

Prosocial behavior in convicted offenders: A scoping review

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ABSTRACT. Despite considerable interest and relevance to the broader community, prosocial behavior in prisons remains an understudied topic. The purpose of the present study was to summarize existing research on prosocial behavior among incarcerated offenders. A complex search of three electronic citation databases (Google Scholar, Web of Science, and PsychInfo) was conducted, covering articles published in the last decade (January 2012 to December 2023). Of the 248 articles initially found, only 12 were included in the scoping review after eligibility screening. The included studies reported on prosocial behavior as measured by self-report questionnaires or experimental tasks/economic games and were conducted with incarcerated offenders.

A first set of studies aimed to assess prisoners' self-reported prosocial behavior, while a second set of studies provided a less subjective approach to offender prosociality by using a variety of games that allowed for the investigation of two main types of actual prosocial behavior: resource sharing and reciprocal prosocial behavior (cooperation).

Existing studies conducted in prisons provide valuable insights into different types of prosociality and the factors that may influence offenders' decisions to engage in prosocial behavior. Further research is needed, particularly using ecological methods reflecting actual prosocial behavior in high-stakes settings to get an accurate picture of the authenticity of prosociality among convicted offenders.

Keywords: prosocial behavior, social behavior, Economic games, prisoners, incarcerated offenders.

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INTRODUCTION

Human beings are social creatures by nature, and every society is based on the ability of its members to cooperate and help one another. At the same time, acting for the benefit of others involves a variety of costs in terms of personal resources and can incur some disadvantages in the long run. Prosocial behavior thus became an important focus of scientific research across different disciplines, in the attempt to identify and study the emergence and maintenance of socially oriented acts (Batson, 2011; Lefevor et al., 2017; Warneken & Tomasello, 2009).

Prosocial behavior can be *defined* as voluntary, intentional behavior that benefits others, the “social glue” that allows people of all ages to live peacefully and productively together (Eisenberg & Miller, 1987). Prosocial behavior encompasses a wide range of actions, such as comforting someone (offering verbal or physical support, Svetlova et al., 2010), practical support (retrieving an out-of-reach object, Warneken & Tomasello, 2006), sharing resources (giving others access to resources or personal belongings, Brownell et al., 2009; Hay, 1979) or cooperating for mutual benefit (reciprocal prosocial behavior, working together towards a common goal, Fehr & Gintis, 2007).

Regarding the *methods* for studying prosocial behavior, the most prevalent approach is to directly ask individuals via the use of **self-report questionnaires** assessing the propensity to help and support others (the Prosocialness Scale, Caprara et al., 2005), the individuals’ preference for resource allocation between themselves and another person (Social Value Orientation Scale, Van Lange, 1999) or the tendency towards egocentric or moral-based behavior (the Machiavelli Index, Henning & Six, 1977). Self-report questionnaires do not measure actual prosocial behavior, but instead focus on perceptions and how individuals see and describe themselves in terms of prosociality. Consequently, they may not reflect the reality of prosocial behavior due to a variety of factors (such as a general positivity bias).

Moving beyond the subjective experience of individuals, other paradigms have focused on more ecological measures of **actual prosocial behavior**, albeit in a controlled setting. One line of research has examined *sharing behaviors* (e.g., inhibition of selfish impulses, altruism, generosity) using hypothetical resource distribution tasks such as the Dictator Game (Camerer, 2003), donation tasks (Tusche et al., 2016), or the Social Discounting Task (Jones & Rachlin, 2006). To elicit and assess reciprocal prosocial behavior or *cooperation*, researchers developed economic-based games such as the Prisoner’s Dilemma (Tucker, 1950, as cited in Poundstone, 1992), the Trust Game (Berg, Dickhaut, & McCabe, 1995), the Ultimatum Game (Harsanyi, 1961), or the Second / Third Person Punishment

Game (Fehr & Fischbacher, 2004) which allowed to investigate strategic giving, cost-benefit calculations, fairness perceptions, and norm motivated behavior.

Despite the growing existing literature, there are still many challenges and controversies in understanding prosocial behavior, mainly because different research approaches tend to use distinct methodologies to explore various facets of prosociality, while at the same time being limited to specific developmental stages or populations. An understudied, yet highly relevant population with regards to prosociality is that of **convicted offenders**. Although some studies underline the protective role of prosociality in reducing antisocial behavior and even recidivism (Andrews and Bonta, 2010a,b; Martí-Vilar et al., 2010; 2019, Walters, 2017b), there is still a lack of systematic research on the relationship between prosocial behavior and criminal conduct and aggressiveness, or on the potential differences between offenders and non-offenders. Some studies suggest that convicted offenders have lower levels of prosocial behavior and higher levels of aggressiveness, with the association being stronger for recidivists compared to non-offenders (Clark et al., 2015; Hämäläinen & Pulkkinen, 1995). However, other studies point to an increase in prisoners' prosociality in certain situations such as after being exposed to empathy-inducing training (Mayer et al., 2018) or identify very small or negligible differences from the general population (Birkeland et al., 2014; Chmura et al., 2016).

The lack of systematic or consistent findings could be explained by the different methodologies used (self-report, economic-based games, or behavioral tasks), overlooking the role of individual differences in personal and situational factors related to prosocial behavior, as well as the challenges and limitations inherent to the prison environment, which make the behavioral study of prosocial behavior less feasible.

PURPOSE OF THIS REVIEW

To the best of our knowledge, there has been no published scoping or systematic review regarding the prosocial behavior of convicted offenders. We focused on the few existing self-reported and actual prosocial behavior studies (using experimental tasks or economic games) to map the existing state of research on inmate prosociality conducted with incarcerated offenders. The scoping review summarizes the content, scope, and methodology of each identified study, providing an overview of the main findings according to the category of prosocial behavior and the underlying individual differences in prosocial behavior that occur in the prison setting.

METHOD

In conducting this scoping review, we followed the six-step framework provided by Arksey and O'Malley (2005) and the general guidelines outlined by PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses, Liberati et al., 2009).

Search Strategy

Database searches. A complex search was conducted for 3 electronic citation databases: Google Scholar (first 500 hits), Web of Science, and PsychInfo. The search was conducted in 2024 and covered articles published between January 2012 and December 2023. Only articles in English were included in the searches. The following keywords were used with all databases: prosocial behavior, social behavior, prosocial motivation, Economic games, altruistic behavior, experiment, dictator game, charity, helping behavior, Prisoner's Dilemma, inmates, prisoners, criminals, offenders, incarcerated offenders.

Article selection. Title and abstract screening. As a first step, the titles and abstracts were separately screened by trained students and the first author, to establish if they reported studies regarding prosocial behavior and were (1) measured through self-report questionnaires or experimental tasks / economic games (2) conducted on incarcerated offenders (3). All articles meeting the mentioned criteria were included in the review.

Article screening. We obtained the full-text version for each article selected after the title and abstract screening. For this step, we established a set of inclusion and exclusion criteria, three students were trained by the first author on article evaluation and screening procedure. The selected articles were randomly divided into three equivalent groups and each trained student was assigned to a group. An independent two-step rating strategy was used, so an article was first read by a trained student and afterward by the first author. The two ratings were compared and the corresponding author mediated each case of under 90% agreement between the two raters and confirmed the exclusion of articles.

Exclusion criteria:

Studies not focused on reported / actual prosocial conduct – this included all articles that didn't measure prosocial behavior (e.g. moral reasoning studies, which didn't measure prosocial behavior).

Studies with non-incarcerated offenders – articles reporting studies that didn't involve convicted inmates, placed in an actual prison setting.

Intervention studies or evaluation of prison programs – articles describing research focus solely on evaluating intervention programs aimed at improving prosocial attitudes and skills, without reporting results of pre/post measures of prosocial behavior.

Qualitative studies of prosocial behavior – studies using interviews/focus groups as measures of prosocial behavior.

Systematic reviews, scoping reviews, books, and book chapters.

Non-English articles – articles written in a language other than English.

Inclusion criteria

Studies of self-report questionnaires, experimental tasks, and economic games regarding prosocial behavior – articles reporting on the psychometric properties of different measures of prosocial behavior.

Studies conducted on convicted offenders – articles reporting research involving offenders currently serving a prison sentence. Articles were included regardless of the offenders' sex, age (youth or adult offenders), or enforcement condition (offenders serving a sentence inside a prison or in special settings in the community, under the prison administration).

Article categorization. Following the articles' screening process, three main categories emerged, based on the type of measures used for prosocial behavior: a) self-reported prosocial behavior, b) prosocial behavior based on sharing of resources, and c) prosocial behavior involving cooperation and distribution of resources. Each article was included in only one category, that best characterized the reported research. The present scoping review focuses on all three categories and reports the outcomes regarding individual differences in offenders' prosocial behavior.

Data Extraction

The three trained students initially extracted the data. Each student was responsible for reading the articles and extracting data for a specific category: self-reported prosocial behavior, prosocial behavior based on sharing of resources, and prosocial behavior involving cooperation and distribution of resources. The first author independently read each article and extracted the relevant data. Afterward, the results were compared and the authors collaborated and discussed the existing differences until they reached comparable results.

For data extraction, an Excel charting form was developed, containing the following information:

- Author(s), year of publication;
- Type of prosocial behavior;

- Assessment of prosocial behavior (self-report questionnaires/ experimental tasks/ economic games);
- Study population (type – prison group and/or community sample, if applicable, sample size, main age, sex);
- Relevant results/ findings.

DATA ANALYSIS

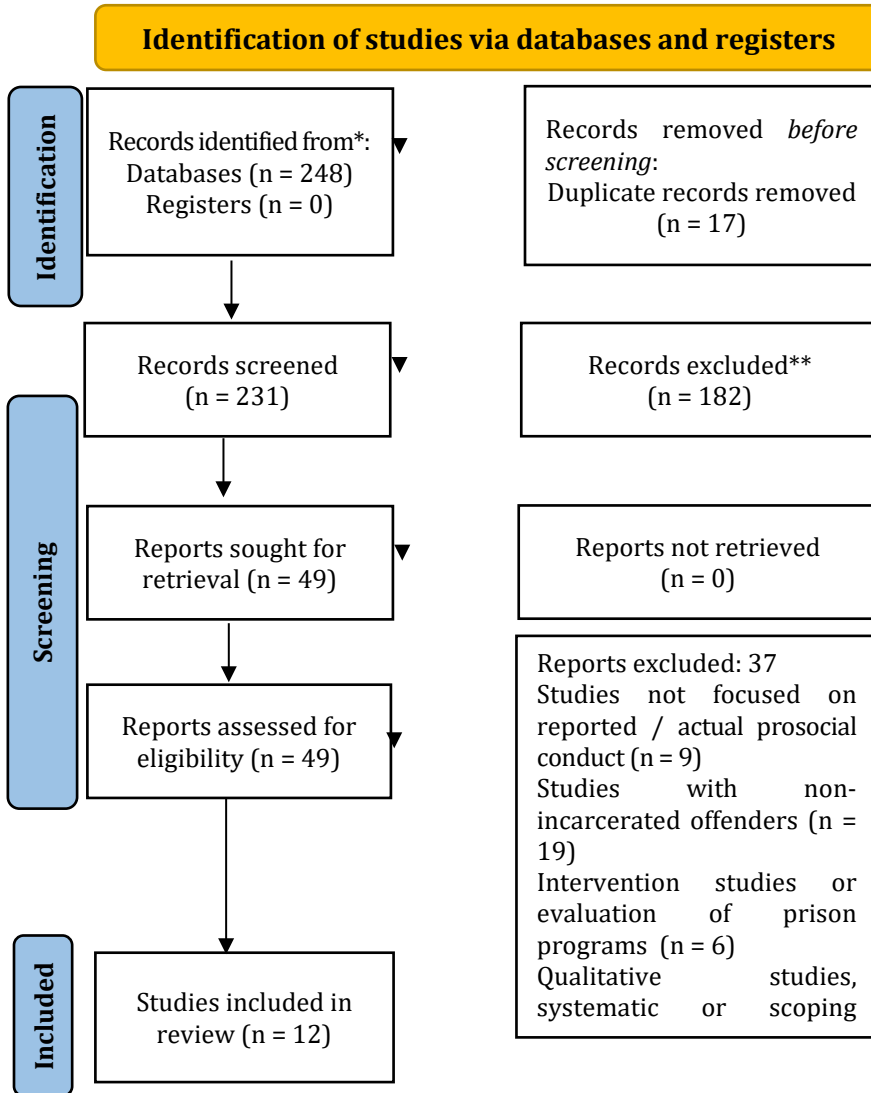
We collated all extracted data and produced a chart mapping the basic characteristics of the selected studies: different types of prosocial behavior assessed in the prison setting, with convicted offenders, type of assessment measures used, and main findings. Second, we analyzed the main findings according to the category of prosocial behavior, underlying the individual differences that appear in the prison setting.

RESULTS

Article selection. After the initial search, 248 articles were found in the three databases (Google Scholar, Web of Science, and PsychInfo), with 17 articles being removed as duplicates. 231 articles were initially considered, of which 182 were excluded during the title and abstract screening stage, while 49 were included for full-text review. After reviewing the 49 articles for eligibility in the full-text screening stage, 37 were excluded (the studies did not focus on reported/ actual prosocial behavior, measured by self-report questionnaires, experimental tasks, and economic games, were conducted with non-incarcerated offenders, reported intervention studies/ evaluations of prison programs or were qualitative studies, systematic reviews, scoping reviews, books and book chapters). In the end, only 12 articles met the criteria and were included in the data analysis. For a visual representation of the selection process, see *Diagram 1*.

The 12 articles were divided into three categories focused on self-reported prosocial behavior ($n = 2$ articles), prosocial behavior based on the sharing of resources ($n = 6$ articles), and prosocial behavior involving cooperation and distribution of resources ($n = 4$ articles).

Our analysis focused on the type of measure used for prosocial behavior assessment in the prison setting, as well as the main findings regarding individual differences in prosocial behavior of incarcerated offenders. *Table 1* presents an overview of the study design, population, and main findings for each article.



* Databases: Google Scholar (first 500 hits), Web of Science, and PsychInfo

**The records were excluded by the authors.

Diagram 1

Table 1.

| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|-----------------------------|--------------------------------|--|---|--|
| Self-report | Samper et al. (2021) | • The Prosocial Behaviour Scale (Caprara & Pastorelli, 1993) | <u>Offenders</u> : $n = 220$, mean age = 16.22 years, 67.3% adolescent males <u>Non-offenders</u> : $n = 220$, mean age = 16.40 years, 65.9% adolescent males | <ul style="list-style-type: none"> • Empathic concern and perspective-taking were positively associated with helping behavior. • The role of empathy in promoting positive social action was significant for both groups. |
| | Cardona-Isaza et al. (2023) | • The Prosocial Behaviour Scale (Caprara & Pastorelli, 1993) | Offenders: $n = 413$, mean age = 16.67 years, 82.6 % adolescent males | <ul style="list-style-type: none"> • Empathy and rational decision-making were positively associated with self-reported prosocial behavior in juvenile offenders. • Participants with stronger rational decision-making skills were more likely to report engaging in prosocial behavior. |
| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
| Sharing of resources | Birkeland et al. (2014) | • The Dictator game | Lab experiment <u>Offenders</u> : $n = 187$, All adult males <u>Non-offenders</u> : $n = 173$, All adult males Internet experiment <u>Ex-offenders</u> : $n = 378$, Adult males and females <u>Non-offenders</u> : $n = 1148$, Adult males and females | <ul style="list-style-type: none"> • There was no significant difference between offenders and the general population in the <i>Dictator game</i>. • The sharing rates were similar in both groups, regardless of the other player's membership to the in/out-group (prisoner or general population). • In the online experiment, there was no statistically significant difference in prosocial behavior between participants with and without a criminal record in their sharing rates. |

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| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|----------------------------|--------------------------------|---|--|--|
| Sharing of resources | Chmura et al. (2016) | <ul style="list-style-type: none"> The Dictator game | <p><u>Offenders:</u></p> <p>Experiment 1 <i>n</i> = 58, mean age = 19.64 years, All adult males</p> <p>Experiment 2 <i>n</i> = 62, mean age = 19.81 years, All adult males</p> | <ul style="list-style-type: none"> In the <i>Dictator game</i>, prisoners gave more than students and less than matched participants from the general population. In the <i>modified Dictator game</i>, prisoners gave more to charity than to an anonymous prisoner. In terms of offense type, based on the degree of violence involved in committing a crime, there was no clear evidence of a difference between prisoners convicted of violent crimes and those convicted of property crimes in their sharing behavior. |

| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|----------------------------|--------------------------------|---|---|--|
| Sharing of resources | Mayer et al. (2018) | <ul style="list-style-type: none"> The classical Dictator game The empathic Dictator game | <p><u>Offenders:</u> <i>n</i> = 42, mean age = 32.79 years, All adult males</p> <p><u>Non-offenders:</u> <i>n</i> = 33, mean age = 28.82 years, All adult males</p> | <ul style="list-style-type: none"> Violent offenders don't seem to have impaired empathic competencies compared to non-offenders, with similar data being observed in self-reports, video-based measures (assessed by the MASC), and sensitivity to empathy induction. The offender group showed lower levels of sharing compared to the general population. Both groups exhibited higher empathy scores and higher rates of prosocial behavior following the empathy induction videos. Psychopathic traits were associated with low levels of self-reported trait empathy and with impairments in the ability to understand one's feelings (alexithymia). |

| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|----------------------------|--------------------------------|----------------------------------|---|---|
| Sharing of resources | Gummerum & Hanoch (2012) | • The Dictator game | <p><u>Offenders</u>: $n = 50$, mean age = 38.24 years, All adult males</p> <p><u>Non-offenders</u>: $n = 50$, mean age = 35.22 years, All adult males</p> | <ul style="list-style-type: none"> • Both groups exhibited altruistic behavior, although prisoners offered significantly more money than participants without a criminal record. • Comparing self-report data, prisoners showed higher levels of empathic concern and perspective-taking than non-offenders, and no significant difference was observed in their personal belief in a just world. • In the general population, only empathic concern was a predictor of increased offers to share in the <i>Dictator game</i>. • In the prisoner group, increased belief in a just world and higher levels of perspective-taking were predictors of increased offers in the <i>Dictator game</i>. • The level of empathic concern did not affect the prisoners' decision to share resources. |

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| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|----------------------------|--------------------------------|---|---|---|
| Sharing of resources | Mayer et al. (2018) | <ul style="list-style-type: none"> The Dictator Game The Ultimatum Game | <p><u>Offenders</u>: n = 25, mean age = 19.68 years, All adult males</p> <p><u>Non-offenders</u>: n = 24, mean age = 19.58 years, All adult males</p> | <ul style="list-style-type: none"> In the <i>Dictator game</i>, prisoners showed lower levels of sharing behavior compared to the general population. In the <i>Ultimatum game</i>, when they took on the role of proposer, prisoners, and non-offenders behaved similarly, making comparable offers. Antisocial violent offenders behaved rationally and strategically and had intact fairness norms compliance when it was in line with their personal goals. The social context (human versus computer proposer) influenced the acceptance rates of participants from the general population but did not affect the prisoner sample (prisoners generally accepted more offers regardless of the type of proposer, confirming a tendency towards more rational and profit-oriented behavior). |

| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|----------------------------|--------------------------------|---|--|--|
| Sharing of resources | Radke et al. (2013) | <ul style="list-style-type: none"> The modified Ultimatum game | <p><u>Offenders with psychopathy</u>: n = 18, mean age = 42.5 years, All adult males</p> <p><u>Offenders without psychopathy</u>: n = 14, mean age = 39.7 years, All adult males</p> <p><u>Non-offenders</u>: n = 18, mean age = 37.4 years, All adult males</p> | <ul style="list-style-type: none"> Participants were more likely to reject unfair offers when the alternative to the offer was fair and the offer was made intentionally. The rejection rates of offenders in the psychopathy group were similar to those of non-offenders. Offenders with lower levels of psychopathy were not influenced by the alternative offer to an unfair proposal, suggesting an indifference to fairness considerations. |

| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|--|--------------------------------|----------------------------------|--|--|
| Reciprocal prosocial behavior (cooperation) | Khadjavi & Lange (2013) | • The Prisoner's Dilemma game | <u>Offenders</u> : n = 90, All adult females <u>Non-offenders</u> : n = 92, All adult females | <ul style="list-style-type: none"> • Prisoners cooperated more often than students in the <i>simultaneous</i> task, but the relationship was reversed in the <i>sequential</i> task, with students being more likely to cooperate as first players than prisoners. • Prisoners' cooperation rates in the <i>simultaneous</i> and <i>sequential</i> task were rather similar, suggesting consistency in their behavior. • The increase in cooperation rates for students in the <i>sequential</i> task (as the first player) compared to the <i>simultaneous</i> task, but not for prisoners, could be explained by possible differences in the ability to anticipate others' strategies. • Both groups responded positively and cooperated when the first player cooperated in the <i>sequential</i> task, confirming conditional cooperation and reciprocity. • Defection in response occurred after the first player failed to cooperate. |

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| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|--|--------------------------------|--|---|---|
| Reciprocal prosocial behavior (cooperation) | Nese et al. (2016) | <ul style="list-style-type: none"> The Prisoner's Dilemma game The Third Party Punishment task | <p><u>Camorra Offenders:</u> $n = 129$, age = 25-30 years, All adult males</p> <p><u>"Ordinary" Offenders:</u> $n = 109$, age = 25-30 years, All adult males</p> <p><u>Non-offenders:</u> $n = 109$, age = 25-30 years, All students</p> | <ul style="list-style-type: none"> The Camorristi were found to be more cooperative than both the students and the "ordinary" prisoners, and the "ordinary" prisoners showed lower levels of cooperation than the students. In the presence of exogenous sanctions, the Camorristi and students became significantly less cooperative; an increase in cooperation was observed among "ordinary" prisoners, although the effect was not statistically significant. Regarding the tendency to punish, both groups of prisoners were more likely to impose sanctions than the student sample. When playing the role of the punisher, both the Camorristi and the students, but not "ordinary" prisoners, were more likely to punish the defection if it occurred after the cooperative behavior of the other player. "Ordinary" prisoners reported a significantly greater tendency to cooperate than both the Camorristi and the students in questionnaires, in contrast with their performance in the behavioral tasks. |

| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|---|--------------------------------|--|---|--|
| Reciprocal prosocial behavior (cooperation) | Balafouta et al. (2020) | <ul style="list-style-type: none"> • The Trust Game • The Prisoner's Dilemma game • The Equal Allocation Task | <p><u>Offenders:</u> $n = 105$, mean age = 35.95 years, All adult males</p> <p><u>Non-offenders:</u> $n = 40$, 25 female students, 15 male students</p> | <ul style="list-style-type: none"> • Prisoners showed lower levels of reciprocity and cooperation towards the out-group (participants from outside the prison) than towards other prisoners, partly explained by their identification with their group and longer time spent in prison. • The preference for their in-group was also observed for the student sample. • The priming intervention increased the prisoners' reciprocity and cooperation towards the out-group, although it did not affect their behavior towards the in-group or their distributional choices in the equal allocation task. • A longer time spent in prison was associated with lower levels of cooperation and trust towards the out-group. • Prisoners' benevolence towards others (regardless of in/out group membership) decreased when the player had an advantage compared to the other player. |

| Type of prosocial behavior | Author(s), year of publication | Assessment of prosocial behavior | Participants | Main findings |
|---|--------------------------------|---|--|---|
| Reciprocal prosocial behavior (cooperation) | Balafouta et al. (2021) | <ul style="list-style-type: none"> The Prisoner's Dilemma game The Trust game The Equality Equivalence Test The Corruption game | <p><u>Offenders</u>: $n = 176$, mean age = 36.40 years, All adult males</p> | <ul style="list-style-type: none"> In the behavioral tasks, for almost half of the cases, prisoners adopted a prosocial behavior, indicating trust and cooperation, as well as an orientation towards social welfare in the social dilemma tasks. Prisoners with higher psychopathy scores show less cooperation, reciprocity, trust, and higher levels of selfishness, suggesting a negative role of this dark personality trait in social interactions. |

Main findings

a. Self-reported prosocial behavior

Self-report measures are often used to assess prosocial behavior because they provide valuable insights into an individual's subjective experience of their prosociality. In addition, compared to other methods, they are easier to administer to larger populations and their results can be interpreted with greater efficiency.

A commonly used instrument for self-reported prosocial behavior is the **Prosocial Behavior Scale** (Caprara et al., 2005), which measures behaviors that indicate altruism, trust, and agreeableness. The total score is calculated by averaging all items, with higher scores indicating greater prosociality. Examples of items are: 'I try to help others', 'I trust others', and 'I try to make sad people happier'.

The two articles included in the review used the Prosocial Behavior Scale to measure prosociality in juvenile offenders to identify individual differences between offenders and non-offenders. One article focused on the relationship between self-reported prosociality and multiple variables such as parenting and emotional instability (Samper et al., 2021). The results highlight the importance of empathic concern and perspective-taking for helping behavior. The role of empathy in promoting positive social action was significant for both

groups. Similarly, Cardona-Isaza et al. (2023) examined the impact of empathy and rational decision-making on self-reported prosocial behavior in juvenile prisoners. Although the results were consistent with previous research indicating the essential role of empathy in offenders' helping behavior, the added cognitive dimension provided new insights, suggesting that participants with stronger rational decision-making skills were more likely to report engaging in prosocial behavior.

Prosocial behavior based on the sharing of resources

Our analysis revealed that resource sharing as a type of prosocial behavior has been a point of interest in a few studies conducted in prison settings, with the preferred method of investigation being the Dictator Game, as well as donation tasks. The Dictator Game was originally developed by Daniel Kahneman (1980) as a derivative of the Ultimatum Game. Later, the game was further simplified (Forsythe et al., 1994) and in its current form involves a decision maker (the dictator) who has to decide how to divide a sum of money between himself and a second passive player (the recipient).

In a study focused on comparing the prosocial behavior of convicted offenders and non-offenders (Birkeland et al., 2014), the researchers conducted two experiments. The first study involved prisoners from a semi-open prison in Norway, as well as participants randomly selected from the general population. The procedure consisted of 12 sessions of the classic Dictator game, where two participants were anonymously paired to play the role of a dictator and a receiver. The dictator had to decide how to divide a sum of money between himself and the recipient. There's no payoff to the decision to share, as the receiver cannot react to the dictator's decision. The game consisted of 12 sessions, 4 mixed sessions (participants from both groups, prisoners and the general population), and 8 single sessions (both dictator and receiver from the same group). The main findings showed no significant difference between prisoners and the general population in the Dictator game. Also, the sharing rates (average share ranging between 30-40%) were similar regardless of the other player's membership in the in/out-group (prisoner or general population). A second experiment via the internet included randomly selected participants from the general adult population in Denmark, who at the time had been convicted and sentenced to a fine, as well as individuals with no criminal record. Similar results were found in the online experiment (no statistically significant difference in prosocial behavior between participants with and without a criminal record).

Another study focusing on resource sharing used the Dictator game to investigate the role of selfishness and the need to maintain a positive self-image in the adoption of prosocial behavior (Chmura et al., 2016). In the first experiment, the sample consisted of prisoners convicted of violent and property crimes, as well as students and adult participants from the general population. Using the Dictator Game, participants were demographically matched into pairs and then randomly and anonymously assigned an identification number. Only one participant was randomly chosen to play the role of the dictator and was given the task of deciding how much of a total of 5 euros should be given to the other player. The second experiment followed a similar pattern, except that none of the participants had participated in the first experiment. Each prisoner participated in a replication of the Dictator game from the first experiment, and in a second modified Dictator game in which each had an active role as a dictator and had to decide to donate part of the 5 Euros to charity. The results suggest that, in the Dictator game, prisoners gave more than students and less than matched participants from the general population. In the modified Dictator game, prisoners gave more to charity than to an anonymous prisoner. In terms of offense type, based on the degree of violence involved in committing a crime, the results did not provide clear evidence of a difference between prisoners convicted of violent crimes and those convicted of property crimes in their sharing behavior.

Another line of research examined the relationship between empathy and prosocial behavior, conceptualized as sharing resources without personal gain (Mayer et al., 2018). The study was conducted on a sample of violent male offenders from a correctional institution in Germany, and a control group of age and education-matched individuals. All participants completed an intelligence task and questionnaires measuring psychopathic and aggressive behavior, trait empathy, and alexithymia. A video-based social cognition task (Movie for the assessment of social cognition, Dziobek, 2006) for empathy induction was followed by a classic Dictator game and an empathic Dictator game. In the first part of the experiment, participants watched empathy-inducing and control videos and had to give an empathy rating. In the second part, participants were presented with the classic Dictator game and guided through a game scenario in which they had to decide how to divide 10 monetary units between themselves and a hypothetical player. Participants were then presented with the same videos they had seen in the first part of the experiment and were instructed to play the empathic Dictator game after each video sequence (they had to decide whether and how to share the 10 monetary units with the person in the video). They were also informed that the monetary units they chose to keep would be converted into real money and offered to them at the end of the

experiment. The study yielded interesting results, suggesting that violent offenders don't have impaired empathic competencies compared to non-offenders, with similar data observed in both self-reports and video-based measures (assessed by the MASC), and sensitivity to empathy induction. In terms of the prosocial behavior of violent prisoners, the offender group showed lower levels of sharing behavior compared to the general population, although both groups exhibited higher empathy scores and higher rates of prosocial behavior following the empathy induction videos. Psychopathic traits were associated with low levels of self-reported trait empathy and with impairments in the ability to understand one's feelings (alexithymia).

Using the Dictator game paradigm, a study compared the sharing behavior of prisoners and non-prisoners and examined three factors that may influence prosocial conduct: belief in a just world, perspective-taking, and empathy (Gummerum & Hanoch, 2012). The sample consisted of a group of 50 convicted offenders from a low-security prison and 50 men with no criminal record, all from the UK. First, participants played a classic Dictator game in which the dictator had to decide how much of 20 coins worth €2 to divide between himself and an anonymous player. Participants then completed two questionnaires assessing their perceptions of how fairly they are treated and whether they deserve what they get (the Personal Belief in a Just World Questionnaire, Dalbert, 1999) and perspective taking and empathic concern (the Interpersonal Reactivity Index, Davis, 1983). Results showed that both groups exhibited altruistic behavior, although prisoners offered significantly more money than participants without a criminal record. Comparing self-report data, prisoners showed higher levels of empathic concern and perspective-taking than non-offenders, and no significant difference was observed in their personal belief in a just world. In the general population, only empathic concern was a predictor of increased offers to share in the Dictator game. Conversely, in the prisoner group, increased belief in a just world and higher levels of perspective-taking were predictors of increased offers in the Dictator game. Interestingly, the level of empathic concern did not affect the prisoners' decision to share resources.

Another line of research focusing on resource-sharing behavior examined fairness norms considerations and responses to their violation, as well as associated neural correlates in antisocial personality disorder (Mayer et al., 2018). The study included incarcerated violent offenders from a German prison and age-matched non-offenders enrolled in a vocational school. Data were collected on cognitive abilities (IQ), psychopathic traits, and aggressive behavior. Trained psychologists also assessed participants for Axis I psychopathology and antisocial personality disorder. In the next phase, participants took part in the

Dictator Game and the Ultimatum Game (Güth et al., 1982). In the Dictator Game, participants were told that they would be playing the game with another player who had already undergone the experiment. They were also told that the monetary units they decided to keep would later be converted into real money, which they would receive for personal use. In the Ultimatum game, participants played the first game as a proposer, who had the task of dividing 10 monetary units between themselves and a hypothetical player. They then played 144 Ultimatum games but in the role of the receiver. They were told that in some games the proposer would be another player, while in others the proposer would be the computer (to test the influence of social context on decision-making). In addition, to measure their consideration of fairness norms and their response to their violation, half of the trials were fair and half contained varying degrees of unfairness. Similar to the Dictator game, the monetary units earned were converted into real money and offered to the participants at the end of the experiment. In the Dictator game, results showed significant differences between antisocial violent offenders and the general population, with prisoners showing less sharing behavior, whereas in the Ultimatum game, when they took on the role of proposer, prisoners and non-offenders behaved similarly. These findings suggest that antisocial violent offenders tend to behave rationally and strategically, and have intact fairness norms compliance when it is in line with their personal goals. Another relevant result showed that the social context (human versus computer proposer) influenced the acceptance rates of participants from the general population, but had no effect on the prisoner sample, suggesting that they generally accepted more offers regardless of the type of proposer, confirming the tendency towards more rational and profit-oriented behavior.

Fairness considerations and the association with psychopathic traits were also investigated in offenders and non-offenders from the Netherlands, using a computerized version of the modified Ultimatum Game (Radke et al., 2013). Participants' cognitive abilities and psychopathic traits were assessed, resulting in three groups: offenders with psychopathy, offenders without psychopathy, and healthy individuals. The modified Ultimatum game allowed the manipulation of two factors: Intentionality and Context. The intentionality factor had two levels: intentional (the human player chose the offer) and unintentional (the choice was made by the computer). The context had four levels, depending on the alternatives to an unfair distribution: a fair alternative, a hyperfair-alternative, a hyperunfair-alternative, and no alternative. Participants were informed that they would be paired with another player and that on some trials the offer would be made by the second player, while on other trials the offer would be randomly selected by the computer. Participants had to decide

whether to accept or reject the offer, knowing that if they accepted, the coins would be distributed as proposed, or if they rejected the offer, all coins would be lost for both players. In this modified version, participants also received information about an unselected alternative, providing them with the context in which the offer was made and the intentionality of the offer. To counteract any possible loss of motivation, all participants were informed that their payoff would be determined at the end of the experiment, based solely on the results of a random number of trials. Results showed that participants were more likely to reject unfair offers when the alternative was fair and the offer was made intentionally. Interestingly, the rejection rates of offenders in the psychopathy group were similar to those of non-offenders, whereas offenders without psychopathy were not influenced by the alternative offer to an unfair proposal, suggesting an indifference to fairness considerations.

b. Prosocial behavior involving cooperation and distribution of resources

One of the most used economic-based games is the **Prisoner's Dilemma**, developed by Albert Tucker (1950) and based on *The Tragedy of the Commons* (Hardin, 1968). The game focuses on how people's rationality leads to either personal gain or mutual gain between participants through cooperation.

In a study focusing on the role of social preferences in conditional and unconditional cooperation, convicted criminals were compared with students in a *simultaneous* and *sequential* Prisoner's Dilemma game (Khadjavi & Lange, 2013). In the *simultaneous* task, a player chooses to either cooperate or defect depending on what they believe another player would do, without explicit confirmation of their actual behavior. Choosing to cooperate implies that the individual holds the belief that the other player will also cooperate, a presumption considered to be an indicator of social preference (orientation towards others). In the *sequential* task, a second player can choose to cooperate or defect in response to the first player's cooperation, indicating that individuals with a strong social preference will cooperate in response to cooperation. Conversely, an individual without social preference (self-interested) or with a strong social preference will usually defect in response to the first player's defection. The results highlighted that prisoners' cooperation rates in the two tasks were rather similar, suggesting consistency in their behavior. A relevant difference observed between the two populations was that prisoners cooperated more often than students in the simultaneous task, but the relationship was reversed in the sequential task, with students being more likely to cooperate as first players than prisoners. The increase in cooperation rates for students in the sequential task (as the first player) compared to the simultaneous task, but not for prisoners, could be explained by possible differences in the ability to

anticipate others' strategies. Both groups responded positively and cooperated when the first player cooperated in the sequential task, confirming conditional cooperation and reciprocity. Defection in response occurred after the first player failed to cooperate. The results suggest that the differences in social preference and cooperative behavior between offenders and non-offenders are not as strong as might be expected and that inmates also show cooperation in these types of tasks, sometimes similar to participants without a criminal record.

Staying in the area of social preferences, a second study was conducted on convicted criminals from Italy (Nese et al., 2016). The study used two types of tasks - the **Prisoner's Dilemma** and the **Third Party Punishment** - and compared three samples: students, prisoners involved in the Camorra mafia, and "ordinary" prisoners, not involved in organized crime (the two groups of offenders were similar in terms of the crimes committed). In addition, the participants completed a questionnaire assessing their propensity to cooperate and their locus of control. The study included two designs: the Prisoner's Dilemma task and the Prisoner's Dilemma task with Third Party Punishment. In the Prisoner's Dilemma task, participants were initially given 10 tokens and were paired with an anonymous partner. Each participant had to decide simultaneously what to do with the 10 tokens: keep them or give them to their partner. If a participant decided to give away the tokens, the researcher would triple the amount. In the second design, the Prisoner's Dilemma task with Third Party Punishment involved three types of players. First, the two participants faced the same decision as in the first design, but the difference was that they knew of the presence of a third player who could intervene in the second stage and influence their winnings by awarding penalty points to one or both of them. An important aspect of the study was that each participant only interacted with participants from the same sample. Significant differences were observed between the three groups: in the first design, the Camorristi were found to be more cooperative than both the students and the "ordinary" prisoners, and the "ordinary" prisoners showed lower levels of cooperation than the students. When exogenous sanctions were introduced in the second design, an increase in cooperation was observed among "ordinary" prisoners, although the effect was not statistically significant. At the same time, Camorristi prisoners and students became significantly less cooperative. Regarding the tendency to punish, both groups of prisoners were more likely to impose sanctions than the student sample. A possible explanation could be the "prison effect", which suggests a tendency to punish as a result of being punished during their sentence. An interesting observation was that both the Camorristi and the students, but not "ordinary" prisoners, when playing the role of the third player (punisher), were more likely to punish the defection if it occurred after the

cooperative behavior of the other player, suggesting a sense of justice and a tendency to punish those who are perceived to be taking unfair advantage. Concerning the self-reported data from the questionnaires, the Camorra participants reported higher levels of cooperation than the students, confirming the behavioral data. An interesting difference emerged when comparing the self-reported and behavioral data of the sample of "ordinary" prisoners, who reported a significantly greater tendency to cooperate than both the Camorristi and the students, an aspect that was not reflected in their actions during the Prisoner's Dilemma task. Considering attitudinal cooperativeness and internal locus of control, the results indicate that they are positively related to prosocial behavior in the Camorristi sample. However, a stronger internal locus of control reduced cooperation in the presence of exogenous sanctions, suggesting a rejection of external authority regardless of the subsequent costs. In contrast, the threat of sanctions increased the cooperation behavior of "ordinary inmates", suggesting a tendency towards opportunistic behavior in this sample.

Another line of research using cooperative games examined the effects of incarceration on the social behavior of convicted offenders and the impact of a priming intervention (reflecting on time spent in prison) on their prosociality (Balafoutas et al., 2020). The study was conducted on a sample of prisoners from two types of prison (a high-security and a low-security prison) and students, and used three games to measure prosocial behavior: the **Trust Game** (Berg et al., 1995), the **Prisoner's Dilemma** game, and the **Equal Allocation Task** (Kerschbamer, 2015). The Trust Game examined the relationship between a sender and a receiver, focusing on the trust/mistrust of the sender and the reciprocity/non-reciprocity of the receiver, as well as the resulting gains associated with each type of relationship. The Prisoner's Dilemma task was used in its simultaneous form, where players decided whether to cooperate or defect. The Equal Allocation task assessed the allocation of resources between two parties in a symmetric condition (decision to give each person the same payoff) and an asymmetric/inequality condition (unequal payoffs for the two parties). Players' choices in this task indicate their benevolence in situations of disadvantageous and advantageous inequality, distinguishing four types of behavior: altruistic (disadvantageous and advantageous inequality), inequality averse (benevolent when in advantage, but malevolent when the other player is in advantage), spiteful (malevolent in both disadvantageous and advantageous inequality) and inequality loving (benevolent when the other player is in advantage, but malevolent when he is in advantage). It is worth noting that after participating in the experimental tasks, participants completed questionnaires on demographics and prison conditions. Finally, a group of prisoners participated in an intervention that involved reflecting on their time in prison and how it

had affected their social behavior, a task used as a priming strategy to measure in/out-group preference. The results showed that inmates showed lower levels of reciprocity and cooperation towards the out-group (participants from outside the prison) than towards other prisoners, partly explained by their identification with their group and longer time spent in prison. Similar results were observed for the student sample (a preference for their in-group). The priming intervention showed the potential to significantly improve prisoners' prosocial behavior towards the out-group, increasing their reciprocity and cooperation, but did not affect their behavior towards the in-group or their distributional choices in the equal allocation task. An important observation is that longer time spent in prison was associated with lower levels of cooperation and trust towards the out-group. Also, the tendency of prisoners to behave benevolently towards others (regardless of in/out-group membership) decreased when the player had an advantage compared to the other player.

Another type of study using cooperation games focused on the relationship between psychopathy and social/antisocial behavior in convicted offenders (Balafoutas et al., 2021). The article reports on a study conducted with 176 prisoners from a high-security and a low-security prison. The design involved the use of four prosocial behavior games: the **Prisoner's Dilemma** task, the **Trust game**, the **Equality Equivalence Test** task, and the **Corruption game**. Psychopathy was assessed using the Levenson Self-Report Psychopathy Scale (Levenson et al., 1995). The Prisoner's Dilemma task, the Trust Game, and the Equality Equivalence Test task were administered similarly to the above-described study (Balafoutas et al., 2020). The Corruption Game (Jaber-López et al., 2014) involved a framed interaction protocol in which participants assumed the role of two "firms" and a "public official". The two "firms" bid for a "public project", offering either higher quality or a higher bribe to win the project. The "public official" had to choose the winning bid by deciding between the offers of the two firms. From the firms' point of view, offering a higher bribe was an indicator of low prosociality, i.e. the players traded off public welfare for personal gain (winning the project). For players in the role of 'public officials', a decision based on bribe (rather than quality) indicates selfish and low prosocial behavior. The results of the behavioral tasks suggest that in almost half of the cases, prisoners adopted prosocial behavior, indicating trust and cooperation, as well as an orientation towards social welfare in the social dilemma tasks. Regarding psychopathy, the data indicated that prisoners with higher psychopathy scores show less cooperation, reciprocity, trust, and higher selfishness, suggesting a negative role of this dark personality trait in social interactions.

DISCUSSION

The study of prosocial behavior provides a window into the heart of humanity and allows us to explore what makes us social beings. Despite its importance in understanding the foundations of human behavior, most research has focused on individuals from the general population, granting little attention to groups that exhibit specific aversive behaviors, such as convicted offenders. There are multiple examples of naturally occurring prosocial behavior by convicted offenders, ranging from acts of kindness towards other prisoners (sharing food or cigars, offering emotional support) to donations to charitable causes in the community or participation in volunteer programs outside prison. However, these types of social acts performed by prisoners tend to be seen as exceptional (Gummerum & Hanoch, 2012), reinforcing the prejudice that individuals who break legal and social rules are incapable of behaving in a truly prosocial manner.

This scoping review attempts to map the current state of research on prosocial behavior in prisons and to identify the limitations and underpinnings of the existing research. Although there has been a paucity of research in this area over the last decade, we have attempted to provide an overall picture and synthesize the main findings to provide a coordinated insight into the types of prosocial behavior adopted by prisoners and the possible differences when compared with the general population. We focused on studies that examined prisoners' prosocial behavior as measured by self-report instruments or behavioral tasks, with a particular interest in economic games.

A first set of studies aimed to assess prisoners' *self-reported* prosocial behavior, suggesting the importance of empathy and perspective-taking in the development and maintenance of prosocial behavior in juvenile offenders. A second set of studies provided a more *ecological* approach to prosociality in offenders, by using a variety of games that allowed investigating two main types of actual prosocial behavior: sharing resources and reciprocal prosocial behavior (cooperation).

Regarding prosocial behavior as *resource sharing*, the research focused on comparing convicted offenders and non-offenders, investigating the impact of several factors on social decision-making: in-group/out-group membership, type of offense (violent versus non-violent), empathic concern and perspective taking, personal belief in a just world, consideration of fairness norms and reactions to their violation. The main findings indicated a lack of consistent and clear difference between convicted offenders and those not involved in crime (students, adult matched participants without a criminal record), suggesting that prisoners are not directly impaired in their ability to share resources and may even be more prosocial in some situations than others, and are not

necessarily biased by in/out-group membership. Their decision to help by sharing could be positively influenced by increasing their ability to take the perspective of others, as well as by having a strong belief that the world is just and that rewards and sanctions are a consequence of our actions. Similarly, fairness consideration was quite similar in prisoners compared to the general population, suggesting that they can adapt their behavior to social norms and constraints. As for empathy and actual prosocial behavior, some studies suggest a strong link with sharing behavior in prisoners, while another study didn't find similar results in this regard, possibly due to different research methodologies. A cautionary note relates to the possibility that the documented (lack of) differences or increased reported or actual generosity may not be truly authentic. We need to bear in mind that the prison environment is characterized by clear norms and rules and promotes socially acceptable behavior through rehabilitation programs and a complex system of rewards and sanctions. Thus, a possible explanation for these findings could be related to learned positive behavior or even fear of adopting socially sanctioned behavior. At the same time, we need to consider the impact of social desirability on prisoners' responses and choices in the behavioral tasks, where the need to present themselves in a positive light may be evidence of their efforts to change their aversive tendencies.

From the perspective of *reciprocal prosocial behavior*, several studies have used the Prisoner's Dilemma paradigm, either alone or in combination with other behavioral tasks, to examine the role of social preference, internal locus of control and external authority, fairness perception, and psychopathy traits on strategic and opportunistic cooperation. In addition, one study focused on the effects of length of imprisonment, membership, and an empathic induction intervention on inmates' reciprocity and cooperation rates. Similar to the findings on resource-sharing behavior, prisoners' levels of cooperation were generally similar to those of the general population, confirming the existence of reciprocal behavior among convicted offenders. Attitudinal cooperativeness and an internal locus of control appeared to be positively associated with prosocial behavior, although the presence of an external authority capable of imposing sanctions may affect this association in a prison setting. In particular, exogenous sanctions increased the likelihood of prosocial behavior among inmates, while the opposite effect was observed among prisoners belonging to the Italian Mafia, a possible explanation being the values promoted by the Mafia culture, which focus on the rejection of external authority. It is also interesting to note that the tendency to punish unfair behavior was higher among mafia prisoners and students, suggesting a sense of justice and the ability to assess fairness appropriately, although this behavior was not consistent among non-affiliated inmates. Examining the link between dark personality and reciprocal behavior, an inverse association was observed, suggesting a decrease in

cooperation, reciprocity, and others' oriented conduct in the presence of high levels of psychopathic traits. Another important finding for policymakers and prison administrations was that longer time spent in prison decreased the probability of adopting prosocial behavior, especially towards participants from the community (seen as the out-group), suggesting a current failure of the prison setting in providing adequate services for effective rehabilitation.

All studies conducted within the prison system provide valuable data on the prosocial behavior of convicted offenders and contribute significantly to the development of effective rehabilitation practices. However, there are still important findings to be made in this area of research. As presented, the research covers a wide variety of aspects, but this diversity, combined with the small number of studies, may lead to an inconsistent approach to prisoners' prosocial behavior. Although they appear to use the same game paradigms, few studies explore similar dimensions and focus on an in-depth analysis of specific facets of prosociality, making it difficult to compare findings and clarify contrasting results.

Also, there is still a discrepancy between self-reported and actual prosocial behavior among prisoners. While self-report measures are useful tools for understanding prosocial behavior in offender populations, they have *limitations*. For example, offenders may be inclined to respond in a socially desirable way, as they may feel pressured to present themselves in a positive light. At the same time, more ecological methods using economic games or behavioral tasks may be difficult to implement in the prison setting due to the specific and restrictive characteristics of this type of environment.

Concerning the prison population, the majority of studies have been conducted with incarcerated males, with a focus on violent offenses. While it is true that the prison population is predominantly male, the paucity of data on female prisoners or incarcerated juveniles results in a significant gap in the literature on the prosociality of convicted offenders. At the same time, despite the serious negative consequences of violent offenses, they do not define the entire prison population. Therefore, to obtain a complex and realistic picture of the prosocial behavior of convicted offenders, further studies should consider different types of offenses.

Another problematic aspect relates to the tendency of existing studies to focus on the concrete (sharing, cooperative) behavior of offenders as a marker of prosocial behavior, sometimes without a thorough investigation of the underlying mechanism (real motivation for the prosocial act). Also, other confounding but possibly explanatory factors, such as norms and rules specific to the prison environment, reinforced criminal behavior, rehabilitative interventions, the need to counter negative stereotypes, or the desire to compensate for previous aversive behavior, remain underexplored.

We can conclude that existing studies conducted in prisons provide valuable insights into different types of prosociality and the factors that may influence offenders' decisions to engage in prosocial behavior. The economic games and behavioral tasks presented above imply behaviors that are similar to social acts that are common in the community (e.g. sharing for charitable purposes), but they are an exception for people sentenced to prison. Consequently, although these findings are extremely useful in assessing the rehabilitative effects of prison sentences on prosociality, we believe that further research is needed on important aspects of inmates' social behavior, especially through the use of more realistic methodologies that reflect real prosocial behavior in different settings. Furthermore, the integration of these findings into the intervention procedures offered to prisoners is essential for the effective rehabilitation of individuals reintegrating into society.

Conflicts of Interest

The authors declare no conflict of interest.

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