

## Flexible effects of positive mood on self-focused attention

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### **Abstract:**

How moods influence self-focused attention is controversial. One model (Sedikides & Green, 2000) predicts that different moods have different effects on self-focus; another model (Salovey, 1992) predicts that all moods increase self-focus. Both models, however, imply that moods have fixed effects on self-focused attention. We suggest that mood has flexible effects on self-focus depending on contextual variables. An experiment manipulated mood (positive vs. neutral) and situational demand (low vs. high) and then measured self-focus. Positive mood decreased self-focus when people expected to work on a subsequent self-relevant task; positive mood increased self-focus when people were not informed of the task. The results demonstrate how mood interacts with situational factors to influence self-focused attention. The discussion considers implications for theories of how emotions affect self-awareness.

### **Article:**

Research on self-awareness finds bidirectional relationships between affect and self-focused attention (Mor & Winquist, 2002). The effects of self-focus on emotions have been extensively studied and are generally well understood (see Duval & Silvia, 2001, ch. 9). But the opposite direction—how emotional states influence self-focused attention—remains controversial (Duval & Silvia, 2001, ch. 10; Sedikides & Green, 2000). One theory—the affect-action sequences model (Salovey & Rodin, 1985)—predicts that both positive and negative moods evoke self-focus because moods are dynamic, distinctive, and salient aspects of experience. In two experiments (Salovey, 1992), people in positive or negative moods were more self-focused relative to people in a neutral mood. Other experiments found that negative moods increased self-focus relative to neutral moods; positive moods showed nonsignificant trends toward increasing self-focus (Wood, Saltzberg, & Goldsamt, 1990). A recent experiment induced happiness with music or autobiographical recall; positive moods increased self-focus relative to neutral moods, for both induction types (Silvia & Abele, 2002).

Another approach—the affect orientation model (Green & Sedikides, 1999; Sedikides & Green, 2000)—predicts that some moods are inherently internally focusing, whereas other moods are inherently externally focusing. Negative moods, indicating a need for action, should increase self-focused attention. Positive moods, indicating the absence of problems, should decrease self-focused attention. Three experiments found that negative moods increased self-focus relative to neutral moods. Positive moods had no effect (Sedikides, 1992), although one experiment found that positive mood decreased self-focus (Green, Sedikides, Saltzberg, Wood, & Forzano, 2003). Other studies found that different types of positive and negative affect had unique effects, but these studies lacked neutral mood conditions (Green & Sedikides, 1999).<sup>1</sup>

These two models make different predictions. The first assumes that all moods have similar effects; the second assumes that different moods have different effects. Their differences are clearest regarding positive

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<sup>1</sup> Our review excludes experiments that lack neutral mood control conditions (Carr, Teasdale, & Broadbent, 1991; Green & Sedikides, 1999; Krohne, Pieper, Knoll, & Breimer, 2002). The effect's directions are ambiguous without a neutral mood condition as a comparison. A significant between-condition difference between positive and negative mood conditions could mean that: (1) both moods increased self-focus, but one increased it more; (2) both moods decreased self-focus, but one decreased it more; (3) one mood increased and the other mood decreased self-focus; or (4) only one mood affected self-focus. Most of these studies, along with additional unpublished studies, are reviewed in detail elsewhere (Duval & Silvia, 2001, ch. 10).

moods. The first theory predicts that positive affect increases self-focus (Salovey, 1992); the second theory predicts that positive affect decreases self-focus (Sedikides, 1992). Common to both models, however, is the assumption that moods have fixed effects on self-focus. Thus far, they have not proposed situational factors that might moderate the effects. As a result, the theories remain silent about the role of contextual factors in the affect-self-focus link.

Instead of positing a fixed effect of mood, we predict that situational conditions determine whether positive affect will amplify or attenuate self-focused attention. Although no experiments show flexible effects of affect on self-focus, research shows flexible effects of mood on other cognitive processes. The mood-as-information model (Schwarz, 1990), for instance, shows that mood effects on social judgements disappear if mood is discounted as information. The mood-as-information-integration model (Abele, Gendolla, & Petzold, 1998; Abele & Petzold, 1994) demonstrates that mood effects on social judgements vary with the amount of information to be integrated. The mood-as-input model (Martin & Stoner, 1996) argues that the influence of affect on various judgments depends on situational stop rules. Finally, affective influences on effort mobilisation depend on the diagnostic value of a person's mood and on the incentive structure of the situation (Gendolla, 2000; Gendolla, Abele, & Krüsken, 2001).

In our view, the effect of positive affect on self-focused attention depends on contextual variables. Depending on the circumstances, positive affect can increase, decrease, or have no effect on self-focus. The issue, then, is identifying relevant contextual variables and understanding how they interact with mood. One significant contextual variable is situational demand—experiencing the situation as pressing and demanding versus relaxed and effortless. High situational demands include, for instance, working on a challenging task, talking to a supervisor, feeling judged or evaluated, giving a presentation, or awaiting important activities. In contrast, a situation may not be demanding if people have nothing special to do, such as sitting in a room and waiting, hanging around and doing nothing, or doing some routine activity that isn't especially absorbing.

We assume that positive affect boosts self-focus only if the situation allows it, that is, if the situation is not demanding. In such a situation people are free to focus on the self because they are not preoccupied with something else. If, in contrast, the situation is pressing and demanding, then positive affect will lead to a decrease in self-focus. This last prediction stems from two lines of research. First, research on positive affect as a resource (Aspinwall, 1998; Trope & Pomerantz, 1998) and research on the broaden-and-build theory of positive emotions (Fredrickson, 1998) shows that positive affective states buffer against fear of failure (Trope & Pomerantz, 1998). Second, affect often leads to mood congruency effects, with more positive evaluations in a positive mood than in a neutral or negative mood (Abele & Petzold, 1994). When facing a challenge, people in a positive mood should feel confident (Gendolla et al., 2001; Gendolla & Krüsken, 2002) and should be less preoccupied with anxious and self-evaluative thoughts.

## THE PRESENT EXPERIMENT

The two prevailing models predict main effects of positive affect, although they predict different main effects. Our model, in contrast, predicts interactive effects, depending on contextual variables. The present experiment manipulated situational demands as one such variable. The situational demand was expecting to work on a self-relevant task. Participants worked on a task (actually a mood induction) and then completed the dependent measures of self-focused attention. One group did so before learning about a second task. Situational demands should be low in this condition because participants did not expect to work on anything important afterwards. The other group learned about the nature and purpose of a second task before completing the measures of self-focused attention. This condition should experience greater situational demands. Anticipating a self-relevant task is a source of apprehension over performance and subsequent social evaluation when success is not assured. In such situations, people recognise the possibility of failure and can respond to the task defensively (Atkinson, 1964; Trope, 1986).

When people experience low situational demands, positive mood should increase self-focus relative to neutral mood. This would replicate our past research (Silvia & Abele, 2002) and other experiments (Salovey, 1992).

When people experience high situational demands, however, a different pattern should appear. People in a neutral mood should become more self-focused due to evaluation apprehension. Past research finds that anticipating evaluation and feeling judged can induce self-focused attention (see Duval & Silvia, 2001, ch. 2). People in a positive mood, in contrast, should be less affected by evaluation apprehension. If positive mood buffers against fear of failure (Aspinwall, 1998; Trope & Pomerantz, 1998) and enhances self-confidence (Gendolla et al., 2001; Gendolla & Krüsken, 2002), then people in a positive mood should be less self-focused than people in a neutral mood.

## METHOD

### *Participants and design*

A total of 69 students (14 men, 55 women; mean age 22 years) at the University of Erlangen, Germany, participated as part of a research participation option. Participants were randomly assigned to condition in a 2 (Mood: Positive vs. Neutral) x 2 (Situational Demand: Low vs. High) between-subjects factorial design.

### *Procedure*

Each person participated individually. After arriving at the lab, the participant was led to a private room and told the study's ostensible purpose. Participants learned that they would take part in two independent studies that were combined to save time. The "first study"—actually the mood manipulation—concerned the construction of a "biographical events inventory". In this inventory, people remember a life event and then describe it on a sheet of paper. Before doing so they answered demographic questions about gender, age, and major, and two ratings of their current mood (cheerful, tired). In the positive affect condition, participants imagined a happy life event that made them feel "very happy, much more so than usual". In the neutral affect condition, people imagined an "everyday routine", such as their daily route to the university. This affect manipulation has been successful in past research (Abele & Gendolla, 1999; Silvia, 2002a, 2002b; Silvia & Abele, 2002).

After finishing this "first study" participants sealed the questionnaire in an envelope and put it in a box. Then they received another questionnaire. Because they believed that this was an independent "second study", participants again filled out demographic questions and rated their current mood with the same items. The manipulation of situational demand appeared at this point. In the no demands conditions, people completed the measures of self-focused attention before receiving any description or instructions for another task to follow. Because people knew nothing about a following task, apprehension over performance and the researcher's judgement of performance should be minimal. In the high demands conditions, people learned about the task before completing measures of self-focus. Knowledge about the forthcoming task was intended to arouse self-evaluation about possible failure and to be convincing as a test of characteristics that are self-relevant to students (such as cognitive skills and decision competence). The task was announced as a decision task on picture preferences and picture suitability for different locations. Sixteen pictures had to be sorted into four categories of four pictures each (suited for "private home", "hospital", "cafeteria", "do not use") and participants had to justify their choices. All participants completed the decision task, although responses were irrelevant to the study and were not analysed. Participants were then interviewed, debriefed, and thanked.

### *Dependent measures*

All participants completed two measures of self-focused attention. The "Linguistic Implications Form" involves completing sentences by selecting one of several correct pronouns, such as "The noise got to (us, them, me) before long". A greater proportion of first-person singular pronouns reflects higher self-focus (Davis & Brock, 1975; Wegner & Giuliano, 1980). This study used a 16-item German version of the scale. The thought-listing task asked participants to list five thoughts they just had. The proportion of self-related thoughts was the second dependent measure. Thoughts were coded as self-related if they expressed present states, subjective evaluations, feelings, or goals (see Palfai & Salovey, 1992). Two independent judges coded the thoughts while unaware of the experimental conditions; interrater reliability was high,  $r = .81$ . Diverging ratings were discussed and then reconciled. Pronoun selection and thought listings are common measures of self-awareness (see Eichstaedt & Silvia, 2003).

As a check of the affect manipulation, participants indicated their present mood on bipolar scales, ranging from 0 (not at all) to 9 (very much), both before and after the mood induction.

## RESULTS

### *Preliminary analyses*

Four participants (three women, one man) were excluded because they did not follow the biographical event instructions; another woman was excluded because of language problems. Initial analyses found no main effects or interactions involving gender. We conducted a reliability analysis on responses to the sentence completion form, to assure a unidimensional scale; six items with negative item-total correlations were dropped. The remaining 10 items showed acceptable internal consistency for an implicit measure ( $\alpha = .48$ ). This level is equivalent to reliability levels in studies with the English version of the scale (around .50: Silvia & Abele, 2002; Snow, Duval, & Silvia, 2004; Wegner & Giuliano, 1980).

### *Manipulation check*

We created two mood scores by averaging the initial mood rating and the mood rating after the induction (negative scales reversed). A 2 (Mood) x 2 (Situational Demands) factorial analysis of variance with Time 1 mood as a covariate resulted in a significant covariate effect,  $F(1, 60) = 84.57, p < .001$ , and a significant effect of the mood induction,  $F(1, 60) = 4.01, p < .05$ ; no other effects were significant,  $F_s < 1$ . The positive mood group reported better mood ( $M = 6.31$ ) than the neutral mood group ( $M = 5.78$ ). This pattern suggests a successful mood manipulation.

### *Self-focused attention*

For the pronoun measure, we divided the number of first-person singular pronouns by the number of items, yielding the proportion of items completed with the self-focused option. For the thought-listing procedure, we divided the number of self-related thoughts by the number of thoughts, yielding the proportion of self-related thoughts. The two measures were marginally correlated ( $r = .23, p < .06$ ). Both scores were standardised and entered into a 2 (Mood) x 2 (Situational Demands) x 2 (Self-Focus Measures) factorial ANOVA, with repeated measures on the final factor. This analysis found a significant interaction between mood and situational demands,  $F(1, 60) = 8.80, p < .001$ , and no further effects, all  $F_s < 1$ . The two measures of self-focus were thus averaged to create a composite measure.

Table 1 shows the effects of mood and situational demand for each measure and for the composite. The pattern of effects for the composite measure fit our prediction (all tests one-tailed). When ignorant about the second task (low situational demand), happy people were more self-focused than neutral people,  $t(30) = 2.47, p < .001$ . But when people knew about the forthcoming task (high situational demand), happy people were less self-focused than neutral people,  $t(30) = 1.80, p < .04$ . The comparisons within each mood type were also significant. For happy people, knowing about the task decreased self-focus relative to not knowing,  $t(33) = 1.83, p < .04$ . For neutral people, knowing about the task increased self-focus relative to not knowing,  $t(27) = 2.30, p < .01$ .<sup>2</sup>

In sum, the results match our hypotheses. Positive affect increased self-focused attention when there was no task expectation, but it decreased self-focused attention when there was a clear task expectation. This shows a flexible effect of positive affect on self-focused attention.

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<sup>2</sup> The single measures of self-focus showed the same pattern as the standardised average, although the averaged measure was more reliable (see Table 1). For the thought-listing measure, the positive and neutral mood conditions differed under low ( $p < .001$ ) and high ( $p < .06$ ) situational demands. The low and high demand conditions differed under positive moods ( $p < .08$ ) but not under neutral moods (n.s.). For the pronoun selection measure, the positive and neutral mood groups differed marginally under high demands ( $p < .10$ ) but not under low demands (n.s.). The low and high demand conditions differed under positive moods ( $p < .01$ ) and under neutral moods ( $p < .04$ ).

TABLE 1  
Effects of mood and situational demand on self-focused attention

	<i>Positive mood</i>		<i>Neutral mood</i>	
	<i>Low demand</i>	<i>High demand</i>	<i>Low demand</i>	<i>High demand</i>
Composite score	0.25 (0.82)	-0.20 (0.60)	-0.34 (0.45)	0.32 (1.02)
Thought-listing measure	0.46 (1.18)	-0.21 (0.87)	-0.47 (0.63)	0.22 (1.04)
Pronoun-selection task	0.04 (0.89)	-0.19 (0.73)	-0.21 (0.99)	0.42 (1.35)

*Note:* Means are z-scores; standard deviations are in parentheses. The composite score is the average of standardised thought-listing and pronoun-selection scores.

## DISCUSSION

The influence of mood on self-focused attention has been controversial since early conflicting findings (Salovey, 1992; Sedikides, 1992; Wood et al., 1990). Two theories address this issue, and each theory makes different predictions. The affect-action sequences model (Salovey, 1992; Salovey & Rodin, 1985) predicts that both positive and negative moods induce self-focus because moods are dynamic and distinctive. The affect orientation model (Sedikides & Green, 2000) predicts that some moods draw attention to self, whereas other moods draw attention away from self. This model views these effects as "built-in", as part of an emotion's functional effects on cognition and action.

In contrast, we suggest that moods can have flexible effects on self-focused attention. Our model is part of a broader emphasis among recent mood theories on contextual and interactive effects of mood on social cognition. Recent theories assume that moods interact with situational factors, such as whether mood can be discounted as information, stop rules, environmental incentives, and features of the judgement task (see Abele & Gendolla, 1999; Gendolla, 2000; Martin & Stoner, 1996; Schwarz, 1990). We thus predict that positive mood will have flexible effects on self-focused attention, depending on contextual variables.

The present experiment supported our hypotheses. Participants were induced into positive mood or neutral mood by means of autobiographical memories. They completed two measures of self-focused attention—pronoun selection and thought listings. High versus low situational demands were operationalized by the time at which participants learned about a subsequent task. They either learned about it after they had answered the self-focus measures (low situational demands) or before they answered them (high situational demands). This subtle operationalisation stems from previous research, which shows that anticipating self-relevant tasks is a source of apprehension if people recognise the possibility of failure (Trope, 1986). Positive mood increased self-focused attention when situational demands were low and decreased self-focused attention when situational demands were high.

The findings replicate previous data showing that positive mood can induce self-focused attention (Salovey, 1992; Silvia & Abele, 2002). Yet they go beyond past work by demonstrating that these effects depend on contextual variables. The data thus allow a new perspective on the long-standing conflict between theories of affect and self-focused attention. Positive affect does not always enhance self-focused attention, as suggested by the affect-action sequences model (Salovey, 1992; Salovey & Rodin, 1985); nor does it always decrease self-focused attention, as suggested by the affect orientation model (Green & Sedikides, 1999; Sedikides & Green, 2000). Instead, positive affect increases self-focus in some contexts and decreases it in other contexts.

Past theories of mood and self-focus have not had much to say about how mood might interact with contextual variables, so they can not easily explain the present findings. Yet those theories could potentially explain contextual effects. Perhaps elaborated versions of the affect-action sequences model and the affect orientation

model could accommodate flexible effects of positive mood. Yet, fixed effects of mood are implied by these models, so it is hard to say what such elaborated models would look like. The affect orientation model in particular strongly implies fixed effects by proposing that the self-focusing effects of mood are part of a mood's action tendency (Sedikides & Green, 2000). As a result, our findings are not necessarily inconsistent with past theories, but they are not predicted by those theories either.

Future research should address some of the issues that our new perspective creates. For example, perhaps negative affect also has a flexible effect on self-focus. We studied positive affect because it is more controversial—the two theories make similar predictions for negative affect (Salovey, 1992; Sedikides & Green, 2000). Contextual approaches to mood and cognition imply that negative affect should, in some circumstances, have flexible effects on self-focus. Isolating and understanding these circumstances is a task for future research. Likewise, thus far we have considered only one contextual variable—situational demand. This variable is good for demonstrating our theory because it reverses, rather than merely attenuates, the effect of positive mood on self-focus. Yet situational demand is not the only relevant variable that would illustrate flexible mood impacts. A fuller understanding of mood and self-focus requires identifying additional contextual variables.

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