PSIHOLOGIJA, 2026, Online First UDC:

 DOI: https://doi.org/10.2298/PSI250929019C

Measuring Intergroup Empathy Bias: Systematic Narrative Review*

[1]Marija V. Čolić & [2]Iris Žeželj

[1]Institute of Criminological and Sociological Research, Belgrade, Serbia

[1]Faculty of Media and Communications, Department of Psychology, Belgrade, Serbia

[2]Faculty of Philosophy, Department of Psychology, University of Belgrade, Serbia

Although empathy is generally treated as a prosocial force, research on intergroup empathy bias (IEB) shows that empathic responses are often stronger toward ingroup than outgroup members, and that such selectively distributed empathy can produce negative outcomes. To clarify how this arises, we conducted a systematic review of IEB studies focusing on how empathy is elicited and measured. Following PRISMA guidelines, we identified 120 studies across 85 articles. Neuroscientific studies were the most numerous (58% of the articles) and typically used physical pain stimuli to elicit empathy, consistently detecting IEB in neural responses but rarely in explicit ratings. Whether bias was observed in behavioral studies depended on the task. The literature is characterized by problematic assumptions of equivalence across task types, unexplored connections to related fields, and underdeveloped explanations of neural-behavioral discrepancies. We recommend critically evaluating operational definitions before discussing practical applications.

* Corresponding author: Marija V. Čolić; marija.colic@fmk.edu.rs

This is an early electronic version of the manuscript that has been accepted for publication in Psihologija journal. Please note that this is not the final version of the article and that it can be subjected to minor changes before final print. Please cite as: Čolić, M.V., & Žeželj, I. (2026). Measuring Intergroup Empathy Bias: Systematic Narrative Review. *Psihologija.* Advance online publication. https://doi.org/10.2298/PSI250929019C

Keywords: intergroup empathy bias, parochial empathy, empathy gap, empathy measurement, operational definitions

Highlights

- Neuroscience finds consistent neural ingroup bias in empathy for pain.
- Explicit behavioral ratings often fail to show this empathy bias.
- Conceptual and operational vagueness of empathy hinders integration of IEB findings.
- Real-world implications of lab-based empathy bias studies are premature.

Introduction

Empathy is one of the infamously elusive psychological concepts, claimed to have as many definitions as there are authors who study it (Batson, 2009; Cuff et al., 2014; Hall & Schwartz, 2018). Divergent phenomena fall under "empathy", from motor mimicry (how much we imitate facial expressions of others) to self-reported imaginative identification with film characters. While intuitively related, these concepts often involve fundamentally different psychological processes.

Attempts to impose conceptual order on the empathy literature have produced summary definitions listing its qualifying attributes. For example, an analysis of Cuff and colleagues (2014) yielded the following:

> Empathy is an emotional response (affective), dependent upon the interaction between trait capacities and state influences. Empathic processes are automatically elicited but are also shaped by top-down control processes. The resulting emotion is similar to one's perception (directly experienced or

imagined) and understanding (cognitive empathy) of the stimulus emotion, with recognition that the source of the emotion is not one's own. (Cuff et al., 2014, p. 7)

Others have argued that such definitions only contribute to the conceptual confusion and instead advocate for creating a taxonomy of empathy-related phenomena or abandoning the general term in favor of more specific concepts (Decety & Cowell, 2014; Hall & Schwartz, 2018; Zaki & Cikara, 2015). Hall and Schwartz (2018) demonstrate that even within a single field, researchers fundamentally disagree on which specific components constitute empathy, and operationalizations routinely fail to correspond to stated conceptual definitions. This suggests that the problem is not merely terminological but structural: the umbrella term "empathy" does not refer to a coherent set of processes, and little is gained by retaining it as a superordinate label. In the present review, we therefore do not treat empathy as a unified construct to be defined, but as a family of heterogeneous operationalizations to be examined and compared – precisely because clarifying what is actually being measured is the precondition for any meaningful synthesis. Empathy is particularly problematic as an umbrella term for several reasons: (1) the concept is stretched across fundamental and applied scientific disciplines, which exacerbates miscommunication; (2) scientists use empathy to explain fundamental questions regarding human social life – how we get to know the internal states of others and how we use that knowledge to navigate the social world – and conceptual vagueness is hindering those aims; and (3) in both scientific and lay explanations of human behavior, empathy often carries moral connotation and remains pervasively used as an explanatory concept, despite the existence of well-developed theoretical frameworks that account for social understanding without relying on empathy at all (e.g., theory of mind, mentalizing, perspective-taking), suggesting that its popularity reflects cultural and moral appeal rather than unique explanatory power. Ignoring conceptual heterogeneity in empathy research creates a false

impression of equivalence and can mislead policy. In an attempt to answer the call for creating a taxonomy of empathies, we systematically review a narrower empathy-related concept – intergroup empathy bias, focusing particularly on empathy-eliciting tasks and empathy measurement.

Intergroup empathy bias powerfully illustrates the contradictions of empathy. On the one hand, empathy-related phenomena are well documented to be positively related to different forms of prosocial behavior and negatively related to different forms of antisocial behavior in intergroup contexts (Eisenberg et al., 2010). For this reason, empathy became one of the key constructs in intergroup relations research. On the other hand, a growing number of studies point out that empathy has limits, often drawn along group lines (Cikara et al., 2011), inviting us to carefully analyze and reconsider the idea that more empathy is always better.

Intergroup empathy bias (Cikara et al., 2011; Vanmann, 2016; Fourie et al.2017) is differential empathic response toward members of our own group compared to another group, ranging from decreased sensorimotor resonance to pain of the outgroup (e.g. Avenanti et al., 2010) to difficulties understanding outgroup members' mental states (e.g. Adams et al., 2010). This phenomenon seems to have been prominently studied in neuroscience (e.g. Cikara et al., 2011; Fourie et al., 2017), with research surging following the discovery of brain regions with resonant properties.

Following the core concepts of social identity theory (Tajfel & Turner, 2004; Hornsey, 2008), we would expect empathic responses to be biased in favor of the ingroup as a consequence of group categorization and identification. Moreover, the seminal socio-psychological papers on bias explain ingroup favoritism as "the extension of trust, positive regard, cooperation, and *empathy* (emphasis added) to in-group, but not out-group, members is an initial form of discrimination…" (Hewstone, 2002, p. 579). Why then have we only recently started to acknowledge the "dark side" of empathy?

One reason may be that neuroscientific explanations carry significant weight, especially among non-experts (Weisberg et al., 2008), generating considerable public interest. Additionally, identifying intergroup bias in empathy for physical pain is especially alarming, as pain – a universal human experience – was hypothesized to elicit an automatic empathic response in the observer (e.g., Preston & De Waal, 2002). Intergroup empathy bias studies show that this response is not as universal as we thought, but is instead sensitive to social identity.

Besides offering a novel perspective on the phenomenon, neuroscience studies circumvent the social desirability issue in empathy measurement. However, they typically employ simple stimuli and tasks, limiting the ecological validity and generalizability. This is especially problematic when studying complex behaviors that unfold in and are defined by social context (Tingley, 2006). In social science, neuroscience findings are valuable when they generate specific, testable hypotheses that build on and critically review existing knowledge (Tingley, 2006). Thus, a critical issue is how closely intergroup empathy bias research reflects human behavior as it unfolds in everyday life.

The impact of intergroup empathy bias studies extends well beyond their immediate scientific context – they shape our understanding of empathy as an umbrella term, and inform hypotheses about intergroup violence (e.g., Cikara, 2015) and intergroup helping behavior (Eisenberg et al., 2010). Moreover, they influence discussions in remotely related fields such as law (e.g., debates for and against capital punishment; Johnson et al., 2016) and technological intervention design (see, e.g., Bertrand et al., 2018). Given this impact, before suggesting practical applications or banishing empathy from moral decision-making (Bloom, 2016), we must evaluate how suitable and applicable intergroup empathy bias studies are to real-world behavior (Ijzerman et al., 2020).

The goal of this paper is to explore and dissect the concept of intergroup empathy bias in studies measuring differential empathic responses to ingroup and outgroup members. Our main focus is on operational definitions of empathy and bias – specifically, how empathy is elicited and measured, and which groups elicit bias. Clarifying how empathy is operationalized is a precondition for understanding when and why empathic responses are biased; the question of motivated and context-dependent empathy therefore emerges as both a motivation for this operational analysis and its result. We aim to illustrate which "empathies" are investigated in intergroup empathy bias studies and summarize results across measurement approaches. This review is systematic, as we focused on a comparatively narrow research problem, followed the formal guidelines to identify studies of interest, and described and contrasted them in a quantitative manner. It is also narrative, as we used qualitative synthesis to describe the concept of interest.

Method

Procedure

The literature search followed the PRISMA2020 guidelines (Page et al., 2021). The original search was conducted in December 2021 as part of the first author's PhD thesis and updated in February 2026 prior to submission to capture more recent studies. We searched the databases ScienceDirect, PsycINFO, and Google Scholar, using the following sets of terms: (intergroup OR ingroup) AND (empathy) AND (bias OR gap), (parochial) AND (empathy), (empathy) AND (bias) AND (race OR gender OR sex OR ethnicity OR nationality OR socioeconomic status OR sexuality OR sports fans). The search strategy for each database and the removal of duplicate records are described in Supplement A.

After excluding duplicate and irrelevant records, 393 entries were assessed for eligibility. Inclusion criteria were as follows: (1) differential empathic response to ingroup and outgroup targets was (1a) measured, and (1b) the main effect of group identity on empathy was reported, (2) studies were conducted on adult populations, and (3) written in English or Serbo-Croatian. We opted for inclusiveness: (1) we included unpublished theses; (2) every phenomenon the authors explicitly labeled as an empathic response was eligible. In sum, we included 85 reports with 120 studies in the review. The PRISMA2020 summary flow diagram is presented in Figure 1. Supplementary tables can be found in Supplement A.

Analytical Strategy

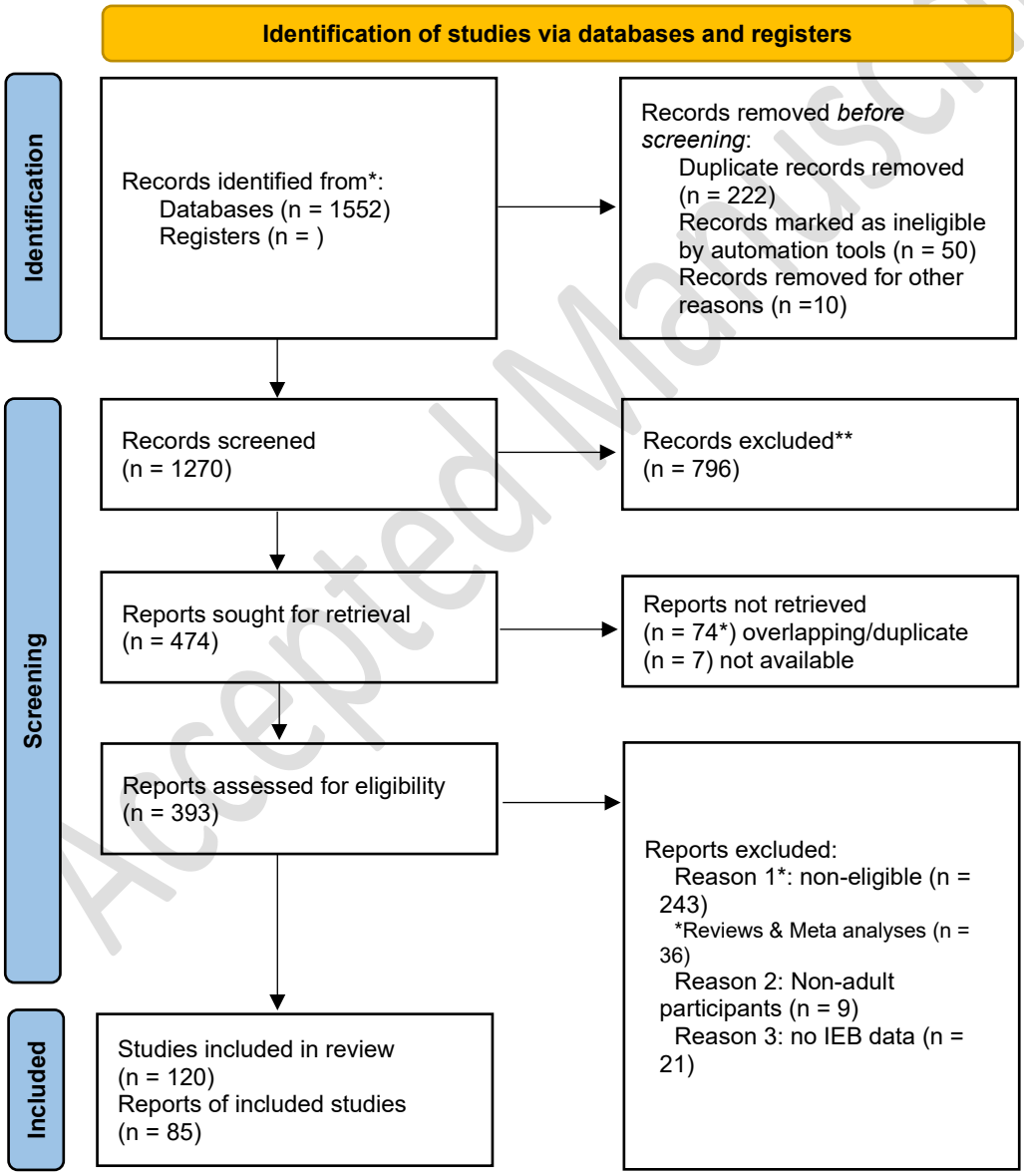
The articles in which empathy was assessed only via behavioral indicators (explicit conscious responses) were typically multi-study, whereas the articles in which empathy was assessed via psychophysiological activity (usually brain activity – electrical or metabolic – registered via neuroimaging techniques such as ERP, EEG, fMRI, but also skin conductance and pupil dilation) were typically single-study. The number of psychophysiological, especially neuroscientific, studies was substantial; we chose to present them separately because we believe it is important to contrast how empathy was conceptualized in studies that measure it directly ("behavioral") vs. indirectly ("psychophysiological"). As physical pain holds a special status among empathy-eliciting events – it is unambiguous, universal, a basic human experience, and supposedly automatically processed (Preston & De Waal, 2002) – we classified the studies into (1) physical pain and (2) non-physical empathy studies within each group.

For every study, we extracted the empathy-eliciting tasks, empathy measures, and groups used to elicit bias, and grouped them meaningfully where possible. We also recorded the study design, sample type, and sample size. In addition, we recorded whether an intergroup

empathy bias was registered. The first author conducted the coding. For psychophysiological studies, we additionally analyzed whether both behavioral and neural indicators of bias were recorded, whether they corresponded or not, and how their (non-)correspondence was addressed in the article.

Figure 1

Prisma2020 diagram for intergroup empathy bias studies



Results

Psychophysiological Studies

We identified 58 studies in 49 reports measuring empathy via psychophysiological signals, primarily neural activity, published between 2008 and February 2026. Except for seven reports, each article included a single study. Table 1 summarizes the characteristics of psychophysiological intergroup empathy bias studies. Table 2 provides a task breakdown by study type.

Empathy for Physical Pain

In 48 of 58 studies (83%), participants observed targets experiencing physical pain. In a typical experiment, participants viewed painful and neutral stimuli depicting ingroup and outgroup targets while brain activity was recorded (usually via ERP or fMRI). Most commonly, studies used images of painful vs. neutral facial expressions (37.5%), followed by needle penetration vs. Q-tip touch applied to neutral faces (21%) or hands (19%) of ingroup and outgroup targets. We labeled the latter two stimuli "repetitive painful events," as they repeatedly used the same stimulation (typically needle vs. Q-tip). Another 17% varied painful and neutral hand or foot events (e.g., knife cuts, paper cuts, fingers hitting furniture), sometimes followed by painful faces.

In all studies, psychophysiological responses to others' pain were the primary measure of empathy, and ingroup bias was almost universally observed. In more than a third (37.5%) of the studies, behavioral indicators of empathy were either absent or limited to classification accuracies and RTs, often without clear interpretation. Among studies with explicit behavioral

Table 1

Psychophysiological studies of ingroup empathy bias: Study characteristics

Studies (Papers)	Physical pain 48 (40)	Miscellaneous 10 (10)
Empathy-eliciting tasks	painful vs neutral facial expression (18) repetitive painful vs neutral facial stimulation (10) repetitive painful vs neutral stimulation on hands/feet (9) variable painful vs neutral stimulation on hands/feet (8)* miscellaneous (3)	emotionally painful visual content (7) misfortunes (1) observing and producing action (2)
Behavioral responses	no behavioral response (6) only RT/classification accuracy (12) RT (22), classification accuracy () explicit ratings (30) pain intensity (27), self-unpleasantness (17)	no behavioral response (3) general affective response (1), empathic concern & personal distress (3), empathic sadness (1), general empathy (2)
Scanning task	passive watching (10) classification tasks (race/pain/orientation) (27) ratings during scanning (7)	passive watching (2) observing and producing action (2) during scan rating (6)
Design	within subject (47) between subject (1)	within subject (10)
Sample	N = 16 to 164, M ≈ 42, Mdn ≈ 34 students (41), general population (4), deaf individuals (1), genocide survivors (2)	N = 21 to 178, M ≈ 58, Mdn ≈ 37 students (7), general population (1), genocide survivors (2)
Group	racial (37) national (2), religious (2), species (2) disability (1), political (1), rival (1), minimal (1), regional (1)	racial (7) national (2) minimal (1)
Bias	Neural ingroup empathy bias (42) no bias (4) ambiguos empathy bias (2) Behavioral- Explicit ratings ingroup empathy bias (10) no bias (20)	Neural ingroup empathy bias (10) Behavioral - Explicit ratings ingroup empathy bias (4) no bias (3)

Table 2

Type of stimuli by type of study in psychophysiological studies

	stimuli	EEG	ERP	fMRI	SCR	tDCS	TMS	MEG	Pup.	total
physical pain	facial expressions of pain		11	3		1		1	2	18
	painful events on neutral face (repetitive)		4	6						10
	painful events on hands (repetitive)	3		3	2		1			9
	painful events on limbs (variable)		5	1						6
	facial expressions + pain on limbs		1	1						2
	painful events: other		1	1	1					3
mis cell ane ous	observing and producing action	2								
	emotionally painful visuals	1		6						
	misfortunes			1						
	total	6	22	22	3	1	1	1	2	58

Note. EEG – electroencephalography; ERP – event-related potentials; fMRI – functional magnetic resonance imaging; tDCS – transcranial direct current stimulation; TMS – transcranial magnetic stimulation; SCR – skin conductance response

measures (62.5%), most used pain intensity ratings (90%), often alongside self-unpleasantness ratings (57%).

During scanning, ratings were collected in 25% of the studies, the task was passive viewing in another 25%, and 50% employed race or pain classification tasks unrelated to empathy. Explicit ratings, when included, were obtained post-scan.

Racial groups were used to elicit bias in 78% of the studies. A breakdown of behavioral results from physical pain studies, by the types of tasks used to elicit empathy and the groups used to elicit bias, is presented in Table 3.

In studies with explicit ratings, ingroup bias was found in one-third of studies (33%). In racial groups, the ratio of found-to-not-found bias matches the total ratio at 27.3%, whereas in non-racial groups, 50% reported bias, although such studies were far fewer.

Bias in ratings varied by task type: it was almost absent in facial expression and variable hand/foot paradigms, but was reported in about 50% of repetitive event studies. However, bias did not differ by rating type: it appeared in one third of studies for both pain intensity and self-unpleasantness.

About 50% of physical pain studies analyzed reaction times during race classification (8), pain classification (8), both (4), or painfulness ratings (2); 20% of studies also examined classification accuracy. In race-classification tasks, RTs were slower for painful (vs. neutral) stimuli, and ingroup bias was defined as especially slow responses to ingroup pain. In pain-classification tasks, the expected pattern was less clear; some authors interpreted longer RTs for outgroup pain as bias. All but one study using only race classification found ingroup RT bias, whereas only one using pain classification alone or combined tasks showed clear bias; findings for painfulness-rating RTs were mixed. Classification accuracy was generally high, and most studies showed no ingroup empathy bias.

Table 3

Ingroup empathy bias by type of stimuli and type of groups: Ratings

	stimuli	racial			non-racial			total			
		Y	N	?	Y	N	?	Y	N	?	total
physical pain	facial expressions of pain	/	8*	9	1	/	/	1	8	9	**18**
	painful events on neutral face (repetitive)	3	2	4	/	1	/	3	3	4	**10**
	painful events on hands (repetitive)	3	3	2	/	/	1	3	3	3	**9**
	painful events on limbs (variable)	/	3*	/	/	2	1	/	5	1	**6**
	facial expressions + pain on limbs	/	/	/	2	/	/	2	/	/	**2**
	painful events: other	/	/	/	1	1	1	1	1	1	**3**
	physical pain - total	6	16	15	4	4	3	10	20	18	**48**
misc.	emotionally painful visuals	4	1	1	/	1	/	4	2	1	**7**
	misfortunes	/	/	/	/	1	/	/	1	/	**1**
	observing and producing actions	/	/	2	/	/	/	/	/	2	**2**
	miscellaneous - total	4	1	1		1		4	3	3	**10**
	total	**10**	**17**	**18**	**4**	**6**	**3**	**14**	**23**	**21**	**58**

Note. y – bias registered; n – bias not registered; ? – no ratings; * – outgroup bias; misc. - miscellaneous

We compared behavioral ingroup empathy bias in studies with explicit empathy ratings to psychophysiological bias. Divergence was found in 60% of studies – ingroup bias found in neural signals but not in ratings – whereas 40% showed concordance (10 with bias in both measures, 2 in neither). Divergence or concordance was not addressed in 50% of the studies. Among studies addressing divergence, social desirability or unconscious bias were the primary explanations. Interestingly, correspondence was attributed to social desirability in half of the cases, while others offered study-specific ad hoc accounts. Only one study, comparing empathy toward humans versus other species, interpreted its findings as a genuine effect and explicitly rejected social desirability explanations.

Only nine studies tested correlations between behavioral and neural bias. Regardless of whether the correlation was found or not, half of those studies report them but then ignore them, while the other half integrate and interpret them, albeit dominantly employing explanations of unconscious bias and social desirability.

Miscellaneous Empathy

Only 10 of 58 psychophysiological studies (<20%) used non-physical pain stimuli to elicit empathy, and these were few and highly heterogeneous. Two-thirds used stimuli that could be labeled "emotionally painful," ranging from sad facial expressions to real-life testimonies of Apartheid victims. As in studies of physical pain, they almost universally reported neural bias. Most focused on racial groups, and one-third did not include behavioral measures of empathy. When behavioral measures were included, studies assessed congruent affect and higher-level empathy components or general empathy ratings, which sometimes diverged from neural indicators. Although empathy was primarily operationalized as neural activation, unlike physical pain studies, most of these studies (5 of 7) explicitly tested and

interpreted correlations between neural and behavioral bias, emphasizing their role in validating psychophysiological measures.

Psychophysiological Studies: Discussion

The present review aimed to dissect the concept of intergroup empathy bias by examining how empathy and bias are operationalized – specifically, how empathy is elicited, how it is measured, and which groups are used to elicit differential responding. Integrating findings across psychophysiological studies reveals that what is labeled "intergroup empathy bias" is typically differential empathic brain response to decontextualized physical pain of racial ingroup and outgroup members.

Across physical and non-physical pain paradigms, ingroup bias was almost universal at the neural level. In contrast, when measured, behavioral bias was inconsistent, task-dependent, and often absent. Divergence between neural and behavioral indicators was common, particularly in physical pain studies, yet frequently unaddressed or explained post hoc through references to social desirability or unconscious bias. The dominance of racial-group manipulations constrains the generalizability of findings and makes social-desirability explanations difficult to falsify.

Overall, the literature documents robust intergroup differences in neural reactivity, but provides a far less coherent account of intergroup differences in experienced or expressed empathy. Superficially similar operationalizations, most notably pain intensity and self-unpleasantness ratings, are treated as equivalent indicators across highly decontextualized paradigms. Review studies then aggregate these findings and conclude that intergroup empathy bias (IEB) exists - a result that is hardly surprising given the basic premises of Social identity

theory. What remains unclear, however, is which empathic processes are biased and through which mechanisms.

The dominant use of pain intensity and self-unpleasantness ratings as behavioral empathy indicators is based on the assumption that greater affective resonance with others' pain (particularly the ingroup) will lead to ascribing higher pain intensity to their pain signals and experiencing more personal distress. Several issues with this assumption merit discussion:

(1) It is disputable whether pain intensity ratings across different physical pain tasks can be treated as indicators of the same empathic component and/or process.

(1a) In studies using facial expressions as empathy-eliciting stimuli, these ratings reflect emotion identification. Emotion identification is not unequivocally considered an indicator of empathy but rather a precursor to empathic responses (see, e.g., Coll, 2017). This type of task fits within a broader body of research on emotional face perception (see e.g., Nord et al., 2017). However, IEB literature does not reference research on emotional face processing, and vice versa. This disconnection may exist because pain is theoretically positioned not as an emotion but as a sensory-emotional experience traditionally studied separately (Gilam, 2020). However, the similarity and comparability of these research areas become evident when examining their operational definitions. We believe both communities would benefit from establishing explicit theoretical and empirical connections.

(1b) In other physical pain tasks, these ratings capture an evaluative or attributional process – participants must estimate how painful an event might be without direct indicators of pain (such as facial expressions, or hypothetically, cries of pain). For example, videos showing needles on neutral faces provide no pain cue, only a signal of incoming potential pain (a needle touching the face, without any consequences or responses), and the participants need to imagine and estimate how painful it might be.

(2) Self-unpleasantness, the second most frequent behavioral indicator, is also problematic. While hypothesized to reflect affect sharing, influential accounts on empathy explicitly draw the self-other line to differentiate between empathic and non-empathic processes, i.e., exclude self-distress from empathy (see Hall & Schwartz, 2018, for a review). The rationale for typically including self-reference in neuroscientific empathy research to measure affect sharing remains unclear.

Neural indicators of empathy have been problematized as well. For example, a recent meta-analysis of ERP studies on empathy for pain questioned whether the components generally associated with affect sharing are reliably present in empathy for pain and whether they are specific to empathy at all (Coll, 2018). Therefore, despite nearly all studies reporting significant differences in brain activation, confidence in those results remains tentative.

Behavioral Studies

We identified 62 behavioral studies across 38 articles published between 1996 and 2025.

Physical pain studies (17 studies, 27%, 13 articles) focused exclusively on empathy for specific bodily pain, whereas non-physical empathy studies (45 studies, 73%, 25 articles) examined a broader range of stimuli. Despite the "non-physical" label, some studies described events resulting in physical injury. However, the focus was not physical pain per se, but general empathic responses to negative events affecting others. Within non-physical studies, we distinguished misfortune studies (19 studies, 31%, 8 articles), which used similar elicitation and measurement methods, from miscellaneous studies (26 studies, 42%, 17 articles), a methodologically diverse residual category. Table 4 summarizes the characteristics of physical pain, misfortune, and miscellaneous studies.

Table 4

Behavioral studies of ingroup empathy bias: Study characteristics

Studies (Papers)	Physical pain 17 (13) – 27%	Misfortunes 19 (8) – 32%	Miscellaneous 26 (17) – 41%
Tasks	medical (5) - videos (3) or pictures (1) of persons displaying pain during shoulder movement - differences of real pain estimates between patients and physicians (1) decontextualised pain (12) - images of hands and feet in painful and neutral situations (5) - painful vs neutral facial expressions (3) - painful vs neutral facial stimulation (2) - descriptions of painful events (2)	positive or negative event + verbal/visual identity cue - verbal descriptions of positive and negative (12) or only negative events (4) - positive or negative outcome in a competitive reaction time game (3)	verbal scenarios (vignettes) describing negative events with broad impact (12) - rape, beating, illness, imprisonment, psychological difficulties verbal scenarios (vignettes) about specific life nuisances (4) photo/video narratives of complex emotional pain (5) observing social ostracism (4) no empathy-eliciting task (1)
Responses	pain intensity (12) self-unpleasantness (4) empathic concern (6) incongruent emotional response (1)	congruent emotional response – slider (17) incongruent emotional response – slider (11) general empathy – Likert scale (2) cognitive empathy – slider (1)	single-item general empathy (5) single-item empathy component (6) average score on 3-4 empathy components (12) standardised state empathy tests (3)
Design	within subject (13) between subject (4)	within subject (19)	within subject (11) between subject (15)
Sample	N = 20 to 240, M ≈ 75, Mdn ≈ 54 - students (6), Mturk (1), students + Mturk (1), helping professionals (3), general population (5), unspecified (1)	37 to 811 (M ≈ 206, Mdn ≈ 105) - online platforms (17) - general (1) and student (1) populations	N = 56 to 1958 (M ≈ 621, Mdn ≈ 257) - online platforms (13), students (9), helping professionals (1), general population (3)
Group	racial (9) national (3) minimal (2) gender (1), fan identity (1), political (1)	minimal (12)* national (3) political (2) racial (1) substance use (1)	racial (9) political (6) sex and gender (5) national (4) religious (2)
Bias	ingroup empathy bias (9) no ingroup empathy bias (8) outgroup empathy bias (2)	ingroup empathy bias (19)	ingroup empathy bias (17) no bias ingroup empathy bias (9) outgroup empathy bias (3)

Note. Outgroup empathy bias: stronger empathic responses were recorded for outgroup compared to ingroup stimuli

Physical pain studies primarily used visual stimuli that varied in complexity and ecological validity to elicit an empathy bias toward ingroup and outgroup members. Some studies examined pain in a medical context (e.g., images or videos of patients referred for shoulder pain, followed by ratings of empathic concern). More frequently, studies presented isolated painful events (e.g., hands or feet cut by a knife or hit against furniture, painful facial expressions, or repetitive painful events on neutral faces) and asked participants to estimate pain intensity, mirroring typical empathy-for-pain tasks employed in psychophysiological studies. Racial and non-racial groups were used equally often, although medical pain studies predominantly examined racial groups.

Misfortune studies typically presented sentences describing mildly positive or negative events affecting ingroups and outgroups (e.g., "Beth/Sanaa found out her son was taking money without asking"; "Ted/Abdullah found a sentimental possession he thought lost"), accompanied by verbal and sometimes visual identity cues (e.g., a flag; "Beth is from the USA/Sanaa is from Iraq"; example from Bruneau et al., 2017). Empathy was operationalized as congruent affect: in nearly 90% of studies, participants indicated how bad negative events and how good positive events made them feel using an anchored, unmarked slider (two studies in a three-study paper used general empathy ratings instead of congruent affect, but identical empathy-eliciting stimuli). Despite minor variations, these studies shared a similar design: isolated, simple, and relatively unambiguous events. Tasks were often embedded in cover stories about problem-solving challenges, increasing perceived social relevance. However, the empathy tasks were independent of these challenges, and the events were everyday misfortunes unrelated to group identity. In more than 60% of studies, bias was elicited using experimentally created minimal groups, followed by national and political groups; only one study used racial groups. All studies used within-subject designs, and data were collected via online platforms in the vast majority of cases.

Miscellaneous studies featured diverse stimuli and tasks. The largest portion (60%) presented verbal narratives describing negative events with broad emotional (sometimes physical) impact, such as being beaten at a protest, raped, falling ill, or smaller life nuisances (e.g., prolonged in-law visits, costly repairs). A smaller portion used video or pictorial narratives of complex emotional pain, and a similar number examined empathy during observed social ostracism in a game. Overall, stimuli were more complex, and higher-level empathic responses were assessed using Likert scales (4–11 points). Non-racial groups were more frequently examined than racial groups. Nearly half of the studies collected data online, and those studies had above-average sample sizes.

A breakdown of study results by the types of tasks used to elicit empathy and the groups used to elicit ingroup/outgroup division is presented in Table 5.

Physical pain studies detected ingroup bias in 53% of cases, with similar rates across tasks and groups; painful facial expressions failed to elicit bias, whereas painful events on neutral faces sometimes did, mirroring the behavioral results of psychophysiological studies. In contrast, all misfortune studies detected ingroup bias. Miscellaneous studies detected bias in 65% of cases, depending on task type. Vignettes describing broad negative impact failed to detect bias in 40% of the cases, with similar rates across racial and non-racial groups (Most diverse groups were represented in these vignettes compared to all other tasks). Ostracism studies consistently failed to detect bias. In contrast, "life nuisance" vignettes and visual narratives reliably elicited ingroup bias. Interestingly, some of these "null" studies detected bias in the opposite direction, i.e., outgroup bias, more empathy for the outgroup.

In non-racial groups, minimal group studies consistently detected bias (mostly misfortune studies); political and national groups also frequently showed ingroup bias (primarily in misfortune and miscellaneous studies).

Table 5

Ingroup empathy bias in behavioral studies by tasks and groups

	stimuli	racial		national		political		gender		sexual		religion		min.		other		total	
		Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
non-physical empathy	questionnaire item											1[1]						1	0
	vignettes-B	2		1	2	2		1[?]	1	1	1[1]	1[1]						8	4
	vignettes-S			4														4	0
	ostracism		4*															0	4
	video	1	1*															1	1
	image	1		1				1[?]										3	0
	(mis)fortunes	1		3		2								12		1		19	0
physical pain empathy	shoulder pain	2	2															2	2
	real pain							1										1	0
	pain on hands and feet			2	1									1			1*	3	2
	descriptions of pain	1	1*															1	1
	facial expressions of pain		2				1											0	3
	painful events on face	2																2	0
	total	10	10	11	3	4	1	3	1	1	1	2	0	13	0	1	1	45	17

Note. 1 – intragroup bias studies (i.e. within religious or sexual minority identity); ? – some studies found bias in one but not all groups; * – some studies found outgroup bias; Y – bias registered; N – bias not registered

Behavioral Studies: Discussion

In behavioral studies, intergroup empathy was elicited and measured in a more diverse and egalitarian manner than in psychophysiological studies. Physical pain studies comprised over a quarter of the sample (27%). Non-physical pain studies (73%) were classified into misfortune studies (31%), measuring congruent affect in response to isolated mild events, and a miscellaneous category (42%), a methodologically diverse residual group.

Physical pain studies were nearly equally likely to detect or fail to detect intergroup empathy bias. In contrast, bias was observed in all misfortune studies and in 65% of miscellaneous studies, depending on the empathy-eliciting task. Because misfortune studies differ from the other two groups in several respects, multiple explanations may account for the striking difference between positive and null findings.

One explanation is social desirability: in contemporary egalitarian climates, participants may hesitate to disclose bias. Misfortune studies predominantly used minimal groups, mild events and measured empathy as congruent affect on a visual analogue scale, which may detect subtle differences while cleverly circumventing conscious and unconscious social desirability concerns: (1) visual analogue scales make identical ratings difficult to produce; (2) displaying bias toward mild empathy-eliciting stimuli may be perceived as harmless (supporting this, four vignette studies describing milder "life nuisances" in the miscellaneous category all detected ingroup bias); (3) using minimal groups may obscure the study aim and reduce conscious behavioral control as the context is not "real".

However, several alternative explanations merit consideration. First, all studies of misfortune involved either minimal groups in competitive contexts or real groups defined by ongoing conflict. Thus, it remains unclear whether reliable bias reflects competitive contexts or the use of non-racial groups. Second, it is possible that misfortune studies consistently detect

bias because a reliable empathy bias between "us" and "them" exists in affect sharing (i.e., the intensity of congruent emotional states). However, this does not entail, by default, a bias in general empathy, perspective-taking, or empathic concern (which may explain inconsistent results in miscellaneous studies and medical physical pain studies) nor in emotion identification or attribution (potentially accounting for inconsistent results in decontextualized physical-pain studies). These alternatives underscore the central argument of this review: what we call intergroup empathy bias is not a single phenomenon but a family of effects whose detection depends critically on which empathic process is being elicited and how it is measured.

Discussion: Empathy in Intergroup Empathy Bias Research

In this paper, we examined the elicitation and measurement of intergroup empathy bias (IEB) and summarized results by measurement approaches. People are socially expected to be both empathic and unbiased, creating a double challenge for IEB research. Psychophysiological approaches, especially neuroscientific methods, have been presented as a solution to this tension by circumventing social desirability and identifying implicit empathic bias in the brain. Although behavioral and neuroscientific studies were roughly equal in number, multiple behavioral studies were often published in a single article, resulting in neuroscience papers accounting for 58% of the published literature. Despite a recent visible rise in behavioral studies (before 2021, they made up 70%), IEB remains predominantly framed and investigated as a neuroscientific phenomenon.

In neuroscience research, empathy was predominantly elicited via physically painful stimuli in an isolated, decontextualized manner. Bias was defined as differential brain activation in response to ingroup versus outgroup pain, a pattern almost universally observed. However, corresponding behavioral measures frequently failed to show similar effects.

Neural–behavioral divergence is common and often left unexplained or attributed post hoc to social desirability or unconscious bias. As most studies focused on racial groups, this explanation remains difficult to falsify – and risks circularity: neural differences serve as evidence of IEB, while behavioral null findings are explained away rather than treated as disconfirmatory. The relationship between neural reactivity and overt empathic responding therefore remains empirically and theoretically underdeveloped.

We highlighted issues with pain intensity and self-unpleasantness as behavioral empathy indicators, both theoretical – whether the recorded response represents empathy or its precursor – and operational – whether identical ratings across tasks capture sufficiently similar processes. As we move from needle-on-a-neutral-face to more complex and contextualized presentations of pain, pain intensity estimates are reasonably expected to be influenced by multiple factors. The extent to which these various processes can be labeled "empathic" remains unaddressed. These issues are a downstream consequence of conceptual ambiguity in the notion of empathy. Therefore, conceptual systematization and process specification are prerequisites for more comprehensive investigation of intergroup empathy biases.

Misfortune studies, measuring congruent affect to everyday misfortunes, consistently detected ingroup bias. We argued that their greater success in detecting behavioral bias may not be solely attributable to their ability to circumvent social desirability. Alternative explanations draw upon the fact that different empathic phenomena were elicited and measured across studies. Ingroup empathy bias was not consistently observed across various higher-level empathic responses to complex events, following and highlighting its conceptual and operational complexity.

All these studies are discussed under the general label of "empathy". The paucity of process models of empathic responses (e.g., Coll et al., 2017) makes it difficult to pinpoint how group membership influences empathic processes, which parts of the system are affected,

when, and to what purpose. However, these are precisely the questions of interest in studying social phenomena. In intergroup empathy bias research, authors tend to characterize empathic reactions as automatic, implicit, "natural", and universally present (and we withhold them for the outgroup). However, in our view, in intergroup (and interpersonal) contexts, many – though not all – phenomena categorized as empathy are actually motivated – employed in specific situations with certain goals (implicit or explicit, conscious or unconscious), and thus not as universal as claimed. Before providing reliable answers, intergroup empathy bias should be investigated more comprehensively, examining various components of the empathic system in different contextual circumstances, given the person's group identity. In our opinion, to enhance our understanding of how social identity affects our empathic responses, we need to avoid the general term "empathy" altogether and focus on specific components and processes, while critically evaluating their operational definitions. This is not merely a pedantic task – psychological constructs are verbal statements only as valid as their operationalization. When we treat narrow operationalization as acceptable proxies for entire constructs, we are not describing the factual world but making *"sweeping generalizations"* (Yarkoni, 2022, p. 5). Empathy exemplifies why precise conceptual definitions matter. The term has spilled over from scientific to public discourse, acquiring value judgments along the way. These generalizations characterize not only scientific discussions about empathy but also their real-world implications. Calls have been made to disregard empathy in moral decision-making (e.g., Bloom, 2016) based on studies that reveal its parochial nature. However, extending conclusions from studies predominantly investigating narrow, low-level responses in small samples of racial groups to a broad, underspecified, and disordered concept such as empathy is, in our view, premature, especially considering the demonstrated public impact of claims about empathy. Before throwing the baby out with the bathwater, we believe empathic phenomena deserve a fair trial, impossible without proper systematization.

Funding acknowledgments. This work was supported by the Institute of Criminological and Sociological Research under a contract with the Ministry of Science, Technological Development and Innovation of the Republic of Serbia, Grant No. 451-03-33/2026-03/200039.

Disclosure of interest. The authors report there are no competing interests to declare.

AI assistance acknowledgments. We used Claude 3.7 Sonnet (Anthropic) to proofread the manuscript in order to enhance readability and correct grammar and spelling errors. Content of the manuscript was generated exclusively by the study authors.

Data availability statement. The authors confirm that the data supporting the findings of this study are available within the article and its supplementary materials.

References

*references of reviewed studies are followed with R

Abu-Akel, A., Fischer-Shofty, M., Levkovitz, Y., Decety, J., & Shamay-Tsoory, S. (2014). The role of oxytocin in empathy to the pain of conflictual out-group members among patients with schizophrenia. *Psychological medicine, 44*(16), 3523-3532. https://doi.org/10.1017/S003329171400097X R

Adams, R. B., Rule, N. O., Franklin, R. G., Wang, E., Stevenson, M. T., Yoshikawa, S., Nomura, M., Sato, W., Kveraga, K., & Ambady, N. (2010). Cross-cultural reading the mind in the eyes: An fMRI investigation. *Journal of Cognitive Neuroscience, 22*(1), 97–108. https://doi.org/10.1162/jocn.2009.21187

Arroyo, J. A. (1996). Psychotherapist bias with Hispanics: An analog study. *Hispanic Journal of Behavioral Sciences, 18*(1), 21-28. https://doi.org/10.1177/07399863960181003 R

Aue, T., Kexel, A. K., Kluwe-Schiavon, B., Bührer, S., Baumgartner, M. R., Soravia, L. M., & Quednow, B. B. (2022). In-and out-group effects on social perception and empathy in cocaine use disorder. *Frontiers in psychiatry, 13*, 879016. https://doi.org/10.3389/fpsyt.2022.879016 R

Avenanti, A., Sirigu, A., & Aglioti, S. M. (2010). Racial bias reduces empathic sensorimotor resonance with other-race pain. *Current Biology, 20*(11), 1018-1022. https://doi.org/10.1016/j.cub.2010.03.071 R

Azevedo, R. T., Macaluso, E., Avenanti, A., Santangelo, V., Cazzato, V., & Aglioti, S. M. (2013). Their pain is not our pain: brain and autonomic correlates of empathic resonance with the pain of same and different race individuals. *Human brain mapping, 34*(12), 3168-3181. https://doi.org/10.1002/hbm.22133 R

Batson, C. D. (2009). These things called empathy: Eight related but distinct phenomena. In J. Decety & W. Ickes (Eds.), *The social neuroscience of empathy* (p. 3–15). MIT Press. https://doi.org/10.7551/mitpress/9780262012973.003.0002

Berlingeri, M., Gallucci, M., Danelli, L., Forgiarini, M., Sberna, M., & Paulesu, E. (2016). Guess who's coming to dinner: brain signatures of racially biased and politically correct behaviors. *Neuroscience, 332*, 231-241. https://doi.org/10.1016/j.neuroscience.2016.06.048 R

Berry, D. R. (2017). *Bridging the empathy gap: Effects of brief mindfulness training on helping outgroup members in need*. [Unpublished Doctoral dissertation]. Virginia Commonwealth University. https://doi.org/10.25772/HGBR-6504 R

Bertrand, P., Guegan, J., Robieux, L., McCall, C. A., & Zenasni, F. (2018). Learning empathy through virtual reality: Multiple strategies for training empathy-related abilities using body ownership illusions in embodied virtual reality. *Frontiers Robotics and AI, 5*, 26. https://doi.org/10.3389/frobt.2018.00026

Bloom, P. (2016). *Against Empathy: The Case for Rational Compassion*. HarperCollins Publishers.

Bruneau, E. G., Cikara, M., & Saxe, R. (2015). Minding the gap: Narrative descriptions about mental states attenuate parochial empathy. *PLoS ONE, 10*(10), e0140838. https://doi.org/10.1371/journal.pone.0140838 R

Bruneau, E. G., Cikara, M., & Saxe, R. (2017). Parochial empathy predicts reduced altruism and the endorsement of passive harm. *Social Psychological and Personality Science, 8*(8), 934-942. https://doi.org/10.1177/1948550617693064 R

Canevello, A., Hall, J., & Walsh, J. I. (2022). Empathy-mediated altruism in intergroup contexts: The roles of posttraumatic stress and posttraumatic growth. *Emotion, 22*(8), 1699–1712. https://doi.org/10.1037/emo0000803 R

Cao, Y., Contreras-Huerta, L. S., McFadyen, J., & Cunnington, R. (2015). Racial bias in neural response to others' pain is reduced with other-race contact. *Cortex, 70*, 68-78. https://doi.org/10.1016/j.cortex.2015.02.010 R

Casey, J. P., Vanman, E. J., & Barlow, F. K. (2025). Empathic conservatives and moralizing liberals: Political intergroup empathy varies by political ideology and is explained by moral judgment. *Personality and Social Psychology Bulletin, 51*(5), 678-700. https://doi.org/10.1177/01461672231198001 R

Caspar, E. A., Pech, G. P., Gishoma, D., & Kanazayire, C. (2023). On the impact of the genocide on the intergroup empathy bias between former perpetrators, survivors, and their children in Rwanda. *American Psychologist, 78*(7), 825. https://doi.org/10.1037/amp0001066 R

Caspar, E. A., Nicolay, E., Banderembaho, F., & Pech, G. P. (2024). Volition as a modulator of the intergroup empathy bias. *Social Neuroscience*, *19*(5-6), 326-339. https://doi.org/10.1080/17470919.2024.2446816

Chen, J., Wu, K., Shi, Y., & Ai, X. (2021). The relationship between dispositional self-construal and empathy for ingroup and outgroup members' pain: evidence from ERPs. *Acta Psychologica Sinica, 53*(6), 629. https://doi.org/10.3724/SP.J.1041.2021.00629 R

Cheon, B. K., Im, D. M., Harada, T., Kim, J. S., Mathur, V. A., Scimeca, J. M., Parrish, T. B., Park, H. W., & Chiao, J. Y. (2011). Cultural influences on neural basis of intergroup empathy. *NeuroImage, 57*(2), 642-650. https://doi.org/10.1016/j.neuroimage.2011.04.031 R

Cikara, M. (2015). Intergroup Schadenfreude: motivating participation in collective violence. *Current Opinion in Behavioral Sciences, 3*, 12–17. https://doi.org/10.1016/j.cobeha.2014.12.007

Cikara, M., Bruneau, E. G., & Saxe, R. R. (2011). Us and Them: Intergroup Failures of Empathy. *Current Directions in Psychological Science, 20*(3), 149–153. https://doi.org/10.1177/0963721411408713

Cikara, M., Bruneau, E., Van Bavel, J. J., & Saxe, R. (2014). Their pain gives us pleasure: How intergroup dynamics shape empathic failures and counter-empathic responses. *Journal of Experimental Social Psychology, 55*, 110-125. https://doi.org/10.1016/j.jesp.2014.06.007 R

Coll, M. P. (2018). Meta-analysis of ERP investigations of pain empathy underlines methodological issues in ERP research. *Social Cognitive and Affective Neuroscience, 13*(10), 1003-1017. https://doi.org/10.1093/scan/nsy072

Coll, M. P., Viding, E., Rütgen, M., Silani, G., Lamm, C., Catmur, C., & Bird, G. (2017). Are we really measuring empathy? Proposal for a new measurement framework. *Neuroscience & Biobehavioral Reviews, 83*, 132-139. https://doi.org/10.1016/j.neubiorev.2017.10.009

Contreras-Huerta, L. S., Hielscher, E., Sherwell, C. S., Rens, N., & Cunnington, R. (2014). Intergroup relationships do not reduce racial bias in empathic neural responses to pain. *Neuropsychologia, 64*, 263-270. https://doi.org/10.1016/j.neuropsychologia.2014.09.045 R

Cuff, B. M., Brown, S. J., Taylor, L., & Howat, D. J. (2014). Empathy: A review of the concept. *Emotion review, 8*(2), 144-153. https://doi.org/10.1177/1754073914558466

De Jong, D., Hortensius, R., Hsieh, T. Y., & Cross, E. S. (2021). Empathy and schadenfreude in human–robot teams. *Journal of Cognition, 4*(1), 35. https://doi.org/10.5334/joc.177 R

Decety, J., & Cowell, J. M. (2014). Friends or foes: Is empathy necessary for moral behavior? *Perspectives on Psychological Science, 9*(4), 525–537. https://doi.org/10.1177/1745691614545130

Deist, M., & Fourie, M. M. (2023). (Not) part of the team: Racial empathy bias in a South African minimal group study. *Plos one, 18*(4), e0283902. https://doi.org/10.1371/journal.pone.0296581 R

Drwecki, B. B., Moore, C. F., Ward, S. E., & Prkachin, K. M. (2011). Reducing racial disparities in pain treatment: The role of empathy and perspective-taking. *Pain, 152*(5), 1001-1006. https://doi.org/10.1016/j.pain.2010.12.005 R

Duan, Q., Fan, L., Zhou, Y., Luo, S., & Han, S. (2024). The oxytocinergic system and racial ingroup bias in empathic neural activity. *Neuropharmacology, 261*, 110151. https://doi.org/10.1016/j.neuropharm.2024.110151 R

Eisenberg, N., Eggum, N. D., & Di Giunta, L. (2010). Empathy-related Responding: Associations with Prosocial Behavior, Aggression, and Intergroup Relations. *Social Issues and Policy Review, 4*(1), 143–180. https://doi.org/10.1111/j.1751-2409.2010.01020.x

Fabi, S., & Leuthold, H. (2018). Racial bias in empathy: Do we process dark-and fair-colored hands in pain differently? An EEG study. *Neuropsychologia, 114*, 143-157. https://doi.org/10.1016/j.neuropsychologia.2018.04.024 R

Forgiarini, M., Gallucci, M., & Maravita, A. (2011). Racism and the empathy for pain on our skin. *Frontiers in Psychology, 2*, 108. https://doi.org/10.3389/fpsyg.2011.00108 R

Fourie, M. M., & Moore-Berg, S. L. (2022). We cannot empathize with what we do not recognize: Perceptions of structural versus interpersonal racism in South Africa. *Frontiers in Psychology, 13*, 838675. https://doi.org/10.3389/fpsyg.2022.838675 R

Fourie, M. M., Stein, D. J., Solms, M., Gobodo-Madikizela, P., & Decety, J. (2017). Empathy and moral emotions in post-apartheid South Africa: an fMRI investigation. *Social Cognitive and Affective Neuroscience, 12*(6), 881-892. https://doi.org/10.1093/scan/nsx019 R

Fourie, M. M., Stein, D. J., Solms, M., Gobodo-Madikizela, P., & Decety, J. (2019). Effects of early adversity and social discrimination on empathy for complex mental states: An fMRI investigation. *Scientific reports, 9*(1), 12959. https://doi.org/10.1038/s41598-019-49298-4 R

Fourie, M. M., Subramoney, S., & Gobodo-Madikizela. (2017). A Less Attractive Feature of Empathy: Intergroup Empathy Bias. In M. Kondo (Ed.), *Empathy: An Evidence-based Interdisciplinary Perspective* (pp. 45–62). Rijeka, Croatia: InTech.

Gamsakhurdashvili, D., Antov, M. I., & Stockhorst, U. (2021). Sex-hormone status and emotional processing in healthy women. *Psychoneuroendocrinology, 130*, 105258. https://doi.org/10.1016/j.psyneuen.2021.105258 R

Gilam, G., Gross, J. J., Wager, T. D., Keefe, F. J., & Mackey, S. C. (2020). What is the relationship between pain and emotion? Bridging constructs and communities. *Neuron, 107*(1), 17-21. https://doi.org/10.1016/j.neuron.2020.05.024

Grimm, F. E. (2016). *Predicting and Intervening Intergroup Empathy Bias in Soccer Fans*. [Unpublished master's thesis]. Universität Wien. https://doi.org/10.25365/thesis.44635 R

Gutsell, J. N., & Inzlicht, M. (2012). Intergroup differences in the sharing of emotive states: neural evidence of an empathy gap. *Social Cognitive and Affective Neuroscience, 7*(5), 596-603. https://doi.org/10.1093/scan/nsr035 R

Gutsell, J. N., Simon, J. C., & Jiang, Y. (2020). Perspective taking reduces group biases in sensorimotor resonance. *Cortex, 131*, 42-53. https://doi.org/10.1016/j.cortex.2020.04.037 R

Hall, J., & Schwartz, R. (2018). Empathy present and future. *The Journal of Social Psychology, 59*(3), 225–243. https://doi.org/10.1080/00224545.2018.1477442

Hane, J. L. (2022). *Empathy and Political Bias.* [Unpublished master's thesis]. San Francisco State University. R

Hanson, E. (2017). *On the Ironic Effects of Being Empathic: Consequences for Attitude Polarization and Intergroup Conflict.* [Unpublished master's thesis]. Washington University in St. Louis. https://openscholarship.wustl.edu/art_sci_etds/1063 R

Harjunen, V. J., Sjö, P., Ahmed, I., Saarinen, A., Farmer, H., Salminen, M., ... & Ravaja, N. (2022). Increasing self–other similarity modulates ethnic bias in sensorimotor resonance to others' pain. Social Cognitive and Affective Neuroscience, 17(7), 673-682. https://doi.org/10.1093/scan/nsab113 R

Hasson, Y., Tamir, M., Brahms, K. S., Cohrs, J. C., & Halperin, E. (2018). Are liberals and conservatives equally motivated to feel empathy toward others?. *Personality and Social Psychology Bulletin, 44*(10), 1449-1459. https://doi.org/10.1177/0146167218769867 R

Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup Bias. *Annual Review of Psychology, 53*(1), 575–604. https://doi.org/10.1146/annurev.psych.53.100901.135109

Hornsey, M. J. (2008). Social Identity Theory and Self-categorization Theory: A Historical Review. *Social and Personality Psychology Compass, 2*, 204–222. https://doi.org/10.1111/j.1751-9004.2007.00066.x

Huang, S., & Han, S. (2014). Shared beliefs enhance shared feelings: religious/irreligious identifications modulate empathic neural responses. *Social Neuroscience, 9*(6), 639-649. https://doi.org/10.1080/17470919.2014.934396 R

Huo, T., Shamay-Tsoory, S., & Han, S. (2023). Creative mindset reduces racial ingroup bias in empathic neural responses. Cerebral Cortex, 33(20), 10558-10574. https://doi.org/10.1093/cercor/bhad303 R

IJzerman, H., Lewis Jr, N. A., Przybylski, A. K., Weinstein, N., DeBruine, L., Ritchie, S. J., ... & Anvari, F. (2020). Use caution when applying behavioural science to policy. *Nature Human Behaviour, 4*(11), 1092-1094. https://doi.org/10.1038/s41562-020-00990-w

Jami, P. Y., & Walker, D. I. (2022). Exploring situational empathy and intergroup empathy bias among people with two opposing cultural norms: Collectivism and individualism. *International Journal of Intercultural Relations, 91*, 282-296. https://doi.org/10.1016/j.ijintrel.2022.11.002 R

Johnson, S. L., Hritz, A. C., Royer, C. E., & Blume, J. H. (2016). When Empathy Bites Back: Cautionary Tales from Neuroscience for Capital Sentencing. *Fordham Law Review, 85*(2), 573–598.

Karakaš, T. (2020), *Utjecaj etničke pripadnosti aktera u scenariju na samoprocjenjenu empatiju*. [Unpublished master's thesis]. Josip Juraj Strossmayer University of Osijek. https://urn.nsk.hr/urn:nbn:hr:142:962065 R

Krautheim, J. T., Dannlowski, U., Steines, M., Neziroğlu, G., Acosta, H., Sommer, J., Straube, B., & Kircher, T. (2019). Intergroup empathy: Enhanced neural resonance for ingroup facial emotion in a shared neural production-perception network. *NeuroImage, 194*, 182-190. https://doi.org/10.1016/j.neuroimage.2019.03.048 R

Li, X., Liu, Y., Luo, S., Wu, B., Wu, X., & Han, S. (2015). Mortality salience enhances racial in-group bias in empathic neural responses to others' suffering. *NeuroImage, 118*, 376-385. https://doi.org/10.1016/j.neuroimage.2015.06.023 R

Luo, S., Han, X., Du, N., & Han, S. (2018). Physical coldness enhances racial in-group bias in empathy: Electrophysiological evidence. *Neuropsychologia, 116*, 117-125. https://doi.org/10.1016/j.neuropsychologia.2017.05.002 R

Luo, S., Li, B., Ma, Y., Zhang, W., Rao, Y., & Han, S. (2015). Oxytocin receptor gene and racial ingroup bias in empathy-related brain activity. *NeuroImage, 110*, 22-31. https://doi.org/10.1016/j.neuroimage.2015.01.042 R

Luo, S., Zhang, T., Li, W., Yu, M., Hein, G., & Han, S. (2019). Interactions between oxytocin receptor gene and intergroup relationship on empathic neural responses to others' pain. *Social Cognitive and Affective Neuroscience, 14*(5), 505-517. https://doi.org/10.1093/scan/nsz029 R

Mathur, V. A., Harada, T., Lipke, T., & Chiao, J. Y. (2010). Neural basis of extraordinary empathy and altruistic motivation. *Neuroimage, 51*(4), 1468-1475. https://doi.org/10.1016/j.neuroimage.2010.03.025 R

Meckes, S. J. (2023). Does Racial Bias Influence Affective and Behavioral Responses to Trauma Disclosure?. [Unpublished Doctoral dissertation]. University of Nevada, Reno. R

Mei, S., Weiß, M., Hein, G., & Han, S. (2024). EEG evidence for racial ingroup bias in collective empathy for pain. *Cerebral cortex, 34*(2), bhae019. https://doi.org/10.1093/cercor/bhae019 R

Miron-Shatz, T., Ormianer, M., Rabinowitz, J., Hanoch, Y., & Tsafrir, A. (2020). Physician experience is associated with greater underestimation of patient pain. *Patient Education and Counseling, 103*(2), 405-409. https://doi.org/10.1016/j.pec.2019.08.040 R

Montalan, B., Lelard, T., Godefroy, O., & Mouras, H. (2012). Behavioral investigation of the influence of social categorization on empathy for pain: a minimal group paradigm study. *Frontiers in Psychology, 3*, 389. https://doi.org/10.3389/fpsyg.2012.00389 R

Moroń, M., Biolik-Moroń, M., & Matuszewski, K. (2021). Alterations in Religious Rituals Due to COVID-19 Could Be Related to Intragroup Negativity: A Case of Changes in Receiving Holy Communion in the Roman Catholic Community in Poland. *Religions, 12*(4), 240. https://doi.org/10.3390/rel12040240 R

Neumann, D. L., Boyle, G. J., & Chan, R. C. (2013). Empathy towards individuals of the same and different ethnicity when depicted in negative and positive contexts. *Personality and Individual Differences, 55*(1), 8-13. https://doi.org/10.1016/j.paid.2013.01.022 R

Nord, C. L., Gray, A., Charpentier, C. J., Robinson, O. J., & Roiser, J. P. (2017). Unreliability of putative fMRI biomarkers during emotional face processing. *NeuroImage, 156*, 119-127. https://doi.org/10.1016/j.neuroimage.2017.05.024

Ozkara, B. Y. (2021). The neural substrate of schadenfreude: The effects of competition level changes on the processing of pain in others. *New Ideas in Psychology, 62*, 100853. https://doi.org/10.1016/j.newideapsych.2021.100853 R

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. A., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting. P., & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International journal of surgery, 88*, 105906. https://doi.org/10.1016/j.ijsu.2021.105906

Pastoors, J. K. (2020). *The Opposite of Love: How Parasocial Interaction with NPC's Can be Enhanced Through Intergroup Competition.* [Unpublished Master thesis]. Breda University of Applied Sciences). https://doi.org/10.13140/RG.2.2.31175.52642 R

Paterson, J., Brown, R., & Walters, M. (2018). Understanding victim group responses to hate crime: Shared identities, perceived similarity and intergroup emotions. TPM. *Testing, Psychometrics, Methodology in Applied Psychology, 25*(2), 163-177. https://doi.org/10.4473/TPM25.2.1 R

Paterson, J. L., Walters, M. A., & Hall, L. (2024). Ingroup empathy, help, and blame after anti-LGBT+ hate crime. *Journal of interpersonal violence, 39*(3-4), 707-734. https://doi.org/10.1177/08862605231200212 R

Petsnik, C., & Vorauer, J. D. (2020). Do dominant group members have different emotional responses to observing dominant-on-dominant versus dominant-on-disadvantaged ostracism? Some evidence for heightened reactivity to potentially discriminatory ingroup behavior. *PLoS ONE, 15*(6), e0234540. https://doi.org/10.1371/journal.pone.0234540 R

Phillips, C. J. (2021). *Effects of Patient's Race on Pain Perception and Treatment in Nursing Students*. [Unpublished Thesis]. University of Southern Mississippi. https://aquila.usm.edu/honors_theses/774 R

Plieger, T., Vetterlein, A., Grünhage, T., Hogeterp, S. A., Wagner, L., Monzel, M., ... & Reuter, M. (2026). Refugees welcome? Empathy attenuates effects of xenophobia on neuronal responses to in-group and out-group suffering. Cognitive, Affective, & *Behavioral Neuroscience, 26*(1), 192-202. https://doi.org/10.3758/s13415-025-01351-8 R

Pluta, A., Mazurek, J., Wojciechowski, J., Wolak, T., Soral, W., & Bilewicz, M. (2023). Exposure to hate speech deteriorates neurocognitive mechanisms of the ability to understand others' pain. *Scientific Reports, 13*(1), 4127. https://doi.org/10.1038/s41598-023-31146-1 R

Preston, S. D., & De Waal, F. B. M. (2002). Empathy: Its ultimate and proximate bases. *Behavioral and Brain Sciences, 25*, 1–72. https://doi.org/10.1017/S0140525X02000018

Richins, M. T., Barreto, M., Karl, A., & Lawrence, N. (2019). Empathic responses are reduced to competitive but not non-competitive outgroups. *Social Neuroscience, 14*(3), 345-358. https://doi.org/10.1080/17470919.2018.1463927 R

Riečanský, I., Lengersdorff, L. L., Pfabigan, D. M., & Lamm, C. (2020). Increasing self-other bodily overlap increases sensorimotor resonance to others' pain. *Cognitive, Affective, & Behavioral Neuroscience, 20*, 19-33. https://doi.org/10.3758/s13415-019-00724-0 R

Riečanský, I., Paul, N., Kölble, S., Stieger, S., & Lamm, C. (2015). Beta oscillations reveal ethnicity ingroup bias in sensorimotor resonance to pain of others. *Social Cognitive and Affective Neuroscience, 10*(7), 893-901. https://doi.org/10.1093/scan/nsu139 R

Ruckmann, J., Bodden, M., Jansen, A., Kircher, T., Dodel, R., & Rief, W. (2015). How pain empathy depends on ingroup/outgroup decisions: a functional magnet resonance imaging study. *Psychiatry Research: Neuroimaging, 234*(1), 57-65. https://doi.org/10.1016/j.pscychresns.2015.08.006 R

Shamay-Tsoory, S. G., Abu-Akel, A., Palgi, S., Sulieman, R., Fischer-Shofty, M., Levkovitz, Y., & Decety, J. (2013). Giving peace a chance: Oxytocin increases empathy to pain in the context of the Israeli–Palestinian conflict. *Psychoneuroendocrinology, 38*(12), 3139-3144. https://doi.org/10.1016/j.psyneuen.2013.09.015 R

Sharifian, M., Hatami, J., Batouli, S. A. H., & Boroujeni, M. M. F. (2022). Citizens of the world: National stereotypes do not affect empathic response in the presence of individuating information. *International Journal of Psychology, 57*(2), 251-260. https://doi.org/10.1002/ijop.12807 R

Shen, F., Hu, Y., Fan, M., Wang, H., & Wang, Z. (2018). Racial bias in neural response for pain is modulated by minimal group. *Frontiers in Human Neuroscience, 11*, 661. https://doi.org/10.3389/fnhum.2017.00661 R

Sheng, F., & Han, S. (2012). Manipulations of cognitive strategies and intergroup relationships reduce the racial bias in empathic neural responses. *NeuroImage, 61*(4), 786-797. https://doi.org/10.1016/j.neuroimage.2012.04.028 R

Sheng, F., Du, N., & Han, S. (2017). Degraded perceptual and affective processing of racial out-groups: An electrophysiological approach. *Social neuroscience, 12*(4), 479-487. https://doi.org/10.1080/17470919.2016.1182944 R

Sheng, F., Liu, Q., Li, H., Fang, F., & Han, S. (2014). Task modulations of racial bias in neural responses to others' suffering. *NeuroImage, 88*, 263-270. https://doi.org/10.1016/j.neuroimage.2013.10.017 R

Sheng, F., Liu, Y., Zhou, B., Zhou, W., & Han, S. (2013). Oxytocin modulates the racial bias in neural responses to others' suffering. *Biological psychology, 92*(2), 380-386. https://doi.org/10.1016/j.biopsycho.2012.11.018 R

Suleiman, R., Yahya, R., Decety, J., & Shamay-Tsoory, S. (2018). The impact of implicitly and explicitly primed ingroup–outgroup categorization on the evaluation of others pain: The case of the Jewish–Arab conflict. *Motivation and Emotion, 42*, 438-445. https://doi.org/10.1007/s11031-018-9677-3 R

Sun, B., Chi, W., Ye, W., Dai, T., & Wang, Y. (2025). The Impact of Incidental Fear on Empathy Towards In-Group and Out-Group Pain. *Behavioral Sciences, 15*(9), 1186. https://doi.org/10.3390/bs15091186 R

Tagesson, A., Wallin, A., & Pärnamets, P. (2025). Brief empathy interventions online can decrease but not increase empathic tendencies. *Communications Psychology, 3*(1), 157. https://doi.org/10.1038/s44271-025-00364-w R

Tajfel, H., & Turner, J. C. (2004). The Social Identity Theory of Intergroup Behavior. In J. T. Jost & J. Sidanius (Eds.), *Key readings in social psychology: Political psychology* (pp. 276–293). https://doi.org/10.4324/9780203505984-16

Tingley, D. (2006). Neurological imaging as evidence in political science: A review, critique, and guiding assessment. *Social Science Information, 45*(1), 5–33. https://doi.org/10.1177/0539018406061100

Trawalter, S., Hoffman, K. M., & Waytz, A. (2012). Racial bias in perceptions of others' pain. *PloS One, 7*(11), e48546. https://doi.org/10.1371/journal.pone.0152334 R

Vaes, J., Meconi, F., Sessa, P., & Olechowski, M. (2016). Minimal humanity cues induce neural empathic reactions towards non-human entities. *Neuropsychologia, 89*, 132-140. https://doi.org/10.1016/j.neuropsychologia.2016.06.004 R

Vanman, E. J. (2016). The role of empathy in intergroup relations. *Current Opinion in Psychology, 11*, 59-63. https://doi.org/10.1016/j.copsyc.2016.06.007

Vaughn, D. A., Savjani, R. R., Cohen, M. S., & Eagleman, D. M. (2018). Empathic neural responses predict group allegiance. *Frontiers in Human Neuroscience, 12*, 302. https://doi.org/10.3389/fnhum.2018.00302 R

Vollberg, M. C., Gaesser, B., & Cikara, M. (2021). Activating episodic simulation increases affective empathy. *Cognition, 209*, 104558. https://doi.org/10.1016/j.cognition.2020.104558 R

Wang, C., Wu, B., Liu, Y., Wu, X., & Han, S. (2015). Challenging emotional prejudice by changing self-concept: priming independent self-construal reduces racial in-group bias in neural responses to other's pain. *Social Cognitive and Affective Neuroscience, 10*(9), 1195-1201. https://doi.org/10.1093/scan/nsv005 R

Weisberg, D. S., Keil, F. C., Goodstein, J., Rawson, E., & Gray, J. R. (2008). The seductive allure of neuroscience explanations. *Journal of Cognitive Neuroscience, 20*(3), 470-477. https://doi.org/10.1162/jocn.2008.20040

Westbury, H. R., & Neumann, D. L. (2008). Empathy-related responses to moving film stimuli depicting human and non-human animal targets in negative circumstances. *Biological Psychology, 78*(1), 66-74. https://doi.org/10.1016/j.biopsycho.2007.12.009 R

Wu, X., Jia, H., Zhao, K., Guo, M., Lv, X., Ma, Y., & Wang, E. (2024). Group membership modulates empathic neural responses to pain in deaf individuals. *Cerebral Cortex*, *34*(3), bhae113. https://doi.org/10.1093/cercor/bhae113 R

Xu, X., Zuo, X., Wang, X., & Han, S. (2009). Do you feel my pain? Racial group membership modulates empathic neural responses. *Journal of Neuroscience, 29*(26), 8525-8529. https://doi.org/10.1523/JNEUROSCI.2418-09.2009 R

Xu, Y., Chen, S., Kong, Q., & Luo, S. (2021). The residential stability mindset increases racial in-group bias in empathy. *Biological Psychology, 165*, 108194. https://doi.org/10.1016/j.biopsycho.2021.108194 R

Yalçın, F. T. (2023). Locating the bias in empathy. [Unpublished master's thesis]. Sabanci University. R

Yarkoni, T. (2022). The generalizability crisis. *Behavioral and Brain Sciences*, *45*, e1. https://doi.org/10.1017/S0140525X20001685

Zaki, J., & Cikara, M. (2015). Addressing Empathic Failures. *Current Directions in Psychological Science, 24*(6), 471–476. https://doi.org/10.1177/0963721415599978

Zhang, T., Zhang, S., & Jiang, Y. (2026). Automatic pupillary responses to pain perception in adults and children: The influence of race and autistic traits. *Cognition, 268*, 106384. https://doi.org/10.1016/j.cognition.2025.106384 R

Zheng, D., Berry, D. R., & Brown, K. W. (2023). Effects of brief mindfulness meditation and compassion meditation on parochial empathy and prosocial behavior toward ethnic out-group members. *Mindfulness, 14*(10), 2454-2470. https://doi.org/10.1007/s12671-023-02100-z R

Zhou, Y., Pang, C., Pu, Y., & Han, S. (2022). Racial outgroup favoritism in neural responses to others' pain emerges during sociocultural interactions. Neuropsychologia, 174, 108321. https://doi.org/10.1016/j.neuropsychologia.2022.108321 R

Merenje međugrupne pristrasnosti u empatiji: Sistematski narativni pregled

[1]Marija V. Čolić & [2]Iris Žeželj

[1]Institute of Criminological and Sociological Research, Belgrade, Serbia

[1]Faculty of Media and Communications, Department of Psychology, Belgrade, Serbia

[2]Faculty of Philosophy, Department of Psychology, University of Belgrade, Serbia

Iako se empatija u načelu posmatra kao prosocijalni činilac, istraživanja međugrupne pristrasnosti u empatiji (MPE) ukazuju da su empatijski odgovori često snažniji prema članovima sopstvene grupe u odnosu na članove drugih grupa, i da ovakva selektivnost u raspodeli empatije može dovesti do negativnih ishoda. Kako bismo razjasnili kako do nje dolazi, sproveli smo sistematski pregled istraživanja MPE, usredsredivši se na pitanje kako je empatija izazvana i merena. Prateći PRISMA smernice, identifikovali smo 120 studija u 85 članaka. Neuronaučne studije, u kojima su za izazivanje empatije obično korišćeni prikazi fizičkog bola, bile su najbrojnije (58% članaka), dosledno detektujući MPE u neuralnim odgovorima, ali retko u eksplicitnim procenama. U ponašajnim studijama, registrovanje pristrasnog odgovora zavisilo je od vrste zadatka. Literaturu karakterišu problematične

pretpostavke o istovetnosti različitih tipova zadataka, neistražene veze sa srodnim istraživačkim poljima, i nedovoljno razvijena objašnjenja diskrepance između neuralnih i ponašajnih indikatora. Smatramo da je, pre razmatranja praktičnih primena, potrebno kritičko preispitivanje operacionalnih definicija fenomena.

Ključne reči: međugrupna pristrasnost u empatiji, parohijalna empatija, empatijski jaz, merenje empatije, operacionalne definicije

RECEIVED: 29.09.2025

REVISION RECEIVED: 21.03.2026

ACCEPTED: 29.06.2026