

How mood turns on language[☆]

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Abstract

Four studies examined the hypothesis that positive mood induces a global processing style and gives rise to the use of more abstract linguistic expressions in the description of social events. In contrast, negative mood induces a detail-oriented analytic processing style, resulting in more concrete descriptions. This hypothesis received support in the case of describing autobiographical events (Studies 1 and 2) and a film scene (Studies 3 and 4), whereby mood was induced either by film clips, or a self-induced mood technique (Study 3). Moreover, Study 4 showed that these systematic differences in linguistic expression disappear when the source of mood is made salient to participants, in line with the affect-as-information (Schwarz & Clore, 1983) and mood-and-general-knowledge approach (Bless, 2000). Implications for interpersonal communication are discussed.

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Many factors contribute to how we say what we say. Undoubtedly, one contributory factor is the mood we are in. While there is a very rich research literature on the effects of mood on cognitive processes, judgments, and behavior (e.g., Isen, 1987; Martin & Clore, 2001; Schwarz & Clore, 1996) little is known about how effects of mood on cognitive processes are reflected in our linguistic expressions.¹ It is however important to understand how such inner processes translate to language use since language—as a medium for practical activity—is the tool that enables the implementation of cognition in social interaction (Semin, 2000, 2001; Smith & Semin, 2004).

The four studies reported here were designed to investigate how positive and negative moods shape language use.

Below, we first examine the literature on mood and cognitive processing in order to frame our hypotheses regarding how the mood–cognitive process interface may translate into systematic differences in language use. We then detail four experiments that were primarily designed to investigate how positive and negative moods influence language use when people are describing social events. Across these experiments, we varied the mood induction techniques as well as the type of social events participants were asked to describe in order to ascertain the generality of our hypotheses.

Mood and cognitive processing

The interplay between affect and cognition has been the subject of a broad range of research that has, in general terms, addressed the ways in which affect influences the *content* and the *style* of information processing (Schwarz & Clore, 1996). Content refers for instance to research that has addressed whether information that is retrieved from memory is affectively congruent with the current

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¹ The exception is a series of studies reported by Forgas (1998, 1999a, 1999b) who has demonstrated that mood affects type of politeness requests. He has found people in a negative mood to be more careful, and to formulate more polite, and elaborate requests, whereas people in a positive mood were more direct, and less elaborate in formulating requests.

affective state of the person (e.g., Bower, 1981; Forgas, 1995; Mayer, Gaschke, Braverman, & Evans, 1992; Sedikides, 1994, 1995; Sedikides & Green, 2001), and how affect influences judgments of objects and situations. For example, research has shown that affective states influence judgments of life satisfaction (Schwarz & Clore, 1983), judgments of risk (Gasper & Clore, 1998), and political judgments (Forgas & Moylan, 1987).

The second approach has examined how affective states (i.e., moods) influences the *style* of cognitive processing. This approach lends itself more readily to formulate hypotheses about how the affect-cognitive processing interface may shape language use. The main finding in this line of research is that a positive mood leads to more heuristic or global processing of information by means of cognitive short cuts and/or by relying on general knowledge (Bless, Bohner, Schwarz, & Strack, 1990; Isen, 1987; Mackie & Worth, 1989). In contrast, negative moods have been shown to induce a more effortful, careful, systematic, and detail-oriented processing style (Bless et al., 1990; Mackie & Worth, 1989; Schwarz, 1990; for a review see Clore, Schwarz, & Conway, 1994). Competing accounts to explain this processing difference have stressed *motivational* (e.g., Clark & Isen, 1982; Wegener & Petty, 1994; Wegener, Petty, & Smith, 1995), *processing capacity* (e.g., Ellis & Ashbrook, 1988; Isen, 1987; Mackie & Worth, 1989), or *functional* implications (cf. Frijda, 1988) of mood states (cf. Forgas, 1998).

Functional approaches rely on the assumption that mood is informative about immediate situations. A positive mood is assumed to signal safety, whereas a negative mood is assumed to signal that a situation is problematic. This affective information leads to cognitive processes being tuned to the respective demands of different situations. According to the affect-as-information-hypothesis proposed by Schwarz and Clore (1983, 1988, 1996)² and the mood-and-general-knowledge assumption derived from it (Bless, 2000, 2001; Bless & Fiedler, 1995; Bless & Schwarz, 1999) people in a positive mood rely more on past experience, reflecting generalized regularities, such as stereotypes or scripts (Bless, 2000, 2001), because this style of processing is adaptively more appropriate in a benign situation. In contrast, a negative mood leads to the adoption of a more effortful, analytic, and systematic processing style. This means an increased focus on specifics because dealing with problematic situations requires attention to local detail (see also Clore, Gasper, & Garvin, 2001; Clore & Wyer et al., 2001; Fiedler, 2000, 2001; Schwarz & Skurnik, 2003).

The research examining differences in processing style as a function of mood has furnished considerable convergent evidence (for reviews: Clore & Wyer et al., 2001; Isen, 1987; Schwarz & Clore, 1996). Individuals in a positive mood

compared to people in a negative mood, have been shown to rely more on general knowledge structures such as stereotypes in social judgment (Bless, Schwarz, & Wieland, 1996; Bodenhausen, Kramer, & Süsser, 1994; Park & Banaji, 2000) or other types of general knowledge such as scripts (Bless & Clore et al., 1996); to use more inclusive categories when sorting exemplars into categories, and use a smaller number of piles to sort colored chips (Hirt, Levine, McDonald, Melton, & Martin, 1997; Isen & Daubman, 1984); to process visual stimuli more globally (Gasper & Clore, 2002), and have been shown to be more prone to the fundamental attribution error (Forgas, 1998).

A related approach that is highly relevant to the present research is the Action Identification Theory (Vallacher & Wegner, 1987; Wegner & Vallacher, 1986). This theory states that success experiences move people up to more abstract levels in thinking about their behavior, whereas failure moves people to thinking at a more specific, concrete level. Recently, we demonstrated that this logic also pertains to mood, and becomes reflected in descriptions of behavior. People in a positive mood were found to be more likely to re-describe simple acts of behavior in general why-terms, whereas people in a negative mood were more prone to re-describe behaviors in concrete how-terms (Beukeboom & Semin, in press).

Mood and language

How do the processing differences that emerge as a function of positive and negative mood states translate into language use? What are the types of linguistic differences one might expect to emerge when describing a social event? The functional approach would suggest that negative mood states lead to systematic, analytic processing, with attentional focus on the detail rather than the ‘whole’ of a situation. In contrast, a person in a positive mood is expected to be in a global focus and attending to the general features of a situation. Given these considerations one would expect that when people are in a negative mood then they are more likely to use more concrete predicates (e.g., more verbs) to describe an event and thus retain more of the contextual detail in their communication. In contrast, if they are asked to represent the same situation when in a positive mood, then their representation should feature more abstract predicates (e.g., more adjectives) and thereby decontextualize the event. This is the general hypothesis that we examined in the set of four experiments we report here.

To examine the linguistic differences that were predicted as a function of mood state we applied the Linguistic Category Model (LCM; Semin & Fiedler, 1988, 1991, 1992). This model offers a taxonomy of predicate types used in interpersonal communication and makes a distinction between four different types of interpersonal terms. Descriptive action verbs are the most concrete terms and are used to convey a description of a single, observable action and preserve perceptual features of the event (e.g., ‘A punches B’). Similarly, the second category (interpretive

² Although reformulations of the approach have been suggested (Gendolla, 2000; Martin, 2000, 2001; Martin, Ward, Achee, & Wyer, 1993) there is agreement on the idea that mood provides information that is used to tune cognitive processes.

action verbs and state action verbs) describes specific observable events. However, these verbs are more abstract in that they refer to a general class of behaviors and do not preserve the perceptual features of an action (e.g., ‘A hurts B’). The next category (state verbs) typically describes an unobservable emotional state and not a specific event (e.g., ‘A hates B’). Finally, adjectives (e.g., ‘A is aggressive’) constitute the last and most abstract category. These generalize across specific events and objects, and describe only the subject. Adjectives, (i.e., traits) are thus highly general descriptions of behavior, providing a global summary of a large number of specific actions, and show no reference to context or to specific acts. The opposite is true for action verbs (e.g., Semin & Fiedler, 1988; Semin & Greenslade, 1985). The most concrete terms retain a reference to the contextual and situated features of an event.

In the following, we report four studies that test this general hypothesis relating positive and negative mood states to systematic differences in language use. The first two examine the effect of positive and negative moods induced by means of film clips on language use in descriptions of autobiographical events provided by participants. In the first study, participants were asked to retrieve this event *after* the mood induction and describe it. In the second, they were asked to retrieve the event prior to mood induction and describe it thereafter. The third study employed a different mood induction technique, namely retrieval of either a highly positive or a highly negative life event, and called for a description of a film participants had seen prior to mood induction. In the final study, we examined whether the mood as information process was responsible for differences in language use by contrasting the standard mood induction conditions for positive and negative mood with a condition in which the source of the positive and negative mood were subtly made salient.

Study 1

In the first study, we asked the participants to describe an event they had experienced in the past. If type of mood (positive vs. negative) influences processing style and this is manifested in systematic differences in terms of general features of language use (differences in predicate types), then one should be able to detect differences in types of predicates across descriptions of idiosyncratic autobiographical events. In this study, each participant was asked to describe a unique event. We predicted that if participants were in a negative mood then they would be more likely to describe concrete features of the retrieved event by using relatively more verbs. In contrast, participants in a positive mood would be more likely to refer to global features of the event they have retrieved by using abstract predicates (i.e., adjectives) more frequently. Thus, we expect differences between mood conditions in the mean level of abstraction of event descriptions.

Mood was induced by means of 4 short film clips that had been extensively piloted. After viewing a film clip, participants were asked to describe an event that happened to them in their past. Two of the film clips were positive and

two were negative, resulting in a one variable between participants design with four levels.

Method

Participants

Fifty-eight undergraduates at the Vrije Universiteit Amsterdam (38 women, 20 men, mean age 21 years) were recruited on campus to participate in this study on a paid voluntary basis. They were paid €2.30 for taking part in this study that took about 25 min to complete.

Materials and procedure

Participants were seated in individual cubicles with a computer. They were informed that all instructions and tasks were to be presented on the monitor.

Mood manipulation. Positive or negative mood was induced by means of a short film clip presented over the computer. Before showing the clip participants were informed that the purpose of the experiment was to examine emotion and mood changes over time. In the course of the experiment, they were also going to perform some other tasks. After these instructions, they were asked to try to relax and clear their minds of all thoughts and feelings, and to try to put themselves into the flow of the film they were about to see. For this purpose, the computer screen was white for almost a minute prior to the onset of the film. Then they were shown the clip, which lasted ≈ 7 min in all conditions.

Two different positive and two different negative films were used to induce positive and negative mood. This was done in order to counter the possibility of film specific effects and to be able to generalize. The first positive clip was a scene from “Jungle Book,” and the second was a clip from a film called “Zoo.” The two negative film conditions were clips from a film called “Baby,” and “Sophie’s choice.”³ The films were presented on an IMac (400 MHz).

Mood manipulation check. After the film clip, participants were asked to report how they ‘felt at this moment’ which they did on three 9-point bipolars ranging from 1 = *good* to 9 = *bad*, 1 = *sad* to 9 = *happy*, and 1 = *positive* to 9 = *negative*. Pilots with the same films and manipulation checks had shown that these three items formed an internally con-

³ The four film clips were (1) a scene from the Walt Disney cartoon film “Jungle Book” showing Mowgli dancing with Baloo the bear to “Bare Necessities of Life,” (2) a scene from a black and white Dutch film, “Zoo,” by Bert Haanstra containing entertaining shots of animals and people with a relaxing jazz background music, (3) a dramatic scene from a Dutch documentary about a family coping with the loss of their newly born, and finally (4) the final scene from “Sophie’s Choice,” in which a mother is forced to choose one of her children to be sent to a concentration camp. These four film clips had been piloted earlier and “Jungle Book” and “Sophie’s choice” had induced the strongest positive and negative moods (using the same manipulation check variables as in this study; respectively $M = 7.76$, and $M = 3.72$). The film clips “Zoo” and “Baby” had induced somewhat more moderate positive and negative moods (respectively, $M = 7.38$, and $M = 4.79$).

sistent scale (Cronbach's $\alpha = .94$). Participants' responded by using the mouse to click a box on the screen that best represented their answer.

Event description task. Next, participants started on an ostensibly different study, which was partly administered by paper and pencil. They were instructed to take a sheet of paper out of an envelope lying next to the computer. They were then informed as follows: "We would like to ask you to describe an event you have experienced, that was important to you and in which you and one or more people were involved." After they had completed the description of an event, they could continue with further instructions from the computer.

They were then asked to answer a set of questions on the computer about the event that they had just described. These questions were included in order to examine whether there were any systematic differences between the types of events retrieved as a function of mood condition, which—if correlated with language use—could present potential confounds. These questions addressed the following different features of the event that the participant had just described (all 7-point scales): (1) *event valence*, "How positive or negative was this event for you?" (1 = *very negative*, 7 = *very positive*), "How pleasant or unpleasant was it for you to experience this event?" (1 = *very pleasant*, 7 = *very unpleasant*); (2) *the significance of the event*, "How important was this event for you?," "To what extent was this situation an emotional situation?" (1 = *not at all*, 7 = *very much*); (3) *how vividly the event was recalled*: "How easy was it to visualize how the event occurred?," "How vivid is your memory of the event?," "How well do you remember the details of the situation?" (1 = *not at all*, 7 = *very much*); (4) *degree of rehearsal in talk*, "Have you talked about the event after it happened?" (1 = *not at all*, 7 = *very often*); (5) *degree of rehearsal in thought*, "Have you thought about the event after it happened?" (1 = *not at all*, 7 = *very often*); (6) *ease of retrieval*, "How easy was it to come up with the kind of event we asked you for?" (1 = *very easy*, 7 = *very hard*). (7) Next, they were asked four *attributional questions*, "To what extent do you think that the event came about due to the type of person that you are?," "To what extent do you think that the event came about due to the personalities of other participants in the situation?," "To what extent do you think that the event came about due to the special combination of personalities in this event?," "To what extent was this event informative about you as a person?" (1 = *not at all*, 7 = *very much*). Then some questions were asked about (8) *the repetition likelihood of the event*, "How likely is it that you will experience a similar situation?" (1 = *not at all*, 7 = *very much*); (9) *the expectedness of the event*, "How often have you experienced an event like this?" (1 = *never*, 7 = *frequently*); (10) *temporal features of the event*, "How long ago did this event occur?" (1 = *not so long ago*, 7 = *a long time ago*), "How long did this event last?" (1 = *very short*, 7 = *very long*), and participants were asked the date of occurrence in month and year, which allowed us to

compute the number of months ago the event had occurred. (11) Finally, with respect to the *event description* we asked, "How easy or difficult was it to describe the event" (1 = *very easy*, 7 = *very difficult*), we measured the time taken to describe the event, and counted the number of words used in each event description.

Subsequently, participants were debriefed and paid. Participants in the negative mood conditions were given the option to watch the Jungle Book clip if they wanted to.

Dependent variables

Linguistic abstraction. The event descriptions the participants provided were coded by a judge blind to experimental condition according to Semin and Fiedler's (1988, 1991, 1992) Linguistic Category Model. Each verb and adjective in the stories was coded and scored in the following way: descriptive-action verbs = 1, interpretive-action verbs/state action verbs = 2, state-verbs = 3, adjectives = 4. On the basis of these scores, the mean level of abstraction was computed for each story separately by adding the different scores and dividing them by their number. The mean level of abstraction could thus vary between 1 (very concrete, only descriptive-action verbs) and 4 (very abstract, only adjectives; Semin & Fiedler, 1989). This measure thus provides an index of how concrete or abstract an event description is. To check the reliability of the coding one third of the stories was coded by a second independent judge. Inter coder agreement was reliable (Cohen's Kappa coefficient = .84).

Results

Manipulation check

We examined the effectiveness of the mood manipulation by subjecting the mood measure (mean of three 9-point mood questions, Cronbach's $\alpha = .94$) to an ANOVA with mood induction as the between participants variable with four levels. This analysis yielded a significant effect, $F(3,43) = 15.32$, $p < .001$.⁴ As expected "Jungle Book" induced the most positive mood ($M = 7.61$; $SD = 0.98$). The "Zoo" clip induced a moderately positive mood ($M = 5.76$; $SD = 1.92$). The "Baby" clip induced an intermediate state ($M = 4.49$; $SD = 1.56$) and "Sophie's Choice" induced the most negative mood ($M = 3.67$; $SD = 1.44$). The positive "Zoo" clip turned out to be less effective in inducing a positive mood compared to the pilot study (pilot study: $M = 7.38$). A post hoc analysis (LSD) revealed that the group mean of this positive "Zoo" condition was significantly different from the other positive "Jungle Book" clip ($p < .01$), and yielded a smaller, but significant, difference from the negative "Baby" condition ($p < .05$). The two negative conditions, "Baby" and "Sophie's Choice" were not significantly different from each other ($p = .19$). Together

⁴ Eleven cases were excluded from the analyses (two from both positive mood conditions, three from "Baby," and four from "Sophie's choice"), because they either provided a single sentence event description, or no event description whatsoever.

the four conditions displayed a linear trend from “Sophie’s Choice” to “Jungle Book”; $F(1,43) = 43.74, p < .001$.

Linguistic abstraction

The central hypothesis, namely that people will use more abstract terms to describe events from autobiographical memory when in a positive mood, and more concrete language when in a negative mood was examined with a one-way ANOVA with mood induction as the between participants variable. This analysis yielded a significant effect $F(3,43) = 2.86, p < .05$. The abstraction level of the descriptions induced under the different mood induction conditions showed a systematic pattern of means. Events described after the positive “Jungle Book” clip were the most abstract ($M = 2.62; SD = .40$), whereas those described after the negative “Baby” ($M = 2.26; SD = .34$) and “Sophie’s choice” ($M = 2.28; SD = .31$) film clips were the most concrete. The moderately positive mood condition “Zoo” ($M = 2.29; SD = .36$) showed a degree of abstraction not different from the two negative mood conditions ($p > .80$). Yet, together the four mood conditions displayed the same linearity in linguistic abstraction as was observed on the mood measure, increasing from the most negative mood condition to the most positive mood condition, $F(1,43) = 5.23, p < .05$. No higher order fit was observed.

In addition, we analyzed whether the individual differences on the mood measure could be used to predict linguistic abstraction, independent of experimental conditions. This was indeed the case, a linear regression analysis showed that the individual scores on the mood measure were highly predictive of linguistic abstraction, $\beta = .37, t(45) = 2.66, p < .025$. The more positive the reported mood, the more abstract the event descriptions.

Importantly, no differences were observed between mood conditions in the number of words used (overall $M = 82, SD = 47$) or in the time taken to describe the event overall ($M = 257\text{ s}, SD = 171\text{ s}; F_s < 1$). Neither did we observe any difference in the reported difficulty to describe the event ($F < 1$).

Examining possible confounds

One could reasonably argue that the differences obtained in abstraction may be due to systematic differences in the types of events retrieved from memory, either caused by the induced mood or certain features of our film clips. One possible account is provided by the mood congruence principle (Bower, 1981; Sedikides & Green, 2001), namely the idea that in a positive mood the probability of retrieving a positive event is increased, while in a negative mood the probability of retrieving a negative event is enhanced. To examine whether any mood congruency effects had occurred we conducted a linear regression to see if reported mood was predictive of reported valence of the event (Cronbach’s $\alpha = .96$). No effect was observed, $\beta = .03, t(45) < 1$. Nor did we find a between group effect, or contrast, in valence between film conditions ($F(3,43) = 1.63, p = .2$). To find out

whether valence could account for the observed effect of mood on linguistic abstraction, we conducted another linear regression analysis, in which valence was also entered as a predictor. This analysis showed that mood was still a significant predictor of linguistic abstraction when controlling for valence, $\beta = .37, t(44) = 2.62, p < .025$. This shows that differences due to mood congruency cannot account for the observed systematic differences in language use.

Another possible confound is an association between event date and linguistic abstraction (Liberman & Trope, 1998; Semin & Smith, 1999). To analyze whether mood, may have led to the retrieval of events that differ in date or duration, and thereby possibly confound our findings, we analyzed the reported temporal features of the described events. In a linear regression, we found that self-reported mood did not have any significant predictive power over either the scale measure of ‘how long ago’ it happened ($\beta < .01, t < .1$), reported date ($\beta = -.15, t < 1$), or event duration ($\beta = .16, t < 1.1$). Neither did we find any differences between experimental conditions (all $F_s < 1$), which shows that neither the manipulation, nor individual mood differences lead to time-related differences. Again, in a linear regression analysis, we found that mood still significantly predicted linguistic abstraction, when controlling for these temporal features, $\beta = .32, t(42) = 2.19, p < .05$.

Aside from the above, we did not observe any between-group effects, nor contrasts between groups on: memory vividness (Cronbach’s $\alpha = .78; F < 1$); degree of rehearsal, in talk ($F(3,43) = 1.4, p = .25$), in thought ($F < 1$); ease of retrieval ($F < 1.1$); significance of the event (Cronbach’s $\alpha = .97; F(3,43) = 2.23, p = .1$); attribution (Cronbach’s $\alpha = .73; F < 1$); repetition likelihood of the event ($F < 1$), or event expectedness ($F(3,43) = 1.45, p = .24$). Again, we conducted a linear regression in which these qualitative differences between memories were, together with mood, entered as predictors. Mood was still predictive of linguistic abstraction, $\beta = .33, t(37) = 2.41, p < .025$.

In summary, when analyzing the qualitative differences we measured, we did not find any indication that our film manipulation, or the induced mood resulted in systematic differences between the retrieved events. Moreover, none of the individual differences between the retrieved and subsequently described events can account for the obtained relation of mood and linguistic abstraction.

Discussion

Study 1 confirmed that people in a positive mood are more likely to use abstract predicates when describing an autobiographical event than people in a negative mood, who use more concrete predicates. This relationship was unrelated to qualitative differences between the retrieved events, or for that matter the types of events that were recalled. There was a systematic difference in the predicate types participants used as a function of mood although each participant reported an idiosyncratic event.

Study 2

It is possible to argue that retrieving events after mood induction introduces systematic and concealed biases that may contribute to differences in language use although we controlled for a range of likely confounds. For that reason, we conducted a second study where event retrieval *preceded* the mood manipulation. Such a sequence cancels out potentially undetected confounds that may have been present in Study 1. Additionally, this provided an opportunity to examine the stability of the mood and language relationship observed in Study 1.

In this study, participants were first asked to retrieve an autobiographical event. Positive or negative mood was induced subsequently. At a later point in time, participants were asked to describe the event they had retrieved. The dependent variable was linguistic abstraction of the descriptions. The resulting study was a two level mood induction (positive film clip vs. negative film clip) between participants design.

Method

Participants

Forty-six students of the Vrije Universiteit Amsterdam (18 male, 28 female, $M=21$ years old) participated in the study, and were paid €3.40. They were native Dutch speakers and were randomly assigned to one of the two conditions.

Event retrieval

At the beginning of the experiment, and prior to the mood manipulation, participants were asked to think about “an event you have experienced that was important to you and in which you played the main part,” and type in a one-sentence title of this event.

Mood manipulation

Subsequently, positive or negative mood was induced by, respectively, the “Jungle book” clip, or the “Sophie’s Choice” clip. The procedures and mood measure were the same as in Study 1.

Event description

After completing the mood measure, participants were presented with the one-sentence event title they had provided on the monitor. They were asked to describe this event on a sheet of paper lying next to the computer. After describing the event they continued on the computer to answer a number of questions about the event they had just described. These were questions about event valence, significance of the event, memory vividness, degree of rehearsal, ease of retrieval, and difficulty to describe the event, and were identical to those in Study 1.

Linguistic abstraction

The linguistic abstraction of the event description constituted the main dependent variable and was coded blind to

experimental condition according to the LCM. To check the reliability of the coding a third of the stories was coded by a second independent coder. Inter coder agreement was reliable (Cohen’s Kappa coefficient = .86).

Results

Manipulation check

Analyses of the mood measure (Cronbach’s $\alpha = .96$) showed that the mood manipulation was successful. Mood scores in the positive “Jungle Book” film condition ($M = 7.67$; $SD = 1.19$) were significantly more positive compared to the negative “Sophie’s choice” film condition ($M = 4.54$; $SD = 1.89$); $t(41) = 6.70$, $p < .001$.⁵

Qualitative differences between events

We examined the diverse variables that we introduced, to check whether the ‘retrieval-before-mood-manipulation’ procedure was successful in preventing mood-induced qualitative differences. As expected, none of the measured variables (i.e., event valence, significance of the event, memory vividness, degree of rehearsal, ease of retrieval, and difficulty to describe the event) showed any difference between mood conditions (all t ’s < 1.2 , *ns*).

Linguistic abstraction

The predicted influence of negative and positive mood upon language use was confirmed. Participants in the negative mood condition used significantly more concrete language ($M = 2.01$; $SD = 0.26$), than those in the positive mood condition ($M = 2.26$; $SD = 0.36$), $t(41) = 2.58$, $p < .025$. Again, no differences were observed in the number of words used (overall $M = 87$, $SD = 61$, $t < 1$) or the time taken (overall $M = 238$ s, $SD = 165$ s, $t < 1$) to describe the event.

Discussion

This study showed that type of induced mood shapes language use even when event retrieval is prior to mood induction. This supports the idea that mood does not simply change the type of retrieved event, but that mood exercises an effect on the way people chose to describe the situation *during* the description process. Again, we found that participants in a positive mood were more likely to use abstract predicates than participants in a negative mood, who used more concrete predicates.

Study 3

In the first two studies, each participant described a unique event. In our view, this underlines the strength of the findings, because it demonstrates that the observed phenomenon is arguably not an artifact of the type of event that is described. Nevertheless, to eliminate any doubt that

⁵ Data from three participants were excluded from analyses because they did not provide a workable event description, leaving 43 cases.

the idiosyncratic nature of the autobiographical events in studies 1 and 2 may somehow have contributed to the systematic effects we have found, we designed a further experiment wherein the social event that was described was kept constant. Participants were asked to describe a neutral film clip they saw prior to the induction of mood. Theoretically, type of induced mood should systematically influence language use in the same way.

Moreover, we employed a different mood induction technique that involves the retrieval of either a highly positive or a highly negative life event (cf. Bless & Clore et al., 1996, Exp. 1). The technique is designed to make participants re-experience the feelings they had during this event by asking a number of specific questions about the event. To intensify the effect of this mood manipulation, participants were additionally presented with a series of pictures of either high positive or high negative affective valence from the International Affective Picture System (IAPS; Lang, Bradley, & Cuthbert, 2001).

Thus, in this study, in contrast to the previous studies, mood was induced by asking participants to recall a life event (independent variable), and the degree of abstraction of the film clip descriptions constituted the main dependent variable. Using an alternative mood induction technique as well as a fixed event rather than autobiographical events that had to be described, permitted us to examine the generality of our hypothesis.

Method

Participants and design

Fifty-eight undergraduates (23 men, 35 women, mean age 20.5 years old) participated in this study that took about 25 min to complete, and were paid €2.50. They were randomly assigned to one of the between participant mood conditions (positive vs. negative).

Materials and procedure

Participants were seated in individual cubicles and explained that all instructions and task would be presented to them on the monitor. Participants read that they were going to take part in a number of independent studies.

Target film clip. In the ostensibly first study, they were shown the target film clip. It was not revealed they would have to describe it later on. Our criteria for choosing the target film scene were rather arbitrary. We looked for a scene that was complex enough to be described in different ways, with at least two people acting in it. We avoided scenes with too much conversation, to prevent literal recall of the spoken words, and scenes of strong positive or negative valence. The selected clip was a scene from the Italian movie “Caro Diario” (duration 4.19 min) showing a man visiting a friend on an island. In the scene, the man orders a sandwich and a drink in a bakery and starts dancing like the woman he watches on television. Next, he sits outside with his friend and they walk away on the street. Immedi-

ately after watching the film clip, participants answered some questions about it (e.g., “To what extent was the scene comprehensible,” “How many minutes did the clip last?” etc.).

Filler task. To prevent literal recall of the specific scene in the upcoming film description task, we included a distraction filler task in which participants completed a number of personality scales (21 items) in an ostensibly different experiment.

Mood manipulation. Subsequently, participants read that they were now beginning with a new study on memory for past events. The instructions in the positive (negative) mood condition then continued as follows: “We would like to ask you to think about an important positive (negative) event you have experienced in your past. The event has to be a very fortunate life event that made you extremely happy (a very unfortunate life event that made you extremely sad).” They were told it was highly important that they would try to remember and re-experience the event as well as possible, and that we would ask them a number of questions to help them with that. The next set of procedures was designed to maximize participants’ re-experience of the positive or negative feelings associated with the event. At the same time, to prevent a possible confound, they were designed to control the retrieval process, such that all participants would both retrieve and think about specific, concrete aspects, as well as about more general, abstract aspects of the memory.

First we asked a number of questions to help participants recall the past life-event. Some were open-ended, others could be answered on a scale. All answers were given on the computer. The questions, in both mood conditions, were: (1) “Where did the event take place?”; (2) “When did the event take place?” (Participants could enter day, month, and year); (3) “How long did the event last?” (1 = an hour, 2 = a number of hours, 3 = a day, 4 = a number of days, 5 = a week, 6 = a number of weeks, 7 = a month, 8 = a number of months, 9 = a year, and 10 = a number of years); (4) “Now, try to remember as accurately as possible how the event occurred. Describe what happened that day. If the event lasted for more than a day then you should describe the most important day of the entire event”; (5) “How did you experience this day? How did you feel?”; (6) “Now describe the most significant moment of the entire event”; (7) “What did this event mean to you? What were the consequences?”

The questions were designed to be strongly leading to either highly abstract or highly concrete answers. This was done to prevent a confounding systematic difference in language use during the mood manipulation, which could be held responsible (rather than the induced mood) for priming the dependent variable. To be able to examine whether our method indeed prevented a systematic difference in language use in answers about positive and negative events, we coded the answers to the open-ended

questions (questions 4–7) for linguistic abstraction. The coding was done blind to experimental conditions and independently from the coding of the target film descriptions. A second judge coded a quarter of these answers. Intercoder agreement was reliable (Cohen's Kappa coefficient = .80).

Next, participants completed the following questions and tasks with the purpose to make participants think about and re-experience the feelings they had during the event. These three questions (8–10) could be answered on a scale ranging from 1 = somewhat to 5 = very well. (8) "How well can you remember how you felt that day?"; (9) "How well can you feel this feeling now when you think about the event?"; (10) "How well can you visualize the event?"; (11) "How often do you think about the event" (1 = sometimes, 5 = very often); (12) Finally, participants were asked to enter five words that described "the feelings you had during the event."

With the purpose to intensify the feelings participants experienced after retrieving a positive or a negative life event, participants were subsequently shown a series of 16 pictures from the IAPS (Lang et al., 2001; see appendix A) that had been rated as being either very positive or very negative in valence (depending on mood condition). In both conditions, the pictures depicted people with strong emotional expressions. In the positive mood condition the expressions were all positive, in the negative mood condition they were all negative. Participants were first shown all 16 pictures successively (each picture for 6 s), and were then instructed to think about how these people feel, and whether these feelings were similar to the feelings they experienced in their past event. Then the pictures were shown for a second time, and participants could indicate which of the pictures displayed roughly how they felt during the event.

This was followed by some questions about the event (e.g., How important was this event to you? etc.). Embedded among these questions was a *mood measure*: On two 9-point bipolars, ranging from 1 = *not at all* to 9 = *very much*, participants rated to what extent they experienced 'negative feelings,' and 'positive feelings' at this very moment.

Target film description. After having responded to the event-related questions participants were told that they would be starting another study. They were unexpectedly asked to describe the target film with the following instruction: "We would now like you to describe the events from the film clip we showed you first. Tell what happened in the scene." They could type their description using the computer keyboard.

When they had finished typing, they answered a number of questions about the task on a scale ranging from 1 = *not at all*, to 7 = *very much*. The following items were presented in a randomized order and were included to tap possible differences in: (1) *difficulty*, "How difficult was it to describe the scene?"; (2) *memory for the target film*, "How well do you remember what happened in the film scene?," "To what

extent had you already partly forgotten the film scene?," (Cronbach's $\alpha = .85$); (3) *Valence of description*, "How negative or positive is your description of the film scene?" (1 = negative, 7 = positive).

The time participants used from the end of the target film to the beginning of the description task was measured ($M = 1088$ s, $SD = 359$ s). No significant differences in time were observed between experimental conditions, $t(52) < 1.6$, *ns*.

Dependent variables

The dependent variable was the mean linguistic abstraction of participants' descriptions of the target film. Each verb and adjective referring to the social event represented in the target film was coded, blind to experimental condition, according to the LCM. One third of the stories was coded by a second independent coder. Intercoder agreement was reliable (Cohen's Kappa coefficient = .82).

Results

Manipulation check

An analysis of the mood measure indicated that the mood manipulation was successful. Participants in the positive mood condition reported a more positive mood ($M = 7.20$, $SD = 1.34$, $n = 28$) compared to those in the negative mood condition ($M = 4.27$, $SD = 1.83$, $n = 26$), $t(52) = 6.74$, $p < .001$.⁶

Linguistic abstraction

An analysis of the mean linguistic abstraction of the target film descriptions confirmed the prediction that people in a positive mood would use more abstract terms to describe the target film, whereas people in a negative mood would use more concrete terms. Participants in the positive mood condition used significantly more abstract language ($M = 1.97$, $SD = .33$) than those in the negative mood condition ($M = 1.80$, $SD = .26$), $t(52) = 2.12$, $p < .04$.

Importantly, we again observed no differences between conditions in the number of words used (overall $M = 121$, $SD = 58$), or in the time taken to describe the scene (overall $M = 224$ s, $SD = 125$ s), t 's < 1 , *ns*.

Examining possible confounds

An important question is whether the induced mood is responsible for the observed differences in language use between conditions, rather than specific variables that may co-vary with the induced mood. For instance, one could argue that the mood manipulation, which requires participants to write answers to specific open-ended retrieval

⁶ Four participants were excluded from analyses because they did not seriously attempt to describe a positive or negative life-event during the mood manipulation. They used a very limited number of words to answer the five open-ended question about the positive or negative event, respectively, 73 (1 male, positive mood condition), 73, 80, 83 (3 female, negative mood condition), which is the least in their condition, and less than half of the mean number of words used (overall $M = 182$, $SD = 117.5$).

questions about a life event, primes level of abstraction aside from inducing the respective mood. However, to prevent linguistic differences in describing a positive or negative life event the retrieval questions were specifically designed to lead participants to describe both concrete and abstract information, and we therefore did not expect any differences between mood conditions here. Indeed, no differences in linguistic abstraction between the positive ($M=2.66$, $SD=.30$) and negative mood condition ($M=2.61$, $SD=.25$) were observed in the answers to the open questions of the mood manipulation, $t < 1$, *ns*. Moreover, we did not observe any relation between the abstraction of the language used during the mood manipulation, and the abstraction of the language used to describe the target film ($r(54) = -.04$, *ns*). This indicates that the mood induction technique itself did not prime the observed differences in linguistic abstraction noted in the descriptions of the target film.

Second, the mood manipulation could have primed a different temporal focus due to differences in time of occurrence between positive and negative life-events described during the mood manipulation. While we did not observe a difference between mood conditions in reported duration of the described life-event ($t < 1$, *ns*), we noted a difference in the reported date of the life-event between mood conditions. Events reported for positive life-events were more recent ($M=24.2$ months ago, $SD=31.4$) than those reported for negative life-events ($M=47.1$ months ago, $SD=43.5$), $t(50)=2.19$, $p < .04$.⁷ This finding is in line with what Ross and Wilson's 'theory of temporal self-appraisal' would have suggested (e.g., Ross & Wilson, 2003, 2002; Wilson & Ross, 2001) according to which positive events are placed temporally closer to the hear and now compared to negative events to enhance a more positive self-image.

Analyses of the answers to the questions about the film description task yielded no differences in participants' judgment about the valence of their description, $t < 1$. We did however find differences on reported difficulty, and reported memory for the target film. Participants in the negative mood condition, compared to those in the positive mood condition indicated that they found it more difficult to describe the target film (resp. $M=3.46$, $SD=1.90$; $M=2.54$, $SD=1.32$), $t(52)=2.09$, $p < .05$. These participants also indicated to have poorer memory for the target film, compared to those in the positive mood condition (resp. $M=4.31$, $SD=1.30$; $M=5.09$, $SD=1.13$), $t(52)=2.37$, $p < .025$. These findings may be regarded as *indicative* of the differences in processing style between the two mood conditions. Thus, it is not surprising that participants in the negative mood condition who are presumed to engage in more effortful processing presume to have more difficulty in describing the film and suggesting that their memory was poorer relative to the positive mood condition.

Discussion

The results of this study, wherein a different mood induction technique was used and wherein the described social event was kept constant for all participants, produced the same pattern of language use as in the previous two studies. Positive mood was found to lead to more abstract language use whereas negative mood to more concrete language use. Again, mood exerted an effect during the description process, since mood was manipulated after encoding the target film, and before the target film description task. This repeated pattern, observed with different methods, underlines the generality of the postulated relationship between mood and language use.

Study 4

The general hypothesis examined in the three preceding studies relied on the affect-as-information (Schwarz & Clore, 1983, 1988, 1996) and the mood-and-general-knowledge (Bless, 2000) accounts of the effects of mood upon cognitive processing. We were able to translate the mood-cognitive process interface suggested by this functional approach into predictions concerning systematic differences in language use. This translation relied on the general notion that language is a tool to implement cognition (Semin, 2000). The third study provides some very tentative evidence that participants perceived the task as more difficult or effortful in the negative mood condition. However, these results as well as the consistent pattern of differences in language use do not provide any direct evidence that the mood-cognitive process interface postulated by the affect-as-information approach does translate into systematic differences in language use. In our fourth study, we addressed this issue and designed a study to test whether our systematic findings were driven by experiencing mood as a source of task-relevant information, as postulated by the affect-as-information-approach.

According to the notion of mood as a source of task-relevant information, a person's positive or negative mood is attributed to things that happen to be at focus, and thereby experienced as information, indicating how one should deal with the task (Clore et al., 2001; Clore et al., 1994; Schwarz, 2001; Schwarz & Clore, 1983, 1988; Schwarz & Skurnik, 2003). Consistent with this, mood effects were expected to disappear when people do not experience their mood as relevant to the task at hand when their attention is drawn to a transient cause of their current mood, thereby making mood irrelevant to the task. A series of experiments, since Schwarz and Clore's (1983) classic demonstration of this effect, have provided consistent evidence for this account. Thus, an external mood attribution manipulation has been shown to cancel cognitive consequences of mood effects for the processing of persuasive messages (Sinclair, Mark, & Clore, 1994), judgments of risk (Gasper & Clore, 1998, 2000), effort-related physiological responses (Gendolla & Krüsken, 2002), performance in a creative generation task

⁷ Note that we had some missing values on date of life-event.

(Hirt et al., 1997), and judgments of personal satisfaction (Keltner, Locke, & Audrain, 1993). These are findings that are difficult to account for in terms of both cognitive capacity assumptions (Isen, 1987; Mackie & Worth, 1989) and motivational implications of mood approaches (Clark & Isen, 1982; Wegener et al., 1995).

In line with the logic of mood as a source of task-relevant information, we introduced a condition that made the source of participants' mood salient. This provided the possibility of attributing the mood to a source unrelated to the task. Consequently, in this condition we did not expect to find the systematic linguistic differences we had obtained thus far. Indeed, this is a well-tested manipulation (see Gasper & Clore, 1998, 2000; Gendolla & Krüsken, 2002; Hirt et al., 1997; Keltner et al., 1993; Schwarz & Clore, 1983; Sinclair et al., 1994).

The fourth study required participants to describe a neutral target film they saw prior to mood induction. Mood was induced by means of a second film clip. For half of the participants, the cause of their current mood was made salient by subtly suggesting to them that the second film clip they had just seen had affected their mood. For the other half of the participants the cause of their feelings was not made salient. Our central dependent variable was the level of linguistic abstraction participants used in describing the first film clip they had seen prior to the mood induction. This resulted in a two (mood: positive versus negative) by two (external attribution: yes vs. no) design, with linguistic abstraction as the dependent variable.

In addition, we included a measure designed to tap participants' judgment about the objectivity of their description. When judging their own description afterwards, participants should be able to judge whether their description is objectively descriptive and factual (i.e., concrete), rather than interpretive (i.e., abstract). This judgment should therefore provide us with an additional measure that is related to our own coding of linguistic abstraction.

Method

Participants and design

Eighty-eight undergraduates (32 men, 56 women, mean age 22 years) participated in this study that took about 25 min to complete, and were paid €2.50. They were randomly assigned to one of the four between participant conditions of a 2 (mood induction: positive vs. negative) \times 2 (external attribution: yes vs. no) design.

Materials and procedure

Participants were seated in individual cubicles and explained that all instructions and task would be presented to them on the monitor. Participants read that they were going to watch a number of film clips about which they were supposed to answer some questions.

Target film clip. The first film that was shown was the target film clip, which was the same clip as the one used in Study

3. The procedures and the subsequent *filler task* were the same as in Study 3.

Mood manipulation. Next, participants were presented with a second film clip in order to induce either a positive or negative mood. As in Study 1 and 2, we used, respectively, the "Jungle Book" clip and the "Sophie's choice" clip. After the clip, participants completed questions about the film, and *mood measure 1* containing the same scales as in Study 3.

External attribution manipulation. Subsequently, half of the participants was made aware of the cause of their current mood, by means of a procedure similar to the one used by Gasper and Clore (2000, Exp. 2). Participants in the attribution condition answered to three statements that suggested that the film clip they just saw was responsible for their current positive (or negative) feelings. The statements were rated on a scale ranging from 1 = not true, 2 = somewhat true, 3 = true, to 4 = certainly true, and were as follows: (a) As a result of watching the film I do temporarily experience somewhat positive (negative) feelings at the moment; (b) The somewhat positive (negative) feelings I am currently experiencing are possibly caused by the film clip I just saw; (c) If I had not seen the film clip, I would have experienced positive (negative) feelings to a lesser extent. Participants in general agreed with the statements (in the positive mood condition $M = 2.91$, $SD = .79$; in the negative mood condition $M = 3.41$, $SD = .71$). Participants in the no-attribution condition were not exposed to the statements.

Target film description. Next, participants were unexpectedly asked to describe the target film with the same instructions as in Study 3. When they had finished typing their description, they answered a number of questions about the task, presented in a scrambled order, on a scale ranging from 1 = not at all, to 7 = very much. Questions about (1) *difficulty to describe the scene*; and (2) *memory for the target film* (Cronbach's $\alpha = .77$) contained the same items as in Study 3. In this study, we also included two items to measure judgments about (3) the *objectivity of description*, "To what extent did you objectively describe what happened in the scene?" "To what extent did you describe your opinion about the scene? (recoded)," (Cronbach's $\alpha = .75$).

The time participants used from the end of the target film to the beginning of the description task was measured ($M = 634$ s, $SD = 49$ s). No significant differences in time were observed between experimental conditions ($F_s < 1$, external attribution: $F(1, 84) = 3.02$, $p = .09$).

Following the film description, participants filled out a personality scale (13 items), and completed another task that is not reported here. Finally, they rated their mood in *mood measure 2*, on the same two scales as in mood measure 1.

Dependent variables

The main dependent variable was again the mean linguistic abstraction of participants' descriptions of the

target film. Each verb and adjective referring to the social event represented in the target film was coded according to the LCM. One third of the stories was coded by a second independent coder. Inter coder agreement was reliable (Cohen's Kappa coefficient = .85).

Results

Manipulation check

A 2 (mood manipulation: positive vs. negative) \times 2 (external attribution: yes vs. no) ANOVA of *mood measure 1*, administered immediately after the mood manipulation, and prior to the external attribution manipulation, suggested that the mood manipulation was successful. Participants reported a more positive mood in the positive mood condition ($M = 8.05$, $SD = 1.08$) compared to the negative mood condition ($M = 2.92$, $SD = 1.74$), $F(1, 84) = 284.82$, $p < .001$. No other significant effects were observed (external attribution, $F(1, 84) = 3.64$, $p = .06$; interaction, $F < 1.1$, *ns*).

An additional ANOVA of *mood measure 2* demonstrated that mood was still significantly different between mood conditions at the very end of the experiment, $F(3, 84) = 10.88$, $p < .01$. That is, more positive in the positive mood condition ($M = 6.83$, $SD = 1.16$) compared to the negative mood condition ($M = 6.00$, $SD = 1.19$). Importantly, no effects of the external attribution manipulation were observed at this point ($F_s < 1$), suggesting that this manipulation did not affect the intensity of mood itself, but merely the salience of its cause (which is in line with Gendolla & Krüsken, 2002, Exp. 2).

Linguistic abstraction

The prediction that the target film would be described more abstractly by participants in the positive mood condition and more concretely by those in the negative mood condition, qualified by mood source identification, was examined in a 2 (mood manipulation: positive vs. negative) \times 2 (external attribution: yes vs. no) ANOVA with linguistic abstraction as the dependent variable. The predicted interaction was significant, $F(3, 84) = 3.99$, $p < .05$. Simple contrasts revealed that participants in the no external attribution condition used significantly more abstract language when in the positive mood condition ($M = 2.06$, $SD = .36$) compared to those in the negative mood condition ($M = 1.84$, $SD = .25$), $p < .05$. However, in the external attribution condition, where the cause of mood was made salient, no effect of mood condition on abstraction was observed. Here, the cell means show a slight non-significant reversal in the opposite direction (positive mood condition, $M = 1.91$, $SD = .33$, negative mood condition, $M = 2.00$, $SD = .46$). The analysis revealed no main effects ($F_s < 1$).

Importantly, an ANOVA with number of words as the dependent variable yielded no significant effects whatsoever (overall $M = 96.6$, $SD = 44.3$, all $F_s < 1$). The same non-effects were observed for the time participants needed to describe the scene (overall $M = 215$ s, $SD = 112$ s, all $F_s < 1$). These two analyses suggest that there were no mood-

induced differences in processing motivation or capacity during the writing task.

In addition, we analyzed participants' judgment of the *objectivity of their description*. This measure was found to be strongly correlated with linguistic abstraction, $r(88) = -.41$, $p < .001$, suggesting that participants can judge the extent to which their film description is descriptive and factual (i.e., concrete) rather than interpretive (i.e., abstract). Interestingly, an ANOVA yielded an interaction effect of mood condition by external attribution condition on this measure, $F(3, 84) = 3.65$, $p = .06$. Although marginally significant, it is highly consistent with the effects of linguistic abstraction. Participants in the no external attribution condition judged their description to be less objective when in the positive mood condition ($M = 4.98$, $SD = 1.34$), compared to those in the negative mood condition ($M = 5.71$, $SD = .80$), $p = .053$. In the external attribution condition, however, where the cause of mood was made salient, no effect of mood condition on participants' judgment was observed (positive mood condition: $M = 5.50$, $SD = .86$, negative mood condition: $M = 5.23$, $SD = 1.69$).

A final important finding is that we did not observe differences in reported memory for the target film (all $F_s < 1$), or in the difficulty to describe it (all $F_s < 1$).

Discussion

The data pattern is supportive of the contention that the 'mood-cognitive processing' interface suggested by the affect-as-information approach (Clore et al., 2001; Clore & Wyer et al., 2001; Schwarz & Clore, 1983, 1988) drives the systematic differences we observe in language use. When participants were not aware of the source for their mood then the pattern of language use as a function of positive and negative mood we found in the first three studies replicates. Participants in a positive mood are found to employ more abstract predicates than those in a negative mood when describing a neutral film that they were exposed to prior to the mood manipulation. However, if participants' attention is subtly drawn to the source of their mood then this systematic linguistic pattern is not observed.

Interestingly, participants' own judgment of the 'objectivity' of their description correlates with this pattern. Those who had described the scene in a negative mood judged their description to be more objective and descriptive, which fits with the characteristics of concrete language. In contrast, participants who described the scene in a positive mood judged their description to be less objective, and more interpretive (cf. abstract language). Notably, these effects were also only observed in the no external attribution condition.

A few other findings are important to note. First, differences in mood were still present after the external attribution manipulation. This indicates that the central component in producing these findings is the informa-

tional value of the mood. The intensity of the mood itself remains, yet, its informational value changes, and as a result it presumably ceases to have an effect on the adopted processing style, and consequently on the choice of words.

Another noteworthy finding, that is in fact consistently found across all four studies, is the lack of differences in word count and writing time between positive and negative mood conditions. In our view, this speaks against possible motivational (Clark & Isen, 1982; Wegener & Petty, 1994; Wegener et al., 1995) or capacity accounts (Ellis & Ashbrook, 1988; Isen, 1987; Mackie & Worth, 1989) for our findings. For instance, if individuals in a positive mood indeed lack the capacity required for an effortful processing strategy, as capacity accounts argued (Isen, 1987; Mackie & Worth, 1989), then this would most likely have been reflected in decreased effort (reflected in writing time and word count) during the writing task. Instead, it seems that in our studies mood has induced differences in processing *style* (that is, when it is ‘consulted’ as a source of information), which most appropriately fits the functional approach as described by the affect-as-information account.

General discussion

What are the broader implications of our findings? The first implication of this research is that it extends what has been known in terms of the intra-personal dynamics of the mood–cognition interface (see Martin & Clore, 2001) to a manifest linguistic level. The affect-as-information, and related accounts (Bless, 2000, 2001; Bless et al., 1996; Clore et al., 2001; Clore & Wyer et al., 2001; Fiedler, 2000, 2001; Schwarz & Skurnik, 2003) argue that people rely on their mood to tune their cognitive processing style. The processing style associated with positive feelings is paired with a global focus, and a reliance on generic, abstract knowledge. In contrast, the analytic processing style associated with negative feelings is paired with a narrowed focus of attention and a shift to a lower level of abstraction.

In the context of the present studies, we argue that such mood-induced processing differences are reflected in the words that are chosen to describe a social event. When thinking about an event they are about to describe, people in a negative mood are likely to have a specific focus of attention and an inclination to retain the original input and stick to concrete information (“the man drank from his glass”). Consequently, when representing their thoughts in language, they should be more descriptive and use concrete predicates to describe it. In contrast, when people in a positive mood think about the same social event, they are more likely to actively interpret and enrich the information that comes to mind by relying on existing general knowledge structures. They interpret the social event in more abstract and general categories (“the man was thirsty”). Consequently, when people are in a positive mood and asked to

represent the same situation in language, their linguistic representation features more interpretive abstract predicates.⁸

A second and very important implication of our findings are the effects such systematic linguistic differences in message composition have on the receivers of such messages. We know from the extant literature that the abstractness or concreteness of a message about social events shapes the types of inferences a receiver of such messages forms (e.g., Semin & De Poot, 1997; Werkman, Wigboldus, & Semin, 1999; Wigboldus, Semin, & Spears, 2000). When a social event is described more abstractly then receivers of this message infer that the persons in the situation acted the way they did because of their personality make up (dispositions) rather than situational forces; that the event lasted a long time (Semin & De Poot, 1997); and that such situations are more likely to recur on some further occasion (Maass, Salvi, Arcuri, & Semin, 1989), inter alia, relative to descriptions of the same event that are composed with more concrete predicates.

The four studies we reported here add an interesting complexion to these general findings by showing that the mood in which a person is influences the type of language register they are likely to use. Thus, if somebody is talking about a specific social event then the mood they will be in will influence the type of predicates she is likely to use. This means that, all other things being equal, when a person is recounting a social event in a positive mood then she is likely to convey different inferences about the same event compared to if she were in a negative mood.

It is also important to note what is not conveyed by linguistic abstraction. Affect and evaluation are orthogonal to linguistic abstraction. Thus, a listener will not be informed about the affective state of the speaker on the basis of the abstraction or concreteness of the language that the speaker uses. Obviously, there are other channels, which carry affective information such as the emotional tone of voice, or facial expressions. Such cues have been found to induce a congruent mood in the observer through processes of mood contagion (e.g., Dimberg, 1982; Dimberg, Thungberg, & Emehed, 2000; Hatfield, Cacioppo, & Rapson, 1994; Neumann & Strack, 2000). A particularly interesting avenue of research that suggests itself readily on the basis of this is the investigation of whether mood contagion processes simultaneously induce differential language use. A person might adopt a different linguistic strategy once he or she is exposed to the positive or negative emotional expressions of a communication partner. Thus, one would expect negative and positive emotional expressions (facial, vocal, etc.) of a speaker to influence the perceiver’s language use systematically. A negative expression (vocal or facial) should induce a more concrete language use in a perceiver, and the reverse for positive expressions from a source.

⁸ In our studies, we found that although all 4 predicate types of the LCM contribute to some extent to the observed effects of mood on the mean linguistic abstraction, the differences are to the largest extent caused by differences in the number of used adjectives.

Moreover, this differential language use may subsequently result in different inferences in a recipient, and most likely in different replies and reactions. In this light, mood may play an important role in shaping the course of a social interaction. These considerations, in our view, open a number of different possible avenues of research into the role of mood in communication, and the diverse manners in which it may influence social interaction.

Appendix A

Used pictures from the IAPS (Lang et al., 2001). The following pictures were used and presented in the following order. Negative mood condition: 2190, 2141, 2200, 2278, 2230, 2399, 2276, 2455, 9070, 2700, 2800, 2810, 2900, 8010, 9041, 9190. Positive mood condition: 2010, 8350, 2050, 2091, 2208, 2304, 8540, 2340, 2370, 2510, 2530, 2070, 2550, 8380, 4622, 8461 (all pictures depict people).

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