

Can Video Engender Empathic Concern for Others? Testing a Positive Affect Arousing Intervention

SAGE Open
October-December 2016: 1–10
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DOI: 10.1177/2158244016676297
sagepub.com


Aaron Castelán Cargile¹

Abstract

Empathy is widely recognized as the psychological foundation for prosocial behavior, yet very little is known about methods to increase affective empathy in students and trainees. The present research sought to assess the reliability and potential boundary conditions of one such intervention—a brief emotional video featuring a boy diagnosed with cancer. Study 1 found that the video succeeded in indirectly increasing empathic concern for an African American victim of police abuse among an ethnically diverse student sample in a classroom setting. Study 2 replicated the effect in an online environment among a population of near-racially homogeneous adults. The effect of this brief, convenient, positive-affect intervention is in line with other practice-based and negative-affect interventions.

Keywords

emotion, experimental psychology, psychology, social sciences, applied psychology, educational research, education, positive psychology

Over recent decades, psychological research has shifted from a narrow focus on the negative and dysfunctional (e.g., Castillo, 1997; Stueber, 2006; Williams, Watts, MacLeod, & Mathews, 1988) to broader inquiries that now regularly include the study of positive and prosocial phenomena (e.g., Mikulincer & Shaver, 2010; Seligman, Steen, Park, & Peterson, 2005). Within this emerging domain of positive/prosocial research, empathy has become a central and well-studied construct. As detailed by Rosan (2012), philosophers have long discussed empathy in a variety of ways, including as affective resonance (Hume, 1739/1978), as “feeling with” (A. Smith, 1759/2006), as “feeling in” (Vischer, 1873/1994), or as an inner imitation (Lipps, 1903/1935). More recently, psychological study has developed its own conceptualizations grounded in these long-standing discussions. As a result, the construct has been used in at least eight distinct ways (see Batson, 2009a) across various investigations in psychology; thus, empathy has no universally accepted definition. Even so, this research has typically focused on affective aspects of empathic responding (i.e., sharing the emotional experience of another; see Decety & Jackson, 2004), though a great deal of attention has also been devoted to its cognitive characteristics as well (i.e., taking the perspective of another; e.g., Bakker, Shimazu, Demerouti, Shimada, & Kawakami, 2011; Schnell, Bluschke, Konradt, & Walter, 2011).

When it comes to the affective aspects of empathy, modern psychology researchers typically distinguish between self-oriented and other-oriented feelings (e.g., personal distress vs.

empathic concern; see Davis, 1983). Both types of feelings are believed to be triggered by emotional contagion—a process through which people converge emotionally with one another, as if one individual “catches” another’s emotion (Hatfield, Cacioppo, & Rapson, 1992). If an individual encounters and is affected by another’s distress, self-oriented feelings produce an “aversive emotional reaction . . . that is associated with the egoistic motivation of making oneself feel better” (Eisenberg, 2010, p. 126). Conversely, if another’s distress is shared in the form of other-oriented feelings, the experience is undergirded by motivation to help that other feel better. As Bernhardt and Singer (2012) describe it, “emotional contagion underlies affect sharing; this can be followed by other-oriented feelings such as compassion, sympathy, and empathic concern, which may further promote prosocial behavior” (p. 3). Such other-oriented affective states do not constitute the whole of empathy, of course, but are central nonetheless because they are believed to motivate prosocial behaviors (cf. Kim & Kou, 2014). Moreover, they are a key component of most descriptions of empathy (e.g., Scheler, 1954; Stein, 1989), including psychotherapeutic ones (Bozarth, 2009). In Stueber’s (2006)

¹California State University, Long Beach, USA

Corresponding Author:

Aaron Castelan Cargile, Department of Communication Studies, California State University, Long Beach, 1250 Bellflower Blvd. Long Beach, CA 90840-2407, USA.

Email: aaron.cargile@csulb.edu



words, “psychologists are not primarily interested in empathy as a specific cognitive mechanism of inner imitation . . . Instead, they tend to be interested in empathy as the psychological foundation for social relations and altruistic behavior” (p. 27). Provided this conceptual centrality then, affective empathy’s ability to motivate prosocial behavior has been widely studied.

Although the connection between affective empathy and altruism is complex, it has nevertheless been found to be demonstrably valid (Batson, Lishner, & Stocks, 2015; Eisenberg, Eggum, & Di Giunta, 2010). Among the most typical findings, laboratory participants with greater other-oriented concern express greater interest in and willingness to help others (e.g., Batson, Chang, Orr, & Rowland, 2002; Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007; Eisenberg et al., 1989). Longitudinal studies have helped to corroborate this relationship outside the laboratory (e.g., Yoo, Feng, & Day, 2013), and functional magnetic resonance imaging (fMRI) studies have helped to identify several neurological mechanisms of this relationship. Empathic concern has been associated with activity in particular neural regions (i.e., medial prefrontal cortex [MPFC] and anterior insula), and studies have linked enhanced activation of these regions to, among other things, a greater willingness to endure physical pain on behalf of a fellow ingroup member (Hein, Silani, Preuschhoff, Batson, & Singer, 2010), and the authoring of more prosocial emails to victims of social exclusion (Masten, Morelli, & Eisenberger, 2011). In these myriad ways then, the central status and importance of empathic concern (i.e., other-oriented affect) have been corroborated. In light of that significance, it is worth investigating what motivates empathic concern.

Empathic concern can be influenced by a number of both “trait” and “state” factors. Beginning with the former, numerous individual difference variables have been linked to greater empathic concern, including age (e.g., Sze, Gyurak, Goodkind, & Levenson, 2012), gender (e.g., Van der Graaff et al., 2014), genetic variation (e.g., K. E. Smith, Porges, Norman, Connelly, & Decety, 2014), emotion regulation style (e.g., Lebowitz & Dovidio, 2015), cultural background (e.g., Cassels, Chan, & Chung, 2010), and self-reported dispositional empathic concern (e.g., Singer et al., 2008). Similarly, a fair number of situational conditions have also been linked to increased affective empathy, including autobiographical memory sharing (Bluck, Baron, Ainsworth, Gesselman, & Gold, 2013), perceiving the other as in need (e.g., Lishner, Batson, & Huss, 2011), valuing the other’s welfare (e.g., Batson et al., 2007), detailed processing (Wolfin, Corneille, Yzerbyt, & Förster, 2011), and, most prominently, active imagining of the other’s plight (i.e., perspective taking; see Batson, 2009b). Given the variety of pathways to expanding empathy suggested by this research, a host of trainings and interventions have attempted to do just that: increase participant empathic concern for others.

In a review of 29 studies assessing seven different training methodologies, Lam, Kolomiro, and Alamparambil (2011) concluded that although cognitive empathy can be reliably improved, “very little is known about the trainability of the affective [empathy]” (p. 163). For example, although mindfulness training develops present moment awareness believed to encourage empathy-inducing perceptions (e.g., perceptions of need or detailed processing), studies have failed to reliably demonstrate its effect on affective empathy (e.g., Birnie, Speca, & Carlson, 2010; Block-Lerner, Adair, Plumb, Rhatigan, & Orsillo, 2007). Since 2011, however, a handful of studies have shown that other sorts of interventions can increase affective empathy, if only slightly.

One potential pathway to increased empathic concern is the development of empathic habits. Although empathic responding is, in part, genetically grounded, there is a large socio-cultural component as well. Thus, it is conceivable that levels of empathic concern could be shifted with practice. A study by Konrath et al. (2015) has recently assessed such a practice-based intervention, called “text to connect.” Participants in the “text to connect” group received a “high empathy” text message 6 times a day for 14 days (e.g., “Reflect on somebody close to you. What makes them feel happiest?”), while those in a control group were either sent similar, but self-focused messages (e.g., “Reflect on this question. What makes you better than others?”), or were not sent any text messages. Participants who were prompted to practice empathy during the 2-week period reported higher levels of emotional empathy for a distressed individual than those in either control group. The increase was small, yet it was significant and persisted after controlling for individual differences in dispositional empathy. A similarly small increase in empathic concern was observed among nursing students who underwent 3.5 hours of professional nonviolent communication training (Nosek, Gifford, & Kober, 2014). Through both instruction and role-play practice, this training was designed to help participants tune into others’ perspectives (see Rosenberg, 1999). It succeeded in this instance, and the results help demonstrate that affective empathy can indeed be increased through practice.

Alongside practice, research also suggests that affective empathy can also be increased through affect arousal. As mentioned earlier, emotional contagion appears to underlie empathic concern; thus, certain emotional states may trigger subsequent affective empathy (see Forgas, 2001). For example, Mallinckrodt et al. (2013; Study 1) found that an attachment security prime (i.e., imagine a loved one coming to your assistance) contributed to a small increase in participants’ empathic feelings beyond those engendered by a positive affect prime (i.e., imagine that you won the lottery). This study did not include a no-prime control group, but previous research suggests that positive affect itself may also increase affective empathy (Nelson, 2009). Affective empathy has also been observed to trigger additional affective empathy with respect to a second target (Cargile, 2016). Specifically,

this study found that an emotional video about a boy with cancer increased participants' affective empathy for the boy (relative to a neutral video) which, in turn, engendered additional affective empathy for an African American man recounting a true story of discrimination.

Just as some forms of positive affect have been found to increase affective empathy, so too have some forms of negative affect. For example, hypothesizing that personal pain would facilitate other-pain empathy, Xiao, Zhu, and Luo (2015; Study 1) exposed participants to ice-induced physical pain. Results showed that participants in the pain group reported slightly higher levels of state empathy (including affective empathy) than those in a no-pain, control group. Similarly, negative affect induced by psychosocial stress has been found to engender a small-to-moderate increase in emotional empathy for people pictured in emotional social scenes (Wolf et al., 2015). The explanation is that elevated levels of affective empathy may be the result of a prosocial-behavior-after-stress process (von Dawans, Fischbacher, Kirschbaum, Fehr, & Heinrichs, 2012). Thus, although it is still the case that we know relatively little about reliably enhancing affective empathy, this recent research adds to our understanding and suggests several potential methods that merit additional investigation.

Given the above-described candidate methods to enhance affective empathy, it is worth noting that not all are easily (e.g., professional nonviolent communication training) or ethically (e.g., personal pain) implemented. One method, however, shows promise as a convenient intervention: the emotional video. Emotional videos have been used in the lab, in classrooms, and across cultures to great effect (e.g., Hagemann et al., 1999; von Leupoldt et al., 2007). Provided this, as well as the mediated impact that one video has already demonstrated (Cargile, 2016), the aim of the present research is to further investigate the effect of this brief emotional video on empathic concern for a secondary other. Specifically, this article will address (a) whether this effect can be replicated across different educational settings (i.e., in a classroom setting and online) with different participant populations, (b) whether the effect persists when relevant covariates are controlled, and (c) whether the effect degrades over time.

Study 1

To address the above-listed questions, Study 1 was designed to replicate the previous findings of mediated impact for an emotional video in a classroom setting (Cargile, 2016). Unlike the prior study, however, the present one engaged relevant controls and conditions to help ensure that any difference in empathic concern for the secondary other was best explained by affect arousal, and not by some other mechanism. Specifically, this study controlled for dispositional empathic concern, as well as perceptions of police racial bias—an individual difference variable directly relevant to

the stories told by the secondary others (see the Appendix). In addition, situational empathic concern was assessed in relation to two different (secondary) others at 2 different times to detect the possible degradation of effect.

Although this study was not designed to identify the specific mechanism of affect arousal (i.e., no physiological data were collected), there are several possibilities, which all presumably degrade over time. For example, the emotional video used here has been demonstrated to increase viewers' levels of oxytocin (Barraza & Zak, 2009)—a neurohormone with robust links to empathy (Hurlemann et al., 2010; Rodrigues, Saslow, Garcia, John, & Keltner, 2009). If oxytocin were the mechanism of effect, it should fade entirely after 3 min (Zak, 2012). Alternatively, if the affective impact depended upon short-term memory, this too should decay (Ricker, Vergauwe, & Cowan, 2014) or be subject to interference (Lewandowsky, Oberauer, & Brown, 2009) over a short period of time. It is thus important to establish whether the hypothesized effect disappears after 10 min or whether it unexpectedly endures.

With the above-described aims and design, Study 1 tested the following two hypotheses:

Hypothesis 1: Participants shown the emotional video will report greater empathic concern (relative to control group participants) for a secondary other that is both mediated by empathic arousal and which is not explained by correlated individual differences.

Hypothesis 2: The controlled, mediated effect of the emotional video on empathic concern for secondary others will be significant for the assessment made immediately after showing the video and non-significant for the assessment made approximately 10 min later.

Method

Participants and Procedures

Participants were 118 undergraduate students at a large urban university in the Western United States, recruited in class to take part on a voluntary basis. Participants reported a mean age of 22.03 ($SD = 2.11$) and included 43 males and 73 females (two declined to state) from a variety of racial/ethnic backgrounds (31 Caucasian, 43 Hispanic, 23 Asian, 10 African American, 5 mixed ethnicity, 3 "Other," and 3 declined to state). After signing a statement of informed consent, participants completed demographic items and two trait measures in a brief survey packet (i.e., empathic concern and perceptions of police bias), after which they were randomly assigned to view either the control ($n = 65$) or experimental ($n = 53$) version of the video.

Following this, the control group was excused from the lecture hall while the experimental group viewed the video clip, listened to Speaker 1's story, and completed measures of state empathic concern. Afterward, the experimental

group was excused, and the control group engaged in identical procedures—except that they were shown the control version of the video. Finally, after approximately 10 min had passed, the experimental group returned to the classroom and, together, both groups listened to Speaker 2's story and completed a measure of state empathic concern. Following this protocol meant that the control group was provided only an approximate 4-min gap between their evaluations of Speaker 1 and Speaker 2, whereas the experimental group was provided 10 min. This unbalanced design was deemed suitable because the null impact of the control video was not expected to change in relation to the time gap.

Materials and Measures

Video stimuli. Because they have been successfully used in studies of affective empathy (Cargile, 2016) and subsequent altruism (Barraza, Alexander, Beavin, Terris, & Zak, 2015; Barraza & Zak, 2009), the experimental (i.e., emotional) and control (i.e., non-emotional) videos used here were clips edited from a brief feature produced by St. Jude Children's Research Hospital. Both videos portray the father of a 2-year-old boy who is dying of brain cancer. However, the experimental video (79 s duration) includes scenes of the child in the hospital and the father who is nearly brought to tears, whereas the control video (56 s duration) includes scenes of the child at a zoo with no mention of his illness.

As described earlier, affective empathy includes both self-oriented (i.e., personal distress) and other-oriented (i.e., empathic concern) reactions. The experimental video used here has been shown to increase both types of affective empathy in participants relative to the control video (Barraza & Zak, 2009). However, only other-oriented affective empathy has been linked to subsequent altruistic behavior (Barraza et al., 2015) and additional affective empathy with respect to a second target (Cargile, 2016). Thus, although the experimental video potentially engenders a complex emotional reaction, the focus here was on manipulating and studying the effects of other-oriented affective empathy (i.e., empathic concern).

Stories of police racial bias. As this study focused on enhancing empathic concern, a relevant question became, "empathic concern for whom?" Although there are many secondary others for whom enhanced empathic concern could be assessed, I chose individuals with stories most relevant to ongoing racial tensions in the United States: two African American men recounting true stories of discrimination and abuse at the hands of police officers. Frank and Reginald's stories were taken from a video series of oral histories (The Southern Coalition for Social Justice, n.d.). To make the storytellers as comparable as possible, only the audio was used, and both stories were edited to approximately 2 min in length (see the appendix).

Study measures. Following Barraza and Zak's (2009) protocol, empathic feelings for the boy (EFB) with cancer (i.e., other-oriented affective empathy) experienced in response to the video presentation were assessed by six adjectives (sympathetic, compassion, moved, tender, warm, soft-hearted) used especially in economic research and derived from A. Smith (1759/2006). Participants rated these adjectives from 0 (*did not feel this way at all*) to 4 (*felt this way very much*; $\alpha = .94$).

Empathic concern for the storyteller was measured using seven items adapted from the Empathic Concern subscale of the most widely used measure of empathy—the Interpersonal Reactivity Index (IRI; Davis, 1983). The IRI is a measure of trait empathy and the seven-item Empathic Concern subscale was used as intended, without alteration, at the outset of study participation ($\alpha = .77$). Previous research indicates that this subscale is the best, if not the sole (e.g., Krueger et al., 2013) predictor of state empathic concern among the four IRI subscales (i.e., Perspective Taking, Fantasy, Personal Distress, and Empathic Concern). As a result, only this subscale was used here. In addition, following the lead of others who have measured state empathic concern (e.g., Xiao et al., 2015), the seven IRI trait items were slightly modified to measure empathy for the storytellers; for example, the item "I often have tender, concerned feelings for people less fortunate than me" became "I had tender, concerned feelings for the speaker." The resulting state version of the Empathic Concern subscale exhibited even greater reliability than the trait version across both speakers (Speaker 1, $\alpha = .88$; Speaker 2, $\alpha = .92$).

Finally, to control for participant beliefs about police discrimination that would most likely affect their empathic concern for the specific speakers featured here, four items were used to measure trait perceptions of police racial bias (PPRB; Weitzer & Tuch, 2005). Unfortunately, the four-item measure exhibited poor reliability ($\alpha = .62$). Although dropping the reverse-coded item would improve reliability ($\alpha = .68$), all four items were retained to maintain consistency with respect to Study 2 (in which the measure exhibited high reliability). Finally, as noted in the literature review, age and gender are often associated with greater empathic concern, so they were assessed as potential covariates alongside both PPRB and trait empathic concern. Descriptive statistics and intercorrelations for all study variables are presented in Table 1.

Results

As indicated in Table 1, all potential covariates except age (i.e., PPRB, trait empathic concern, and gender) were significantly correlated with empathic concern for Speaker 1 (ECS1). Consequently, age was dropped from the analysis, and mediation models were estimated both with and without covariates. A series of independent sample *t* tests indicated that although there were no significant differences between the control and experimental groups with respect to PPRB and gender, the experimental group had higher levels of trait

Table 1. Correlations Among and Descriptive Statistics for Study 1 Variables.

	<i>M (SD), range</i>	ECS1	ECS2	EFB	EC	PPRB	Gender	Age
ECS1	5.73 (1.09) 3.29-7.00		.73**	.45**	.53**	.26**	.23*	-.02
ECS2	5.56 (1.18) 1.43-7.00			.34**	.39**	.23*	.15	.02
EFB	2.76 (1.01) 0-4.00				.61**	.08	.21*	.11
EC	5.46 (0.86) 2.86-7.00					.26**	.32**	.14
PPRB	5.36 (1.06) 3.00-7.00						.12	.04
Gender	1.63 (0.49) 1.00-2.00							-.12
Age	22.03 (2.11) 18-31							

Note. For Study 1, *ns* range from 116 to 118 due to occasional missing data. ECS1 = empathic concern for Speaker 1; ECS2 = empathic concern for Speaker 2; EFB = empathic feelings for the boy; EC = trait empathic concern; PPRB = perception of police racial bias. * $p < .05$. ** $p < .01$.

empathic concern ($n = 53$, $M = 5.68$, $SD = 0.87$) than the control group, $n = 65$, $M = 5.29$, $SD = 0.82$; $t(116) = 2.55$, $p = .012$, 95% confidence interval [CI] = [.08, .71]. For this reason, trait empathic concern was never excluded as a covariate in the analyses.

To test whether the emotional video had a mediated effect on ECS1, Model 4 in SPSS PROCESS (Hayes, 2013) was estimated using unstandardized coefficients and bootstrapping with 10,000 resamples (including only trait empathic concern as a covariate). The emotional video was found to influence EFB ($b = .65$, $SE = .14$, $p = .000$, 95% CI = [.36, .92]), which in turn affected ECS1 ($b = .24$, $SE = .12$, $p = .041$, 95% CI = [.010, .470]). The model did not produce a significant direct effect of the emotional video on ECS1 ($b = -.089$, $SE = .19$, $p = .64$, 95% CI = [-.47, .29]), but did indicate a significant indirect effect ($b = .15$, $SE = .084$, 95% CI = [.029, .374]). When PPRB and gender were included as covariates, the non-significant result (i.e., video direct effect on ECS1, $b = -.092$, $SE = .19$, $p = .63$, 95% CI = [-.48, .29]), as well as the significant results remained unchanged (i.e., video effect on EFB, $b = .67$, $SE = .14$, $p = .000$, 95% CI = [.38, .95]; EFB effect on ECS1, $b = .26$, $SE = .12$, $p = .028$, 95% CI = [.030, .498]; and video indirect effect on ECS1; $b = .18$, $SE = .092$, 95% CI = [.022, .385]).

The same approach was used to assess the impact of the emotional video on empathic concern for Speaker 2 (ECS2), who was evaluated approximately 10 min after seeing the video. In this case (and controlling only for trait empathic concern), EFB did not affect ECS2 ($b = .21$, $SE = .13$, $p = .11$, 95% CI = [-.055, .489]). Consequently, the emotional video had neither a significant direct ($b = .11$, $SE = .23$, $p = .64$, 95% CI = [-.34, .56]) or indirect ($b = .14$, $SE = .09$, 95% CI = [-.009, .373]) effect on empathic concern for the speaker. When PPRB and gender were included as

covariates, the indirect effect of the video on empathic concern for the speaker remained non-significant ($b = .16$, $SE = .10$, 95% CI = [-.012, .392]).

Discussion

This study replicated a small but significant indirect effect of the emotional video on empathic concern for a secondary other found in earlier research (Cargile, 2016). Moreover, it confirmed both Hypotheses 1 and 2 by finding both that this effect persisted when controlling for relevant covariates and that the effect diminished over time. Despite the fact that experimental and control group participants possessed unequal levels of dispositional empathic concern, the use of covariates in this study has helped confirm the first hypothesis by demonstrating a mediated effect caused by the video and not by the measured individual differences. In addition, these results also confirmed the second hypothesis by demonstrating a degradation of this mediated effect over an approximate 10-min period. This suggests that affect arousal is the mechanism likely responsible for the video's effect on speaker empathic concern. Even so, it is worth noting that the size and significance of the effect degraded only minimally over this period.

Although this study successfully addressed questions about the source and time frame of this mediated effect, it is important to determine whether this effect can be replicated in other pedagogical contexts, with different participant populations. Specifically, as more learning and training shifts from traditional classrooms to online environments, an emotional video may have less (or perhaps more) success in arousing affect and engendering subsequent empathic concern. In addition, it is worth assessing the generalizability of the effect shown here; will it be observed among a less

Table 2. Correlations Among and Descriptive Statistics for Study 2 Variables.

	<i>M (SD), range</i>	ECSI	EFB	EC	PPRB	Gender	Age
ECSI	4.57 (1.34) 1.33-6.43		.54**	.56**	.23**	.24**	-.11
EFB	2.85 (1.15) 0-4.00			.69**	.24**	.17*	-.08
EC	5.22 (1.59) 1.00-7.00				.09	.19*	-.02
PPRB	4.82 (1.62) 1.00-7.00					.04	-.01
Gender	1.41 (0.49) 1.00-2.00						.16*
Age	35.01 (10.08) 20-67						

Note. For Study 2, $n = 145$. All variables are scored such that larger values indicate increased levels of the construct. ECSI = empathic concern for Speaker 1; ECS2 = empathic concern for Speaker 2; EFB = empathic feelings for the boy; EC = trait empathic concern; PPRB = perception of police racial bias. Gender: 1 = male; 2 = female.

* $p < .05$. ** $p < .01$.

ethnically diverse and older participant population? To address these questions, a second study was conducted.

Study 2

As described above, Study 2 was designed to reassess the first hypothesis in an online environment with a different participant population. To do this, the following method was engaged.

Method

Participants were 145 adults living in the United States and recruited via Amazon MTurk to participate in the study in exchange for payment. The study was hosted online and administered via Qualtrics. Participants reported a mean age of 35.01 ($SD = 10.08$) and included 85 males and 60 females, 85% of whom identified as Caucasian (124 Caucasian, 4 Hispanic, 6 Asian, 8 African American, 2 mixed ethnicity, 1 "Other"). After completing a statement of informed consent, participants completed demographic items and the two trait measures (i.e., empathic concern, $\alpha = .96$; and four-item perceptions of police bias, $\alpha = .91$), after which they were randomly assigned to view either the control ($n = 61$) or experimental ($n = 84$) version of the video. After viewing the video, participants reported their EFB using the same six-item measure as in Study 1 ($\alpha = .98$) and then immediately listened to the audio recording of Speaker 1 (Frank) featured in the first study. Finally, they completed the seven-item state empathic concern measure in relation to Speaker 1 ($\alpha = .81$).

Results

As before, all potential covariates except age (i.e., PPRB, trait empathic concern, and gender) were significantly correlated with ECSI (see Table 2). Consequently, age was

again dropped from the analysis, and mediation models were again estimated both with and without covariates. Unlike Study 1, a series of independent sample t tests indicated that there were no significant differences between the control and experimental groups with respect to PPRB, gender, or trait empathic concern; thus, no statistical controls were implemented in the model without covariates.

To test whether the emotional video had a mediated effect on ECSI, Model 4 in SPSS PROCESS (Hayes, 2013) was estimated using unstandardized coefficients and bootstrapping with 10,000 resamples. The emotional video was found to influence EFB ($b = .46$, $SE = .19$, $p = .016$, 95% CI = [.088, .839]), which in turn affected ECSI ($b = .62$, $SE = .08$, $p = .000$, 95% CI = [.45, .79]). The model did not produce a significant direct effect of the emotional video on ECSI ($b = .097$, $SE = .20$, $p = .62$, 95% CI = [-.29, .49]), but did indicate a significant indirect effect ($b = .29$, $SE = .13$, 95% CI = [.074, .578]). When PPRB, gender, and trait empathic concern were included as covariates, the non-significant result (i.e., video direct effect on ECSI, $b = .25$, $SE = .19$, $p = .19$, 95% CI = [-.12, .63]), as well as the significant results remained unchanged (i.e., video effect on EFB, $b = .50$, $SE = .13$, $p = .000$, 95% CI = [.23, .76]; EFB effect on ECSI, $b = .24$, $SE = .12$, $p = .044$, 95% CI = [.007, .466]; and video indirect effect on ECSI, $b = .12$, $SE = .070$, 95% CI = [.006, .288]).

Discussion

Study 2 replicated the small but significant indirect effect of the emotional video on empathic concern for a secondary other, this time in an online context with a predominantly White, non-student sample. The mediated path in the uncontrolled model indicated that this video intervention increased participant empathic concern scores about one third of a point ($b = .29$). Although the size of this effect was reduced

in the controlled model, it nevertheless remained statistically significant, thereby indicating that individual differences correlated with empathic concern cannot fully explain the observed differences in participants' empathic reactions to Frank's story of race-based discrimination.

General Discussion

Five years ago, Lam et al. (2011) noted that very little was known about reliably increasing affective empathy in students and trainees. Since that time, research has pointed to several different methods that can increase empathic concern through practice, negative affect arousal, or positive affect arousal. Despite the uniformly small effect sizes of such interventions, the present research sought to assess the reliability and potential boundary conditions of one such intervention—a brief emotional video featuring a boy diagnosed with cancer.

Study 1 demonstrated that the video succeeded in indirectly increasing empathic concern for an African American victim of police abuse among an ethnically diverse student sample. When controlling for three relevant trait characteristics (i.e., perceptions of police racial bias, gender, and trait empathic concern), participants who viewed the emotional video reported more EFB with cancer, and greater subsequent empathic concern for the victim of police abuse, compared with participants who saw an unemotional version of the video. When, approximately 10 min later, participants rated their empathic concern for a second African American victim of police abuse, the difference across conditions was marginally non-significant. This seems to suggest that the potency of positive affect arousal degrades over time, though not as much as anticipated. This merely marginal degradation suggests that the potency of positive affect arousal may be somewhat sustainable.

By finding the same mediated effect in the same classroom setting as previous research (Cargile, 2016), Study 1 demonstrated the reliability of this emotional video to engender empathic concern for secondary others. In addition, analysis of covariance indicated that individual differences could not, by themselves, account for all of the between-group variation. The use of control variables here thus further implicated the emotional video as a source of the increased empathic concern. This, however, still left open the question about whether the effect of the video would replicate in other settings and among other populations. To address this question, Study 2 was conducted online among a population of near-racially homogeneous adults. Again, the results were similar, thereby establishing the consistency of this small effect.

Together, these studies clearly demonstrate that increasing empathic feelings for a boy with cancer through use of an emotional video subsequently leads to a slight increase in empathic concern for an African American victim of police discrimination. The effect of this brief, convenient, positive-affect intervention is in line with other practice-based and negative-affect interventions. Five years ago, we knew very

little about the trainability of affective empathy. Today, we know that there are perhaps several mechanisms by which to engender it and that the impact of these interventions appears to be limited.

Despite the limited size of this positive-affect intervention, the duration of impact may be longer than anticipated. Although the specific mechanism of affect arousal is unknown here, it was hypothesized not to endure beyond a 10-min period because the possibilities that were initially imagined (i.e., oxytocin, short-term memory) degrade, decay, or are interfered with in relatively quick succession. Thus, although Hypothesis 2 was confirmed (i.e., the effect was indeed insignificant at Time 2), questions remain. In particular, it is worth considering what exactly constitutes the state of positive affect engendered here and, relatedly, how long it may last.

Physiologically speaking, positive affect is associated with many different body states. It has been tied to lower systolic blood pressure (Steptoe, Gibson, Hamer, & Wardle, 2007), increased heart rate variability (Kop et al., 2011), diurnal cortisol decline (Lai et al., 2005), and increases in secretory immunoglobulin A (Hucklebridge et al., 2000), among other indices (see Dockray & Steptoe, 2010). Thus, it is possible that the emotional video engendered a host of body state changes that endured up to 10 min.

In addition, the video may have also served as a prime for subsequent empathic responding that was not subject to the limits of short-term memory. As Custers and Aarts (2005) note, “positive affect [primes play] a key role in nonconscious goal pursuit” (p. 129), and consciously perceived primes can show effects after a 24-hr period (Srull & Wyer, 1980). Thus, it is possible that the video engendered a mode of empathic responding that was accessible both immediately after the presentation, as well as 10 min later. Future research should address plausible mechanisms of the somewhat enduring effect seen here, as well as investigate possibilities of increasing its effect size. Although the small effect was handily achieved (i.e., via a brief video) and is consistent with other affective empathy interventions, it would be beneficial to augment it, perhaps via longer presentations, different subject matter, and/or different message characteristics (e.g., music, editing features, etc.).

Finally, as with any study, there are limitations to consider. Although empathic concern can be measured behaviorally (e.g., Moran & Diamond, 2008) and physiologically (e.g., Silva & Gonçalves, 2011), only self-report measures were used here. In addition, although the two testimonies about police racial bias used here were comparable in all respects, they were nevertheless two different speakers providing two different testimonies. Thus, it is possible that speaker differences triggered the differences in empathic concern, and not the difference in time of presentation. It is also plausible that some variety of compassion or distress fatigue (Klimecki & Singer, 2012) could have diminished empathic concern for the second speaker, as participants had already heard similar story moments earlier. Despite these

limitations, the two studies described here have nevertheless succeeded in further outlining the promise and possibility of engendering empathic concern for others, in others.

Appendix

Speaker 1 (Frank's) Testimony

Well, I was on my way to my second job. Once I arrived there and exited my car. I happened, I noticed a police car. He came around to the driver's side, told me to come out the car. I was like, "For what? What do I do wrong?" He was like, "Step outside the car. I gotta take precautions. I gotta put you in cuffs." And I was like "For what? What did I do wrong?" Then he was like, "Put your hands on the car. Spread your legs." He finally put me in handcuffs; then he told me to lay down on the ground. I said "For what?" He forcibly pushed me, my whole body on the ground, lay me all the way on the ground. And that's when back up had came and the officer had put the taser to my neck. When I guess I was completely down, that's when the officer mushed me down, you know, dirty up my face. He never told me what I did.

He kept saying, "Is your name such and such?" I was like, "No, that's not my name. Why you keep calling me that? That's not . . ." He said some name, I don't remember the name, but it wasn't mine and he had my license so it show who I was. I think if you stop me, I should be able to ask you why you stop me and get an answer. So now you just racially profile me because I'm Black. It's not the first time. It's like every time an officer see me, they want to stop me. How they searching now it's like you getting sexually harassed, humiliated, and everything 'cuz now you got everybody coming out, looking . . . Now you done brandished my name. You done tarnished my name. Now, everybody's looking at me, "oh! he a criminal!"

Speaker 2 (Reginald's) Testimony

Went to visit my mother and grandmother as I did every day. I saw the officer ride by. I gave my mother the keys and a kiss. I got in my SUV, I turned around and I proceeded to go home. Put my turn signal on, pulled up in the front of the store, and I had the blue lights on me. The officer got out . . . I got out of my vehicle and the officer got out his vehicle and asked me to get back in and I asked him why am I being stopped and he said get back in the vehicle. And I asked him why he stopped me again and he told me "shut up!" I think I have a right to ask you why am I being stopped. He stood there for a minute and he say, "You know you're comin' out of a known drug area?" I was like, "My mother live in that neighborhood" And I asked him, "What does that mean? Everybody ride through a drug neighborhood is subjected to being stopped?" "You know, you didn't see me make no hand transactions, nobody walked up to my vehicle, you know there's just no reason for it." So, I went to light my cigarette and he grabbed my left arm and pulled it out the door, when my arm was being bent back toward the back of

my vehicle. And I asked him, "Why you putting your hands on me?" And I asked him what was my badge number and before I could get out "badge number," I was tased. And I was looking the opposite way, you know.

It felt like I was stopped because I was a Black man coming out of a known drug area. So, uh, to me that's racial profiling. There was police brutality happened to me for nothing. I didn't see the taser coming or nothing, I just felt it. And like I said, I urinated on myself, um, that was humiliating because the peoples at the store was watching, and I'm sure they could see. It was just a humiliating, probably the most humiliating day of my life.

Acknowledgments

The author would like to thank Sasha Kuczynski for her help with data collection, data entry, and proofing. Additionally, I would like to thank Dr. Paul Zak for sharing the stimulus and control videos used in his research.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research and/or authorship of this article.

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Author Biography

Aaron Castelán Cargile holds a PhD in Communication Studies (U.C. Santa Barbara). His ongoing participation in dialogues about race have led him to search for humanistic, compassionate, and pragmatic responses to the challenges of facilitating such interactions. Most recently, his research has appeared in the *Journal of Language and Social Psychology*, *Race and Social Problems*, and the *International Journal of Intercultural Relations*.