). On the transformed data, the interaction was obtained both for misses, \( F(1,28) = 8.32, p < .01 \), and false alarms, \( F(1,28) = 3.97, p = .056 \).
of signals the subjects thought they saw, $F(1, 28) = 14.0, p < .01$. On the easy task, subjects thought they saw 88.4% of the signals, but on the hard task they thought they saw only 76.9% of them. Also consistent with the success of the difficulty manipulation was the finding that subjects reported the difficult task as being more difficult ($M = 4.90$) than the easy task ($M = 3.23$), $F(1, 28) = 10.2, p < .003$. Finally, consistent with the success of the identifiability manipulation, identifiable (four counter) subjects believed to a greater extent that the researcher could determine exactly how well they individually performed ($M = 8.95$) than did unidentifiable (one counter) subjects ($M = 5.4$), $F(1, 28) = 46.8, p < .0001$.

**Discussion**

First of all, the results suggest that both the difficulty and the identifiability manipulations were successful. Overall, subjects detected 89% of the signals (hits) and made 1.31 false alarms on the easy task, whereas they detected 77% of the signals and made 4 false alarms on the difficult task. Easy-task groups also reported that the task was easier and that they detected a greater percentage of signals than difficult-task subjects. Finally, subjects who were told that their responses were identifiable reported that they believed to a greater extent that their performance could be monitored than did subjects who thought that their responses were combined.

Consistent with other social loafing research, at high-contrast levels when the task was easy, subjects whose scores could be individually identified outperformed subjects whose scores were combined and supposedly unidentifiable. However, as with the brainstorming research, when the task was difficult, there were no differences in performance. Once again, it could be argued that this performance equivalence was the result of the task being so difficult that a floor effect prevented the emergence of any significant differences. Arguing against this interpretation is the finding that, overall, when the task was difficult, 77% of the 14 signals were detected. In addition, this level of performance was attained at the cost of an average of only four false alarms. To have performed reliably more poorly than the identifiable subjects who made 7.62 errors, the subjects who were told that their scores were not identifiable needed only to have made 11 or more errors (misses plus false alarms). So, although this task was more difficult than the easy one, there was plenty of room for the unidentifiable subjects to perform more poorly than the identifiable ones. Thus, no floor effect appears to be operating. As in Experiment 1, arguing against a ceiling artifact is the fact that, if the identifiable subjects in the difficult-task condition were operating at a ceiling, the unidentifiable subjects were at the same ceiling, because their performances were not reliably different. Yet there is ample room for poorer performance (any score above 11). In addition, as in Experiment 1, the a posteriori tests of the interaction means revealed that the subjects whose scores were unidentifiable performed as well on the difficult task as on the easy one, suggesting that these subjects put out greater effort on the difficult than on the easy task.

The brainstorming and vigilance tasks are different in several ways. The former requires active cognitive effort and would be facilitated by a degree of creativity; the latter requires passive watchfulness. On the brainstorming task, the subjects were asked to generate as many uses as they could, a *maximizing task* in Steiner's (1972) terminology. On the vigilance task, the subjects were to detect as many signals as they could while minimizing false alarms, an *optimizing task* in Steiner's (1972) terminology.

The tasks are similar in that when outputs are pooled in the easy conditions, subjects may not feel like putting out their best efforts because the tasks do not present a challenge. As a result, subjects may feel that their performance can be easily duplicated by the others in their groups. When working with an object for which it is easy to generate uses, the subjects may feel that others will generate the same uses as they will. Likewise, when viewing the television under high-contrast conditions, it is likely that the others will have detected the signal. Even though the subjects have been told to generate as many uses as they can or to report every signal, the redundancy of their performances may reduce motivation. However, when the task is
more difficult and presents a challenge, subjects may feel that because they are on the whole above average (Goethals & Zanna, 1979; Jellison & Riskind, 1970; Myers, 1980), they can make a contribution that is not as likely to be replaceable. Thus, a lack of identifiability does not produce loafing when the task is challenging.

Experiment 3

Taken together, these studies suggest that it may not be a feeling of a lack of identifiability or accountability alone that leads to social loafing but also a feeling that one’s contribution is redundant, that one’s performance does not represent a real contribution, and hence, that there is no incentive for working hard. To test directly the roles of these two factors, we designed a study using the television vigilance task in which the factors were manipulated orthogonally. Identifiability was manipulated, once again, by keeping track of a group’s responses on one counter, or on a set of four counters, one per subject. Crossed with this manipulation, in half of the groups, all of the subjects were assigned a single quadrant of the television to watch (same task), whereas in the other half of the groups, each individual was given his or her own quadrant to watch (different task). In each of the quadrants 14 signals occurred, but the time of occurrence of these signals within a given quadrant was completely independent of the time of occurrence in the other quadrants. So, when watching different quadrants, subjects could make a definite contribution, because if they did not report a signal it went unreported. When everyone watched the same quadrant, any one of the subjects could see and report the signal.

To replicate previous research on identifiability (Williams et al., 1981), we would expect better performance by subjects whose performances were individually identifiable than by those whose outputs were combined in a single counter. However, if the opportunity to make a definite contribution provides sufficient motivation not to loaf, subjects whose individual scores are unidentifiable but are assigned tasks requiring nonredundant responses should perform as well as identifiable subjects. Thus, if lack of identifiability alone is sufficient to produce social loafing, we should obtain a main effect for identifiability on performance—lack of identifiability should reduce performance. If the lack of an opportunity to make a definite contribution to the group effort is also necessary for social loafing, as Experiments 1 and 2 suggest, an Identifiability × Task interaction would be expected—lack of identifiability should reduce performance only when all subjects perform the identical task.

Method

Subjects. The subjects were 86 male and female undergraduates who participated in the experiment to earn partial course credit. The design was a 2 × 2 factorial with identifiability (one counter vs. four counters) and same/different task (one quadrant vs. four quadrants) as between-groups factors. Groups were composed of from three to four members, were randomly assigned to one of the four conditions, and were run by two experimenters.

Procedure. The procedure was much the same as in the previous study. Groups assigned to the same-task conditions (one quadrant) read exactly the same instructions as those used in the previous study: “All of you will be observing the same one-fourth of the TV screen. Thus, you share the responsibility for reporting the signals in this one-fourth of the screen.” Groups assigned to the different-task condition (four quadrants) read, “Each of you will be responsible for reporting signals in your one-fourth of the screen.”

Crossed with the task manipulation, subjects were informed that their outputs were either identifiable or pooled. Subjects in the unidentifiable conditions (one counter) read, “Since we are interested in the performance of the group, all of the group’s responses will be recorded on a single counter in the box. Remember, we will be measuring the group’s performance, so please try as hard as you can to see and report all of the signals.” In the identifiable conditions (four counter) subjects read, “Since we are interested in your performance in the group each person’s responses will be recorded on a separate counter in the box. Remember, we will be measuring your performance in the group, so please try as hard as you can to see and report all of the signals.” Subjects received the same elaborate demonstration as in Experiment 2, which was designed to convince them that their responses either were or were not identifiable. In summary, four conditions were established: (a) unidentifiable, same—subjects all monitored the same television quadrant and their responses were pooled; (b) unidentifiable, unique—subjects worked on separate tasks but their contribution to the group score could not be distinguished from the performance of other group members; (c) identifiable, same—all subjects worked on the same task, but individual scores could be distinguished; (d) identifiable, unique—subjects worked on separate tasks and their individual scores could be distinguished. The television contrast level was set on a position intermediate to the difficult and easy settings.
used in the previous study. The ancillary measures were the same as those used in Experiment 2.

Results

Once again misses and false alarms were combined to form an overall error index. The data were analyzed in 2 × 2 ANOVAs with identifiability and task as factors.

Analysis of the error index yielded main effects for identifiability, \( F(1, 20) = 10.5, p < .01 \), and task, \( F(1, 20) = 7.5, p < .02 \). Subjects whose individual performances were unidentifiable made more errors (\( M = 4.56 \)) than subjects for whom there were individual counters (\( M = 2.53 \)), and same-task subjects made more errors (\( M = 4.41 \)) than did subjects who each had their own quadrant to watch (\( M = 2.69 \)). However, these main effects must be interpreted in terms of the reliable Identifiability × Task interaction, \( F(1, 20) = 4.36, p < .05 \). Subjects who took part in the same task and whose outputs were combined made more errors (\( M = 6.08 \)) than did subjects in any of the other conditions (\( ps < .05 \)), among which there were no reliable differences. As can be seen in Table 1, subjects whose outputs were unidentifiable but had their own unique quadrants to watch performed as well as subjects whose outputs were identifiable, and they performed reliably better than same-task subjects whose outputs were unidentifiable.2

Subjects who were told that their outputs were identifiable reported believing to a greater extent that the researcher could tell exactly how well they individually performed on the task (\( M = 8.8 \)) than did subjects who were told that their outputs were pooled (\( M = 6.42 \)), \( F(1, 20) = 10.24, p < .01 \). Importantly, unique-task subjects felt no more identifiable (\( M = 6.43 \)) than did those who all watched the same quadrant (\( M = 6.41 \)). No other reliable differences were obtained on the ancillary measures.

Discussion

In both of the conditions in which subjects lacked identifiability, good performance led to better scores for the entire group. Yet, unidentifiable subjects working on the same task made more errors than unidentifiable subjects working on unique tasks. Clearly, the subjects’ motivation to perform well on the task was not determined solely on the basis of whether or not their performance could be monitored. Nor was performance determined by the stated instruction to perform one’s best, which was given in all conditions. Consistent with our analysis of the preceding studies, subjects’ motivation to perform in the present study appeared to depend on their perception that they could make a unique contribution. When everyone worked on the same task and loafing could not be detected, subjects loafed. When each subject had his or her own task, loafing did not occur, even though subjects thought it could not be detected. In fact, the unique-task subjects who were unidentifiable performed as well as participants whose outputs were identifiable. To test the generalizability of this finding to a more cognitive task, we

<table>
<thead>
<tr>
<th>Task</th>
<th>Identifiable (4 counters)</th>
<th>Unidentifiable (1 counter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique (4 quadrants)</td>
<td>2.33, ( p &lt; .01 )</td>
<td>3.05, ( p &lt; .01 )</td>
</tr>
<tr>
<td>Same (1 quadrant)</td>
<td>2.73, ( p &lt; .01 )</td>
<td>6.08, ( p &lt; .01 )</td>
</tr>
</tbody>
</table>

Note. Means that do not share a common subscript are reliably different by the Newman-Keuls procedure, \( p < .05 \).

2 Separate analyses of false alarms and misses revealed similar patterns of results. For false alarms, both main effects and the interaction were reliable: identifiability, \( F(1, 20) = 9.35, p < .01 \); task, \( F(1, 20) = 8.25, p < .01 \); Identifiability × Task, \( F(1, 20) = 4.28, p = .05 \). The pattern of means for misses was the same, but the differences did not achieve conventional significance levels.

To assure the replicability of the major finding, the unidentifiable conditions (one counter) of this experiment were replicated at the high-contrast (easy) setting used in Experiment 2. Consistent with the results of Experiment 3, same-task subjects made more total errors (\( M = 4.23 \)) than did different-task subjects (\( M = 2.35 \)), \( t(14) = 3.56, p < .01 \). Separate analyses of misses and false alarms revealed similar effects for each type of error. Single-task subjects missed more signals than did subjects who watched different quadrants (\( M = 1.89 \) vs. \( M = 1.03 \)), \( t(14) = 2.04, p = .06 \), and made more false alarms, \( M = 2.34 \) vs. \( M = 1.32 \), \( t(14) = 2.72, p < .02 \). Also, there was no difference in the extent to which the subjects in the two conditions felt identifiable.
attempted a replication using the brainstorming task with which we began.

Experiment 4

As in Experiment 3, subjects were told either that they alone would be working on the task or that others would also be taking part. In this case, as in Experiment 1, the task involved generating uses for an object. The uses, once generated, went into a common hopper so that they could not be associated with their creators. If brainstorming works like vigilance, even though subjects’ outputs are unidentifiable, those who believe that they have their own object should generate more uses for it than those who believe that they have the same object for which they are to generate uses as everybody else.

Method

Subjects. The subjects were 32 male and female undergraduates who participated in the experiment to earn partial course credit. There were two conditions: Subjects were informed that they all were generating uses for the same object or that they were generating uses for different objects. Groups were composed of three or four members, were randomly assigned to one of the two conditions, and were run by one experimenter.

Procedure. When subjects arrived they were seated at a semicircular table with partitions that prevented them from seeing each other and were given instruction sheets that read as follows:

We are interested in studying the performance of groups and individuals on what is called a brainstorming task. You will be given the name of an object and your task will be to come up with as many uses for this object as you can. Don’t be concerned about the quality of your reactions. The uses can be ordinary or unusual. Simply list as many as you can.

The subjects in the same-object condition then read, “We are interested in the number of uses that can be generated for a single object, so all of you will be generating uses for the same object. Thus, you share the responsibility for generating uses for the object you will be given.” Subjects in the different-object condition read “We are interested in the number of uses that can be generated for a range of objects, so each of you will be generating uses for a different object. Thus, you alone are responsible for generating uses for the object you will be given.” All of the subjects then read “Since we are interested in the number of uses generated by the group, all of the group’s uses will be combined. Remember, we will be measuring the group’s performance, so try to list as many uses as you can.”

Each of the subjects was then asked to take 1 of the 12 envelopes that were in a box on a table behind them and a handful of the strips of paper that were beside the box. If the subjects were in the same-object condition, they were told to take any of the envelopes because the experiment required the subjects to generate uses for the same object, and all of the envelopes were the same. If the subjects were in the different-object condition, they were told to take any of the envelopes because each envelope contained the name of a different object. The subjects then opened the envelopes and took out a strip of paper on which was written, “You are to list as many uses for a ______ as you can. Write each use on one strip of paper and then drop the strip down the tube in front of you. Remember to list as many uses as you can.” For all of the subjects, “knife” was handwritten in the blank. Each subject was then asked to drop the strip on which the object was written down a tube that was in front of each of them. These tubes extended from a box on the floor immediately in front of the subjects to the spaces between the partitions that separated the subjects. The top of the box into which the tubes protruded was then removed, and the subjects saw that the strips had fallen down the tubes into one large box in which there were already apparently a number of slips on which were written uses generated by previous groups. The subjects were told that the number of uses that were generated would be determined at the end of the experiment. The top was replaced and on a signal, the subjects began listing their uses. In short, all subjects were led to believe that the responses they generated would be completely unidentifiable.

As in the previous brainstorming research, the subjects were allowed to continue writing until 1 minute passed during which no one wrote down a use. If at least 45 seconds passed with no uses being written down and then a subject wrote something, an additional 45-second period of nonactivity was allowed to pass, at which point the subjects were stopped and asked to respond to a set of rating scales. After completing these measures, the subjects were debriefed and dismissed.

Results

As in Experiment 3, subjects whose outputs were unidentifiable but who were told that they each had a different object generated more uses for them ($M = 30.67$) than did subjects whose outputs were unidentifiable and were told that they all would be generating uses for the same object ($M = 21.37$). $t(6) = 3.41, p < .02$. Analysis of the ancillary measures revealed no reliable effects. Different-object subjects believed that the experimenter could tell exactly how well they performed to the same extent ($M = 4.73$) as same-object subjects ($M = 5.37, p > .20$), so that differential perceptions of identifiability do not provide a plausible interpretation of the finding.

General Discussion

The experimental designs used in previous research on social loafing have incorporated
several features that could account for the observed reductions in individual effort when groups were assigned responsibility for a task. Williams et al. (1981) have pointed out that one such feature is that in the group conditions of previous studies, participants’ outputs were combined and thus were not individually identifiable. Williams et al. (1981) showed that when subjects’ outputs were made identifiable, even when performing in groups, subjects shouted as loudly in groups as when alone. When their outputs were not identifiable, even when performing alone, they shouted no louder alone than in groups. These data suggest that when the subjects’ performances cannot be evaluated, they loaf.

The potential for evaluation (identifiability) also plays an important role in the explanations offered for other social psychological phenomena associated with the presence of others. For example, it has been suggested (Cottrell, 1972) that social facilitation effects are the result of apprehension arising from the possibility of being evaluated by an audience or being compared to coworkers. Although there may be disagreement about the relative contributions of mere presence (Zajonc, 1965) and evaluation apprehension to social facilitation effects, it seems clear that evaluation apprehension provides at least one source of motivation (cf. Geen & Gange, 1977). One of the antecedents of deindividuation (Zimbardo, 1969) is anonymity. When a person’s behavior cannot be evaluated, as may be the case when he or she is a member of a group, the probability that normally proscribed behavior will be engaged in is enhanced.

Both social facilitation and deindividuation could provide explanations for previous findings termed social loafing. That is, when participants’ outputs can be evaluated (identifiable conditions) they work harder than when their outputs are combined and are unidentifiable. Of course, mere presence (Zajonc, 1965) could not account for the social loafing findings, because with one exception (Kerr & Bruun, 1981) the same number of people have been present for both individual and group trials. All that changes is the way the scores are treated. A deindividuation interpretation might suggest that when participants’ outputs cannot be evaluated they are more willing to disobey the experimenter and loaf. When they are not anonymous, they honor the experimenter’s request that they work as hard as they can.

These interpretations suggest a rather pessimistic view of individual motivation in collective endeavors in their emphasis on the role of external factors in motivating behavior. Without the intervention of ever-watchful observers, it appears that participants put out substantially less than that of which they are capable.

However, in addition to eliminating the potential for individual evaluation, the loafing manipulation in previous studies has also led subjects to believe that they were working with others on the same simple task. Experiments 1 and 2 tested the notion that if subjects were given a more challenging task, they would feel that they could make a unique contribution that was unlikely to be duplicated by other group members. The feeling that one can contribute uniquely on a challenging task, we suggested, stemmed from the typical subject’s belief that he or she was above average on a variety of dimensions. Motivated by this perceived ability to contribute when the task is difficult, we predicted that subjects would not loaf even if their individual efforts were not identifiable. Consistent with this prediction, when subjects were faced with an easy task, whether brainstorming or vigilance, the typical loafing effect was obtained, but when the task was more difficult, no performance differences were found between subjects whose outputs were identifiable and those whose outputs were not. In both the brainstorming (Experiment 1) and vigilance (Experiment 2) research, the subjects performed well enough under the difficult-task conditions to provide ample opportunity for the unidentifiable subjects to perform more poorly than the identifiable ones, rendering implausible both floor- and ceiling-effect interpretations. Also, the group subjects performed as well on the difficult task as on the easy one, suggesting greater motivation in the former case. These findings are consistent with the interpretation that subjects faced with the difficult task feel that their contribution is more worthwhile than do subjects who take part in the simple task, which could be performed by anyone.
Further evidence that social loafing is in part attributable to the feeling that one’s contribution is not needed is provided by the results of Experiments 3 and 4. For both the vigilance and brainstorming tasks, subjects who were given their own task (their own quadrant to watch or their own object for which to generate uses) performed better than subjects working on the same task, even though their outputs were equally unidentifiable (lost in the group total). Thus, giving subjects the opportunity to make a unique contribution is sufficient to motivate them, even when their outputs are unidentifiable and the task is a simple one. In fact, this manipulation is sufficient to yield performance equivalent to that observed when outputs are identifiable, as found in Experiment 3. Neither deindividuation nor social facilitation can provide explanations for these findings, because these differences are found even when the potential for evaluation (i.e., identifiability) is held constant.

Other manipulations that give participants the impression that they can make a needed contribution should yield similar outcomes. For example, enhanced effort could follow from simply giving the subjects the impression that the task is difficult. This could be accomplished by informing the subject that others have found such tasks difficult. In addition, convincing the subject that he or she is particularly skilled at the task may convince him or her that effort would be well-spent, leading to reduced loafing.

Another factor that may influence subjects’ perceptions of their potential contributions might be the way the subjects think their outputs will be combined to make up the group product. For example, if everyone were required to report the flash of the dot for the group to generate a hit, a conjunctive task in Steiner’s (1972) typology, everyone’s contribution would be required and we would expect reduced social loafing. If only the first person’s report of the signal counted, a disjunctive task (Steiner, 1972), the contribution an individual could make would be much smaller because any of the others in the group could generate the group response, and so we would expect loafing to occur. A third possibility is that each group member’s identification of a signal would count and the group score would be the sum of these identifications. This would be an additive task (Steiner, 1972), and it describes the way scores were treated in both the present and previous research on social loafing. However, under these conditions, subjects may not have felt that their responses really added anything important. Vigilance subjects were told that they shared the responsibility for detecting the signal in the same fourth of the television screen and that the investigators were measuring the group’s performance. Thus, subjects may have felt that after one person detected the signal, other responses were superfluous. In the brainstorming research, the subjects were told that their uses would be combined, but they were not told how useful duplicate responses would be. In addition, it is likely that subjects felt that their full efforts were not needed when their group was working on the same task, because real world analogs with which they might be familiar would not suggest that adding responses would be meaningful. For example, brainstorming subjects working on the same simple task as other group members would probably feel that duplicate responses were likely and would add nothing of value. Likewise, subjects working on the same vigilance task as other group members probably felt that it was likely that at least one of the other members would detect the signal (airplane, submarine, etc.) and that the first detection was far more important than duplicate detections. Even on the physically effortful tasks employed in previous research, when the subjects are told that their outputs are to be combined, they may not feel that their best efforts are required because these outputs would only represent duplication of what anyone could do, and thus their responses would not add anything unique. Only when the subjects feel their efforts would add something that is unlikely to be duplicated by another group member would we expect social loafing to be reduced.

The present research provides a necessary corrective to previous research on social loafing that indicated that loafing might be an inevitable outcome of making the individual contributions of group members unidentifiable. This previous research suggested that loafing might only be reduced by providing
recognition and/or blame for individual accomplishments. The present research, however, suggests that identifiability or surveillance is not at all necessary to reduce social loafing. To the extent that subjects feel that they can make a definite contribution to the collective endeavor, subjects loaf less even if their efforts go unrecognized because they are lost in a group production total.

References


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