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Being moved by meaningfulness: appraisals of surpassing internal standards elicit being moved by relationships and achievements

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ABSTRACT

People can be moved and overwhelmed, a phenomenon typically accompanied by goose-bumps and tears. We argue that these feelings of being moved are not limited to situations that are appraised as pro-social but elicited when someone surpasses an internal standard. In line with these predictions, people were moved by relationships and success (Study 1), by reunion, separation, success and failure (Study 2) and by social, environmental and sports achievements (Study 3). In all three studies, the elicitation of these feelings was partially mediated by appraisals of surpassing social or achievement standards. In line with this, ratings of meaningfulness were closely associated with feelings of being moved and moving stimuli elicited behavioural intentions such as spending time with family and friends, helping others and/or achieving something in life. Thus, moving situations may remind us about what we perceive as meaningful and thereby help us to act accordingly.

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Being moved

People sometimes cry at weddings, they experience shivers and goose bumps when listening to music and they are deeply touched when they witness exceptional helpfulness. On such occasions, one might express the corresponding emotional experience by saying that one is “moved”. The emotion of being moved is associated with a warm feeling in the chest, chills (i.e. shivers and goose bumps) and tears in the eyes (Cova & Deonna, 2014; Menninghaus et al., 2015; Seibt, Schubert, Zickfeld, Zhu, et al., 2018). Further, episodes of being moved are often experienced as positive (Cova & Deonna, 2014; Kuehnast, Wagner, Wassiliwizky, Jacobsen, & Menninghaus, 2014) and pleasurable (Hanich, Wagner, Shah, Jacobsen, & Menninghaus, 2014; Wassiliwizky, Wagner, Jacobsen, & Menninghaus, 2015) yet differ from typical joyful events (Cova & Deonna, 2014; Wassiliwizky et al., 2015). The specific elicitors and associated appraisals of being moved, however, are of ongoing debate. The present research aims to clarify these eliciting conditions.

When people are asked to describe moving situations they report events like weddings, the birth of a child, funerals, outstanding achievements, national celebrations, natural phenomena or simply music (Cova & Deonna, 2014; Menninghaus et al., 2015). From these findings, three views of the appraisals and elicitors of being moved have been developed.

Being moved as a moral emotion

The first view puts forward a conception of being moved as a moral emotion: Menninghaus et al. (2015) state that episodes of being moved are limited to specific situations, which are appraised as compatible with “prosocial norms and self-ideals” (Menninghaus et al., 2015, p. 8). Specifically, people should be moved to the extent they perceive a situation as “ethically acceptable” and “consistent with moral ideals” (Menninghaus et al., 2015, p. 8), further referred to as *moral appraisals*. Correspondingly, feelings of being moved are posited to enhance pro-social behaviour like helping (Menninghaus

et al., 2015). This description is compatible with the concept of *moral emotions* (Haidt, 2003). An emotion can be considered as moral, when it is elicited by events that affect others' well-being or moral norms but not by pure self-interest (Haidt, 2003).

Being moved as a communal sharing emotion

The second view frames being moved first and foremost as a reaction to "the sudden intensification of communal sharing", where a communal sharing relationship is defined as a relationship, in which the participants feel that they are "equivalent, belong together, care for and trust each other" (Fiske, Seibt, & Schubert, 2017). Key examples of communal sharing include pro-social actions, in which people help each other, but also events like reunion or weddings. Schubert, Zickfeld, Seibt, and Fiske (2018) therefore argue that *appraisals of closeness* explain feelings of being moved. That is, people should be moved to the extent they perceive an intensification of closeness in a situation. Correspondingly, being moved is posited to enhance behaviour that strengthens communal sharing relationships (Fiske et al., 2017).

This notion is based on *relational models theory* (Fiske, 1991), which posits that four universal principles coordinate social life: People can care for others and treat them like they would treat themselves (i.e. *communal sharing*), attend to their positions in linear hierarchy (i.e. *authority ranking*), keep track of equality (i.e. *equality matching*) or orient to material and financial values (i.e. *market pricing*). Fiske et al. (2017) argue that being moved is linked to the communal sharing domain. Hence, being moved is typically elicited by communal sharing relations and can help to enhance this principle.

Being moved as a value related emotion

The third view frames being moved as a value related emotion. Cova and Deonna (2014) claim that people are moved when a situation reflects a positive *core value* as standing out, whereby a core value can be any value that is particularly relevant to the emoter. This is consistent with the claim that being moved is elicited by wishes, which can include close relationships but also success (Tokaji, 2003). Hence, weddings, the birth of a child, funerals, outstanding achievements, national celebrations or natural phenomena should be moving to the extent that someone perceives a

value such as generosity, success, courage or beauty as positively standing out in these situations. Correspondingly, feelings of being moved should reorganise values such that the value that elicited the emotion is strengthened (Cova & Deonna, 2014).

Most values come with a corresponding *standard*. For instance, if someone values *courage*, he or she expects from people that they are courageous to a certain extent. People can, of course, fail to meet these expectations, at which point they would be judged to be coward. They can meet these expectations, at which point they would be judged to be brave. But they can also surpass these expectations, at which point they would be judged to be heroic. In appraisal theories of emotion, standards are addressed by appraisals of *compatibility with internal standards* (Scherer, 1999), *value relevance* (Frijda, 1986) or *legitimacy* (Smith & Ellsworth, 1985). Whereas appraisals of violating an internal standard elicit anger (Landmann & Hess, 2017), *appraisals of surpassing a standard* may elicit feelings of being moved. According to Scherer (1999), standards cover descriptive norms (i.e. what people normally do) as well as injunctive norms (i.e. what people ought to do) but differ from mere goals, which are covered by a different appraisal dimension (i.e. goal-conduciveness). The presence of close others, for instance, can be such a goal. People can reach this goal (e.g. when close friends are reunited) or fail to reach this goal (e.g. when close friends are separated). However, witnessing both cases may elicit feelings of being moved because the friends' reactions signal their exceptional closeness (i.e. that a closeness standard is surpassed). The same may be true for achievement-related goals. Meeting an achievement goal (e.g. succeeding in a competition) and not reaching this goal (e.g. failure in a competition) may elicit feelings of being moved when an effort standard is surpassed.

In sum, being moved could be elicited by appraisals of morality (moral emotion approach), by appraisals of closeness (communal sharing approach) or by appraisals of surpassing an internal standard (value approach) with different behavioural consequences respectively.

Interestingly, empirical evidence on this question points in different directions. In line with the communal sharing approach, evaluations of closeness predict feelings of being moved when participants are presented with moving videos (Schubert et al., 2018; Seibt, Schubert, Zickfeld, Zhu, et al., 2018). However, appraisals of morality predict being moved as well

(Seibt et al., 2017) as do manipulations of willpower and beauty (Strick & Van Soolingen, 2018), which supports the other two views respectively. These studies, however, are limited to social stimuli (e.g. Schubert et al., 2018; Seibt et al., 2017; Seibt, Schubert, Zickfeld, Zhu, et al., 2018) or do not cover appraisals (e.g. Strick & Van Soolingen, 2018). Thus, the different views on being moved cannot be evaluated with the extant evidence.

The present research

To evaluate the three different views on being moved, we studied being moved by relationships and success (Study 1), reunion, separation, success and failure (Study 2) and positive norm deviations in different contexts (Study 3). According to the moral emotion approach, these situations should be moving to the extent they are perceived as ethically acceptable and consistent with moral ideals. Hence, appraisals of compatibility with standards (as assessed by the Geneva Appraisal Questionnaire) should mediate the elicitation of being moved. According to the communal sharing approach, these situations should be moving to the extent that they are perceived as showing psychological closeness. Hence, appraisals of closeness should mediate the elicitation of being moved. According to the value approach, these situations should be moving to the extent these situations are appraised as surpassing a social standard (e.g. morally praiseworthy behaviour or exceptional psychological closeness) or as surpassing an achievement standard (e.g. outstanding success).

Further, we investigated the association between being moved and values. According to the moral emotion approach and the communal sharing approach, pro-social values should predict being moved in all contexts. According to the value approach, by contrast, a person-environment fit of values should predict being moved. Specifically, pro-social values should predict being moved in social contexts, achievement values should predict being moved in achievement contexts and pro-environmental values should predict being moved in environmental contexts.

Being moved has been associated with reports of chills, tears and a warm feeling in the chest (e.g. Benedek & Kaernbach, 2011; Wassiliwizky et al., 2015; Strick, de Bruin, de Rooter, & Jonkers, 2015). We explored whether feelings of being moved are similarly associated with perceived physiological changes across the different eliciting contexts.

Whether being moved can elicit specific behaviours is still open. Being moved may elicit pro-social behaviour (moral emotion approach), communal devotion (communal sharing approach) or the value that elicited the emotion (value approach). We explored whether feelings of being moved enhances the respective behavioural intentions.

Study 1

In the first study, we investigated emotional reactions to relationship and success-related video clips. To distinguish being moved from positive emotions, we used mirth as a control condition. In line with the value approach, we predicted that a specific set of appraisals – surpassing relevant standards – is central for the elicitation of being moved. Yet, appraisals of compatibility with internal standards as measured in the Geneva Appraisal Questionnaire (GAQ) focus only on negative deviations from such standards. To assess appraisals of positive deviations from standards we developed appraisal items similar to the GAQ-appraisals but positively framed.¹ We tested whether these appraisals mediate the elicitation of being moved. As the value approach does not imply a hierarchy of values, we expected that appraisals of surpassing social standards and appraisals of surpassing achievement standards would predict being moved to a similar extent.

Furthermore, we predicted that the match between situational and individual values moderates feelings of being moved. Specifically, we expected that being moved is not associated with pro-social values in general but that having pro-social values (i.e. moral identity) would predict being moved by relationships and that having achievement values (i.e. achievement motivation) would predict being moved by achievement.

Emotions similar to being moved such as elevation and awe can facilitate pro-social behaviour (e.g. Piff, Dietze, Feinberg, Stancato, & Keltner, 2015; Thomson & Siegel, 2017). We investigated whether this is true for being moved as well. Therefore, we explored whether being moved increases cooperation in a social dilemma task.

In sum, we tested the hypotheses (1) that relationship and success-relevant content can elicit feelings of being moved, (2) that these feelings are mediated by appraisals of surpassing social and achievement standards and (3) that the eliciting context and participants' values interact such that pro-social values

predict being moved by relationships and achievement values predict being moved by success. In addition, we explored whether being moved in these different contexts is associated with specific self-reported physiological reactions and with cooperation as a consequence of being moved.

Method

A total of 109 (86 women, 23 men) students at Humboldt-University Berlin aged between 17 and 50 years ($M_{age} = 24.2$, $SD = 6.4$) participated in exchange for credit points. We attempted to collect data from 35 participants per condition. Sensitivity analysis revealed that this is sufficient to detect medium differences between groups, medium mediation effects and large moderation effects.² After participants completed the value questionnaires, they watched two video clips. Participants were randomly assigned to watch either two relationship clips, two success clips or two control clips. Following each video clip, participants indicated their feelings, perceived physiological changes and appraisals. At the end of the study, participants chose one of the two videos and watched it again. Subsequently, they participated in a social dilemma task. We share the data and questionnaire via OSF (osf.io/xqmr7).

Values

The Moral Identity Scale from Aquino and Reed (2002) was used to measure how central pro-social standards are to the participants' self-construal. The Moral Identity Scale measure consists of a description of a person as *Caring, Compassionate, Fair, Friendly, Generous, Helpful, Honest, Kind*.³ Participants indicated to what extent they are or want to be similar to that person (e.g. *I strongly desire to have these characteristics*, 10 items, $\alpha = .81$). Achievement motivation was assessed with the achievement scale from the German version of the Personality Research Form (e.g. *I continue to work on problems when others already capitulate*, 6 items, $\alpha = .54$; Stumpf, Angleitner, Wieck, Jackson, & Beloch-Till, 1985).⁴ Participants indicated to what extent they agree with these statements on 7-point scales anchored with 1 (*not at all*) and 7 (*completely*).

Stimuli

The videos presented slideshows of significant relationships, outstanding success or humorous

pictures. Relationship pictures showed friends or family members interacting positively, success related pictures showed successful events in work or sports, and humorous pictures showed human mistakes or extraordinary ideas. The length of the videos was 1:20 min each. Each participant watched two video clips from one of the three categories (i.e. relationships, success and humour). After each video clip, participants indicated their emotional reaction, physiological changes and appraisals on 7-point scales anchored with 1 (*not at all*) and 7 (*extremely*).

Emotions

Being moved was assessed by four items (*moved* "bewegt," *touched* "berührt," *overwhelmed* "überwältigt," *stirred* "ergriffen," $\alpha = .95$). Mirth was assessed by two items (*amused* "amüsiert," *quizzical* "belustigt," $\alpha = .92$). In addition, elevation ("erhebend") and joy ("fröhlich") were assessed by single items. Elevation is often assessed by items such as being moved (e.g. Schnell, Roper, & Fessler, 2010), awe (e.g. Thomson & Siegel, 2013) or admiration (e.g. Freeman, Aquino, & McFerran, 2009). However, to avoid the semantic overlap with being moved, we used the single item elevated.

Self-reported physiological changes

Participants indicated to what extent they experienced *chills* (*shivers and goose bumps*), had a *warm feeling in the chest* or *smiled* during the video on a scale intermixed with filler items (i.e. *strong, energetic*).

Appraisals

We adapted Geneva Appraisal Questionnaire (GAQ) items related to compatibility with internal standards (Geneva Appraisal Questionnaire, 2002).¹ Specifically, participants indicated to what degree the video represents different themes. Appraisals of surpassing pro-social standards (i.e. *strong bonds between people, humanities better nature, morally and ethically praiseworthy behaviour*, $\alpha = .92$) and appraisals of surpassing achievement standards (i.e. *a remarkably good performance, how people can go beyond themselves, how someone surpasses all expectations*, $\alpha = .95$) were assessed by three items each, intermixed with filler items (i.e. *humour, human mistakes, poor performance*).

Cooperation

Cooperation in a social dilemma task (Smeesters, Warlop, Van Avermaet, Corneille, & Yzerbyt, 2003; Van Lange & Kuhlman, 1994) was assessed at the end of the study. Participants received an envelope with four chips. They were told that another participant would also receive four chips and that they could either give their chips to this participant or keep them. They would receive one lottery ticket for every chip kept and two for every chip received. Winning lottery tickets earned 10 €. Participants were then asked to decide how many of these chips they keep for themselves and how many they give to another unknown participant. After their decision, participants received the envelope of another participant. The number of chips given served as measure of cooperation.

Results and discussion

Reactions to the videos

To test whether being moved can be elicited by relationships and success, we conducted a series of one-way ANOVAs with the factor context (i.e. relationships, success and control) on the dependent variables. *Post hoc* comparisons with Bonferroni correction were used to test for differences between conditions. The results are shown in Table 1.

Appraisals

Videos about significant relationships were rated as surpassing a social standard much more than success related videos or humorous videos. By contrast, success related videos were rated as surpassing an achievement standard much more than

relationship related videos or humorous videos. Thus, the videos were perceived as intended.

Emotions

Participants reported moderate emotional reactions in all three conditions. The quality of these emotions, however, clearly differed. As expected, participants reported higher levels of being moved in response to relationships and success compared to the control condition (see Table 1). Contrary to our expectation, however, participants were not similarly moved by relationships and success. Instead, being moved was accentuated in the relationship context. Thus, social contexts might be particularly good elicitors of being moved. In addition, relationships and success elicited more elevation than the control condition. Reversely, the control condition elicited more mirth than relationships and success. All three conditions elicited similar levels of joy. Hence, feelings of being moved were accompanied by elevation and joy but differed from mirth. The largest effects emerged for being moved and mirth.

Self-reported physiological changes

Participants reported more intense warm feelings in the chest in response to relationships and success compared to the control condition (see Table 1). The effect of the condition on chills was lower and inconclusive. Although chills and a warm feeling in the chest were highly correlated with being moved (see Table 2), it seems that warm feelings in the chest are more easily elicited in moving situations than chills. Smiling, by contrast, was moderate in all three conditions (see Table 1) and the associations with being moved were weaker or not significant (Table 2),

Table 1. Reactions to relationships, success and control videos (Study 1).

	Relationships (N = 37)	Success (N = 34)	Control (N = 38)	F(2, 106)	η_p^2
<i>Appraisals</i>					
Pro-social	5.56 ^a (1.28)	2.83 ^b (1.09)	2.44 ^b (1.35)	68.30***	.56
Achievement	2.93 ^b (1.58)	5.09 ^a (1.36)	2.22 ^b (1.23)	40.33***	.43
<i>Emotion</i>					
Being Moved	4.30 ^a (1.53)	3.11 ^b (1.26)	1.90 ^c (1.01)	32.79***	.38
Elevation	4.22 ^a (1.60)	3.79 ^a (1.31)	2.57 ^b (1.55)	12.30***	.19
Mirth	2.29 ^b (1.08)	2.77 ^b (1.28)	5.03 ^a (1.38)	50.92***	.49
Joy	4.31 ^a (1.43)	3.69 ^a (1.21)	4.59 ^a (1.48)	3.94*	.07
<i>Physiology</i>					
Chills	2.62 ^a (1.46)	2.22 ^{ab} (1.24)	1.65 ^b (1.06)	5.65**	.10
Warm Chest	3.97 ^a (1.61)	3.26 ^a (1.63)	2.08 ^b (1.25)	15.19***	.22
Smile	4.23 ^{ab} (1.77)	3.57 ^b (1.44)	4.87 ^a (1.65)	5.67**	.10
Cooperation	2.41 (0.96)	2.47 (0.79)	2.24 (1.10)	0.57	.01

Note: Means and standard deviations are displayed. Scales ranged from 1 (*not at all*) to 7 (*extremely*). Superscripts (a–c) indicate significant differences between the three conditions. * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 109$.

Table 2. Correlations between being moved in different contexts and appraisals, physiological changes and values (Study 1).

	Being moved by relationships	Being moved by success	M (SD)
<i>Appraisals</i>			
Surpassing social	.41*	.61***	3.62 (1.87)
Surpassing ach.	.67***	.40*	3.36 (1.84)
<i>Physiology</i>			
Chills	.64***	.63***	2.16 (1.32)
Warm chest	.70***	.70***	3.09 (1.69)
Smile	.38*	.22	4.25 (1.70)
<i>Values</i>			
Moral identity	.60***	.17	4.75 (0.92)
Ach. motivation	.20	.15	4.62 (0.87)

Note: Scales ranged from 1 (*not at all*) to 7 (*extremely*). * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 109$.

which indicates that self-reported smiling does not differentiate well between being moved and mirth.

Cooperation

How many chips participants decided to give to the other player did not differ significantly between the conditions (see Table 1). Previous research identified small effects of emotion inductions on cooperation (e.g. Keteelaar & Tung Au, 2003; Piff et al., 2015; Thomson & Siegel, 2013).⁵ The present study was sufficiently powered to detect large and medium but not small effects.² Hence, a weak effect of moving clips on cooperation may exist that the current study could not detect.

Mediation

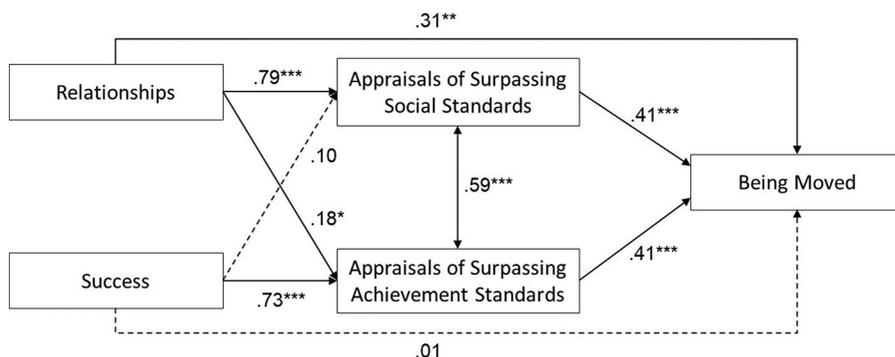
In order to test whether the elicitation of being moved can be explained by appraisals, we conducted a multiple mediation analysis employing *Mplus* bootstrapping (Preacher & Hayes, 2008). As shown in Figure 1, we specified a saturated model with relationship context and success context as independent variables

(both dummy-coded), appraisals as mediators and being moved as dependent variable.

Indirect effects of relationships, $\beta = .32$, $p = .001$, and success, $\beta = .03$, $p = .225$, on being moved through appraisals of surpassing social standards were partially significant. Indirect effects of relationships, $\beta = .08$, $p = .045$, and success, $\beta = .30$, $p < .001$, on being moved through appraisals of surpassing achievement standards emerged significantly. As expected, the effects of relationships and success on being moved were mediated by appraisals of surpassing social and achievement standards respectively (see Figure 1). In addition, an indirect effect of relationships on being moved through appraisals of surpassing achievement standards emerged. Thus, participants construed positive social interactions not only as outstanding virtue but also as a form of achievement. As expected, a major part of the variance in being moved, $R^2 = .65$, $p < .001$, could be explained by these appraisals. Participants were moved to the degree that they appraised the pictured events as surpassing a social standard or as surpassing an achievement standard.

Moderation

To test whether values moderate how intensely someone was moved by the videos, we conducted stepwise regression analysis. In the first step, we included the dummy-coded variables relationships and success together with moral identity. In the second block, we added the interactions between the dummy variables and moral identity, which revealed a significant interaction, $\Delta R^2 = .04$, $p = .015$. Detailed results are shown in the supplemental

**Figure 1.** Mediation by appraisals of surpassing standards (Study 1).

Note: Standardised parameters are displayed. * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 109$.

material (Table S1). As shown in Table 2, moral identity significantly predicted being moved only in the relationship context. Thus, being moved was strongly contingent on pro-social values in social situations but less so in achievement situations.

The same procedure was applied for achievement motivation. However, the interactions between achievement motivation and the eliciting contexts were non-significant, $\Delta R^2 = .01$, $p = .362$. Detailed results are shown in the supplemental material (Table S1). As shown in Table 2, achievement motivation was not significantly associated with being moved in any context. Contrary to our expectation – and even though achievement appraisals were predictive, achievement motivation did not predict being moved by success, which might be due to the low reliability of that measure.

In sum, Study 1 shows that feelings of being moved can be elicited by relationships and success. These experiences were associated with chills and a warm feeling in the chest. Consistent with our hypotheses, a considerable amount of variance in being moved could be explained by appraisals. Participants were moved to the extent that they appraised the events as an exceptional pro-social act or as an outstanding achievement. However, contrary to our hypotheses, people were overall more intensely moved by relationships than by success and this difference could not be explained by appraisals. These findings suggest that some internal standards (like positive relationships) are more likely to move people than others (like success). Our person-environment-fit hypothesis was also only partially supported. As expected, moral identity predicted being moved by relationships better than being moved by success. However, contrary to our expectation, the reverse pattern for achievement motivation was not found. Hence, the role of pro-social values such as moral identity for being moved depends on the eliciting context but whether other values affect being moved remains open.

Study 2

In the second study, we attempted to replicate and extend the findings of Study 1. We used movie scenes and YouTube clips as stimuli. As many people watch such videos in everyday life, they provide an ecologically valid way to study being moved.

Study 1 showed that people can be moved by relationships and success related videos to the

extent that they appraise these situations as surpassing a standard. However, people can also be sadly moved, for instance by movies, in which someone loses a loved person (Hanich et al., 2014). If appraisals of surpassing standards are general elicitors of being moved, as we argue in the introduction, these appraisals should explain these feelings of being sadly moved as well. To test this claim, we investigated being moved by reunion and success, which were similar to the moving contexts in Study 1, but also being moved by separation and failure. We expected that being moved is elicited by appraisals of surpassing social or achievement standards but not by appraisals of violating such standards. As in Study 1, we expected that appraisals of surpassing social standards and appraisals of surpassing achievement standards would predict being moved to a similar extent.

To account for a broader range of values, we employed the Schwartz Value Survey (Schwartz, 1992). The Schwartz self-transcendent values (i.e. benevolence and universalism) and the Moral Identity Scale (Aquino & Reed, 2002) were used as indicators for pro-social values. The Schwartz self-enhancement values (i.e. achievement and power) and the Achievement Motivation Scale (Stumpf et al., 1985) were used as indicators of achievement values. As in Study 1, we expected that pro-social values predict how intensely someone is moved by reunion and separation and that achievement values predict how intensely that person is moved by success.

Further, emotions come along with specific action-tendencies (e.g. Frijda, 1986). Whether these action tendencies manifest in actual behaviour depends on the context. Therefore, we investigated behavioural intentions in Study 2 in order to reveal the action-tendencies of being moved.

In sum, we tested the hypotheses that (1) reunion, separation, success and failure elicit being moved, (2) that these feelings of being moved are mediated by appraisals of surpassing social or achievement standards but not by appraisals of violating social or achievement standards and (3) the eliciting context and participants' values interact such that pro-social values predict being moved by reunion and separation and that achievement values predict being moved by success.⁶ In addition, we explored whether being moved in these different contexts is associated with specific self-reported physiological reactions, behavioural intentions and evaluations.

Method

A total of 252 students at the University of Hagen participated in the online study in exchange for credit points. After participants responded to value questionnaires, they were randomly assigned to watch either a reunion, separation, success, failure or a control clip. Clips were pretested and counterbalanced across participants. Participants then indicated their feelings, physiological changes, appraisals, intentions and evaluations. The study was preregistered at <https://aspredicted.org/fg647.pdf>. We attempted to collect data from 45 participants per condition. Sensitivity analysis revealed that this is sufficient to detect medium differences between groups, medium mediation effects and large moderation effects.² Twenty-four participants were excluded from analysis because they indicated they did not watch the video completely and/or did not participate seriously. The final sample consisted of 228 participants (164 women, 64 men) with a mean age of 33.1 (SD = 10.2). Of these 50 saw the reunion, 48 the separation, 48 the success, 40 the failure and 42 the control clip. We share the data and questionnaire via OSF (osf.io/xqmr).

Values

Individual differences in participants' values were assessed at the beginning of the questionnaire. The Moral Identity Scale ($\alpha = .77$) and the PRF Achievement Motivation Scale⁴ ($\alpha = .57$) were assessed as in Study 1. In addition, participants responded to the Schwartz' Value Survey (Schwartz, 1992). The Schwartz' Value Survey consists of 58 valuable attributes each followed by a short description such as *true friendship* (*close, supportive friends*) or *social power* (*control over others, dominance*). Participants indicated how important these value attributes are for them on 7-point scales anchored with 1 (*not at all*) and 7 (*extremely*). The values covered benevolence (7 items, $\alpha = .73$), universalism (8 items, $\alpha = .82$), self-direction (7 items, $\alpha = .75$), stimulation (3 items, $\alpha = .70$), hedonism (3 items, $\alpha = .82$), achievement (5 items, $\alpha = .70$), power (5 items, $\alpha = .74$), security (7 items, $\alpha = .73$), conformity (4 items, $\alpha = .64$), spirituality (3 items, $\alpha = .44$) and tradition (6 items, $\alpha = .62$). According to the structure of these values (Schwartz, 1992), these values were merged into two value dimensions. A self-transcendence vs. self-enhancement scale was computed from the z-standardised mean of benevolence and

universalism minus the z-standardised mean of achievement and power. A conservation vs. openness to change scale was computed from the z-standardised mean of security, conformity and tradition minus the z-standardised mean of self-direction, stimulation and hedonism. Due to low reliability, spirituality was not included in these value dimensions.

Stimuli

Each participant watched one of 10 video clips, which showed either a reunion, separation, success, failure or a funny scene. In a pretest, participants indicated that the experimental clips were moving and showed either reunion, separation, success or failure (see supplemental material for details). Reunion clips included a movie scene from "Little Princess (1995)", in which a father and his daughter are reunited, and the YouTube clip "Homecoming Soldiers", in which US soldiers come home to surprise their dear ones. Separation clips included a movie scene from "My Girl (1991)", in which a girl learns that her friend is dead, and the YouTube clip "Jenni", which reports about a girl who died of cancer. Success clips included a movie clip from "Pursuit of Happiness (2006)", in which a single father who has been homeless is accepted for a well-paid job in a bank, and the YouTube clip "Emmanuel", which shows how a handicapped person wins a casting show. Failure clips included a movie clip from "Cool Runnings (1993)", in which a Jamaican bobsleigh team loses the competition despite their best efforts, and the YouTube clip "Derek Redmond", which shows how he lost a race due to a torn hamstring. Funny clips included a scene from the comedy series "Pastewka", in which a comedian makes fun of his colleague, and the YouTube clip "Falling through Ice", in which people break into the ice. After the video clip, participants indicated their emotional reaction, physiological changes, appraisals, intentions and evaluations on 7-point scales anchored with 1 (*not at all*) and 7 (*extremely*).

Emotions

Being moved ($\alpha = .94$), mirth ($\alpha = .89$), elevation and joy were assessed as in Study 1. In addition, compassion (*compassionate "mitleidend," empathic "empathisch,"* $\alpha = .86$), awe (*"ehrfürchtig"*) and sadness (*"traurig"*) were assessed.

Self-reported physiological changes

Participants indicated to what extent they experienced *chills (shivers and goose bumps), tears in the eyes, a warm feeling in the chest* as well as *smiled and laughed* during the video.

Appraisals

Appraisals of surpassing social ($\alpha = .83$) and appraisals of surpassing achievement standards ($\alpha = .88$) were assessed as in Study 1. In addition, we assessed appraisals of violating standards in both contexts. Appraisals of violating social standards (i.e. *how people hate each other; behaviour that is morally and ethically unacceptable; unfair behaviour*, $\alpha = .90$) and appraisals of violating achievement standards (i.e. *a remarkably bad performance; how someone makes mistakes; how someone fails to achieve a goal*; $\alpha = .77$) were assessed by three items each developed based on the Geneva Appraisal Questionnaire (GAQ) and the other two appraisal sets.¹

Intentions

Participants indicated their moral intentions (i.e. *During the video I thought that I want to do good; that I want to help others*; $\alpha = .90$), social intentions (i.e. *that I want to spend more time with my family; that I want to spend more time with my friends*, $\alpha = .85$) and achievement intentions (i.e. *that I want to achieve something in life; that I want to strive to go beyond myself*, $\alpha = .92$) intermixed with filler items (i.e. *that I shouldn't take life so seriously; that I should take things lightly*).

Evaluations

In addition, participants evaluated the video on 10 items included for explorative purposes. Based on principal component analysis with varimax rotation that revealed two factors, which explained 75.32% of the variance, a meaningfulness scale (i.e. *the video was about something important/deep/meaningful/thought-provoking; the video affected me*, 5 items, $\alpha = .92$) and a humour scale (i.e. *the video was funny/humorous*, 2 items, $\alpha = .95$) were created from these items. The remaining items (i.e. *I would like to see more videos like this; I would share this video with friends; the video was entertaining*) were analysed separately.

Results and discussion

Reactions to the videos

To test whether reunion, separation, success and failure elicit feelings of being moved, we conducted a series of one-way ANOVAs with the factor context (i.e. reunion, separation, success, failure, control) on the dependent variables. *Post hoc* comparisons with Bonferroni correction were used to test for specific differences between conditions. The results are shown in Table 3.

Appraisals

Appraisals of surpassing social standards and appraisals of surpassing achievement standards were higher in response to reunion, separation, success and failure compared to the control condition. The reverse pattern emerged for appraisals of violating these standards (see Table 3). Thus, participants perceived some kind of surpassing standard not only in the reunion and success related videos but also in the separation and failure clips. Specifically, appraisals of surpassing social standards were similarly high for the reunion, separation, success and failure clips whereas appraisals of surpassing achievement standards were accentuated for the success and failure clips (see Table 3). Thus, reunion and separation were perceived primarily as representing exceptionally positive social behaviour whereas success and failure were perceived as representing both – exceptionally positive social behaviour as well as outstanding achievements.

Emotions

All videos elicited strong emotional reactions but the quality of these emotions clearly differed. As expected, participants reported higher levels of being moved in response to reunion, separation, success and failure compared to the control condition (see Table 3). Mirth, by contrast, was lower in response to reunion, separation, success and failure compared to the control condition. The moving clips (reunion, separation, success and failure) further elicited compassion, elevation, awe and sadness (see Table 3): Compassion was – similar to being moved – intense for all moving conditions. Elevation and awe were elicited by all moving clips but to varying degrees and overall lower. Interestingly, elevation was strongest in the success and the failure conditions. Hence, achievement contexts may be more elevating than social

Table 3. Reactions to reunion, separation, success, failure and control videos (Study 2).

	Reunion (<i>N</i> = 50)	Separation (<i>N</i> = 48)	Success (<i>N</i> = 48)	Failure (<i>N</i> = 40)	Control (<i>N</i> = 42)	<i>F</i> (4, 223)	η_p^2
<i>Appraisals</i>							
Surpassing Social	4.24 ^b (1.11)	5.24 ^a (1.34)	4.83 ^{ab} (1.51)	4.83 ^{ab} (1.51)	1.83 ^c (4.16)	42.54***	.43
Violating Social	2.48 ^b (1.56)	1.24 ^c (0.79)	1.82 ^{bc} (1.29)	1.14 ^c (0.57)	3.36 ^a (1.61)	24.1***	.30
Surpassing Ach.	2.95 ^{bc} (1.47)	3.74 ^b (1.91)	5.61 ^a (1.29)	5.18 ^a (1.67)	2.33 ^c (1.56)	35.3***	.39
Violating Ach.	2.14 ^b (1.23)	1.51 ^b (0.96)	1.59 ^b (1.01)	1.73 ^b (1.09)	3.65 ^a (1.48)	24.97***	.31
<i>Emotions</i>							
Being Moved	5.07 ^a (1.56)	5.26 ^a (1.07)	5.53 ^a (1.18)	5.48 ^a (1.37)	1.79 ^b (1.18)	65.59***	.54
Elevation	2.94 ^{ab} (2.00)	2.23 ^b (1.60)	3.77 ^a (1.94)	3.70 ^a (2.07)	1.88 ^b (1.45)	9.51***	.15
Awe	3.10 ^b (1.71)	3.83 ^b (2.10)	3.88 ^b (2.05)	4.25 ^a (2.00)	1.33 ^c (0.69)	17.93***	.24
Compassion	5.29 ^a (1.45)	5.83 ^a (1.08)	5.40 ^a (1.12)	5.38 ^a (1.31)	3.30 ^b (2.09)	20.54***	.27
Mirth	1.99 ^b (1.31)	1.45 ^b (0.91)	1.76 ^b (1.10)	2.13 ^b (1.61)	3.88 ^a (1.84)	20.9***	.27
Joy	3.20 ^a (2.01)	1.48 ^b (0.95)	3.17 ^a (1.55)	2.85 ^a (1.69)	3.12 ^a (1.86)	9.18***	.14
Sadness	4.40 ^b (1.98)	5.63 ^a (1.42)	3.96 ^b (1.86)	4.18 ^b (1.96)	1.88 ^c (1.49)	26.19***	.32
<i>Physiology</i>							
Chills	3.50 ^a (2.03)	3.31 ^a (2.09)	4.21 ^a (2.00)	4.05 ^a (2.24)	2.02 ^b (1.72)	7.85***	.12
Tears	3.74 ^{ab} (2.35)	2.96 ^b (2.20)	4.50 ^a (2.00)	4.50 ^a (2.42)	1.33 ^c (1.00)	17.60***	.24
Warm Chest	4.38 ^a (2.10)	2.79 ^b (1.90)	4.44 ^a (1.82)	3.95 ^a (2.05)	1.64 ^c (1.19)	18.84***	.25
Smile	3.24 ^a (2.15)	1.56 ^b (1.22)	3.46 ^a (2.06)	3.23 ^a (2.18)	4.05 ^a (2.18)	10.11***	.15
Lough	1.90 ^a (1.46)	1.08 ^b (0.50)	1.98 ^a (1.60)	1.45 ^b (0.88)	2.40 ^a (1.88)	6.31***	.10
<i>Intentions</i>							
Moral	3.43 ^a (1.79)	3.29 ^{ab} (1.65)	4.00 ^a (1.88)	3.34 ^{ab} (1.87)	2.38 ^b (1.66)	4.89**	.08
Social	3.90 ^a (1.77)	3.41 ^a (1.82)	3.79 ^a (1.88)	3.54 ^a (1.82)	1.89 ^b (1.21)	9.68***	.15
Achievement	2.88 ^b (1.68)	3.18 ^{ab} (1.98)	4.36 ^a (2.01)	4.13 ^a (2.07)	2.29 ^b (1.50)	9.63***	.15
<i>Evaluations</i>							
Meaningfulness	4.68 ^a (1.38)	4.94 ^a (1.24)	5.11 ^a (1.52)	4.91 ^a (1.43)	2.07 ^b (1.31)	36.79***	.40
Humour	1.74 ^b (1.03)	1.10 ^b (0.37)	1.61 ^b (0.87)	1.63 ^b (1.07)	3.35 ^a (2.10)	21.90***	.28
Entertainment	2.90 ^{bc} (1.50)	2.40 ^c (1.75)	3.43 ^b (1.67)	3.26 ^{bc} (1.67)	3.50 ^{ab} (2.02)	3.24*	.06
Watch	3.40 ^a (1.77)	2.35 ^b (1.59)	3.65 ^a (1.82)	3.53 ^a (1.99)	1.98 ^b (1.62)	8.34***	.13
Share	2.80 ^{abc} (1.77)	2.40 ^{bc} (1.88)	3.40 ^{ab} (2.06)	3.70 ^a (2.28)	1.88 ^c (1.50)	6.34***	.10

Note: Means and standard deviations are displayed. Scales ranged from 1 (*not at all*) to 7 (*extremely*). Superscripts (a–c) indicate significant differences between the five conditions. * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 228$.

contexts. Awe, by contrast was strongest in the failure condition, although participants did not react more emotionally to this condition in general. Hence, some features of the failure condition seemed to be linked to awe in particular. Overall, while all emotions were elicited to some degree, the effect was strongest for being moved.

Self-reported physiological changes

Participants reported more chills, tears and a warm chest in response to the moving clips compared to the control condition (see Table 3). Feelings of being moved were positively and strongly associated with these self-reported physiological changes in all moving conditions (except for the association between being moved by separation and a warm chest, see Table 4). Self-reported smiling and laughing, by contrast, were not higher in the moving conditions compared to the control condition (see Table 3) and correlations between laughing/smiling and being moved were overall lower and in some contexts even negative (see Table 4). This suggests that chills, tears and a warm feeling in the chest are more

closely associated with being moved than smiling and laughing.

Evaluations

Among the considered evaluations, the association between meaningfulness and being moved was striking. The moving clips were evaluated as much more meaningful and less humorous but similarly entertaining compared to the control clips (see Table 3) and attributions of meaningfulness and being moved were strongly correlated (see Table 4). Thus, attributions of meaningfulness seem to be typical for being moved in general. Participants in the moving conditions also indicated to a larger extent that they would like to watch the video again and that they would share the video with their friends (Table 3). Hence, being moved may motivate to share the moving information with others.

Intentions

The video clips also affected participants' intentions. Participants reported more social intentions

Table 4. Correlations between being moved in different contexts and appraisals, physiological changes, intention, evaluations and values (Study 2).

	Being moved by reunion	Being moved by separation	Being moved by success	Being moved by failure	<i>M</i> (<i>SD</i>)
<i>Appraisals</i>					
Surpassing Social	.40**	.48***	.40**	.57***	4.16 (1.76)
Violating Social	-.38**	-.15	-.21	-.39*	2.01 (1.47)
Surpassing Ach.	.18	.38**	.53***	.37*	3.95 (2.01)
Violating Ach.	-.35*	-.08	-.21	-.35*	2.10 (1.39)
<i>Physiology</i>					
Chills	.49***	.36*	.42**	.42**	3.43 (2.14)
Tears	.65***	.49***	.67***	.70***	3.43 (2.35)
Warm Chest	.48***	-.03	.31*	.45**	3.48 (2.12)
Smile	.36*	-.34*	.14	-.01	3.08 (2.12)
Lough	.13	-.20	.32*	-.24	1.76 (1.42)
<i>Intentions</i>					
Moral	.01	.34*	.28	.39*	3.31 (1.81)
Social	.32*	-.02	.29*	.11	3.34 (1.85)
Achievement	.26	.13	.35*	.22	3.36 (2.00)
<i>Evaluations</i>					
Meaningfulness	.62***	.47**	.53***	.61***	4.39 (1.76)
Humour	-.02	-.22	.04	-.23	1.86 (1.40)
Entertainment	.18	.07	.29*	-.11	
Watch	.36*	.08	.42**	.31	2.99 (1.87)
Share	.28	-.03	.35*	.46**	2.83 (2.00)
<i>Values</i>					
Trans.vs. Enhance.	.38**	.03	.03	-.08	0.00 (1.00)
Cons. vs. Open.	.09	.26	.04	-.17	0.00 (1.00)
Moral Identity	.38**	.23	.17	.33*	4.62 (0.87)
Ach. Motivation	-.09	.16	.12	.23	4.58 (0.91)

Note: Surpassing Social = Appraisals of surpassing social standards, Violating Social = Appraisals of violating social standards, Surpassing Ach. = Appraisals of surpassing achievement standards, Violating Ach. = Appraisals of violating achievement standards, Trans. vs. Enhance. = Difference score of the z-standardised self-transcendent values minus the z-standardised self-enhancement values; Cons. vs. Open. = Difference score of the z-standardised conservation values minus the z-standardised openness values. Scales ranged from 1 (*not at all*) to 7 (*extremely*). * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 228$.

(e.g. that they want to spend more time with friends) after all moving clips compared to the control condition (see Table 3). Whether moral or achievement intentions were increased, however, depended on the eliciting context: Moral intentions (e.g. the intention to help others) were particularly high in the reunion and success condition whereas achievement intentions (e.g. the intention to achieve something in life) were particularly high in the success and failure condition. This indicates that being moved does not increase moral intentions in general. Rather, non-moral intentions like the intention to achieve something in life can be elicited by moving stimuli as well.

Mediation

To test whether the elicitation of being moved was mediated by appraisals of surpassing social or achievement standards but not by appraisals of violating these standards, we used structural equation modelling. In line with the approach for Study 1, we specified a saturated model with reunion, separation,

success and failure (all dummy-coded) as independent variables, appraisals of surpassing social standards and appraisals of surpassing achievement standards as mediator variables and being moved as dependent variable. In a second mediation model, we added appraisals of violating social and achievement standards as mediators.

The first mediation model revealed indirect effects of the experimental conditions on being moved through appraisals of surpassing social standards (see Figure 2). Specifically, the indirect effects of reunion, $\beta = .20$, $p < .001$, separation, $\beta = .28$, $p < .001$, success, $\beta = .22$, $p < .001$, and failure, $\beta = .23$, $p < .001$, on being moved through appraisals of surpassing social standards emerged significantly. Indirect effects of reunion, $\beta = .02$, $p = .222$, separation, $\beta = .03$, $p = .105$, success, $\beta = .08$, $p = .057$, and failure, $\beta = .06$, $p = .062$, on being moved through appraisals of surpassing achievement standards were not significant.

The second mediation model with four mediator variables (i.e. appraisals of surpassing social standards, violating social standards, surpassing achievement standards, violating achievement standards) revealed

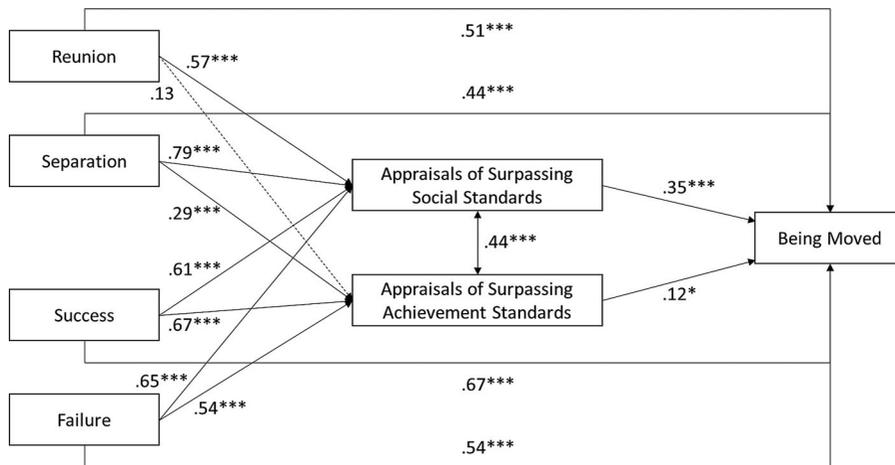


Figure 2. Mediation by appraisals of surpassing standards (Study 2).

Note: Standardised parameters are displayed. * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 228$.

indirect effects of the experimental conditions on being moved through appraisals of surpassing social standards (indirect effects between .20, $p < .001$, and .28, $p < .001$) and to a smaller extent by appraisals of surpassing achievement standards (indirect effects between .02, $p = .199$, and .08, $p = .044$). Appraisals of violating these standards did not mediate being moved significantly (indirect effects between .01, $p = .956$, and .06, $p = .102$). Detailed results are shown in the supplemental material (Table S2). This shows that being moved is specifically elicited by appraisals of surpassing standards – not by appraisals of violating standards.

In both models, appraisals explained a major part of the variance in being moved, Model 1: $R^2 = .64$, $p < .001$; Model 2: $R^2 = .65$, $p < .001$, but significant direct effects of the videos on being moved remained, which could not be explained by appraisals (see Figure 2 and Table S2). This indicates that additional features in the videos like the music or standards different from social and achievement standards may have contributed to feelings of being moved as well.

Thus, the hypothesis that being moved is mediated by appraisals of surpassing social and achievement standards was only partially supported. In line with our hypothesis, appraisals of surpassing a standard but not appraisals of violating a standard mediated the elicitation of being moved. However, contrary to our hypothesis, appraisals of surpassing achievement standards were not relevant (Model 1) or less than appraisals of surpassing social standards (Model 2).

Moderation

To test whether values moderate how intensely someone was moved by the videos, we conducted stepwise regression analysis for each value dimension separately. We followed the same procedure as in Study 1. In the first step, we included the dummy-coded variables reunion, separation, success and failure together with the value dimension. In the second block, we added the interactions between the dummy variables and the value dimension. Detailed results are shown in the supplemental material (Table S1).

For moral identity, the interactions in the second block were significant, $\Delta R^2 = .02$, $p = .019$. However, moral identity was associated most strongly with being moved by reunion and failure – not with being moved by reunion and separation as we expected (see Table 4).

For the self-transcendent vs. self-enhancement scale, the interactions were significant, $\Delta R^2 = .03$, $p = .011$. However, the relative importance of self-transcendent over self-enhancement values was associated most strongly with being moved by reunion – not with being moved by reunion and separation as we expected (see Table 4).

For the conservation vs. openness to change scale, $\Delta R^2 = .01$, $p = .433$, and for achievement motivation, $\Delta R^2 = .01$, $p = .500$, the interactions were not significant (see Table S1 for details). The associations between these values and being moved were similar in all contexts (see Table 4).

In sum, reunion, separation, success and failure videos elicited strong feelings of being moved, which were associated with chills, tears (and a warm feeling in the chest). Consistent with our hypotheses, these feelings were mediated by appraisals of surpassing standards (not by appraisals of violating standards). However, contrary to our hypothesis, appraisals of surpassing social standards predicted being moved better than appraisals of surpassing achievement standards (although these appraisals were highly relevant in Study 1). This indicates that the relative influence of these two appraisal sets depends on the stimulus set. Also, appraisals could not fully explain the variance in being moved. Hence, other features like the music in the videos seemed to elicit being moved in addition to the appraisals. Our person-environment fit hypothesis was overall not supported. The relevance of pro-social values for being moved depended on the eliciting context but not always in the expected direction. Hence, the association between values and being moved is more complex than we predicted. Interestingly, meaningfulness was strongly associated with being moved in all contexts. Thus, appraisals of surpassing standards might be moving because they make a situation meaningful. The meaningful and moving situations increased behavioural intentions to help others, to spend more time with friends and/or to achieve something in life.

Study 3

In the first two studies, we identified appraisals that explain why people are joyfully moved by relationships and success and sadly moved by separation and failure. Participants perceived exceptionally close relationships (and outstanding achievements) in these situations and these appraisals of surpassing standards partially mediated the elicitation of being moved. Appraisals of violating standards, by contrast, did not predict being moved. However, none of these situations represented *violations* of internal standards. To test whether being moved is elicited specifically by surpassing standards (and not by violating standards), we compared positive and negative deviations from standards in Study 3.

We expected that appraisals of surpassing social and achievement standards would mediate the elicitation of being moved by positive norm deviations. To investigate the relevance of these appraisals compared to other appraisals, we controlled for appraisals

of goal-conduciveness, goal-obstructiveness and norm violation from the Geneva Appraisal Questionnaire (GAQ). We expected that appraisals of surpassing standards but not the GAQ-appraisals would mediate feelings of being moved.

Further, the inconsistent association between values and being moved in the first two studies may be due to the self-reported values, which may not be specific enough as predictors. Therefore, in Study 3 we surveyed different volunteer groups. We expected that the volunteer context (pro-environmental vs. sports) would imply different strongly held values and therefore moderate how intensely people are moved by value congruent versus incongruent action.

In sum, we hypothesised (1) that positive norm deviations would be more moving than negative norm deviations, (2) that feelings of being moved would be mediated by appraisals of surpassing pro-social standards and by appraisals of surpassing achievement standards and (3) that environmental volunteers and people with strong pro-environmental values would be moved more strongly in an environmental context and less strongly in a sport context compared to sport volunteers and people with low pro-environmental values.

Method

Participants

A total of 190 participants (100 women) aged between 16 and 75 ($M_{age} = 38.07$, $SD = 14.2$) who volunteered either in a pro-environmental organisation ($N = 80$; 54 women, aged between 17 and 66; $M_{age} = 30.20$) or in sports clubs ($N = 110$; 46 women, aged between 17 and 75; $M_{age} = 43.79$) participated in the online survey. We attempted to collect data from 80 participants from each volunteer group. Sensitivity analysis revealed that the final sample size was sufficient to detect medium differences between groups, medium mediation effects and large moderation effects.² Participants read six newspaper articles, in which context (social vs. environment vs. sports) and norm-deviation (positive vs. negative) were varied within subjects. Participants indicated their emotional reactions and appraisals respectively. To keep the questionnaire short despite the within design and a wider variety of appraisals and emotions, we used shorter scales than in the first two studies. Subsequently, participants responded to a couple of questions regarding their values and ecological

behaviour. At the end of the questionnaire, participants could join a lottery for an Amazon voucher or a donation to Oxfam. We share the data and questionnaire via OSF (osf.io/xqmr7).

Stimuli

Each participant read six newspaper articles, which differed in context (social vs. environment vs. sports) and norm deviation (positive vs. negative). The articles were based on real newspaper articles but shortened. Articles with positive deviations from norms told about a man who rescued another person from railway tracks (social context), about people who presented an environmentally friendly innovation (environment context) or about someone who engaged in sports despite their disabilities (sport context). Articles with negative norm-deviations told about cheating investment bankers (social context), about environmentally harmful behaviour (environment context) or about soccer manipulations (sport context). After each article, participants responded to a series of 5-point Likert scales, which were anchored at 1 (*not at all*) and 5 (*extremely*).

Emotions

Being moved (*moved* “bewegt,” stirred “ergriffen,” α between .70 and .85), elevation (“erhebend”), admiration (“bewundernd”), compassion (“mitfühlend”), joy (“fröhlich”), anger (*angry* “ärgerlich,” furious “wütend,” indignant “empört,” α between .80 and .92), disgust (“angeekelt”), fear (“fearful”), guilt (“schuldig”) and sadness (“traurig”) were assessed together with filler items (i.e. *indifferent, surprised, satisfied*).

Appraisals

We assessed appraisals about surpassing internal standards related to pro-social acts (i.e. *the action was selfless*) or achievement (i.e. *the action is an outstanding achievement*) by one item each. To investigate the relevance of these appraisals compared to other appraisals, we also assessed goal-conduciveness (i.e. *the situation had positive consequences for myself*), goal-obtrusiveness (i.e. *the situation had negative consequences for myself*) and norm-violations (i.e. *the situation/behaviour was unfair; the actions were morally and ethically acceptable* (reverse coded); *the actions violated laws or social norms*, 4 items, α between .51

and .76) from the Geneva Appraisal Questionnaire (2002).⁷

Individual differences

Individual differences in general values were assessed by the 10-item version of the Portrait Value Questionnaire (PVQ-10), which was developed for the World Value Survey (www.worldvaluessurvey.org) and assesses benevolence, universalism, achievement, power, self-direction, stimulation, hedonism, security, conformity and tradition with one item each. As negative norm deviations are associated with justice considerations (e.g. Landmann & Hess, 2017), we assessed sensitivity to injustice (Baumert et al., 2014, p. 6 items, $\alpha = .67$) and belief in a just world (Dalbert, 2000, p. 6 items, $\alpha = .68$) in addition. Individual differences in ecological values were assessed by a shortened version of the New Ecological Paradigm questionnaire (NEP, Dunlap, Van Liere, Mertig, & Jones, 2000, p. 5 items, $\alpha = .46$) and the General Ecological Behaviour scale (GEB, Kaiser & Wilson, 2004, p. 7 items, $\alpha = .61$).

Results and discussion

Reactions to the newspaper articles

To test whether positive norm deviations in different contexts are more moving than negative norm deviations and whether environmental and sport volunteers react differently to these contexts, we conducted 6 (condition) by 2 (volunteer group) ANOVAs on the dependent variables. Greenhouse-Geisser correction was used to account for violations of sphericity. *Post hoc* comparisons with Bonferroni correction were used to test for specific differences between conditions. The results are shown in Table 5.

Appraisals

As expected, newspaper articles with positive norm deviations were appraised as surpassing social and achievement standards more and as violating norms less than newspaper articles with negative norm deviations (see Table 5). Hence, all positive norm deviations elicited a compound of appraisals of surpassing social and achievement standards. In addition to the appraisals of surpassing and violating standards, the newspaper articles elicited the GAQ appraisals of goal-conduciveness and goal-obstruction: Newspaper articles with positive norm deviations were appraised

Table 5. Reactions to positive and negative norm deviations in different contexts (Study 3).

Norm Deviation	Positive						Negative						Condition <i>F</i> (5, 920) η_p^2	Group <i>F</i> (1, 188) η_p^2	Interaction <i>F</i> (5, 920) η_p^2	ϵ
	Social		Environment		Sport		Social		Environment		Sport					
Context	Env.	Sport	Env.	Sport	Env.	Sport	Env.	Sport	Env.	Sport	Env.	Sport				
<i>Appraisals</i>																
Surpass. Social	4.61 ^a (0.82)	4.64 ^a (1.00)	2.90 ^{bc} (1.11)	2.70 ^{bc} (1.20)	2.03 ^d (1.03)	2.23 ^{cd} (1.15)	1.23 ^e (0.76)	1.29 ^e (0.97)	1.14 ^e (0.71)	1.58 ^{de} (1.13)	1.18 ^e (0.71)	1.45 ^{de} (1.24)	313.75*** .63	4.27* .02	2.26 .01	.54
Surpass. Ach.	4.69 ^a (0.63)	4.81 ^a (0.48)	4.00 ^{bc} (0.90)	3.73 ^c (1.07)	4.53 ^{ab} (0.69)	4.56 ^{ab} (0.83)	1.64 ^d (1.23)	1.59 ^d (1.20)	1.38 ^d (1.01)	1.37 ^d (0.99)	1.66 ^d (1.15)	1.34 ^d (0.86)	582.26*** .76	1.51 .01	1.79 .01	.77
Conducive	2.28 ^{bc} (1.35)	2.01 ^{bc} (1.28)	3.93 ^a (1.32)	2.75 ^b (1.40)	2.16 ^{bc} (1.36)	1.68 ^{cd} (1.11)	1.30 ^{de} (0.60)	1.19 ^e (0.58)	1.99 ^{cd} (1.37)	1.84 ^{cd} (1.18)	1.14 ^e (0.44)	1.13 ^e (0.41)	120.29*** .39	15.53*** .08	8.72*** .04	.81
Obstrusive	1.15 ^c (0.53)	1.15 ^c (0.54)	1.12 ^c (0.43)	1.27 ^c (0.68)	1.09 ^c (0.36)	1.05 ^c (0.27)	2.68 ^{ab} (1.34)	1.92 ^b (1.24)	3.23 ^a (1.53)	2.12 ^b (1.22)	1.43 ^c (0.93)	1.22 ^c (0.57)	126.18*** .40	22.84*** .11	16.39*** .08	.62
Norm violation	1.16 ^c (0.32)	1.14 ^c (0.32)	1.14 ^c (0.33)	1.27 ^c (0.49)	1.27 ^c (0.45)	1.25 ^c (0.33)	4.69 ^a (0.51)	4.50 ^a (0.63)	4.42 ^a (0.57)	3.83 ^b (0.86)	4.43 ^a (0.64)	4.55 ^a (0.49)	2295.80*** .92	6.14* .03	13.62*** .07	.70
<i>Emotions</i>																
Being Moved	3.66 ^a (1.06)	3.70 ^a (1.07)	2.68 ^{bc} (1.10)	2.23 ^{cd} (1.04)	3.14 ^{ab} (1.04)	3.30 ^{ab} (0.97)	2.16 ^{cd} (1.03)	2.18 ^{cd} (1.08)	3.14 ^{ab} (1.17)	2.88 ^{bc} (1.05)	1.69 ^d (0.82)	1.82 ^d (0.86)	151.23*** .45	0.31 <.01	4.31** .02	.95
Elevation	2.41 ^a (1.30)	2.71 ^a (1.39)	2.91 ^a (1.31)	2.39 ^a (1.19)	2.33 ^a (1.19)	2.44 ^a (1.23)	1.21 ^b (0.63)	1.15 ^b (0.54)	1.17 ^b (0.65)	1.23 ^b (0.66)	1.35 ^b (0.71)	1.25 ^b (0.67)	131.51*** .41	0.17 <.01	4.82** .03	.70
Admiration	4.44 ^a (0.91)	4.46 ^a (0.74)	4.04 ^{ab} (1.00)	3.68 ^b (1.00)	4.23 ^{ab} (0.86)	4.25 ^{ab} (0.93)	1.16 ^c (0.56)	1.17 ^c (0.53)	1.04 ^c (0.19)	1.20 ^c (0.60)	1.20 ^c (0.58)	1.14 ^c (0.55)	1060.17*** .85	0.31 <.01	2.88* .02	.77
Compassion	3.54 ^a (1.11)	3.56 ^a (1.04)	2.40 ^{bc} (1.21)	2.10 ^{cd} (1.13)	3.21 ^a (1.09)	3.41 ^a (1.09)	1.80 ^d (1.13)	1.50 ^d (0.95)	3.06 ^a (1.33)	2.97 ^{ab} (1.25)	1.40 ^d (0.74)	1.58 ^d (0.94)	160.12*** .46	0.23 <.01	2.59* .01	.94
Anger	1.52 ^d (0.92)	1.48 ^d (0.90)	1.25 ^d (0.58)	1.21 ^d (0.56)	1.25 ^d (0.53)	1.17 ^d (0.49)	3.92 ^a (0.98)	3.91 ^a (1.07)	4.09 ^a (0.79)	3.45 ^a (1.18)	2.79 ^b (1.18)	3.35 ^{ab} (1.12)	462.46*** .71	0.27 <.01	10.17*** .05	.78
Disgust	1.21 ^b (0.67)	1.12 ^b (0.44)	1.09 ^b (0.36)	1.16 ^b (0.63)	1.09 ^b (0.36)	1.02 ^b (0.19)	3.39 ^a (1.39)	3.19 ^a (1.40)	3.05 ^a (1.40)	2.43 ^a (1.42)	2.30 ^a (1.43)	2.67 ^a (1.47)	201.04*** .52	0.96 <.01	5.63** .03	.67
Guilt	1.30 ^{bc} (0.60)	1.25 ^{bc} (0.66)	1.64 ^b (1.02)	1.40 ^{bc} (0.76)	1.11 ^c (0.42)	1.07 ^c (0.35)	1.35 ^{bc} (0.73)	1.13 ^{bc} (0.41)	2.60 ^a (1.12)	2.72 ^a (1.13)	1.11 ^c (0.42)	1.08 ^c (0.39)	155.04*** .45	1.74 <.01	1.94 .01	.67
Fear	1.61 ^{ab} (0.96)	1.41 ^{abc} (0.90)	1.15 ^{bc} (0.53)	1.10 ^c (0.41)	1.29 ^{bc} (0.70)	1.19 ^{bc} (0.57)	1.94 ^a (1.19)	1.91 ^a (1.09)	1.81 ^a (1.10)	1.71 ^{ab} (0.90)	1.21 ^{bc} (0.52)	1.36 ^{abc} (0.89)	34.45*** .16	0.52 <.01	1.20 .01	.78
Sadness	1.80 ^d (1.11)	1.85 ^d (1.18)	1.38 ^{de} (0.79)	1.23 ^e (0.65)	1.83 ^d (0.94)	1.73 ^{de} (1.02)	3.09 ^{abc} (1.33)	2.98 ^{bc} (1.31)	3.96 ^a (1.12)	3.61 ^{ab} (1.14)	2.16 ^{cd} (1.15)	2.72 ^{bc} (1.25)	170.31*** .48	0.03 <.01	4.78** .03	.85
Joy	2.79 ^b (1.14)	2.56 ^b (1.25)	3.75 ^a (1.13)	2.95 ^{ab} (1.14)	2.76 ^b (1.13)	2.69 ^b (1.28)	1.23 ^{cd} (0.57)	1.15 ^{cd} (0.47)	1.06 ^d (0.29)	1.13 ^{cd} (0.43)	1.55 ^c (0.98)	1.25 ^{cd} (0.61)	234.15*** .56	9.06** .05	5.95*** .03	.74

Note: Means and standard deviations are displayed. Scales ranged from 1 (*not at all*) to 5 (*extremely*). Superscripts (a-e) indicate significant differences. Greenhouse–Geisser correction (ϵ) was used to control for violations of sphericity. * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 190$.

as more conducive and less obstructive for the own goals than newspaper articles with negative norm deviations – except for the article about soccer manipulations (negative norm deviation in sports), which was appraised as only slightly obstructive.

Compared to these main effects of condition (i.e. which newspaper article participants read), the effects of volunteer group (i.e. whether participants volunteered for a pro-environmental organisation or a sports club) and the interaction between condition and volunteer group were much smaller and only partly significant (see Table 5). The two volunteer groups perceived the environmental newspaper articles differently but they did not differ much in their perception of the social and sports articles. Specifically, environmental volunteers rated the positive norm deviation in the environmental context as more goal conducive and the negative norm deviation in the environmental context as more goal obstructive and as a more severe norm violation compared to sport volunteers.

Emotions

Emotional reactions mainly differed between the set of positive vs. negative norm deviation articles (see Table 5). In line with our hypothesis, positive norm deviations were more moving than negative norm deviations in the social and the sport context (see Table 5). However, contrary to our hypothesis, positive and negative norm deviations were similarly moving in the environmental context and being moved by environmental harmful behaviour was associated

with appraisals of norm violations (Table 6). The article about environmentally harmful behaviour (negative norm deviation in environmental context) stood out in several respects: It elicited guilt, compassion and feelings of being moved more strongly than the other norm violation articles presumably because the article evoked attributions of own responsibility. Hence, being moved was elicited by positive norm deviations but also by negative norm deviations that involve own responsibility. Elevation, admiration and joy, were more strongly elicited by all positive norm deviations compared to all negative norm deviations. The largest effect and the highest ratings emerged for admiration. Thus, participants were moved by the positive norm deviations but admiration described their feelings even better. Conversely, anger, disgust and sadness were more strongly elicited by all negative norm deviations compared to all positive norm deviations (except for environmental volunteers' sadness due to negative norm deviations in the sport context).

We expected that environmental volunteers would be more moved by positive norm deviations in an environmental context and less by positive norm deviations in a sports context compared to sport volunteers. As shown in Table 5, the interaction between condition and volunteer group was small but significant. However, although the means tended to differ in the expected direction, *post hoc* comparisons were not significant. Thus, the interaction between eliciting context and volunteer group was not as strong as expected.

Table 6. Correlations between being moved in different contexts, appraisals and values (Study 3).

	Being Moved by Positive Norm Deviations			Being Moved by Negative Norm Deviations			M (SD)
	Social Context	Env. Context	Sports Context	Social Context	Env. Context	Sports Context	
<i>Appraisals</i>							
Surpassing social	.12	.26***	.30***	.03	-.01	.12	2.26 (0.45)
Surpassing Ach.	.28***	.37***	.42***	-.03	.06	.05	2.93 (0.45)
Conduciveness	.25***	.44***	.36***	.24**	.08	.32***	1.92 (0.65)
Obstrusiveness	.09	.08	-.03	.15*	.28***	.08	1.59 (0.49)
Norm violation	-.19*	-.02	.01	.21**	.29***	.14*	2.79 (0.26)
<i>Values</i>							
Trans.vs. enhance.	.08	.32***	.08	.09	.30***	-.01	0.00 (1.00)
Cons. vs. open.	.07	-.13	.17*	.05	.01	.09	0.00 (1.00)
Sens. injustice	.12	.11	.03	.15*	.23**	.09	3.89 (0.74)
BJW	.12	.08	.14	.01	.05	.09	2.44 (0.80)
NEP	-.04	.06	.02	.01	.18*	-.09	3.82 (0.60)
GEB	.04	.27***	.01	.02	.13	-.08	3.75 (0.60)

Note: Surpassing Social = Appraisals of surpassing social standards; Surpassing Ach. = Appraisals of surpassing achievement standards; Trans. vs. Enhance. = Difference score of the z-standardised self-transcendent values minus the z-standardised self-enhancement values; Cons. vs. Open. = Difference score of the z-standardised conservation values minus the z-standardised openness values; Sens. Injustice = Sensitivity to Injustice; BJW = Belief in a Just World; NEP = New Ecological Paradigm; GEB = General Ecological Behavior. Scales ranged from 1 (not at all) to 5 (extremely/completely). * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 190$.

Mediation

To test whether the elicitation of being moved is mediated by appraisals of surpassing social or achievement standards, we used structural equation modelling. In line with the approach for Study 1 and 2, we specified a saturated model with positive norm deviations in social, environment and sport contexts (all dummy-coded) as independent variables, appraisals of surpassing social standards and appraisals of surpassing achievement standards as mediator variables and being moved as dependent variable. In a second mediation model, we added appraisals of goal-conduciveness, goal-obstructiveness, and norm violations as mediators.

The first mediation model revealed indirect effects of the experimental conditions on being moved through appraisals of surpassing social standards and by appraisals of surpassing achievement standards (see Figure 3). Specifically, the indirect effects of social context, $\beta = .14$, $p < .001$, environment context, $\beta = .06$, $p = .001$, and sport context $\beta = .03$, $p = .003$, on being moved through appraisals of surpassing social standards and the indirect effects of social context, $\beta = .15$, $p < .001$, environment context, $\beta = .11$, $p < .001$, and sports context, $\beta = .14$, $p < .001$, through appraisals of surpassing achievement standards emerged significantly.

The second mediation model with five mediator variables (i.e. appraisals of surpassing social standards, surpassing achievement standards, goal-conduciveness, goal-obstructiveness) revealed indirect effects of the experimental conditions on being moved through appraisals of surpassing social standards and by appraisals of surpassing achievement

standards (see Table S3). In addition, appraisals of goal-conduciveness and goal-obstructiveness mediated the elicitation of being moved to a similar extent. Appraisals of violating norms, however, did not significantly mediate being moved.

In both models, appraisals explained a major part of variance in being moved, Model 1: $R^2 = .23$, $p < .001$; Model 2: $R^2 = .33$, $p < .001$, but significant direct effects of the videos on being moved remained, which could not be explained by appraisals (see Figure 3 and Table S3). This indicates that additional features in the newspaper articles contributed to feelings of being moved as well.

Moderation

To test whether values moderate how intensely someone was moved by the newspaper articles, we conducted stepwise regression analysis for each value dimension separately. We followed the same procedure as in Study 1 and 2. In the first step, we included the dummy-coded variables social, environment and sport context together with the value dimension. In the second block, we added the interactions between the dummy variables and the value dimension. Detailed results are shown in the supplemental material (Table S1).

For general ecological behaviour (GEB), the interactions were small but significant, $\Delta R^2 = .01$, $p = .022$. General ecological behaviour predicted being moved by pro-environmental behaviour but not being moved by helping behaviour or sport achievements (see Table 6). However, the interactions for the new ecological paradigm (NEP), $\Delta R^2 < .01$, $p = .751$, were

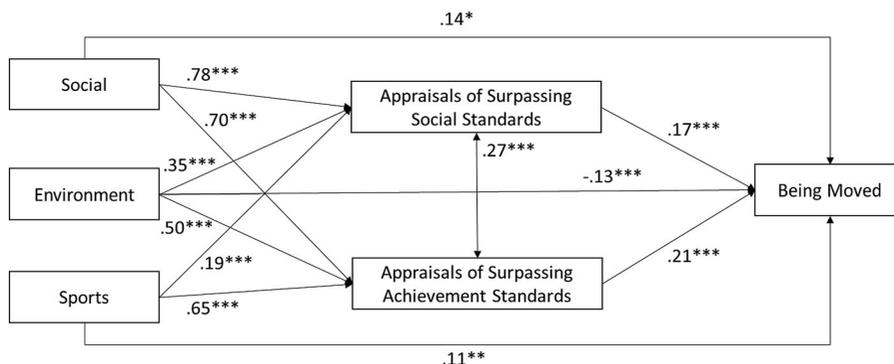


Figure 3. Mediation by appraisals of surpassing standards (Study 3).

Note: Standardised parameters are displayed. * $p < .05$, ** $p < .01$, *** $p < .001$, $N = 190$.

not significant (see Table S1 for details). Hence, the hypothesis that being moved is moderated by pro-environmental values was only partially supported.

To explore the association to other values, we applied the same procedure to the Schwartz' values, sensitivity to injustice and belief in a just world. For the conservation vs. openness to change scale, the interactions were small but significant, $\Delta R^2 = .01$, $p = .039$. Openness predicted being moved by pro-environmental behaviour whereas conservation predicted being moved by sport achievements (see Table 6). For the self-transcendent vs. self-enhancement scale, $\Delta R^2 = .01$, $p = .051$, sensitivity to injustice, $\Delta R^2 < .01$, $p = .512$, and belief in a just world, $\Delta R^2 < .01$, $p = .684$, however, the interactions were not significant (see Table S1 for details). Hence, only general ecological behaviour and openness vs. conservatism moderated the reaction to the newspaper articles.

In sum, Study 3 showed that people can be moved by an outstanding achievement in a social, sports or pro-environmental context. Consistent with our hypothesis, appraisals of surpassing social and achievement standards mediated the elicitation of being moved. As expected, appraisals of violating standards did not mediate the elicitation of being moved. However, contrary to our hypotheses, participants were moved by negative norm deviations that involve own responsibility (i.e. environmentally harmful behaviour), appraisals of goal-conduciveness mediated being moved in addition to appraisals of surpassing standards, and feelings of being moved could not be fully explained by appraisals. Hence, appraisals of surpassing standards are one important path to being moved but other paths seem to exist as well. Again, the expected moderation by pro-environmental engagement and values was only partially supported, which indicates that the person-environment fit is less relevant than expected.

General discussion

The present research shows that feelings of being moved are elicited by close relationships and outstanding achievement (Hypothesis 1). Specifically, relationship and success related videos (Study 1), videos that showed reunion, separation, success and failure scenes (Study 2) and newspaper articles about outstanding achievements in different contexts (Study 3) elicited feelings of being moved with effect sizes comparable to previous research.⁸ Situations without that constraint such as funny scenes were

less moving. Hence, elicitors of being moved are diverse but not arbitrary.

Differences within the moving situations, however, raise new questions. Contrary to our expectation, participants were not moved by all situations to the same degree. That is, relationships moved people more intensely than outstanding success in Study 1 and achievement appraisals were less relevant than social appraisals in Study 2. Thus, social values represented in close relationships may be more likely to move people compared to other values like achievement. This is compatible with the notion of *value hierarchies* (Schwartz & Bardi, 2001) according to which many people put pro-social values on top of their individual value hierarchies. Top-level values might move people more easily than lower-level values.

The common feature of these moving situations was a positive deviation from an internalised norm (Hypothesis 2). This claim was supported by the fact that the elicitation of being moved was mediated by appraisals of surpassing internal standards (Study 1–3) but not by appraisals of violating these standards (Study 2 and 3). These associations between appraisals of surpassing standards and being moved were similarly strong or even stronger compared to associations between being moved and closeness in previous research ($r = .29$ [.22; .37], Seibt, Schubert, Zickfeld, Zhu, et al., 2018). If we appraise an event either as an exceptionally positive social interaction or as representing an exceptional skill it can move and overwhelm us. This finding is compatible with appraisal theories that consider an event's value relevance (Frijda, 1986) or its compatibility with internal standards (Scherer, 1999) but shifts the focus from negative to positive deviations from these standards.

These appraisal processes, however, could not fully explain the elicitation of being moved. Instead, appraisals of surpassing standards mediated the elicitation of being moved only partly (Study 1–3). This may be due to alternative processes like emotional contagion. Specifically, music, which accompanies many moving stimuli, may elicit being moved by emotional contagion such that certain features of the music like rhythm, pitch and density create an emotional expression of the music, which then spreads to the listener (Juslin & Västfjäll, 2008; Scherer & Zentner, 2001). Although such processes of emotional contagion through music are possible, internal standard appraisals seem to be relevant elicitors of being moved in most cases.

Correspondingly, we expected that whether a value was associated with feelings of being moved depends on the fit between the context and the emoter's values (Hypothesis 3). As expected, people with strong pro-social values were particularly moved by relationships (Study 1) and people who report strong pro-environmental behaviour were more moved by a pro-environmental innovation compared to those who report low pro-environmental behaviour (Study 3). However, the expected associations for achievement motivation, Schwartz' values and other pro-environmental value indicators were not significant and all moderation effects were smaller than expected. This is surprising, as previous research has already shown that individual differences in political preferences moderate how intensely people are moved by respective election ads with a large interaction effect ($\eta_p^2 = .52$ [.44; .58], Schubert et al., 2018). Whereas being moved in a political context are highly contingent on political preferences, other moving contexts like the stimuli used in the present study seem to dependent less on individual differences. To investigate conditions for this person-environment fit of values is an interesting task for future research.

The association between evaluations of *meaningfulness* and being moved, however, was striking. All moving stimuli in Study 2 were rated as highly meaningful and these evaluations of meaningfulness were strongly associated with feelings of being moved. This is consistent with the finding that ratings of profundity and being moved in response to quotes correlate highly (Cova, Deonna, & Sander, 2017). Meaningfulness seems to be either an antecedent or a consequence of being moved.

Similarly, self-reported *chills and tears* were closely associated with being moved independent of the eliciting context. A warm chest was associated with being moved in most contexts but not with being moved by separation. Self-reported smiling and laughing, by contrast, were not closely associated with being moved. This indicates that chills and tears are specific experiential components of being moved.

The moving stimuli also elicited *behavioural intentions*. People who watched the moving videos reported that they want to spend more time with their family and friends, that they want to help others and/or that they want to achieve something in life. These intentions may affect actual behaviour and point to the function of being moved. Moving

situations might remind us of our own values and priorities – things that fill our life with meaning – and thereby help us to act accordingly.

The finding that participants in the moving conditions agreed more that they would share the video with their friends, points to an additional function: Being moved may motivate to share the moving material with others. This is compatible with communication research that investigates emotional reactions to meaningful entertainment as predictors for social sharing (e.g. Oliver, 2008; Rieger, Reinecke, Frischlich, & Bente, 2014) and may be applicable to sharing moving cat videos via social media platforms but also to more serious contexts like sharing moving recruitment clips of radical groups. Hence, being moved could play an important role for communication via social media and for the formation of social movements.

Implications for the three views on being moved

The present results are relevant for all three approaches to being moved. In line with the notion that being moved is a moral emotion (e.g. Mennighaus et al., 2015), people were moved by morally praiseworthy behaviour (e.g. a man who rescued another person from the rails, Study 3) and feelings of being moved evoked intentions to help others (Study 2). In line with the community sharing approach (e.g. Seibt et al., 2017), people were moved by close relationships (Study 1) and reunion (Study 3) and feelings of being moved evoked intentions to spend time with close others (Study 2). However, the achievement related stimuli in Study 1 and 3 were moving, but not (or not only) because people perceived some implicit closeness or morally praiseworthy behaviour in them. These stimuli were moving because people perceived them as outstanding achievement. Further, being moved evoked not only helping and relationship intentions but also achievement intentions (Study 2). Hence, being moved by morality and being moved by closeness seem to be subtypes of being moved. However, as social appraisals were more relevant than achievement appraisals in intensely moving situations (Study 2), perceived closeness and morality may be necessary for intense feelings of being moved.

The view that being moved is elicited by an outstanding positive value (e.g. Cova & Deonna, 2014) is supported by the finding that being moved is elicited

in situations that are perceived as surpassing a social or an achievement standard. Hence, being moved is not limited to pro-social appraisals. Yet, social situations and appraisals moved people more strongly than achievement contexts and appraisals. This is congruent with the observation that some people place social values on top of their individual value hierarchies (e.g. Schwartz & Bardi, 2001). Further, feelings of being moved were not completely mediated by appraisals. This indicates that other processes affect being moved as well, notably the accompanying music of the clips likely induced feelings of being moved through emotional contagion (e.g. Juslin & Västfjäll, 2008). Thus, the present research supports the general claim that being moved is elicited by appraisals of surpassing standards but the results also point to additional influences such as a hierarchy of values that privileges social concerns and emotional contagion.

Limitations and future research

These conclusions, however, are limited by the methodology used in the present research. We used relationship and achievement related video clips. Hence, we covered a broader range of stimuli than previous experimental studies on being moved, which were limited to relationship stimuli (e.g. Schubert et al., 2018; Seibt et al., 2017). However, elicitors of being moved could be even broader covering being moved by courage, being moved by natural phenomena and being moved by music.

Related to this is the question of whether all values can be moving or whether feelings of being moved are specific only to certain values. We showed that people are moved when they perceive a social or an achievement value as positively standing out. It remains open, whether this can be generalised to other values. According to the model of *universal values* (Schwartz, 1992), people also value tradition, security, spirituality, self-direction, hedonism and stimulation. However, only values that are perceived as meaningful might be moving. For instance, search for meaning contrasts with hedonic motivations (e.g. Oliver & Raney, 2011). Hence, hedonic values may not be moving. To identify what constitutes a meaningful and hence moving value is an interesting question for future research.

Further, the present findings were based on self-reports and should, therefore, be complemented with more objective measures. For instance,

physiological reactions associated with feelings of being moved (i.e. chills and tears in the eyes) could be measured by piloerection (e.g. Benedek & Kaernbach, 2011) and infrared camera (e.g. Ioannou, Ioannou et al., 2016). Also, we found that moving stimuli elicited behavioural intentions, but we did not find associations with actual behaviour. To investigate behavioural consequences of being moved could provide important insights to the evolutionary function of being moved.

Interestingly, the moving stimuli did not only elicit being moved but also compassion, elevation, admiration and awe. To further investigate the association between these emotions would help to understand the nature of being moved and to link the extant literature on compassion (e.g. Eerola, Vuoskoski, & Kautiainen, 2016; Zickfeld, Schubert, Seibt, & Fiske, 2018), elevation (e.g. Thomson & Siegel, 2017), admiration (e.g. Schindler, Zink, Windrich, & Menninghaus, 2013), awe (e.g. Piff et al., 2015), and being moved.

Despite these restrictions, the present research shows that people can be moved by morally praiseworthy behaviour, by close relationships and by outstanding success. An important route to these feelings of being moved are appraisals of surpassing internal standards.

Notes

1. The Geneva Appraisal Questionnaire (GAQ) includes appraisals of compatibility with internal standards (i.e. the actions that produced the event were morally and ethically acceptable; was your behaviour consistent with the image you have of yourself? did you think that real or potential consequences of the event were or would be unjust or unfair? Geneva Appraisal Questionnaire, 2002). For appraisals of surpassing social standards, we reframed the first item as a positive deviation from a social standard and constructed two additional appraisals similar to that (i.e. morally and ethically praiseworthy behaviour; strong bonds between people; humanities better nature). For appraisals of violating social standards, we used shortened versions of the first and third GAQ item and constructed an additional item similar to that (i.e. behaviour that is morally and ethically unacceptable; unfair behaviour; how people hate each other). We did not include the second GAQ item as it refers to the emoter's behaviour and hence does not apply to participants' third-party perspective in the present studies.
2. Sensitivity analysis ($1 - \beta = .80$, $\alpha = .05$) with gpower was conducted for all three studies. Results revealed that the ANOVAs in Study 1 ($N = 109$, three groups), Study 2 ($N = 228$, five groups) and Study 3 ($N = 190$, two groups, six measurements) can detect medium differences between groups ($\eta^2 = .08$, $.05$, and $.06$ for the three

studies respectively). The moderation analysis in Study 1 ($N = 35$ per condition), Study 2 ($N = 45$ per condition) and Study 3 ($N_1 = 110$, $N_2 = 80$) can detect large interaction effects ($|\text{slope}| = .86$, $.76$ and $.53$ for the three studies respectively). For the mediation analysis in all three studies, we relied on Monte Carlo simulation by Ma and Zeng (2014). Their simulations indicate that multiple mediation models, $N = 100$, $1 - \beta = .80$, $\alpha = .05$, can detect medium indirect effects of $.29$ and larger.

3. The original Moral Identity Scale includes the description as a person as Caring, Compassionate, Fair, Friendly, Generous, Helpful, Hardworking, Honest, Kind. However, to distinguish moral identity from achievement motivation, we dropped the word Hardworking.
4. Reliability of the achievement motivation scale from the Personality Research Form were low in both studies, although the reliability of that scale was acceptable with $\alpha = .70$ in the general population (Stumpf et al., 1985). The reliability of that scale seems to be sensitive to small sample sizes and/or the meaning of the items changed over the last 30 years.
5. Previous research that studied the effect of emotion induction on cooperation found small effects of elevation on donation ($\eta_p^2 = .04$ [.00; .11], Thomson & Siegel, 2013, Study 2) and a small effect of awe on cooperation in a dictator game ($\eta_p^2 = .03$ [.00; .07], Piff et al., 2015, Study 3). Ketelaar and Tung Au (2003) found a medium effect of guilt on cooperation ($\eta_p^2 = .09$ [.01; .21]) though replications of this study found such an effect for a subsample of relatively non-cooperative participants only (de Hooge, Zeelenberg, & Breugelmans, 2007; Nelissen & Dijker, 2007).
6. The hypothesis for the interaction between context and values on being moved was preregistered for the reunion, separation and success contexts only. The stimuli for these contexts were rated to show the respective principle in a pretest (see supplemental material). However, in this pretest moving failure clips were rated to show success and/or a social context in addition. Therefore, we did not formulate a specific hypothesis for the association between values and being moved by failure but preregistered that we explore which values predict being moved by failure.
7. Goal-conduciveness and goal-obstructiveness were also assessed for persons other than the self (i.e. the situation had positive/negative consequences for others). However, as these appraisals are neither part of the Geneva Appraisal Questionnaire (GAQ) nor clearly distinguishable from pro-social appraisals, we did not include them in the analysis.
8. Previous studies on being moved did not compare moving contexts with control conditions but focused on the association of being moved and specific appraisals within moving contexts (Seibt et al., 2017; Seibt, Schubert, Zickfeld, & Fiske, 2018; Seibt, Schubert, Zickfeld, Zhu, et al., 2018; Schubert et al., 2018). In research on moral elevation, however, moving stimuli are compared with control conditions. For instance, Schnall et al. (2010) compared reactions to elevating and funny clips and found large effects on being moved, $\eta_p^2 = .26$ [.10; .40] and warm feelings in the chest, $\eta_p^2 = .35$ [.18; .48]. The

effects in the present study were comparably large or even stronger.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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