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## BRIEF REPORT

### **Mood and representations of behaviour: The how and why**

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Based on the idea that mood helps to tune cognitive processes to current demands, we hypothesised that mood should influence the abstraction level in which people think about behaviour, and that such mood-induced differences in cognitive attention should be manifested in behaviour descriptions. In this study, participants re-described a number of daily behaviours in their own words after a mood manipulation. As predicted, people in a positive mood were more likely to re-describe behaviours in general why terms, whereas people in a negative mood were relatively more likely to re-describe behaviours in specific how terms. The findings are discussed with respect to the role of mood in processes of behaviour regulation.

When thinking about, for example, writing a scientific paper, a person can think about many different features of this behaviour. One can think about the general goals that are pursued with this behaviour (e.g., “getting published”, “being a scientist”). Alternatively, one can think about the specific means to accomplish it (e.g., “typing words”, “writing an introduction”). These examples demonstrate that one can think about behaviour at different levels of abstraction. That is, the second set of examples entails more specific and feasible representations of behaviour than the first set, which entails more general and abstract representations. The question we address here is whether a person’s mood influences the level of specificity or generality to which one will cognitively tune when thinking about simple acts of behaviour. Based on the body of research that has demonstrated how mood influences cognitive processes (for an overview, see Martin & Clore, 2001), we predicted that mood should influence a person’s interpretation of a simple act. This, in our view, is an important issue as it may shed more light on the role of mood in processes of behaviour regulation, an issue that, to our knowledge, has not as yet been addressed empirically.

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## Mood and representations of behavior

Why would mood influence a person's thoughts about an act of behaviour? Previous research has amply demonstrated that mood influences people's style of information processing (Bless, 2000, 2001; Bless & Fiedler, 1995; Forgas, 1995; Schwarz, 1990; Schwarz & Clore, 1983, 1988, 1996). These lines of research demonstrate that people in a positive, happy mood tend to process information in a more heuristic and global manner (Bless, Bohner, Schwarz, & Strack, 1990; Isen, 1987; Mackie & Worth, 1989). A processing style that is argued to be paired with a global focus, and a reliance on generic, abstract knowledge (Bless, 2001; Clore, Gasper, & Garvin, 2001a; Clore et al., 2001b; Fiedler, 2001; Gasper & Clore, 2002; Schwarz & Skurnik, 2003). In contrast, people in a negative, or sad mood tend to use a more effortful, careful, systematic, and detail-oriented processing style (Bless et al., 1990; Mackie & Worth, 1989; Schwarz, 1990). This is a style of processing that is paired with a narrowed focus of attention and a shift to a lower level of abstraction (Bless, 2001; Clore et al., 2001a, 2001b; Gasper & Clore, 2002; Fiedler, 2001; Schwarz & Skurnik, 2003).

As a consequence of these different processing styles it has, for instance, been shown that people in a positive mood, compared to people in a negative mood, are more likely to rely on general knowledge like stereotypes in social judgements (Bless, Schwarz, & Wieland, 1996; Bodenhausen, Kramer, & Süsser, 1994; Park & Banaji, 2000) and activated scripts (Bless et al., 1996). Similarly, individuals in a positive, compared to a negative mood, show more clustering of information into broad, general trait categories in their recall of person descriptions (Bless, Hamilton, & Mackie, 1992). Also, happy individuals tend to employ relatively more broad and inclusive categories when sorting exemplars into categories, and to use a smaller number of piles to sort coloured chips (Isen & Daubman, 1984).

In a similar vein, we expect that mood may influence a person's thoughts about acts of behaviour. In accordance with the idea that cognitions of behaviour are organised in a hierarchical structure (Aarts & Dijksterhuis, 2000; Carver & Scheier, 1990; Gollwitzer & Moskowitz, 1996; Heckhausen & Beckmann, 1990; Vallacher & Wegner, 1987; Wegner & Vallacher, 1986), a person can have cognitive representations of behaviour in mind that vary in abstraction. On the one hand, a person can concern him or herself with behaviour at a general, high level (i.e., getting published). The person then focuses on a more general understanding of the action, indicating *why* the action is performed (cf. Vallacher & Wegner, 1987). On the other hand, a person can concern him or herself with behaviour at a more specific, low level (i.e., typing words). The individual then focuses attention at the details or specifics of the activity itself, indicating *how* it is performed (cf. Vallacher & Wegner, 1987).

As discussed above, a person in a positive mood is most likely to adopt a global focus and to rely on generic and abstract knowledge (Bless, 2000, 2001). This processing style promotes interpretation of the stimuli in more general terms, while attention to specifics is low. Thus, when thinking about an act of behaviour, a happy individual is most likely to access general understandings and meanings associated with the specific act. This is equivalent to generating thoughts about *why* an act is performed (i.e., to access cognitive representations that are at a more abstract level in the hierarchy).

A person in a negative mood is more likely to process information in a detail-oriented and analytic style (Bless, 2000, 2001). When thinking about a given act of behaviour, an individual in a negative mood is most likely to think about the details and specifics of the act. Rather than interpreting an act in general terms, one is more likely to specify it more locally and concretely, which is equivalent to thinking about *how* an act is performed. One moves to thinking about the behaviour at a lower level of abstraction.

From the above considerations, we conclude that a positive mood will be paired with a stronger tendency to activate general representations of behaviour, that is, the more abstract understandings and meanings of behaviour (*why*). And, by contrast, a negative mood will be paired with an increased tendency to activate specific representations of behaviour, that is, concrete and more localised means of behaviour (*how*). This is a prediction that is consistent with the literature on mood and cognitive processing (Martin & Clore, 2001). It can also be made on the basis of theoretical accounts concerned with behaviour regulation (Carver & Scheier, 1990; Heckhausen & Beckmann, 1990; Vallacher & Wegner, 1987; Wegner & Vallacher, 1986). Yet, the issue whether mood influences a person's thoughts about simple acts of behaviour has, to our knowledge, not been demonstrated empirically. It is however important, because it seems likely that the cognitive representation a person has in mind influences behaviour control and overt behaviour. The outcome of such a study may therefore shed light on the role of mood in processes of behaviour control.

The hypothesis was investigated by using a novel method in which participants were first induced in either a positive or a negative mood by means of a short film clip. Subsequently, participants were asked to re-describe a number of ordinary, daily behaviours in their own words. The translations-in-other-words were coded for being descriptive of either the *how* (subordinate) or *why* (superordinate) of the behaviour in the given items.

## METHOD

### Participants and design

A total of 56 Dutch undergraduates at the Free University of Amsterdam participated in this computer mediated study (20 male, 36 female,  $M = 21$  years old). They received 5 euros for their participation in this study, and an unrelated subsequent study. On entrance to the lab they were randomly assigned to one of the four conditions of a 2 (mood condition: positive, negative)  $\times$  2 (behaviour item order: order 1, order 2) between-participant design.

### 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.* To induce a positive or negative mood, participants were shown one short film clip on the computer screen, purportedly to examine emotions, and mood changes over time. To induce a positive mood we showed participants a scene from the Walt Disney cartoon *Jungle Book* (in which a little boy, Mowgli, is dancing and singing a jazzy song with Baloo the bear). To induce a negative mood we showed

participants a scene from the movie “Sophie’s Choice” (in which a mother is forced to choose between one of her children to be sent on a train to a concentration camp). The film clips were shown on the monitor of an I-mac (400 Mhz) and they last approximately 7 minutes.

It is inevitable that the film clips, besides their different effects on mood, differ on some other modalities. However, in a series of earlier studies in which these film clips were used (Beukeboom & Semin, 2004), we had obtained consistent effects in different replications using other film clips, as well as a completely different type of mood manipulation. This provided evidence that it is indeed the positive and negative mood induced by these clips that is causing any effects, rather than possible other variations between the clips.

Although a neutral baseline condition is normally useful to detect the direction of an effect, in the case of mood it is difficult to define what neutral means. Namely, neutral here is not the absence of mood. Consequently, conclusions about the direction of a mood effect are highly dependent on the type and relative effect of the manipulation that is used in the condition labelled as “neutral”. In the light of this, we did not find it informative to include a neutral mood condition. Instead, we aimed to focus on the relative difference between positive and negative mood.

*Mood measure.* Directly after the film clip participants were asked whether they experienced, at this very moment: (1) negative feelings and (2) positive feelings. Participants responded by using the mouse to click an answer on two 9-point scales that were anchored (1) *not at all*, (9) *very much*. Mood scores consisted of the mean score on these two scales (Cronbach’s  $\alpha = .95$ ).

*Behaviour re-description questionnaire.* Next, participants were asked to continue with an ostensibly unrelated experiment. They were instructed to take a questionnaire out of an envelope lying next to the computer. Participants read the following instruction on the questionnaire (partly based on Vallacher & Wegner, 1989): “This study is about how people think about behaviour. Any behaviour can be identified in different ways. For example a behaviour such as ‘typing a letter’, can be described as ‘pushing keys’ or as ‘expressing thoughts’. We are interested in the way in which you would like to describe a number of different behaviours. We are not interested in your opinion about these activities. Instead, we are interested in the way in which you would like to describe them in other words. In the task you get a number of sentences in the I-format, with a certain behaviour. It is your task to describe them in different way, with the first thing that comes to your mind”. Next, a few examples were given and participants were encouraged not to think about them too much, but to rely on their first inspiration when describing each behaviour.

The questionnaire consisted of a list of 18 items. These 18 behaviour-items were selected on the basis of a pilot study ( $N = 18$ ), in which 45 items were tested. The 45 tested items were partly taken from Vallacher and Wegner’s (1989) Behaviour Identification Form, and partly new items. We selected those items that resulted in a more or less equal number of *how* and *why* translations-in-other-words, and in a relatively small number of other-translations (translations that did not fall into either the *how* or *why* category, such as synonyms, opinions, consequences). The experimental items were: (1) I make a grocery list; (2) I wash my clothes; (3) I measure a room for carpeting; (4) I am taking care of the

plants; (5) I lock a door; (6) I brush my teeth; (7) I call someone on the phone; (8) I ride a bike; (9) I buy flowers; (10) I read the newspaper; (11) I eat a sandwich; (12) I send a postcard; (13) I ring a doorbell; (14) I drink tea; (15) I do the dishes; (16) I cook macaroni; (17) I greet someone; (18) I send an e-mail. Participants received a questionnaire with either order 1, which was the random order as presented here, or order 2, which was the opposite order. After filling out the questionnaire they continued with another unrelated study, after which they were debriefed, thanked, and paid.

### Dependent variables

*Coding the translations-in-other-words: How vs. Why.* The dependent variable consisted of the number of *how*, and *why* sentences that participants produced in “translating” the 18 behaviours. To obtain these two variables the translations-in-other-words were coded, blind to experimental condition, by two independent judges into either (1) *how*, (2) *why*, or (3) *other*. The two judges used the following rules to decide in which of the three categories a translation belonged (see Liberman & Trope, 1998). (1) *How*: How-translations describe the means by which the behaviour in the item is conducted. The content of these behaviour translations is subordinate to, or more specific than, the content of the item. Therefore they fit in the structure: [item] by [translation], e.g., “locking the door” by “turning the key”. Translations referring to time or place (2.3% of total number) were also coded in this category. (2) *Why*: Why translations describe the ends to which the behaviour in the item is conducted. The content of these behaviour translations are superordinate to, or more general than, the content of the item. Therefore they fit the structure (translation) by (item) (e.g., “arranging safety” by “locking the door”). (3) *Other*: These translations do not fit either the how-to or why-to category. These are, for example, exact synonyms that are descriptive of behaviour that is done simultaneously with the activity in the item, or are descriptive of both how and why.

The two judges agreed on 88.9% of the translations (Cohen’s kappa = .80). In 7.3% of the cases, one judge coded the translation to fit either the *how* or *why* category, whereas the other judge coded the translation as fitting the *other* category. Only 3.8% of the translations were classified by one judge as *how*, and by the other judge as *why*. These cases were resolved by discussion between the judges.

## RESULTS

### Manipulation check

On the basis of an initial analysis of the mean mood score two participants were excluded from further analyses, because of extreme deviating mood scores (more than 3.5 standard deviations from the mean in the mood condition). Further analyses of the mood scores showed that participants in the positive mood condition reported a significantly more positive mood ( $M = 7.97$ ,  $SD = 0.82$ ) than participants in the negative mood condition ( $M = 2.8$ ,  $SD = 1.43$ ),  $t(52) = 16.56$ ,  $p < .001$ , which indicates that the mood manipulation was successful.

### How and why translations-in-other-words

In total, 34.9% of the total translations was coded as fitting the *how*-to category and 57.9% was coded as fitting the *why*-to category, which shows that in general people were

more likely to focus on the superordinate *why* aspects. This is in line with Action Identification Theory findings that show that preference is usually given to high levels of action identification (Vallacher & Wegner, 1987). Only 7.2% of the total number of translations did not fit either the *how* or *why* category, and were classified in the *other* category. The number of *why* and *how* translations are strongly interdependent ( $r(54) = -.93, p < .001$ ), given the relatively small number of *other* translations. In the following analyses, the number of *how* translations is used as the dependent variable. This produces the same, but opposite, effects as the number of *why* translations.

It was predicted that people in a negative mood would produce relatively more *how* descriptions, whereas people in a positive mood would produce relatively more *why* descriptions. The number of *how* translations was subjected to a univariate ANOVA with Mood (positive, negative) and Sex (male, female) as between-participants variables. The variable "order of items" (order 1, order 2) did not show any main nor interaction effects (all  $F_s < 1.1$ , n.s.), and is therefore not considered here. The analyses revealed the predicted main effect of mood condition,  $F(1, 50) = 4.15, p < .05$ . In Table 1 the means of the different types of translations are depicted. One can see that participants in the negative mood condition translated the behaviours, as expected, more often in *how* terms, compared to participants in the positive mood condition. The exact opposite effect is true for the number of *why* translations. In the positive mood condition more *why* translations were made than in the negative mood condition. No differences were observed for the number of *other* translations.

Not directly relevant to the current research questions, is the observation of a marginal main effect of participant Sex,  $F(1, 50) = 3.77, p = .06$ . Women translated the behaviours more often in *how* terms ( $M = 7.11, SD = 5.8$ ), compared to men ( $M = 4.68, SD = 4.76$ ). This marginal effect was, however, completely orthogonal to the effect of Mood condition, no interaction was observed,  $F(1, 50) < 1$ , n.s.

TABLE 1  
Mean (and standard deviations) of the number of How, Why, and Other translations-in-other-words of the 18 behaviours, in the positive and negative mood conditions

Translation	Mood condition		F(1, 50)	Sign.	
	Positive (n = 29)	Negative (n = 25)			
How (specific)	M (SD)	5.00 (4.96)	7.72 (5.93)	4.15	p < .05
Why (general)	M (SD)	11.66 (5.67)	8.84 (6.09)	4.02	p < .05
Other	M (SD)	1.31 (2.24)	1.44 (2.24)	<1	n.s.

Note: N = 54. Depicted F-values are based on univariate ANOVAs. There was one missing value in the positive mood condition.

## DISCUSSION

The results of this study show that, when describing behaviour in other words, people in a positive mood (compared to negative mood) have a stronger tendency to describe behaviours with a focus on general, superordinate aspects (i.e., *why*-to-perform-it). When provided with a behaviour description, they presumably access general and abstract cognitive representations of the behaviour, which is reflected in their translations. In a negative mood, by contrast, people are less likely to describe behaviours with a focus on *why* aspects, and, compared to people in a positive mood, their tendency to describe behaviour with a focus on specific aspects is significantly stronger. When provided with a behaviour, people in a negative mood presumably access more specific and feasible cognitive representations of the behaviour, reflecting the *how*-to-perform-it. Most probably, these effects arise from the different processing styles that positive and negative mood induce (Bless, 2000, 2001; Clore et al., 2001a, 2001b).

### Mood and processes of behaviour regulation

It seems likely that the observed effects of mood on the abstraction of behaviour representations are part of a functional behaviour regulation process. Mood has been argued to serve an adaptive purpose by providing information about the nature of the present situation, and about a person's progress in goal pursuit (Bless, 2000; Carver & Scheier, 1990; Frijda, 1988; Schwarz, 2001; Schwarz & Clore, 1983, 1988, 1996). Negative affect is argued to arise in problematic situations, and when progress towards a goal is perceived as unsatisfactory. Positive affect is experienced in situations that provide no problems, and progress toward a desired goal is perceived as satisfactory or rapid (Carver & Scheier, 1990; Clore et al., 2001a). Simultaneously with changes in mood, people are thought to tune their cognitive processes to the most functional processing style, and thus adjust to the demands of the situation. It is therefore functional if people, simultaneously with changes in mood, adjust their level of behaviour control and the specificity of the acts of behaviour they pursue (Carver & Scheier, 1990). A careful way of attending to one's behaviour is required in problematic (i.e., negative mood) situations. When a negative mood is experienced it seems most adaptive to access and rely upon more specific and feasible representations of the behaviour that indicate *how* an action should be performed. Namely, when people have the required specific behaviours in mind then it is likely to be performed effectively (Gollwitzer 1993; Gollwitzer & Moskowitz, 1996; Pham & Taylor, 1999; Vallacher & Wegner, 1987; Wegner & Vallacher, 1986). By contrast, people can rely on their experience with a behaviour when the situation is experienced as positive or benign, and when progress toward a goal is satisfactory (i.e., positive mood situations). In a positive mood, progress towards a goal does not require attention to specifics of the activity since no problem is signalled. Consequently, behaviour control is shifted from the specifics of the activities to the general overarching goal, and behaviour can presumably be conducted more automatically (Aarts & Dijksterhuis, 2000; Heckhausen & Beckmann, 1990; Vallacher & Wegner, 1987).

Aside from the possible implications for behaviour regulation, the present findings may also provide some knowledge about the effects of mood on how people communicate about behaviour. The presumed processing differences between people in positive and negative mood were reflected in the way in which acts of behaviours were described.



People in a positive mood were more likely to re-describe behaviour in general, abstract terms, whereas people in a negative mood were relatively more likely to re-describe the behaviour in concrete and specific terms. In the light of these and other findings (see Beukeboom & Semin, 2004) it seems that mood can have a profound effect on the way in which people communicate about their own and other people's behaviour. For instance, we know from the extant literature that the abstractness or concreteness in which people talk about behaviour 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). Thus, all other things being equal, a happy person talking about an act of behaviour is likely to convey different information about this behaviour than a person in a negative mood. Possibly, such effects of mood in communicating about behavior may eventually influence the performance of the discussed activities as well.

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