

Intrinsic motivation and the effects of self-consciousness, self-awareness, and ego-involvement: An investigation of internally controlling styles

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Abstract

This study explored the relationships among dispositional self-consciousness, situationally induced states of self-awareness, ego-involvement, and intrinsic motivation. Cognitive evaluation theory, as applied to both the interpersonal and intrapersonal spheres, was used as the basis for making predictions about the effects of various types of self-focus. Public self-consciousness, social anxiety, video surveillance and mirror manipulations of self-awareness, and induced ego-involvement were predicted and found to have negative effects on intrinsic motivation since all were hypothesized to involve controlling forms of regulation. In contrast, dispositional private self-consciousness and a no-self-focus condition were both found to be unrelated to intrinsic motivation. The relationship among these constructs and manipulations was discussed in the context of both Carver and Scheier's (1981) control theory and Deci and Ryan's (1985) motivation theory.

Recent theory and research on self-awareness, stimulated by the initial findings of Duval and Wicklund (1972), has suggested that qualitatively distinct styles of attention and consciousness can be involved in the ongoing process of self-regulation (Carver & Scheier, 1981). In particular, Fenigstein, Scheier, and Buss (1975) have distinguished between *private* self-consciousness and *public* self-consciousness as two independent, but not necessarily exclusive, types of attentional focus with important behavioral, cognitive, and affective implications for regulatory processes. Private self-consciousness refers to the tendency to be aware of one's thoughts,

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feelings, attitudes, and motives, that is, the internal, private aspects of self. Public self-consciousness is the tendency to be aware of and to focus upon oneself as viewed from the outside by others.

These two forms of self-focus have been related both to relatively stable dispositions and to situational states that can be induced by specific environmental stimuli. The Self-Consciousness Scale (Fenigstein et al., 1975) has been used to measure and investigate stable individual differences on these dimensions; and public and private states of self-awareness have been situationally induced by various experimental manipulations (Carver & Scheier, 1981). There is growing evidence that stimuli that suggest the possibility of surveillance or observation by others, e.g., TV cameras, audiences, or voice recordings, can induce awareness of *public* self-aspects. Another frequently used experimental stimulus, the mirror, particularly when employed in the absence of any potential other-observation, has been shown in some cases to create or facilitate increased attention to *private* aspects of self (Brockner, Hjelle, & Plant, in press; Froming, Walker, & Lopyan, 1982). Carver and Scheier (1981) have suggested a functional equivalence between these two types of situationally induced states and the two dispositions of public and private self-consciousness, respectively. Following Fenigstein et al. (1975), they used the term *self-awareness* to refer to the state concepts and *self-consciousness* to refer to the corresponding dispositional concepts.

Although both public and private forms of self-consciousness play significant roles in self-regulation, both phenomenological and empirical analyses suggest that there are important differences between them. In conditions of high public self-consciousness the person tends to view him or herself as a social object, and the regulation of behavior is thus more likely to be influenced and organized on the basis of perceived or projected external conditions or expectations. On the other hand, in conditions of high private self-consciousness there is evidence that the attentional focus is more on one's own motives and perceptions, thus suggesting that regulation of behavior is more highly influenced by internal values, interests, and feelings.

Accordingly, the relative salience of these two types of self-focus to the organization of behavior may have important motivational consequences. If one is regulating one's behavior on the basis of projected or imagined external expectations or viewpoints, this is likely to facilitate, in the terminology of de Charms (1968) and Deci (1975), an external perceived locus of causality, since the projected "external" factors are perceived as mediating one's actions. Alternatively, behavior guided by one's own attitudes, feelings, and values

is less likely to be experienced as having an external perceived locus of causality and may even be experienced as having an internal perceived locus of causality. According to cognitive evaluation theory (Deci & Ryan, 1980, 1985) factors that facilitate an external perceived locus of causality tend to diminish intrinsic motivation for an activity, while those that promote an internal perceived locus of causality tend to maintain or enhance intrinsic motivation.

In cognitive evaluation theory, events that promote an external perceived locus of causality are referred to as *controlling* and are defined in terms of pressures to behave, think, or feel in particular ways. By contrast, events that promote an internal perceived locus of causality are referred to as *informational* and are defined in terms of providing effectance-relevant information in the context of experienced choice.

Recent work by Ryan and his colleagues has confirmed that the concepts of controlling and informational are not synonymous with whether the event occurs outside the person or inside the person, even though they tend to promote an "external" vs. "internal" perceived locus of causality, respectively. For example, Ryan, Mims, and Koestner (1983) demonstrated that initiating events outside the person such as the offer of a performance-contingent reward could be made either controlling (and thus promote an external perceived locus of causality) or informational (and thus promote an internal perceived locus of causality). Similarly, Ryan (1982) has shown that initiating events inside the person (i.e., intrapersonal events) can be either controlling (and thus promote an external perceived locus of causality) or informational (and thus promote an internal perceived locus of causality). Ryan referred to these latter two classes of events as internally controlling and internally informational to emphasize that they occur inside the person but have different functional significance.

An internally controlling event is a thought or feeling that pressures one to behave in a specified way. For example, thoughts such as "I *have to* do that in order to feel like a good person or to avoid guilt" would be internally controlling; they pressure people to behave, and they tend to usurp the possibility for, or experience of, choice. Internally informational events are less pressured and involve a kind of interested self-monitoring. They are inputs to the choice process rather than pressures to perform.

In the Ryan (1982) study, these styles of self-initiation were induced through "ego-involvement" vs. "task involvement." By making people's self-esteem contingent upon good performance, ego-involvement represented an internally controlling event that fos-

tered an external perceived locus of causality and decreased intrinsic motivation relative to task involvement.

Returning to the issue of attentional focus, public self-consciousness would seem to be related to internally controlling regulation. By focusing on oneself "as if" through the eyes of an evaluator, one is likely to pressure oneself to perform as that "projected" evaluator would want. In other words, the highly publicly self-conscious person is hypothesized to be concerned with how he or she "should" perform and thus to control him- or herself to perform that way. Like external surveillance, this self-surveillance is predicted to promote an external perceived locus of causality and thus to decrease intrinsic motivation.

There is some existing evidence in support of the point that public self-awareness, as experimentally manipulated by surveillance and external evaluations, will decrease intrinsic motivation, although this was not previously interpreted within the context of the self-awareness literature. Lepper and Greene (1975) reported that children who worked on an interesting puzzle under conditions of adult surveillance via a television camera displayed less intrinsic motivation for the puzzle activity in a follow-up session than did nonsurveilled children. Pittman, Davey, Alafat, Wetherill, and Kramer (1980) also examined the impact of surveillance on intrinsic motivation. They found a linear decrease in interest in the task as surveillance increased from low to medium to high. Clearly, "public" surveillance can have a negative effect upon intrinsic motivation.

As yet, the impact on intrinsic motivation of the mirror as a self-focusing stimulus has not been studied. The mirror, however, is more complicated in this regard than is surveillance. In Duval and Wicklund's (1972) early work, the mirror was used to instantiate objective self-awareness—that is, the awareness of oneself as an object. This concept bears some qualitative similarity to the concepts of public self-consciousness (being aware of oneself as one is seen from the outside) and of internally controlling regulation (regulating oneself by events not unlike those used by outside agents). However, as we noted earlier, Carver and Scheier likened the effects of the mirror manipulation to private self-consciousness (which is less likely to promote internally controlling regulation), and work by Froming, Walker, and Lopyan (1982) indicated that the mirror, in the absence of observation by others, did yield results closer to those of private self-consciousness than public self-consciousness. Inducing a state of private self-awareness and thus lessening the amount of internally controlling regulation requires that the situation be free of evaluative or controlling elements, which may be difficult to achieve in an

experimental laboratory. Further, since the laboratory use of the mirror has, in some contexts, been shown to induce a state of self-awareness that approximates the state induced by an audience (Carver & Scheier, 1978), we hypothesize that the perceived locus of causality associated with the mirror may be more external than that associated with no self-focus but less external than that associated with surveillance. This leads to the prediction that the presence of a mirror would yield a subsequent level of intrinsic motivation that is less than a no-self-focus control group, but greater than an external surveillance group. The present study included those three levels of experimentally induced attentional focus.

Let us now turn to the issue of dispositional aspects of self-consciousness, which has not in any previous studies been related to intrinsic motivation. The preceding analysis suggests that public self-awareness, stimulated by external surveillance, will have a strongly negative effect on intrinsic motivation because it implies external control. But with high *dispositional* public self-consciousness the actual presence of other-surveillance is not necessary. Instead one tends to focus attention on oneself "as if" from the perspective of another, a condition of "self-surveillance." Since this self-surveillance depends upon projections of others' perspectives rather than upon a more direct awareness of one's internal perspective, it is hypothesized to facilitate internally controlling regulation and the experience of an external locus of causality. This, however, would be more chronic than public self-awareness and relatively independent of external stimuli. Since this mediation of one's behavior by what one thinks others expect is an excellent example of being in a state of internally controlling regulation, we predict that persons with dispositionally high public self-consciousness would be less intrinsically motivated than will those lower in public self-consciousness.

The case of dispositional private self-consciousness, like the case of the mirror, is a more complicated one. Private self-consciousness refers to a dimension of awareness of one's internal condition, but does not specify what the nature of that internal condition would be. Thus one could be more or less privately self-conscious in a variety of motivational states (Deci & Ryan, 1985). It is probable that a high level of private self-consciousness would lead people to be aware of any internal state, whether that state is conducive or antithetical to intrinsic motivation. Thus, we predicted no relationship between intrinsic motivation and private self-consciousness. Since Fenigstein et al. report that private and public self-consciousness dimensions are relatively independent, these hypothesized relationships do not contradict their distinction.

As previously stated, public self-consciousness is conceptualized as being closely related to internally controlling regulation. And as we mentioned, Ryan (1982) studied another form of internally controlling regulation, namely *ego-involvement*. As suggested by de Charms' (1968) analysis, ego-involvement was defined as a state in which there is a threat to self-esteem, and behavior is motivated by a desire to protect or enhance self-esteem. Ego-involvement was contrasted with task involvement, in which the motivation to perform an activity is derived from its intrinsic properties rather than an investment of self-esteem in the outcome of one's performance at the activity. Results indicated that ego-involvement (as well as both self-administered and other-administered *controlling* feedback) decreased intrinsic motivation relative to task involvement (as well as both self-administered and other-administered *informational* feedback). Consequently, since ego-involvement vs. task involvement have been shown to represent internally controlling vs. internally informational regulation, and since attentional foci are being interpreted in terms of their relationship to these self-regulatory processes, the present study once again contrasted ego-involvement with task involvement.

The present study included a measure of dispositional public self-consciousness and experimentally induced conditions of video-surveillance and ego-involvement. It was hypothesized that all three, being akin to controlling regulation, would be negatively related to intrinsic motivation. The mirror manipulation, being somewhat less associated with controlling regulation, was predicted to have a moderately negative effect. Private self-consciousness was predicted to be unrelated to intrinsic motivation, and the task involvement and non-self-focused conditions were expected to maintain high levels of intrinsic motivation for the interesting puzzle activity.

Finally, the Self-Consciousness Scale measures a third dispositional factor, social anxiety. By definition, dispositional social anxiety involves both public self-consciousness (i.e., the concern with and focus upon how one is viewed by others) and the preoccupation or apprehension that others will, indeed, view one negatively (Fenigstein et al., 1975). Socially anxious individuals thus both focus on themselves "as if" from the outside and expect to be negatively evaluated. Accordingly, they exhibit low self-evaluations of social competence and self-worth (Ryan, Plant, & Connell, 1984). The combination of this low sense of competence and internally controlling style of self-focus should be particularly undermining to intrinsic motivation. Thus it was predicted that there would be a strong

negative relationship between dispositional social anxiety and intrinsic motivation.

In the present study a 3×2 factorial design based on three conditions of situationally induced self-awareness (a no-self-focus control, mirror, and video camera) and two levels of involvement (task vs. ego) was employed to assess the effects of these factors on intrinsic motivation. All subjects completed the Self-Consciousness Scale so the effects of public self-consciousness, social anxiety, and private self-consciousness could also be determined.

Method

Overview

First, subjects completed the Self-Consciousness Scale in order to assess the level of dispositional self-consciousness. Then they received either an ego-involving or task-involving induction. Following this, all subjects worked on a series of three interesting, hidden-figure puzzles. During the puzzle-solving period one-third of the subjects worked in the presence of a mirror, one-third in the presence of a video camera, and one-third received no manipulation of situational self-awareness. Immediately after the puzzle-solving period subjects were moved to an adjacent cubicle containing a desk, chair, additional hidden-figure puzzles, and some current magazines. Subjects were left alone in this cubicle for a period of six minutes during which the amount of time spent working on the puzzles was surreptitiously observed. Finally subjects were asked to fill out a questionnaire to assess their interest in and attitudes toward the target task, and then debriefed.

Subjects

Subjects were 96 introductory psychology students from the University of Rochester participating in partial fulfillment of course requirements. Equal numbers of each sex were randomly assigned to each experimental condition.

Procedure

Upon reporting to the experiment, subjects were seated at a desk and requested to fill out the Self-Consciousness Scale (Fenigstein et al., 1975). Subjects were led to believe that the scale was not part of the experiment but part of another project being completed by the experimenter and another graduate student. The experimenter remained blind to the subjects' self-consciousness scores. The scale consists of 23 items worded in self-referent form (e.g., I'm often the subject of my own fantasies) that are rated on 7-point scales. Factor analysis of the scale (Fenigstein et al., 1975) revealed three factors: *private self-consciousness* (10 items), *public self-consciousness* (7 items), and *social anxiety* (6 items). Factor scores were obtained by averaging the items on each factor. After completing the scale

subjects worked on two sample puzzles: an object-assembly puzzle and a hidden-figure puzzle. Subjects were given two minutes to work on each puzzle and then asked to rate their familiarity with the puzzle types and their interest in and enjoyment of each. The purpose of this was to obtain a measure of the initial interest in the hidden-figure task.

The hidden-figure puzzles are cartoon-like drawings by Al Hirschfeld in which the name NINA is embedded several times. Previous studies have used these puzzles and found them to have a high level of intrinsic interest (Harackiewicz, 1979; Ryan et al., 1983). All subjects worked on three puzzles and circled the NINAs they found in each. Puzzle-solving performance was determined by the sum of correctly identified hidden figures.

After the subjects completed their ratings of the two sample puzzles they were asked to move to a second desk, "where the tape recorder is located." This move was necessary to achieve the self-awareness manipulation. At this point subjects were told that they would be working on a series of three hidden-figure puzzles like the one they had just completed. Subjects were instructed to circle with a red pen, as many NINAs as they could find in the two minutes allotted for each puzzle. They were also told that a tape had been prepared which "will allow you to time yourself on this task." Subjects were then instructed on how to use the tape-recorded instructions which regulated the amount of time spent on each puzzle.

Involvement Induction

Just prior to beginning work on the hidden-figure puzzles each subject received a description of the target activity. The descriptions were altered so that half of the subjects received an ego-involving induction and half received a task-involving induction. The ego-involving induction described the activity as a test of creative intelligence, often used as a component of IQ tests, which requires the capacity to break down and reorganize a perceptual field. Task involvement was created simply by drawing attention to the activity without mentioning its relationship to creative intelligence. Each of the descriptions was of the same length but focused on different aspects of the activity. This induction is described in more detail by Ryan (1982).

Self-Awareness Induction

Self-awareness was situationally manipulated during the puzzle-solving phase of the experiment. Three levels of self-awareness were operationalized: a no-self-focus control, a mirror condition, and video camera condition. In the control condition subjects worked on the puzzles in the absence of any self-focusing stimuli. In the mirror condition a 60-cm square, plate-glass mirror was leaning against the wall on top of the desk immediately in front of the subject, reflecting an image of his or her head and shoulders in accord with the suggestions of Buss (1980). In the camera condition the experimenter told the subject that his/her puzzle-solving behavior was being recorded for subsequent analysis. Prior to leaving the room the experimenter turned

on a large video camera, removed the lens cap, and "focused" the camera on the subject.

Free Choice Period

Following the puzzle-solving phase of the experiment each subject was moved to an adjacent room for the purpose of insuring that all subjects participated in the free-choice period under the same conditions. The second room was arranged to give the impression that it was being used as a storage room. Among the items being "stored" were some additional hidden-figure puzzles and several current magazines. These items were placed on top of the desk at which subjects were seated. Subjects were told that the experiment was over but that they should wait five minutes so that the experimenter could "check the responses, select some questionnaires, and prepare the room for the next subject." Each subject was explicitly told that while they waited they were free to do whatever they wanted, including additional hidden-figure puzzles. They were then left alone for a period of six minutes. During this free-choice period the amount of time the subject spent working on the target activity was surreptitiously recorded by a second experimenter who remained blind to the subject's experimental condition. This behavioral measure served as the primary dependent variable.

After the free-choice period subjects completed a questionnaire designed to assess the level of intrinsic interest in and enjoyment of the target task, the amount of pressure or tension experienced during the experiment, and the level of effort expended. This 17-item scale has been used in previous studies (Ryan, 1982; Ryan et al., 1983) and was subjected to a principle-components factor analysis with varimax rotation. Using a factor loading cut-off of .50, three factors were extracted: Interest-enjoyment (11 items, e.g., I would describe these puzzles as very interesting), pressure-tension (3 items, e.g., I felt very tense while doing these), and effort-importance (2 items, e.g., It was important for me to do well on these). One item was eliminated from the analyses due to a failure to load on any of the three factors. All items were rated on 7-point scales. Following completion of the questionnaire the subject was debriefed.

Results

Preliminary Analyses

Using subjects' preinterest scores, a 2×3 (Involvement \times Awareness) analysis of variance was performed to check for group differences in initial interest for the NINA task. As expected no significant group differences were found.

An initial $2 \times 3 \times 2$ (Treatments \times Sex) analysis of variance was performed to check for possible Treatment \times Sex interactions. As expected there were no significant sex effects or Treatment \times Sex interactions. Data were collapsed across sex for subsequent analyses.

A plot of the free-choice data revealed a nonnormal distribution. Therefore, a square root transformation was performed, resulting in a more normalized distribution of free-choice scores. These transformed free-choice scores were used for the remainder of the analyses.

Effects of Dispositional Self-Consciousness on Intrinsic Motivation

Analysis of covariance was used to assess the independent contributions of the dispositional and situational variables to the free-choice measure. First, the free-choice variable was residualized by regressing it on the three continuous dispositional variables using multiple regressions; next, a 2×3 ANOVA was performed on the residual scores after correction for degrees of freedom. In this way dispositional variance was removed before the analysis of situational effects.¹

The three covariates in the 2×3 (Involvement \times Awareness) analysis of covariance consisted of the public self-consciousness, social anxiety, and private self-consciousness subscale scores. It was hypothesized that there would be a negative relationship between intrinsic motivation and the personality variables of public self-consciousness and social anxiety. No effect was predicted for private self-consciousness. As predicted, the level of public self-consciousness had a significant effect on intrinsic motivation, $F(1,92) = 5.54$, $p < .03$. The higher the level of public self-consciousness, the less intrinsic motivation displayed during the free-choice period. A similar effect was found for social anxiety, indicating a significant negative effect on intrinsic motivation, $F(1,92) = 7.46$, $p < .01$. The higher the level of social anxiety, the less intrinsic motivation displayed during the free-choice period. Also as predicted there was no significant effect for private self-consciousness $F(1,92) = 2.04$, *ns*, although the trend was in the direction of greater intrinsic motivation for higher levels of private self-consciousness.

1. Before performing those final analyses, the assumption of homogeneity of slopes underlying the ANCOVA procedure was tested using a hierarchical regression procedure. Three hierarchical regressions were performed; in each analysis, the main effects of the situational variables were entered as contrast codes (Cohen & Cohen, 1983), followed by the covariate, followed by the interaction of the covariate and the situational variables (entered as the cross-products of the covariate and the contrast codes). The unique contribution of this set of interaction contrasts to the prediction of the dependent measure was tested for significance using the procedure recommended by Cohen & Cohen (p. 320). In all those analyses the contribution was nonsignificant, indicating that the assumption of homogeneity of slopes had been met.

Effects of Ego-Involvement and Situational Self-Awareness on Intrinsic Motivation

It was hypothesized that ego-involvement and heightened public self-awareness would have strongly negative effects upon intrinsic motivation relative to task involvement and conditions in which there was either a mirror or no manipulation of self-awareness. The mirror was predicted to fall midway between the control group and the video-surveillance group. As can be seen from Table 1 the arrangement of marginals is as predicted. The 2×3 (Involvement \times Awareness) analysis of covariance revealed a significant effect for level of involvement, $F(1,87) = 4.45$, $p < .04$, thus replicating results reported by Ryan (1982). Ego-involved subjects spent less time on the target activity during free-choice than did task-involved subjects. A marginal effect emerged for the situational self-awareness variable (control vs. mirror vs. video), $F(2,87) = 2.89$, $p < .06$. A Duncan's Multiple Range Test indicated that both the mirror and camera conditions differed from the control condition ($p < .05$) but not from each other. This suggests that both forms of self-focus had deleterious effects on intrinsic motivation, though in terms of the size of effects, the video condition seems to have produced the larger effect.

The interaction between level of involvement and situational self-awareness was found to be nonsignificant, $F(2,87) = .43$, *ns*. However, inspection of the cell means for the free-choice measure of intrinsic motivation suggested the possibility that an undermining of intrinsic motivation may have occurred only when subjects were ego-involved and self-focused. A post hoc Duncan's Multiple Range

Table 1. Cell means, marginals, and standard deviations for the free-choice measure of intrinsic motivation ($\sqrt{\text{seconds}}$) for the six experimental conditions.

Involvement	Control	Mirror	Camera	Rows
Task				
M	12.48	11.13	11.50	11.71
SD	4.47	6.60	4.78	5.28
Ego				
M	11.57	8.82	7.06	9.15
SD	7.10	6.50	6.11	6.71
Columns				
M	12.03	9.98	9.28	
SD	5.85	6.55	5.85	

Test revealed, in fact, that there was no statistically significant difference between the task and ego-involved subjects within the no-self-focus (control) condition. To further address this issue we collapsed across the mirror and camera conditions to create a self-focus group in order to assess the possibility of an interaction between self vs. non-self-focus and ego- vs. task involvement. This interaction was, however, nonsignificant, $F(1,87) = .63, ns$.

Performance. In order to rule out the possibility that puzzle-solving performance mediated between treatments and measures of intrinsic motivation, an analysis of variance was performed on performance scores. No significant group differences were found.

Supplemental Analyses

Postexperimental questionnaire data were also subjected to a 2×3 analysis of covariance (Involvement \times Awareness) with public self-consciousness, social anxiety, and private self-consciousness serving as the covariates. Results revealed a significant main effect for level of involvement (ego vs. task) on subjective ratings of tension and pressure, $F(1,87) = 4.62, p < .04$. Ego-involved subjects rated themselves as more tense and pressured than did task-involved subjects. A main effect also emerged for level of involvement on subjective ratings of interest in and enjoyment of the target task. Ego-involved subjects reported less interest and enjoyment than did task-involved subjects $F(1,87) = 4.30, p < .04$.

The personality variable of public self-consciousness had a significant effect on subjects' ratings of how much effort they put into the task and how important it was for them to do well. Subjects high in public self-consciousness reported more effort and importance than did subjects lower on this trait $F(1,92) = 12.32, p < .001$. A similar but marginal effect was found for private self-consciousness $F(1,92) = 3.26, p < .08$.

Discussion

The present study explored the relationship between attentional focus and intrinsic motivation. It was hypothesized that situations that promote public self-awareness, in this case video-surveillance, should undermine intrinsic motivation. More importantly, dispositional public self-consciousness was expected to represent an internally controlling style, and thus parallel ego-involvement in having a detrimental effect on intrinsic motivation. In contrast, private self-consciousness, which simply involves a dimension of more or less

awareness of internal states, was not expected to decrease intrinsic motivation.

In general the results supported these hypotheses. In particular, dispositional public self-consciousness was negatively related to intrinsic motivation, supporting the analysis of this style as being of an internally controlling nature. We speculate that the situational or dispositional focus on "what others think" creates a certain kind of self-regulatory orientation which is antithetical to self-determination or autonomy, and therefore to intrinsic motivation. However, the generality of this phenomenon is in need of further exploration. Dispositional social anxiety was also negatively related to intrinsic motivation, as predicted. Fenigstein et al. (1975) argued that their social anxiety dimension does not assess a unique style of self-focus, but rather represents a measure of a public self-conscious style combined with apprehension over the outcome of external evaluation. In cognitive evaluation theory terms, such an attentional focus would maximize the perceived external locus of causality along with one's expectations of negative effectance feedback, thus resulting in a strong negative impact upon intrinsic motivation.

The effects of situationally induced self-awareness also generally supported our hypotheses. As in previous research on surveillance, there was a negative effect of other-surveillance over nonsurveillance on intrinsic motivation. The more surprising result was that the standard mirror manipulation also resulted in a negative impact on intrinsic motivation relative to the no-self-focus condition. Given the heretofore mixed results obtained with the mirror in terms of its relationship with a public self-focus, it is difficult to determine the stability of this effect. However, the present results suggest that at least in this experimental context, the mirror had parallel effects to a video camera in the style of self-focus it promoted, namely one that was related to reduced intrinsic motivation.

In the current investigation there was no evidence that dispositional variables interacted with situational variables in their impact upon intrinsic motivation. Rather the dispositional variables of public self-consciousness and social anxiety appeared to undermine intrinsic motivation across all conditions. Nonetheless, the correlation of the dispositional variables and intrinsic motivation within the various experimental conditions may be an area that deserves further attention in future studies since one might expect individuals with extreme scores on public self-consciousness to react differently under various sets and surveillance conditions.

The specific psychological processes by which public self-consciousness or public self-awareness undermine intrinsic motivation

are not directly addressed by this study. From a theoretical viewpoint there are at least two possibilities. In the introduction, we suggested that a public self-focus makes salient or even generates pressures that otherwise would have little motivational impact. Thus one's concern with what others think might result in internal states such as "shoulds" and "musts" concerning performance which are self-controlling in character, and like external controls, have a negative impact on intrinsic motivation (Ryan et al., 1983). A related possibility is that a public self-focus creates evaluation apprehension, again a state which has previously been shown to be detrimental to intrinsic motivation insofar as it heightens the salience of the external controls. Indeed these two possibilities are not mutually exclusive, and more likely are both operative for those who experience a heightened public self-focus. In other words, we suggest that evaluation apprehension can be one aspect of controlling regulation.

Finally, the finding of decreased intrinsic motivation under ego-involvement replicates Ryan's (1982) previous findings, as does the self-report of increased pressure and tension in this condition. However, it appeared that ego-involvement most effectively undermined intrinsic motivation only under self-focus conditions. These results support de Charms' (1968) analysis of ego-involvement. It should be noted that de Charms' use of the term ego-involvement was more restricted than a more recent description by Greenwald (1982) that included other types of ego-involvement in addition to that induced by self-esteem involving sets.

In general then, support was provided for both the control theory analyses of attentional focus and the cognitive evaluation theory interpretation of the interface of these styles with intrinsic motivation. The results also underscore the importance of the dispositional measures of self-consciousness represented in the Self-Consciousness Scale. These personality variables had a significant relationship to a specific behavioral outcome, namely free-choice activity. It suggests that the relatively unexplored relationship between styles of self-consciousness and motivation is a significant area for further study.

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