

# When does feedback about success at school hurt? The role of causal attributions

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**Abstract** The present research provides evidence that attribution theory can serve as an explanatory framework not only to explain achievers' reactions to their achievement based on their self generated understandings of what brought these achievements about but also when such information is provided by others. Thus, when we succeed at school, others may comment on the likely reasons for this success. The present research addressed the question what it is that makes certain types of feedback on the reasons for success at school hurtful. The results of two studies conducted in the context of a school setting demonstrated that the causal structure implied by an explanation for success explains why some explanations are perceived as hurtful and elicit anger, shame, and guilt rather than pleasure or pride. Interestingly, the perceived validity of the explanation is of relatively less importance for the elicitation of hurt feelings and anger than the content of the explanation. Overall, these results provide further evidence for the importance of attributional information for social emotions in educational settings.

**Keywords** Attribution theory · Hurt feeling · Anger, shame, guilt · Success at school · Peer feedback

## 1 Introduction

Attempts of explaining achievers' reactions to their outcomes in educational settings often use attribution theory as a theoretical framework (see e.g., [Bar-Tal 1978](#), [Forsyth](#)

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1986, Weiner 1976). However, most of the discussions connecting attribution theory and educational achievements focused on the perspective of the achiever. That is, the focus is on questions such as the way the achiever understands why she failed or succeeded at school and the emotional and behavioral consequences of this understanding (Weiner 1976, Bar-Tal 1978). Nevertheless, more recently developments in the literature discussing attributions made in educational settings, note that people's achievements' do not occur in a vacuum but rather in a social context (Hareli and Hess in press, Hareli and Weiner 2002, Hareli et al. 2006). Indeed achievements are important events for individuals and hence achievers are motivated to understand their causes (Weiner 1986) and occasionally the source of this understanding may be others such as teachers or peers (Hareli and Weiner 2002). Such external feedback not only increases the achievers' understanding of the achievement situation but also affects their response to the achievement. As suggested by Hareli and Weiner (2002) attribution theory can serve as a theoretical framework that explains the reaction of achievers to feedback. Employing this line of reasoning, the goal of the present research is to examine how the emotions that achievers experience following success at school are shaped by observers' feedback attempting to explain what brought about one's success.

When achievers receive feedback from others about the reasons for their success, the achiever may feel pleasure or pride because his/her achievement did not go unnoticed and because the feedback may suggest that the achiever has superior qualities (Hareli and Weiner 2002, Weiner 1995). However, others' performance feedback can also entrain negative social emotions such as hurt feelings as well as anger, shame and guilt if it reflects negatively on the achiever. In line with this claim, Hareli and Hess (in press) recently showed that certain types of observer feedback that include explanations for the causes for a person's *failure* leads to such emotions. In particular, their research showed that the attributional information underlying observers' explanations determines if and to what extent an explanation will induce hurt feelings, anger, guilt and shame in the achiever. The present research moves further by investigating whether a similar process may also render success feedback hurtful. We first explain the rationale underlying our research question.

### 1.1 Communicated explanations for success, causal attribution and emotions

In general, messages are emotionally hurtful if they imply a relational devaluation (Leary et al. 1998, Leary and Springer 2001, Vangelisti 1994). Such messages also elicit other emotions such as anger, guilt, anxiety, shame and embarrassment (Gabriel 1998, Leary et al. 1998). In the context of feedback aimed at explaining a person's achievements, Hareli and Hess (in press) based on Weiner's (1986) attribution theory of emotion and motivation have shown that an explanation for failure is hurtful if it implies a devaluation of the person's worth (see also Hareli and Weiner 2002).

Similarly, certain explanations for a person's success may also devalue both the success and the achiever's worth (Hareli and Weiner 2002). In the following we discuss how attribution theory of emotion and motivation explains the link between hurt

feelings, anger, guilt and shame and the attributional information regarding the cause of a success contained in messages explaining success at school.

Weiner (1985, 1986) describes three dimensions of perceived causes: causes can be considered internal or external to the actor (locus), controllable or uncontrollable by the actor or others (controllability), and varying or unvarying over time (stability). Because causal dimensions describe the nature of a cause, causal dimensions that underlie causal success feedback also describe the link between the specific outcome and the person attaining it. The locus of the causality determines whether something about the person or something outside the person brought about the success. In addition, causal stability defines how permanent or transitory the cause is, and, for internal causes, the dimension of controllability describes the extent to which the outcome is the result of the person's own actions. For example, both effort and luck are unstable, yet effort is internal and under the person's own control whereas luck is external and uncontrollable. Therefore, when effort is described as the cause of an achievement this implies that the person is responsible for it. However, when the outcome was brought about by luck, this leads to the appraisal that the person is not responsible for the outcome. When these causes are presented as reasons for a success, they convey information on the role that the individual has played in bringing the success about (Hareli and Hess in press, Hareli and Weiner 2000, 2002, Weiner 1985, 1986).

Given that communications that devalue a person's worth tend to be hurtful (Leary et al. 1998, Vangelisti and Young 2000, Young 2004), explanations that suggest that the individual is not responsible for the success (i.e., the cause of success is external to the individual) are likely to be hurtful. This expectation fits the fact that locus is known to affect self-esteem and related emotions (Weiner 1986) as self esteem can be considered to be a subjective estimate of relational evaluation (Buckley et al. 2004, Leary and Downs 1995, Leary et al. 1995). Consequently, all else being equal, feedback from another person that explains a success by referring to luck or help from others devalues the achiever's worth and hence should elicit more hurt feelings than feedback that explains the same outcome by referring to ability or effort.

The causal dimensions of stability and controllability are also expected to play a role in inducing hurt feelings. In general, causal stability is associated with expectations for the future (Weiner 1986). Accordingly, if an explanation for a success suggests that it was caused by a factor that is unstable, and thus not characteristic of the self, this implies that further success is not necessarily to be expected as the current one might have been the result of chance. Such explanations are expected to be particularly hurtful because they extend the devaluation of the person into the future.

As regards the controllability of the cause conveyed in the explanation, ascription of a cause controllable by another individual should entrain more intense hurt feelings. This, because controllability in this context implies that one's fate is in the hands of others. If, in addition, such a cause is stable, i.e., success will always be achieved this way, this presents a particularly strong devaluation of the person. Thus, the ascription of success to an external, controllable and stable cause should be most hurtful, as it suggests not only lack of worth (due to dependence on others) in the present but predicts that future success will also be the fruit of a similar cause.

In sum, both stability and controllability are expected to affect hurt feelings in interaction with locus. Furthermore, based on the considerations outlined above, it is

expected that the most hurtful message would be a message ascribing the success to an external, stable and controllable cause.

As mentioned above, hurt feelings are usually accompanied by other emotions such as anger, shame and guilt. We predict that the extent to which these emotions are elicited by the success feedback is also determined by the implied attributional information. Anger is an emotion that is determined, among other things, by the degree of damage inflicted by another person (Averill 1982, Frijda 1986, Ortony et al. 1988). Hence it is expected that the more hurtful the message, the more anger will be elicited as well. That is, the same underlying causal structure that leads to more intense hurt will also lead to increased levels of anger.

Unlike anger, which is an emotion directed at another person, shame and guilt are both self-directed negative emotions (Frijda 1986). It has been contended that shame is elicited by a public characteristic of the self that is not under volitional control. In contrast, guilt follows from a violation of a norm and is evoked by a self-judgment of responsibility (see Izard 1977, Smith et al. 2002, Wicker et al. 1983). That is, as Roseman et al. (1996) noted, both shame and guilt result from a self-caused outcome; however, shame follows when the cause is one of character, whereas for guilt, the cause is behavioral. Accordingly, it is expected that success feedback that implies external and stable causes will lead to higher levels of shame—as it points to a lack of ability in the person, whereas success feedback that implies personal responsibility and control will elicit more guilt if it also implies that the success could have been achieved in a way more flattering to the achiever had s/he wished it. Study 1 was planned to test these predictions in the context of explanations given by a peer for one's success at school.

For this a vignette paradigm was chosen. Vignettes have been criticized due to their low ecological validity (see for example, Parkinson and Manstead 1993, for a discussion of this issue). As such, vignettes are not well suited to assess how people would actually react in a given social situation. However, for the same reasons vignettes are an excellent tool to assess the symbolic knowledge that people apply when judging social interactions. Specifically, we wanted to assess the impact of the causal information implied in success feedback. Yet any given actual interpersonal situation varies with regard to a number of ancillary aspects and other social norms and rules may interact with that information. For example, feedback from a peer perceived as envious of the achiever (and who may be perceived as competitive as a result) may well be perceived as less acceptable and less hurtful than feedback from a peer who seems caring (for example, because s/he is considered as a good friend and a reliable person). However, to a large extent vignettes allow for an abstraction from the specific characteristics of the feedback provider as well as other situational factors and are hence the appropriate tool for the assessment of the question at hand.

## 2 Study 1

The main goal of Study 1 was to test the predictions outlined above by examining the role that the causal information underlying communicated explanations for success play in inducing hurt feelings and the emotions of anger, guilt and shame.

**Table 1** The causal structure of the explanations used in Study 1 and Study 2

Locus	Stability	Controllability	Explanation
Internal	Stable	Uncontrollable	High ability
Internal	Stable	Controllable	Like always invested high effort
Internal	Unstable	Uncontrollable	Sudden insight of an idea for the work
Internal	Unstable	Controllable	Invested exceptional effort that time
External	Stable	Uncontrollable	Always lucky in getting good grades with demanding lecturers
External	Stable	Controllable	Like in all other cases, helped by T.A.
External	Unstable	Uncontrollable	Luck in topic choice
External	Unstable	Controllable	Helped by T.A.

## 2.1 Method

### 2.1.1 Participants

Participants were 116 (92 female, 24 male) undergraduate students enrolled in psychology courses at different departments in the University of Haifa, and the Iezreel Valley College, who participated in the experiment voluntarily during regular class sessions.

### 2.1.2 Materials and procedure

Participants read one of eight variations of a scenario that described a situation in which they were asked to imagine receiving a very high grade (90 out of 100) for a paper submitted for an important course. The instructions further asked participants to imagine that on the following day, with no third party present, they meet another student from the same course in the corridor of the department and a discussion about the paper ensues. The participant was asked to imagine telling the other student about the grade and expressing bewilderment about how this grade came about. In response, the peer offers one out of eight different explanations for the success. Finally, participants were instructed to assume that they felt that the provided explanation reflected the true reason for the failure. Each explanation reflected a specific combination of one level of each of the causal dimensions of locus, stability and controllability. Table 1 describes each explanation and the underlying causal dimensions. This resulted in a between-subjects factorial design with the factors Locus (internal vs. external), Stability (stable vs. unstable) and Controllability (controllable vs. uncontrollable).

The following is an example of one variation on the scenario. The parts that varied between experimental conditions to achieve the desired manipulations of type of explanation appear in italics.

“You took a seminar that requires students to submit a paper to fulfill its requirements. Your paper received a very good grade (90). The next day, you happen to meet in the corridor of the department a fellow student who also took this course. During your conversation with the other student, you tell him/her about your grade and that you wonder why you received such a good grade. In response, the other student answers that you managed to prepare a good paper because *you invested exceptional effort that time.*”

Upon reading the description of the scenario, participants answered questions intended to measure their reactions to the feedback by the other student. All ratings were made on seven-point scales anchored with 1 = “not at all” to 7 = “to a large extent.”

### 2.1.3 Emotion ratings

In addition to providing ratings of the degree that their feelings would be hurt and they would feel insulted, they rated expected shame and guilt, as well as levels of anger towards the other student. Level of insult was assessed because in Hebrew the notion of insult typically refers to the more general situation of hurt feelings.

### 2.1.4 Causal attributions

Questions on causal attributions served as manipulation checks. Participants were asked, “To what extent is the cause the other student mentioned as the reason for your grade ... (a) located within you or within the environment?” (ranging from 1 = “located within you” to 7 = “located within the environment”—locus); (b) something that is permanent or temporary?” (ranging from 1 = “temporary” to 7 = “permanent”—stability); (c) controllable or uncontrollable by you (control by self) and (d) controllable or uncontrollable by another person (ranging from 1 = “controllable” to 7 = “not-controllable”).

## 2.2 Results and discussion

### 2.2.1 Manipulation checks

To test the effectiveness of the causal dimension manipulations, a 2 (Locus)  $\times$  2 (Stability)  $\times$  2 (Controllability) Analysis of Variance was conducted. As expected, a significant main effect emerged for each of the causal dimensions—locus,  $F(1, 108) = 36.19$ ,  $p < .001$ , partial  $\eta^2 = .25$ ; stability,  $F(1, 108) = 71.28$ ,  $p < .001$ , partial  $\eta^2 = .40$ ; and controllability,  $F(1, 106) = 6.76$ ,  $p < .05$ , partial  $\eta^2 = .06$ . Overall, external explanations ( $M = 4.41$ ,  $SD = 1.66$ ) were perceived to be more located in the environment than internal ones ( $M = 2.36$ ,  $SD = 1.46$ ), stable explanations were seen as more stable ( $M = 4.92$ ,  $SD = 1.75$ ) than unstable ones ( $M = 2.73$ ,  $SD = 1.23$ ), and controllable explanations (the sum rating of the person’s own controllability and other’s controllability) were perceived as more controllable ( $M = 7.53$ ,  $SD = 2.22$ ) than uncontrollable explanations ( $M = 8.75$ ,  $SD = 2.96$ ). In addition, a significant interaction between stability and controllability emerged for perceived locus,  $F(1, 108) = 4.71$ ,  $p < .05$ , partial  $\eta^2 = .04$ ; however, post-hoc tests ( $p < .05$ ) failed to find any significant differences between conditions.

For perceived stability, a main effect for locus,  $F(1, 108) = 14.85$ ,  $p < .001$ , partial  $\eta^2 = .12$ , emerged such that internal causes ( $M = 4.41$ ,  $SD = 1.87$ ) were perceived as somewhat more stable than external ones ( $M = 3.35$ ,  $SD = 1.74$ ). In addition a significant interaction between locus and stability,  $F(1, 108) = 4.90$ ,  $p < .05$ , partial  $\eta^2 = .04$ , suggested that overall, the internal and stable causes

( $M = 5.76$ ,  $SD = 1.18$ ) were perceived as most stable, followed by external, stable causes ( $M = 4.13$ ,  $SD = 1.84$ ). As intended, the two unstable causes were perceived as significantly less stable than the two stable causes, and did not differ from one another ( $M = 2.52$ ,  $SD = 1.15$ ; and,  $M = 2.96$ ,  $SD = 1.29$ , for external, unstable and internal, unstable, respectively). Thus, as expected stable causes were indeed perceived as more stable than unstable causes. In sum, these data generally confirm the validity of the experimental manipulations.

### 2.2.2 Hypotheses testing

As the two scales asking about level of hurt and level of feeling insulted correlated very highly ( $r = .93$ ) they were combined into one variable, which we will refer to as hurt feelings. A 2 (Locus)  $\times$  2 (Stability) by 2 (Controllability) analysis of Variance was conducted to assess the relation between the causal dimensions and hurt feelings. As predicted, a significant main effect of Locus,  $F(1, 107) = 30.34$ ,  $p < .001$ ,  $\eta^2 = .22$ , emerged, such that explanations that included an internal cause for success were seen as less hurtful ( $M = 2.71$ ,  $SD = 1.74$ ) than explanations including an external cause ( $M = 4.22$ ,  $SD = 1.53$ ). A main effect of Stability also emerged,  $F(1, 107) = 19.16$ ,  $p < .001$ ,  $\eta^2 = .15$ , such that explanations suggesting stable causes were perceived as less hurtful ( $M = 2.97$ ,  $SD = 1.90$ ) than those suggesting unstable ones ( $M = 4.04$ ,  $SD = 1.51$ ). In addition, a two-way interaction between locus and stability,  $F(1, 107) = 13.18$ ,  $p < .001$ , partial  $\eta^2 = .11$ , as well as between stability and controllability,  $F(1, 107) = 13.09$ ,  $p < .001$ , partial  $\eta^2 = .11$  emerged. Post-hoc tests indicated that explanations suggesting internal and stable causes ( $M = 1.74$ ;  $SD = 1.15$ ) were significantly less hurtful than all other explanations, which did not differ significantly from one another ( $M = 3.76$ ;  $SD = 1.67$ ;  $M = 4.15$ ;  $SD = 1.73$ , and,  $M = 4.29$ ;  $SD = 1.32$ ; for internal unstable, external stable and external unstable, respectively). Further, uncontrollable unstable causes ( $M = 4.53$ ;  $SD = 1.45$ ) were significantly more hurtful than all other explanations, which did not differ significantly from one another ( $M = 3.36$ ;  $SD = 1.87$ ;  $M = 3.50$ ;  $SD = 1.51$ , and,  $M = 2.46$ ;  $SD = 1.85$ ; for controllable stable, controllable unstable and uncontrollable stable, respectively).

In sum, the present findings suggest that an explanation that ascribes success to something that is either external to the achiever or internal but uncharacteristic of him or her (i.e., help or having exceptionally invested hard work) rather than to the person's own stable characteristics (ability or being a hard worker), are perceived as hurtful. Explanations that describe success as stemming from causes that seem random (luck or sudden insight) are even more hurtful. This latter finding may be due to the fact that such a success appears to be very detached from the achiever, that is, not at all linked to his or her abilities and actions.

Thus, contrary to our expectations these findings suggest that it is not necessary for the communicated causes for success to describe an *external* cause for success—indicating that the achiever did not contribute significantly to the attainment of the achievement—and thus to hurt his or her feelings. Uncontrollable and unstable causes seem to have a similar impact on such feelings regardless of their locus.

**Table 2**  $F$ ,  $p$ , and  $\eta^2$  for the causal dimensions underlying observer's communicated explanations for success for anger, guilt and shame: Study 1

Causal dimension		Anger $F(1, 108)$ $\eta^2$		Guilt $F(1, 108)$ $\eta^2$		Shame $F(1, 108)$ $\eta^2$				
Locus	Internal	$M$ 2.63	15.80**	.13	1.66	8.89*	.08	1.91	3.69	.03
		$SD$ 1.77			1.10			1.42	( $p = .057$ )	
	External	$M$ 3.78			2.38			2.40		
		$SD$ 1.64			1.42			1.46		
Stability	Stable	$M$ 2.78	12.08*	.10	2.05	.002	.0	2.07	1.06	.01
		$SD$ 1.81			1.42			1.44		
	Unstable	$M$ 3.70			2.02			2.27		
		$SD$ 1.66			1.21			1.48		
Controllability	Controllable	$M$ 3.00	2.33	.02	2.07	.06	.00	2.20	.08	.004
		$SD$ 1.70			1.39		1	1.36		
	Uncontrollable	$M$ 3.46			2.00			2.13		
		$SD$ 1.88			1.25			1.56		

Note.  $N = 116$ ; Higher values indicate a greater degree of that variable. \*  $p < .01$ ; \*\*  $p < .001$

As mentioned above, causal attributions for success should also impact on other emotions. As Table 2 indicates, a significant main effect of locus emerged for anger, guilt (marginally) for shame, with higher levels of each of these emotions for external causes. Further, a main effect of stability emerged for anger, such that unstable causes led to higher levels of anger. These main effects were qualified by significant interactions.

For anger, the expected two-way interaction between locus and stability,  $F(1, 108) = 8.67$ ,  $p < .01$ , partial  $\eta^2 = .07$ , emerged, such that internal and stable causes ( $M = 1.79$ ;  $SD = 1.21$ ) induced less anger than any of the remaining conditions, which did not differ significantly ( $M = 3.52$ ;  $SD = 1.89$ ;  $M = 3.71$   $SD = 1.81$ , and,  $M = 3.86$ ;  $SD = 1.46$ ; for internal, unstable, external stable and external unstable, respectively). A two-way interaction was also found between stability and control,  $F(1, 108) = 9.34$ ,  $p < .01$ , partial  $\eta^2 = .08$ ; uncontrollable and unstable causes ( $M = 4.31$ ;  $SD = 1.39$ ) led to the significantly more anger than any of the other causes, which did not differ significantly ( $M = 2.56$ ;  $SD = 1.93$ ;  $M = 2.97$ ;  $SD = 1.72$ , and,  $M = 3.04$ ;  $SD = 1.70$ ; for uncontrollable, stable, controllable, stable and controllable, unstable, respectively). This effect was further qualified by a significant three-way interaction,  $F(1, 108) = 6.46$ ,  $p < .05$ ,  $\eta^2 = .06$ . As is apparent from Table 3, an explanation ascribing success to a sudden insight or luck led to the highest levels of anger. Temporary effort led to an intermediate level of anger that was no different than that of internal, stable causes (permanent effort and ability), but also no different than the anger arising in the context of external causes. This again indicates that success ascribed to factors that seem random is hurtful. Overall, these findings replicate the picture that emerged in the context of hurt feelings. Thus, as found by Hareli and Hess (in press) for failure events, hurt feelings are closely and positively associated with anger for success feedback as well.

Another significant three-way interaction emerged for shame,  $F(1, 108) = 7.16$ ,  $p < .01$ ,  $\eta^2 = .06$ . As is apparent from Table 3, an explanation ascribing success to a sudden insight led to higher degrees of shame than did an explanation that ascribed success to ability. There were no other differences between explanations in terms of

**Table 3** Means and standard deviations for anger and shame ratings as a function of the causal dimensions underlying the explanation: Study 1

Variable	Causal dimension	Explanation							
		Int. Unsta.	Int. Unsta.	Int. Sta.	Int. Sta.	Ext. Unsta.	Ext. Unsta.	Ext. Sta.	Ext. Sta.
	Locus Stability Controllability	Uncont. Cont.	Uncont. Cont.	Uncont. Cont.	Uncont. Cont.	Uncont. Cont.	Uncont. Cont.	Uncont. Cont.	Uncont. Cont.
Anger	<i>M</i>	4.77 <sub>c</sub>	2.36 <sub>ab</sub>	1.38 <sub>a</sub>	2.13 <sub>a</sub>	3.94 <sub>c</sub>	3.77 <sub>bc</sub>	3.64 <sub>bc</sub>	3.76 <sub>bc</sub>
	<i>SD</i>	1.30	1.55	.96	1.31	1.39	1.59	1.99	1.72
Shame	<i>M</i>	2.92 <sub>b</sub>	1.57 <sub>ab</sub>	1.15 <sub>a</sub>	2.00 <sub>ab</sub>	2.00 <sub>ab</sub>	2.69 <sub>ab</sub>	2.43 <sub>ab</sub>	2.53 <sub>ab</sub>
	<i>SD</i>	1.85	.85	.38	1.55	1.46	1.38	1.70	1.36

*Note.*  $N = 116$ ; Int. = Internal, Ext. = External, Unsta. = Unstable, Sta. = Stable, Uncont. = Uncontrollable, Cont. = Controllable; Subscripts based on post-hoc tests at  $p < .05$ . Higher numbers represent greater level of hurt feelings. Numbers with different subscripts differ at  $p < .05$ . For anger, the internal, unstable, uncontrollable explanation is marginally significantly different than all other explanations ( $p = .54$ )

level of shame that they induced. Again, this finding implies the undesirability of explaining success as resulting from a random factor such as sudden insight. However, overall, shame did not vary a lot across conditions indicating that in the context of positive achievement, shame is of low likelihood even when the achiever did not contribute much to bring about the success.

In this study, participants were instructed to assume that the explanation provided by the other student was valid. However, people do also provide explanations that convey invalid information and this may even lead to higher levels of hurt feelings, especially if the perceiver is aware that the communicator purposefully presents a wrong explanation (Hareli and Weiner 2002). Under such circumstances the achiever is likely to assume that the main intention of the speaker was in fact to hurt his or her feelings and intentional hurtful acts lead to higher degrees of hurtful feelings (Leary et al. 1998; Vangelisti and Young 2000). A similar effect should be obtained for anger. However, in the context of guilt and shame, the opposite effect is expected, that is, true causes should elicit higher levels of shame and guilt as these emotions are closer to the person's character and actions (Lewis 1971) and less to their relationships with others. However, Hareli and Hess (in press) found that the validity of the communication had a very limited effect on the emotional reaction of the achiever. The goal of Study 2 was to assess the influence of the validity of the explanation with regard to hurt feelings and related emotions.

## 3 Study 2

### 3.1 Method

#### 3.1.1 Participants

Participants were 214 (141 female, 73 male) undergraduate students enrolled in psychology courses at different departments in the University of Haifa who participated in the experiment voluntarily during regular class sessions.

### 3.1.2 Materials and procedure

To simplify the design and given that the more clearly hurtful effects emerged in the context of external explanations, only the four scenarios used in Study 1 that described an external explanation for the success (four last explanations appearing in the forth column of Table 1) were used. There were two versions for each explanation. In one version the participants were instructed to imagine that the explanation described the real reason for the success, whereas the other version mentioned that the participant is aware to the fact that the friend knows for sure that the real reason for success was high ability. High ability was chosen as the real reason because it potentially allows for the greatest discrepancy between the true reason for the success and the communicated reason in terms of distancing the person from the cause of the achievement when the explanation is false. This formed a between-subjects factorial design combining the validity of the explanation and the causal dimensions of stability and controllability in a 2 (Validity: valid vs. invalid)  $\times$  2 (Stability: stable vs. unstable)  $\times$  2 (Controllability: controllable vs. uncontrollable) between subjects design. The same emotion ratings scales were used as in Study 1. Because the vignettes were the ones used in Study 1, manipulation checks were not included in this study.

### 3.2 Results and discussion

As in Study 1, perceptions of insult and hurt feelings correlated highly ( $r = .83$ ) and were combined into one measure of hurt feelings. A 2 (Validity)  $\times$  2 (Stability)  $\times$  (Controllability) analysis of variance was conducted to assess the effect of the validity of the explanation and the causal dimensions of stability and controllability on hurt feelings. For validity, only a marginally significant main effect emerged,  $F(1, 203) = 2.82$ ,  $p = .10$ ,  $\eta^2 = .01$ , such that true explanations were somewhat more hurtful than false explanations ( $M = 4.08$ ,  $SD = 1.79$  vs.  $M = 3.66$ ,  $SD = 1.78$ ). A three-way interaction between validity, stability and controllability,  $F(1, 203) = 4.36$ ,  $p < .05$ , partial  $\eta^2 = .02$  also emerged, however, post-hoc tests failed to find any significant differences between explanations. Thus, the validity of the explanation did not play a significant role in affecting the extent to which the feelings of the achiever were expected to be hurt. This replicates previous findings by Hareli and colleagues (Hareli and Hess in press, Hareli et al. 2006) in the context of feedback for school achievements. For anger as well no significant effects emerged.

In contrast to the minor role that validity played for hurt feelings and anger, for guilt,  $F(1, 204) = 9.97$ ,  $p < .01$ , partial  $\eta^2 = .05$ , and shame,  $F(1, 203) = 25.23$ ,  $p < .001$ , partial  $\eta^2 = .11$ , main effects for validity emerged such that, as predicted, a valid explanation was expected to elicit higher levels of both emotions (guilt:  $M = 2.54$ ,  $SD = 1.77$ ; shame:  $M = 2.88$ ,  $SD = 1.93$ ) than a false one (guilt:  $M = 1.89$ ,  $SD = 1.83$ , shame:  $M = 1.78$ ,  $SD = 1.26$ ). In addition, a main effect for stability emerged for shame,  $F(1, 214) = 4.86$ ,  $p < .05$ , partial  $\eta^2 = .02$ , such that stable explanations increased shame ratings in comparison to unstable ones ( $M = 2.56$ ,  $SD = 1.74$  vs.  $M = 2.08$ ,  $SD = 1.65$ ). This replicates the findings of Study 1 and is congruent with the view that shame is related to an

undesirable characteristic of the individual (Lewis 1971). No other significant effects emerged.

#### 4 General discussion

Attribution theory is an important theoretical framework allowing to explain how achievers react to their educational achievements as a function of how they explain to themselves the reasons for their outcomes. However, attribution theory can also explain achievers' reactions in the context of their achievements when this attributional information is provided by others (Hareli and Hess *in press*, Hareli and Weiner 2002). The goal of the present study was to use attribution theory as an explanatory tool for the way achievers react emotionally to peers' explanations concerning the reasons for their success. In particular, we were interested to examine the conditions under which achievers may experience hurt feelings, anger, guilt and shame due to a relational devaluation implied in attributions for success provided by peers. Guided by Weiner's attribution theory (1985, 1986) and following recent research by Hareli and Hess (*in press*) we predicted that the specific pattern of causal properties underlying such attributions together with their validity are important determinants of these reactions. As regards hurt feelings and anger we predicted that explanations that distance the person from the cause of the success, that is, external causes and causes controllable by other, will be most hurtful and angering. Overall these predictions were confirmed. In particular, not only external causes but also explanations that ascribe success to random factors (such as sudden insight or luck)—regardless of the locus of these causes—increased hurt feelings and anger as these later causes also undermine the person's potential contribution to the success. Thus, as for hurt feelings and anger arising in response to explanations for failure (Hareli and Hess *in press*), in the context of success too, the causal structure of the communicated cause explains the extent to which the communication elicited hurt feelings and anger.

Further, in both studies, the pattern of anger and hurt feelings was similar. Interestingly, as found by Hareli and Hess (*in press*) in the context of failure, the level of anger and hurt feelings was not strongly determined by the validity of the explanation—and this despite the fact that providing knowingly an invalid external explanation such as luck for a success which is actually due to high ability may be considered an act of ill-will. Rather, it seems that both for hurt feelings and anger what matters more is what others say rather than whether the messages convey true or false information. This fits findings in other domains that involve reactions to social information, for example, social judgments and social emotions, and that indicate that such effects are often relatively insensitive to validity of the information. For example, inferences of arrogance are determined mostly by the way people explain their achievements with little regard to whether the achievement was in fact major (Hareli and Weiner 2000) or whether the explanations given for the achievement reflect the true reason for the success (Hareli et al. 2006).

In addition to hurt feelings and anger, guilt and shame were also assessed. We predicted that both emotions would be determined by the causal dimensions underlying communicated explanations for success as well as by the validity of the information.

As expected, explanations describing external causes led to slightly higher levels of shame than did explanations describing internal causes. Also, stable causes increased shame (Study 2 only) as well as guilt feelings. Further, valid explanations increased the experience of guilt and shame, yet there were no interactions between the validity of the explanation and its underlying causal dimensions for both emotions.

Overall, these studies provide reasonable evidence for the applicability of Weiner's attribution theory of emotion and motivation (1985, 1986) to explain the link between communicated explanations for success, hurt feelings and related emotions. Previous research emphasized the important role of relational devaluation for hurt feelings as well as which other emotional reactions are likely to arise in such contexts (Leary et al. 1998, Leary and Springer 2001, Vangelisti 1994), the present research extends this prior work and, importantly, specifies the type of information that will lead a person to feel devalued. Most importantly, this research provides support for the idea that attribution theory is useful in explaining not only how achievers react to their achievements as a function of their understanding of the reasons for their success, but also the way observers' feedback shapes such reactions. This is in particular important when considering achievement motivation as shaped not only by ones' self generated cognitions but also by the information that others (e.g., peers, teachers and parents) provide (Hareli and Weiner 2002). School settings provide ample opportunities for students to put their abilities and skills to test and understand their role in their achievements. Often this information is provided by others and when this occurs achievers respond to such feedback in a way that may further determine how they will behave (Hareli and Weiner 2002). The present research exemplifies that attribution theory is a useful tool for understanding this understudied aspect of achievement motivation.

Although the present research gathered reasonable evidence for the important role that causal dimensions underlying communicated explanations for success has for inducing hurt feelings and related emotions, further research is required to better assess the generality of these findings and the limiting factors. For example, in the present study the importance of the achievement was controlled, yet level of importance may be a moderating factor in so far as emotions arise in the context of personally significant events and that their intensity is positively correlated with the subjective significance of these events (Frijda 1986, 1988). Likewise the quality of the relationship with the other person may also be pertinent. People tend to interpret criticism voiced by others as more constructive and hence as less hurtful if their relations with the others are satisfying (Bradbury and Fincham 1990). However, if such explanations are known to be false and there are reasons to suspect that the other is aware of this, then the quality of relationships is expected to have the reverse effect. That is, the closer the other person is the more hurtful such an invalid explanation should be. In such a case, the message is expected to be more hurtful as the importance of the achievement for the individual increases. Finally, the presence of a third person can further affect that achiever's reaction to the explanation. Yet, all of these factors are expected to work in interaction with the causal dimensions underlying the communicated explanation.

The present research used a vignette approach. By using vignettes and asking participants to imagine the relevant emotional situation, one cannot be assured that the results represent people's actual emotional reactions. Recent discussions exploring the question of the extent to which self reports made in the context of hypothetical

scenarios reflect actual experience suggest that such reports are most likely to represent participants' beliefs about such situations rather than actual experiences (Robinson and Clore 2002). Yet, under many circumstances the discrepancy between actual experience and prospective self report is a matter of degree rather than of the pattern of response. That is, prospective self-reports such as those used here, are exaggerations or underestimations of the actual reaction (Gilbert et al. 1998, Robinson and Clore 2002, Wilson et al. 2000). In addition, the beliefs that people have about hurtful events are highly pertinent in their own right as hurtful events have long-term consequences (Leary and Springer 2001) and the long-term consequences of emotional events tend to be more strongly influenced by the beliefs that people have about these events than by the actual emotions experienced in response to them (Robinson and Clore 2002). Finally, the present research centered on communicated explanations for a specific event, yet, hurtful comments can be made without reference to specific events. We suggest that such comments will be perceived as hurtful for the same reasons that comments in the present research were thus perceived, that is, because they distance the person from achievement or conversely associate the person with failure (Hareli and Hess in press). Overall, we believe that the present research provides a valuable framework for the study of the determinants of the emotional consequences of hurtful communication.

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