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Emotional Tears as a Bargaining Tactic of the Weak: Experimental Evidence From Two Countries

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Abstract

Organisms, including humans, would have disproportionately descended from ancestors who, over generations, captured fitness benefits and are therefore expected to be well-designed to procure those benefits. When individuals cannot directly obtain benefits, they may still secure them by seeking assistance from others. Emotional tears may serve as signals through which people influence others to act on their behalf in ways that benefit them, in situations in which their bargaining power is relatively low. Here, we test the hypothesis that, in a conflict between two individuals, people expect the individual with lower bargaining power to be more likely to tear up. We conducted an online experiment with participants from the United States ($N = 410$) and India ($N = 276$). Participants read vignettes depicting conflicts between an individual with relatively low fighting ability (a wife, a daughter, or a physically weak man) and another individual with higher fighting ability (a husband, a mother, or a physically strong man), accompanied by images of their faces. Consistent with the hypothesis, participants expected target individuals to tear up more when they perceived them as less physically formidable. However, participants did not consistently expect tears from the weaker individual in a dyad. Overall, the findings suggest that perceived fighting ability may represent an important cue in judgments about the likelihood of tearing up in others. Tears may serve as a bargaining tactic when one's bargaining potential is low.

Keywords: tears, emotion, signaling, physical formidability, bargaining

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Introduction

Developing, maintaining, and running an organism is costly in materials and energy. Present organisms, therefore, are disproportionately the heirs of those ancestral variants that harvested benefits from their environments at higher rates and are correspondingly well designed to procure benefits. Benefits can be obtained from the physical environment, sometimes requiring additional input from the actor. They can also come from the social environment, such as acquiring an apple from another individual. In this case, the apple might be obtained by requesting it, stealing it stealthily, cajoling, offering something in exchange, extorting, robbing, or defrauding. Social interactions thus represent an important arena in which humans acquire resources or lose them.

Adaptations for bargaining - broadly defined as machinery for influencing others' behavior in ways that benefit the actor - play a central role in acquiring resources through social interaction (De Dreu et al., 2007; Sell, 2005; Sell, Sznycer, Al-Shawaf, et al., 2017). By possessing certain characteristics or behaving in specific ways, individuals can incentivize others to adopt a more favorable standard of treatment toward them (Cohen et al., 2020; Durkee et al., 2020; Sznycer et al., 2017; Sznycer & Cohen, 2021; Sznycer & Lukaszewski, 2019). When others are incentivized in this way, they confer more benefits and impose fewer costs, resulting in an overall increase in the individual's welfare (Delton et al., 2023; Tooby et al., 2008).

People deploy various classes of tactics to bargain for better treatment from others. One class involves *active* tactics. The logic of these tactics is the logic of threat (Cosmides & Tooby, 1992; Tooby & Cosmides, 1996, see also 2006). Implicitly or explicitly, the actor conveys the message: "Treat me better, including when doing so costs you more, or I'll do something that will cost you even more" (Sell, 2011). This is done via two main subtypes of tactics: (*i*) denial of benefits (potential or actual) (e.g.,"Help me now or I won't help you when you need it"), and (*ii*) aggressive imposition of costs (potential or actual) (e.g., punching another person to compel better treatment) (Sell, 2005). This logic implies that individuals with superior aggressive formidability, access to benefits, or both have greater leverage in conflict, feel a heightened sense of entitlement, are quicker to express displeasure when treated poorly, and prevail in conflicts more often (Sell et al., 2009). There is now evidence that this is the case (Ermer et al., 2025; Lukaszewski et al., 2016; Sell et al., 2009; Sell, Sznycer, Cosmides, et al., 2017; Von Rueden et al., 2008).

The flipside is that individuals who command few benefits or have low aggressive formidability will be relatively less successful in negotiations (Durkee et al., 2020; Leroux et al., 2023; Sznycer et al., 2016; Sznycer & Cohen, 2021). However, they are not entirely powerless, as another, *passive* class of tactics is available to them. A threat is communicated here too, but in the form: "Treat me better, including when doing so costs you more, or, because your fate is tied to mine,

my deprivation will indirectly cost you even more." (Hagen, 2002; Sznycer et al., 2025). The scope of this class of tactics is limited; it is unlikely to succeed unless the target of the appeal assigns some positive value to the actor's welfare - otherwise, the target remains indifferent to, or may even benefit from the actor's suffering.

Emotional tears appear to be one way actors implement the passive bargaining tactic, with other examples including whining, dragging one's feet, inactivity, depression, and self-harm (Rodriguez et al., 2024; Sznycer et al., 2025).

Emotional tears, in part, reflect evaluative psychology (Sznycer et al., 2025). These tears are produced when, in the actor's own estimation, the actor potentially or actually experience high costs - costs above a certain threshold, such as hunger, cold, injury, dispossession, mistreatment, abandonment, censure, or the death of a close other, etc. Tears can also convey that the actor is deriving a high level of benefits (Gračanin et al., 2018; Vingerhoets et al., 2009). These secretions serve as a bid to adjust the target's own evaluations and behaviors in ways that would favor the tearer (Murube et al., 1999). For example, tears may cause your spouse to stop doing something you dislike.

Tears may have evolved as signals of incurred costs because they are highly visible on a region of the face that naturally draws attention (Itier & Batty, 2009). Observers can extract substantial information from the eyes and surrounding facial cues, including health, emotional state, and physical vulnerability (Wild et al., 2000; Axelsson et al., 2018). By appearing along the line of mutual gaze, tears make these costs salient, effectively creating common knowledge of the tearer's state (Thomas et al., 2014). Further, tears may be evolutionarily stable as signals of incurred costs for several reasons. First, they are difficult to produce outside the conditions that naturally elicit them. Second, social consequences - such as being perceived as needy or incompetent - combined with observers' adaptations to detect and respond to exploitative partners, help maintain their credibility. Third, tears blur vision, which constrains the tearer's ability to harm or defend themselves, further supporting their reliability as an indicator of distress (Hasson, 2009).

We propose that in interpersonal conflicts, tears tend to be produced by those with relatively lower bargaining power. Third-party observers, in turn, will view the tearer as the individual with lower bargaining power in a dyad and, reciprocally, will view the individual with lower bargaining power as more likely to tear up in a confrontation. In the present work, we focus on the latter prediction.

Existing evidence supports the general hypothesis that emotional tears serve as a bargaining tactic for *the weak*. For example, self-perceived helplessness, incompetence, and inability to deal with obstacles are key concomitants of tearing up (Choti et al., 1987; Hoover-Dempsey et al., 1986; Vingerhoets et al., 1997; Vingerhoets & Bylsma, 2016). More intense tearing up is associated with increased feelings of helplessness or powerlessness (Gračanin & Vingerhoets, 2024; Vingerhoets et al., 1997). In turn, individuals with tears experimentally added to their faces are perceived as feeling more helpless than the same individuals without tears

(Vingerhoets et al., 2016; Zickfeld et al., 2021), and people perceive tearful individuals as having a low ability to act in specific situations (Wróbel et al., 2022). A recent study found a link between bargaining power and tearing up in bargaining situations. Specifically, people expect individuals to be more likely to tear up when their relative social rank and ability to return favors are low than when these are high (Gračanin et al., 2023).

To our knowledge, no studies directly link tearing up with aggressive formidability or the general *ability* to inflict costs. However, there is substantial evidence for associations between tearing up and *readiness* to impose costs, which relates to the ability to behave aggressively (see Sell et al., 2009). Individuals with tears added to their faces are perceived as less aggressive (Hendriks & Vingerhoets, 2006), as well as warmer (Van de Ven et al., 2016; Zickfeld & Schubert, 2018), kinder (Picó et al., 2020), and friendlier (Vingerhoets et al., 2016) compared to the same individuals without tears. Similarly, adults who display more nonverbal cues of dominance tear up less frequently (Gračanin et al., 2019). Notably, children frequently tear up during dominance struggles when other children outmatch them (Strayer & Trudel, 1984).

Children shed tears more often and more easily than adults, although this is supported only by limited developmental research on crying (Vingerhoets, 2013). Children's proclivity to tear up may be due to their relatively low bargaining power, and negative bargaining outcomes are, on average, more costly for them than for adults. However, there is no research on differences in tearing up between children and adults in the context of physical formidability.

Men are, on average, physically stronger and larger than women (Wells, 2012). Women tear much more often than men (Bylsma et al., 2011; Choti et al., 1987; De Fruyt, 1997), have a greater propensity to tear, and their crying is more intense and of longer duration (Bylsma et al., 2008; Vingerhoets & Scheirs, 2000). Importantly, women tear up more often in conflict situations (e.g., Vingerhoets et al., 2009; Vingerhoets & Becht, 1996) and when feeling anger (Santiago-Menendez & Campbell, 2013) than men, which often occurs during conflicts with men. However, even in such situations, the female advantage in tearing up might be related to the higher costs that ancestral women potentially incurred during conflicts (Campbell, 2013) rather than to any feature that would allow them to impose costs (or withdraw benefits) on another individual. At the same time, men may be less likely to tear up even when they have a lower relative ability to inflict costs during a conflict because, in ancestral environments, they were under stronger selective pressures to show less vulnerability due to more frequent exposure to the presence of antagonists and enemies (Cosmides & Tooby, 2000). In short, while it is plausible to expect that the male disadvantage in tearing up stems from their advantage in the ability to inflict costs, empirical evidence linking tearing up to (differences in) the physical formidability of males and females is missing.

Finally, empirical evidence shows that, on average, tearing up is a successful bargaining tactic and that positive bargaining outcomes for tearful individuals are related to their weakness. Observers are inclined to confer more benefits and impose fewer costs on tearful individuals than on non-tearful ones. Tears on faces consistently increase perceivers' motivation to help the focal individual (Hendriks et al., 2008; Hendriks & Vingerhoets, 2006; Vingerhoets et al., 2016; Zickfeld et al., 2021). There is also evidence that tearful individuals incur lower costs in the context of retribution than non-tearful individuals. Specifically, in mock trials, tearful defendants receive more lenient sentences for their transgressions than non-tearful defendants (Picó et al., 2020). Crucially, these positive reactions from observers are mediated by perceptions of weakness – specifically, helplessness, as well as low aggressiveness, and high warmth (Vingerhoets et al., 2016; Zickfeld & Wróbel, 2024).

A central prediction of the hypothesis that emotional tears function as a bargaining tactic used by the (relatively) weak is that actors are more likely to produce tears during conflicts with individuals who possess relatively greater power to impose costs, compared to situations where the power dynamic is reversed. The existing evidence does not address this possibility. Specifically, there is no research linking relative fighting ability (or its proxies - physical formidability or strength) and emotional tearing up during interpersonal conflicts. In the present study, we assessed people's inferences about the likelihood that others would tear up based on these others' relative physical formidability. In our stimuli, information about physical formidability can be inferred from both demographic characteristics (e.g., child vs. adult) and facial features that reflect physical strength (Sell et al., 2014).

We conducted an experiment in two countries: the United States and India. The experiment tests whether, in the context of dyadic conflict, physical weakness - inferred either from phrases within vignettes that express a relational position (e.g., wife vs. husband) or from the face of an interactant - leads study participants to predict that the interactant will cry. We test two specific hypotheses. We expect that participants will judge target *individuals* who are relatively lower in physical strength (indicating low fighting ability: wife, daughter, physically weak man) as more likely to shed tears during conflicts than individuals who are relatively higher in physical strength (husband, mother, physically strong man) (Hypothesis 1). Similarly, we expect that participants will judge target individuals they *perceive* as lower in physical strength (in absolute terms) to be more likely to shed tears during conflicts (Hypothesis 2).

Methods

Participants

Our aim was to reach sample sizes sufficient to meet commonly recommended thresholds for logistic regression models with the specified number of predictors (Riley et al., 2019). Under reasonable assumptions regarding outcome prevalence and predictor distributions, the planned minimum sample size of 250 participants was expected to provide sensitivity to detect small-to-moderate effects: odds ratios of approximately 1.5 or its reciprocal for binary predictors (Hypothesis 1), or comparable odds ratios per standard-deviation increase for continuous predictors (Hypothesis 2). Our goal was to collect at least 400 participants from each of the U.S. and India community samples, respectively, to retain sufficient numbers after potential exclusions. We recruited 421 participants in the United States and 429 in India via Amazon Mechanical Turk. The requirements for participation were passing the initial reCAPTCHA check and being at least 18 years old. In the United States, four participants failed the attention check and seven did not respond to the dependent variable, leaving 410 participants for data analysis (M = 39.2 years; SD = 13.3; 215 women). In India, after excluding 122 participants based on the attention check and 71 for missing responses (with 40 individuals overlapping in reasons for exclusion), data from 276 participants were available for analysis (M = 32.1 years; SD = 9.27; 95 women).

Stimuli

We created six brief vignettes depicting conflicts between two individuals who differed in fighting ability (see Table 1). We manipulated the relative fighting ability of the target individual in a pair in two ways: (a) in four vignettes, using phrases (e.g., husband vs. wife) paired with corresponding images, and (b) in two vignettes, using only images. The vignettes were designed to be equally plausible and consequential for the both stronger and weaker individuals. In two scenarios, fighting ability was manipulated via gender, and in two others via age, for which written (i.e., vignette) manipulation was appropriate. To vary fighting ability independently of these factors, we created vignettes that relied solely on image-based manipulation of strength, in which characters were matched for gender and age but differed in physical strength. For each category (age-based, gender-based, and strength-based), two vignettes were created to represent different situations. An example of the vignette-based manipulation is: “Talking with her husband, this woman found out that her husband cheated on her with another woman,” versus “Talking with his wife, this man found out that his wife cheated on him with another man.” An example of image-based manipulation is: “Someone tripped this man and then threatened him with a bat,” where only the image differs between the two conditions. Therefore, each of the 12 different combinations (6 vignettes x 2 levels of fighting ability)

described a target individual who was either the one with relatively low fighting ability (a wife, a daughter, or a physically weak man) or the opposite (a husband, a mother, or a physically strong man).

Table 1

Summary of Stimuli and Participant's Tasks

Vignette number and type of manipulation	Event (target individual…)	Target individual 1 (Weak)	Target individual 2 (Strong)	Type of image depicting target individual	Participant's task 1	Participant's task 2
1 Vignette	is being cheated on by their spouse	Young adult female (wife)	Young adult male (husband)	Real individual	Given two images of the target's face (tearful vs non-tearful), selecting the one that "goes with the situation described above"	Indicating how physically strong the target individual is
2 Vignette	is shouted at by their spouse					
3 Vignette	receives silent treatment by mother/daughter	Six-year-old child (daughter)	Young adult female (mother)	Composite of 20 faces		
4 Vignette	is shouted at by mother/daughter					
5 Image	is threatened with a bat	Young adult physically weak male (weak man)	Young adult physically strong male (strong man)	Artificially generated		
6 Image	is shouted at by boss					

Note. Target individual was a between-subjects variable.

We used images of six different individuals displaying neutral facial expressions. Images of a young adult female and a young adult male were selected from the NimStim Set of Facial Expressions (07F_NE_C and 23M_NE_C; Tottenham et al., 2009). Images of a child and a young adult female were created using Webmorph (https://debruine.github.io/project/webmorph/, DeBruine, 2017) by averaging 20 young adult White females from several open-source face image sets, all assessed using the same platform. Built-in Webmorph vectors for age manipulation were then used to transform the newly created adult female face into that of a 6-year-old girl. Finally, images of physically weak and strong men were created with FaceGen Modeller Core 3 by varying different indicators of physical strength (e.g., chin, jaw, and eye size; see, e.g., Sell et al., 2014) of a typical 20-year-old European male.

To create the dependent variable, we varied the presence of tears on each of these six images. We added tears using standard, commercially available photo-editing software (see, e.g., Zickfeld et al., 2021), resulting in six images with tears and six without tears. All images are available in Supplementary materials at https://osf.io/qsymb/overview.

Figure 1

Example of Fighting Ability Manipulation and Tears as Dependent Variable

Note. Participants saw either a pair of images of a daughter (below the vignette, e.g., "Her mother gave her the silent treatment.") or a pair of images of a mother (below the vignette, e.g., "Her six-year-old daughter gave her the silent treatment."). Their task was to select which of the two images of the target individual (tearful vs. non-tearful) "goes with the situation described above."

Procedure

Participants were randomly assigned to one of 12 vignette-target individual combinations. Two images of the target individual - one with tears and one without - were presented below a vignette (Figure 1). Participants were prompted with the question, "Which of the two pictures goes with the situation described above?" and asked to choose one of the two images of the target by clicking on the image (testing Hypothesis 1). Next, for the purpose of validating the vignettes, participants were asked to indicate how positive or negative the described situation was for the target

individual (e.g., "Use the slider below to indicate how positive or negative this situation is for the six-year-old daughter."), using a 200-point slider (e.g., -100 = extremely negative for the six-year-old daughter, +100 = extremely positive for the six-year-old daughter). After that, for the manipulation check for Hypothesis 1 and to test Hypothesis 2, participants were presented with the non-tearful version of the image of the target individual and asked to rate the physical strength of the individual using a 100-point slider (0 = *not physically strong at all*, 100 = *extremely physically strong*). Questions about sex and age followed, and finally, an attention check.

Analysis Plan

Analyses were conducted using IBM SPSS Statistics (Version 28.0; IBM Corp., 2021).

Hypothesis 1: Participants judge target individuals who are relatively weaker (wife, daughter, physically weak man) as more likely to shed tears during conflicts than individuals who are relatively stronger (husband, mother, physically strong man). We tested this hypothesis using binary logistic regressions, with tearful versus non-tearful face as the dependent variable and low-fighting-ability versus high-fighting-ability individual as the primary independent variable. To control for the effects of different scenarios, the vignette was included as an additional independent variable with six (all vignettes), four (vignette manipulation), or two levels (image manipulation) in each regression. We first analyzed pooled data across the two samples and all vignettes used in the two types of manipulation, controlling for sample and vignette, and then tested the hypothesis in each sample separately. We then repeated the analysis for each manipulation type, first using pooled data across samples and vignettes while controlling for sample and vignette, and then separately for each sample.

Hypothesis 2: Participants judge target individuals they perceive as weaker to be more likely to shed tears during conflicts. The effects of perceived strength on the likelihood of selecting tearful versus non-tearful faces were tested using binary logistic regression, with tearful versus non-tearful faces as the dependent variable and perceived strength as the primary independent variable. We merged the results for the same targets within each pair of vignettes involving the same individuals (e.g., the daughter in the silent-treatment and shouting vignettes) to test whether there was a link between perceived strength and the selection of tears within, rather than between, targets. To do this, we pooled the data across all individuals and vignettes while controlling for individual and vignette as additional independent variables. We first tested Hypothesis 2 by pooling across samples while controlling for sample, and then by testing each sample and manipulation type separately.

Results

As expected, participants on average perceived the situations described in the vignettes as moderately negative for the target individual, both when fighting ability was manipulated via vignettes (M = -37.70, SD = 57.70; ranging from -63.54 to -27.06 per vignette) and when it was manipulated via images (M = -47.33, SD = 54.83; ranging from -52.38 to -42.68 per vignette). Participants in the U.S. sample perceived the situations described in the vignettes as highly negative (vignette-based: M = -60.96, SD = 39.25; ranging from -92.54 to -44.41 per vignette; image-based: M = -64.67, SD = 38.95; ranging from -66.40 to -63.06 per vignette), whereas participants from India perceived them as mildly negative when fighting ability was manipulated via images (M = -21.90, SD = 64.28; ranging from -31.66 to -12.96 per vignette), and neutral or even mildly positive when it was manipulated via vignette (M = -2.94, SD = 63.22; ranging from – 15.21 to 4.60 per vignette; for details, see online Supplementary Materials).

Overall, the more negative the situation was perceived to be for the individual, the more likely participants were to select target individuals with tears rather than without tears (samples merged: t = 11.23; p < .001; d = 1.45; United States: t = 7.10; p < .001; d = 0.99; India: t = 7.94; p < .001; d = 1). These effects were substantial.

When the two samples were analyzed together, individuals with low-fighting-ability were perceived as less strong than those with high-fighting-ability, $F(1,678) = 63.08$, $p < .001$, $\eta^2p = .08$. This pattern was observed for both vignette-based, $F(1,443) = 39.64$, $p < .001$, $\eta^2p = .08$, and image-based, $F(1,227) = 32.29$, $p < .001$, $\eta^2p = .13$, manipulation (for detailed data see Table 2). The data in the U.S. sample mirrored this pattern: overall $F(1,406) = 69.14$, $p < .001$, $\eta^2p = .15$; vignette-based, $F(1,267) = 49.06$, $p < .001$, $\eta^2p = .16$; image-based, $F(1,131) = 31.88$, $p < .001$, $\eta^2p = .20$. However, while this was also the case in the Indian sample, the effects were much smaller: overall, $F(1,272) = 11.80$, $p = .001$, $\eta^2p = .04$); vignette-based, $F(1,176) = 5.75$, $p < .001$, $\eta^2p = .03$; image-based, $F(1,88) = 7.44$, $p = .008$, $\eta^2p = .08$. Due to the much weaker manipulation effect, comparisons between low- and high-fighting-ability individuals in the Indian sample should be interpreted with caution for both types of manipulation. Importantly, participants in both samples varied substantially in their perceptions of strength for each target individual (Table 2), which is crucial for testing Hypothesis 2.

Participants selected tears rather than no tears in most cases (Table 2). Moreover, participants in the U.S. sample who were exposed to the vignette describing a cheating situation chose tears in all but one instance, which prevents comparison between low- and high-fighting-ability targets regarding their likelihood of tearing up in response to that vignette. Therefore, this vignette was omitted from testing Hypothesis 1.

Hypotheses Testing

Hypothesis 1: Did participants judge individuals who are relatively lower in strength (wife, daughter, physically weak man) as more likely to shed tears during conflicts than individuals who are relatively higher in strength (husband, mother, physically strong man)? In general, yes, but not consistently. When participants were exposed to individuals with lower fighting ability, they more often selected tears rather than no tears, across countries and both types of manipulation. This pattern of results was replicated in the United States, but not in India (Table 2).

When considering the vignette manipulation, the findings supporting Hypothesis 1 were replicated, pooling across countries and vignettes. Again, this was replicated in the United States but not in India, where the overall model did not reach statistical significance.

The findings supporting Hypothesis 1 were not replicated when fighting ability was manipulated via images. The link between the presentation of individuals with different fighting abilities and selecting tears versus no tears was not significant when pooling across samples and vignettes, or across vignettes within each sample.

Hypothesis 2: Did participants judge targets they perceived as lower in strength to be more likely to shed tears during conflicts? In general, yes. Perceived strength significantly predicted the selection of tears, pooled across countries, individuals, and vignettes, while controlling for individual and vignette (collinearity diagnostics indicated no problematic multicollinearity among these; all condition indices < 10; Table 3). This effect was observed in both the United States and India. It was observed for vignette manipulation when pooled across the two samples and within each sample. It was also observed for image manipulation, but less consistently: when pooled across samples and in the Indian sample, but not in the U.S. sample. Overall, the relationship between perceived strength and tears is relatively consistent: it is observed when fighting ability is manipulated via both vignettes and images. However, the effect sizes are small.

Table 2.

Perceived Strength of Target Individual, Percentage of Participants Selecting Tearful (vs. Non-Tearful) Faces of Weak and Strong Targets, and Results of Binary Logistic Regressions Testing Hypothesis 1

Vignette		Vignette manipulation									
		Cheated on by their spouse		Shouted at by their spouse		Receives silent treatment		Shouted at by mother/daughter		Pooling across 4 vignettes	
		Wife	Husband	Wife	Husband	Daughter	Mother	Daughter	Mother	Weak	Strong
Samples merged											
Perceived strength	*M* (*SD*)	55.98 (18.28)	70.18 (17.61)	54.47 (22.87)	71.43 (18.61)	56.62 (27.22)	64.98 (19.02)	55.84 (26.12)	68.19 (20.88)	55.72 (24.03)	68.75 (19.15)
% selecting tears		92%	89%	81%	67%	80%	60%	94%	60%	**85%**	**64%**
Wald $\chi^2(df = 1)$										**22.32**	
p										**< .001**	
OR [95% CI]										**0.31 [0.19, 0.50]**	
U.S. sample											
Perceived strength	*M* (*SD*)	53.16 (17.15)	65.88 (18.58)	45.41 (19.59)	71.31 (15.81)	47.13 (25.87)	60.32 (17.87)	42.70 (22.57)	58.44 (18.49)	46.90 (21.94)	63.80 (18.27)
% selecting tears		97%	100%	84%	66%	87%	65%	100%	64%	**91%**	**65%**
Wald $\chi^2(df = 1)$										**18.50**	
p										**< .001**	
OR [95% CI]										**0.18 [0.08, 0.40]**	
Indian sample											
Perceived strength	*M* (*SD*)	61.12 (19.67)	76.82 (13.93)	65.62 (21.97)	71.58 (21.90)	74.24 (20.30)	73.32 (18.57)	74.54 (18.40)	81.19 (16.52)	69.36 (20.58)	75.91 (18.18)
% selecting tears		82%	73%	77%	69%	67%	53%	85%	56%	78%	63%
Wald $\chi^2(df = 1)$										5.34	
p										.021	
OR [95% CI]										0.46 [0.24, 0.89]	

Table 2 – *Continued*

Vignette		Image manipulation: Threatened with a bat – Weak man	Threatened with a bat – Strong man	Shouted at by boss – Weak man	Shouted at by boss – Strong man	Pooling across 2 vignettes – Weak	Pooling across 2 vignettes – Strong	Pooling across all 6 stimuli – Weak	Pooling across all 6 stimuli – Strong
Samples merged									
Perceived strength	*M* (*SD*)	64.36 (21.40)	78.57 (14.68)	58.60 (21.58)	74.02 (17.57)	61.50 (21.59)	76.09 (16.40)	57.61 (23.39)	71.21 (18.58)
% selecting tears		79%	79%	71%	68%	75%	73%	**81%**	**67%**
Wald $\chi^2(df = 1)$						0.17		**15.46**	
p						.896		**< .001**	
OR [95% CI]						0,96 (0.52, 1.76)		**0.47 [0.33, 0.69]**	
U.S. sample									
Perceived strength	*M* (*SD*)	56.24 (17.02)	76.94 (16.37)	55.35 (20.07)	69.42 (17.68)	55.79 (18.49)	72.96 17.37)	49.79 (21.25)	66.85 (18.44)
% selecting tears		93%	75%	74%	75%	84%	76%	**88%**	**69%**
Wald $\chi^2(df = 1)$						1.00		**16.94**	
p						.316		**< .001**	
OR [95% CI]						0.64 (0.27, 1.53)		**0.31 [0.17, 0.54]**	
Indian sample									
Perceived strength	*M* (*SD*)	76.00 (21.99)	81.05 (11.60)	63.86 (23.35)	80.15 (15.72)	70.20 (23.21)	80.54 (13.94)	69.63. (21.39)	77.38 (16.96)
% selecting tears		56%	81%	67%	59%	61%	69%	72%	65%
Wald $\chi^2(df = 1)$						0.63		1.97	
p						.427		.161	
OR [95% CI]						1.42 (0.60, 3.38)		0.69 [0.41, 1.16]	

Note. Data for the *Cheated on by their spouse* vignette in the United States were not analyzed because only 1 out of 65 participants selected the non-tearful face. Each binary logistic regression model examines a single predictor of interest (relative strength) predicting selection of tearful (vs. non-tearful) faces while controlling for country/vignette. For most models with significant predictors, the overall model was also significant (likelihood ratio tests, not shown). Models in which both the predictor and the overall model were significant are shown in bold.

Table 3

Perceived Target Strength and Tearful Image Selection across Target Individuals: Descriptive Statistics and Binary Logistic Regression Testing Hypothesis 2

Manipulation type	Individual	Strength No tears *M* (*SD*), *n*	Strength Tears *M* (*SD*), *n*	*Wald* χ^2 (*df* = 1) *p* *OR* [95% CI]
		Samples merged		
Vignette	Wife	62.93 (27.92), 15	53.87 (19.33), 91	
	Husband	80.00 (9.59), 25	68.24 (19.05), 89	
	Daughter	72.44 (30.99), 16	53.79 (25.10), 107	
	Mother	71.24 (18.53), 46	63.76 (20.55), 70	
	Pooled	**72.35 (21.30), 102**	**59.37 (22.23) 357**	**12.69** **< .001** **0.98 [0.96, 0.99]**
Image	Weak man	72.29 (21.48), 28	57.87 (20.50), 83	
	Strong man	80.39 (15.20), 31	74.53 (16.64), 85	
	Pooled	**76.54 (18.73), 59**	**66.30 (20.38), 168**	**9.59** **.002** **0.97 [0.95, 0.99]**
Pooled		**73.89 (20.44), 161**	**61.58 (21.87), 525**	**22.03** **< .001** **0.97 [0.96, 0.98]**
		U.S. sample		
Vignette	Wife	40.50 (18.49), 6	50.14 (18.68), 57	
	Husband	77.36 (10.96), 11	66.75 (17.95), 55	
	Daughter	50.00 (30.85), 5	44.62 (23.97), 71	
	Mother	65.80 (18.09), 25	55.78 (17.26), 45	
	Pooled	**63.60 (21.32), 47**	**53.54 (21.64), 228**	**4.03** **.045** **0.98 [0.96, 1.00]**
Image	Weak man	54.00 (18.47), 11	56.14 (18.65), 56	
	Strong man	77.25 (17.47), 16	71.63 (17.29), 52	
	Pooled	67.78 (21.04), 27	63.60 (19.53), 108	0.68 .410 0.99 [0.97, 1.01]
Pooled		**65.12 (21.17), 74**	**56.77 (21.48), 336**	**4.42** **.035** **0.98 [0.97, 1.00]**
		Indian sample		
Vignette	Wife	77.89 (22.83), 9	60.12 (19.10), 34	
	Husband	82.07 (8.18), 14	70.65 (20.76), 34	
	Daughter	82.64 (26.34), 11	71.89 (15.86), 36	
	Mother	77.71 (17.29), 21	78.12 (18.27), 25	
	Pooled	**79.84 (18.38), 55**	**69.67 (19.40), 129**	**8.46** **.004** **0.97 [0.95, 0.99]**
Image	Weak man	84.12 (13.67), 17	61.44 (23.87), 27	
	Strong man	83.73 (12.02), 15	79.09 (14.67), 33	
	Pooled	**83.94 (12.72), 32**	**71.15 (21.12), 60**	**9.91** **.002** **0.95 [0.92, 0.98]**
Pooled		**81.34 (16.56), 87**	**70.14 (19.92), 189**	**18.26** **< .001** **0.96 [0.94, 0.98]**

Note. The table presents the relationship between perceived strength and the likelihood of selecting tearful images, both for each individual and pooled across individual/vignette. Each binary logistic regression model examines a single predictor of interest (perceived strength) predicting the selection of tearful (vs. non-tearful) faces, while controlling for country/individual/vignette. Models in which both the predictor and the overall model were significant are shown in bold (likelihood ratio tests, not shown).

Discussion

These data provide some support for the hypothesized link between perceptions of fighting ability and tearing-up behavior. Overall, the findings indicate that individuals with lower fighting ability are perceived as more likely to tear up during interpersonal conflict. Our first specific hypothesis was that participants would judge individuals who are relatively lower in physical strength (indicating low fighting ability) as more likely to shed tears during conflicts than individuals who are *relatively higher* in strength. This hypothesis received some support, with mixed evidence across different types of experimental manipulation and two samples. The hypothesis was supported primarily in the U.S. sample and when the manipulation relied on vignettes. This inconsistency could be partly attributed to the experimental manipulation being less effective in the Indian sample and to cultural differences, both of which we discuss below. The absence of the hypothesized effect when strength was manipulated using images will also be discussed below. Taken together, these results offer modest support for our general hypothesis linking fighting ability to the likelihood of tearful responses.

Our second specific hypothesis was that participants would judge targets they perceived as lower in physical strength (in absolute terms) as more likely to shed tears during conflicts. This hypothesis received general support, with relatively consistent findings across more specific instances. This link was observed in all instances only when the two samples were combined, suggesting relatively consistent, albeit small, effects supporting our second specific hypothesis. In short, people expect those they perceive as physically weaker to tear up more, which aligns with the core hypothesis that tears are less likely among individuals with higher fighting ability.

Overall, we expected participants to associate tears with fighting ability both across and within sex and age classes. While both expectations received some empirical support, there was less evidence for this link within the same classes in the context of Hypothesis 1, where no difference was found between weak and strong men. However, the link between strength and tearing up within the same classes was reliably observed under Hypothesis 2, providing further support for the general study hypothesis.

The current findings align with the general idea that emotional tears are adaptations designed to negotiate better treatment (Sznycer et al., 2025). By shedding tears, individuals motivate the interacting party to adopt a more favorable standard of treatment toward them—that is, to confer more benefits and impose fewer costs on the tearful individual than they would be inclined to do without witnessing tears (or other forms of pleas). Crucially, we conceptualize tears as signaling components of a passive bargaining tactic used when the focal individual has relatively less bargaining power than the intended recipient. By definition, bargaining potential rests on the resources an individual can use to impose costs and provide benefits to

another party (Ermer et al., 2025; Krems et al., 2022; Sell et al., 2009). Specifically, individuals with higher fighting ability can incentivize others by threatening to impose costs, because it allows them to inflict greater costs while, at the same time, taking less risk (note that the fighting ability can also represent the potential to provide benefits that may be withheld if the negotiation outcome does not favor the focal individual).

On the other hand, individuals who are less able to provide benefits or inflict costs will be less successful in negotiations. Nevertheless, they have means – such as tears – to convey to others the value they place on a particular outcome (e.g., experiencing silent treatment from a close individual might have a subjectively high cost), which, in turn, incentivizes the other person to act in favor of the focal individual.

Hereby, it is not strictly necessary that tearful individuals are largely incapable of using active tactics, even within the same bargaining context (e.g., a tearful wife might threaten to leave her husband). However, tears are viewed as the output of a mechanism that is activated when a critical level of perceived capability to deploy the most relevant active tactics is not reached in a particular context. For this mechanism to be activated, a differential in leverage must be a salient aspect of the specific situation (e.g., during a quarrel, an abusive husband is more capable of physically harming his wife than vice versa).

The idea that tears serve as a bargaining tactic of the weak aligns with the notion that they signal submission (Hasson, 2009) or even friendly intentions (Gračanin et al., 2017, 2018). This is also consistent with previous research showing that tears occur when one feels helpless (e.g., Choti et al., 1987; Vingerhoets & Bylsma, 2016) or that tearful individuals are perceived as more helpless by observers (Vingerhoets et al., 2016; Zickfeld et al., 2021). However, the current study is the first to demonstrate that the occurrence of tears can depend on fighting ability – operationalized as physical strength – as a basic biological variable that determines bargaining potential in humans and many other social species (e.g., Sell et al., 2009; van Schaik, 2016).

It is well known that children shed tears more often than adults (Vingerhoets, 2013) and that women shed tears more often than men (Bylsma et al., 2011; Choti et al., 1987; De Fruyt, 1997). As stated above, these age- and gender-related differences in tearing up may also result from differences in benefit-generating capacity and other factors. Children and adult women might cry more often because the same objective outcomes often carry higher costs for them than for adults and men (e.g., Campbell, 2013). In addition, parents, on average, have greater (long-term) stakes in children than vice versa, because children have a relatively greater capacity to transmit their genes to the next generation, which makes parents more likely to respond to children's tears than vice versa. However, as we have shown by testing Hypothesis 2, variation in fighting ability is a specific aspect of bargaining potential that predicts the occurrence of tears.

Strengths, Limitations, and Future Directions

One strength of the current study is that it was conducted with two distinct samples from different cultures. The findings were consistent across samples in some instances but not in others. Hypothesis 1 was not supported in the Indian sample. In that sample, the lower–fighting–ability targets (wife, daughter, weak man) were less consistently perceived as physically weaker than the higher–fighting-ability targets (husband, mother, strong man; see Table 2). In other words, manipulating fighting ability in the Indian sample was less effective, which should have reduced the likelihood of observing the expected effects of fighting ability on the selection of tears. Similarly, there were large differences between the two samples in the perceived negativity of the situations (i.e., the sizes of the potential or incurred costs) described in the vignettes: Indian participants, on average, perceived much lower costs than U.S. participants. We observed much stronger support for Hypothesis 1 in the U.S. sample, where the manipulation of strength was more effective and perceived costs were higher. While this initial difference in perceived negativity could be explained by differences in the values attached to specific types of situations (Sznycer et al., 2016), it says little about the (potentially different) links between perceived strength and expectations about tearing up across the two cultures. Furthermore, possible cultural differences between U.S. and Indian participants in perceptions of strength (note that strength ratings were substantially higher in the Indian sample) and in crying norms (e.g., which situations are considered appropriate for tearing up; see e.g., Gračanin et al., 2018) may have also reduced the consistency of the effects across the samples. The support for Hypothesis 2 was much more consistent across the two samples. Here, somewhat stronger support for Hypothesis 2 in the Indian sample - particularly for the image manipulation - may be related to the fact that the depicted individuals were Caucasian. More limited exposure to such stimuli among Indian participants may have led them to rely more on cues of physical strength (i.e., more universal human features), whereas U.S. participants may have attended to some less universal facial features when assessing the likelihood of tearing up. Finally, a much larger proportion of participants was excluded from the analysis in the Indian sample (36%, compared to only 1% in the U.S. sample), due to failing the attention check and/or missing data, possibly reflecting inattention and the fact that English was not the first language for part of the Indian sample. This pattern is consistent with findings from studies that have explicitly compared data quality among Amazon Mechanical Turk respondents in India and the United States (Litman et al., 2015).

Another strong aspect of the study was that we tested Hypothesis 1 using two distinct experimental manipulations. However, there was no support for Hypothesis 1 in the case of image manipulation. Such results may suggest that fighting-ability differentials are not relevant for triggering tears, especially given that the vignette-based manipulation focused exclusively on gender and age differences, which are already well known to predict proneness to tears (Vingerhoets, 2013), as discussed

above. Alternatively, these effects may exist but be subtle, making them harder to observe due to study limitations discussed below. Note that of 18 differences at the level of specific vignettes, 14 (78%) were in the predicted direction. This pattern is consistent with the possibility that the predicted effects are real, but that our manipulation was not strong enough or the study was too underpowered to detect them reliably.

Manipulating strength on the faces of the models may have affected features beyond strength itself, which are relevant for both bargaining potential (e.g., physical attractiveness; see Krems et al., 2025) and the expectancy of tearing up (e.g., indicators of facial expressiveness). Unfortunately, aside from checks for situational negativity and perceived strength, we lacked additional information about the vignettes and the facial characteristics of the depicted characters. However, participants may have systematically perceived some characters differently on dimensions such as competence or warmth, which could have influenced the selection of tears beyond strength. This issue was addressed by testing Hypothesis 2, that is, by directly focusing on within-target (and between-participant) variation in perceived strength.

The effects of tears on observers' behavior are expected to depend on the degree of vested interest observers have in the welfare of the focal individual. Therefore, the likelihood of tears is expected to correlate positively with the magnitude of such vested interests (Sznycer et al., 2025; see also Gračanin et al., 2023; Vingerhoets, 2013). One potential reason why the effects of strength were more inconsistent when manipulated via images is that the perceived level of shared interests between the focal individual and the interacting individual (i.e., threatened with a bat, shouted at by the boss) was likely lower than in other situations (i.e., family contexts).

One limitation of the present work is that we did not test whether the less formidable partner in a dyad is actually more likely to tear up during a conflict than the other partner. Instead, we tested people's perceptions of this association. This approach allowed us to experimentally manipulate formidability (Hypothesis 1) and examine the correlation between perceived formidability and expectations of tearing-up behavior (Hypothesis 2), while keeping other stimulus features constant. The use of vignettes is a common scientific practice, including in research on the interpersonal effects of tears (see, e.g., Zickfeld et al., 2021). However, their validity has been both theoretically and empirically challenged over the years (e.g., Parkinson & Manstead, 1993). These critiques often argue that vignettes lack emotional involvement and tend to measure what people think they/others (should) do rather than what they/others actually do in specific situations. However, differences between vignette-based research and more tangible experiences appear to diminish when participants have greater experience with the behavior of interest (see, e.g., Collett & Childs, 2011), which may also be expected in the case of tearing up. Directly investigating the link between relative formidability and tearing up would require measuring both variables in real-life conditions, necessitating a fully

correlational approach with its inherent advantages and limitations. In this case, assessing actual behavior would likely rely on self-reports of participants' recent crying episodes, which we consider a promising direction for future research.

Testing Hypothesis 2 was not based on experimental manipulation but rather on a correlation between participants' perceptions of strength and their perceptions of how likely the presented individual was to tear up. This implies that participants may have differed in their general tendency to perceive others as both more likely to tear up and more physically weak at the same time. However, such co-variation would itself require an explanation, and one candidate for that would be exactly the human tendency to associate tears with strength, which might vary between individuals due to some third variable (e.g., one's tendency to see others as incurring a certain level of costs). Another related limitation of the current study is that participants may have based their perception of strength on whether they had previously designated the target as tearful or non-tearful. However, this explanation still leaves open the question of why participants were initially more likely to select tears or no tears within the same individuals. They likely assessed strength immediately, a process that typically occurs early in interpersonal interaction (Durkee et al., 2018). Furthermore, it is possible that, for some participants, a particular individual seemed more emotionally expressive (or characterized by a feature related to experiencing high costs) for idiosyncratic reasons, and that selecting tears based on such impressions then also affected the perception of strength. However, it is unlikely that all such sources of covariation were systematic or occurred for all depicted individuals, especially given that participants selected weaker individuals more often as having tears on their faces (Hypothesis 1). Finally, when asked to rate strength, participants were presented with the non-tearful rather than the tearful version of the target individual's image, reducing the likelihood that they were influenced by their prior selection of a tearful or non-tearful face.

Another limitation is that, in some vignettes, the contexts presented to participants resulted in low variation in the dependent variable, with the majority of participants selecting tears rather than no tears (Table 2). It may be relevant that participants attributed high costs to these situations, as indicated by the strong correlation between the perceived negativity of the situation and the selection of tears. Consequently, these ceiling effects could have reduced the likelihood that fighting ability influenced variation in tears in specific scenarios. Next, when assessing participants' expectations about the likelihood of tearing up, we used a forced-choice paradigm, which could have biased our results. Further research would benefit from more balanced stimuli in terms of costs and from considering other options for assessing participants' expectations of tearing up.

While consistent in direction, the effect sizes supporting the study's hypotheses were modest. Specifically, the effects supporting Hypothesis 2 are relatively consistent across contexts, especially when the samples are combined, suggesting that they are real, but either small in magnitude or that stronger manipulations are

needed to detect them. In future studies, this could be achieved by manipulating strength within the same groups of individuals. This approach would allow researchers to experimentally isolate the effects of fighting ability from those of other features, such as age and gender, and to eliminate the influence of individual differences in the perception of strength and other characteristics that might predispose participants to expect tears. It would also be important to experimentally disentangle the roles of the ability to provide benefits and the ability to create costs in predicting tears. Finally, the present findings, which rely on third-person judgments based on vignette descriptions, can be generalized only to adult samples from large, industrialized societies. The generality of these effects may be somewhat constrained by cultural context, as results were not fully consistent across samples and manipulations. Most importantly, generalization to real-world interactions remains to be tested.

Conclusion

Previous research has provided some suggestive evidence that tears function as a bargaining tactic for the weak, showing that people tend to shed tears when they are helpless or less able to surmount challenges (Choti et al., 1987; Hoover-Dempsey et al., 1986; Vingerhoets & Bylsma, 2016; Vingerhoets et al., 1997, 2016; Wróbel et al., 2022; Zickfeld et al., 2021). Recently, Sznycer et al. (2025) proposed that tears serve as a bargaining strategy when one's bargaining power is lower than that of the other party. When individuals are less able to use active bargaining tactics – such as imposing costs or withdrawing benefits – they may resort to tears as a fallback bargaining tactic. Such tactics are effective as long as the interacting party has a stake in the welfare of the individual shedding tears. Lower fighting ability is one important determinant of diminished bargaining capacity. In the current research, we found evidence supporting the hypothesis that emotional tears are more likely to occur in individuals whose fighting ability is lower than that of the intended recipient. The size and relative inconsistency of the observed effects warrant further investigation. Nevertheless, the current findings, for the first time, point to the possibility that fighting ability, as an aspect of bargaining potential, shapes tearing up behavior.

Credit Author Statement

Author Contribution Statement. Asmir Gračanin: Resources, Conceptualization, Funding acquisition, Methodology, Investigation, Data curation, Formal analysis, Writing – Original draft, Writing – Review & Editing; **Daniel Sznycer:** Resources, Conceptualization, Funding acquisition, Methodology, Investigation, Data curation, Formal analysis, Writing – Original draft, Writing – Review & Editing; **Debra Lieberman:** Resources, Conceptualization, Funding acquisition, Methodology, Investigation, Data curation, Formal analysis, Writing – Original draft, Writing – Review & Editing.

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