**Review**

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# Empathy as a Determinant of Pro-Social and Antisocial Behaviors: Theoretical Foundations, Measurement Methods, and Behavioral Outcomes

## Toplum Yanlısı ve Antisosyal Davranışların Belirleyicisi Olarak Empati: Kuramsal Temeller, Ölçüm Yöntemleri ve Davranışsal Sonuçlar

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## ABSTRACT

Empathy is the ability to understand the feelings and thoughts of others and to react to them appropriately. Therefore, it has an important role in strengthening interpersonal relationships and supporting social cohesion. Cognitive empathy involves understanding another person's point of view, while emotional empathy involves experiencing what they feel. In this study, the definition of empathy, its components, measurement methods and its relationship with pro-social and antisocial behaviours are discussed. Empathy is measured by self-report scales, behavioural methods and neuroimaging techniques. Empathy affects pro-social and antisocial behaviours both directly and indirectly through biopsychosocial (personality traits, emotion regulation skills) and biological factors. On the other hand, the strength of this relationship may differ depending on demographic factors -such as age, gender-. The use of different measurement techniques together in the studies and more experimental and longitudinal studies as a method can be listed as points that will strengthen future studies. In addition, the close relationship between empathy and these behaviours emphasises the importance of multidisciplinary studies involving different fields such as sociology, psychology and economics.

**Keywords:** Empathy, pro-social behaviour, antisocial behaviour, measurement methods, demographical factors

## ÖZ

Empati, başkalarının duygu ve düşüncelerini anlama ve bunlara uygun şekilde tepki verme yeteneğidir. Bu nedenle bireyler arası ilişkileri güçlendirme ve sosyal uyumu destekleme konusunda önemli bir role sahiptir. Bilişsel empati, başkasının bakış açısını anlamayı; duygusal empati ise onun hissettiklerini deneyimlemeyi içerir. Bu çalışmada empatinin tanımı, bileşenleri, ölçüm yöntemleri ve toplum yanlısı ile antisosyal davranışlarla olan ilişkisi ele alınmaktadır. Empatinin ölçümü öz-bildirim ölçekleri, davranışsal yöntemler ve nörogörüntüleme teknikleri ile gerçekleştirilmektedir. Empati toplum yanlısı ve antisosyal davranışlara hem direkt hem de biyopsikososyal (kişilik özellikleri, duygu düzenleme becerileri gibi) ve biyolojik etmenler aracılığıyla dolaylı olarak etki etmektedir. Diğer taraftan demografik etkenlere (yaş, cinsiyet gibi) bağlı olarak bu ilişkinin gücü farklılaşabilmektedir. Araştırmalarda farklı ölçüm tekniklerin bir arada kullanılması; yöntem olarak deneysel ve boylamsal çalışmalara daha çok yer verilmesi gelecek çalışmaları güçlendirecek noktalar olarak sıralanabilir. Ayrıca empatinin bu davranışlarla olan yakın ilişkisi sosyoloji, psikoloji ve ekonomi gibi farklı alanların dahil olacağı multidisipliner çalışmaların önemine vurgu yapmaktadır.

**Anahtar sözcükler:** Empati, toplum yanlısı davranış, antisosyal davranış, ölçüm yöntemleri, demografik etmenler

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## Introduction

Empathy is a complex and multidimensional concept that plays a central role in individual and social interactions. It contributes significantly to individuals' ability to form meaningful relationships and to societies' ability to live in harmony (Lévy et al. 2019). In this context, a comprehensive review of existing research findings on empathy will contribute to a better understanding of its precursors, components, and consequences.

Like many other psychological concepts, empathy has its origins in philosophy. It was first addressed as a phenomenon in 1790 (Smith 2002). This phenomenon has been exemplified as a reflexive ability whereby an individual automatically withdraws their own leg or arm when observing a blow to another person's leg or arm. The concept of empathy was then systematically conceptualised for the first time by the German philosopher Lipps (1903) and expressed using the term 'Einfühlung'. 'Einfühlung' refers to emotional experiences developed towards a work of art or an individual. Later, Titchener (1909) renamed this term 'empathy' and contributed to its modern definition. Hall and Schwartz (2019), in their study examining modern definitions of empathy, stated that empathy is still considered a reflexive ability; however, it is also evaluated as a complex process involving cognitive and emotional components. The main objective of this review study is to comprehensively examine the relationship between empathy and prosocial and antisocial behaviour in line with the current literature. In this context, the definitions, components, and measurement methods of empathy in the literature will be discussed first. Then, the definitions of prosocial and antisocial behaviours, their relationships with empathy, and the mediating and moderating variables affecting these relationships will be explained in light of current sources. Finally, the strengths and weaknesses of empathy-focused literature will be evaluated, and recommendations for future research will be presented.

## Definition, Characteristics, and Components of Empathy

Empathy has been defined in different ways in the literature due to its complex structure. Cuff and colleagues (2016) noted that there are 43 different definitions of empathy in the literature, and that these definitions differ in terms of the dimensions they focus on (cognitive or emotional), their emphasis on individual or social orientation, and whether or not they include behavioural outcomes of the empathic experience. In general, empathy is defined as 'understanding another person's perspective and responding appropriately' (Hall and Schwartz 2019). Although empathy is used in a similar sense to concepts such as sympathy and emotional contagion, in sympathy, the person acts with different feelings (e.g., pity in response to pain) than the other person (e.g., helping); in emotional contagion, the emotions reflected by another person are felt as if they belong to oneself (Hein and Singer 2008). Empathy, however, differs from these two concepts in that it involves feeling the same emotion while knowing that the feelings do not belong to oneself (Decety and Lamm 2006). Being able to distinguish between these concepts is critical for an effective empathy experience (Little et al. 2023).

Biological (e.g., oxytocin, serotonin, and dopamine release) and environmental factors (e.g., family environment and education) have a combined effect on the development and continuity of empathy (Knafo et al. 2008, Yang et al. 2017). Empathy can emerge both automatically (e.g., feeling sad when seeing someone cry; Singer et al. 2004) and through controlled processes (e.g., analysing another person's perspective; Hodges and Biswas-Diener 2007). Additionally, empathy can develop beyond face-to-face interactions through books, films, or imagination (Decety and Jackson 2004), and even limited emotional cues such as a slight tremor in voice tone can trigger this process (Blair 2005).

Theoretical and empirical studies on empathy show that this phenomenon consists of two basic dimensions: the ability to understand another person's emotional state is referred to as cognitive empathy, while the emergence of similar emotions in the individual is referred to as emotional empathy (Wagner et al. 2015). For example, understanding that a friend is angry in the face of injustice corresponds to the cognitive dimension, while feeling angry along with them corresponds to the emotional dimension. Research on psychological tendencies such as autism and psychopathy shows that these two types of

empathy have distinct structures (Baron-Cohen and Wheelwright 2004, Blair 2005). Emotional empathy involves understanding another person's emotional experience and adjusting one's own emotional state accordingly (emotional resonance), as well as understanding others' emotions and providing them with support and appropriate responses (emotional resonance) (Errasti et al. 2017). Research shows that emotional empathy significantly influences social dynamics in various contexts and is a strong predictor of pro-social behaviour and relationships (Qin et al. 2022, Smith-Flores et al. 2023). Cognitive empathy, on the other hand, involves the ability to understand another person's feelings and thoughts, as in theory of mind (Geer et al. 2000, Frith and Frith 2003), and is therefore also represented as perspective taking. This type of empathy not only strengthens social relationships (both within and outside groups) but also supports effective communication and moral reasoning (Chang et al. 2021). Some definitions of empathy in the literature emphasise emotional empathy (Hoffman 2000, Stocks et al. 2011), while others focus on cognitive empathy (Decety and Michalska 2010). However, most definitions include both dimensions (Colman 2009). This diversity reflects the complexity and definitional challenges of empathy (Lampert et al. 2019); therefore, it has led to the development of different tools to measure empathy (Gerdes et al. 2010, Brown et al. 2012).

## Measurement Tools Used in Empathy Measurement

Various measurement methods are used to comprehensively assess the multidimensional nature of empathy, which plays an important role in human interaction. These are divided into three main categories: self-report, behavioural, and neuroscientific measurements. Each of these methods offers different levels of conceptual scope and measurement sensitivity towards the cognitive and/or emotional dimensions of empathy and includes advantages and methodological limitations depending on the context of use (Beattie et al. 2011).

The general characteristics of self-report, neuroscientific, and behavioural measures are summarised in Tables 1, 2, and 3, respectively. Self-report scales can address one or more dimensions of empathy, while behavioural measures focus on evaluating participants' empathetic responses through structured visual stimuli. Neuroscience methods provide data on neural correlations related to empathic responses; in particular, they reveal the relationship between brain activity and social behaviour, producing more objective indicators of empathy (Gill and Calkins 2003). However, these methods have certain limitations in terms of widespread use due to high costs, expertise requirements, and limited ecological validity (Yuguero et al. 2022).

Self-report scales are cost-effective but sensitive to social desirability and response bias. Neuroscientific measurements provide important data on the biological foundations of empathy but are limited in widespread use due to high costs and limited ecological validity (Yuguero et al. 2022). Behavioural measures, while producing reliable data in controlled environments, may fail to adequately reflect empathetic responses in real-life conditions. Therefore, researchers are advised to consider the multidimensional nature of empathy and the limitations of each measurement method, selecting the most appropriate method for the research context and, if possible, combining multiple measurement techniques. Smith and colleagues (2017) emphasised the importance of these approaches in empathy assessment. The researchers stated that supporting self-report scales with behavioural observations would enable a more comprehensive assessment of empathic abilities. In the following sections, the characteristics of empathy-focused studies will be discussed in the context of prosocial and antisocial behaviours.

## Pro-social Behaviours

Empathy strengthens interpersonal interactions and is also fundamental to prosocial behaviour, which aims to benefit others or society and thereby increase overall social well-being (Cikara et al. 2011). Understanding the mechanisms that drive these behaviours is necessary to promote social goals, advance equality, and foster a sense of unity within society (Leeming and Hayes 2016).

**Table 1. Self-report scales used in empathy measurement and their general characteristics**

| Measuring Instrument | Developer | Adapter to Turkish Culture | Structural Characteristics | Contents Features |
|---|---|---|---|---|
| Basic Empathy Scale | Jolliffe and Farrington 2005 | Topçu et al. 2010 | 20 items: two sub-dimensions. | It measures both the emotional and cognitive dimensions of empathy. It focuses on basic emotions such as anger, fear, and happiness, and is used in research and clinical settings (Zych et al. 2020, Azeredo et al. 2023). |
| Balanced Emotional Empathy Scale | Mehrabian 1996 | - | 30 items: 15 positive statements and 15 negative statements | It measures only the emotional dimension of empathy. It has been used in different groups such as medical students and caregivers of schizophrenia patients (Courtright et al. 2005, Di Lorenzo et al. 2021). |
| Hogan Empathy Scale | Hogan 1969 | - | 64 items: Items taken from different inventories (Minnesota Multiphasic Personality Inventory 31 items, California Psychological Inventory 25 items, 8 items added by Hogan et al.) | It measures only the cognitive dimension of empathy. It focuses on the cognitive aspects of understanding other people's perspectives and feelings (McLaren et al. 2019). |
| Multidimensional Emotional Empathy Scale | Caruso and Mayer 1998 | Turan et al. 2021 | 30 items, six sub-dimensions. | It measures only the emotional dimension of empathy. It consists of six sub-dimensions: Empathic Pain, Positive Sharing, Sensitive Crying, Emotional Attention, Feeling for Others, and Emotional Contagion. |
| Interpersonal Reactivity Index | Davis 1980 | Engeler and Yargıç 2007 | 28 items, four sub-dimensions. | It measures both the cognitive and emotional dimensions of empathy (Vachon and Lynam 2015). The perspective-taking and fantasy subdimensions form the basis of cognitive empathy, while the empathetic concern and personal distress subdimensions form the basis of emotional empathy. |
| Empathy Scale | Baron-Cohen and Wheelwright 2004 | Bora and Baysan-Arabacı 2009 | Full form 60 items: 40 empathy, 20 distracting items. Short form 22 empathy items. | It measures both the emotional and cognitive dimensions of empathy. It has good psychometric properties. It was developed for adults and provides reliable results when completed by both self-report and close others. It is an effective tool for identifying empathy disorders in psychiatric disorders (e.g., schizophrenia) (Bora and Baysan-Arabacı 2009). |

Different types of motivations may influence the emergence of prosocial behaviours. External and internal factors such as ensuring justice in interpersonal relationships, advancing social goals, gaining prestige, experiencing subjective satisfaction, or avoiding stress can be counted among these motivations. However, the primary motivation frequently emphasised in the literature is usually a genuine concern for the well-being of others (Krebs 1982, Leeming and Hayes 2016, Hepach and Warneken 2018). In addition to individual factors such as cooperation, honesty, and humility, situational factors such as family environment, parental support, and social incentives also influence the emergence of pro-social behaviour (Hilbig et al. 2013, Nguyen-Van et al. 2021, Li and Li 2022).

**Table 2. Neuroscience measures used in empathy assessment, advantages and disadvantages**

| Method | Advantages | Disadvantages |
|---|---|---|
| Magnetic Resonance Imaging (MRI) | MRI visualises the brain's response to empathic stimuli with high spatial resolution (Banissy et al. 2012). It is completed non-invasively, without direct intervention in the body. | MRI is an expensive measurement method with limited temporal resolution. In addition, the artificial nature of the laboratory environment may affect the generalisability of findings (Lamm et al. 2011, Rütgen et al. 2019). |
| Functional Magnetic Resonance Imaging (fMRI) | fMRI maps the activity of brain regions related to empathy in real time (Singer 2006). This method provides high spatial resolution and can track the development of neural circuits (Fan et al. 2011). It is completed non-invasively, without direct intervention in the body. | fMRI is an expensive measurement method with limited temporal resolution. Additionally, the artificial nature of the laboratory environment may affect the generalisability of findings (Lamm et al. 2011, Rütgen et al. 2019). Furthermore, it is known that some participants may find this method uncomfortable due to the machine's characteristics (e.g., high noise levels) (Rütgen et al. 2019). |
| Facial Electromyography (FE) | FE objectively detects instantaneous emotional responses by measuring facial muscle activity (Westbury and Neumann 2008). It is completed non-invasively, without direct intervention in the body. | Facial muscle movements can be influenced by various factors, and interpreting the data requires expertise (Heller et al. 2011). |

fMRI: Functional Magnetic Resonance Imaging, FE: Facial Electromyography, MRI: Magnetic Resonance Imaging

## Empathy and Pro-Social Behaviour

Empathy enables individuals to be sensitive to the emotional experiences of others, paving the way for pro-social behaviour such as helping, donating or providing voluntary support (Batson et al. 1991). Numerous studies have supported that individuals with high levels of empathy perceive others' pain and needs more deeply, and that this perception increases the likelihood of the individual engaging in prosocial behaviour (Park et al. 2015, Smith et al. 2019). Similarly, a comprehensive meta-analysis conducted by Eisenberg and Miller (1987) revealed that individuals with high levels of empathy are more sensitive to others' distress and are more likely to engage in actions to alleviate that distress. Specifically, it is argued that emotional empathy leads to internalising others' feelings and behaving more compassionately towards them, while cognitive empathy enhances the ability to understand others' perspectives and act based on this understanding (Lockwood et al. 2014, Telle and Pfister 2015).

On the other hand, empathy is argued to form the basis of social behaviour because it involves cognitive and emotional assessments that must be completed in order to understand and meet the needs of others (Bellucci et al. 2020, Decety 2011). This strong link between empathy and pro-social behaviour is accepted as a dynamic that strengthens individuals' social bonds and promotes solidarity within society (Decety 2011, Luo 2018).

**Table 3. Behavioural measures used in empathy assessment and their general characteristics**

| Instrument | Developer | Procedure | Advantages | Disadvantages |
|---|---|---|---|---|
| Picture Viewing Paradigms | Westbury and Neumann 2008 | In the test, participants are exposed to specific images in a controlled environment and their cognitive-emotional responses are measured (Zhao et al. 2020). | This method, which reliably compares empathetic responses using standardised visual stimuli, allows participants to examine empathy and evaluate brain activity through neuroimaging by presenting them with emotional scenes (Zhao et al. 2020). | The artificial nature of the laboratory environment may limit the generalisability of empathic responses, and short-term visual stimuli may not fully reflect empathy (Hilgard et al. 2014, Verona et al. 2013). Additionally, task instructions can influence participant responses and interfere with the measurement process (Althaus et al. 2014). While this method is effective in measuring cognitive response speed, it may not fully reflect empathy in real-life scenarios. |
| CST - Comic Strip Task | Völlm Et al. 2006 | It is a standard measurement method for assessing individuals' ability to understand their mental states and emotions (Völlm et al. 2006). Consisting of educational comic strips, the ÇRG requires participants to answer specific questions by providing visual and textual clues (Yüzbaşıoğlu and Kurnaz 2023, Muzumdar 2016). | It is widely used to identify theory of mind impairments and measure social-cognitive abilities, particularly in individuals diagnosed with ASD (Sivaratnam et al. 2012, Yüzbaşıoğlu and Kurnaz 2023, Muzumdar 2016). | Presenting emotional and social scenarios in isolation may limit the generalisability of findings by failing to fully reflect real-life interactions (Pino et al. 2020). Additionally, participant responses may vary depending on individual experiences. This may increase the subjectivity of the measurement. Since it evaluates only certain components of social cognition, it may not encompass all aspects of empathy and theory of mind (Pertz et al. 2022). |
| Virtual Reality Technologies (VR) | VR technologies were not developed solely for the purpose of developing empathy by a specific individual or group, but have a wide range of applications in various fields. | Enables participants to be in environments that mimic real-world situations through simulation laboratories or VR platforms (Kim 2024; Vargas et al. 2022). | Participants prepare for situations they may encounter in fields such as healthcare or engineering by interacting with digital and physical elements. Virtual reality simulations are an effective method in that they provide participants with realistic and repeatable experiences. They enable contextual learning and instant feedback in a risk-free environment. | It has disadvantages such as high costs and technical limitations. In addition, simulations may not fully reflect real-world dynamics, which may limit their effectiveness depending on the application area (Bumbach et al. 2022). |

CST: Comic Strip Task, ASD: Autism Spectrum Disorder, VR: Virtual Reality

The relationship between empathy and pro-social behaviour has been explored in depth by examining the sub-dimensions of empathy and different pro-social behaviours. Smith and colleagues (2019) found that cognitive empathy positively influenced charitable donation behaviour and that empathetic individuals were more likely to participate in social responsibility projects. This highlights the importance of cognitive empathy in promoting pro-social behaviour, particularly in organisational and social contexts. On the other hand, it is known that high levels of emotional empathy increase helping behaviour towards others even in situations where self-sacrifice is possible (Von et al. 2022). It is argued that the intense experience of compassion, which guides altruistic responses, leads to an increase in helping behaviour (Sinclair et al. 2016).

An important perspective on the role of empathy in promoting prosocial behaviour has been proposed by Batson and colleagues (1991) in their empathy-altruism hypothesis. This hypothesis suggests that individuals with high levels of empathy are more likely to help others and exhibit altruistic behaviour (Batson et al. 1988). The findings of a study by Osman and colleagues (2018) and an experimental study conducted by May (2011) also show that empathic concern increases the likelihood of individuals engaging in cooperative behaviour that benefits others. These findings support the altruistic motivations underlying the relationship between empathy and prosocial behaviour. Additionally, some studies in the literature suggest that empathy's role in promoting prosocial behaviour is not limited to altruistic motivations (Telle and Pfister 2015). It has been suggested that self-centred motivations, which refer to individuals' tendency to engage in empathetic behaviour for personal benefits such as raising their social status or alleviating personal distress, may also shape this process (O'Malley et al. 2012). For example, it is known that lonely individuals exhibit more prosocial behaviour than non-lonely individuals in situations where high social rewards are expected, particularly in order to re-establish lost social connections (Lucas et al. 2010). These findings suggest that the effect of empathy on prosocial behaviour can be explained by both altruistic motivations and personal interests. This diversity provides an important perspective for understanding the multifaceted nature of empathy and the different motivations underlying prosocial behaviour. The relationship between empathy and prosocial behaviour has also been examined in studies with children. Qin and colleagues (2022) found in a study with children that empathy increased prosocial behaviour and decreased antisocial behaviour in children. Additionally, a study conducted by Spinrad and Gal (2018) showed that empathy training increased children's behaviour such as helping, sharing, and supporting others. Suazo and colleagues (2020) investigated the role of empathy in moral sensitivity and prosocial behaviour, highlighting the importance of empathy development in shaping moral values and social norms. In short, the early acquisition of empathic skills is critical in promoting prosocial behaviour and creating a moral and harmonious society. However, it has been suggested that empathic skills can be developed not only during childhood but also in adulthood. Rathje and colleagues' (2021) study showed that engaging in theatre arts allows individuals to experience different perspectives and can increase empathy skills, thereby promoting pro-social behaviour. This finding is consistent with the research results of Rowe and Kaufman (2023), which suggest that watching theatre can encourage audiences to behave more empathetically and adopt pro-social behaviours. The relationship between empathy and pro-social behaviour determines not only individual-level behaviour but also interactions at the social and organisational levels (Eisenberg and Miller 1987, Batson et al. 1991, Luo 2018). For example, empathy strengthens individuals' pro-social behaviour towards protecting the environment by acting as a factor that encourages environmental responsibility and environmentally friendly actions (Hogan et al. 2016, Raza et al. 2021). It has been found that individuals with high levels of empathy are more likely to participate in environmental social responsibility initiatives in the organisations they work for and are more likely to engage in environmentally friendly behaviour (Islam et al. 2019). Similarly, a study by Wang and colleagues (2022) demonstrated that empathy towards nature encourages environmental protection and sustainability behaviour. The study reveals a positive relationship between empathy towards nature and environmental commitment and environmentally friendly behaviour, demonstrating how empathy can contribute to environmental sustainability efforts (Wang et al. 2022).

While the positive relationship between empathy and pro-social behaviour has been supported by many studies, some research has found this relationship to be insignificant. One of the main reasons for this inconsistency is that empathy consists of different components, such as emotional and cognitive

components (Wink et al. 2021). For example, while emotional empathy may motivate pro-social behaviour, cognitive empathy may be more closely associated with defensive behaviour in situations such as bullying (Rizkyanti et al. 2021). Therefore, the type of empathy measured in studies can significantly influence the observed relationship with behaviour. Additionally, the measurement tools and methodologies used also play a decisive role in the findings. In particular, the self-report method may have limitations such as social desirability bias, which can lead to unreliable results regarding pro-social behaviour (Chirico et al. 2020). For example, Oliphant and colleagues (2020) found that self-report-based pro-environmental behaviour was not consistent with experimental observations. These findings indicate that the measurement tools and methodologies used in research directly influence how the relationship between empathy and pro-social behaviour is perceived and interpreted.

In general, the relationship between empathy and pro-social behaviour has been found to be positive and consistent, with individuals with higher levels of empathy being more likely to engage in actions that benefit society (Eisenberg and Miller 1987, Park et al. 2015, Luo 2018). The collective findings from these studies underscore the important role empathy plays in encouraging pro-social behaviour that benefits individuals, societies, and the environment. As empathy levels increase, positive social interactions and pro-social behaviour also increase (Islam et al. 2019, Smith et al. 2019). Inconsistencies found in some studies can be explained by the multifaceted nature of empathy and the sensitivity of measurement methods, which are mostly based on self-reports, to effects such as social desirability. These findings provide us with a broad understanding of how empathy shapes pro-social behaviour.

## Mediating and Moderating Factors

Explaining the relationship between empathy and prosocial behaviour requires an analysis of the demographic, psychosocial, and environmental variables that shape this relationship. This section will focus on research on variables that play a mediating and moderating role in the relationship between empathy and prosocial behaviour.

### Demographic Factors

Gender, one of the most studied demographic variables, is known to determine the effect of empathy on prosocial behaviour. For example, in some studies where empathy was experimentally manipulated, women exhibited more prosocial behaviour than men, and gender was found to play a moderating role in this relationship (Czap et al. 2014, Khachaturyan and Czap 2016, van Rijn et al. 2018). Women tend to convert empathy experiences into prosocial behaviour, whereas the relationship between empathy and prosocial decisions is weaker in men (Khachaturyan and Czap 2016). Age is another factor that influences the relationship between empathy and prosocial behaviour. For example, in a study by Beadle et al. (2013) that experimentally manipulated empathy, older adults (67–93) exhibited more prosocial behaviour than younger adults (18–26). In another study, it was found that middle-aged individuals (75–84 years old) were more likely to engage in prosocial behaviour than younger older adults (65–74 years old) when a situation that triggers empathy was present (Pollerhoff et al. 2022). These findings reveal that age plays a moderating role in the effect of empathy on prosocial behaviour.

Educational level is another important factor that moderates the relationship between empathy and prosocial behaviour. The findings of a meta-analysis conducted by Yin and Wang (2022) reveal that this relationship is weak at the primary school level and reaches its strongest level at the secondary school and university levels. In this regard, it is observed that the relationship between empathy and prosocial behaviour strengthens with increasing educational level (Li 2018). However, it has been suggested that the relative weakening of this relationship at the high school level may be due to the increase in self-centredness during adolescence (Van der Graaff et al. 2018). On the other hand, cultural background shapes individuals' empathetic responses and participation in pro-social behaviour (González 2017). A comprehensive meta-analysis study shows that both cognitive and emotional empathy are positively related to pro-social behaviour, and that this relationship is stronger in collectivist cultures (Yin and Wang 2022). Similarly, it has been found that the mutual dependency self-concept, which is a feature of collectivist cultural structures and prioritises the continuity of social relationships and conformity to group norms, strengthens the relationship between empathy and pro-environmental behaviour. However, the

independent self-concept, which is structured independently of social contexts and other individuals and emphasises individual achievements, personal competence, and uniqueness, does not produce such an effect (Wang et al. 2022).

**Psychosocial Factors**

Emotion regulation strategies, one of the psychosocial factors, play an important role in the relationship between pro-social behaviour and empathy. For example, the cognitive reappraisal strategy, which involves changing thoughts about an event to reduce its emotional impact, has been found to play a regulatory role in the relationship between emotional empathy and pro-social behaviour. In contrast, it has been found that the emotion regulation strategy of suppression, which involves consciously controlling and preventing the expression of emotions, does not play any regulatory role in the relationship between empathy and prosocial behaviour (Lockwood et al. 2014). However, a study has revealed that empathy is one of the most decisive factors influencing pro-social behaviour through the rational decision-making process, which involves individuals evaluating different options to achieve the best outcome. This finding shows that empathy does not directly lead to pro-social behaviour, but rather shapes it through cognitive evaluation processes and transforms it into a more systematic pro-social response through rational decision-making mechanisms (Cardona-Isaza 2023). Another study found that individual religiosity, i.e., the place of religion in people's lives and their level of competence, plays a partial mediating role in the relationship between empathy and pro-social behaviour (Korkmaz and Hacıkeleşoğlu 2021). This result shows that some empathy-driven pro-social behaviour occurs indirectly through religiosity and that religiosity acts as a factor guiding this relationship.

In conclusion, the relationship between empathy and pro-social behaviour is shaped by a wide range of variables, from an individual's demographic characteristics to their psycho-social processes and even biological predispositions. Demographic factors such as gender, age, educational level, and cultural context determine the extent to which empathy affects prosocial behaviour, while psycho-social processes such as cognitive reappraisal, religiosity, and rational decision-making can also alter the nature of this relationship. Furthermore, empathy is not merely a factor that increases pro-social behaviour; it also acts as a mechanism that supports such behaviour by being reinforced through factors such as self-compassion, gratitude, and social media use. Furthermore, the decisive influence of biological processes such as the functioning of the oxytocinergic system on empathy levels can indirectly shape individuals' tendencies towards pro-social behaviour. These findings reveal that the relationship between empathy and prosocial behaviour is not a one-way, simple process, but rather a multi-layered and dynamic structure. Therefore, in order to understand and improve this relationship, comprehensive approaches that take into account individual and environmental factors must be adopted.

## Antisocial Behaviours

Antisocial behaviours are defined in the literature as behaviours characterised by defiance of social norms and harming or disturbing others; they are most commonly represented by tendencies towards theft, physical aggression, lying, and bullying (Fairchild et al. 2013). Childhood and adolescence are seen as critical periods in the development and prevention of antisocial behaviour. Antisocial behaviour patterns that emerge during these periods can turn into criminal behaviour in adulthood if left untreated (Wilson et al. 2009). Antisocial behaviour is associated with tendencies such as lack of empathy and criminality (Ferretti et al. 2021); empathy plays a major role in the development and prevention of antisocial behaviour (Eisenberg and Spinrad 2014). Antisocial behaviour has both social and economic costs. In work groups and sports teams, antisocial behaviour causes conflict between individuals, reducing group cohesion and, in the long term, group performance and productivity (Thau et al. 2007, Al-yaaribi and Kavussanu 2017). Antisocial behaviour in children harms the well-being of family members and significantly increases the amount of money spent on the child (Romeo et al. 2006). However, the negative outcomes of antisocial behaviour in adulthood, such as harming others and theft, are much more costly. In addition to the health and property losses of victims (Tillem et al. 2020), the long-term care of offenders in prisons places a significant burden on state budgets (Cohen 1998). The inability of individuals released from prison to find

employment and education increases unemployment rates and reduces productivity in society (Farrington 2007). This situation pushes individuals released from prison back into crime, creating a cyclical problem. Antisocial behaviour has destructive effects not only on the environment of individuals but also on their own well-being. A longitudinal study found that children with antisocial behaviour patterns exhibited higher rates of aggression and drug use and lower levels of psychological well-being in adulthood compared to those without antisocial behaviour (Colman et al. 2009). The same study also found that individuals who exhibited antisocial behaviour patterns in childhood had significantly lower socioeconomic status in adulthood compared to those who did not exhibit such behaviour.

Antisocial behaviours are behaviours that disturb people in society and cause harm to society. These behaviours impose significant psychological, social, and economic burdens on both the behaviourer and those around them, as well as society at large. Considering the role of empathy in the emergence and development of these behaviours, understanding the relationship between antisocial behaviour and empathy is important. In this section, we will discuss the findings of studies on antisocial behaviour through the relationship between empathy and antisocial behaviour.

## Empathy and Antisocial Behaviour

Although empathy is mostly mentioned in terms of its contribution to pro-social behaviour, the relationship between empathy and antisocial behaviour is also a popular topic among researchers (Liu 2023). Biological and/or environmental disruptions in the development of empathy during childhood hinder empathy development and lead to the phenomenon of empathy deficiency (Warrier et al. 2018). Empathy deficiency, which leads individuals to disregard the emotional pain or discomfort of others and engage in harmful behaviour towards other people or society (Decety and Moriguchi 2007), is a concept closely related to antisocial behaviour. The literature examining the relationship between empathy and antisocial behaviour has been studied mainly in the context of criminal behaviour and interpersonal relationships.

### Criminal Behaviour

Criminal behaviour is defined as behaviour that is contrary to laws and norms within society and causes harm to people either directly (e.g. physical violence) or indirectly (e.g., theft). The relationship between empathy deficiency and aggressive behaviour is based on psychological and neurological foundations. When individuals with empathy deficits are examined neurologically, structural and functional differences are observed in the orbitofrontal cortex and amygdala (Blair 2010). Abnormalities in these regions are closely associated with empathy deficits and increased aggression (Blair 2005, Blair 2010).

In terms of criminal behaviour, a lack of empathy has been found to be associated with low shame and guilt in behavioural choices (Trivedi-Bateman 2019). In other words, individuals with a lack of empathy do not experience shame from causing fear, sadness, or stress to others. Furthermore, these individuals tend to rationalise and persist in their criminal behaviour (Decety and Meyer 2008). This leads individuals with a lack of empathy to exhibit norm-violating behaviour and become more prone to committing crimes. Common criminal behaviours such as physical violence, sexual violence, and fraud are closely associated with a lack of empathy (Romero-Martinez et al. 2016, Winter et al. 2017, Trivedi-Bateman 2019). In contrast, high empathy has been found to be a protective factor against behaviours that may lead to crime, such as gang membership (Lenzi et al. 2015) and gun possession (Espejo-Siles et al. 2020). These relationships have been tested across various age groups and cultures, yielding similar results (Jolliffe and Farrington 2021). Furthermore, a lack of empathy has been found to predict criminal behaviour in childhood (Jolliffe and Farrington 2004), and a lack of empathy in parents has been found to trigger domestic violence (Rodriguez 2013).

These findings show us that a lack of empathy is strongly related to criminal behaviour. Research conducted at both psychological and neurological levels shows that a lack of empathy increases the likelihood of individuals exhibiting criminal behaviour. These individuals rationalise their criminal behaviour, experience less shame and guilt, and this creates a cycle that perpetuates norm violations.

## Interpersonal Relationships

The second area where studies examining the relationship between antisocial behaviour and empathy are most concentrated is interpersonal relationships. Antisocial behaviours such as lying, verbal aggression and bullying, which are examined in the context of interpersonal relationships, do not have as serious consequences as criminal behaviour at the individual and societal levels, but they significantly reduce the quality of individuals' social relationships and well-being. As in criminal behaviour, empathy plays an important role in these relationships. Indeed, a lack of empathy has been observed to be associated with verbal aggression (Jolliffe and Farrington 2004), lying (Blair 2008) and bullying (Gini et al. 2007, Jolliffe and Farrington 2011). Additionally, numerous studies indicate that a lack of empathy is closely related to the dark triad personality traits (narcissism, Machiavellianism, and psychopathy) (Duradoni et al. 2023). On the other hand, high levels of empathy enable victims exposed to antisocial behaviour to adopt a sensitive attitude towards negative situations (Espejo-Siles et al. 2020).

Empathy studies conducted within the framework of racism and discrimination reveal that a lack of empathy is closely related to prejudice, stereotyping and discrimination. Lack of empathy can lead to the development of prejudices towards different ethnic groups and races (Stephan and Finlay 1999; Spanierman et al. 2006), while perspective-taking reduces stereotypes towards out-group members (Galinsky and Moskowitz 2000). Finlay and Stephan (2000) observed in their study of African Americans and White Americans, and Choi and Cho (2013) in their study of Koreans and Americans, that participants with high levels of empathy exhibited less in-group and out-group bias. Önal and colleagues (2021) noted that this relationship lies in the power of empathy to limit prejudices.

Lack of empathy in family relationships leads to communication problems among family members, causing increased conflict within the family (Burleson 2003). Lack of empathy in parents leads to emotional and physical neglect and abuse of children (Wiehe 2003); the lack of role models in empathy development hinders the child's empathy development (Zhang et al. 2023) and increases the likelihood of the child falling into negative situations (involvement in crime, bullying, etc.) in adulthood due to the empathy deficiency mentioned above. Especially during adolescence, empathy deficiency causes greater problems in parent-child relationships. Adolescents, who are striving to become emotionally independent, may find it difficult to communicate with parents who lack empathy, and this situation triggers family conflicts (Steinberg and Silk 2002).

In conclusion, lack of empathy has serious negative consequences in interpersonal relationships and harms individuals' social adjustment. Behaviours such as lying, bullying, and verbal aggression are associated with lack of empathy and harm individuals' social relationships. Furthermore, lack of empathy can lead to social division by fostering prejudiced attitudes such as racism and discrimination. People who demonstrate empathy more successfully are better able to limit their prejudices. In family relationships, lack of empathy negatively affects children's emotional development, leading to long-term problems. Within the framework of these findings, developing empathy is seen as an important part of establishing healthier interactions both in interpersonal relationships and at the societal level.

## Mediating and Moderating Factors

Demographic, cognitive, cultural, and biological factors have been found to play a mediating and moderating role in the strong relationship between empathy and antisocial behaviour.

### Demographic Factors

Jolliffe and Farrington (2011) suggest in their study that bullying behaviour differs according to gender. While a lack of cognitive empathy is an important determinant of bullying behaviour in males, this effect is caused by a lack of emotional empathy in females (Jolliffe and Farrington 2011). Similarly, meta-analyses examining the literature on empathy and bullying highlight significant gender differences (Mitsopoulou and Giovazolias 2015, Zych et al. 2019); van Noorden and colleagues' (2015) review study examined 40 bullying studies and found no significant gender differences. There are several possible reasons for van Noorden and colleagues' (2015) failure to find significant differences. Van Noorden et al. (2015) study included a large population of children and adolescents under the age of 18 but did not conduct detailed analyses between

age groups, thus failing to provide detailed analyses of the effect of age. In contrast, Zych and colleagues (2016) indicated that empathy levels change with age, while Mitsopoulou and Giovazolias (2015) examined the effects of age and gender on bullying separately and found that age is a moderating variable. Furthermore, van Noorden and colleagues (2015) did not limit the measurement tools used when comparing the results of studies evaluating the relationship between empathy and bullying. Therefore, it is possible that data from many different scales may have caused confusion. In contrast, the other two meta-analyses that found significant differences included studies examining empathy and bullying within specific scales in their analyses. In the relationship between empathy and aggression, it was observed that empathy's inhibitory effect on aggression is much more effective in women than in men (Stanger et al. 2016, Stanger et al. 2017). In fact, while empathy was found to reduce aggression in women under both low and high provocation conditions, its effect was only significant under low provocation conditions in men (Stanger et al. 2016). Another important demographic variable tested for its effect on the relationship between empathy and bullying is age. Various studies have found that social and cognitive changes that come with age affect bullying behaviour. In particular, it has been observed that individuals form more power-based dynamics in peer relationships during the transition from childhood to adolescence, and that bullying behaviour increases during this process (Rey et al. 2016, Utomo 2022). Although there are very few studies examining cultural differences in the relationship between empathy and bullying, existing studies have found that culture does not have a significant effect (Rey et al. 2016). However, the fact that all the cultures compared in the study were Western cultures, such as Spanish, Greek, and English, suggests that culture needs to be tested as a variable in a more comprehensive and generalisable manner. There are very few studies investigating the effects of culture on the relationship between empathy and aggression. However, one study observed that a lack of empathy, when combined with the culturally variable factor of dominance aspiration, predicted aggression (Van Hazebroek et al. 2016).

**Psychosocial Factors**

Newton and Bussy (2012) presented that moral disengagement played an important mediating role between empathic competence and criminal behaviour in their study with middle school students, and that boys' moral disengagement scores were significantly higher than girls' in this relationship. In the study, moral disengagement is defined as the justification of one's own wrong behaviour. In fact, this concept appears to be parallel to the literature discussed in previous sections of our study regarding the rationalisation of criminal behaviour. It is thought that culture may also play a role in the rationalisation process. Various cultural structures can influence the empathy process by promoting normative definitions that rationalise unempathetic actions, suggesting that cultural contexts may affect empathy levels and criminal behaviour (Mackenzie 2006). For example, in some societies, a culture of honour is quite prominent. In such cultural structures, the use of violence to protect family or community honour can be normalised, especially among men. For example, when a man uses violence in response to an insult or minor disrespect towards his family, he may rationalise this action on the grounds of 'protecting his honour.' Another factor influencing the relationship between antisocial behaviour and empathy is coping strategies. A study by Qin and colleagues (2022) showed that positive coping strategies (seeking support, regulating emotions, etc.) and negative coping strategies (avoidance, suppression, etc.) mediate the relationship between empathy and antisocial behaviour. Positive coping strategies may reduce the frequency of antisocial behaviour, while negative coping strategies have been found to increase the frequency of antisocial behaviour. Finally, it has been suggested that callous-unemotional personality traits are also effective in the relationship between empathy and antisocial behaviour and constitute a risk factor for antisocial behaviour (Frick and White 2008). Callous-unemotional personality traits refer to insensitivity to others' feelings and difficulty developing empathy. In individuals with high levels of callous-unemotional personality traits, the risk of antisocial behaviour emerging becomes more pronounced when empathy levels are low (Frick and White 2008).

**Biological Factors**

Impulsivity, hormone levels such as cortisol, and the functioning of brain structures such as the insula and amygdala have been found to be effective in the relationship between empathy and antisocial behaviour. Decreased physiological arousal and stress reactivity have been found to be associated with the

relationship between empathy and antisocial behaviour (Shirtcliff 2009). In other words, low cortisol levels and high impulsivity reinforce the effects of empathy deficiency. For example, empathy deficiency combined with low cortisol levels leads to a decrease in empathetic sensitivity towards victims and indirectly causes the person to exhibit antisocial behaviour. Similarly, adolescents with low empathy levels and high impulsivity are more prone to antisocial behaviour (Álvarez-García et al. 2019).

In conclusion, it has been revealed that there are many demographic, biological, and psychosocial factors that play a mediating and moderating role between empathy deficiency and antisocial behaviours such as bullying, aggression, and criminal behaviour. It is seen that the effect of cultural differences on this relationship has not been sufficiently investigated and that more comprehensive studies are needed in this area. All of the findings examined under this heading reveal that the interaction between empathy and antisocial behaviour cannot be reduced to a single dimension; on the contrary, various demographic, cognitive, cultural, and biological variables must be evaluated together.

## Conclusion

This review study addresses the complex and multidimensional relationship between empathy and prosocial and antisocial behaviour. It has been observed that empathy, with its cognitive and emotional components, forms the basis of social adaptation and plays a critical role in promoting prosocial behaviour while preventing antisocial tendencies (Penner et al. 2005, Morrison 2006). However, it has been demonstrated that different types of empathy can lead to different types of behaviour; specifically, emotional empathy motivates compassion and helping behaviour, while cognitive empathy supports moral reasoning through perspective-taking (Lockwood et al. 2014). In contrast, the association between empathy deficits and aggressive, bullying, and criminal behaviour clearly highlights empathy's protective function in social interactions (Decety and Moriguchi 2007, Park et al. 2015, Smith et al. 2019).

The study demonstrated that empathy interacts with factors such as demographic and psychosocial factors and biological predispositions in both prosocial and antisocial behaviour. However, findings in antisocial behaviour studies are more inconsistent and fewer in number compared to prosocial behaviour studies. For example, while empathy's prosocial effects are more pronounced in collectivist cultures (Yin and Wang 2023) and emotional empathy produces stronger behavioural outcomes in women (Stanger et al. 2016), the influence of gender and culture on antisocial behaviour is not clearly defined. On the other hand, neuroscientific findings have highlighted the need for a biopsychosocial perspective by showing that functional differences in brain regions such as the orbitofrontal cortex and amygdala are associated with empathy deficits and antisocial tendencies (Decety and Moriguchi 2007, Blair 2010). Although there are many studies in the literature on the relationship between empathy and prosocial or antisocial behaviour, there are some limitations, particularly in terms of the methods used. For example, self-report biases in empathy measurements and the artificial nature of laboratory settings cast doubt on the ecological validity of findings (Jolliffe and Farrington 2005, Oliphant et al. 2020). Furthermore, the scarcity of experimental methods, interdisciplinary studies, and the prevalence of cross-sectional and self-report-based studies are noteworthy. Additionally, cultural factors have not been sufficiently examined, and existing studies are largely limited to Western cultures. This creates a significant gap in understanding global empathy dynamics (Rey et al. 2016). In conclusion, empathy is recognised as a critical social skill for societies by promoting interpersonal solidarity and social harmony. However, a lack of empathy increases antisocial behaviour and paves the way for social divisions and conflicts. Therefore, the widespread implementation of empathy development programmes and the promotion of pro-social behaviour are emerging as important needs at both the individual and societal levels.

In future research, it is critical to define and measure the concept of empathy in a more comprehensive and clear manner. New scales that address cognitive and emotional empathy together should be developed to increase the validity of existing methods (Zych et al. 2020). In addition, studies supported by interdisciplinary and longitudinal designs should examine the developmental processes and behavioural outcomes of empathy in greater depth. In particular, culture has not been sufficiently studied in terms of empathy, antisocial and prosocial behaviour (González 2017). Joint studies with other scientific fields such

as sociology and economics are important because empathy, prosocial behaviour and antisocial behaviour are closely related not only to psychological factors but also to social structures, economic conditions and cultural norms. For example, sociology approaches empathy through social norms and social networks, while economics evaluates individuals' tendencies towards cooperation and altruism in the context of decision-making processes. An interdisciplinary approach will enable a more comprehensive understanding of these complex relationships and the development of effective intervention strategies. Therefore, it is recommended that experimental studies be conducted to examine the effects of empathy development programmes on pro-social behaviour. Such studies can identify factors that cause an increase or decrease in pro-social behaviour by evaluating the impact of empathy education in different age groups and cultural contexts (Rhee 2019). Finally, it would be useful to conduct studies investigating the effects of social media and digital platforms, which are prominent today, on empathy and pro-social/anti-social behaviour. Such studies would provide important data for understanding how empathy is shaped in the age of digital communication and for understanding pro-social and anti-social behaviour (Prot et al. 2013).

In practical terms, these findings offer important implications for education, clinical practice, and policy. School-based empathy education can increase prosocial behaviour and reduce antisocial tendencies in children (Spinrad and Gal 2018, Qin et al. 2022). In the clinical field, empathy-focused therapy and intervention programmes can help individuals develop emotional and social skills, particularly in cases of antisocial personality disorder and psychopathy (Decety and Moriguchi 2007, Blair 2010). For example, emotion-focused therapies and role-playing techniques can facilitate individuals' understanding of others' perspectives and emotional connections, thereby improving interpersonal relationships (Batson et al. 1991). Similarly, empathy-focused rehabilitation programmes in the criminal justice system may be an effective method for preventing recidivism (Trivedi-Bateman 2019). In conclusion, empathy is not merely an individual ability but a collective resource that shapes social well-being. Therefore, theoretical and applied studies centred on empathy play a key role in building a more harmonious and sustainable society.

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