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**In the Mood to Break the Rules:
Happiness Promotes Linguistic Abstractness and Transgression of Grice's Conversation
Rules**

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To appear in J. P. Forgas, J. Laszlo & O. Vincze (Eds.),
Social Cognition and Communication

Abstract

Positive and negative moods are a constant companion in our everyday life, influencing both *how* and *what* we communicate. Based on the assimilative / accommodative processing model (Bless & Fiedler, 2006), two studies predicted and found that when sending messages people in a positive mood are more likely to communicate abstract information, less likely to communicate concrete information (Experiments 1 + 2), and less likely to adhere to Grice's conversational maxims (Experiment 2) compared to people in a negative mood (Grice, 1975). In Experiments 1 and 2, participants in a negative mood use more concrete, and those in a positive mood used more abstract communicative acts when speaking and writing about both factual and fictional events, extending earlier findings that mood influences linguistic abstractness (Beukeboom & Semin, 2005, 2006). In Experiment 2 we developed a new set of empirical measures assessing transgressions of the conversational maxims (quantity, relevance, quality and manner) postulated by Grice. Our results suggest that negative mood resulted in greater adherence to Grice's maxims in comparison to positive mood. These findings are consistent with positive affect promoting a more abstract, top-down and *assimilative* thinking style, and negative affect promoting more concrete, bottom-up and *accommodative* thinking. Assimilative thinking results both in increased linguistic abstractness (Experiments 1 + 2) and in less attention to external normative expectations such as Grice's maxims (Experiment 2). The theoretical relevance of our findings and their implications for everyday communication are discussed, suggesting that moods have a significant but latent influence on the way people form their communicative strategies.

In the Mood to Break the Rules: Happiness Promotes Linguistic Abstractness and
Transgression of Grice's Conversation Rules

Introduction

Staying tuned to the complex state of affairs and course of events in our environment requires that we mutually engage in circulating both first-hand and second-hand information. At this, however, varied compositions of motivational, affective and cognitive factors determine what and how we speak or write, leading to great and far-reaching differences in communication output based on the same input of information (Fiedler, 2007; Forgas, 2007). For example, when asked to give account of the same event, promotion-oriented individuals in a good mood may feel inclined to report a great amount of positive things, whereas prevention-oriented individuals in a bad mood may feel inclined to report a small amount of negative things (Bower & Forgas, 2000; Higgins, 1997). The present chapter is devoted to illustrate how *affective states* and *cognitive processing styles* may interact in influencing language use in terms of two fundamental aspects of communication style.

In particular, we would like to argue that *positive* mood triggers *assimilative* thinking, that *negative* mood triggers *accommodative* thinking (Bless & Fiedler, 2006), and that this mood-induced processing dichotomy translates into meaningful and considerable differences in (1) the extent to which communicators commit *breach of standard conversation rules* and (2) the level of *linguistic abstractness* they adopt. To be precise, assimilative processing in good mood is hypothesized to promote greater breach of standard communication rules and greater linguistic abstractness than accommodative processing in bad mood. Surely these basic aspects of communication style have so far received little attention in terms of being subject to affective-cognitive influence. Therefore, showing the predicted effects would further increase the explanatory power of mood-based cognitive styles for variations in language use (see Forgas, this volume), some of which are known to have dramatic effects on how receivers understand and react to a sender's message (see Fiedler & Mata, this volume).

Mood States and Cognitive Processing Styles

Positive and negative mood promote qualitatively different processing styles. According to Bless and Fiedler's (2006) assimilative / accommodative processing theory, moods are informative about whether the current situation poses assimilative chances or accommodative challenges to the self, and thus subconsciously regulate whether we construe adaptive cognition as "imposing internal structures on the external world" (= *assimilation*) or "modifying internal structures in accordance with external constraints" (= *accommodation*; Bless & Fiedler, 2006, p. 66). Positive mood signals that the environment is familiar / benign, and that it is adequate to process incoming information in an internally focused, top-down and assimilative fashion where people follow their own intentions and intuitively apply their abstract, integrated knowledge to interpret and respond to the current situation. In contrast, negative mood signals that the environment is novel / malign, and that it is necessary to process incoming information in an externally focused, bottom-up and accommodative way where people follow socially prescribed rules and deliberately attend to concrete, separate stimuli to interpret and respond to the current situation. That is, people in a good mood are guided by their own goals and rely on internal, abstract and integrated knowledge structures, whereas people in a bad mood are guided by social norms and turn to external, concrete and separate stimulus cues to make sense of the world (Bless, 2000; Bless & Fiedler, 2006; Fiedler, 2001; Forgas, 2002, 2010).

Mood States and Communication Style

Given that happy individuals rather *transform* incoming information according to their internal goals and abstract concepts, categories, expectations, ideas etc. (i.e., *assimilation*), and given that unhappy individuals tend to pay more attention to external norms and rather *preserve* stimulus information (i.e., *accommodation*; Bless & Fiedler, 2006; Forgas, 2010), our predictions for mood effects on communication style are straightforward and easy to see: Positive mood should promote both linguistic abstractness and transgressions of standard

communication rules. In contrast, negative mood should promote both linguistic concreteness and compliance with standard conversation rules. In other words, positive affect should increase peoples' tendency to tell things in their own way compared to negative affect.

To test these two hypotheses, we conducted two studies. Positive, neutral, or negative moods were induced through affective film clips, and participants were instructed to communicate an episode that was presented to them earlier (Study 2), or to make up events starting from the same set of input information (Study 1). The resulting output was analyzed by independent coders (blind to condition and hypotheses) who used elaborate, theory-based and largely objective coding schemes (see below) to arrive at ratings of linguistic abstractness and adherence to standard communication rules for each subject in all three mood conditions. As outlined above, we expected to find a meaningful and considerable difference between subjects in a positive and negative mood regarding both linguistic abstractness (Study 1 + 2) and transgressions of standard conversation norms (Study 2).

Study 1

Method

Overview, design, and participants. Study 1 investigated whether induced affect moderates the level of abstractness used in written communications regarding fictional events. We applied a one-way, between-subjects design, with mood state (positive, neutral, or negative) as the independent variable, and linguistic abstractness as the dependent variable. 100 students (39 men, 61 women) participated for course credit.

Procedure and materials. Upon arrival, subjects were told that the lab session involves taking part in two ostensibly unrelated studies: “evaluating film clips to be used in a later study” (in fact, the mood manipulation), and “writing three fictional stories”. At first, they watched an 8-minute excerpt from *Love Actually*, from a documentary on birds, or from *Angela's Ashes*. After this positive, neutral, or negative mood induction, respectively, participants viewed three ambiguous images (a captain and a passenger talking at the side of

an anchored vessel, two lab-coated scientists working in a lab, and an employee sitting at an office desk) selected from the thematic apperception test (McClelland, Atkinson, Clark, & Lowell, 1953), designed to elicit idiosyncratic interpretations that among other things also vary in terms of level of abstractness. Subjects were asked “what comes to your mind when looking at the images that lie in front of you? Please create and write down a fictional story for each of these three images, and describe: Who are these people, and what is happening? What happened before, how did the story begin? What are these people thinking about, and how do they feel? What will happen, how will the story end?” Participants worked on this creative writing task for as long as they wanted. Finally, prior to a debriefing that concluded the experiment, they completed a questionnaire which consisted of several distracter items plus two 9-point scales (‘bad-good’ and ‘sad-happy’) asking them to indicate how they had felt after watching the affective film clip.

Dependent variables. Two independent coders blind to condition and hypotheses separated all the stories written by participants into 3729 distinct communicative acts, each referring to a trait, a state, an action, or the context / background of a story. Next, they numerically coded every communicative act for level of abstractness on a 4-point scale, as a trait (= 4; e.g., “the captain is an *evil* man”), a state (= 3; e.g., “he *hopes* the cruise goes well”), an interpreted action (= 2; e.g., “he *smuggled* something on board”), or a described action (= 1; e.g., “he is *talking* to a businessman”), achieving a satisfactory inter-rater agreement (Cohen’s $\kappa = .73$). Communicative acts referring to the context / background of a story (17.5%; e.g., “the people are two school students in a chemistry lab”) were not analyzed further as we were only interested in the ones referring to the persons mentioned in the fictional stories. This operationalization of linguistic abstractness was based on the linguistic category model (LCM, Semin & Fiedler, 1988; 1991; 1992), which specifies four increasingly abstract ways of communicating about people: descriptive action verbs (DAVs, e.g. ‘said’ and ‘paid’) describe observable, *concrete behaviors*; interpretive action verbs (IAVs, e.g.,

‘babbled’ and ‘wasted’) interpret and evaluate a *sequence of observable behaviors*; state verbs (SVs; e.g. ‘loved’ and ‘craved’) infer unobservable, more abstract psychological *states*, and adjectives (ADJs; e.g. ‘spoiled’ and ‘impulsive’) describe highly abstract, unobservable *traits*. An average abstractness score ranging from 1-4 was calculated for each subject.

Results

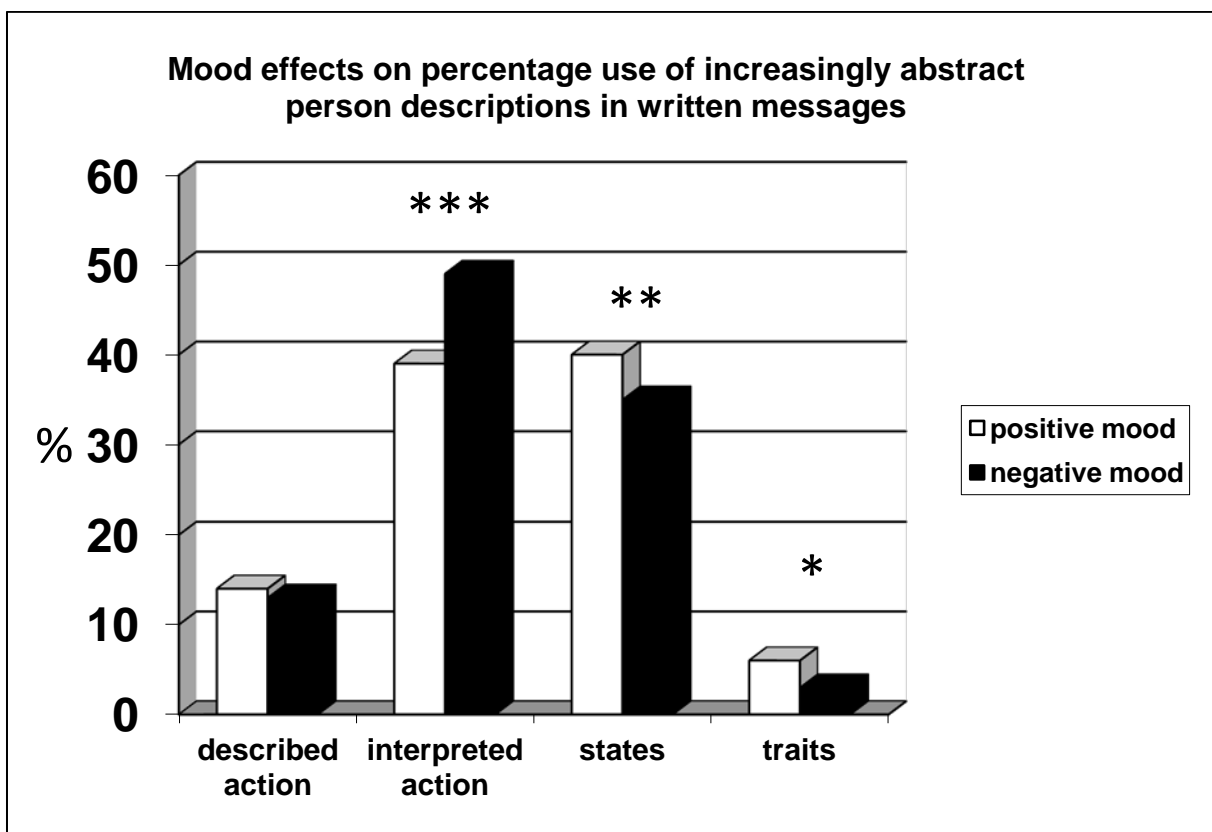
Mood validation. The ‘sad-happy’ and ‘bad-good’ mood scales were highly correlated ($r = .59, p < .001$), and thus were combined to form a single scale. As expected, mood was significantly better after watching the positive rather than the neutral film ($M_{positive} = 7.45, SD = 1.57; M_{neutral} = 6.09, SD = 1.47$), $t(65) = 3.66, p < .001, d = 0.88$, and significantly better after watching the neutral rather than the negative film ($M_{negative} = 3.57, SD = 0.91$), $t(64) = 8.35, p < .001, d = 2.11$, confirming the effectiveness of our mood manipulation.

Preliminary analyses. There was no difference between the mood conditions regarding the number of communicative acts used ($M_{pos} = 38.79, SD = 10.15; M_{neu} = 37.48, SD = 9.38; M_{neg} = 38.96, SD = 12.63$), and the number of words written ($M_{pos} = 295, SD = 88; M_{neu} = 289, SD = 71; M_{neg} = 297, SD = 102$), $F_{references}(2, 97) = 0.18, NS$, and $F_{words}(2, 97) = 0.07, NS$. From this it follows that any mood effect on linguistic abstractness cannot be confounded by the amount of material communicated.

Linguistic abstractness. An ANOVA of the linguistic abstractness measure revealed a significant mood effect, $F(2, 97) = 3.43, p < .05, \eta^2 = .07$. As expected, good mood resulted in a more abstract language use than bad mood ($M_{positive} = 2.38, SD = 0.14; M_{negative} = 2.28, SD = 0.17$), $t(65) = 2.58, p = .01, d = 0.64$. The control group fell in between the positive and negative mood conditions ($M_{neutral} = 2.32, SD = 0.15$), but neither the mean difference between the neutral and the negative group, $t(64) = 0.98, NS$, nor the mean difference between the positive and the neutral group, $t(65) = 1.64, NS$, were significant.

Next, mood effects on each of the four levels of linguistic abstractness were analyzed by means of a 2 (mood: positive vs. negative) x 4 (percentage of communicative acts

containing traits vs. states vs. action interpretations vs. action descriptions) mixed ANOVA with repeated measures on the second factor. Results confirmed that mood made a significant difference to the percentage with which the four levels of abstractness were used, $F(3, 195) = 7.90, p < .001, \eta^2 = .11$. Abstract references to traits ($M_{positive} = 6\%, SD = 5\%; M_{negative} = 3\%, SD = 4\%$) and states ($M_{positive} = 40\%, SD = 9\%; M_{negative} = 35\%, SD = 8\%$) were significantly more frequent in positive rather than negative mood, $t_{traits}(65) = 2.31, p < .05, d = .57$, and $t_{states}(65) = 2.77, p < .01, d = .67$. In contrast, less abstract action interpretations ($M_{positive} = 39\%, SD = 8\%; M_{negative} = 49\%, SD = 11\%$) were significantly more frequent in negative rather than positive mood, $t_{IA}(65) = 3.96, p < .001, d = .97$. Concrete action descriptions ($M_{positive} = 14\%, SD = 7\%; M_{negative} = 13\%, SD = 11\%$) were equally frequent across positive and negative mood, $t_{DA}(65) = 0.44, NS$.



Discussion

Consistent with the assimilative / accommodative processing theory (Bless & Fiedler, 2006), these results confirm that moods may significantly influence the level of abstractness

in communications about entirely fictional, self-created events. Overall, positive mood yielded more abstract communicative acts than negative mood. In other words, those experiencing negative affect adopted a more concrete communication style than those experiencing positive affect. Interestingly, we found no mood effects on the relative frequency of the most concrete type of communicative act (plain action descriptions), which suggests that coming up with a tangible course of action was equally important to participants in good and bad mood. Rather, the observed main effect of mood on linguistic abstractness is due to that subjects in a good mood chose to comment on behaviors in more abstract ways, making more inferences about the unobservable traits and states of the persons in their stories. In contrast, subjects in a bad mood commented on the target event in less abstract ways, simply providing more interpretations and evaluations of in principle observable behaviors.

Study 2 aimed at confirming and extending these findings in several directions. Communicating fictional events generated on the spot, as investigated in Study 1, essentially is a creativity task that involves a great deal of *divergent*, unrestricted thinking (Cromptley, 2006) open to influence of mood-based processing styles (Forgas, 1995). In contrast, communicating specific occurrences from the past is by far less likely to vary as a function of assimilative versus accommodative processing (Bless & Fiedler, 2006), because accurately recalling a clearly defined cluster of information calls for *convergent* thinking (Cromptley, 2006) based on a restricted range of representations and associations in memory. In order to examine the robustness and generality of mood effects on linguistic abstractness, Study 2 aimed at replicating the findings of Study 1 in such a straightforward task where subjects were asked to recount an actually recently experienced event.

Further, given the substantial differences between the cognitive processes that underlie writing and speaking (Casagrande & Cortini, 2008; Chafe, 1982; Hidi & Hildyard, 1983; Redeker, 1984), clarification is needed as to whether the mood effects observed in Study 1

hold true for both written and verbal messages – therefore, in Study 2, we asked participants to speak rather than write about what happened in the target event.

Also, to examine our second hypothesis that mood states influence the extent of adherence to standard communication rules, we implemented a transgression index for each of the *conversational maxims* postulated by *Grice* (quantity, quality, relevance and manner; Grice, 1975). As assimilative processing promotes personal preferences and intentions regarding communication style, and as accommodative processing promotes attention to socially prescribed communication rules (Bless & Fiedler, 2006; Forgas, 2010), we expected that happy, assimilative thinkers commit significantly more transgressions of Grice's quantity, quality, relevance and manner maxims than unhappy, accommodative thinkers.

Study 2

Method

Overview, design, and participants. Study 2 looked at verbal messages about factual events, investigating whether induced mood moderates linguistic abstractness as well as adherence to standard conversation norms. We applied two one-way, between-subjects designs, with mood (positive, neutral, or negative) as the independent variable, and linguistic abstractness and overall transgression of Grice's conversational maxims as the two dependent variables (Grice, 1975, 2008). Ninety-eight students (30 men, 68 women) participated.

Procedure and materials. At first, participants were informed that the lab session involves two ostensibly unrelated tasks: "evaluating film clips to be used in a later study" (in fact, the mood manipulation), and "describing a social interaction in your own words". Then, they watched a funny, affectively neutral, or sad mood induction film (5-minute excerpts from *The Jungle Book*, from a documentary on birds, and from *The Shawshank Redemption*, respectively). Next, participants were presented with a highly ambiguous social interaction from *Annie Hall* (2.5 minutes). The episode showed the encounter between comedian Alvi and backstage manager Alison, who appear to be either arguing, or flirting with each other.

Immediately afterwards, they were instructed to recount this social interaction to “a friend who wants to know what happened” by speaking into a microphone for between 1-3 minutes in total, and their narratives were recorded. Finally, prior to a thorough debriefing, participants completed distracter items plus two 9-point scales (‘bad-good’ and ‘sad-happy’) asking them to indicate how they had felt after watching the affective film clip.

Dependent variables – linguistic abstractness. In order to preclude unwanted effects of paralinguistic communication features (e.g., tone and voice pitch), the recorded narratives were transcribed into text prior to the coding phase. Linguistic abstractness was coded using the same method as described in the previous study. Two coders blind to condition and hypotheses first identified 1681 distinct communicative acts, and then rated their abstractness on the same 4-point scale as in Study 1, achieving a satisfactory inter-rater agreement (Cohen’s $\kappa = .68$). Again, communicative acts referring to context / background of the target event were excluded (12.2% in total), leaving 1476 communicative acts in the final analysis. Furthermore, meta-cognitive remarks (e.g., ‘I guess’ and ‘I don’t know’), false starts, stuttering and fillers, such as ‘then’, ‘and’, ‘so’, ‘like’, ‘um’, ‘yeah’ etc., were also omitted (27.1% of all words spoken). As in Study 1, an average abstractness score ranging from 1-4 was calculated for each participant.

Dependent variables – overall transgression of Grice’s conversational norms. According to Grice (1975), when *sharing information* is the purpose of a social interaction, then it is in everyone’s best interest to comply with the four *conversational maxims* of *quantity*, *quality*, *relevance* and *manner*, social norms that define the most efficient and thus expected way of communicating. The maxim of *quantity* calls for contributions to be as informative, but not more so than required for the aim of a given conversation. The maxim of *quality* requires “do not say what you believe is false” and “do not say that for which you lack adequate evidence”. The maxim of *relevance* demands to voice only germane information. Finally, the maxim of *manner* urges dialogue partners to “avoid obscurity and ambiguity”,

and to “be brief and orderly” (Grice, 1975, pp. 45-46). In sum, these four socially prescribed communication rules demand to clearly utter an appropriate amount of exclusively relevant and truthful information. In the present study, transgressions of these four recommendations were assessed by five other independent judges (blind to condition and hypotheses), who were highly familiar with the target event to be communicated, and who assigned ratings based on the four content-related operationalizations described in the following sections.

As already noted by Grice himself (Grice, 1975, 2008), the relevance and quantity maxims partially overlap each other, because providing irrelevant information is tantamount to providing too much information, and failing to provide relevant information is tantamount to providing too little information. As a possible approach to clearly distinguish between transgressions of these two maxims, the quantity index was set to measure the number of relevant communicative acts that nevertheless were absent in a subject’s event report. In contrast, the relevance index was set to measure the number of irrelevant communicative acts that nevertheless were present in a participant’s event report. In order to establish which particular pieces of information are relevant for describing the target event, we took the average number of produced communicative acts ($M \sim 12$) as a starting point, and instructed two more independent judges blind to condition and hypotheses to familiarize themselves with the target event, and to then split it into twelve distinct and equally relevant sub-events, yielding two very similar solutions (see Appendices). Sub-events listed and not listed in these two sub-event catalogues were defined as relevant and irrelevant for describing the event, respectively. Thus, scores on the *quantity transgression* measure were higher the more relevant sub-events were absent in participants’ narratives ($M = 5.78$ out of 12, $SD = 1.67$; inter-rater agreement: $Mr = .71$, $SD = .06$; for an example, see Appendices), whereas scores on the *relevance transgression* measure were higher the more irrelevant sub-events were present in participants’ narratives ($M = 1.10$; $SD = 0.91$; inter-rater agreement: $Mr = .34$, $SD = .14$; e.g., “he was wearing a brown jacket”).

Transgression of the maxim of quality was measured by a separate scale indicating the number of obviously untrue (or at least highly speculative) communicative acts produced by each subject ($M = 0.71$, $SD = 0.67$; inter-rater agreement: $Mr = .35$, $SD = .11$; e.g., “he didn’t keep eye-contact with her”). Finally, *transgression of the maxim of manner* was measured by (a) *prolixity* as indicated by the average number of words per communicative act ($M = 9.22$, $SD = 1.99$), (b) *redundancy* as indicated by the number of repetitions of communicative acts ($M = 1.91$, $SD = 1.31$; e.g., “he keeps freaking out” and “he keeps doing this”), and (c) *discontinuity* as indicated by the number of pauses and filler words / phrases (e.g., ‘like’, ‘um’, ‘yeah’, ‘I don’t know’ etc.) interrupting the speech flow ($M = 12.35$, $SD = 5.11$). Participants’ prolixity, redundancy and discontinuity scores were transformed into Z-scores and averaged within participants and across the five judges, achieving a satisfactory inter-rater agreement ($Mr = .72$, $SD = .06$).

In sum, participants’ adherence to standard conversation norms was assessed by four separate measures indicating transgressions of the quantity, relevance, quality and manner maxims postulated by Grice (1975, 2008). The intercorrelations between these four measures were low ($Mr_{[quantity, quality]} = .09$, $SD = .09$; $Mr_{[quantity, relevance]} = .06$, $SD = .15$; $Mr_{[quantity, manner]} = -.24$; $SD = .08$; $Mr_{[quality, relevance]} = .15$; $SD = .06$; $Mr_{[quality, manner]} = .04$; $SD = .13$; $Mr_{[relevance, manner]} = .12$; $SD = .15$; calculated within judges and reported as averaged across judges), confirming that we succeeded in assessing transgressions of distinct yet theoretically related communication rules. Finally, averaging across the four scores indicating transgressions of the quantity, relevance, quality and manner maxims, we computed a Z-score indicating overall transgression of Grice’s conversation norms.

Results

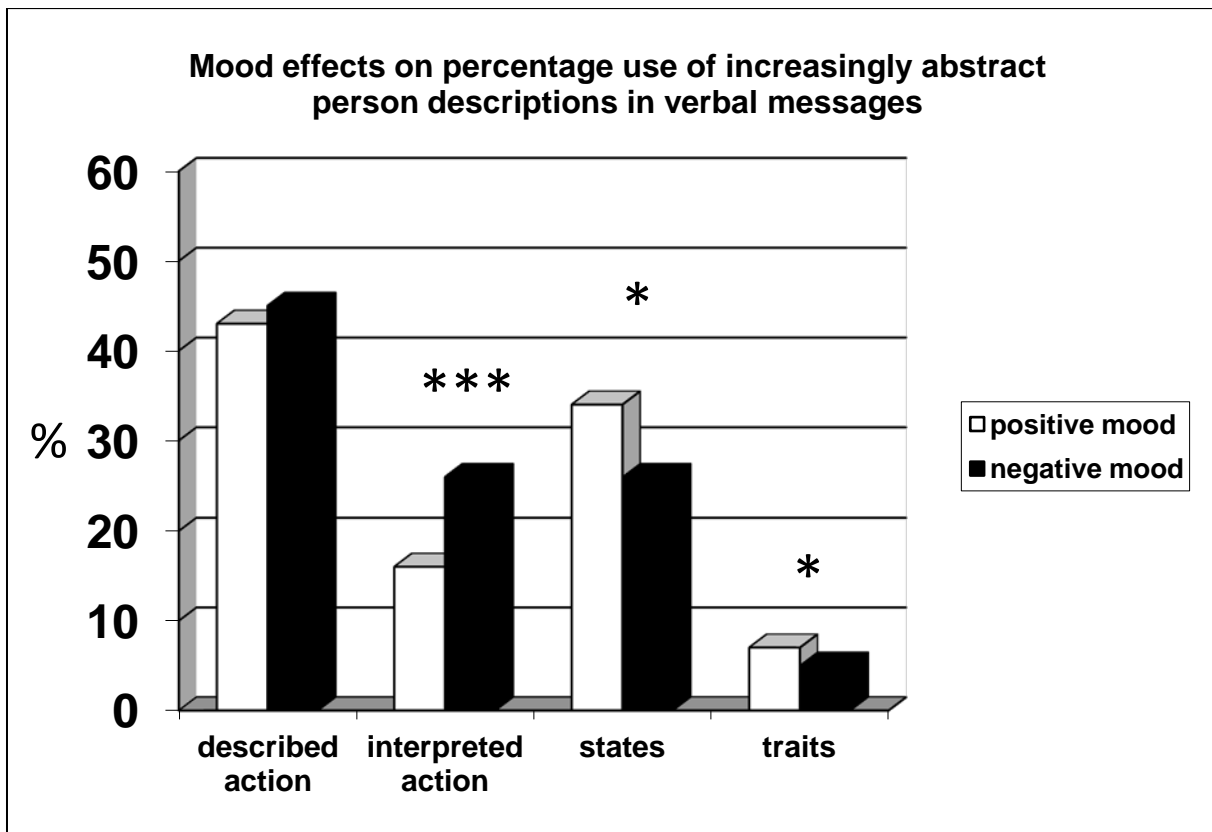
Three subjects were excluded from the following analyses whose total number of words spoken was at least 3 SDs higher or lower than the overall mean ($M_{words} = 180$, $SD = 62$), because such atypical verbosity may confound the results.

Mood validation. The mood self-ratings on the ‘sad-happy’ and ‘bad-good’ scales were highly correlated ($r = .95, p < .001$), and thus were combined to form a single scale. As expected, mood was significantly better after watching the positive rather than the neutral film ($M_{positive} = 7.33, SD = 1.83; M_{neutral} = 5.05, SD = 1.01$), $t(59) = 5.80, p < .001, d = 1.60$, and significantly better after watching the neutral rather than the negative film ($M_{negative} = 2.76, SD = 0.81$), $t(59) = 9.82, p < .001, d = 2.51$.

Preliminary analyses. As in Study 1, we found no differences between the mood conditions regarding the number of communicative acts produced ($M_{pos} = 14.41, SD = 5.11; M_{neu} = 15.07, SD = 5.15; M_{neg} = 14.61, SD = 5.32$), the number of words spoken ($M_{pos} = 186, SD = 59; M_{neu} = 176, SD = 54; M_{neg} = 170, SD = 54$), and the time taken to recount the target event ($M_{pos} = 76s, SD = 18s; M_{neu} = 77s, SD = 19s; M_{neg} = 73s, SD = 17s$), $F_{references}(2, 92) = 0.25, NS, F_{words}(2, 92) = 0.72, NS$, and $F_{time}(2, 92) = 0.34, NS$, which confirms that any mood effects on linguistic abstractness and transgression of Grice’s conversation norms cannot be confounded by the amount of material communicated.

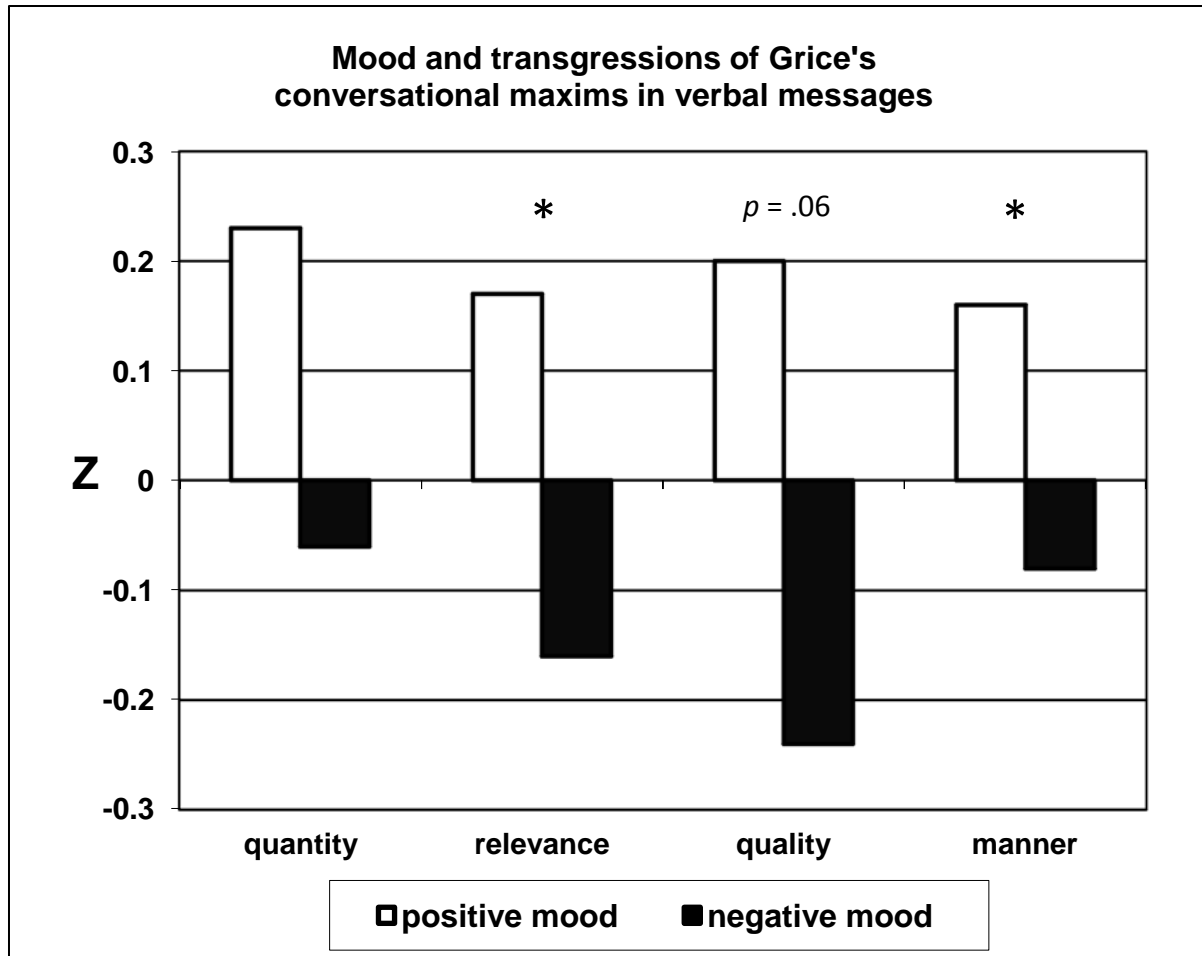
Linguistic abstractness. Two other subjects were excluded from these analyses whose number of references to traits, states, interpreted action, or described action was at least 3 SDs higher than the overall mean ($M_{traits} = 0.88, SD = 1.51; M_{states} = 4.25, SD = 2.17; M_{IA} = 2.92, SD = 1.85; M_{DA} = 6.78, SD = 3.93$), leaving 33 positive, 27 neutral and 33 negative mood subjects in the final analyses. A between-subjects ANOVA with mood (positive, neutral, or negative) as the independent variable revealed a significant effect, $F(2, 90) = 3.23, p < .05, \eta^2 = .07$. As predicted, positive mood elicited a more abstract language use than negative mood ($M_{positive} = 2.05, SD = 0.34; M_{negative} = 1.85, SD = 0.29$), $t(64) = 2.45, p < .05, d = 0.60$. Again, the neutral mood group fell in between positive and negative mood ($M_{neutral} = 2.00, SD = 0.33$), and actually produced messages that were more abstract than the ones produced by the negative mood group, $t(58) = 1.91, p = .06, d = 0.47$. Linguistic abstractness did not differ between the positive and neutral mood conditions, $t(58) = 0.43, NS$.

As in Study 1, we also computed a 2 (mood: positive vs. negative) x 4 (percentage of references to traits vs. states vs. interpreted action vs. described action) mixed ANOVA with repeated measures on the second factor, which yielded a significant interaction, $F(3, 192) = 3.25, p < .01, \eta^2 = .08$. This effect confirms that communicators' use of the increasingly abstract communicative acts varied significantly as a function of mood. Specifically, the percentage of references to traits ($M_{positive} = 6\%, SD = 8\%; M_{negative} = 2\%, SD = 5\%$) and states ($M_{positive} = 34\%, SD = 14\%; M_{negative} = 26\%, SD = 13\%$) was significantly greater in positive compared to negative mood, $t_{traits}(64) = 2.52, p < .05, d = .64$, and $t_{states}(64) = 2.47, p < .05, d = .61$., whereas the percentage of references to interpreted action was significantly greater in negative compared to positive mood ($M_{positive} = 16\%, SD = 9\%; M_{negative} = 26\%, SD = 11\%$), $t_{IA}(64) = 3.89, p < .001, d = .96$. However, the positive and negative mood groups did not differ in the percentage of references to described action ($M_{positive} = 43\%, SD = 16\%; M_{negative} = 45\%, SD = 17\%$), $t_{DA}(64) = 0.65, NS$.



Overall transgression of Grice's conversation norms. A between-subjects ANOVA with mood (positive, neutral, or negative) as the independent variable revealed a significant effect, $F(2, 92) = 4.92, p < .01, \eta^2 = .09$. The control condition ($MZ_{neu} = 0.03, SD = 0.57$) did not differ significantly from the other mood conditions, but fell exactly in between positive and negative mood, showing fewer transgression than the positive mood group ($MZ_{pos} = 0.18, SD = 0.60, t(59) = 1.02, NS$), and more transgressions than the negative mood group ($MZ_{neg} = -0.11, SD = 0.48, t(59) = 0.95, NS$). However, as predicted, participants in good mood committed significantly more conversational transgressions than participants in bad mood, $t(66) = 2.14, p < .05, d = 0.52$.

Looking at transgressions of each conversational maxim separately revealed that subjects in good mood transgressed the relevance, quality and manner maxims to a significantly greater extent than did subjects in bad mood (relevance: $M_{pos} = 1.26, SD = 0.93; M_{neg} = 0.81, SD = 0.82; t(66) = 2.06, p < .05, d = 0.51$; quality: $M_{pos} = 0.85, SD = 0.83; M_{neg} = 0.55, SD = 0.42; t(66) = 1.84, p = .06, d = 0.47$; and manner: $MZ_{pos} = 0.17, SD = 0.46; MZ_{neg} = -0.08, SD = 0.56; t(66) = 2.02, p < .05, d = 0.49$), whereas this was not the case with the quantity maxim ($M_{pos} = 6.17, SD = 1.74; M_{neg} = 5.68, SD = 1.62; t(66) = 1.21, NS$).



However, repeating these analyses but controlling for the number of communicative acts used revealed the expected mood effect regarding each of Grice's conversation norms (Grice, 1975, 2008), $F_{quantity}(1, 65) = 3.12, p = .08, \eta^2 = .05$; $F_{relevance}(1, 65) = 4.54, p < .05, \eta^2 = .07$; $F_{quality}(1, 65) = 3.37, p = .07, \eta^2 = .05$; and $F_{manner}(1, 65) = 4.14, p < .05, \eta^2 = .06$.

Discussion

As in Study 1, we did not find conclusive evidence for differences between both positive and negative mood on the one hand and neutral mood on the other hand. Rather, it is *only in comparison to* subjects in a negative mood that subjects in a positive mood both used more abstract communicative acts and committed greater breach of conversation norms (Grice's quantity, relevance, quality and manner maxims; Grice, 1975, 2008).

Indeed, the predicted effect of mood on linguistic abstractness appears to be robust and generalizable, because it emerged despite the structural / functional differences between

writing (Study 1) and speaking (Study 2), and between transmitting generated information (Study 1) and retrieved information (Study 2). Put more simply, there is affect infusion on both writing and speaking about both facts and fiction, as evident from our findings that subjects in good mood spoke about a recently experienced event and also wrote about entirely fabricated events in a more abstract fashion than subjects in bad mood. On the subject of robustness and generality, it should be noted that there already is conclusive evidence that positive mood promotes a more abstract communication style than negative mood (Beukeboom & Semin, 2005, 2006; Forgas, 2007, 2011).

Our findings add to this literature by suggesting that mood effects on the abstractness of event reports are due to the differential use of action *interpretations* and *inferences* about both states and traits, but not due to the differential use of action *descriptions*. In both studies, those in a negative mood made more action interpretations than those in a positive mood, who in turn made more inferences about states and traits. As these increasingly more abstract ways of communicating about persons involve more *substantive, constructive* processing than immediate action descriptions, this pattern of results is in line with the affect infusion model (Forgas, 1995, 2002), suggesting that mood effects on assimilative / accommodative thinking, and thus linguistic abstractness, should only emerge given that substantive, constructive processing is used (Fiedler, 2001).

Further, our data show for the first time that communicators in a positive mood also tend to commit more overall transgression of Grice's conversational maxims (Grice, 1975) than communicators in a negative mood. More specifically, happy subjects communicated in a more discontinuous, redundant and verbose fashion than unhappy subjects, as evident from greater scores on the *manner* transgression index. Also, happy subjects used more irrelevant communicative acts and more untrue, or at least speculative, communicative acts, as evident from greater scores on the *relevance* and *quality* transgression indices, respectively. These results are consistent with past research showing that happy people are less likely to

distinguish between relevant and irrelevant information than unhappy people (Bless, Bohner, Schwarz, & Strack, 1990; Bless, Mackie, & Schwarz, 1992; Petty & Cacioppo, 1986), and recent research demonstrating that positive mood enhances reconstructive memory processes compared to negative mood (Forgas, Vargas, & Laham, 2005; Storbeck & Clore, 2005).

However, we did not find the predicted difference between positive and negative mood regarding transgressions of the *quantity* maxim (Grice, 1975) except for when controlling for the total number of communicative acts used. Thus, it seems like differences in talkativeness override affective influences on the transmission of actually relevant pieces of information. Put another way, mood effects on adherence to Grice's quantity maxim appear to only hold true for people in a more or less equally talkative state, whereas mood effects on adherence to Grice's relevance, quality and manner maxims appear to hold true regardless of the total amount of communicated information (i.e., irrespective of talkativeness).

Interestingly, participants who spoke in more abstract terms committed greater overall transgression of Grice's conversation norms ($r = .50, p < .001$), a finding that cannot be explained in terms of a coding artifact, as we made sure to use different groups of completely independent judges. Rather, it seems like communicating in an abstract fashion often implies excluding relevant information and including false, or at least speculative, information, as suggested by the significant and sizable correlations between linguistic abstractness on the one hand and quantity and quality transgressions on the other hand ($r_{[quantity]} = .49, p < .001$; $r_{[relevance]} = .18, p = .08$; $r_{[quality]} = .32, p < .01$; $r_{[manner]} = -.08, NS$). That is, these data imply that abstract event descriptions (i.e., lots of references to traits and states) should be treated with caution, because they tend to be both incomplete and in fact questionable.

General Discussion

Limitations and future prospects

First, it is advisable to replicate our findings using other types of mood inductions such as purely auditory, purely visual, or memory-based techniques (Martin, 1990), and other

indices of both linguistic abstractness and adherence to Grice's and other conversation norms (Grice, 1975). Future studies may also explore these and other aspects of communication style as a function of distinct emotions (pride, gratitude, fear and anger; Lerner & Keltner, 2001; Williams & DeSteno, 2008) rather than just diffuse moods.

Also, it needs to be shown that our findings indeed apply to realistic conversations where senders also receive information and vice versa. In a similar vein, it should be checked whether the observed mood effects generalize to more specific communication tasks than 'sharing information about events' (e.g., flattery, dating, bargaining, criticism etc.), which amounts to investigating the three-way interaction between affect, cognition and motivation.

Manipulating participants' moods *before* showing the stimuli to be communicated, our studies cannot tell apart whether the observed mood effects emerged during encoding, retrieval, or during both phases, as suggested by the assimilative / accommodative processing model (Bless & Fiedler, 2006). However, in Beukeboom and Semin's (2006) studies on linguistic abstractness, participants communicated stimuli that they had acquired way before being subjected to an affect induction, and the results of these studies show that mood during the retrieval phase is a sufficient condition for affective influences on linguistic abstractness. Also, if the observed mood effects disappear as a result of outlining the communication task as a filler task that will not be analyzed, then they are to be understood as contingent on genuine communication purposes, and not as mere carryover of cognitive processing styles. Anyway, future experiments should aim at clarifying the necessary, sufficient and boundary conditions for the observed mood effects.

Grice's communication norms certainly are not to be understood as imperatives (Grice, 1975, 2008), but rather represent adaptable recommendations of how to communicate in a maximally efficient, *direct* way. Indeed, people often have good reason to communicate in a less efficient, *indirect* way, using purposeful and *blatant* transgressions of the quantity, relevance, quality and manner maxims postulated by Grice (Wänke, 2007). To illustrate,

providing no feedback at all (a quantity transgression) is a convenient way of expressing indifference; changing the subject (a relevance transgression) is an effective way of rejecting a nasty question, praising somebody for a wrongdoing (a quality transgression) is an ironic way of criticizing that person, and paraphrasing a message (a manner transgression) is an easy way to convey appreciation. Moreover, communicators often have good reason to use purposeful but *hidden* transgressions of Grice's maxims, for instance when they intend to conceal critical information (a quantity transgression), distract others with unnecessary details (a relevance transgression), lie to others (a quality transgression), and keep on talking to prevent others from having their say (a manner transgression). Of course, communicators may also simply fail to adhere to Grice's maxims in an inadvertent way. That is, it could be that participants in a positive mood communicated in a less vigilant / more negligent fashion, leading to more *unintentional* conversational transgressions than in the negative mood group. However, it could also be that happy subjects simply reframed the predefined task objective (i.e., informing their hypothetical conversation partners) according to their own intentions, resulting in more *intentional* conversational transgressions than in the negative mood group. Future studies should apply explicit and implicit measures of both communicators' intentions and listeners' / readers' inferences about these intentions to determine whether happy people, compared to unhappy people, perform worse at informing others, or simply prefer to pursue other communication goals. The assimilation / accommodation model (Bless & Fiedler, 2006) predicts both of these mood effects. If it is true that happy communicators pay more attention to their own intentions, then the nature of these intentions obviously should be investigated – in other words, it is of great practical interest to find out why people in a positive mood commit more transgression of Grice's conversational maxims, which would also help to clarify how these breaches of communication norms impact on listeners and readers.

Speaking of the consequences of mood-based variations in communication style, at least there is considerable evidence regarding the case of linguistic abstractness. Specifically,

if A communicates with B about target person C in abstract rather than concrete terms, B will infer that C (rather than other persons) is to held responsible for his / her actions. B will also like A and infer that C is part of A's in-group (rather than out-group) given A says nice things about C; B will dislike A and infer that C is part of A's out-group (rather than in-group) given A says nasty things about C. B will also infer that A and C are just acquaintances (rather than intimate friends). And finally, B will also infer that A communicates about C with a specific (rather than no) purpose in mind (Beukeboom, this volume; Douglas & Sutton, 2003, 2010; Fiedler & Mata, this volume; Fiedler & Semin, 1988, Forgas, this volume; Maass, Salvi, Arcuri, & Semin, 1989; Semin, 2007; Wigboldus, Semin, & Spears, 2000).

Last but not least, it is of high interest whether conversation partners in the same mood understand and like each other better than conversation partners in opposing moods, and if so, whether this is mediated by the congruence and incongruence, respectively, in the abstractness / concreteness and peculiarity / conventionality of their communicative acts.

Theoretical Implications

The results obtained in the present studies further increase the explanatory power of mood-based cognitive styles for variation in communication style (see Forgas, this volume). We conclude that positive compared to negative mood promotes linguistic abstractness and transgression of conversation norms, which is consistent with the notion that positive mood amplifies personal preferences and attention to internal, abstract and integrated knowledge (i.e, assimilative thinking; Bless & Fiedler, 2006). Negative compared to positive mood promotes linguistic concreteness and adherence to conversation norms, consistent with the notion that negative mood amplifies social expectations and attention to external, concrete and separate stimuli (i.e, accommodative processing; Koch & Forgas, 2012; Tan & Forgas, 2010). It should be noted that the predicted mood effects on communication style are consistent with not only the assimilative / accommodative processing model (Bless & Fiedler, 2006), but also several other affect-cognition theories, such as Schwarz's (1990) cognitive tuning model and

Fredrickson's (2001) broaden-and-build theory. Future studies should implement some dependent or independent variables that are more sensitive to the slight differences between the implications of these and other models, which would help to clarify which model best explains mood-based differences in both linguistic abstraction and adherence to standard communication rules.

Practical Implications

Effective communication is a critically important skill in everyday life, and is significantly related to professional and personal success. The findings that positive mood promotes greater linguistic abstractness and greater transgression of communication rules than negative mood can be of importance in many applied domains where abstract and maverick, or concrete and conventional, communicative acts are more suited to fulfill the purpose of a given social interaction. That is, it should greatly depend on the specific nature of the communication task and context whether positive or negative mood will yield better outcomes – business psychologists might want to keep groups of product designers happy, while forensic psychologists might prefer to interrogate witnesses that are slightly upset.

Conclusion

In conclusion, the present studies were successful in showing that consistent with Bless & Fiedler's (2006) assimilative / accommodative processing theory, positive compared to negative mood can result in greater linguistic abstractness and more transgressions of Grice's conversational maxims (Grice. 1975). Much remains to be discovered about the necessary, sufficient and boundary conditions of these effects, and about the communicative intentions and conversational outcomes that accompany mood-based differences regarding these two fundamental aspects of communication style.

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Appendix A: Information classified as relevant for recounting the target event (*Judge 1*)

Background	Left-wing political rally with entertainers giving shows
1 st response	Comedian Alvi approaches backstage manager Alison; asks her when he is due to go on
2 nd response	She responds that he's next
3 rd response	He doesn't want to perform right after another comedian; he becomes nervous / stressed, he has stage fright; he hectically demands to be postponed in the order of performers
4 th response	She calmly insists that he performs next; she comforts and encourages him; she tells him that "everything is going to be fine"
5 th response	He wants to get rid of his stage fright by starting a distractive conversation; he starts to ask her personal questions [her last name, her thesis topic]
6 th response	She calmly responds to all his questions;
7 th response	Based on her thesis topic, he reduces her to a cultural stereotype; he is interested in her
8 th response	She is not impressed, but she doesn't feel seriously insulted; she answers with a disapproving, ironic comment
9 th response	He realizes that he likes her; he asks her for some encouraging words
10 th response	She likes him as well; she smiles and responds that she thinks that he is cute
11 th response	He goes on stage and begins to tell jokes to the audience

Appendix B: Information classified as relevant for recounting the target event (*Judge 2*)

Background	Political rally
1 st response	He [comedian Alvi] asks when he'll go on
2 nd response	She [backstage manager Alison] says he's on next
3 rd response	He freaks out about being next; he wants to perform sometime later
4 th response	she stays calm and insists on the order of shows; she tries to reassure him
5 th response	He asks her about herself
6 th response	She tells him her name; she also tells him that she's writing a thesis on political commitment
7 th response	He asks her an elaborate identity question; he tries to impress / charm her
8 th response	She says she loves being reduced to a cultural stereotype; but she doesn't seem too offended
9 th response	He says he has to go on stage and asks for encouragement
10 th response	She says he's cute; she looks at him in a way that indicates that she's interested in him
11 th response	He goes on stage and makes a successful entrance