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REVIEW



The optimal application of empathy interventions to reduce antisocial behaviour and crime: a review of the literature

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ABSTRACT

In recent decades, the relationship between weak empathy and the development of antisocial and offending behaviours has been well established. In the first review of its kind, this paper outlines the current implementation of empathy intervention programmes in a variety of disciplines. This paper will identify some key agents that are instrumental in empathy development and build a case to suggest that where such traditional sources of empathy development are inadequate, interventions are crucial to bridge the gap. To date, the few offender empathy interventions that have been implemented and assessed heed mixed results by crime type, sample type, gender, and empathy type. Novel, evidence-led recommendations will be made in relation to the timing, content, format, length, and location of future interventions, and the importance of the consideration of baseline empathy and individual differences will be outlined. Deficient empathy must be of central concern to criminal justice agencies and identified and addressed from infancy and throughout the life course. By using a combination of universal programmes with general populations and specific offender-targeted programmes, a holistic approach can be achieved.

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Introduction

The development of various social competencies throughout the life course is dependent on empathic functioning (Allemand et al., 2015). Empathy has historically been conceptualised in numerous ways and 43 different definitions of empathy can be found in the literature (Cuff et al., 2016). However, it is generally accepted as a multidimensional psychological construct which allows for individuals to both recognise (cognitive) and respond (affective) to others' emotional states (Cuff et al., 2016). More recently, others have suggested an alternative three-dimensional measure of empathy with improved psychometric properties, constituting cognitive empathy, emotional contagion, and emotional disengagement (Herrera-López et al., 2017). Individual differences in empathic response are influenced by a combination of both state (contextual) and trait (dispositional)

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factors (Cuff et al., 2016). Various measurement techniques are used to capture empathy; including several standardised scales, such as the Interpersonal Reactivity Index (IRI, Davis, 1983) and the Basic Empathy Scale (BES, Jolliffe & Farrington, 2021c). Empathy is also frequently measured using hypothetical scenarios where individuals' behavioural outcomes are interpreted as a reflection of their empathic ability (Hein et al., 2018).

Academics have actively attempted to decode empathy's relationship with criminality for the past fifty years, particularly since the new millennium (Posick et al., 2012). Weak empathy is linked to higher antisocial behaviour and general rule-breaking as well as to criminal behaviour (Bach et al., 2017; Trivedi-Bateman, 2015, 2019), and recent research advocates for the importance of a variety of positive environmental factors in fostering empathy (Silke et al., 2018). This has important implications for criminological policy and highlights the potential for empathy interventions to attempt to strengthen empathy and reduce antisocial behaviour and criminality (Jolliffe & Farrington, 2021a; Malti et al., 2016) in both at-risk and offending populations. In this paper, we posit that this is a largely neglected area of crime policy focus. Intervention programmes have more commonly been administered in healthcare settings; and in turn, conclusions can be drawn from other scholarly disciplines to inform and develop a framework for effective empathy enhancement techniques to be applied in a criminological context. The mixed results from offender interventions by crime type, sample type, gender, empathy type, and other factors (Jolliffe & Farrington, 2021d) create difficulty when it comes to designing future interventions.

Building on previous work that evidences a relationship between empathy and antisocial behaviour and crime, the first aim of this paper is to consider how empathy develops. Second, and crucially, this paper aims to address a research gap to highlight the potential for both universal and targeted empathy intervention implementation to reduce antisocial and criminal behaviour. Results from empathy interventions with general populations (and a smaller number of offender empathy interventions) are reviewed in order to identify practitioner recommendations for evidence-based optimal conditions to potentially reduce crime. Foremost, we suggest that prenatal programmes should be implemented to encourage parents to support adequate empathic development from birth, alongside further universal empathy promotion programmes in both school and home environments, such as the CASEL (Collaborative for Academic, Social, and Emotional Learning) (CASEL, 2013, 2015) and ROE (Roots of Empathy) (Cain & Carnellor, 2008; Connolly et al., 2018; Santos et al., 2011; Schonert-Reichl et al., 2012) programmes. If, using these primary methods, empathy development is insufficient, targeted intervention programmes can be implemented with specific at-risk, antisocial and offending groups to address the relationship between weak empathy and antisocial and criminal behaviour.

The relationship between weak empathy and antisocial and criminal behaviour

Empathy is evidenced to be influential in predicting and influencing a variety of human traits and behaviours, including criminality (Trivedi-Bateman, 2015, 2019). A well established and evidenced theoretical model of why crime occurs, situational action theory (Wikström et al., 2012), provides a robust explanation of why and how weak empathy is found to be related to overall morality and higher levels of offending (Trivedi-

Bateman, 2015, 2019). This work outlines that although establishing a causal relationship is difficult to achieve, it is likely that empathy influences criminality via a multitude of mediating factors, for example, through the effect of moral emotions (Trivedi-Bateman, 2015, 2019). Specifically, weak empathy is found to be associated with subsequent weak shame and guilt, all of which play a primary role in moral decision-making when making behavioural choices (Trivedi-Bateman, 2019). It follows that people with weak empathy are unburdened by the consequences of their actions to others, such as causing fear, distress, or sadness. In this way, they are believed to lack the function of an 'emergency handbrake' on their illegal action (Jolliffe & Farrington, 2021d). Other work also highlights that the relationship between empathy and antisocial and criminal behaviour is complex due to its modulation with various contextual factors (Yoder & Decety, 2018; Trivedi-Bateman, 2019). For example, greater empathic responding is shown towards individuals with characteristics that are common to oneself (Decety, 2015; Wieck & Kunzmann, 2015).

The relationship between weak empathy and antisociality has been evidenced to begin in childhood in the form of disruptive (Hunnikin et al., 2020) and callous-unemotional behaviours (Waller et al., 2015), which are predictors for norm-breaking behaviour in later life (Sitnick et al., 2019). Higher empathy is found to be a protective factor against juvenile aggression (Wang et al., 2017), carrying a weapon (Espejo-Siles et al., 2020a), and gang membership (Lenzi et al., 2015). In childhood and adolescence, disruptive behaviour can also take the form of bullying, which is a prominent issue in schools (Department for Education, 2018). More than 1 in 4 males and 1 in 7 females report having bullied others in the previous school year (Jolliffe & Farrington, 2011). An association between weak empathy and bullying perpetration is found for both traditional face-to-face bullying (Mitsopoulou & Giovazolias, 2015; van Noorden et al., 2015) and cyberbullying and trolling (Zych et al., 2019). High affective empathy is specifically found to be associated with lower bullying perpetration (Jolliffe & Farrington, 2006b, 2011), and is believed to protect against the effects of moral disengagement, which increases bullying (Zych & Llorent, 2019). The relationship between empathy and bullying is found to differ by gender (Jolliffe & Farrington, 2006b, 2011), for example, in predicting cyberbullying, cognitive empathy deficits are more relevant for males whereas affective empathy deficits are more relevant for females (Ang & Goh, 2010). Elsewhere, these differences by empathy type and gender are found to be minimal (van Noorden et al., 2015) or are not always observed. For instance, cognitive and affective empathy have both been found to be associated with face-to-face bullying and cyberbullying for males and females (Del Rey et al., 2016). Stronger empathy is not only associated with reduced bullying perpetration but also found to be a protective factor for negative life outcomes for victims of bullying (Espejo-Siles et al., 2020).

Beyond antisociality, a variety of criminal behaviours have also been associated with weak empathy; such as violent (Trivedi-Bateman, 2015, 2019; Romero-Martinez et al., 2016; Winter et al., 2017), sexual (Hempel et al., 2015), and fraudulent (O'Neill, 2020) offending. Weak empathy is present in offending community samples (Jolliffe & Farrington, 2021d) and within juvenile incarcerated (Llorca-Mestre et al., 2017) and adult incarcerated offending populations (House et al., 2017; Jolliffe & Farrington, 2021d). This phenomenon has been empirically tested in a number of countries and settings, including primary and secondary schools, probation services, prison services, and psychiatric

hospitals (Jolliffe & Farrington, 2021a). Low cognitive empathy, in particular, is found to be related to offending (Bock & Hosser, 2014; Jolliffe & Farrington, 2004; van Langen et al., 2014) and low general empathy is found to predict juvenile recidivism (Narvey et al., 2021). A greater severity of empathy deficiency is associated with a higher propensity to engage in interpersonal violence (Mariano et al., 2016; Trivedi-Bateman, 2015), a higher frequency of offending (Jolliffe & Farrington, 2007, 2011), and less severe perceptions of the seriousness of criminal acts (Marcelo Rodriguez et al., 2021). Notably, empathy deficits are most commonly observed with interpersonal rule-breaking, such as person-to-person violence involving direct contact with the victim (Jolliffe & Farrington, 2007) over more impersonal offences such as property crime (Bach et al., 2017; Mariano et al., 2016). Another consideration involves whether and in what capacity the crime victim is known to the offender; experienced empathy is found to differ in line with ingroup and outgroup dynamics (Lösel et al., 2018). Further, although it is difficult to disentangle the effect of empathy from the effects of numerous empathy correlates such as verbal fluency (Jolliffe & Farrington, 2011), impulsivity, intelligence, socioeconomic status (Jolliffe & Farrington, 2021a; Sánchez-Pérez et al., 2014), and social skills (Sánchez-Pérez et al., 2014), there is evidence that the relationship between weak empathy and crime continues to exist when controlling for such variables using regression (Sekol et al., 2021). For example, in a sample of 839 offenders from 5 prisons, low perspective-taking (a facet of cognitive empathy) significantly predicted violent offending after controlling for other measures (Lauterbach & Hosser, 2007). Extensive reviews that find a consistent relationship between empathy and crime have been carried out elsewhere (Trivedi-Bateman, 2015, 2019; Bach et al., 2017; Jolliffe & Farrington, 2021c).

The development of empathy in childhood, adolescence and adulthood

Undoubtedly, in order to develop effective interventions, a robust understanding of how and when empathy ordinarily develops is imperative. This section will establish how empathy develops and identify the people and institutions that are integral to successful empathy development. In typically-developing individuals, empathy tends to increase throughout childhood and adolescence (Allemand et al., 2015). Although there are challenges posed by studying infants, empathic capacity is found to emerge within the first year of life (Liddle et al., 2015), with simple and higher-order empathy development processes occurring before that of verbal ability (Tousignant et al., 2017). Empathic ability continues to develop into adulthood. Upon comparison of adolescents and young adults with older adults, affective empathy levels are found to be similar, if not higher, in older adults (Beadle & de la Vega, 2019). However, a process of cognitive decline occurs in individuals over age 60, leading to specific deficits in cognitive empathy and weakened social functioning (Khanjani et al., 2015). Thus, evidence supports that empathic ability develops continually throughout the life course and is not limited to childhood and adolescence, although these periods are important (Allemand et al., 2015).

The role of parents in empathy development

The importance of positive parenting, from the early formation of a secure attachment (characterised by trusting, comforting and close relationships), to the use of constructive

and warm disciplinary styles, is central to empathy development. Attachment with caregivers is an early influence on many aspects of psychological development, including empathy development (Stern & Cassidy, 2018). Kim and Kochanska (2017) find evidence for the relationship between empathy and parent–child security in children as young as 14 months old. A secure attachment between caregiver and child throughout infancy, childhood and adolescence, is theorised to foster individuals' engagement with language and emotional capacities, such as self-regulation (Stern & Cassidy, 2018), which is also found to be a mediator between attachment and empathy (Panfile & Laible, 2012). Self-regulation abilities create opportunities for individuals to practice and develop emotional understanding and empathy (Stern & Cassidy, 2018). Secure attachments are also found to be associated with greater empathy elsewhere (Joireman et al., 2002). Parental unresponsiveness and inconsistent parental behaviour may prevent the formation of secure attachments and subsequently hamper empathy development (Heynen, Simon, et al., 2021). Further to this, anxious insecure attachments are associated with increased personal distress, which is considered to be a maladaptive form of empathy (Joireman et al., 2002). Insofar as empathy is largely resultant from secure parenting, secure parenting itself requires empathy in the first instance. Child and parental empathy are found to be positively associated (Soenens et al., 2007). A meta-analysis finds parental mentalisation (appreciation of children's emotions and experiences), to which empathy is believed to be central, to be an independent predictor of attachment security (Zeegers et al., 2017). A systematic review of the relationship between parental empathy and attachment security finds a significant moderate correlation ($r=.27$) (Basto-Pereira & Farrington, 2021). All in all, attachment style has lasting effects on empathic ability into adulthood and implications for future behaviour (Williams et al., 2017).

Beyond the basic parent–child relationship, parental behaviour is the most widely studied contextual influence on empathy development (Silke et al., 2018). Specifically, associations have been drawn between empathy and both parental styles and disciplinary techniques. Uninvolved, neglectful, or permissive (lenient) parenting is associated with lower empathy (Heynen, van der Helm, et al., 2021; Samper et al., 2021). A meta-analysis illustrates that authoritative parenting, which is characterised by support, responsiveness and warmth, is positively associated with higher empathy in children (Heynen, van der Helm, et al., 2021). This is especially found when supportive parenting is combined with challenging parenting, in which opportunities for stimulation and growth are created (Mesurado & Richaud, 2017). Conversely, overbearing techniques such as helicopter parenting may detriment empathy development (McGinley, 2018), indicating a fine line between parental support and over-control. Constructive disciplinary techniques such as inductive (reasoning-based as opposed to power-assertive) discipline are associated with higher empathy (Krevans & Gibbs, 1996), especially when combined with emotion socialisation practices such as acknowledgement and validation of emotions in disciplinary situations (Spinrad & Gal, 2018). Gender normative socialisation and differences in parenting styles also contribute to gender differences in empathic development (O'Neill, 2020). Notably, this varies culturally, whereby collectivist cultures find males to be more empathic (Lai et al., 2015) as compared to individualist cultures wherein females report higher empathy scores (Jolliffe & Farrington, 2006a; Llorca-Mestre et al., 2017; Zych et al., 2020). Similarly to attachment, the influence of parental behaviour has

lasting effects on empathy later in life. For example, Lyons et al. (2017) evidence that adult affective empathy is associated with the level of care and overprotection received from a same-sex parent in childhood. Taken together, the promotion and employment of empathy-supporting parenting techniques is vital to strengthen the relationship between parent and child (Heynen, van der Helm, et al., 2021) and to foster individuals' empathy in childhood, adolescence, and beyond.

The role of peers, siblings, and further influences in empathy development

External social influences beyond the parent–child relationship cannot be neglected in the context of successful empathy development. Specifically, a meta-analysis indicates that positive and supportive extrafamilial and interfamilial relationships foster socialisation and empathy development from a young age via social learning and imitation of others (Boele et al., 2019). In adolescence, empathy development is more strongly associated with the quality of peer relationships within school environments than that of parent–child relations (Boele et al., 2019). Further, evidence indicates that the quality of sibling relationships is positively associated with overall empathy (Gungordu & Hernandez-Reif, 2020). An additive effect is apparent whereby positive sibling and parent relationships in combination contribute to the creation of positive family environments which, taken together, are associated with increased empathy (Estévez et al., 2016). The strength and the quality of family relationships are deemed to be very important for empathy development (Sánchez-Pérez et al., 2014). Elsewhere, the importance of positive school experiences is highlighted; school success may encourage a better sense of self, which may strengthen morality and empathy development and is likely to lead to more social acceptance and harmonious living (van der Helm, 2021). A number of other extrinsic factors have also been associated with empathy development over time such as higher religiosity (Kaur, 2020), higher social media usage (Vossen & Valkenburg, 2016), higher quality of living environment (van der Helm, 2021), and reduced aggressive video gaming (Siyez & Baran, 2017). Further, low empathy is associated with childhood trauma (Greenberg et al., 2018; Moreno-Manso et al., 2017) and adverse childhood experiences (Narvey et al., 2021). In conclusion, the sheer volume of factors evidenced to alter empathy indicates the complexity of empathy development and its malleable nature (Allemand et al., 2015; Decety, 2015). The development of empathy is considered as multi-directional and context-dependent, with individual empathic abilities ever-changing over the life course and within different scenarios (Wieck & Kunzmann, 2015). The aforementioned aspects of parental, sibling, peer and school factors appear to have a central influence on empathy development but may warrant further exploration in future research to decipher their relative importance (Silke et al., 2018).

The optimal conditions for empathy interventions for crime reduction

The biopsychosocial model for explaining the relationship between low emotionality and emotion-related characteristics and crime has received much support (Forrester, 2018). When the traditional sources of empathy development described above are underdeveloped or inadequate, empathy strengthening programmes (that utilise psychosocial approaches) are imperative. A comprehensive search of the literature published since

2015 was conducted to identify theoretical and experimental research which has explored the utility of empathy strengthening programmes in any subject field. In stage one, the studies were identified using keyword searches on Google Scholar, including *empathy interventions*, *empathy programmes*, and *empathy development*. In stage two, a snowball method was used to obtain further relevant publications from the reference sections of the papers retrieved at stage one.

Numerous empathy interventions have been carried out with general populations in non-criminological contexts and have proved successful in all age groups. Various promotional, prevention and intervention programmes involving children (Grazzani et al., 2016; Wu et al., 2020), adolescents (Carpio de los Pinos et al., 2020; Ingram et al., 2019) and adults (Leppma & Young, 2016; Romero-Martinez et al., 2016a) have produced significant increases in empathy with a variety of methodologies including teaching, interactive games and mindfulness programmes. Fewer offender empathy programmes have been administered and with various levels of success. Leading empathy and crime researchers reiterate that considerable care needs to be taken when designing empathy interventions to be effective (Jolliffe & Farrington, 2021a) but state that it is a worthwhile endeavour (van der Helm, 2021). Tailoring to the participant's individual differences and baseline empathy level is also found to be crucial for programme effectiveness (Malti et al., 2016; Mayer et al., 2018). Incorporation of the optimal conditions outlined below alongside other evidence-led considerations listed in this paper has sizeable implications for cost-effectiveness in achieving behaviour change. The suggested intervention focus, content, and methodologies vary according to age group and in relation to whether programmes are universally focused for general populations or offender-targeted (see Table 1).

Timing of empathy intervention

In early childhood, the suggested focus is on the parent and family environment, using nurturing and attachment-related empathy promotion techniques. To encourage key sources of empathy development to be successfully facilitated from a young age, universal empathy promotion programmes should be implemented in the prenatal and early childhood periods within both home and (later) school environments. In prenatal

Table 1. Intervention focus and methodology by age group.

Age group	Universal promotion vs targeted approach	Empathy intervention methodology
Prenatal and early childhood	Universal promotion	Parental training and support to focus on relationship between parental empathy and child empathy: attachment, parental style, supportive family environment
Early-mid school age	Universal promotion	Approaches such as those adopted by CASEL and ROE programmes, combined with continued rehearsal in home and peer environments.
Late childhood and early adolescence	Targeted: based on need and tailored to existing empathy deficits	Emotion regulation strategies, for example role playing as aggressor and aggressor, with a focus on milder forms of antisocial behaviour and rule-breaking
Late adolescence and adulthood	Targeted: based on need and tailored to existing empathy deficits, and offending history	Specific personalised offender interventions (for example, victim/offender scenarios)

empathy promotion programmes, emphasis should be placed on the importance of early empathy development and how parents can facilitate supportive family environments, positive attachments, and parenting practices with their children to achieve this (Estévez et al., 2016; Heynen, Simon, et al., 2021; Heynen, van der Helm, et al., 2021; Mesurado & Richaud, 2017; Spinrad & Gal, 2018; Stern & Cassidy, 2018). Existing early interventions have been found to be successful and emphasise the scope for employment with young children. For example, a toddler conversation-based empathy training programme significantly improved all measured dimensions of empathy, as reported by parents (Grazzani et al., 2016).

In early-mid school age groups, various techniques used in well-evidenced universal programmes such as CASEL and ROE programmes can be adopted with continued rehearsal in home and peer environments. The ROE programme has been delivered to over a million school children world-wide (Roots of Empathy, n.d.) and found to increase empathy (Cain & Carnellor, 2008). To increase efficacy, empathy intervention programmes should assess and subsequently be tailored to individuals' pre-intervention empathic ability, as social competencies differ greatly by age (Malti et al., 2016). Looking beyond school-based empathy programmes with general populations; in late childhood and adolescence, the suggested focus is on participant need and tailoring to identified empathy deficits to attempt to divert young people from involvement in crime. Children who are at-risk of criminality, for example, children with delinquent parents, have been found to have impaired empathy from as young as eight years old (van Zonneveld et al., 2017). If left unaddressed, emotional issues such as deficient empathy may become entrenched over time and increasingly difficult to strengthen (Hunnikin et al., 2020). Empathy intervention training can foster significant gains in empathy and is found to be a protective factor for the effect of adverse childhood experience on later recidivism (Narvey et al., 2021). In adulthood, offending behaviour can be targeted with specific victim/offender scenarios with the goal to reduce recidivism.

Content of empathy intervention

The most successful empathy interventions train behavioural as well as cognitive and affective empathy components (Jolliffe & Farrington, 2021d; van Berkhout et al., 2016). Behavioural empathy training, for example, the use of modelling, allows trainees to gain insight into the expression and application of empathy in real life. Authentic tasks that can be applied to daily situations are found to be more effective than abstract, theoretical approaches (Bertrand et al., 2018). Examples of empathy intervention methodologies that have been successfully applied include didactic, experiential, role-playing, and modelling techniques (Şahin, 2012). A review of 19 school-based social-emotional learning (SEL) programmes reveals that the inclusion of multiple empathy-related constructs (perspective-taking, emotion understanding and prosocial behaviour) is found to be most effective for behavioural outcomes (Malti et al., 2016). Broader aspects of socio-emotional functioning, as is achieved in the CASEL framework (CASEL, 2013, 2015) should also be included. Skills such as effective self-regulation are necessary to facilitate successful empathy development as they mitigate personal distress caused by engaging in empathic behaviour (Hein et al., 2018; Llorca-Mestre et al., 2017; Yoder & Decety, 2016). This can be achieved by teaching perspective-taking and reasoning

techniques rather than encouraging emotional sharing with others (Yoder & Decety, 2016), alongside the teaching of emotion regulation strategies (Hein et al., 2018). Combined, this encourages the constructive processing of negative affects and addresses the emotionally-draining nature of responding empathically. Provision of emotion regulation training is vital to achieve empathy intervention efficacy in real life (Hein et al., 2018). Poor social cognition, constituting emotion recognition, is associated with offending behaviour (Schofield et al., 2015). Specifically for offenders and groups at-risk of criminality, the use of emotional regulation training (with prosocial reasoning) is theorised to decrease antisocial behaviour through cognitive restructuring and the development of empathic ability as well as behavioural and moral awareness (Llorca-Mestre et al., 2017).

Format of empathy intervention

A variety of formats for delivering empathy interventions have been explored in recent research. First, mindfulness training allows for the objective consideration of emotions in the present moment and therefore awareness of others' experiences (Block-Lerner et al., 2007). Various mindfulness-based training programmes have successfully increased empathy levels (Gur & Yilmaz, 2020; Winning & Boag, 2015). Further, simulated practice exercises are found to be effective to develop empathy in medical contexts (Bearman et al., 2015), whereas other formats such as behavioural guidance teaching where students are taught about the behaviour of their patients are unsuccessful (Souror et al., 2020). To enhance engagement in simulations, virtual reality (VR) technology is often adopted and, by virtue of VR's immersive nature, allows individuals to engage in perspective-taking more readily (Schutte & Stilinovic, 2017). This is evidenced to have greater effects on post-intervention empathy than that of identical two-dimensional interventions (Schutte & Stilinovic, 2017). Notably, as simulations generally increase empathy towards certain individuals and groups (for example, homeless individuals; Herrera et al., 2018), VR interventions could be tailored and applied specifically for offenders with weak empathy to experience the predicament of their victim and subsequently develop victim empathy. For example, VR simulation interventions have been effectively employed to increase empathy and reduce bullying (Ingram et al., 2019) and to increase emotion recognition ability in domestic abuse offenders, which is required for empathic responding (Seinfeld et al., 2018).

Length of empathy intervention and longevity of effects

Implementing empathy interventions with lasting effects is a salient issue particularly because most current assessments of efficacy only include short-term measures (Lor et al., 2015). For example, although a simulation-based empathy intervention produced significant empathy increases seven-days post intervention, these effects are found to be insignificant 90-days post-intervention (Lor et al., 2015). Particularly, since VR-based empathy interventions have been introduced in recent years, few studies have investigated their long-term impacts. Contradictory to other research, Herrera et al. (2018) evidence that traditional perspective-taking tasks (such as imagining the position of someone else) are as effective as VR long-term, which highlights the need for further

research. Notably, a meta-analysis of various interventions emphasises that different groups, such as children, as compared to adults, may require different length programmes to produce significant empathy increases (van Berkhout et al., 2016). Mindfulness interventions find positive empathy outcomes for six and eight-week courses (Gur & Yilmaz, 2020; Leppma & Young, 2016), and elsewhere, brief 15-minute mindfulness courses are found to increase empathy (specifically for students and adults with low conscientiousness and extraversion personality traits) (Winning & Boag, 2015). Further evidence exists for short courses; a 15–30-minute online empathy intervention (combined with homework exercises) with adults significantly improved empathic responses with a medium effect size, and furthermore, improvements remained stable at a two-month follow up (Sentas et al., 2018). Of key importance, in the context of mindfulness interventions, effect sizes between intervention and empathy outcome are moderated by the extent of post-intervention application and home-based practice and rehearsal of learnt mindfulness techniques (MacLean et al., 2020). It follows that it is crucial for intervention programmes to address longevity of effects (regardless of programme length) by emphasising the importance of post-intervention practice. For example, in order to achieve such longevity of effects, neurobiological evidence suggests that long-term mindfulness practice is required to support the required significant brain changes (Chialant et al., 2016). To date, there is no published literature that explores this in relation to empathy in a criminological context specifically, and future research can address this.

Location of empathy intervention

The following section will outline evidence to suggest that empathy promotion must be actively supported in both the home and school environments. Earlier sections of this paper presented evidence for the relationship between empathy, parental attachment (Basto-Pereira & Farrington, 2021; Heynen, Simon, et al., 2021; Joireman et al., 2002; Kim & Kochanska, 2017; Panfile & Laible, 2012; Stern & Cassidy, 2018), parental style (Heynen, van der Helm, et al., 2021; Krevans & Gibbs, 1996; Lyons et al., 2017; McGinley, 2018; O'Neill, 2020; Samper et al., 2021; Spinrad & Gal, 2018), and other home-oriented factors (Boele et al., 2019; Estévez et al., 2016; Gungordu & Hernandez-Reif, 2020; Sánchez-Pérez et al., 2014). These factors can be addressed with prenatal and child-oriented strategies in the home.

Turning to the potential for school-based interventions, only 29–45% of school-aged children report having socio-emotional competencies such as empathy, and 71% indicate that their school does not provide an encouraging environment (Benson, 2006). Research indicates that a CASEL approach (CASEL, 2013, 2015) can be adopted to improve empathy in general populations as well as adolescents at-risk of criminality. These social and emotional learning (SEL) programmes aim to develop children's emotional, behavioural and cognitive competencies, including self- and social-awareness, which are required for empathic functioning (Malti et al., 2016). SEL programmes are designed to help participants to acquire the knowledge, skills, and attitudes to understand and manage emotions (Dusenbury et al., 2015) and to apply them as required in diverse daily situations (Bertrand et al., 2018). For example, Carpio de los Pinos et al. (2020) evidence that an SEL summer camp facilitated empathy development in adolescents at-risk for social and emotional problems resultant from negative family circumstances. In another study, a

CASEL programme that focused on visual arts and music found significant gains in social awareness and empathy compared to a control group (Mogro-Wilson & Tredinnick, 2020). Additionally, two meta-analyses have found similar support for the effectiveness of CASEL programmes (Durlak et al., 2011; Taylor et al., 2017). The SEL programmes that are most specifically tailored to individual participants, implemented earliest, and adopt a whole-school approach produce the most successful outcomes, including increases in empathy (Malti et al., 2016). Various other initiatives have been carried out in schools worldwide, such as ROE, which have proved impactful due to their population reach. ROE has been evaluated in both comparative and randomised controlled studies and findings indicate increases in prosocial behaviour (Cain & Carnellor, 2008; Connolly et al., 2018; Santos et al., 2011; Schonert-Reichl et al., 2012), decreases in aggression (Cain & Carnellor, 2008; Santos et al., 2011; Schonert-Reichl et al., 2012), expected fighting incidents by 50% (Santos et al., 2011), increases in social and emotional understanding (Connolly et al., 2018; Schonert-Reichl et al., 2012) and increases in empathy (Cain & Carnellor, 2008). Although the UK government statutory guidance regarding compulsory elements of the core school curriculum (FSHE; financial, social, health, and economic classes) dictates that moral teachings are crucial (Department for Education, 2019), there is no evidence or indication that comprehensive and consistent empathy or moral emotion content is taught in schools. To achieve this, empathy development teaching may be incorporated into the existing curriculum elsewhere. For example, the addition of role-playing and simulation within religious studies curricula may support empathic understanding abilities and understanding for others' religious beliefs (Trothen, 2016), potentially reducing future prejudice and hate crime (Miklikowska, 2018). Further, although it has not yet been tested, it has been suggested that drama lessons could include bullying scenario exercises to facilitate empathy awareness and socio-emotional development with peers (Froeschle Hicks et al., 2016).

Further, combined home and school techniques can offer a collective approach to empathy development. For example, CASEL approaches emphasise the importance of involving primary caregivers to assist them in rehearsing and reinforcing student learning at home (Dusenbury et al., 2015). Recent research also advocates for the use of other empathy intervention styles simultaneously in both home and school environments. For example, tablet games such as The Empathy Game (Wu et al., 2020), which can easily be tailored to children's existing abilities and social contexts, are found to longitudinally increase the empathic perception abilities required for empathic responding by integrating real-life social interpersonal interactions with technology.

Empathy interventions in a criminological context

The following section will outline existing empathy interventions designed to address bullying. Some research finds that empathy decreases from childhood to adolescence and reiterates the urgent need for effective empathy intervention in adolescence to address the detrimental effects of bullying (Garandeau et al., 2021). Empathy components feature in many school-based anti-bullying programmes (Gaffney et al., 2019). A systematic review of cyberbullying interventions found that empathy training was present in over half of the programmes, was one of the most effective components, and often included perspective-taking activities whereby the perpetrator would look at the situation from the

perspective of bystander or the victim (Hutson et al., 2018). A 10-week classroom-based cyberbullying intervention increased empathy and decreased cyberbullying behaviour, and the control group reported decreased affective empathy and increased cyberbullying (Schultze-Krumbholz et al., 2016). Further, a small-scale empathy training intervention significantly increased empathic skills and decreased bullying behaviours in primary school students, and these effects remained at the 60-day post assessment stage (Şahin, 2012). A systematic review of the relationship between empathy and bullying finds that prevention and intervention programmes fail to acknowledge the multi-dimensional and complex nature of the empathy-bullying connection (van Noorden et al., 2015). It is argued that specific anti-bullying interventions cannot solely rely on empathy and must also consider other factors associated with preventing bullying, such as decreasing moral disengagement (Garandeau et al., 2021).

There are multiple examples of existing empathy interventions in criminological contexts. Although the long-term effects of restorative justice interventions (RJIs) on empathy have not been studied, research indicates that 50% of those involved in a brief RJ gave post-intervention evaluations which were classified under the theme of 'empathy' (Kennedy et al., 2019). This included statements that highlighted the detrimental effect of their criminal action on victims and the community. Restorative justice and humane education programmes are also argued to be useful in increasing offender empathy and decreasing recidivism (Komorosky & O'Neal, 2015). Additionally, group interventions such as a long-term (30-week course with two-hour-long weekly sessions) court-mandated intimate partner violence offender rehabilitation programme improve self-reported cognitive empathy and cognitive flexibility (Romero-Martinez et al., 2016a). Crucially, improvements in these cognitive skills, including overall empathy, have been associated with reduced recidivism.¹ Communication training, in which offenders learn non-confrontational, constructive and empathic communication skills with the aim of reducing interpersonal conflict, is also found to increase empathy for offenders on probation (Marlow et al., 2012). Elsewhere, an alternative content approach using arts-based techniques has been found to cultivate empathy for serious offenders in psychiatric settings (Compton-Dickinson & Jolliffe, 2021), however, whether this can be generalised to other groups remains to be explored.

Existing research evidence that weak empathy is more relevant in specific offending groups and, within these groups, to individuals with certain characteristics (Mayer et al., 2018). For example, offenders with psychopathic traits specifically are shown to exhibit weak empathy compared to other violent offenders, which highlights a need for individual assessment using pre-intervention diagnostic tools rather than the grouping of all violent offenders as a homogenous group (Mayer et al., 2018). Further, offenders who have committed a crime against another person show higher deficits in cognitive empathy (Mariano et al., 2016) and interventions should be tailored accordingly. Elsewhere, intervention effectiveness is also found to be contingent on crime type, for example existing interventions have produced mixed results with sexual offenders (Narvey et al., 2021; Wastell et al., 2009). Sexual offenders are found to report low victim empathy specifically as opposed to general empathy (Brown et al., 2012; Fernandez & Marshall, 2003). However, other research finds victim empathy has no significant association with sexual recidivism (Hanson & Morton-Bourgon, 2005) and the relationship between empathy and sexual violence is found to be weak (Jolliffe & Farrington, 2004;

Levitán & Vachon, 2021). In addition, low severity offenders may not benefit from empathy enhancement, such as those who commit minor crimes or low-level drug users (Jolliffe & Farrington, 2007). Further work to explore tailoring for different offender subgroups is required in order to increase empathy intervention success (Mayer et al., 2018). Intervention effectiveness may also differ according to participant gender and empathy type (Ang & Goh, 2010; Jolliffe & Farrington, 2011), for example, although most existing anti-bullying programmes address cognitive empathy, it is believed that it may be more effective to increase affective empathy instead (Jolliffe & Farrington, 2011). However, methodological hurdles exist whereby affective empathy is notoriously challenging to enhance (Jolliffe & Farrington, 2011) since it involves emotional congruence with others as opposed to identification of others predicaments. An exception to this is the KiVa intervention, an empathy-focused bullying programme, which significantly increased affective empathy specifically (Garandeau et al., 2021).

Interventions should ensure to measure for baseline empathy to ensure participants exhibit low empathy, in addition to repeated measurements of empathy throughout the intervention and beyond. The importance of tailoring is highlighted by the 'Violence Prevention Program' with youth violent offenders (Zhou et al., 2018) wherein significant empathy increases were only produced in individuals with lower pre-intervention empathy scores. Interventions should also measure other salient factors that influence crime alongside (Zhou et al., 2018), and use robust evaluations to minimise potential threats to internal validity (Jolliffe & Farrington, 2021a). It has been suggested that RCT designs (with the inclusion of a control group) provide the strongest evidence to assess the effectiveness of empathy interventions on antisocial behaviour, although there are very few existing studies that adopt this design (Farrington, 2013; Jolliffe & Farrington, 2021a). Various other factors, including positive environments and motivation for individual change are also found to be important in achieving programme success. For example, positive group environments in detention facilities, which are characterised by supportive staff, opportunities for growth, and a positive atmosphere, are associated with increased empathy (Heynen, 2017). This is also found in longer intervention programmes, where a focus on fostering group relationships with programme members and facilitators is found to support retention and empathy outcomes (Chovanec, 2020). In order to balance the need for a personalised approach with cost-effectiveness, programmes could potentially begin with a larger cohort of offenders and deliver subsequent sessions with smaller clusters and one-to-one evaluations. In conclusion, empathy is often unaddressed by current offender intervention programmes. Insofar as continued antisocial behaviour leads to further decreases in empathy over time (Williford et al., 2016), future interventions are urgently needed. In future, in order to assess for changes in empathy, intervention evaluations should include parent or youth worker report as well as self-report and behaviour outcomes measures (Jolliffe & Farrington, 2021b).

Discussion

This paper draws attention to the relationship between weak empathy and the development of antisocial and offending behaviours and identifies conditions under which empathy strengthening programmes could be administered in a criminological context, based on the current implementation in a variety of disciplines. A framework is developed

for the optimal implementation of universal and targeted empathy interventions whereby deficient empathy is addressed from childhood through to adulthood. Centrally, the importance of positive parenting, from the early formation of secure attachments to the use of constructive and warm disciplinary styles, is highlighted, as well as peer and sibling relationships. Successful development of empathy in childhood, adolescence and adulthood is incredibly important and must be of central concern to criminal justice agencies. Interventions are crucial to bridge the gap in instances where traditional sources of empathy development are inadequate or deficient to potentially reduce future antisociality and criminality. In addition to providing general support to children and adolescents universally and routinely in home and school environments, the identification of at-risk or offending groups should also be carried out. Since intervention programmes have the power to strengthen empathy, they can focus on mitigating the behavioural effects of weak empathy. Mixed results are found from offender-specific empathy interventions and further work is required to ascertain specific criteria for successful attitudinal and behavioural outcomes. As well as reviewing the outcomes from such criminological interventions, this paper has extended conclusions drawn from other scholarly disciplines to further inform empathy enhancement techniques in a criminological context. This research develops practicable suggestions in a subject area that has previously received little attention by identifying numerous factors to take into consideration in the planning stages of potential future empathy interventions (see Table 2). The desired outcome of strengthening empathy is generally dependent on several factors including intervention timing, content, format, length and location, and crucially, tailoring to the participant's individual differences and baseline empathy level. Additionally, further considerations for programme design have been suggested; for example, the importance of assessing

Table 2. Evidence base for suggested optimal conditions for effective empathy interventions.

Factor	Optimal condition	Evidence base
Timing	For general populations, begin universal empathy promotion in early childhood and sustain from prenatal stage, to pre-school and beyond to all school age years, and throughout the life course. When traditional development sources (e.g. parents and significant others) are not adequate, and baseline empathy is low, apply targeted programmes to address this.	Malti et al. (2016); van Zonneveld et al. (2017); Hunnikin et al. (2020); Narvey et al. (2021)
Content	Inclusion of all constructs of empathy (cognitive, affective and behavioural) and emotion regulation skills.	Jolliffe and Farrington (2021d); van Berkhouit et al. (2016); Malti et al. (2016); Yoder and Decety (2016)
Format	Target general social and emotional functioning with SEL and CASEL approaches. Mindfulness- and simulation-based interventions (including the use of virtual reality technology).	CASEL (2013, 2015)
Length and longevity of effects	Tailor programme length to group needs and baseline empathy. Encourage post-intervention practice to strengthen longevity of effects.	Gur and Yilmaz (2020) Bearman et al. (2015); Schutte and Stilianovic (2017); Ingram et al. (2019); Seinfeld et al. (2018)
Location	Home (parents, siblings, family environment) and school (for example, CASEL & ROE techniques) environments in combination.	MacLean et al. (2020); van Berkhouit et al. (2016); Chialant et al. (2016)
		Dusenbury et al. (2015); Malti et al. (2016); Wu et al. (2020)

empathy changes using long-term measures in addition to short-term measures. Ultimately, in order to begin to explore causality, exploration of whether within-individual changes in empathy are reliably followed by within-individual changes in offending are required (Compton-Dickinson & Jolliffe, 2021) and a more robust understanding of the relationship between empathy and offending is fundamental (Jolliffe & Murray, 2012).

There are various limitations to the current study. First, the study does not take into account the role of other factors that play a role in criminal behaviour, such as morality and wider setting factors (Wikström et al., 2012). Second, establishing causal relationships between empathy and associated variables proves to be continually difficult due to empathy's multifaceted nature (which encompasses abilities from emotion perception to perspective-taking), and its indirect association to crime via various moderating factors (Trivedi-Bateman, 2015, 2019). Third, the reliable measurement of empathy has been found to be problematic (Basto-Pereira & Farrington, 2021), partly because of a consistent lack of consensus as to the most suitable conceptual definitions and the various corresponding assessment scales (Cuff et al., 2016; Jolliffe & Farrington, 2021a; Jolliffe & Murray, 2012). To illustrate this issue further, the importance of the distinction of cognitive and affective empathy as separate entities is highlighted in recent research (Coll et al., 2017). Offenders are found to be deficient in cognitive and/or affective empathy according to crime type and various individual differences, although results are mixed and inconclusive (Winter et al., 2017). Widely used scales also present usability issues, for example, the Interpersonal Reactivity Index (Davis, 1983) is found to have poor readability, which may be problematic for some participants. Furthermore, past experience (Coll et al., 2017) and social and contextual factors (Yoder & Decety, 2018) are found to confound empathic responses. Psychopathic participants may also require further attention as although they are found to exhibit very low affective empathy, they are believed to use their cognitive empathy to aid them while luring in their victims (Robinson & Rogers, 2015; Sest & March, 2017). As a result, for specific subgroups, participation in an empathy strengthening programme may have the undesirable effect of assisting rather than hampering future offending (Jolliffe & Farrington, 2011).

There is evidence that empathy interventions (if applied early enough, personalised sufficiently and sustained) may be operational in increasing child and adolescent empathy before the cycle of later antisocial behaviour and criminality takes hold. These programmes can identify any barriers to typical empathy development sources in early life (such as significant others, including parents) and provide another opportunity to develop empathy adequately. Early interventions can promote empathy universally, and later interventions can target young people with weak empathy who are at risk for criminality and in parallel can assist to tackle recidivism in offending populations. Ultimately, this paper outlines that the malleable nature of empathy provides scope for the use of empathy interventions to address inadequate empathy development, strengthen empathy with long-term effects, and potentially reduce antisociality and crime.

Note

1. However, although this intervention was successful for those who completed it, only 31% of the initial sample completed the course and took part in the second neuropsychological

assessment, indicating that participant recruitment and retention should be a core focus when developing offender empathy interventions. To increase retention, the incorporation of motivational strategies which encourage treatment compliance and motivation for individual change have been effective (Romero-Martinez et al., 2019).

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