Relinquishment of Control and the Type A Behavior Pattern: The Role of Performance Evaluation

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We investigated the role of information processing in the control relinquishment decisions of Type As and Bs. Pairs of subjects worked independently on a task and received feedback indicating that their partner had performed at a comparable or superior level. On a second task, subjects combined their efforts and made decisions concerning who would work on different parts of that task. One third of the subjects made this decision before completing an evaluation of the initial performances. Another third completed the evaluation without knowing that they would subsequently make a control decision. The final third of the subjects completed their evaluations knowing that a control decision would follow. Results indicated that when the evaluations were completed last, or when the evaluations were completed first but without knowledge of the impending decision, Type As relinquished less control to a superior partner than did Type Bs. When the evaluations were completed with knowledge of an impending control decision, Type As and Bs did not differ in their decisions. These results suggest that under certain conditions, Type As use an automatic or mindless decision style with potentially maladaptive consequences.

Previous investigations indicate that Type As (characterized by a hard-driving, competitive, time-urgent lifestyle) have a higher need to control their environments, and respond more reactively to control loss, than do Type Bs (characterized by a more relaxed behavioral orientation). For example, Type As have been found to exhibit learned helplessness more readily than Type Bs in response to salient and extensive uncontrollable stimuli (e.g., Brunson & Matthews, 1981; Glass, 1977; Krantz, Glass, & Snyder, 1974; Matthews, 1979), and Type As respond more reactively than Type Bs to a threat to an important freedom (e.g., Carver, 1980; Rhodewalt & Davison, 1985). Extending this research, Strube and Werner (1985) investigated differences between Type As and Bs in their willingness to relinquish task control to another person. Their results indicated that Type As were more reluctant than Type Bs to relinquish control and that this reluctance persisted despite evidence indicating the clear performance superiority of the other person (see also Miller, Lack, & Asroff, 1985). In addition, Type As made attributions about the other person's performance that indicated a lower belief in the likelihood of future replication, making lower relinquishment appear sensible. As Strube and Werner pointed out, these results have important implications for work settings in which low delegation has been found to result in poor productivity and job stress (Beach, 1975; Cooper & Marshall, 1977; Dowling & Sayles, 1978; Pfiffner, 1958). However, the precise manner in which the Type As' high need for control produces their reluctance to relinquish control is unclear. Accordingly, the purpose of this study was to examine the role of information processing in the control relinquishment decisions of Type As and Bs.

The sequence of events in the Strube and Werner (1985) study did not allow identification of the precise role of performance evaluation in the relinquishment of control. In that

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1 The control perspective is one of several that have been used to conceptualize Type A behavior (see Matthews, 1982, for a review).
study, pairs of subjects performed an initial task independently, received feedback about both performances, and then were asked to decide how many trials of a subsequent cooperative task they wished to give to their partners (only one person could work on any one trial of the second task). After making these decisions, subjects evaluated the initial task performance. There are several possible ways that the differential control concerns of Type As and Bs could produce different decisional responses. For example, it is possible that Type As and Bs carefully consider previous performance information, arrive at fundamentally different interpretations of that information, and allocate subsequent task control in a manner that follows logically from those evaluations. In this case, Type As may view the superior performance of another person as being less diagnostic of an underlying superior ability than do Type Bs. As a result, postdecision evaluations accurately reflect predecision differences in the interpretations of performance by Type As and Bs. That Type As and Bs can differ in their perception and evaluation of events has been demonstrated in several studies. Strube and Lott (1985) found that although both Type As and Bs exhibit an illusion of control (Langer, 1975) when viewing their own noncontingent behavior, only Type Bs do so when viewing the noncontingent responses of another person. Other researchers have also found differences in the attribution styles of Type As and Bs (Miller et al., 1985; Strube, 1985), again suggesting that fundamental differences in interpretations of performance by Type As and Bs are possible (see also Smith & Brehm, 1981).

A second explanation is that Type As and Bs evaluate previous performance information similarly, but because of differences in achievement striving and competitiveness, Type As ignore performance information and refuse to relinquish control. In this case, the predecision interpretations of information are the same for Type As and Bs, but the relative influence of those interpretations on relinquishment decisions are different. Note that this explanation for control relinquishment differences between Type As and Bs and the explanation described previously both suggest that information is processed carefully.

A third possibility stands in contrast to the two "thoughtful" explanations just given: Type As may allocate control in a relatively automatic or "mindless" fashion, keeping more control than Type Bs as a function of their greater control needs. When asked to account for their decisions, Type As may justify their actions through post hoc manipulation of performance evaluations. Past research indicates that behavior that is well learned and often repeated can become scriptlike (Abelson, 1981) in nature and, given an appropriate cueing event, can run to completion with little or no conscious thought (e.g., Chanowitz & Langer, 1980; Langer, 1978; Langer, Blank, & Chanowitz, 1978). Perhaps Type As have a "control decision script" that leads to automatic retention of control when such decisions arise. That Type As have the potential for such a script is suggested by research indicating that the Type A pattern is well developed in early childhood (Matthews, 1979; Matthews & Angulo, 1980), providing for substantial experience with control-relevant decisions over a lifetime, and the development of rigid decision rules in which personal control is important. In addition, Type As have an "I can do it better" attitude (Dembroski & MacDougall, 1978), providing the basis for a "keep control" decision style. However, this style is not appropriate in all cases and may lead to inappropriate control relinquishment. Type Bs, on the other hand, are less likely to develop such a decision rule, given their lesser concern for control, and may in fact adhere to a "best person wins" rule.

Our major purpose was to distinguish which of these three processes underlies the relinquishment differences exhibited by Type As and Bs. On an initial problem-solving task, subjects were given performance feedback that indicated that a partner was either similar or superior in task capabilities. Subsequently, subjects were asked to evaluate the performances and to allocate control over a replication of the task on which the participants' efforts would be combined (cf. Strube & Werner, 1985). The timing of the request for performance evaluations and the knowledge of an

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2 An anonymous reviewer suggested this possibility.
impending control decision were varied systematically. Replicating the procedure used by Strube and Werner, we had one third of the subjects make their control decisions first and then provide performance evaluations (evaluation-last condition). Another third of the subjects provided performance evaluations first, knowing that they would have to make a subsequent relinquishment decision (evaluation-first/decision-knowledgeable condition). A final third made their performance evaluations first, but without knowledge of the impending control decision (evaluation-first/decision-ignorant condition).

The decision knowledge manipulation was included to test a subtle aspect of automatic or mindless behavior. Chanowitz and Langer (1981) demonstrated that when information is processed as irrelevant, but that information becomes relevant later, its importance is ignored. It is as if people prematurely commit themselves to an initial evaluation of information and are reluctant to deviate from that commitment later: They behave automatically, on the basis of their initial assessment. If Type As allocate control mindlessly, then their forced attention to performance information without knowledge of its relevance for a control decision should not be sufficient to disrupt the subsequent decision process.

Each of the three explanations for control relinquishment differences between Type As and Bs is predictive of a distinct pattern of results.3 If Type As and Bs differ in their control relinquishment decisions because they arrive at fundamentally different interpretations of previous performance information, then the timing of the request for performance evaluation and the knowledge of an impending control decision should not influence the control relinquishment decisions of Type As and Bs. Only previous performance should influence relinquishment decisions: Type Bs would relinquish more control than would Type As to superior partners (cf. Strube & Werner, 1985). Furthermore, the evaluations of performance should differ: Type As would be less convinced than Type Bs that the superior performance of the partner reflects superior ability. If, on the other hand, Type As and Bs arrive at similar interpretations of previous performance but Type As are less influenced by those interpretations, then the evaluations of the partner’s superior performance will be similar for Type As and Bs. Again, however, Type Bs will relinquish more control than will Type As to a superior partner, and this differential relinquishment will not be influenced by the timing of the request for performance evaluation or knowledge of an impending decision. Finally, if relinquishment differences between Type As and Bs reflect a relatively automatic process, then relinquishment differences should emerge when subjects are simply asked to make a decision (evaluation-last condition) and when subjects are asked to provide performance evaluations without knowledge of an impending control decision (evaluation-first/decision-ignorant condition). No differences should emerge, however, when subjects are asked to provide performance evaluations with knowledge of an impending control decision. This follows from the fact that mindful consideration of relevant information disrupts the automaticity of the script (Langer & Weinman, 1981). Furthermore, Type As and Bs should differ in their evaluations of performance in the evaluation-last condition in a manner that justifies their relinquishment decisions.

This study had several additional minor purposes. Whereas Strube and Werner (1985) confined their investigation to men, we examined relinquishment decisions of men and women. Miller et al. (1985) found that in a physically aversive situation, relinquishment differences between Type As and Bs were more pronounced for men than for women. We sought to replicate this finding in a setting that was not physically aversive and to investigate any information-processing concomitants. We also examined the mediating influence of mood on relinquishment decisions by collecting a mood measure immediately after initial task performance. It may be that Type As and Bs have different affective reactions to performance feedback and these influence subse-

3 Only the “ideal” data patterns are described. Other patterns that would reflect a mixture of processes are possible. Furthermore, this study is designed to determine the information-processing mode that leads Type As to relinquish control inappropriately; we are less concerned with the processing mode of Type Bs. This issue is treated in more detail in the discussion.
quent decisions. Finally, we examined the role of competitiveness in the relinquishment process. Perhaps Type As interpret the cooperative task as being competitive in nature and they fail to relinquish control accordingly. Although past research suggests that Type As are not more likely than Type Bs to misperceive the nature of cooperative settings (Gotay, 1981), the generality of this finding remains to be demonstrated.

**Method**

**Subjects**

One hundred forty-seven undergraduate volunteers (64 male, 83 female) participated in the study in exchange for $4.00. All subjects completed the Jenkins Activity Survey (JAS), Form T (Krantz et al., 1974), a student-adapted measure of the Type A pattern, immediately before taking part in the experiment proper. On the basis of a median split ($Median = 6.73$), subjects were classified as Type As (scores of 7 or greater) or Type Bs (scores of 6 or less). The average age of the subjects was 18.7 years.

**Apparatus and Task Description**

The choice discrimination task used in this study was programmed on a small computer. The task stimuli were the four symbols found on common playing cards (i.e., clubs, diamonds, hearts, and spades). Each of 25 trials began with a computer-generated tone and the identification of one of the symbols as the target for that trial (the target appeared for 3 s in the middle of the screen). The remaining symbols served as distractors. After 3 s, the target disappeared from the screen, and a varying number of the distractors began to appear and move randomly about the screen. Between 3 and 10 s later, a randomly determined number of target stimuli appeared on the screen and remained stationary (the distractors continued to move about the screen). The subject's task was to count the number of targets within 7 s. After 7 s, the screen went blank and then prompted the subject for the number of targets. The subject entered this information into the computer. According to a predetermined schedule, subjects received feedback about their own and their partner's performances. This information was displayed on the screen, and a running total appeared at the end of each trial. All 25 trials followed this format.

The computer program had two additional features designed to enhance the perceived validity of the feedback. First, the computer stored the results of each trial, keeping running totals of actual success and failure and their match to the predetermined feedback. If a subject was performing very poorly and failing on trials in which the feedback indicated correct performance, the computer program self-adjusted and made subsequent "correct" trials easier. This was accomplished by means of presenting fewer distractors and fewer targets. Likewise, if subjects were performing very well and getting "incorrect" trials correct, subsequent "incorrect" trials were made more difficult. In other words, the computer adjusted the problem difficulty in an attempt to match the subject's skill level, the result being a better match of feedback to actual performance. The second program feature was designed to overcome problems of suspicion concerning incorrect feedback. Whenever incorrect feedback was given, the subject was also shown a display on the screen that indicated the location of the targets (without the distractors), so subjects could see why they were incorrect. If the subject was actually incorrect in counting the targets, then the actual number of targets was shown. If, however, the subject had correctly counted the targets, then the "incorrect" display contained from 1 to 3 (randomly determined) additional targets to convince the subject that his or her count was wrong.

**Feedback Manipulation**

The feedback that subjects received after each trial was given according to a predetermined random order and constituted one of the independent variables (level of partner's performance). Subjects were led to believe that they had achieved success on 13 trials, whereas the partner achieved success on 14, 18, or 23 of the 25 trials (cf. Strube & Werner, 1985).

**Dependent Measures**

The major dependent variable was the number of trials on the second task that were relinquished to the partner. Relinquishment was measured via a check list on which subjects indicated the trials they wished to keep, and left blank those on which their partners would perform.

Immediately before the initial task, subjects completed an expectancy measure on which they were to predict the number of trials out of 25 on which they expected to succeed, and rated how important it was for them to do well on the task. Immediately after the initial task, subjects completed the 36-item short form of the Nowlis Mood Adjective Check List (Nowlis, 1965). This scale is scored on 12 subdimensions that reflect a variety of affective states.

Subjects also completed a measure of their attributions for and evaluations of performance on the first task (both their own and their partner's). Subjects rated the quality of performance, were asked to specify the major cause for performance, and then rated that cause along the dimensions of internal-external, stable-unstable, global-specific, and controllable-uncontrollable (cf. Peterson et al., 1982). After making their relinquishment decisions, subjects indicated the proportion of trials they expected themselves and their partners to perform successfully on the second task, and rated the confidence they had in their own and their partner's chances of success. All ratings were made on 7-point bipolar scales.

Additional measures of perceived task similarity, ability similarity (for the two tasks), attractiveness of prizes (see Procedure section), and competitiveness were obtained in order to check on the quality of the manipulations and on the mediation of additional variables. These ratings were obtained at the end of the experimental session.

**Procedure**

Subjects were randomly assigned to one cell of a $3 \times 3$ (Level of Partner's Performance $\times$ Evaluation Order/Decision Knowledge) factorial design. Pairs of same-sex sub-
jects participated in the study and were assigned to the same condition. On arrival, subjects were seated in separate rooms in order to eliminate interaction, and to reduce any potential suspicion about feedback and decision manipulations. The experimenter communicated with subjects from a third room via an intercom system. The purpose of the study was described to the subjects as an examination of the "types of problem-solving strategies using during effective and ineffective information processing." The task was briefly described, after which subjects completed the JAS (ostensibly to provide background information to be used in interpreting their performance). This scale was not scored until the conclusion of the study in order to ensure that the experimenter remained blind to subject status on the Type A/B variable. When the subjects completed the JAS, the experimenter explained the task in detail (as outlined in the Apparatus and Task Description section), allowing subjects to familiarize themselves with the keyboard and to complete one practice trial. Subjects were informed that the task was a sensitive and valid measure of information processing abilities and that in the past, high performance had been related to high intelligence and academic potential. The purpose of these instructions was to maximize task involvement and effort.

In order to avoid arousing suspicion as to the true purpose of the task, and in order to be consistent with the cover story, subjects were asked to verbalize their problem-solving strategies during the 25 trials. Their attention was directed to a tape recorder that was started at the beginning of the 25 trials. The "importance" of the recordings and that they speak loudly enough during the task were emphasized. Subjects then completed the expectancy measure and importance rating, and proceeded through the 25 trials (approximately 13 min), after which they completed the mood measure.

At this point the procedure varied depending on the evaluation-order/decision-knowledge condition to which the subjects had been assigned: In the evaluation-first/decision-ignorant condition, subjects completed their evaluations and attributions for initial task performance before and without knowledge of the relinquishment decision. Subjects in the evaluation-first/decision-knowledgeable condition also completed the evaluation and attribution measures before the relinquishment decision, but after the nature of their future decision was described to them. In the evaluation-last condition, subjects made their relinquishment decisions first; then they completed the initial task evaluation and attribution measures.

In describing the second phase of the study, the experimenter told the subjects that they would team up and combine their efforts on another 25 trials of the choice-discrimination task, in which the object of the second task was for the team to do as well as possible. In this way, team versus individual strategies could be examined. To emphasize the cooperative nature of the second task, the experimenter told subjects that if the team's performance was in the top 10% for the entire study, they would be eligible for one of three prizes: a clock-radio, a digital watch, or a calculator. Subjects were informed that only one person at a time would be allowed to perform on any given trial. This requirement necessitated a decision as to who would work on each of the next 25 trials. The experimenter explained that this decision would be made by one of the subjects. In actuality, each subject was led to believe that he or she was the decision maker. The experimenter stated that before the experiment, one of the rooms had been chosen at random and a star had been placed on the back of the brown envelope on the table in that room (both rooms had a brown envelope on the table). The star signified who would be the decision maker. Each subject was asked to examine the envelope in his or her room and, if it contained a star, to signal the experimenter. In fact, both envelopes had stars so that each subject signaled that he or she was the decision maker. Next, the experimenter communicated instructions that were meant to further convince each subject that he or she alone had been chosen as decision maker. Immediately on receiving the affirmative responses from the subjects, the experimenter addressed the decision maker specifically: "OK, Subject 2, you will be the decision maker for the next task." The words "Subject 2" were prominently displayed on the computer terminals of both subjects. The instructions that followed depended on evaluation-order/decision-knowledge condition. In all cases, the completion of the decision checklist and the attribution/evaluation measures concluded the experimental session. Subjects completed a short postexperimental questionnaire, were debriefed, and excused. Examination of responses on the postexperimental questionnaire indicated that subjects were unaware of the true purpose of the experiment, were unsuspicious of the feedback manipulations, and did not question the integrity of their choice as decision maker.

Results

We conducted 2 x 3 x 3 (Type A/B x Level of Partner's Performance x Evaluation-Order/Decision-Knowledge) analyses of variance (ANOVAS). Preliminary analyses indicated the absence of reliable sex differences (cf. Miller et al., 1985). Because several subjects failed to complete one or more measures, the degrees of freedom vary slightly in the following analyses.

Manipulation Checks

To determine whether Type As and Bs were randomly assigned to conditions, we performed an ANOVA of scores from the JAS. Only the effect of Type A/B was significant, F(1, 129) = 289.70, p < .001, indicating that Type As and Bs were distributed randomly among the experimental conditions. Analyses also indicated a highly significant main effect for level

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4 Although subject pairs were separated throughout the experimental sessions, an initial analysis was conducted to test formally for dependencies in the scores of pair-mates. No dependencies were indicated; thus subjects are treated as independent in the major analyses.
of partner's performance, $F(2, 129) = 131.12$, $p < .001$, on the perceived quality of the partner's performance. Examination of means indicated that partners who achieved success on 14 ($M = 4.63$), 18 ($M = 5.92$), and 23 ($M = 6.78$) of the 25 trials were rated successively higher on quality of performance. Each mean is significantly different from all other means ($p < .05$, Newman–Keuls procedure).

Several additional findings are pertinent to interpretation of results. First, subjects appeared overall to take the task seriously. The modal rating for the importance of doing well on the task was 5 on a 7-point scale ($M = 4.49$; 1 = not at all important, 7 = very important). The prizes available for high team performance were also found to be attractive with a modal rating of 6 ($M = 4.18$; 1 = not at all attractive, 7 = very attractive). The following results are relevant to the presumed applicability of the feedback on the first task to the relinquishment decisions for the second task: Subjects perceived the two tasks to be fairly similar ($M = 3.45$, modal rating = 4.0, reversed scale) and the abilities required for both tasks as quite similar ($M = 2.53$, modal rating = 1.0, reversed scale). Finally, subjects expected to achieve success on an average of 15.01 of the initial trials (modal rating = 14.98). As a result, subjects' own feedback did not provide a serious violation of these expectations.

**Relinquishment of Control**

Analysis of the number of trials relinquished yielded a significant main effect for level of partner's performance, $F(2, 128) = 26.00$, $p < .001$, and a reliable interaction between Type A/B, level of partner's performance, and evaluation-order/decision-knowledge conditions $F(4, 128) = 2.81$, $p < .05$. Table 1 contains the means relevant for interpreting this triple interaction. In order to clarify the nature of this finding, the simple interaction between Type A/B and level of partner's performance was examined within each evaluation-order/decision-knowledge condition (Kirk, 1968).

Within the evaluation-first/decision-ignorant condition, results indicated a significant Type A/B × Level of Partner's Performance interaction, $F(2, 128) = 3.14$, $p < .05$. Further analyses (see Table 1) indicated that the interaction was due primarily to the reliable increase in trials relinquished by Type Bs, but not As, as partner's performance increased. As a result, Type Bs relinquished significantly more trials than did Type As when the partner had performed at a superior level (i.e., 23 correct).

Analyses within the evaluation-first/decision-knowledgeable condition did not yield a significant Type A/B × Level of Partner's Performance interaction, $F(2, 128) = 1.35$. Both Type As and Bs relinquished greater numbers of trials to partners who performed at successively higher levels. In other words, when asked to carefully consider the information from the first task, with knowledge that a control decision was pending, Type As and Bs did not differ in their relinquishment decisions.

The evaluation-last condition, which provides a replication of Strube and Werner's (1985) condition, yielded a Type A/B × Level of Partner's Performance interaction that approached significance, $F(2, 128) = 2.94$, $p = .056$. The shape of this interaction is remarkably similar to that obtained by Strube and

<table>
<thead>
<tr>
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<th>Evaluation first/decision knowledgeable</th>
<th>Evaluation last</th>
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<tr>
<td></td>
<td>Type A</td>
<td>Type B</td>
<td>Type A</td>
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<tr>
<td></td>
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<td>$13.04$</td>
<td>$11.85$</td>
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<td>$1.09$</td>
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</tr>
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<td>$F(1, 128)^a$</td>
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<td>$9.90$*</td>
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*Simple main effects of level of partner's performance.

$^a$Simple main effects of Type A/B.

$^p < .05$. **$p < .01$. 

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Table 1

**Relinquishment of Trials as a Function of Type A/B, Level of Partner's Performance, and Evaluation-Order/Decision-Knowledge Condition**

<table>
<thead>
<tr>
<th>Level of partner's performance</th>
<th>14</th>
<th>18</th>
<th>23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td></td>
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<tr>
<td>Correct</td>
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<tr>
<td>Correct</td>
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<tr>
<td>$F(2, 128)^a$</td>
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</tbody>
</table>
Werner, and is due primarily to the reliable increase in relinquishment across levels of partner's performance for Type Bs, but not Type As. When the partner performed at a superior level, Type As and Bs differed significantly in their allocation of control.

Taken together, these data suggest the following. Under conditions conducive to automatic processing of information (i.e., evaluation-last), in which careful attention to performance information is not required, Type As and Bs differ fundamentally in their control decisions. Type As appear to adhere to a rigid "keep control" strategy, whereas Type Bs seem to use a "best person wins" strategy. (In fact, Type Bs used this strategy regardless of the situation). A different pattern emerges, however, when subjects are asked to consider carefully the previous experiment information before making a decision. When subjects were knowledgeable of their future decision, both Type As and Bs relinquished more trials to better partners. The forced attention to the partner's performance caused Type As to consider the evidence more carefully and thus to make a more rational decision. However, the results for subjects who were not aware of the impending decision indicate that careful attention to performance information alone is insufficient to cause Type As to relinquish control. These results are consistent with the "mindlessness" interpretation of the reluctance to relinquish control by Type As. Information that is initially processed without knowledge of its future relevance, is not used effectively by Type As when the relevance is revealed.5

Performance Evaluations

Perceived quality: The only effect to emerge for self-ratings was a Type A/B × Evaluation-Order/Decision-Knowledge interaction, \( F(2, 129) = 6.27, p < .005 \). The means for this interaction are displayed in Table 2. As one can see, Type As but not Bs varied considerably in the ratings of their own performance as a function of evaluation condition. A finding that was consistent with their reluctance to relinquish control was that Type As saw their own performance as being better when they made their ratings last, or when they made their ratings without knowledge of an impending control decision, than when they rated their performance knowing they would subsequently make a control decision. Another finding, which was consistent with the mindlessness explanation, was that Type As differed reliably from Type Bs in the evaluation-last condition. These findings occurred despite the fact that all subjects received the same performance feedback (i.e., 13 correct).

Type As and Bs did not rate the quality of the partner's performance differently. This

<table>
<thead>
<tr>
<th>Condition</th>
<th>Type A</th>
<th>Type B</th>
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<tbody>
<tr>
<td>Quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation first/decision ignorant</td>
<td>3.50&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.42&lt;sub&gt;b&lt;/sub&gt;</td>
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<tr>
<td>Evaluation first/decision knowledgeable</td>
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<td>3.75&lt;sub&gt;a,b&lt;/sub&gt;</td>
</tr>
<tr>
<td>Evaluation last</td>
<td>3.96&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.27&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
<tr>
<td>Diagnosticity</td>
<td></td>
<td></td>
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<tr>
<td>Evaluation first/decision ignorant</td>
<td>19.33</td>
<td>18.17</td>
</tr>
<tr>
<td>Evaluation first/decision knowledgeable</td>
<td>17.72</td>
<td>18.57</td>
</tr>
<tr>
<td>Evaluation last</td>
<td>20.44</td>
<td>18.08</td>
</tr>
</tbody>
</table>

Note. Means with different subscripts are significantly different (\( p < .05 \)) by the Newman-Keuls procedure.

Because the computer program adjusted feedback to fit ability level, it is possible that relinquishment decisions by Type As and Bs are confounded by differences in the actual difficulty of the task. For example, one could argue that Type As tried harder initially than Type Bs, and as a consequence received more difficult trials. The result would be equal feedback to Type As and Bs but the perception by Type As that they had succeeded at a harder task, implying higher ability. This alternative explanation is ruled out by an examination of the number of instances in which the computer program adjusted the difficulty of the task (recall that the computer stored the actual success and failure of the subjects). A 2 × 3 × 3 (Type A/B × Level of Partner's Performance × Evaluation-Order/Decision-Knowledge Condition) ANOVA of the number of times the computer adjusted the task to make it more difficult revealed no reliable differences (all \( F < 1.23, ps > .27 \)). Likewise, there were no reliable effects from an analysis of actual success (regardless of feedback; all \( F < 1.67, p > .16 \)).
highlights an important characteristic of automatic or mindless processing. Individuals who process information mindlessly do attend to stimuli, but do not process it appropriately. Thus both Type As and Bs recognized the higher quality of the superior partner's performance (see the Manipulation Checks section), but Type As failed to use this information under certain conditions (cf. Strube & Werner, 1985).

**Attribution ratings.** Initial examination of the attribution dimensions indicated a high degree of intercorrelation. As a result, composite indices were created for the subjects' ratings of both their own and their partner's causal structures. The dimensions of internal-external, stable-unstable, global-specific, and controllable-uncontrollable were combined such that high scores reflect a cause rated as being more internal, stable, global, and controllable. In other words, a higher score reflects a belief on the subject's part that a given performance is relatively more diagnostic of future performance.

Analysis of subjects' ratings of their partner's performance indicated a significant main effect for Type A/B, $F(1, 128) = 4.78$, $p < .05$, and a significant main effect for level of partner's performance, $F(2, 128) = 3.61$, $p < .05$. The means indicated that Type As ($M = 20.74$) rated the partner's performance as being more diagnostic than did Type Bs ($M = 19.47$). In addition, as the performance of the partner increased from average ($M = 19.01$) through moderate ($M = 20.17$) to superior ($M = 21.15$), there was a concomitant rise in rated diagnosticity.

Subjects' ratings of their own performance indicated a marginal Type A/B × Evaluation-Order/Decision-Knowledge interaction, $F(2, 128) = 2.61, p = .077$. This result must be interpreted with caution. It is interesting to note, however, that the pattern of means resembles that obtained for perceived quality of performance (see Table 2). The evaluation-order/decision-knowledge manipulation had little influence on the Type Bs. Type As, however, rated their performance as more diagnostic when they made the ratings last, and when they made the ratings first but without knowledge of the future decision, than when they provided the ratings with knowledge of the decision.

**Task Expectancies**

After the relinquishment decision, subjects rated their confidence in future success on the second task, and indicated their expected proportion of successful trials, for both themselves and their partners. Analysis of these measures yielded significant main effects for level of partner's performance for self-confidence, $F(2, 122) = 13.04$, $p < .001$; confidence in the partner, $F(2, 122) = 41.35$, $p < .001$; and expected proportion of successful trials by the partner, $F(2, 122) = 20.64$, $p < .001$. As the partner's performance increased from average through moderate to superior, there were concomitant increases in confidence in the partner ($M = 4.91, 5.59, and 6.52$, respectively) and expected proportion of successful trials by the partner ($M = 0.639, 0.706, and 0.829$, respectively), and decreases in self-confidence ($M = 4.32, 4.16, and 3.11$, respectively).

**Perceived Competitiveness**

Because Type As typically exhibit competitiveness, we included an item tapping this dimension to explore any possible mediating effects. Subjects were asked the extent to which competitiveness influenced their relinquishment decisions. Analyses of these ratings indicated a significant main effect for Type A/B, $F(1, 122) = 5.92$, $p < .025$, which indicated that Type As rated their decisions as being more due to competitiveness ($M = 2.85$) than did Type Bs ($M = 2.22$). This main effect was further qualified by a marginally significant Type A/B × Level of Partner's Performance interaction, $F(1, 122) = 2.64, p = .075$. It is consistent with the competitive nature of Type As that their perceived competitiveness increased as the partner's level of performance increased ($M = 2.18, 3.07, and 3.30$, respectively); Type Bs exhibited no such trend ($M = 2.30, 2.46$, and $1.90$, respectively).

**Mood**

The subscales of the mood checklist were found to be substantially intercorrelated. To avoid redundancy, a mood composite was formed and analyzed via a $2 \times 3$ (Type A/B × Level of Partner's Performance) ANOVA (recall that mood was measured before the evalua-
tion-order/decision-knowledge manipulation). Results indicated a reliable main effect for level of partner's performance, \( F(2, 129) = 9.29, p < .001 \). Rated mood did not differ among subjects whose partners performed at an average \((M = 24.25)\) or moderate level \((M = 24.60)\). Subjects whose partners performed at a superior level, however, rated their mood more negatively \((M = 22.60)\) than either of the other two groups \((p < .05, \text{Newman–Kuels procedure})\). The absence of Type A/B effects indicates that Type As and Bs did not have different affective responses to the feedback and that mood does not appear to mediate their relinquishment decisions.

**Rationality of Relinquishment Decisions**

The failure of Type As to relinquish control to superior partners in the evaluation-last and evaluation-first/decision-ignorant conditions could be interpreted as irrational from a team success standpoint; that is, Type As appear willing to ignore crucial information in order to maintain control, which appears to have the effect of degrading the team's chances of success. However, as Strube and Werner (1985) pointed out, there are two levels at which rationality of control decisions must be examined.

One approach is to assume that the feedback should be used in a strict probabilistic manner. Thus a subject who achieves success on 52% of the trials on the first task (i.e., 13 correct), in the absence of any other information, should expect to succeed on 52% of any trials kept on the second task. A partner who succeeds on 92% of the trials on the first task (i.e., 23 correct) should be expected to succeed on 92% of the trials relinquished to him or her on the second task. If \( S \) = proportion of successful trials by the subject on the first task, \( P \) = proportion of successful trials by the partner on the first task, and \( R \) = number of trials relinquished, then the expected number of successful trials \((ES)\) by the team on the second task can be estimated by

\[
ES = (25 \times S) + [R \times (P - S)]
\]

Obviously, when \( P > S \), the best strategy is to let the partner have all the trials on the second task. This strategy, however, was rarely used (only 7 subjects relinquished all trials). Even the less optimal though adequate strategy of relinquishing a clear majority of trials was rare. Thus one conclusion might be that most subjects do not use sensible relinquishment strategies, and Type As are more prone to such irrationality than are Type Bs.

It is quite possible, however, that relinquishment decisions make more sense or appear more rational when the subjects' actual expectations are considered in calculating expected team success. To address this issue, we calculated expected team success scores by using the formula just given, and by substituting the subject's expected proportion of successful trials on the second task for \( S \), the expected proportion of successful trials for the partner on the second task for \( P \), the number of trials relinquished for \( R \). These expected team success scores were then analyzed via ANOVA. Only one significant effect emerged: Expected team success varied as a function of level of partner's performance, \( F(2, 121) = 17.02, p < .001 \); greater expected team success accompanied better initial performance by the partner. The absence of any other significant effects (all remaining \( F \)'s \(\leq 1.83, p s > .16 \)) indicates that despite their differing relinquishment strategies, Type As and Bs expected comparable levels of team success. Thus, from a subjective standpoint, Type As and Bs used equally rational decision strategies.

**Discussion**

In summary, the results indicate that the relinquishment decisions of Type As, but not of Type Bs, depend on whether decision-relevant information is considered before a decision, and whether the relevance of the information is recognized. When decision-relevant information is not considered carefully before a decision, or when the relevance of the information for a control decision is not known at the time it is considered, Type As, but not Type Bs, refuse to relinquish a majority of trials to superior partners. In contrast, when information is considered before a relinquishment decision, and the relevance of that information is known, Type As and Bs do not differ in their
decisions. This pattern of results is consistent with the use of an automatic or mindless decision style by Type As in the former two conditions, but a thoughtful strategy in the latter. Type Bs were uninfluenced by the evaluation-order/decision-knowledge manipulation and used a "best person wins" strategy in all situations.

Results also indicated that the self-perceptions of performance quality provided by Type As varied as a function of the evaluation-order/decision-knowledge condition, whereas those of Type Bs did not. Despite the fact that the subjects' level of performance was constant in this study, Type As rated that performance as being of higher quality when the rating occurred after the relinquishment decision, or before the decision but without knowledge of its relevance, than when the rating was made with knowledge of the impending decision. These results parallel the relinquishment data and suggest that a distorted self-perception of competence may accompany the automatic relinquishment decisions of Type As. Only careful consideration of information with full knowledge of its relevance could override this bias. It must also be recognized, however, that despite differences in control relinquishment and ratings of competence between Type As and Bs, no differences were obtained on a measure of expected team success. In other words, on a subjective level, Type As and Bs used equally rational decision strategies (cf. Strube & Werner, 1985).

Although our results indicate that the reluctance by Type As to relinquish control arises in situations conducive to mindless processing of information, the mode of information processing engaged in by Type Bs remains elusive. Type Bs appeared to engage in a "best person wins" strategy regardless of experimental conditions. Whether this strategy was carefully considered, or automatic, cannot be determined from the present results. The ambiguity arises from the fact that mindless processing is most easily identified when it produces apparently inappropriate behavior (as with Type A relinquishment decisions). Unfortunately, it is hard to imagine a situation in which the "best person wins" strategy would be considered inappropriate. It appears that future research of a different kind is necessary to elucidate the type of information processing engaged in by Type Bs when they make a relinquishment decision. All that one can conclude from our results is that Type Bs use a consistent relinquishment strategy across situations.

Taken together, the results of this study have several important implications. First, it seems likely that many control decisions are characterized by conditions conducive to mindless decision making. Decisions are often made on the spur of the moment; performances are often evaluated without a clear vision of the future relevance of those evaluations. Under these conditions, Type As can be expected to not give up much control, even when it might be beneficial to do so. This reluctance may contribute to the longer workdays, constant deadline pressures, and heavy workloads that characterize the Type As' work environment (e.g., Burke & Weir, 1980; Friedman & Rosenman, 1974; Howard, Cunningham, & Rechnitzer, 1977). By refusing to use the work efforts of others, Type As may increase their own job demands and workloads needlessly. Furthermore, the careful consideration of information does not alter the Type As' reluctance to relinquish control if the relevance of the information is not recognized. Type As may prematurely commit themselves to a biased interpretation of information (at least their own performance) and mindlessly adhere to this interpretation despite a shift in its relevance (cf. Chanowitz & Langer, 1981). Finally, it is unlikely that Type As can self-diagnose a poor relinquishment strategy, given that they expect their decisions to have favorable consequences. What appears to be necessary is an interruption of the Type As' automatic allocation of control. When information is considered carefully and its relevance is recognized, Type As and Bs do not differ in their relinquishment decisions. In fact, there is a tendency for Type As to give more trials to a superior partner than for Type Bs (see Table 1). An important task for future researchers is to explore possible means of ensuring thoughtful decision making by Type As in control-relevant situations. Such research will not only aid the understanding of Type A behavior but also provide potential interventions for reducing work stress. However, it must be
recognized that strategies that induce more thoughtful processing of information by Type As will not remove their concern for control; inappropriate processing of control-relevant information is a symptom, not a cause, of the Type A's need for control.

More generally, our results have implications for the actual amount of control exhibited by Type As. As Chanowitz and Langer (1980) point out, a person engaged in mindless or automatic processing is less able to adjust to any moment-to-moment fluctuations in the environment: They are less flexible, and exhibit less actual control over the environment, than do individuals engaged in careful processing. A similar point is made by Rothbaum, Weisz, and Snyder (1982), who suggest that a judicious choice of primary (self) control and secondary (environment/other) control is more adaptive than rigid reliance on primary control. Thus although Type As may have a higher need for control, their use of a mindless control allocation strategy may result in less actual control than they might otherwise have. In other words, Type As may place themselves in the paradoxical position of creating less controllable situations as a consequence of their rigid control allocation strategies. This possibility deserves more attention because it suggests that Type As may actually create much of the uncontrollable stress they find so aversive.

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