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The Dissociation between Cognitive and Emotional Prejudiced Responses to Deterrents

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ABSTRACT

This article reports empirical findings on the strength and dissociation of experimentally induced cognitive vs. emotional responses to instigators of prejudice towards people affected by mental illness. Drawing on emotional intensity theory (EIT: Brehm, 1999), the experiment (N = 80) shows how growing and apparently reassuring reasons (*i.e.*, the deterrents) for *not* being prejudiced towards 'the mentally ill' differentially affect the intensity of cognitive vs. emotional prejudiced responses. Such reassuring information was conveyed to participants as the increasing likelihood that ordinary people typically recover, if affected, from mental illness (likelihood not mentioned, low [5%], moderate [50%], high [70%]). Whereas the intensity of *cognitive* responses tended to diminish linearly with growing reasons for *not* being prejudiced (η^2 = .06), the intensity of *emotional* responses followed closely EIT's predictions, and varied as a cubic function of deterrence information (η^2 = .61), that is, of information ironically intended to reassure participants. These findings substantiate EIT in two important respects. For one, they consistently reveal, and nicely conceptually replicate, EIT's predicted *cubic* pattern of paradoxical results for emotional responses with respect to prejudiced affect. Most importantly, however, they also illustrate—theoretically and empirically—the expected dissociation between emotional and cognitive responses to deterrents. In our view, such a dynamic separation *and* convergence of cognitive and affective components of prejudice has the full potential to inspire new theoretical insight and understanding, theory-based research, and the development of evidence-based intervention practices.

Keywords: deterrence; emotional intensity; cognitive vs. emotional prejudice; intensity of motivation; paradoxical affect; emotional and adaptation.

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"One of the wonderful things about well-formulated theories is that they can lead you conceptually and empirically to places that you never intended to go"
(Wright & Franklin, 2004, p. 187).

To what extent does information typically intended to lessen the intensity of prejudice (*e.g.*, contrasting counter-attitudinal information) actually reduce prejudice strength? Or, to what extent will giving someone reasons for *not* being prejudiced towards people with mental illness really lessen the intensity of prejudice towards those people? And also, does the act of reassuring people about the groundlessness of certain beliefs, which are normally at the core of their cognitive and emotional prejudiced responses, really reduce the strength of those responses? Further, if we answer affirmatively, which component—the *emotional* (*i.e.*, affect), the *cognitive* (*i.e.*, knowledge, beliefs etc.), or both—will ultimately be shaped by reasons for *not* being prejudiced? And, eventually, how will they be shaped? And why?

In this article we will consider the above questions from two broad theoretical and empirical angles, a traditional perspective and a new proposal. Whereas there might be reasons for anticipating that credible counter-attitudinal information may indeed affect the intensity of the *cognitive* component of prejudice by delegitimizing biased beliefs and related negative stereotypes—and by subtracting, thereby, from basic prejudiced thoughts (*e.g.*, Pettigrew, 2011)—these effects are typically feeble. Much stronger are the effects on the emotional component (Tropp & Pettigrew, 2005; see also Paolini *et al.*, 2007). Improving our understanding of the core dynamics, and fundamental distinction, between the *emotional* and *cognitive* aspects of prejudice becomes therefore of pivotal importance, especially if we want to illuminate the interplay—*i.e.*, the dynamic separation *and* convergence—of prejudiced attitudes and overt anti-social responses that people manifest in everyday life.

Cognitive and Emotional Aspects of Prejudice

The distinction between cognitive and emotional aspects of prejudice can be easily traced back to seminal work by Gordon Allport (1954; 1962), then refined and applied to the intergroup context by one of his most famous disciples, T. F. Pettigrew (*e.g.*, Pettigrew, 1997; 2011). Whereas Allport focused more on the emotional aspects of prejudice, such as for instance societally-driven *emotional commitment*, Pettigrew made serious and extensive efforts to integrate also the relative *weight* of the emotional *vs.* cognitive components of prejudice into the broad picture (*e.g.*, Tropp & Pettigrew, 2005; see also Stangor *et al.*, 1991, for a similar though differentiated approach). Complementing these conceptual and research avenues, some scholars brought prejudiced affect and cognitions to bear on *intergroup emotions* (Mackie & Smith, 2003; Mackie *et al.*, 2009; Smith & Mackie, 2008), whereas others concentrated on strategies of *prejudice reduction* both in its affective and cognitive components (*e.g.*, Gaertner & Dovidio, 2005; Hewstone *et al.*, 1992; see also Allport, 1954, and Pettigrew, 1997).

Prejudiced attitudes—that is, attitudes that lie at the core of prejudice—have also been considered in their emotional and cognitive components simultaneously. Besides the seminal and influential distinction made by the tripartite model of attitudes (*i.e.*, cognitions, affect, and behavior: Rosenberg & Hovland, 1960; Breckler, 1985; see also Kaiser & Wilson, 2019, among others, for a reinterpretation, and Fuegen & Brehm, 2004, for a critical stance), the cognitive/emotional distinction was still central in work by Eagly and Chaiken (1993), Edwards (1990), or Millar and Millar (1990)—and, of course, in the aforementioned research by Pettigrew and colleagues (*e.g.*, Pettigrew, 2011; Tropp & Pettigrew, 2005). Sympathizing with Fuegen and Brehm (2004), we suspect that the tripartite idea, and variations thereof, is still very alive—implicitly or explicitly—among researchers.

Recently, also scholars working at the intersection of prejudice and motivated cognition have ventured to examine, experimentally, the dynamics of cognitive and motivational processes underling (cognitive) manifestations of prejudice. These researchers largely borrowed from established paradigms of motivated social cognition. Pica and colleagues (2016), for instance, examined how self-threat biases memories of stigmatized group members by impairing the recall of positive (*vs.* negative) information about the target of prejudice (this amounting to the so-called retrieval-induced forgetting, or RIF effect).

Similarly, Pica *et al.* (2019) replicated the above findings and showed, again, that an analogous motivationally-driven mechanism of retrieval-induced forgetting was at work also in the case of ethnic prejudice (*i.e.*, prejudice towards an African-American target). In the above studies (Pica *et al.*, 2016; 2019), however, the accent was almost exclusively—and necessarily—on the motivationally-driven cognitive processes that characterize the *cognitive* prejudiced response. There was no room, in such analyses, for the idea of a *dissociation* of cognitive *vs.* emotional responses to prejudice, nor for considering what should happen to the intensity of those responses once they are juxtaposed to counterforces, or *deterrents*, pushing or otherwise pressing people towards revising, reducing, or even abandoning the prejudicial stance (cf. Miron *et al.*, 2011).

While the cognitive component of prejudice may follow a 'rational' route, probably dictated by a 'cognitive algebra' in which prejudice-furthering information *adds* whereas prejudice-disconfirming information *subtracts* from the intensity of cognitive prejudice, the emotional component should follow a different path, in which any information or reason for *not* feeling prejudiced (the *'deterrent'*, Brehm, 1999) will, paradoxically, either strengthen *or* reduce the intensity of affective prejudice in a non-linear (*cubic*) fashion, in proportion to the strength of that information (*i.e.*, the deterrent: Brehm, 1999; Miron *et al.*, 2011; Sciara & Pantaleo, 2018; 2021, for reviews). In this context, a rough understanding of how *deterrence* works becomes of primary importance.

Deterrence of Emotional and Affective States

Among the many conceptually equivalent definitions of deterrents, emotion intensity theory (EIT: Brehm, 1999;

Brehm & Brummett 1998; Brehm & Miron, 2006; Fuegen & Brehm, 2004; see Brehm, 1975, for core founding principles) describes them as '...any factor[s] that tend to block [the] function [of an emotion]' (Fuegen & Brehm, 2004, p. 41). According to Brehm's original ideas, however, deterrents can also be understood, more broadly, as 'any obstacle, impediment or, more generally, any potentially obstructing-, resisting-, inhibiting-, or counter-force that interferes either with the experience or with the expression of a given emotion' (see Sciara & Pantaleo, 2018, p. 138). As useful shortcuts we may alternatively think of deterrents also as *'anything that adverses the function of the emotion'* or, perhaps more easily, as *'reasons for* not *feeling what one is feeling'* (Brehm, 1999; Brehm & Brummett 1998; Fuegen & Brehm, 2004).

To illustrate, if a person has strong negative feelings towards a certain social group (*e.g.,* non-smokers) and suddenly notices that—contrary to expectations—those people are in fact (re)acting positively to her (*e.g.*, smiling, offering leeway for smoking freely even in their presence, etc.), then she will be facing a counterforce, or *deterrent*, to her original prejudicial stance—*i.e.,* a reason for *not* feeling the negative attitude (cf. Fuegen & Brehm, 2004). Or, if the same person has now good reasons to be happy (*e.g.*, she won a prize), then any sudden bad news (*e.g.*, discovering that she did not pass some relatively unimportant examination, or that a good friend has unexpectedly died) will act, again, as a *deterrent*—or counterforce—to her feelings of happiness (cf. Brehm, 1999; Miron *et al.*, 2009).

What is especially relevant, here, is that according to emotional intensity theory (EIT), deterrents have the power to substantially alter the strength of certain motivational, emotional, and affective responses. This modulation of emotional and affective outcomes takes the form of predictable and characteristic, yet non-obvious, response patterns (see *e.g.* Sciara & Pantaleo, 2018, for a summary review of the motivational role of barriers on the intensity of emotional, motivational, and affective responses).

More concretely, EIT's predicted *cubic* effects of deterrence (Brehm, 1999; Brehm & Brummett 1998; Fuegen & Brehm, 2004) amount to (a) a *lessening* of emotional intensity from an instigation condition (the control condition, *i.e.*, a psychological condition in which the emotion has been either induced, or its presence has been otherwise contextually ascertained) to a condition in which there are only very weak counterforces (the deterrents) to the instigated emotional or affective state (this typically amounting to the low deterrence condition). In the overall cubic pattern, this initial drop is followed by (b) an *intensification* of the emotional/affective state as the intensity of the counterforce (the deterrent) grows, for whatever reason, stronger (the moderate deterrence condition). When deterrence strength reaches a critical threshold (called the threshold of 'potential intensity', Brehm, 1999; see Wright, 2008, for details), however, it will overwhelm the intensity of the ongoing emotional, affective, or motivational state—this producing, again, (c) a *lessening* in the intensity of the original emotional or affective response. This overall pattern of predicted results is illustrated in Figure 1 (see the unfolding of EIT's 'expected results' for the *emotional* component).

In our previous illustration of a person holding a strong negative attitude towards non-smokers, a little positive gesture by side of those people (*e.g.*, a cursory and friendly smile, a kind and sympathetic sign, etc.) will be enough to suddenly reduce the intensity of her negative prejudiced feelings towards the group (cf. Fuegen & Brehm, 2004; Miron & Pantaleo, 2010). Mounting positive gentle acts, however, will paradoxically intensify the original negative stance, up to the point where those friendly acts will surmount, in strength, the intensity of the original reason (*i.e.*, the instigator of the negative response) for *not* feeling sympathetic towards the group of non-smokers. Such an intensification of contrasting reasons *for* feeling sympathetic will in turn provoke a sudden drop in the intensity of the original negative attitude towards non-smokers, this amounting to EIT's predicted overall and characteristic cubic pattern of results.

Such cubic effects of deterrence on the intensity of emotions and affective states have been shown, to date, in several controlled studies. They have been documented, for instance, with respect to the intensity of positive and negative basic sensory affect (Brehm *et al.*, 2009), and for basic emotions such as sadness (e.g., Brehm *et al.*, 1999; Silvia & Brehm, 2001), anger (e.g., Miron *et al.*, 2008) and happiness (e.g., Miron *et al.*, 2007). Within the emotional/motivational arena, then, deterrence has been shown to systematically influence the affective component of intentions (Miron & Pantaleo, 2010, for a review), and—at the intergroup level—also affective social identification (Pantaleo *et al.*, 2014), vicarious empathy (Pantaleo, 2011), and the intensity of specific intergroup emotions such as collective guilt (Schmitt *et al.*, 2008). Crossing the interdisciplinary border of romantic relationships, then, EIT's predicted cubic pattern was observed as well in research on the intensity of positive and negative feelings towards the romantic partner (e.g., Donato *et al.*, 2018; Miron *et al.*, 2009; Sciara & Pantaleo, 2018), and even towards just a would-be dating acquaintance, or a potential romantic partner (Reysen & Katzarska-Miller, 2013; Wright *et al.*, 1985; see Sciara & Pantaleo, 2018; 2021, for reviews).

Deterring the Emotional Component of Prejudice

To the extent that prejudice has indeed a strong affective/emotional component, then it should be prone to deterrence as any other emotional or affective state. Deterring the emotional component of prejudice would amount to *controlling* the intensity of prejudiced affect (cf. Brehm & Brummett, 1998; Fuegen & Brehm, 2004). This idea has been anticipated by Fuegen and Brehm (2004) in research on attitude strength, and also extensively tested by Miron and colleagues (2011) in subsequent studies of prejudiced affect. Whereas Fuegen and Brehm (2004) were interested in *lowering* resistance to attitude change by *lowering* the intensity of the deterrent (see also Miron & Pantaleo, 2010), Miron *et al.* (2011) explicitly tested the predicted *cubic* effects of deterrents on the intensity of prejudiced affect towards a gay and lesbian organization.

More specifically, in two studies, Miron and colleagues nicely demonstrated that the intensity of prejudiced affect of anti-gay students was a cubic function of the difficulty of refusal to help the target. Compared with a control condition

of heightened affective anti-gay prejudice, when it was easy to refuse to help the homosexual target group, prejudiced affect was reduced; when it was moderately difficult to refuse to help, prejudiced affect was enhanced; and, eventually, when it was very difficult to refuse to help, prejudiced affect was, again, reduced. Though featuring ground-breaking research in the field of prejudiced affect, these two seminal studies followed, however, only the dynamics of the *affective*, not cognitive, component of prejudice—a gap that the present research intends, of course, to bridge.

The Dissociation between the Cognitive and Emotional Components of Prejudice

A close reading of emotion intensity theory implies that whereas motivational, emotional, and affective responses to deterrents should vary according to EIT's predicted cubic pattern, the *cognitive* component of the instigated response should remain unaffected by deterrents, or substantially unaltered (Figure 1). The dynamics of such component should follow a distinctive path, when compared with those of the emotional component. The cognitive response should either remain unaffected by deterrents or, if anything, obey a simple 'cognitive algebra' whereby the information given by deterrents (*i.e.*, the counterforces, or reasons for *not* feeling the ongoing emotion/affective state) should *subtract*, algebraically, from the intensity of the prejudiced cognitive response.

In this respect, in our ongoing example on holding a negative attitude towards non-smokers, reasons for feeling positively towards the group because of their gentle acts (the *deterrents*) should systematically alter the intensity of the *emotional* component of that attitude (i.e., the intensity of the negative prejudiced feelings towards that group of non-smokers, such as dislike, aversion, and the like) according to EIT's predicted cubic pattern. The intensity of the *cognitive* component of prejudice, however, should remain relatively unaltered by deterrents (this amounting to the continued subjective conviction that 'non-smokers are rather intolerant towards smokers'; 'non-smokers regard themselves as superior', and the like). Alternatively, such cognitive component should be reduced in proportion to increasing deterrence strength (this possibly leading, in turn, to cognitive reappraisal—and then reduction—of the original emphasis given to the negative contents of the stereotype that portrays non-smokers as 'intolerant', 'thinking of themselves as superior', and the like). Yet, to date, no explicit empirical test has been conducted to examine, experimentally, the implied dissociation of *cognitive* and *emotional* responses to deterrents.

A hint at the dynamic dissociation between cognitive and emotional responses comes from Gendolla (2006), who found that whereas the intensity of *motivational arousal* first increased with increasing task difficulty and then sharply declined when the task became too difficult to perform (this amounting to a predicted nonlinear pattern), the intensity of the cognitively-connoted response of *static thinking* continued to increase with increasing task difficulty (this amounting to a contrasting *linear*, ostensibly dissociated, pattern of results).

The challenge and opportunity to plan and conduct research on the possible dissociation of such emotional *vs.* affective components has been amply envisioned and discussed in Brehm and colleagues (2009), who explicitly wrote: 'In general, future research should attempt to address several related questions. First, both emotions and deterrents can contain both *cognitive* and *affective components*…' (p. 1085, emphasis added)—a statement then readily complemented by further related considerations such as, 'Theoretically, emotional reactions that involve a stronger *affective component* may be *more susceptible to deterrence* than those *responses* that involve a stronger *cognitive* component (Edwards, 1990; Millar & Millar, 1990)' (Brehm *et al.*, 2009, p. 1085, emphasis added).

Brehm and coworkers (2009) also considered work by Fuegen and Brehm (2004) in this respect, and observed: 'For now, there is evidence that the *affective* component of both positive and negative attitudes is responsive to deterrents (Fuegen & Brehm, 2004)' (pp. 1085-1086, emphasis added)—a statement readily substantiated in subsequent research on deterrence of prejudiced affect by Miron and colleagues (2011). Eventually, Brehm and colleagues (2009) concluded with a broad, unmistakable, visionary, and programmatic statement: '…[but] future research should address distinction between *affective*- and *cognitive*-based *emotional responses* and the possible differential effect of cognitive versus affective deterrents' (p. 1086, brackets and italics added).

To date, this advocated line of research has been pursued, officially, only in an experiment by Pantaleo and colleagues (2014, Study 2)—a study addressing the dissociation between affective *vs.* emotional components of social identification as a function of deterrence information given to participants as reasons for *not* identifying with their in-group. Aside from this single study, however, no empirical test has been run as yet to examine, experimentally, the predicted dissociation between *cognitive* and *emotional* responses to deterrents.

The Present Research

Our main intent here was then to extend the above line of reasoning and test EIT's implied dissociation of cognitive *vs.* emotional responses also with respect to instigators of prejudice towards people affected by mental illness—i.*e.*, a research topic that, nowadays, seems to interest researchers and professionals well beyond the social/motivational psychology arena (*e.g.*, Kenny *et al.*, 2018; Radović *et al.*, 2017). More specifically, in our study, prejudiced responses were expected to be (differentially) shaped by reasons for *not* being prejudiced (the deterrents). To accomplish this, we first instigated and then deterred prejudice towards 'the mentally ill'—a label we used on purpose to create a general prejudiced /biased interpretative context—with reasons for *not* being prejudiced. Before deterring prejudice, however, we measured its intensity. We repeated this measurement of prejudice intensity also after the manipulation of deterrence, to be able to assess intra-individual (i.e., *within-participants*) variations in strength of *cognitive* vs. *emotional* responses by computing

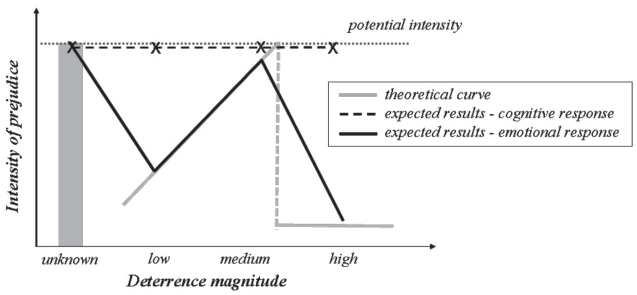
difference scores (see dependent measures; cf. also Donato *et al.*, 2018, and Pantaleo *et al.*, 2014).

The intensity of prejudice in this research was measured by handing participants a paper-and-pencil questionnaire that asked several questions about the *cognitive* (knowledge and beliefs) and *emotional* (affective/motivational) aspects of participants' manifest prejudice towards people with mental illness. Note also a further, important feature of this and related research on deterrence of emotional and affective states. When adopting a deterrence paradigm, *instigation*—or at least the ascertained contextual presence—of the psychological state to be deterred is a fundamental prerequisite (Brehm, 1999; Brehm & Brummett, 1998; Fuegen & Brehm, 2004; see also Brehm *et. al*, 2009; Miron *et al.*, 2007, 2008, 2011; Silvia & Brehm, 2001; Sciara & Pantaleo, 2018; 2021). If an emotion or affective state has not been evoked, or is not psychologically present, in fact, it cannot be deterred.

In sum, drawing on EIT (Brehm, 1999, see Figure 1), we reasoned that to the extent that prejudiced responses entail also an *emotional* component, then the intensity of that component—and only that—should obey a *cubic* function of increasing deterrence strength (*i.e.*, reasons for *not* being prejudiced). By contrast, the intensity of the *cognitive* component of prejudice should either remain unaffected by deterrents or, alternatively, follow a simple 'cognitive algebra', whereby increasing reasons for not being prejudiced—the deterrents—logically subtract from the intensity of prejudice, whereas decreasing reasons add to its strength. In either case, we expected a fundamental *dissociation* between cognitive and emotional prejudiced responses to deterrents.

It is apparent that this pattern of anticipated results stems directly from the theoretical curve depicted in Figure 1 and, if observed in the present research, would not only testify to the dynamic *dissociation* between the two components of prejudice, but also reveal the separate dynamics leading to the identification of two critical points of (a) *convergence* (Figure 1, 'control' and 'moderate' deterrence conditions), and (b) *divergence* (Figure 1, 'low' and 'high' deterrence conditions) between the two components of prejudice. We will return on this important aspect when presenting and discussing the results of the present research.

Fig. 1. The effect of deterrence magnitude (unknown *vs*. low *vs*. medium *vs*. high) on the intensity of instigated prejudice as predicted by EIT (*theoretical curve*) and as expected to manifest—empirically—in the present experiment (*expected results*) for the cognitive *vs.* emotional components of prejudice, respectively. Expected results are drawn on the basis of the theoretical curve, and imply an ostensible dissociation between the two components of prejudice (adapted from Sciara & Pantaleo, 2021 – in press; cf. Brehm's original depiction, 1999, p. 7, Figure 1)



Method

Statistical Power and Sample Size Determination

At the time in which we planned (Oct. 2010) and ran (Jan. – April 2011) the study, there was no firm official basis for estimating the magnitude of effects of deterrence on prejudiced emotional responses, as the seminal studies by Miron *et al.*, 2011 on the intensity of prejudiced affect were still to appear. Thus, we decided to enroll 20 participants per cell to be able to detect only sizeable and meaningful effects (Cohen's $d_s \geq .80$) of deterrence on prejudiced (emotional) responses ($\alpha = .05$; one-tailed a-priori tests; critical $t = 1.69$; non-centrality parameter $\delta = 2.53$), thereby securing the appropriateness of relevant statistical comparisons and implied theoretical interpretations (all computations were made with *G*Power* 3.1; Faul *et al.*, 2007).

Participants, Design and Procedure

Eighty adults (52.5% females; age = 18 to 65 years old, mean age = 33.05 yrs., SD = 12.35; various occupations) from the district of Milano and Varese, Italy, expressed their informed consent and volunteered in the experiment. The study was introduced as 'a research project on mental health.' Participants were randomly assigned to one of four deterrence conditions (i.e., control *vs.* low *vs.* moderate *vs.* high [alleged] probability that ordinary people affected by mental illness would recover from that disturbance, once affected). This was done to assess, separately, the expected variations in the intensity of *cognitive* vs. *emotional* prejudicial responses to such deterrent information. Upon agreement, participants received a five-part questionnaire. The first part asked for basic demographic information. The second part was intended to instigate, in all participants, a diffuse and negative (*i.e.*, prejudiced) attitude towards people suffering from mental illness. This was accomplished by presenting participants with information from a (bogus) press excerpt attributed to a prominent Italian newspaper, *La Stampa*, on the topic *'L'Italia dei pazzi armati' ('Italy, a Country full of dangerous mentally-ill and armed people')*.

Such a vivid depiction of potential dangerous aspects related to mental illness was intended to link 'mental illness' to the danger and likelihood of being suddenly and unexpectedly aggressed—as a citizen—by a 'mentally ill' and, consequently, to an unfavorable and prejudiced cognitive and emotional stance towards 'the mentally ill' in general— this amounting to a negatively prejudiced attitude to be later deterred in its *emotional* (not *cognitive*) component. The third part of the questionnaire entailed some questions intended to assess participants' initial *cognitive* and *emotional* responses to people with mental illness. The fourth part introduced the deterrent in form of reasons—all allegedly stemming from recent authoritative research findings—for *not* being prejudiced towards people affected by mental illness (all of the arguments were revolving around the [alleged] likelihood of recovering from mental illness and, thereby, to return to 'normal life'). Those reasons for not being prejudiced were articulated in a control condition (no likelihood information given) *vs.* low *vs.* moderate *vs.* high probability of recovering. In the

same (fourth) part of the questionnaire, we checked for the effectiveness of the manipulation also at a subjective level. The fifth and final part of the questionnaire then assessed, again, the two components of *cognitive* vs. *emotional* prejudice towards the mentally ill with the same questions used in the third part of the questionnaire. The difference scores for the *cognitive* vs. *emotional* endorsement of prejudice assessed, respectively, *before* and *after* the experimental manipulation of the deterrent represented the dependent measures. Participants completed the questionnaires individually and anonymously, with the assistance of a female experimenter, blind to experimental conditions. Then, they were fully debriefed and thanked for participation.

Manipulation of the Reasons for not being Prejudiced towards Mental Illness

Participants were randomly assigned to one of four conditions (control *vs.* low *vs.* moderate *vs.* high deterrence), whereby deterrence was operationalized as reasons for *not* being (either *cognitively* or *emotionally*) prejudiced towards people with mental illness, because of a certain (alleged) communicated probability—'scientifically founded'—of recovering from that undesirable physical and mental state. More specifically, the reasons (*i.e.*, the deterrents) were introduced as authoritative and trustworthy research findings, that is, as reassuring information for *not* being prejudiced towards 'the mentally ill'. Concretely, the manipulation entailed the following four conditions: no information (control condition) *vs.* information that either 5% (low deterrence), 50% (moderate deterrence), or 70% (high deterrence) of people with mental illness typically recover from that prejudicial state. Such differently reassuring information was ostensibly running contrary to the instigated components of cognitive *vs.* emotional prejudice. In the control condition, by contrast, participants simply red (bogus) neutral information about the organization of our research laboratory (*i.e.*, information *not* intended to alter neither the cognitive, nor the emotional component of the instigated responses).

Manipulation Check

To be able to check for the effectiveness of the manipulation not only through the results of our main statistical analyses but also at a *subjective* level, we asked participants assigned to the three deterrence conditions to indicate to what extent they judged the communicated information about the reasons for *not* being prejudiced towards people with mental illness as just 'a little', 'moderately', or 'very' reassuring. Participants provided their answers by marking only one of the three possible corresponding options.

Dependent Measures of Cognitive vs. Emotional Responses to Prejudice

Consistent with research by Pantaleo *et al.* (2014), we measured cognitive and emotional responses of prejudice on analog bipolar scales ranging from 0 to 12.50 cm. Each question was anchored at the extremes with labels such as 'completely untrue, disagree' etc. *vs.* 'completely true, agree' etc. depending on the specific wording of the question. *Cognitive* prejudice was measured by asking questions such as 'Mental illness cannot be healed', 'The mentally ill are actually useless to our society', or 'Even if healed, they will never be normal'. *Emotional* prejudice was measured by asking more affectively laden questions such as 'I would feel ashamed if I had a friend with mental illness', 'Friendship, practicing sports etc. with a person affected by mental illness would bother me a lot', or 'I would feel shame for a family member with mental illness'. Cognitive and emotional questions were mixed—i.e., not artificially separated—in the pertinent sections of the questionnaire (*i.e.*, part 3 and 5, see *Procedure*). Yet, a principal component analysis indicated the presence of the two components of prejudice (*cognitive*; 13 items, Cronbach α_s = .93 and .92 for pre- and post-scales, respectively; and *emotional*; 9 items, Cronbach α_s = .95 and .94 for pre- and post-scales, respectively).

Results

Manipulation Check

A preliminary cross-tabulation analysis examined the intersection of the *actual* and *perceived* manipulation of the deterrent and revealed a strong effect of the experimental manipulation, *Chi-square* (4) = 108.69, $p < .001$. This effect was complemented by an ordinal-by-ordinal *Spearman* correlation coefficient of .98, $p < .001$, substantiating the expectation of a close adherence of participants' *perception* of deterrence strength ('a little', 'moderately', or 'very' reassuring information about the likelihood of recovery) to actual administered deterrence strength (5% *vs.* 50% *vs.* 70% [bogus] likelihood of recovery). The experimental manipulation of the reasons for *not* being prejudiced towards people with mental illness, thus, seemed to work properly.

Deterrence of the Cognitive Component of Prejudice

In this study, the intensity of cognitive and emotional responses was measured twice—*before* and *after* the deterrence manipulation—to examine within-participant shifts in strength of prejudice. As in current related research on emotional intensity (Donato *et al.*, 2018; Pantaleo *et al.* 2014, Experiment 2), we computed two difference scores (post-pre manipulation), one for the *cognitive* component; the other for the *emotional* component. With respect to cognitive responses, EIT's predicts no special effects of deterrence on the intensity of cognitive prejudice—for sure, no *cubic* effects (Figure 1). We might nevertheless expect, here, that mounting reassuring information (the deterrent) could either *subtract* from or *add* to the intensity of the *cognitive* response—as in a simple 'cognitive algebra'—in proportion to the capacity of the counter-attitudinal information to cognitively reassure and logically convince people about the likelihood of recovery from mental illness. In line with this reasoning, a one-way ANOVA revealed an effect of deterrence on the c*ognitive* component of

prejudice, F (3, 76) = 2.93, p = .039, MSE = 0.25, η^2 = .10, which took the form of a slightly descending linear trend (F [1, 76] = 5.51, p = .022, MSE = 0.25, η^2 = .06) showing that prejudice strength tended to decrease linearly as a function of increasing counter-attitudinal deterrence information (control *vs.* low *vs.* moderate *vs.* high deterrence conditions) (Figure 2)[1]. Follow-up analyses showed that this effect was substantially driven by the difference between the low *vs.* medium deterrence conditions, t(38) = 2.15, p = .038, d = .68[2]. Mounting counter-attitudinal reassuring information about the likelihood of recovery then appeared to influence the *cognitive* response in proportion to the strength and possibly persuasiveness of that information, a finding in line with the idea of a simple 'cognitive algebra' in which non-reassuring information *adds* whereas reassuring information *subtracts* from the intensity of the cognitive component of prejudice.

Deterrence of the Emotional Component of Prejudice

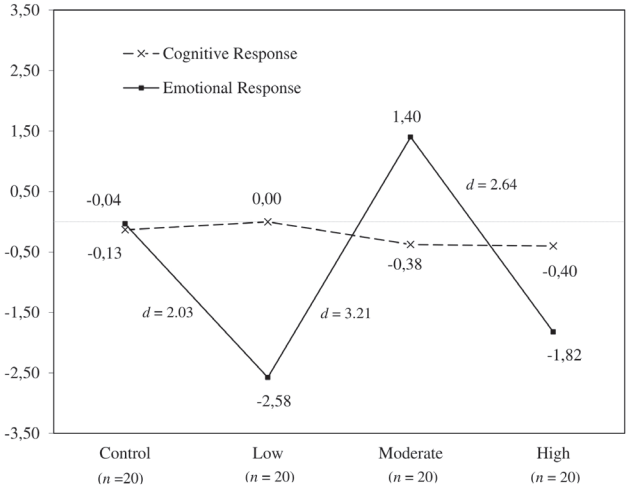
For emotional responses, by contrast, we expected to observe EIT's predicted *cubic* trend (Figure 2). Thus, after initial inspection of the overall cubic effect of the information on the probability of recovering from mental illness (the deterrent) on strength of *emotional* prejudice (the dependent variable), we ran polynomial contrasts with a pooled error term to test for the significance of each single adjacent leg of the cubic trend in planned pairwise comparisons. This reflects the common analytical strategy used, now as in the past, in research on motivational and emotional intensity (*e.g.*, Silvia & Brehm, 2001; Miron *et al.*, 2011; Pantaleo *et al.*, 2014; Sciara & Pantaleo, 2018; 2021, for recent reviews). As shown in Figure 2, a one-way ANOVA revealed the predicted overall cubic effect of deterrents on emotional prejudice, F(1, 76) = 122.69, p < .001, MSE = 1.53, η^2 = .61. Planned polynomial contrasts further showed that, as predicted, the intensity of emotional prejudice decreased from the control (M = -0.04, SD = .43, bootstrap 95% CI [-0.23, 0.15] to the low deterrence (i.e., low likelihood of recovery) condition (M = -2.58, SD = 1.63, bootstrap 95% CI [-3.31, -1.84]), t(76) = 6.41, p < .001, d = 2.03 (contrast weights +1 -1 0 0), increased from the low to moderate condition (M = 1.40, SD = 1.29, bootstrap 95% CI [0.88, 1.99]), t(76) = 10.15, p < .001, d = 3.21 (contrast weights 0 -1 +1 0), and decreased from the moderate to high condition (M = -1.82, SD = 1.29, bootstrap 95% CI [-2.40, -1.26]), t(76) = 8.34, p < .001, d = 2.64 (contrast weights 0 0 +1 -1). In all pairwise comparisons, each group's mean fell outside the other group's 95% CI. Further, in line with EIT's predictions (Figure 1), the control condition significantly differed from the high deterrence condition, t(76) = 4.57, p < .001 (contrast weights +1 0 0 -1). Table 1 reports the detailed pattern of results for cognitive and emotional responses to deterrents, and shows how deterrence influenced the *emotional* component of prejudice according to EIT's predicted *cubic* pattern.

Tab. 1. The effect of reasons for not being prejudiced towards people with mental illness (deterrent not mentioned *vs.* low *vs.* moderate *vs.* high) on the intensity of cognitive *vs.* emotional components of prejudice

	Reasons for not being prejudiced			
	Control	**Low**	**Moderate**	**High**
Cognitive component	-0.13 (0.27)	0.00 (0.46)	-0.38 (.62)	-0.40 (.57)
Bootstrap 95% CI	[-0.26, -0.02]	[-0.21, 0.21]	[-0.64, -0.12]	[-0.67, -0.18]
Emotional component	-0.04_a (0.43)	-2.58_b (1.63)	1.40_c (1.29)	-1.82_b (1.29)
Bootstrap 95% CI	[-0.23, 0.15]	[-3.31, -1.84]	[0.88, 1.99]	[-2.40, -1.26]
Ns	20	20	20	20

Note. This table reports *difference scores* (see text). Original untransformed bipolar scales ranged from 0 *(not at all/completely untrue)* to 12.50 cm *(very much/completely true)*, scale neutral midpoint = 6.25 cm. Row means with different subscripts differed significantly from each other in planned *a-priori* pairwise contrasts (p_s < .001) for emotional responses. SDs are displayed in parenthesis. Bootstrap estimates for 95% CI_s of the means were computed with 5,000 resamples. Ns denote the cell sizes.

Fig. 2. Intensity of prejudice (cognitive *vs.* emotional) as a function of deterrence magnitude (reasons for *not* being prejudiced towards the mentally ill: no information [control] vs. information that either 5% [low], 50% [moderate], or 70% [high deterrence] of people with mental illness would typically recover). Variations in the intensity of prejudice are expressed as *difference scores* (see text), whereby positive values represent an increase, relative to a zero baseline, in prejudice; negative values a decrease. Cohen's *d*s are displayed for each adjacent leg of the cubic trend of the emotional component



Ancillary Analyses on the Dissociation of Cognitive and Emotional Prejudiced Responses

The above results about the dynamic *dissociation* of cognitive and emotional responses to deterrents, as implied by EIT (Figure 1), were complemented by a mixed 4 (deterrence: control, low, moderate, high) x 2 (type of prejudiced response:

[1] We report *eta squared* (η^2) instead of *partial eta squared* (η^2_p) estimates of effect size to avoid misreporting and misinterpretation of the magnitude of experimentally observed effects (Levine & Hullett, 2002).

[2] All Cohen's *d*s for pairwise comparisons were computed using a dedicated online calculator (Lenhard & Lenhard, 2016). We calculated effect sizes for independent t-tests on the basis of the t-statistics, and the related sample sizes (n_1 and n_2) of the contrasting experimental conditions.

cognitive *vs.* emotional) ANOVA with 'deterrence' representing the *between-* and 'type of prejudiced response' the *within-*participants factors, respectively. The analysis revealed a main effect of deterrence, F (3, 76) = 32.73, p < .001, MSE = .90, η^2 = .45, which was substantially an artifact of the predicted strong variations in *emotional* responses, see Table 1 and Figure 2, and a main effect of type of prejudiced response, F (1, 76) = 12.72, p = .001, MSE = .88, η^2 = .06, instantiating the quite trivial yet straightforward (EIT's congruent) prediction that emotional responses had to be (cf. Figure 1), *on the average*, less pronounced than cognitive responses (as they actually *were*; see Table 1; Figure 2)—an outcome that, again, represents a (predicted) artifact.

Most importantly, and clearly in line with the dissociation idea, however, the analysis also yielded a significant interaction between the deterrents and cognitive *vs.* emotional responses, F (3, 76) = 40.52, p < .001, MSE = .88, η^2 = .58. These results reveal that the *main effect* of deterrence was driven by the emotional component of prejudice and, most importantly, that the effect was qualified by a significant statistical interaction, which clearly distinguished between cognitive *vs.* emotional responses to deterrents. Note, however, that in their overall dynamics, in the control and moderate deterrence conditions, the cognitive and affective components of prejudice tended to reunite (*i.e.*, to converge), in sharp contrast to their ostensible distancing and separation in the low and high deterrence conditions (Figure 2). This fact may have important theoretical and practical consequences and implications (see Discussion).

Further speaking in favor of the predicted dissociation between cognitive and emotional responses to deterrents, the overall correlation between the two components, if computed across conditions, was ostensibly absent r (80) = -.11, p = .337. But when contrasting the control *vs.* the three (collapsed) deterrence conditions, we obtained correlations of r (20) = .47, p = .034 (control condition) vs. r (60) = -.15, p = .24 (deterrence conditions collapsed), respectively, *Fisher z-test:* 2.39, p = .016 (two-tailed), Cohen's q = .66 (a *large* difference effect according to Cohen, 1988, p. 109). This pattern nicely suggests that whereas in the control condition emotional and cognitive prejudice were moderately associated, in the deterrence conditions they could be considered independent, or dissociated, from one another. This was also true when we considered, separately, the extended correlation (*i.e.*, association/dissociation) pattern made by the control (r [20] = .47, p = .034) *vs.* low (r [20] = -.14, p = .576, *n.s.*) *vs.* moderate (r [20] = -.23, p = .307, *n.s.*) *vs.* high (r [20] = .37, p = .106, *n.s.*) deterrence conditions. Again, it is apparent that, in the presence of a deterrent, the dynamics of cognitive and emotional responses are substantially altered. These dynamics appear to follow different routes, with the two types of responses acting as *dissociated* components of prejudice.

Discussion

In this study, we empirically observed EIT's predicted *cubic* effects of deterrence on the emotional—but not on the cognitive—component of prejudice (Brehm, 1999; Fuegen & Brehm, 2004; Miron *et al.*, 2011), and the expected dynamics of convergence *and* divergence of cognitive *vs.* emotional prejudiced responses to deterrents (cf. Pantaleo *et al.*, 2014 – Experiment 2, on the dissociation, convergence and divergence of cognitive *vs.* emotional social identification; see also Gendolla, 2006). With respect to the *cognitive* component of prejudice, we predicted either *no influence* of deterrence on cognitive prejudice, or a lessening in the intensity of that component according to the idea of a simple *'cognitive algebra'* between increasingly reassuring deterrence information (i.e., mounting reasons for *not* being prejudiced), on the one side, and the intensity of the cognitively prejudiced response, on the other (with reassuring deterrence information algebraically *subtracting* from the intensity of cognitive prejudice).

Results from the present experiment clearly indicated that the *cognitive* component of prejudice reacted feebly to deterrents according to a smooth descending linear trend, in which the intensity of the cognitive response was slightly (η^2 = .06) reduced as a function of increasing reassuring counter-attitudinal deterrence information. In sharp contrast with this, exactly as predicted, *emotional* prejudice was high in the control condition, reduced in the low deterrence condition, intensified in the moderate deterrence condition, and reduced—again—in the strong deterrence condition, with this overall dynamic pattern, and unfolding of results, instantiating the prediction of the *cubic* trend (η^2 = .61) originally anticipated by EIT (Brehm, 1999).

The Dissociation between Cognitive and Emotional Responses

The overall pattern of results we observed in this experiment, thus, nicely fits EIT's theoretical curve *and* all of the implied empirical predictions depicted in Figure 1 (see also Sciara & Pantaleo, 2021 – in press). This pattern testifies to an interesting and non-obvious *dissociation* between the cognitive *vs.* emotional components of prejudice. To be sure, scholars in the domain of (prejudiced) attitudes, emotions, and related affective states have long suspected, discussed, and investigated such and similar distinctions (see, for instance, Brehm *et. al*, 2009; Eagly & Chaiken, 1993; Edwards, 1990; Fuegen & Brehm, 2004; Kaiser & Wilson, 2019; Millar & Millar, 1990; Miron *et al.*, 2011; Pettigrew, 2011; Rosenberg & Hovland, 1960; Tropp & Pettigrew, 2005; see also Fuegen & Brehm, 2004, for thought-provoking reflections on the tripartite model of attitudes). The present experiment substantiates for the first time those reflections by direct observation and empirical demonstration of the separate yet common dynamics underlying the two components of prejudiced affect; in so doing, it also parallels the results already reported, in a different area, by Pantaleo *et al.* (2014, Experiment 2) with respect to the intensity of affective *vs.* cognitive social identification in intergroup relations.

From a practical/implemental point of view the *dissociation* of cognitive and emotional prejudiced responses has important implications. Deterring prejudice amounts to *controlling* its intensity, as deterrents systematically reduce *or* intensify the emotional component of prejudice, depending on deterrence

strength. Perhaps even most importantly, deterring prejudice also means *dissociating* its cognitive from its emotional components. At a closer look, we guess that deterrence-based interventions would allow researchers and professionals to exercise some subtle—perhaps most needed—form of control on some otherwise ostensibly dangerous synergies between the cognitive and the emotional components of the prejudiced social responses. We refer to these synergies as the 'affective boost'.

The Affective Boost

In the control and moderate deterrence conditions of this experiment, the cognitive and affective components of prejudice tended to *converge*. In sharp contrast to this, in the low and high deterrence conditions they tended to *diverge* (Figure 2; cf. also the theoretical predictions of Figure 1). In our view, this result may have important theoretical and practical consequences and implications. For one, when—*and only when*—the intensity of the *emotional* component joins that of the cognitive component, we may expect that such sudden emotional intensification will actually *energize* the execution of (prejudiced) behavior (*i.e.*, of behavioral manifestations whose concrete instances are under direct control, and guidance, of the contents of the cognitive component of prejudice).

When, by contrast, such an affective boost is absent (*i.e.*, in the case of a strong *divergence* between the two components), we would instead expect, if anything, just some empty expression of some *cognitive* content of prejudice (*i.e.*, prejudice-related knowledge), without any affectively-laden (and potentially dangerous) concrete behavioral manifestations. From this broader perspective, the lead of Fuegen & Brehm (2004) is even more true (and maybe relevant) today, as their suggestion to reduce the intensity of affect by reducing the intensity of deterrents would amount, in our case, to defusing the affectively-laden concrete manifestations of prejudice. This point should be taken seriously both by researchers and professionals.

Not to be left behind, the kind of *affective boost* discussed in this article might also easily produce, in our view, strong *cognitive rigidity* because, in the presence of intense affective states, central cognitive attentional resources that are normally employed to monitor the environment are suddenly monopolized, by the cognitive system, and almost entirely re-directed to the instigating event (Silvia & Brehm, 2001; see Easterbrook, 1959 for foundational ideas). This point has been extensively illustrated in Pantaleo *et al.* (2014, p. 863), under the rubric of 'effort-based cognitive narrowing'.

A Practical Update for Researchers on the Magnitude of Recent Deterrence Effects

In this study we observed quite strong effects of deterrence on the *emotional* component of prejudice, with Cohen's d_s ranging from 2.03 to 3.21, together with a notable average effect of $d = 2.63$. The effects of the reasons for *not* being prejudiced towards people with mental illness (*i.e.,* the deterrent) on the intensity of the affective component of prejudice, thus, were remarkable. At the same time, we did not observe any substantial nonlinear (i.e., cubic) effect of deterrence on the *cognitive* component of prejudice—this, again, happening in line with EIT's predictions (see Figure 1).

Strength of prior effects of deterrence on prejudiced affect. Here, we would like to discuss and complement, briefly, the above information by offering to the reader a swift and practical reference for weighing and interpreting, more generally, the magnitude of deterrence-related effect sizes in research on (prejudiced) affect. We do so by reporting some additional computations of Cohen's d_s we made with the aid of a dedicated online calculator (Lenhard & Lenhard, 2016) on the relevant *t-test* statistics reported in Miron *et al.* (2011) (*i.e.*, on the effects of deterrence on *prejudiced affect* towards [a] a students' gay organization and [b] a related target group of gays and lesbians in the U.S.A.) According to such computations, the relevant effect sizes in those studies ranged from $d = .83$ to $d = 1.50$, with an average effect of $d = 1.10$ (a value we derived from 10 theory-driven relevant pairwise comparisons, across two studies). Together with the results of our present experiment, such a summary pattern of results would to suggest quite strong non-negligible general effects of deterrence on prejudiced affect.

Strength of current related deterrence effects. Adding to this, we might also consider a recent meta-analysis of power effects of deterrence on the intensity of romantic feelings (Sciara & Pantaleo, 2018)—a seemingly distant yet theoretically very closely related domain of investigation—which already ascertained a somewhat smaller average effect of $d = .85$ (this representing, again, a *large effect* according to Cohen, e.g. 1988; 1990) in relevant pairwise comparisons. This effect was complemented by Sciara and Pantaleo (2018) own experimental findings, revealing effect sizes (*ES*s) of $d_s = .80$, .69, and .60, in pairwise comparisons of control *vs.* low deterrence, low *vs.* moderate deterrence, and moderate *vs.* high deterrence, respectively (with an average *ES* of $d = .70$)—a pattern replicated by subsequent findings by Donato *et al.* (2018), yielding somewhat smaller yet parallel effects of $d = .44$, .67, and .57 (and an average *ES* of $d = .56$) for the three critical conditions, respectively.

We hope that, if looked at from a broader perspective, the above 'effect size' information might be useful for future planning of power analyses and sample size estimations both to researchers in the domain of prejudiced affect and to researchers interested in emotional vs. cognitive prejudice, and its determinants and manifestations.

Further Theoretical and Practical Considerations

The effects normally produced by deterrents on prejudiced affect and attitudes (*e.g.,* Fuegen & Brehm, 2004; Miron *et al.*, 2011) need not to be circumscribed, from a theoretical point of view, to manifestations of *affective* prejudice. They can also take the reverse form of *prosocial* emotional and motivational responses, *i.e.* the form of what we may define, here, as unexpected and surprising *'mirror effects'* of prejudice-laden information. Such a step can be made quite easily, theoretically, by giving people that very information that would normally—and in different circumstances—instigate, maintain, or even strengthen (!)

cognitive prejudice. In this respect, research has shown that the same *cubic* variations we documented in this article with respect to the emotional component of prejudice, can be observed also for certain emotional and motivational manifestations of *empathy* (a vicarious emotion), *emotional closeness*, and the *willingness to help* a needy target (a motivational variable)—these all representing *mirror* or *reverse* constructs with respect to prejudice—by simply altering (i.e., controlling) the strength of deterrents to those emotional/motivational manifestations.

More concretely, such paradoxical *prosocial* responses have been experimentally observed by varying (i.e., increasing *or* decreasing) information on the severity (i.e., intensity) of crimes allegedly committed by an out-group of non-European citizens living in Europe. From a theoretical perspective, this amounts to controlling the strength of negative information (*i.e.,* the deterrent), that is, of information that a vast majority of researchers in the domain of prejudice/intergroup relations might normally think would otherwise instigate, maintain, or even amplify the negative affective response towards the prejudiced target group (i.e., the *out-group*), especially if the categorical label associated with that group hints at a collection of 'potential criminals' (Pantaleo, 2011, pp. 59-61; Pantaleo & Veneziani, 2011).

Accumulating results nicely demonstrate, in this respect, the great potential of deterrents to *paradoxically* either intensify *or* reduce the intensity of affective reactions, depending on their strength (cf. Brehm, 1999; Brehm *et al.*, 2009; Miron *et al.*, 2011; Pantaleo *et al.*, 2014; Sciara & Pantaleo, 2018; 2021 – in press). As low deterrence tends to result in lessened emotional reactions, in the case of prejudiced affect it would seem particularly true that 'less can be [strategically] better than more' (Fuegen & Brehm, 2004; Miron & Pantaleo, 2010; Sciara & Pantaleo, 2021, in press).

Conclusion

Being able to deter and dissociate the emotional component of prejudice would seem of paramount importance in certain areas of intervention. In our view, such a deterrence/dissociation strategy might be applied with success, for instance, in the very case of prejudiced affect towards people with mental illness—a seemingly populated and rapidly expanding research field (*e.g.*, Kenny *et al.*, 2018; Radović *et al.*, 2017).

Accumulating results inspired by emotional intensity theory (EIT: Brehm, 1999; Brehm & Brummett 1998; Brehm & Miron, 2006; Fuegen & Brehm, 2004) concur with this idea, and nicely point to the enormous potential of deterrents, or counterforces, to subtly control (i.e., either intensify or reduce) the strength of positive and negative affective reactions, including prejudiced affect, by simply controlling the strength of those deterrents or counterforces (*e.g.,* Brehm, 1999; Brehm *et al.*, 2009; Miron *et al.*, 2011; Pantaleo & Contu, 2021; Pantaleo *et al.*, 2014; Sciara & Pantaleo, 2018; 2021 – in press).

Author Note

The research presented in this article was planned in October 2010; the data were collected by Federica D'Andria in January – April 2011 at the *UniSR-Social.Lab*, the Laboratory of Social Psychology at Vita-Salute San Raffaele University (UniSR) of Milan, under the guidance and supervision of professor Giuseppe Pantaleo. A preliminary and unextended portion of the analyses and results presented here was submitted by Federica D'Andria in 2011 as a master thesis for graduation at UniSR under the supervision of the first author. This article is based on an invited talk given by the first author at the *Department of Psychology Colloquium* of the University of Geneva, hosted by professor G. H. E. Gendolla, December 3rd, 2019. We are grateful to the students and to the members of the *Geneva Motivation Lab* (GML) for their generous and constructive comments and suggestions. We are also grateful to two anonymous reviewers for their helpful remarks and expert advice.

Author Contributions

GP: planning of the study and research hypotheses, methodology, and design; main and complementary data analyses and interpretation of results; drafting and writing of the manuscript; final review and approval. FC: complementary data analyses and interpretation of results; co-drafting and co-writing of the manuscript.

Compliance with Ethical Standards

Conflict of interest

The authors declare that they have no competing interests.

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Ethical approval

This study has been planned and run in full compliance with APA's ethical standards, and closely adhered to point 8.07b ('Deception in Research') of *APA Compliance Standards with Ethical Principles* (http://www.apa.org/ethics/), and the WMA's *Declaration of Helsinki (DoH)* on human research ethics.

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