

## Self-awareness and emotional intensity\*

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### **Abstract:**

Does self-awareness amplify or dampen the intensity of emotional experience? Early research argued that self-awareness makes emotional states salient, resulting in greater emotional intensity. But these studies induced a standard for emotional intensity, confounding the salience of the emotional state with the self-regulation effects of self-awareness. Three experiments suggest high self-awareness can dampen the intensity of emotional experience in the absence of this confound. In Study 1, participants were led to feel sad in the presence or absence of a mirror; a standard for emotionality was or was not induced. High self-awareness amplified sadness when there was a standard for emotionality; it dampened sadness when there was no standard. Additional experiments using a self-novelty writing task (Study 2) and a mirror (Study 3) showed that self-awareness can also dampen positive affect. A fourth study found that trait private self-consciousness did not affect emotional intensity after controlling for the effects of neuroticism. The intersections of self-focused attention and emotional experience are discussed.

### **Article:**

Other animals have, at best, rudimentary self-awareness (Hyatt & Hopkins, 1994; Marten & Psarakos, 1994), but humans can direct their attention toward the self and thus be aware of their existence. The human capacity for self-awareness creates fundamental personal, social, and cultural consequences (May, 1967; Shibutani, 1961). Emotions have always played a prominent role in psychological models of self-awareness. The original theory of objective self-awareness (Duval & Wicklund, 1972), for instance, assumed close ties between self-awareness and emotional experience. It argued that discrepancies between actions and “standards of correctness” led to negative emotions. Because the person cares more about discrepancies when self-focused, the emotional consequences of discrepancies are more intense.

Recent statements (Duval & Silvia, 2001) take a more differentiated position, distinguishing between emotions arising from self-discrepancies and emotions arising from other reasons. Clearly, not all affect results from meeting or failing to meet an internalised standard of correctness. This distinction is useful because self-awareness seems to have different effects depending on the origins of the emotional state. As suggested by the original self-awareness theory (Duval & Wicklund, 1972; Wicklund, 1975), research consistently finds that emotions resulting from self-discrepancies are amplified by high self-awareness. Positive affect resulting from consistent behaviour, and negative affect resulting from inconsistent behaviour, are both more intense when self-awareness increases (Ickes, Wicklund, & Ferris, 1973; for a review see Duval & Silvia, 2001). This basic process can become the starting point for certain emotional disorders (Pyszczynski, Hamilton, Greenberg, & Becker, 1991; Wells & Matthews, 1994).<sup>1</sup>

Yet it is not entirely clear how self-awareness influences discrepancy-irrelevant emotions. Several theoretical approaches assume that increased self-awareness will attenuate emotional intensity. Rollo May (1967), for

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<sup>1</sup> In this paper, *self-awareness* refers to momentary levels of attention directed toward the self. *Self-focused attention* is a general term encompassing both situational self-awareness and dispositional *self-consciousness*.

example, argued that our capacity for self-awareness creates a “human dilemma”, a tension between the mundane and existential features of self-awareness. Viewing ourselves as objects is necessary for regulating our actions and achieving complex goals. But objective self-awareness also enables self-evaluation and existential concerns. Focusing on the self as an object, according to May, creates a detached, unemotional experience of self:

If I set out to deal with myself as “pure object”, fully determined and manipulatable, I become driven, dried up, affectless, and unrelated to my experiences (May, 1967, p. 9).

Experiencing self as subject, in contrast, creates rich affective feelings and an experience of self-determination. Successful living, in May’s view, requires negotiating the dialectic of self-awareness.

The psychology of “flow” (Csikszentmihalyi, 1990) takes a similar view of self-awareness and affective experience. Flow experiences are characterised in part by reduced self-awareness—attention is wholly devoted to ongoing activity. Flow states usually involve feelings of competence, unawareness of time, blurring of boundaries between self and environment, and pleasant affective states. Yet, when self re-enters the picture, the flow state is disrupted and positive affect diminishes (Csikszentmihalyi, 1990; Csikszentmihalyi & Figurski, 1982).

Although these theories assume self-awareness dampens emotional experience, experimental research is considerably more ambiguous. Scheier and Carver (1977), in an important extension of early self-awareness research, suggested that self-awareness clarifies internal states such as attitudes, sensations, and emotions. As a result, emotions should be more salient, and subjectively experienced more intensely, when attention is focused on the self. Two experiments supported the “salience hypothesis”. In one study (Scheier & Carver, 1977, study 1), male participants rated the attractiveness of slides of nude women—high self-awareness amplified ratings of slide attractiveness. In a second study (Scheier & Carver, 1977, study 3), participants read positive or negative mood-induction statements. Self-awareness amplified negative affect, but not positive affect.<sup>2</sup>

But other experiments support the “dampening hypothesis” suggested by Rollo May (1967). Kleck et al. (1976) subjected participants to electric shocks and measured pain intensity. Self-awareness was (inadvertently) manipulated by observing participants from behind a one-way mirror (Carver & Scheier, 1978). Observation led to significantly less pain, as measured by facial expressions, self-reports, and physiological measures. Later research deliberately manipulated self-awareness (Lanzetta, Biernat, & Kleck, 1982). Although many comparisons were not significant, participants exposed to their mirror images generally showed less intense facial expressions and self-reported emotions. Another experiment found that self-aware persons exposed to pornography reported significantly less bodily arousal (Gibbons, 1978).

One reason why self-awareness might attenuate emotional intensity is because attentional resources are allocated to the self at the expense of other activities. Instead of being immersed in ongoing activity and experience, the person begins thinking about other concerns, particularly how the self relates to internalised standards (Scheier & Carver, 1983a). Self-evaluative processes can be incongruent with and distract one from thinking about a discrepancy-irrelevant affective state (Erber, 1996). Evidence for this comes from studies on how high self-awareness acts as a “cognitive load” (e.g., Panayiotou & Vrana, 1998). Vallacher (1978), for example, found that highly self-aware people formed less differentiated impressions of another, a common effect of attentional load (Macrae, Bodenhausen, & Milne, 1998). This mechanism thus has strong indirect

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<sup>2</sup> Given the distinction between emotions arising from self-discrepancies and emotions arising from other processes, I will not review the studies that induced emotions by creating a discrepancy. These studies only tentatively support the salience hypotheses because we cannot tell if amplified emotion resulted from greater salience or from the self-discrepancy. One experiment induced anger by ridiculing the person’s poor task performance (Scheier, 1976); others measured affect after the person had failed to meet a performance standard for snake handling (Carver, Blaney, & Scheier, 1979; Scheier, Carver, & Gibbons, 1981, study 1). Two additional experiments by Berkowitz (1987) didn’t find effects of self-awareness on emotion. All of these experiments are discussed in detail elsewhere (Duval & Silvia, 2001, ch. 9).

support—the distracting properties of self-awareness (Panayiotou & Vrana, 1998; Vallacher, 1978) and the affect-dampening properties of distraction (Erber, 1996; Erber & Tesser, 1992; Silvia & Brehm, 2001) have both been well-supported.

### *Testing the salience and dampening hypotheses*

The literature shows two sets of findings—some studies support the salience view, and other studies support the dampening view. How might these conflicting experiments be reconciled? One difference between them is the presence of demand characteristics. Experimental demand is never welcome, but it is disastrous in self-awareness research. Self-awareness's "bread-and-butter" effect is enhanced conformity with standards and norms (Duval & Lalwani, 1999; Silvia & Duval, 2001a). If an experimenter inadvertently creates a situational standard for what the participant ought to do, high and low self-awareness groups will always diverge.

Evidence for the salience hypothesis apparently contains such demand properties. In the first study (Scheier & Carver, 1977, study 1), participants were told the experimenter was interested in emotional responses to provocative slides, and that they should attend to their bodily reactions to the slides. In the second study (Scheier & Carver, 1977, study 3), the experimenter directly stated that he was interested in how well people can self-induce emotions, later reminded the participants to continue generating the mood, and finally administered a questionnaire containing only mood items. This surely communicated a desired response to the participant.

Brockner, Hjelte, and Plant (1985) were the first to suggest the demand explanation for Scheier and Carver's (1977) experiments. To test the explanation, they varied the intensity of the mood by using a strong and a weak negative affect induction. But their experiment inexplicably preserved Scheier and Carver's demand characteristics by using the same instructions and cover story, the Velten (1968) induction procedure, and a questionnaire containing only mood items. The findings were also inconclusive. Self-awareness did not influence negative affect in the strong induction condition; it led to a marginally significant decrease in the weak induction condition. When participants were divided according to high, medium, or low levels of trait self-esteem, self-awareness had no effects on persons with high and medium levels of self-esteem. But in the low trait self-esteem group, self-awareness amplified negative affect in the strong induction condition and attenuated negative affect in the weak induction condition. In short, this study's demand characteristics and inconsistent findings prevent it from supporting either the salience or dampening hypothesis.

The present studies attempted to explore the plausibility of this explanation in an attempt to reconcile the conflicting findings. If support for the salience hypothesis results from demand, then the literature becomes much more harmonious. Study 1 tested the hypothesis that demand characteristics interact with self-awareness to amplify and dampen emotional intensity. Studies 2 and 3 extended this experiment using different self-awareness manipulations, procedures, measures, and emotions. Study 4 explored the relation between private self-consciousness (Priv SC), an individual-differences approach to self-awareness, and emotional intensity. State self-awareness and trait Priv SC are often used jointly to provide converging evidence for self-focus processes (Scheier & Carver, 1983b). Priv SC apparently amplifies emotional intensity (Scheier et al., 1981, study 2), yet the dampening hypothesis suggests that state self-awareness can attenuate emotional intensity. Because self-awareness and Priv SC often show equivalent effects, it is important to consider why they might diverge.

### STUDY 1

Study 1 tested the possibility that self-awareness can interact with demand characteristics to amplify and dampen emotional intensity. Participants were led to experience sadness in the presence or absence of a mirror. To examine the alternative explanation, "standard" and "no standard" conditions were added. The standard conditions paralleled Scheier and Carver's (1977) procedure—participants were instructed to try to self-induce an emotional state. Emotions were not mentioned in the no standard conditions. When a standard for emotionality is given, high self-awareness should amplify emotional intensity. When no standard is given, however, high self-awareness should dampen emotional intensity given past theory (Csikszentmihalyi, 1990; May, 1967) and findings (Gibbons, 1978; Kleck et al., 1976; Lanzetta et al., 1982).

## *Method*

### **Participants and design**

A total of 48 female undergraduates from an Introductory Psychology class at the University of Kansas participated as part of a research participation option. They were assigned to condition in a 2 (mirror/no mirror) x 2 (standard/no standard) factorial design, using randomised blocks of eight. Two male experimenters were involved in the data collection, one of whom was blind to the experiment's theory and hypotheses.

### **Procedure**

The participant was led to a private room and seated at a table containing a large mirror, a file folder, a manila envelope labelled "Questionnaire", and a white letter-size envelope. In the mirror conditions, the mirror's reflective side faced the participant so that she could not avoid seeing her image. In the no mirror conditions, participants faced the mirror's nonreflective side. To minimise suspicion about the mirror, the experimenter casually apologised for the state of the room, stating that he was borrowing it from someone else and was asked not to move anything.

After obtaining informed consent, the experimenter said that earlier in the year the researchers had asked several people to write an account of an important event that had recently happened to them, and that the researchers were presently interested in getting other peoples' reactions to these personal accounts. The participant expected to read several of these accounts, and to give her reactions by completing a brief questionnaire after each one. Participants in fact read only one account.

*Standard/No standard manipulation.* In the standard conditions, the experimenter further explained that the researchers were particularly interested in emotional responses to the accounts, and that the participant should "try to induce the emotion suggested by the account" (see Scheier & Carver, 1977, p. 631). No additional information or instructions were given in the no standard conditions.

All participants were then instructed to read the account contained in the file folder, complete the questionnaire in the manila envelope, and seal the questionnaire in the white envelope to ensure their responses would be anonymous. The "first account" was presumably written by a female first-year undergraduate; it described her recent experience of being dumped by her boyfriend of six years. Past research (Brehm, Brummett, & Harvey, 1999; Silvia & Brehm, 2001) found that this account reliably induces sadness in female undergraduates. The experimenter was not in the room while the participant read the account and completed the questionnaire.

*Dependent measures.* The intensity of sadness was measured by the item "How sad did the account make you feel?". Related emotion questions "How depressing was this account?", and "How sympathetic are you toward the author of the account?" were also included. These three items were embedded among several filler items, such as "How typical is the account author's experience?" and "How cynical is the account author?". The five filler items disguised the study's purpose and allowed a test of the possibility that self-awareness simply polarises responses to all questions. Responses to all items were given on a 1–9 scale.

To check the self-awareness manipulation, participants completed the private self-consciousness (Priv SC) scale (Fenigstein, Scheier, & Buss, 1975) using a 1–7 response format. Although the Priv SC scale was designed to measure chronic "trait self-awareness", it is reasonably sensitive to situational changes in state self-awareness. Earlier research (Wood, Saltzberg, & Goldsamt, 1990, study 2) found that the Priv SC scale replicated two other measures of state self-awareness—thought-listings coded for self-references and a pronoun-selection task (Wegner & Giuliano, 1980, 1983)—although it was less sensitive. Increasing self-awareness by completing personality questionnaires (Osberg, 1985), or by describing unique self-aspects (Study 2) also significantly increases scores on the Priv SC scale.

Instructions at the end of questionnaire asked the participant to contact the experimenter; the participant was then probed for suspicion, debriefed, and thanked.

## Results

No effects for the experimenter variable were found on any measure.

### Manipulation checks

An analysis of variance (ANOVA) performed on the sum of the ten Priv SC items revealed a sole main effect for self-awareness,  $F(1, 44) = 22.6, p < .001$ . People in the mirror conditions experienced significantly higher levels of self-awareness than people in the no mirror conditions, indicating the manipulation was successful.

A manipulation check for the standard variable was included toward the end of data collection; only the final four persons in each condition completed the measure. Responses to the question “To what extent did you try to experience the emotion suggested by the account?” yielded a sole main effect for standard condition,  $F(1, 12) = 6.84, p < .023$ . As expected, people in the standard conditions endorsed this item more than people in the no standard conditions. Given the small sample of four per cell, this should be interpreted cautiously.

### Emotional intensity

An ANOVA performed on the question “How sad did the account make you feel?” revealed a significant main effect for the standard variable,  $F(1, 44) = 26.7, p < .001$ , qualified by a significant interaction,  $F(1, 44) = 14.82, p < .001$ . The sadness data are displayed in Table 1. The depression item yielded a similar

TABLE 1  
Effects of self-awareness and emotionality standards on sadness: Study 1

	Level of self-awareness	
	Low	High
Standard	5.92 (1.68)	7.50 (1.00)
No standard	5.42 (1.31)	4.08 (1.16)

Note: Scale values range from 0 to 9; higher numbers indicate more intense sadness; standard deviations are in parentheses;  $n = 12$  per cell.

standard main effect,  $F(1, 44) = 5.48, p < .024$ , and interaction,  $F(1, 44) = 12.76, p < .001$ . No effects were found for sympathy or any of the five filler items. Planned  $t$ -tests were conducted to examine the interaction's form.

*Standard conditions.* As predicted, Scheier and Carver's (1977) findings were replicated when a standard for emotionality was induced. Persons in the mirror condition reported experiencing significantly more sadness,  $t(22) = 2.81, p < .01$ , and perceiving the account as more depressing,  $t(22) = 3.67, p < .001$ , relative to the no mirror condition.

*No standard conditions.* When no standard was induced, the mirror condition reported feeling significantly less sad than the no mirror condition,  $t(22) = 2.63, p < .015$ . The depression item was nonsignificant,  $t = 1.5$ .

*No mirror conditions.* There were no differences between the standard and no standard groups in the no mirror conditions for the sadness and depression items ( $ts < 1$ ). Although one might intuitively expect the standard condition to be higher, self-awareness research repeatedly finds that pre-existing (Carver, 1975; Gibbons, 1978) and experimentally induced (Dana, Lalwani, & Duval, 1997; Duval & Lalwani, 1999) standards have little or no effect when self-awareness is low.

## Discussion

Study 1 supports the argument that experimental demand is responsible for conflicting findings. Self-awareness amplified sadness when the experimenter told participants that they ought to try to self-induce an emotion. This is congruent with self-awareness's tendency to promote consistency between self and standards (Silvia & Gendolla, 2001). When participants did not have such a standard, however, self-awareness dampened the intensity of sadness. This suggests, along with past studies (Kleck et al., 1976; Lanzetta et al., 1982), that the dampening hypothesis may be most accurate.

Some caveats must be raised, however, due to the nature of the sadness induction. Participants were asked to consider another person's misfortune in order to avoid emotions arising from self-discrepancies. Studies 2 and 3 address this by using emotion inductions that involve the self but are still discrepancy-irrelevant. And although the demand explanation seems plausible, it is nonetheless possible that simply mentioning emotions to the standard groups made emotions salient—this salience may have amplified emotion apart from demand characteristics. Yet this seems unlikely, given that making an emotion salient need not make it more intense (Silvia & Gendolla, 2001); this is considered in greater detail in the General Discussion. It seems more likely, given the large literature on self-awareness and self-regulation with standards (Carver & Scheier, 1998; Duval & Silvia, 2001), that it created a standard for people to meet.

Another unresolved issue concerns the effects of self-awareness on different emotional states. Research has found effects of self-awareness on pain (Kleck et al., 1976), negative affect (Lanzetta et al., 1982), and sadness (Study 1), but not on positive affect. Studies inducing positive affect (Lanzetta et al., 1982; Scheier & Carver, 1977, Study 3) have failed to find a significant link. Several recent reviews have remarked on this asymmetry (Gibbons, 1990; Pyszczynski et al., 1991). This is unusual because some perspectives (e.g., Csikszentmihalyi, 1990) assume that self-awareness has particularly potent effects of positive emotions. Study 2 thus attempted to extend Study 1 using happiness.

## STUDY 2

Study 2 manipulated self-awareness by making participants feel psychologically novel and distinct. Perceiving oneself as novel induces self-focused attention because attention gravitates toward distinctive stimuli (Duval & Duval, 1983). Although self-novelty manipulations are less common than mirrors, they have been well-validated (Duval, 1976; Mayer, Duval, Holtz, & Bowman, 1985; Mullen, 1983). Mayer et al. (1985), for example, manipulated self-awareness by calculating the distribution of planets on the participant's birthday and then describing the planetary alignment as shared by either 1% or 50% of the general population. A Stroop measure of self-awareness indicated the 1% group was significantly more self-focused than the 50% group. Perceived self-distinctiveness, even on a dimension as trivial as an astrological diagram, can induce self-awareness.

Apart from providing convergent validity, this manipulation also induces self-awareness without confronting people with their physical image. It seems likely that at least some self-awareness effects are exacerbated when people see their corporeal presence (Silvia, 2001). This might be particularly true for emotions, which involve the face like few other phenomena (Izard, 1971). Because facial expressions both reflect and influence emotional intensity, it is worth using a manipulation that does not make the face salient.

## Method

### Validating the self-novelty manipulation

The self-awareness manipulation directs attention to self by asking questions that make novel self-aspects salient. In the *high self-awareness* condition, participants write their first name on the page and then respond to the following questions:

What is it about you that makes you different from your friends and relatives?

What are some ways in which you differ from most other KU students? Please list 7 traits that you would use to describe yourself.

The first two questions draw attention to novel self-aspects; the third further increases self-reflectiveness (cf. Berkowitz's, 1987, self-awareness writing task). In the low self-awareness condition, participants write responses to:

Please tell us a few things about your psychology class and one of your other classes.  
Please describe the last time you went out to eat.

These questions should not appreciably increase self-reflectiveness or perceived self-novelty.

A total of 23 undergraduates completed either the high or low self-awareness form, followed by the Priv SC scale (Fenigstein et al., 1975). A one-way ANOVA revealed that people in the high self-awareness condition had higher scores on the Priv SC scale than people in the low self-awareness condition,  $F(1, 22) = 5.38, p < .03$ . A second sample of fifty undergraduates completed either the high or low self-awareness form, followed by Wegner and Giuliano's (1983) "Linguistic Implications Form". This quasi-projective measure of self-focus consists of twenty sentences such as "Someone stopped (*them, me, us*) to get directions to the stadium". Participants are asked to select the pronoun that best fits the sentence, although each pronoun is correct. People high in self-awareness choose a greater proportion of first-person singular (I, me, my) pronouns compared to people low in self-awareness. A one-way ANOVA on the percentage of self-focused responses revealed a significant difference,  $F(1, 48) = 6.43, p < .015$ . As expected, people in the high self-awareness condition chose a higher proportion of self-focused responses ( $M = 0.53, SD = 0.18$ ) compared to the low self-awareness condition ( $M = 0.42, SD = 0.11$ ). These two studies suggest that the writing task adequately manipulates self-awareness. Additional validity comes from a three-condition experiment (Silvia, 2001), which found that a mirror condition and a self-novelty condition showed similar effects on terror management processes compared to a control condition.

### **Participants and design**

A total of 36 undergraduate students enrolled in Introductory Psychology at the University of Kansas participated as part of a research participation option. Three people were excluded—two were non-native English speakers, and another did not understand the procedure—leaving a final sample of 10 men and 23 women. Participants were assigned to either a high or low self-awareness condition in randomised blocks of six. The experimenter was blind to condition.

### **Procedure**

All persons participated individually. The participant was greeted by the experimenter and led to a private cubicle. The experimenter explained that the study concerned how people describe personal and social events, specifically how oral and written descriptions differ. Because the study on oral descriptions had recently been completed, the participant's study involved written descriptions. The experimenter gave the participant a brief questionnaire and explained its contents. The first page assessed "descriptions of hypothetical imaginary events"; the second page asked for "descriptions of actual experiences and events". The remainder of the questionnaire was described as "standard scales included in all of our studies".

*Happiness induction.* The first page of the primary questionnaire contained a mental imagery task designed to induce happiness. Participants were asked to spend several minutes imagining a hypothetical situation that would make them very happy, and then describe the situation in writing. The induction was "unstructured"; no constraints were placed on the content of the hypothetical situations. Past research has used this induction procedure successfully (D'Anello, 1997). Unlike Study 1's induction, this involved a self-referent experience. A hypothetical experience was used to avoid creating an actual self-discrepancy.

*Self-awareness manipulation.* The second page contained the self-awareness writing task described above. No participant expressed suspicion regarding the happiness induction or self-awareness manipulation.

*Dependent measures.* After the self-awareness manipulation, participants noted the extent to which eight emotion adjectives described their current mood, using a 1–5 response scale. The items “happy”, “cheerful”, and “good mood” were selected before data collection as the measures of positive affect. The mood measure was flanked by filler items concerning verbal and written fluency to disguise the study’s purpose. Participants were probed for suspicion, debriefed, and thanked upon completion of the questionnaire.

### **Results and discussion**

The three positive affect items (happy, cheerful, good mood) were combined to form a composite measure of positive affect ( $\alpha = .90$ ). A one-way ANOVA revealed a significant difference between the high and low self-awareness conditions,  $F(1, 31) = 5.06, p < .032$ . As predicted by the dampening hypothesis, people high in self-awareness reported experiencing less intense positive affect ( $M = 2.71, SD = 0.96$ ) compared to people low in self-awareness ( $M = 3.41, SD = 0.84$ ).

Study 2 thus extends the first experiment using a different procedure, emotional state, and a manipulation that does not make the face salient. It is worth replicating this study, however, because of the unconventional self-awareness manipulation. The validation studies suggest that the self-novelty task effectively induces self-awareness, but the task probably manipulates additional variables as well. Writing about self–other differences may itself influence mood, or serve as an opportunity for self-affirmation. Describing oneself in trait terms may also promote “static” as opposed to “dynamic” thinking (Wicklund, 1986). Although it is unclear if these variables predict a dampening effect, a replication would increase our confidence in the self-novelty manipulation and provide converging support for the first two experiments. Study 3 thus used a more conventional manipulation—a mirror—as well as a different cover story, procedure, and set of affect measures.

## **STUDY 3**

### **Method**

#### **Participants**

A total of 18 undergraduate women enrolled in Introductory Psychology at the University of Kansas participated as part of a research participation option. Participants were assigned to either a high or low self-awareness condition in randomised blocks of six.

#### **Procedure**

Participants were seated at a table containing a large mirror covered with a thick cloth. The experimenter explained that the study was about how different types of creative abilities were correlated. The participant would complete several different creativity tasks, and the researchers would then see if creativity was general across many activities, or limited to specific domains. The experimenter explained that the first creativity task tested “linguistic and expressive creativity”—participants would be asked to imagine a hypothetical event and describe it in writing. The second task would ask participants to draw a self-portrait using a mirror. The experimenter briefly lifted a corner of the cloth to show participants the mirror, and restated that it would be used for the second task. (Participants in fact only completed the first task.)

*Happiness induction.* The “first creativity task” was the happiness induction used in Study 2. Participants were asked to imagine a happy event and describe it in writing, which would ostensibly be coded for “linguistic and expressive creativity”. The experimenter left the room during the induction.

*Self-awareness manipulation.* When the participant had completed the happiness induction, the experimenter said that it was time for the second creativity task. After rummaging through his files, he remarked that he needed to get additional copies of the test and that he would return shortly. In the high self-awareness condition, the experimenter removed the cloth covering the mirror before leaving the room. The mirror’s reflective side faced the participant so that she could not avoid seeing her face and upper body. In the low self-awareness condition, the experimenter left the mirror covered. The experimenter had been blind to condition up to this point.



*Dependent measures.* The experimenter returned after two minutes and handed the participant a “mid-study questionnaire”. Participants ranked their current mood on a 21-point scale ranging from –10 to 0 to +10 in increments of one. The endpoints were labelled “very negative” and “very positive”; the midpoint of zero was labelled “neutral”. This item was embedded among filler items concerning creativity. The final measure was the 20-item PANAS (Watson, Clark, & Tellegen, 1988). The PANAS was justified by mentioning that peoples’ mood sometimes affected creative performance, and that the researchers wanted to see if that was affecting their study. Participants were probed for suspicion, debriefed, and thanked upon completion of the questionnaire.

### Results and discussion

One-way ANOVAs were conducted to see if self-awareness affected the intensity of happiness. Means are displayed in Table 2. A significant difference was found on the bipolar mood scale,  $F(1, 16) = 5.58, p < .031$ . As in Study 2, the high self-awareness condition reported experiencing less positive affect than the low self-awareness condition. A similar effect was found on the PANAS positive affect subscale. High self-awareness dampened positive affect relative to low self-awareness,  $F(1, 16) = 4.52, p < .05$ . The two groups did not differ on

TABLE 2  
Effects of self-awareness on positive affect: Study 3

	Level of self-awareness	
	Low	High
PANAS-PA	3.39 (0.66)	2.68 (0.76)
PANAS-NA	1.43 (0.41)	1.61 (0.65)
Bipolar scale (-10 to +10)	6.56 (2.13)	4.11 (2.26)

Note: PANAS scale values range from 1 (low) to 5 (high); PA = positive affect subscale; NA = negative affect subscale; standard deviations are in parentheses;  $n = 9$  per cell.

the negative affect subscale,  $F < 1$ . This study thus replicates Study 2 using a different manipulation, procedure, and standard measures of affect.

### STUDY 4

The first three experiments strongly suggest that self-awareness can dampen emotional intensity. Now, it is worth considering private self-consciousness’s (Priv SC) effects on emotional intensity. Priv SC is “the tendency to be aware of covert and hidden aspects of the self. People who are high on this dimension are presumed to be particularly attentive to their thoughts, feelings, attitudes, and other private self-aspects” (Scheier & Carver, 1983b, p. 193). The self-consciousness perspective thus predicts that Priv SC leads to a greater awareness of emotions, which in turn leads to greater subjective intensity. As Buss (1980) argues, “[Priv SC] polarizes the affective component of any private event— positive events become more positive and negative events become more negative” (p. 14).

Support for this prediction comes from a study in which persons were asked to volunteer for a study on electric shock (Scheier et al., 1981, study 2). To induce fear, the researcher told some participants that the shocks were painful; others were told the shocks were mild. The decision to participate in the study was the primary measure. The fear manipulation did not affect participation rates among persons low in Priv SC. Among those high in Priv SC, however, the fear manipulation significantly reduced participation rates. Scheier et al. interpreted this as support for the salience hypothesis: “it was in fact the heightened fearfulness of high private self-consciousness subjects which made them more likely to withdraw from the study when threatened with strong shock” (p. 12).

Ingram (1989), however, questions whether Priv SC uniquely affects emotional intensity. Using a procedure based on an earlier study by Scheier and Carver (1977, study 2), Ingram found that Priv SC amplified positive and negative affect. Participants were then selected based on their joint scores on the Priv SC scale and the Beck

depression inventory (Beck, 1967), creating a 2 × 2 factorial design. When Priv SC and depression were thus separated, Priv SC was unrelated to emotional intensity—depression was driving the amplification effect.

Confounding variables might thus explain the disjunction between self-awareness and self-consciousness. To explore the generality and extent of confounding, Study 4 examined neuroticism as a potential confound. High correlations between neuroticism and Priv SC scales have been found (Trapnell & Campbell, 1999), and neuroticism's many links to emotional phenomena are well-known (e.g., Eysenck & Eysenck, 1985). Neuroticism thus seems to be a likely candidate. Study 4 induced happiness in all participants and measured the intensity of emotional responses; the relative contributions of Priv SC and neuroticism were then assessed.

## Method

### Participants

A total of 26 undergraduate women enrolled in Introductory Psychology at the University of Kansas participated as part of a research participation option.

### Procedure

Participants were led to a private room and told that the study concerned personality and mental visualisation. They expected to fill out some personality measures, visualise and describe a hypothetical event, and complete additional questionnaires. Participants first completed the Priv SC scale (Fenigstein et al., 1975) and a neuroticism scale (Eysenck & Eysenck, 1964), which were flanked by filler scales as a precaution. They then completed the positive affect induction used in Studies 2 and 3.

After the positive affect induction, participants completed a questionnaire containing an affect measure. As in Study 3, participants ranked their current mood on a 21-point scale ranging from -10 (very negative) to 0 (neutral) to +10 (very positive). This item was embedded among filler items concerning personality, dreams, and daydreams. Participants were debriefed and thanked upon completion of the questionnaire.

## Results

Scores on the Priv SC scale were significantly correlated with positive affect,  $r = .47, p < .022$ , which replicates past research. Neuroticism scores were also significantly correlated with positive affect,  $r = .51, p < .007$ . The correlation between Priv SC and neuroticism was quite high,  $r = .67, p < .001$ . To assess Priv SC's unique effect on happiness, a partial correlation was conducted to remove neuroticism's variance. The partial correlation was nonsignificant,  $pr(23) = .16, p < .44$ , indicating that Priv SC had no unique impact on emotional intensity.

## Discussion

Private self-consciousness (Priv SC) typically replicates the effects of situational self-awareness. This has historically provided convergent validity and assuaged the occasionally disgruntled alliance between social and personality psychology. Study 4, however, found that Priv SC was unrelated to emotional intensity—the scale's correlation with neuroticism was driving the effect. This replicates and extends past research that found a similar problem with depression (Ingram, 1989). The possible psychometric and conceptual implications of these findings will be presented in the General Discussion.

## GENERAL DISCUSSION

What is the relationship between self-awareness and the intensity of emotional experience? Some studies have supported the “salience hypothesis”, which argues that self-awareness makes emotions more salient and thus more intense (Scheier & Carver, 1977). Other studies have supported the “dampening hypothesis”, which argues that self-awareness diminishes emotional experience (Kleck et al., 1976; Lanzetta et al., 1982). The present studies cast doubt on the salience hypothesis. Self-awareness only increased emotional intensity when there was a clear standard for feeling sad (Study 1). This suggests that evidence for the salience hypothesis was due to experimental demand. All three experiments—using different manipulations, emotions, and measures—found that high self-awareness led to a decrease in emotional intensity, thus lending further support to the dampening hypothesis.

The salience hypothesis's empirical problems seem less surprising when its unusual conceptual underpinnings are considered. The original salience view explicitly argued that self-awareness does not actually influence an emotion's intensity—it only influences the emotion's salience, or "subjective intensity" (Scheier & Carver, 1977). In short, self-focused persons are more likely to notice their affective experiences, *not* to experience emotions more strongly. It is uncommon to find such sharp distinctions between intensity and salience. Indeed, some emotion models assume that the "subjective" intensity is "actual" intensity. Brehm (1999) argues, for example, that subjective intensity determines the corresponding intensity of action: "emotions function as emotions (urge adaptive responses) only to the extent that they are felt consciously" (p. 20). Tomkins (1991) also assumes that the intensity of affect in consciousness reflects the amplification of physiological signals in the "central assembly". And these dimensions simply are not independent. If intensity is zero then salience must also be zero; whether the converse is true depends on one's view of unconscious affect. So although emotion salience and intensity might not be as redundant as these theories suggest, they probably are not as divorced as the salience hypothesis assumes.

The second and more serious issue is the relation between salience and the direction of intensity, subjective or otherwise. Why should a heightened awareness of one's emotion always lead to greater intensity? If self-awareness is indeed clarifying an internal experience, it should promote veridical assessments of emotion regardless of the direction of intensity. Self-focused people might realise, for example, that their bad mood was not as bad as they thought—self-focus would thus lead to less intense self-reported affect. Assuming that the direction of intensity is confounded with salience seems unnecessary (Silvia & Gendolla, 2001).

### *Other intersections*

The present experiments sought to clarify conflicting studies and demonstrate that self-awareness can sometimes dampen emotional intensity. It is not fruitful, however, to assume that self-awareness will *always* have this effect. Indeed, positing an invariant main effect of self-awareness was one of the salience hypothesis's liabilities. With a basic relationship established, future research should seek additional variables that moderate and circumscribe the relation between emotion and self-awareness.

Self-awareness might, for instance, influence emotions on the input end of initial appraisals. High self-awareness typically leads to more internal attributions for both positive and negative events (Duval & Wicklund, 1973; Silvia & Duval, 2001b). Some evidence also suggests that dispositional self-focus leads people to overestimate the extent to which random events are deliberately directed at the self (Fenigstein, 1984). Seeing oneself as causally responsible for events, and perceiving events as being directed at oneself, are important components of emotional appraisals (Lazarus, 1991). Similarly, taking the perspective of another person typically leads to empathic emotion and altruistic motivation (Batson, Early, & Salvarani, 1997). Because self-awareness reduces egocentrism and enhances perspective taking (Hass, 1984; Stephenson & Wicklund, 1983), it might amplify the intensity of empathy through this indirect effect. In both of these instances, self-awareness increases an emotion's intensity or likelihood of occurrence by influencing appraisal and moderator variables.

There may also be individual differences and social norms that interact with self-awareness to influence emotional experience. People differ in their attitudes about the appropriateness of emotional expressions (Tomkins, 1963, 1965). Because self-awareness increases consistency between attitudes and actions (Gibbons, 1978), it can probably exaggerate the effect of pre-existing standards related to emotion regulation or suppression (Silvia, *in press*). Likewise, social norms for emotional experience—like being happy on encountering a friend, being sad when delivering bad news, or being neutral when interacting with a stranger (Erber, 1996)—probably affect emotion regulation more strongly when self-awareness is high. This is one way in which self-awareness might *increase* emotional intensity. And perhaps emotional dispositions, such as affect intensity (Larsen & Diener, 1987), will also have stronger effects when self-awareness is high. Self-awareness might thus influence emotion by making emotion-relevant attitudes and habits more closely aligned with behaviour. These possibilities are speculative, of course, and invite future research.

A recent meta-analysis (Fejfar & Hoyle, 2000) highlights the importance of circumscribing the relationship between self-awareness and emotion. This metaanalysis's conclusions contradict the current studies—it argues that self-awareness increases negative affect. Yet “negative affect” in this analysis includes transient negative moods and emotions, emotions resulting from discrepancies, trait self-esteem, and emotional disorders such as panic disorder, phobias, various forms of depression, test anxiety, and generalised anxiety disorder. By ignoring moderators and conceptual distinctions—such as between discrepancy-relevant and -irrelevant affect, and between normal and disordered processes—very little information is gained. An incisive understanding will require looking at the boundaries of self-awareness's effects.

### *Self-awareness and self-consciousness*

State self-awareness and trait self-consciousness usually replicate each other. Study 4, however, found that private self-consciousness failed to relate uniquely to emotional intensity. The meaning of this finding is complex. The traditional view of trait self-consciousness distinguishes between a focus on “private” versus “public” aspects of the self (Buss, 1980; Fenigstein et al., 1975; Scheier & Carver, 1983b). The public self-consciousness scale has been long abandoned because research consistently cast doubt on its validity (Carver & Scheier, 1978; Gibbons, 1990; Wicklund & Gollwitzer, 1987). The private self-consciousness (Priv SC) scale has recently encountered intense psychometric scrutiny (e.g., Anderson, Bohon, & Berrigan, 1996; Chang, 1998; Watson, Morris, Ramsey, Hickman, & Waddell, 1996). The scale has several factors, which correlate inconsistently with each other and with other scales, and often fails to replicate certain self-awareness effects (e.g., Franzoi & Sweeney, 1986; Ingram, 1989).

These deficiencies have prompted researchers to argue that new conceptual models and resulting scales are needed (Creed & Funder, 1998, 1999; Silvia, 1999; Trapnell & Campbell, 1999). Some have already proposed alternative scales and conceptualizations (Trapnell & Campbell, 1999); others are currently developing alternative views of dispositional self-awareness (e.g., Creed & Funder, 1999; McKenzie & Hoyle, 1999). Some of these new scales have decided to retain the public-private framework (McKenzie & Hoyle, 1999), and others have abandoned it in favour of alternative models. Trapnell and Campbell (1999), for example, distinguish between “reflection” and “rumination”; Creed and Funder (1999) are also developing a scale based on a similar distinction between healthy and dysfunctional forms of chronic self-focus.

The meaning of Study 4's finding thus depends on which model of dispositional self-focus is considered. The failure to predict emotional intensity clearly conflicts with the traditional self-consciousness model (Buss, 1980; Fenigstein et al., 1975). Yet the high correlation with neuroticism may be compatible with alternative models. In Trapnell and Campbell's approach, for example, “ruminative self-focus” is expected to correlated with neuroticism and other indices of psychological dysfunction. In McCrae and Costa's (1997) five-factor model, dispositional self-focus is a primary facet of neuroticism. Study 4 would offer convergent validity for this model's taxonomy, not indicate a confound. More research is needed to relate these new approaches to each other and to conceptually predicted effects. Because many of these models are quite new, and in some cases still unpublished or in development, this task awaits future research.

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