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### Striving for Consistency Shapes Emotional Responses to Other's Outcomes

**Abstract:** Based on the balance theory (Heider, 1958), we hypothesized that emotions (i.e., *schadenfreude*, resentment, joy and sorrow) induced by other person's outcomes function as responses restoring balance within cognitive units consisting of the perceiver, other persons and their outcomes. As a consequence, emotional reactions towards others' outcomes depend on the perceiver's attitudes in such a way that outcomes of a well-liked person rise congruous responses (sorrow after failure and joy after success), while outcomes of a disliked other lead to incongruous responses (*schadenfreude* after failure and resentment after success). Our participants recalled a situation from their past in which somebody they liked or disliked had succeed or failed. Additionally, we manipulated whether the outcome referred to a domain where participants' self-interest was involved or not. We analyzed the participants' average emotional state as well as specific emotions induced by the recalled events. Consistently with expectations we found that balancing principles played a major role in shaping emotional responses to successes and failures of person who were well-liked or disliked.

**Key words:** Balance, *Schadenfreude*, Resentment, Self-interest, Self-esteem

Focus on different motives has waxed and waned in the short history of social psychology. For example, the striving for cognitive consistency was proposed as a major human motivation by Festinger (1957) and inspired much of theorizing and research. After two decades of research, however, the interest in consistency strivings waned and dissonance reduction got to be seen as subsidiary to ego-defense motives (Greenwald & Ronis, 1978). Only recently striving for consistency become once more seen as a fundamental principle of social information processing (Gawronski & Strack, 2012) and various compensations for inconsistency are recognized as different forms of basically the same palliative response to a violation of expectations (Proulx, Inzlicht & Harmon-Jones, 2012). The most interpersonally oriented consistency model – the balance theory proposed by Heider (1958) suffered a similar lot as the theory of dissonance – the former also generated a great amount of research (Crockett, 1982) but recently it seems to be half-forgotten. In the present work we try to reinvigorate the balance theory by applying it to the explanation of interpersonal emotions, specifically, emotional responses to outcomes of other people.

Emotions are indispensable elements of human life. They accompany nearly every our thought and action. Frijda (1988) argued that “emotions arise in response to events which are important to the individual's goals, motives, or concerns” (p. 349). When an event is evaluated as consistent with someone's goals, the emotion is positive, and when it is inconsistent - a negative emotion appears. However, we also react emotionally to others who are present physically or symbolically. Interestingly, our reactions can take several forms. For example, sometimes we are happy about someone's success, but sometimes we feel envy or resentment. Similarly, we can derive pleasure from someone's failure instead of showing empathy or sorrow.

In this paper, we take a closer look at emotional reactions to other's outcomes. We briefly present previous studies on different emotions following the successes of other persons (especially joy and resentment) as well as their failures (especially sorrow and *schadenfreude*). Subsequently, we elaborate an explanation of emotional responses to other's outcomes derived from the balance theory (Heider, 1958). Our model predicts that the

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perceiver's emotional responses to someone else's successes or failures may be either positive or negative depending on what brings balance within cognitive units (consisting of a perceiver, another person and the latter's outcome). Hence, we examine the rarely studied role of pre-existing attitudes and document their influence on emotional reactions to other's outcomes. Last but not least, we test the relation between self-interest and self-esteem and emotional reactions to other's outcomes.

### Diversity of Emotional Reactions to Other's Outcomes: Joy, Resentment, Sorrow and Schadenfreude

In the European-American culture high self-esteem and positive emotions are valued (Tsai, Knutson, & Fung, 2006). Own successes evoke mainly positive emotions such as joy, pleasure or pride. For example, it was demonstrated that own success, at least in individualistic cultures, is highly associated with pride, confidence and satisfaction (Imada & Ellsworth, 2011) or general pleasure (Zhang & Cross, 2011). In particular joy, a feeling of great pleasure and happiness, can accompany a positive outcome. Interestingly, joy differs from other positive emotions such as elation or gladness (Bagozzi, 1991) and it is a synonym of happiness. Harmon-Jones, Schmeichel, Mennit, and Harmon-Jones (2011) showed that joy is a low-approach-motivated positive affect that negatively correlates with anger and determination.

In general, positive emotions enable us to maintain or increase self-esteem. Consequently, successes are something that we strive for. However, other's successes can lead to negative emotions such as envy or resentment as well. Envy is an unpleasant and often painful feeling which consists in emotions such as inferiority, resentment or hostility (Smith & Kim, 2007). It lasts for a short time and is usually unexpected and unwanted (Heikkinen, Nikkonen, & Aavarinne, 1998). Parrott and Smith (1993) claimed that envy is more controversial than other emotions such as anger or sadness; a person experiencing envy hardly reveals it because he or she is ashamed of it. Resentment is a bitter feeling following successes of others who are perceived as not deserving their lot (Feather & Sherman, 2002). Although both envy and resentment are negative, they differ in that envy focuses on the lack of something enjoyed by another person, while the focus of resentment is a conviction that other's good fortune is undeserved and unfair. Both emotions are usually correlated and emerge in similar conditions of other's successes.

As in individualistic cultures people seek and aim to maintain positive self-views (e.g., Zhang & Cross, 2011), successes are desired and failures avoided. This is evidenced, for example, by the fact that people make more internal attributions for successes than for failures (Mezulis, Abramson, Hyde & Hankin, 2004), and memories of successes are more accessible than memories of failures (Endo & Meijer, 2008). Failures are usually associated with negative feelings such as dissatisfaction or sadness. They are also very demanding for one's self-esteem (e.g., Zhang

& Cross, 2011). Failures of others lead to dissatisfaction, sadness and other unpleasant emotions, especially when they are evaluated as undeserved (Feather, 2006) and refer to well-liked people. Paradoxically, other's failures can also result in a positive emotional state, for example in *schadenfreude*. *Schadenfreude* is a German word which literally means the joy of another person's failure (Heider, 1958). In other words, someone else's negative experience educates a positive emotion. When summarizing research on the antecedents of *schadenfreude*, Smith, Powell, Combs, and Schurtz (2009) concluded that despite being socially undesirable, this emotion commonly arises when the perceiver gains something from another's misfortune, when the misfortune is deserved and when it befalls an envied person. The gains refer mainly to the increases in self-esteem which follow other's failures. The role of deservingness has been widely described in previous literature (e.g., Feather, 1999, 2006, Feather, & McKee, 2009, van Dijk, Ouwerkerk, & Goslinga, 2009, van Dijk, Ouwerkerk, Goslinga, & Nieweg, 2005). For example, *schadenfreude* is more likely to occur if the misfortune of another person is perceived as deserved and when it concerns high achievers (e.g., Feather, 1996). Last but not least, while some studies documented the existence of the link between envy and *schadenfreude* (e.g., van Dijk, Ouwerkerk, Goslinga, Nieweg, & Gallucci, 2006), others did not (e.g., Feather & Nairn, 2005). Van Dijk and coworkers (2006) tried to resolve this inconsistency by showing that envy predicts *schadenfreude* when the perceiver and the target are comparable (e.g., are of the same gender) and the two emotions remain unrelated when the persons are incomparable (e.g., are of different gender).

### Balance Restoration: A Neglected Motivational Force

As discussed in the first section, emotional reactions to other's outcomes can have different causes. However, there is one model capable of predicting both positive and negative emotional reactions to other's outcomes. It is based on the Heiderian balance theory (1958) which explains formation, origins and change of attitudes. It was chronologically the first concept of cognitive consistency, which dominated social psychology in 1960s (Greenwald et al., 2002), and similarly to other theories of this kind, it assumes that people strive for internal consistency in their attitudes and behaviors (see Wojciszke, 2011, for review). Although the balance theory is quite old, it is still successfully applied in some areas of psychology, for example to predict team conflicts (Rovira-Asenjo, Gumi, Sales-Pando, & Guimera, 2013).

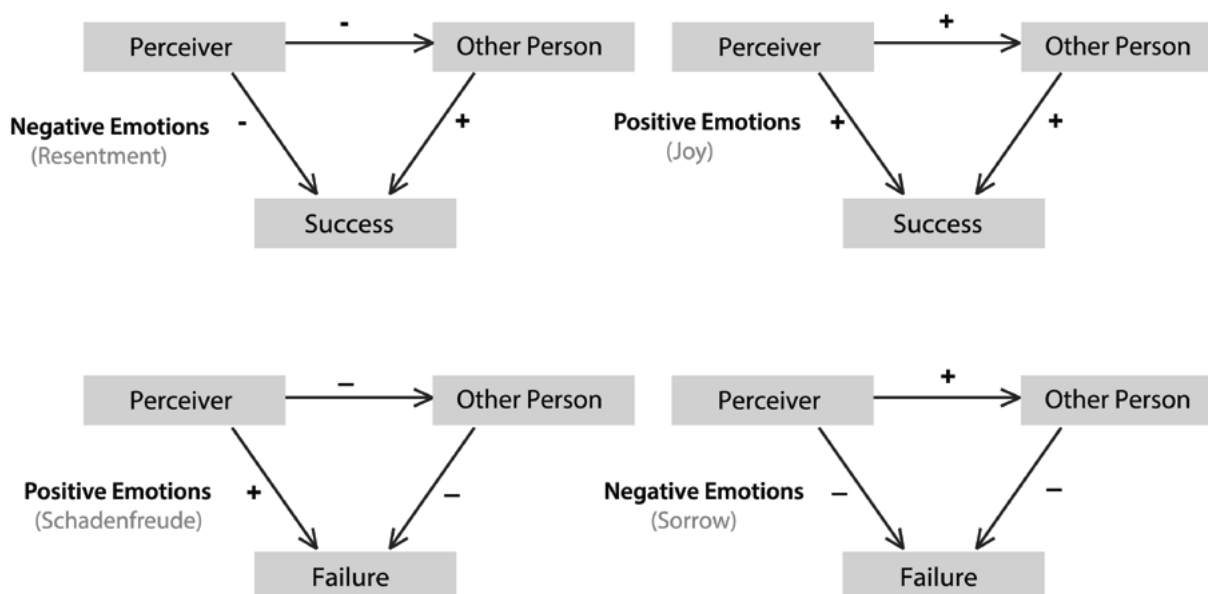
According to the Heider's theory, separate entities that are perceived as belonging to each other constitute a cognitive unit P-O-X, consisting of P (perceiver), O (other person) and X (impersonal entity e.g., an event, an idea, a thing). All relations within a unit are conceived as interdependent. The elements can create a "unit" or "sentiment" relations. The former are for example: proximity, similarity, causality, membership, possession, or belonging. For instance, P knows well O, O made X, or P

does not own O. Sentiment relations include for example, to like, to esteem, to love, to value, and their opposites. The cognitive units involve strong forces to balance emotional relations between the elements of the unit. Importantly, balanced states within cognitive units are preferred by individuals, while imbalanced states are strongly avoided and associated with negative states; and at the same time they evoke strong motivation to restore the balance. If balance restoration is impossible, a state of imbalance will produce tension (Heider, 1946).

Although the Heiderian model originally referred to attitudes and relationships, it can be successfully extended to emotions as well. Pietraszkiewicz and Wojciszke (2014) demonstrated that emotional reactions may induce balance restoration within a cognitive unit. In the present paper, we focus on cognitive units consisting of three elements: a perceiver (P), another person (O) and an outcome of this person (X). According to Heider, three-element units are balanced when the number of positive sentiment relations is odd; otherwise a triad is in an imbalanced state. As it was mentioned before, balanced states are preferred by the perceiver, while imbalanced are strongly avoided. For example, if P and O have a positive relationship (e.g., P likes O) and so do P and X (e.g., P likes X), then if O and X have a negative relationship (so that the number of positive relations in the cognitive unit is two) there is a tension pushing towards either the O – X relationship becoming positive or one of the others becoming negative. This tension may lead for instance to a change in the relation between P and O, P and X.

Basing on the above mentioned assumptions, it is possible to predict the relation between the perceiver and his or her result by systematic change of the perceiver's attitude towards the other person, as illustrated in Figure 1. Thus, we can assume that if the successes of the other are always liked and failures disliked, then that constitutes positive (O + X) or negative (O – X) sentiment relations within P - O - X units. Second, the relations between P and O can take two different forms: either the perceiver likes the other (P + O) or the perceiver dislikes the other (P – O). Third, the perceiver's responses to the other's successes or failures are conceptualized as responses bringing balance to P - O - X units. Having defined the relation between the perceiver and the outcome as well as that between the outcome and the other (i.e., failures are always disliked while successes are liked by the other), we can easily predict the perceiver's emotional reactions to the other's outcomes. In effect, perceivers are likely to respond with a positive emotional state to successes of liked others (joy) and to failures of disliked others (schadenfreude), and to respond with a negative emotional state to successes of disliked others (resentment) and to failures of liked others (sorrow). In other words, emotional states aim to restore balance within cognitive units. Therefore, we claim that interpersonal attitudes play a key role in shaping emotional reactions to other's experiences. As a consequence, schadenfreude and resentment appear as reactions to a failure or success of a disliked other, while sorrow and joy are reactions to a liked other's outcomes.

Figure 1. Emotional responses to successes and failures of a liked and disliked person as a restoration of cognitive balance within a cognitive unit involving P (perceiver), O (other person) and X (other's outcome).



### The Role of Self-Esteem and Self-Interest in a Domain

In general, high self-esteem is associated with experiencing more happiness, optimism, and motivation than low self-esteem, as well as with lowered experience of depression, anxiety, and negative mood (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). It is also well documented that people with low and high self-esteem react with different emotions to their own outcomes, especially persons of low self-esteem experience far more negative emotions in response to their failures (Blaine & Crocker, 1993; Taylor, 1991). On the other hand, individuals of high self-esteem experience more positive emotions evoked by their own successes (and less negative emotions), in comparison to low self-esteem individuals (Wood, Heimpel, & Michela, 2003).

Numerous authors have also noticed that the involvement of the self is probably a crucial precondition for experiencing both resentment and *schadenfreude* (e.g., McNamee, 2007; Portmann, 2000). Other's successes lead to envy when they pertain to domains which are personally relevant to perceivers, that is, where perceivers desire successes for themselves (Smith & Kim, 2007). Similarly, other's failures are pleasurable when they not only provide the perceiver with a subjective feeling of justice restoration, but also create an opportunity for downward social comparisons which boost the perceiver's self-esteem. At a group level, the self-focused pain of in-group inferiority is a major predictor of *schadenfreude* experienced after a failure of a previously successful out-group (Leach & Spears, 2009).

The link between self-esteem and *schadenfreude* was shown experimentally by van Dijk, Ouwerkerk, Wesseling, and van Koningsbruggen (2011). They decreased their participants' self-esteem via negative feedback on a task and found that those participants took more pleasure in reading about another person's misfortune than those who had received no or positive feedback. Decreased self-esteem led to increased *schadenfreude* in both threat-related and threat-unrelated domains. In another set of studies, they documented that low self-esteem intensifies the experience of *schadenfreude* unless there is no possibility for self-affirmation (van Dijk, van Koningsbruggen, Ouwerkerk, & Wesseling, 2011).

*Schadenfreude* is directed toward others and it is strongly tied to the self. As a consequence, Heider (1958) suggested that pleasure derived from other's misfortune should be more intense when it refers to self-relevant domains. This happens because self-interest (both at an individual and group level) boosts the self-relevance of other's actions within a domain. The role of self-interest in experiencing *schadenfreude* towards out-groups was demonstrated directly by Leach, Spears, Branscombe and Doosje (2003). They analyzed the sentiment of *schadenfreude* among soccer fans in response to a rival soccer team's misfortunes. They documented that the intensity of *schadenfreude* derived from the rival's failure was especially strong for the participants among whom self-

interest in the soccer was high. In the present study, we further explored the role of self-esteem and self-interest in evoking emotional reactions to other's outcomes. Based on previous findings, we reasoned that self-interest intensifies *schadenfreude* and resentment. Additionally, we included self-esteem in our analyses in order to investigate a possible link among emotional reactions to other's failure, in particular *schadenfreude*, resentment, and self-esteem.

### Present Research

The present study aimed at showing that emotional reactions to other person's outcomes function as responses bringing balance within cognitive units. In other words, we tested the basic hypothesis that the perceiver's attitude toward other persons is a moderator of his or her emotional reactions to the latter's outcomes (failures and successes). We asked our participants to recall and describe a situation involving a success or a failure of a person whom they liked well or disliked. Additionally, we analyzed the role of self-interest in shaping emotional reactions towards these outcomes. Hence, the recalled outcomes fell either into a domain which the participants found personally important or into a domain which they found unimportant. The participants were also asked to describe their emotional responses to the situation, both answering an open-ended question about their feelings and rating their emotions on a few provided scales. Finally, we measured the participants' self-esteem.

### Method

**Participants and Design.** The participants were 203 Polish students from four different universities. Their mean age was  $M = 26.6$  ( $SD = 6.36$ ) years, 121 were women and 82 were men. The participants were randomly assigned to one of eight conditions of a between-participants design: 2 (attitude: positive vs. negative) x 2 (outcome: success vs. failure) x 2 (self-interest: involved vs. not involved). They were recruited to the study individually by the study assistant. i.e., the study assistant approached a person he/she met in the university's corridor and asked if he or she wants to participate. Having given their consent, the individuals were randomly allocated to particular experimental conditions by drawing one of the eight cards with group numbers from the pool. All participants took part in the study voluntarily.

**Procedure.** The participants were asked to recall and describe a situation from their past in which someone they liked or disliked succeeded or failed in an action. Additionally, one half of the participants recalled a situation regarding a domain in which they had interest (aspired for successes themselves), the other half – a domain in which they did not have interest (no personal aspirations). Every participant recalled only one situation. Subsequently, during an open question stage, they were asked to write down a few names of emotions they experienced in the recalled situation. Finally, they evaluated their emotions on nine provided rating scales.

**Dependent Measures.** Emotion descriptions given in the answers to the open question were compiled into a common alphabetical list. Each item on the list was subsequently rated for its positivity-negativity by five independent judges using seven-point rating scales ranging from -3 (*definitely negative*) to 0 (*neutral*) to 3 (*definitely positive*). The judges were very consistent (Krippendorff's  $\alpha = .74$ ), so we averaged their ratings. Then we came back to individual protocols and, using the judges' ratings, we computed an index of the average emotional state reported by each participant. Additionally, the relatively large sample size allowed us to conduct a frequency analysis concerning the specific emotions listed by our participants.

After the participants had written their descriptions, they were asked to rate the experienced emotions on a seven point scale (from 1 – *did not experience this feeling at all* to 7 – *very strongly experienced this feeling*). Four items measured positive emotions: joy, satisfaction, pleasure and happiness (Cronbach's  $\alpha = .93$ ). Five items measured negative emotions: resentment, upset, anger, sadness and gloom (Cronbach's  $\alpha = .93$ ). Subsequently, the participants evaluated how much they liked a person from the recalled situation, ranging from 1 (*I definitely dislike him/her*) to 7 (*I definitely like him/her*) and evaluated how close the person was for them, ranging from 1 (*definitely not close to me*) to 7 (*definitely close to me*). Finally, they filled the ten-item Rosenberg's Self-Esteem Scale pre-adapted previously to the Polish language ( $\alpha = 0.90$ ) and provided information regarding their age and gender.

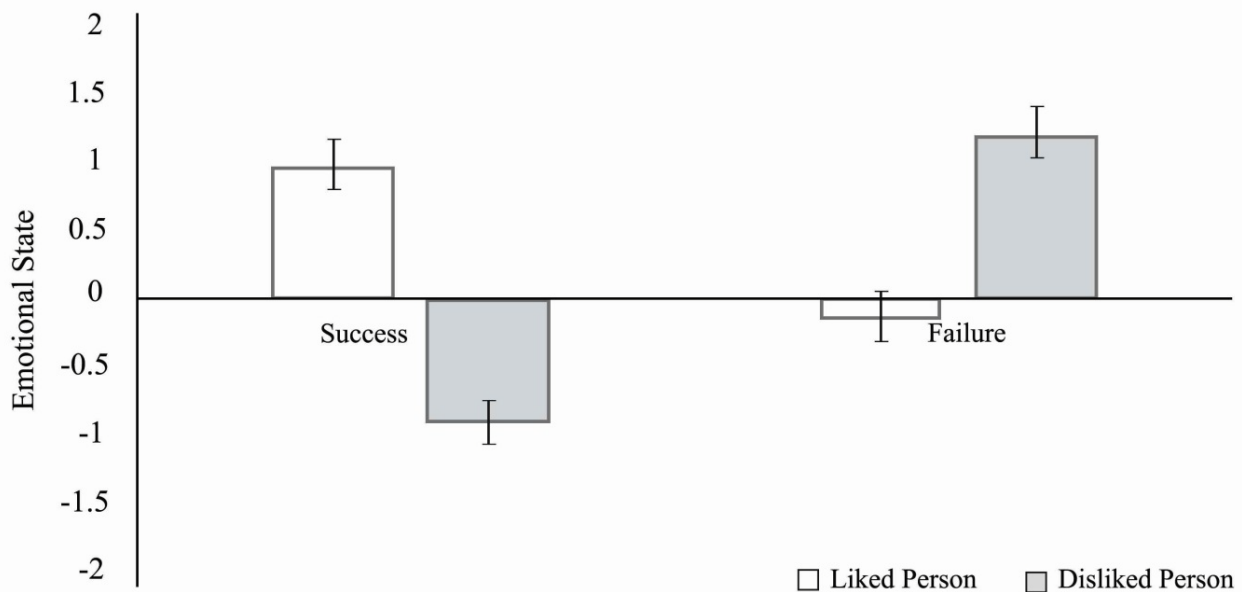
## Results and Discussion

**Manipulation Checks.** We performed an analysis of variance in the 2 (outcome) x 2 (attitude) x 2 (self-interest) design on the attitude as a dependent variable. It showed the predicted effect of attitude,  $F(1, 195) = 182.35$ ;  $p < .001$ ,  $\eta^2 = .48$ . In the liking group the target was indeed liked to a higher degree ( $M = 5.81$ ,  $SD = 1.07$ ) than in the disliking group ( $M = 3.20$ ,  $SD = 1.7$ ).

**Average Emotional State.** The 2 (outcome) x 2 (attitude) x 2 (self-interest) analysis of variance performed on the average emotional state yielded the predicted interaction between the attitude and outcome,  $F(1, 195) = 92.77$ ;  $p < .001$ ,  $\eta^2 = .32$ . As can be seen in Figure 2, a success resulted in a negative emotional state when it happened to a disliked person ( $M = -.92$ ,  $SD = 1.13$ ) and in a positive emotional state when it happened to a well-liked person ( $M = .96$ ,  $SD = 1.38$ ). The difference between these two means was large,  $t(97) = 7.35$ ,  $p < .001$ ,  $d = 1.87$ . Furthermore, a failure led to a negative emotional state when it happened to a person who was liked by the perceiver ( $M = -.15$ ,  $SD = .16$ ) and to a positive state when it happened to a disliked person ( $M = 1.2$ ,  $SD = 1.42$ ). The difference between these two means was also large,  $t(102) = -5.7$ ,  $p < .001$ ,  $d = 1.37$ .

Although the interaction between attitude, outcome, and self-interest failed to reach significance,  $F(1,195) < 1$ , the basic pattern depicted in Figure 2 was slightly different in the condition involving self-interest versus not. In the condition involving self-interest, one simple effect disappeared – responses to a success ( $M =$

**Figure 2.** The average emotional state reported in reactions to successes and failures of persons who were liked or disliked. Whiskers represent standard errors of the mean. Higher scores indicate a more positive emotional state.



0.26,  $SD = 1.39$ ) and failure ( $M = -0.23$ ,  $SD = 0.80$ ) of a well-liked person failed to differ significantly,  $t(52) = 1.59$ ,  $p = .12$ . In the condition not involving self-interest the pattern was identical to that of Figure 2 and this crucial difference between the success ( $M = 1.66$ ,  $SD = 0.95$ ) and failure ( $M = -0.08$ ,  $SD = 1.19$ ) of a well-liked person remained highly significant,  $t(50) = 5.83$ ,  $p < .001$ . These subtle differences show that self-interest involvement moderates the attitude by outcome interaction so basic for our Heiderian reasoning. When self-interest is involved (the perceivers have their own aspirations for high outcomes) the success of a well-liked person is threatening to the self (due to upward social comparisons) and it does not induce joy ( $M = 0.26$  does not differ from the neutral value of zero). However, when self-interest is not involved (the perceivers have no aspirations for success) the success of a well-liked person opens the possibility of basking in reflected glory and induces much of joy ( $M = 1.66$  is much higher than zero). The importance of self-interest is also reflected by a significant interaction between self-interest and outcome,  $F(1, 195) = 10.90$ ;  $p < .001$ ,  $\eta^2 = .05$ . This interaction meant that in the self-interest involved condition responses to other's successes were generally negative ( $M = -0.38$ ,  $SD = 1.38$ ) whereas responses to other's failures were generally positive ( $M = 0.66$ ,  $SD = 1.29$ ) and this difference was highly significant,  $t(107) = 4.06$ ,  $p < .001$ ,  $d = 0.78$ . However, when the perceivers had no personal aspirations for success, their responses to others' success ( $M = 0.56$ ,  $SD = 1.65$ ) and failure ( $M = 0.30$ ,  $SD = 1.48$ ) were similar,  $t(92) < 1$ .

Summing up, we documented that failures of a disliked person induce a positive emotional state, while failures of a well-liked person – a negative emotional state. Similarly, successes of a disliked other resulted in a negative emotional state, while successes of a liked other – in a positive emotional state. It is consistent with our assumption that interpersonal attitudes moderate emotional

reactions to other's outcomes. Furthermore, this pattern was slightly moderated by the involvement of self-interest understood as having personal aspirations for success in the outcome domain or lack of thereof.

Since the average emotional state is a bipolar measure with 0 as a neutral value, we tested whether the mean emotional state in the eight conditions differed significantly from 0 using one sample  $t$  tests. The analyses showed that when a well-liked person succeeded in a domain in which the participant did not have self-interest, the average emotional state differed significantly from 0,  $t(24) = 8.75$ ,  $p < .001$ . When a disliked person succeeded, both in an important and unimportant domain, the average emotional state differed significantly from 0 as well,  $t(28) = -4.52$ ,  $p < .001$  and  $t(18) = -3.31$ ,  $p < .01$ . The analysis also revealed that the average emotional state differed from zero,  $t(25) = 8.36$ ,  $p < .001$ , when a disliked person failed in an important domain. All these means are presented in Table 1.

**Positive and Negative Emotions.** Subsequently, the ratings of the experienced emotions were subjected to a 2 (outcome) x 2 (attitude) x 2 (self-interest) x 2 (emotions: positive vs. negative) analysis of variance with repeated measures on the last factor. A significant and strong interaction effect between the attitude, the outcome and emotions appeared,  $F(1, 195) = 224.76$ ;  $p < 0.001$ ,  $\eta^2 = .54$ . The attitude and the outcome influenced the experienced emotions.

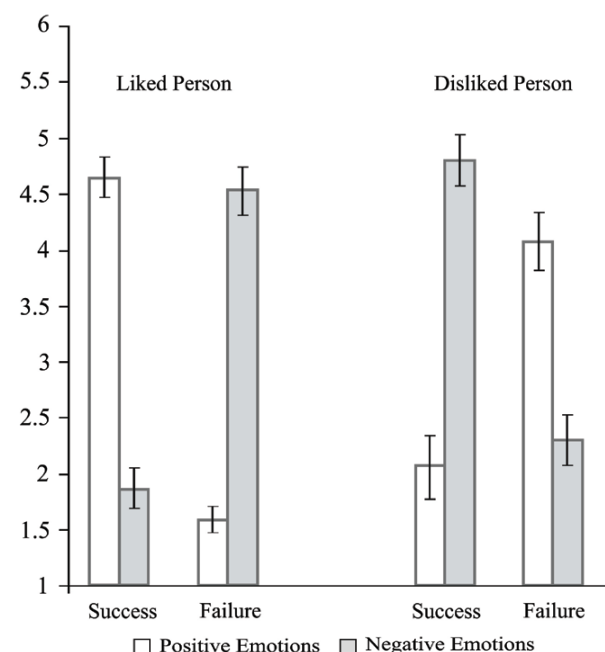
As presented in Figure 3, successes of a disliked other induced more negative emotions than successes of a well-liked other ( $M = 4.8$ ,  $SD = 1.67$  vs.  $M = 1.89$ ,  $SD = 1.27$ ),  $t(87) = -9.77$ ,  $p < .001$ ,  $d = 2.9$ . In addition, successes induced more positive emotions when they referred to a liked person than to a disliked person ( $M = 4.66$ ,  $SD = 1.37$  vs.  $M = 2.06$ ,  $SD = 1.42$ ),  $t(97) = 9.27$ ,  $p < .001$ ,  $d = 2.6$ . Failures of a liked other induced more negative emotions

**Table 1. Mean emotional state in the eight conditions and their difference from zero (single sample  $t$  tests)**

Condition	Mean	SD	$t$
<b>Success</b>			
Liked Person			
Self-Interest	0.25	1.38	0.94
No Self-Interest	1.66	0.95	8.75***
Disliked Person			
Self-Interest	-0.94	1.13	-4.52***
No Self-Interest	-0.88	1.16	-3.31**
<b>Failure</b>			
Liked Person			
Self-Interest	-0.23	0.8	-1.51
No Self-Interest	-0.7	1.18	-0.3
Disliked Person			
Self-Interest	1.62	0.99	8.36***
No Self-Interest	0.74	1.69	2.09*

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Figure 3. Intensity of positive and negative emotions to successes and failures of liked or disliked persons. Whiskers represent standard errors of the mean.**



than failures of a disliked person ( $M = 4.53$ ,  $SD = 1.6$  vs.  $M = 2.29$ ,  $SD = 1.59$ ),  $t(102) = -7.12$ ,  $p < .001$ ,  $d = 2.23$ , while failures of a disliked person induced more positive emotions than failures of a liked person ( $M = 4.09$ ,  $SD = 1.89$  vs.  $M = 1.6$ ,  $SD = .95$ ),  $t(69) = -.83$ ,  $p < .001$ ,  $d = 2.49$ . Successes of a liked person induced the most positive emotions, while successes of a liked other induced the least negative emotions.

The analysis also revealed a significant interaction effect between the outcome, self-interest and emotions,  $F(1,195)=12.56$ ,  $p < .001$ ,  $\eta^2 = .06$ . However, it appeared that the only significant difference between experiencing positive and negative emotions occurs in the case of a failure in a domain in which a perceiver does not have own interests,  $t(49) = -3.07$ ,  $p < .01$ ,  $d = 1.42$ . The participants experienced more negative emotions ( $M = 2.08$ ,  $SD = .29$ ) than positive emotions ( $M = 1.86$ ,  $SD = .27$ ) as a reaction to a failure in a domain in which they did not have self-interest. In the case of a domain in which they were interested, there was no significant difference,  $t(53) = -.72$ ,  $p = .94$ . Therefore, this shows that self-interest plays some role only in the case of empathetic reactions to other's failures in a domain which is unimportant for the perceiver.

As self-interest did not appear to play an important role in evoking emotional reactions towards other's lots, we aimed to verify the intensity of positive and negative emotions in all four conditions, omitting self-interest condition. Thus, we conducted a few one sample  $t$  tests, whose results are presented in Table 2. The results showed that the difference between positive and negative emotions was significant for all conditions. Moreover, the signs of emotions and the outcome were consistent in the positive attitude condition. A success evoked positive emotions and a failure evoked negative emotions. In the negative attitude condition, the signs of emotions and the outcome were discordant. The participants enjoyed a failure and regretted a success.

**Table 2. The difference between the level of intensity of positive and negative emotions in response to outcomes of persons who were well-liked or disliked**

Condition	Mean	SD	$t$
<b>Success</b>			
Liked	2.77	2.24	8.85**
Disliked	-2.73	2.79	-6.79**
<b>Failure</b>			
Liked	-2.92	2.07	-10.45**
Disliked	1.8	2.67	4.70**

Note. \*\*  $p < .001$

What is important, positive emotions and negative emotions were correlated ( $r^2 = -.63$ ;  $p < 0.01$ ). Similarly, the average emotional state (the open question) correlated with positive emotions ( $r = .56$ ,  $p < .001$ ), and with negative emotions ( $r = -0.6$ ,  $p < .001$ ). A similar correlation was found in the case of the average emotional state in the negative attitude condition ( $r^2 = -.61$ ;  $p < 0.001$ ).

**Specific Emotions.** In this analysis, we combined data both from the present study and the pilot study of Pietraszkiewicz and Wojciszke (2014). This was justified as the methodologies of both studies were identical. As a result, we obtained a sizeable sample of participants ( $N = 397$ ,  $M_{age} = 23.62$ ,  $SD = 7.1$ ) which enabled us to run analyses on specific emotions. We proved that interpersonal attitudes were a major moderator of specific emotions reported in response to other's outcomes. The frequency data reported in Table 3 clearly shows that successes do not have any intrinsically positive value, nor is a failure intrinsically negative. All the emotions reported by more than 10% of the participants heavily depended on whether the person winning the success or suffering the failure was liked or disliked by the perceiver. Joy was the most frequently recalled positive emotion – as many as 84.5% of the participants reported this emotion in response to a success of a well-liked person, but only 10.1% in response to a success of a disliked one, and this difference was large ( $\phi = .75$ ). However, in response to a failure, 68.4% of the participants reported joy when recalling outcomes of a disliked person, but only 7.5% when recalling outcomes of a well-liked one, and this difference was also large ( $\phi = .63$ ). As can be seen in Table 3, similarly large differences were found in the case of satisfaction. Admiration was reported only in the case of a success and only when the success was won by a well-liked person. Sympathy was reported only after a failure and mainly when it was suffered by a well-liked person. A similar picture emerged in the case of negative emotions. Sadness was reported after a success of a disliked (but not well-liked) person and after a failure of a liked (but not disliked) person. These differences were also large, as can be seen in Table 3, and they were equally large in the case of anger. Dissatisfaction was reported very frequently after a disliked person's success, but also quite often after a failure of a well-liked other.

**Table 3. Percentages reporting different emotions in response to outcomes of persons who were well-liked or disliked**

		Liked	Disliked	$\chi^2$	Phi
<b>Joy</b>	Success	84.5	10.1	108.899***	.75
	Failure	7.5	68.4	80.273***	.63
<b>Satisfaction</b>	Success	37.1	3	35.71***	.43
	Failure	6.6	62.8	71.07***	0.6
<b>Admiration</b>	Success	36.1	7.1	24.49***	.35
	Failure	3.8	1.1	< 1.00	-
<b>Sympathy</b>	Success	4.1	0	4.17	.15
	Failure	58.5	17.9	34.61***	.42
<b>Sadness</b>	Success	9.3	39.4	42.03***	.35
	Failure	74.5	15.8	69.43***	.58
<b>Anger</b>	Success	12.4	50.5	32.95***	.41
	Failure	35.8	7.4	23.39***	.34
<b>Dissatisfaction</b>	Success	31	66.7	25.04***	.36
	Failure	23.6	7.4	3984**	.23

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

To summarize, successes of a well-liked person bring emotions which are strikingly similar to those reported after failures of a disliked person and vice versa. Responses to successes are positive (joy) and responses to failures are negative (sorrow), but only as far as the perceivers hold positive attitudes towards those to whom these outcomes happen. When the perceivers hold negative attitudes towards others, the latter's successes result in negative emotions (resentment) and their failures result in positive emotions (schadenfreude). These internally consistent results show the crucial role of interpersonal attitudes in shaping responses to outcomes of other persons' actions. This is in line with our hypotheses derived from the balance theory – that emotional responses to other's outcomes restore the balance within cognitive units comprising the perceiver, the other and the outcome.

### **The Role of Self-Esteem**

Subsequently, we conducted analyses of correlations between self-esteem, positive and negative emotions. The findings showed a limited role of self-esteem. Self-esteem inhibited positive emotions when a disliked other succeeded in a domain in which participants had self-interest ( $r = .44, p < .005$ ). In addition, self-esteem negatively correlated with negative emotions when the other succeeded in a domain in which the perceiver had interest ( $r = -.42, p < .05$ ). As previous analyses failed to demonstrate a clear role of self-interest, we conducted correlational analyses omitting this condition in order to further verify the role of self-esteem. It appeared that self-esteem negatively correlated with negative emotions in a situation when a well-liked other succeeded,  $r = -.37, p < .01$ , and negatively correlated with positive emotions when a disliked other succeeded,  $r = -.30; p < .05$ . Other correlations appeared to be insignificant. No other effects involving self-esteem appeared significant.

### **General Discussion**

The present research aimed at documenting the major role of balancing principle in shaping emotional responses to other's outcomes. Responses to other's successes were either positive (joy) or negative (resentment) and this valence was strongly influenced by the perceiver's pre-existing attitude toward the person in question. Similarly, emotional responses to other's failures were positive (schadenfreude) when the attitude toward the person was negative, but the responses were negative (sorrow) when the attitude was positive. This pattern of responses was predicted basing on the balance theory (Heider, 1958) and the assumption that responses toward other's lot are fleeting emotional reactions which restore the balance within a cognitive unit (consisting of the perceiver who may like or dislike the other person, who always likes his or her success and dislikes his or her failures). These consistent results were obtained by different emotional measures – mean emotional state, scales measuring positive and negative emotions and frequency of specific emotions).

These results supplement the previous findings on emotional reactions toward other's outcomes. For example, Ortony, Clore and Collins (1988) pointed out that liking is one of four variables (next to desirability of the event for-other and for-self, and deservingness) which affect the intensity of resentment and schadenfreude, while disliking is one of four variables affecting happy-for emotions (e.g., happy-for, pleased-for) and sorry-for emotions (e.g., pity or compassion). However, they treat "liking as an intensity variable rather than as part of the eliciting condition" (Ortony et al., 1988, p. 97). Similarly, Smith (2000) in his analysis suggested that liking can weaken the sensation of resentment, and thus can, in turn, strengthen schadenfreude. He documented the latter assumption and showed that the less the other is liked, the less schadenfreude is evoked by his/her failure. Hareli and Weiner (2002) documented that other-directed negative emotions (such as anger, hatred and disgust) can lead to pleasure in another's misfortune which is independent of envy and/or competition; in particular, they showed a positive relation between other-directed negative emotions and deriving pleasure from another's misfortune. However, their studies were limited to disliking relations, failures in particular, whereas the role of positive attitudes was not analyzed. Thus, our work complements this gap.

However, in our work we do not only demonstrate the role of pre-existing attitudes in shaping emotional reactions towards other's outcomes. Our research expands the current work utilizing balance theory (e.g., Greenwald et al., 2002) and contributes to the revitalization of cognitive consistency as a core principle in social psychology (cf. Gawronski & Strack, 2012). In other words we show that a "forgotten motivation" toward psychological balance can be successfully used to predict emotional reactions to other's outcomes.

Importantly, the role of pre-existing attitudes in shaping emotional reactions appeared to be stronger than the influence of self-interest. Self-interest appeared to play only a limited role in shaping responses to successes and failures of well-liked others. We failed to demonstrate that experiencing resentment and schadenfreude would be intensified when they refer to domains important for the participants. It seems that, in contradiction to previously mentioned results (Leach, Spears, Branscombe, & Doosje, 2003), when strong attitudes are involved, self-interest has limited influence on shaping emotional reactions to other's failures and successes. In other words, the role of interpersonal attitudes is documented whether the perceiver has or does not have self-interest in the domain in which the other's outcome appears. It is consistent with findings of Pietraszkiewicz and Wojciszke (2014) who showed that restoring balance plays a stronger role in shaping emotional responses of joy and sorrow than the perceptions of deservingness. Although the deservingness theory has dominated current research on schadenfreude and has been widely tested, those empirical tests typically failed to take pre-existing attitudes into account.



Similarly, we demonstrated only a limited role of self-esteem. It appeared that the higher self-esteem, the more empathetic reactions to a well-liked other's successes (more positive emotions) and a disliked other's success (less positive emotions). These results are consistent, for example, with the findings of Chambliss and her colleagues (2012). They showed that joy caused by someone else's successes is higher among non-depressed undergraduates in comparison to mildly-depressed ones. Unfortunately, we failed to demonstrate the role of self-esteem in experiencing schadenfreude. However, there are some suggestions in the literature that such a link exists (e.g., van Dijk, Ouwerkerk, Wesseling, & van Koningsbruggen, 2011). One reason of that might be the way of measurement of self-esteem. In current study, we measured global self-esteem, while above mentioned authors demonstrated the role of state self-esteem (Heatheron & Polivy, 1991).

Last but not least, it should be noted that the present study has some methodological limitations. It was based on retrospective reports consisting of recalling events and a person who was involved. Because different participants recalled different events from their personal past this procedure introduced much of error variance. However, Pietraszkiewicz and Wojciszke (2014, Study 2) provided their participants exactly the same information about attitudes and outcomes (as well as the outcome deservingness) and obtained findings very similar to the present ones. Emotional responses to other's lot appeared to be shaped mainly by the balancing principles.

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