

The role of environmental work in supporting child desistance

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Abstract

Purpose – This paper aims to explore how environmental employment can promote desistance among criminalised children. Research demonstrates that being immersed in and interacting with the natural environment has a positive impact upon well-being and behaviour, including reduced aggressive and violent behaviours. However, how exposure to the natural environment might promote desistance amongst children with persistent criminal involvement is unclear.

Design/methodology/approach – This paper examines, through semi-structured interviews and participant observations, the experiences of $n = 23$ criminalised children aged 16–18 employed in outdoor work at a UK social enterprise.

Findings – The findings demonstrate how working in the natural environment can provide a safe space for children, where they can build positive relationships, learn valuable skills and reconnect with the world outside of the high-pressure, conflict-driven spaces in which they typically occupy.

Originality/value – This research highlights the relevance of the setting in which child rehabilitation takes place and the potential role of natural environments in providing places and opportunities which support pro-social identity development and desistance for children.

Keywords Youth crime, Nature, Environment, Desistance, Mental well-being, Pro-social identity

Paper type Research paper

Introduction

Evolutionary biologists explain that human beings have an innate, genetically determined desire to have an affinity with the natural world (Wilson, 1984). While “nature” might traditionally be thought to consist of plants, animals and ecosystems, including landscapes and waterscapes untouched by human activity, it is now widely accepted that public parks and gardens can also represent nature (Mental Health Foundation, 2022). Connecting with nature has physiological and psychological effects, creating joy and pleasure whilst also producing a sense of calm and contentment and reducing feelings of threat and anxiety (Richardson *et al.*, 2016). The benefits of contact with nature might also extend to lowering an individual’s propensity for aggression and violence. Indeed, studies from around the world have found connections between higher levels of “greenness” in neighbourhoods and cities and lower rates of crime (Sukartini *et al.*, 2021; Sanciangco *et al.*, 2021; Venter *et al.*, 2022). However, it is unclear how greater exposure to nature might support desistance among persistent offenders. Desistance is a complex process and a difficult undertaking for individuals where crime has become a pattern of behaviour, frequently involving setbacks and relapses (Halsey *et al.*, 2017). Desistance can require more than just a desire on the part of the individual to change; it can necessitate a change in internal mindset and self-view, often in combination with an alteration in external circumstances (Giordano *et al.*, 2002).

Based upon findings from a three-year funded project with a social enterprise which provides outdoor employment opportunities for criminalised children, this paper explores

how work that connects children to nature might support desistance. Statistics demonstrate dramatic decreases in the numbers of children entering the youth justice system in England and Wales (Youth Justice Board, 2023b). Nonetheless, the children remaining in the youth justice system today are the most persistent and troubled offenders, who consistently reoffend at a higher rate than adult offenders (Ministry of Justice, 2023). Consequently, it is important to investigate what can support child desistance to improve the lives of children and reduce the persistence of offending into adult criminal careers.

Green spaces, the natural environment and crime

Evidence suggests that the natural environment is connected to reductions in criminal activity through a variety of means. For instance, research has found that the presence of green public spaces reduces the prevalence of urban crime (Shepley *et al.*, 2019). Multiple mechanisms have been identified to explain this. For instance, a significant body of research identifies the positive impact of nature on cortisol levels, stress and blood pressure, decreasing propensity for anger and aggressive behaviours and increasing self-control (Butler and Friel, 2006; Kuo and Sullivan, 2001; Taylor *et al.*, 2015). Whereas others attribute the connection between public green spaces and lower crime rates to increased community cohesion through social interaction and recreation in these spaces (Keniger *et al.*, 2013). Green spaces encourage guardianship among those using these areas for legitimate purposes, decreasing opportunities for crime (Weinstein *et al.*, 2015). Nonetheless, there is also recognition that poorly maintained urban greenspaces may promote criminal behaviours (Sampson *et al.*, 2017).

Alongside this research, a growing number of public, private and third-sector organisations are using interventions in nature to aid offender rehabilitation. This includes nature conservation and sustainability work, allowing criminalised individuals the opportunity to learn new skills, gain qualifications and improve employability prospects (White and Graham, 2015; DelSesto, 2022). Also increasingly popular is therapeutic horticulture, involving the use of plants, animals and environments to support criminalised individuals with substance addiction and/or mental-health issues, specifically drawing on the capacity of nature to “calm, heal and inspire” (Carter, 2007, p. 4). Environmental interventions have been used for criminalised individuals serving both community and custodial sentences, and indeed, some programmes take place in prison gardens or greenhouses (Brown *et al.*, 2015). Community environmental programmes have also been created for the “socially excluded” more generally, including those with previous criminal convictions, with the aim of reintegrating marginalised populations by improving self-esteem, reducing isolation and building social networks (Burls, 2007; O’Brien *et al.*, 2010). Furthermore, the value of learning opportunities in nature is increasingly recognised. For example, the forest school pedagogical approach, used in the UK and internationally, has demonstrated how woodland environments can support children’s cognitive, physical and social development (see Harris, 2022 for a review). While run for all children, forest schools have been targeted specifically for young people with behavioural difficulties who are at risk of being excluded from school for anti-social behaviour, and research suggests that they can promote restorative outcomes (Roe and Aspinall, 2011; Knight, 2011).

Theories of desistance

Despite the scholarship and interventions noted above, there has been surprisingly little discussion of the concept of “desistance” in this context. Desistance can be defined as a fluid process of abstaining from crime over time (Maruna and Farrall, 2004). In research conducted with adult populations, scholars have identified that desistance requires criminalised individuals to shift from a deviant to a “pro-social” identity (Copp *et al.*, 2019; Giordano *et al.*, 2002). Developing a more law-abiding self-view helps direct the individual towards non-offending behaviours. Those who cannot undergo this change are more likely

to persist (Maruna, 2001). Identity development has been found to be relevant to child desistance too; late childhood is a crucial period in which individuals begin to engage more deeply in constructing their identity. However, children may not have been involved in offending long enough to possess a robust deviant self-view (Walters, 2019; Wigzell, 2021). Therefore, their desistance may instead require the development of a stronger, more coherent pro-social identity (Oswald, 2022).

There are also factors external to the individual which can be important for desistance. Spatial and situational desistance theorists emphasise that desistance is associated with an alteration in routine activities, resulting in a reduction in time spent in criminogenic spaces and places (Bottoms, 2014). This can involve moving away from or avoiding past criminal associates, spending less time in environments with crime potential, such as the nighttime economy, or forming routines based around respectable, conventional domains, such as family or work responsibilities (Farrall *et al.*, 2014). Indeed, several studies confirm that gaining employment can be a turning point for a move away from crime (Sampson and Laub, 1993; Savolainen, 2009; Wright and Cullen, 2004). Furthermore, forming positive relationships, networks of support and “mutual aid” can be vital assets in desistance (Albertson and Albertson, 2022). Termed “tertiary desistance” by McNeill (2016), a key stage within the desistance process is the acknowledgement by people within both the individual’s immediate social setting and wider community that they have changed and the development of a sense of belonging. Scholarship focused specifically upon youth desistance confirms the applicability of these theories to criminalised children (Barry, 2016). However, it is also suggested that because children have less ability than adults to influence their lives, they may feel less able to access opportunities such as employment or pro-social networks that could promote desistance (Munford and Sanders, 2015). Furthermore, the “quality” employment that is required to support long-term change is increasingly difficult for young people to access in contemporary labour markets, with the rise of insecure, precarious forms of employment (Standing, 2011).

Overall, however, there has been little dedicated research on desistance in children. This paper aims to contribute to this area by exploring how work that brings children into contact with nature might impact upon desistance and associated factors such as identity reconfiguration and pro-social relationships.

Methodology

This paper is informed by research conducted with the Green Light [1] (GL) social enterprise, which provides a six-month paid employment opportunity for children who have completed, or are in the process of completing, their sentences with their local Youth Justice Service (YJS). The GL aims to give these children an opportunity to rebuild their lives and reduce their chances of resuming offending. Participation is voluntary and does not form part of a child’s sentence. The GL creates a supportive environment for young employees; they work approximately 30 h per week in small groups of between three and five employees with a supervisor who is trained in working with criminalised children.

The GL currently operates in 12 UK locations, and all schemes provide a variety of outdoor work tasks. GL employees partake in work with environmental benefits including building habitats for wildlife, waste removal from watercourses, litter-picking and tree-planting, as well as work for commercial and heritage preservation purposes such as painting, fencing, allotment clearance, specialist brick cleaning and erecting tourist information signs. The setting of these activities can also vary, from remote, rural areas to built-up, urban localities. Thus, much work at the GL involves interactions with the natural environment in some form, including activities *for the benefit* of nature and work with commercial and heritage benefits that *take place in* predominantly natural areas. However, there is also non-environmental work that takes place in urban areas. Consequently, the GL provided an opportunity to

explore the impact of these varied forms of work and settings upon children and their desistance.

The experiences of 23 children were collected in this project. These participants formed the entire cohort groups for the three Northern England GL schemes surveyed during the timeframe of this study; there was no selection process. Participants were approached during their pre-employment interviews and voluntarily agreed to participate in the study; no incentives were provided. Most children were male ($n = 22$) and white ($n = 20$). Upon commencing their employment with the GL, participants were aged 16 ($n = 14$), 17 ($n = 8$) and 18 ($n = 1$). All employees had multiple convictions prior to engaging in the GL, the average – referring to official records – was 12. The most common offences on their records were criminal damage, burglary, common assault and shoplifting. The Youth Justice Board grades these as mid-serious offences (Youth Justice Board, 2023a).

Semi-structured interviews were conducted with supervisors and children. Interviews with children covered topics such as their experiences working at the GL, the types of work tasks and settings they most enjoyed and valued, their past and any continuing offending behaviours and their longer-term goals. Interviews with children were held on their first week at the GL, three months in, on their last week and six months after completion of their employment. All participants took part in at least two interviews during their employment with the GL, with 78% ($n = 18$) completing all three interviews during their employment; however, the researcher could only contact 57% ($n = 13$) of participants for six-month post-GL interviews. Supervisor interviews ($n = 4$) examined their experiences working with the GL children, their perceptions of how children engaged with the various types of work in different settings and their understanding of the children's desistance process.

Over 200h of participant observations were also conducted, with detailed field notes written at the end of each day. Spending time immersed in the working environments of children expanded the researcher's understanding of how they engaged with various types of work and in different settings. It also allowed trust and rapport to be built with young participants, leading to the collection of richer data in interviews. Qualitative data analysis in this project followed Thomas's (2006) "general inductive approach". A thorough coding process was developed, involving multiple readings of the raw data, generating initial codes and searching and reviewing key themes. In addition to the qualitative data, the records held by the YJS for each child were a source of quantitative data on the offending activities of participants, as recorded by the police.

Approval for this project was gained from the University's Ethics Committee. User-friendly information sheets and consent forms were created for young participants, with language used at an appropriate level, to ensure that their informed consent was gained. For those participants who were under the age of 18, written consent was also obtained from a parent/guardian.

Findings

The data collected in this study demonstrated that spending time in and interacting with the natural environment was greatly valued by criminalised children and supportive of their desistance. Three central themes shall be explored in turn:

1. finding a new and safe space;
2. the impact of "doing good" on identity; and
3. improving mental well-being, followed by a consideration of how engaging in environmental work impacted recidivism amongst participants.

Finding a new and safe space

Many GL employees had spent little time previously in nature. Socio-economically deprived areas tend to have proportionately less green space than more affluent areas, and the green

space itself is of a poorer quality: lacking in biodiversity, less serene and poor cleanliness (Drayson and Newey, 2014). Most participants in this study lived in areas characterised by low incomes and welfare dependency, as well as high levels of crime and disorder, and consequently may have had less access to well-maintained, safe, public green spaces. Supervisors also described that growing up in impoverished neighbourhoods with a lack of opportunities, social mobility and investment, children became very inward looking – “their estate is their whole world”. For GL employees, this impacted their knowledge and experiences of nature; several children had never visited rural areas before, and GL supervisors gave examples of – “kids not knowing the difference between a horse and a cow, or that fruit and vegetables grow out of the ground”.

Children displayed great interest in the new places they visited, the flora and fauna that they observed, and other aspects of the natural environment they had not come across before.

“the majority of people haven’t been to school so therefore you learn something new everyday [. . .] that conker tree there – he [GL supervisor] told weh that not much conkers have formed cos there’s not enough pollen for the bees to be attracted.” – Julie, GL employee

Being in the natural environment appeared to be conducive to learning for participants. Children expressed the difficulties they had experienced trying to learn and focus in a classroom setting, with the confinement, strict rules and boundaries. Seventy-four percent ($n = 17$) of young participants had been excluded from school, compared to only 0.05% of all children enrolled in schools in England (Department for Education, 2022b). Children stated that they learned better in the natural environments they worked in at the GL, resonating with forest school research highlighted above. The potential for learning and fun in these natural areas, as well as realising the existence of opportunities and sources of interest outside of their estates, provided motivation for children to keep attending this employment programme and reduce their involvement in crime.

“They are doing different things and taking them out of their comfort zone and their areas and there comes a point where they almost get that fear of missing out, where they don’t want to miss a day because they might miss something fun.” – Ross, GL supervisor

When working in rural, natural environments, supervisors described employees acting more childlike, less streetwise and being more dependent on them. The bravado and pressure to “maintain face” which characterised many interactions in their local neighbourhoods were less apparent.

“They rely on me. They don’t know what to do with getting in the water, and all the risks associated with that. They aren’t sure about fields with cows in. It’s all new to them.” – Greg, GL supervisor

Children and supervisors from all three Northern English cities included in this study detailed the existence of tensions, conflicts and violence between children from different sub-regions of their cities, which had a huge impact on children’s lives and their feelings of safety in both their own and neighbouring areas. Preserving their reputation and protecting themselves could lead to violence.

“what we sometimes get is, especially with the males, certain parts of the city they won’t get on. You’re from that part of the city so we don’t get on with them, so obviously they have fights or whatever they do.” – Greg, GL supervisor

Indeed, one participant missed his first week of employment because he was violently assaulted when passing through a rival area of the city; the assault was filmed and uploaded to social media. These tensions may be linked to traditional working-class ideals of masculinity, such as “toughness”, “strength” and “machismo” which can still have a strong presence in the most socio-economically deprived estates (Ellis, 2016). Nonetheless, the female participant also described – “I was proper nervous when I first come on [. . .] I’ve

got loads of haters". Pickering *et al.* (2012) report that territoriality and associated conflicts can be a coping mechanism for living in poverty, providing children with belonging and respect.

Consequently, children were noticeably less relaxed when working in urban areas. They described feeling like a "target" for rival children and gangs, particularly when wearing high-visibility clothing. These concerns were not without merit. Supervisors described occasions of other children intimidating GL employees, including an incident involving an employee being threatened with a corrosive substance, which had necessitated that the group abandon their work that day. When working in such areas, children faced an intense pressure to preserve their reputation and not lose face. The work was no longer enjoyable, and learning new skills was not the priority.

"It just doesn't work out. Cos if they're in an area where they don't feel comfortable, their heads are over their shoulders all the time. And they don't want to be there. Cos they've got a chew with somebody that lives over there." – Greg, GL supervisor

In contrast, working in rural, natural environments provided children with physical and conceptual distance from the pressures of their everyday life. They did not need to act "hard"; they could act their age in this safe space. It was consequently a much more favourable setting to promote desistance; children could be more effectively supported by the supervisor and could form meaningful bonds with co-workers. Indeed, even when GL employees were from rival territories, engaging in environmental work – which often required children to depend on each other to do the work safely – appeared to break down barriers between them.

"we didna really used to speak cos we were from different areas [...] our two areas were always arguing. But soon as we come on here we've become friends [...] If we've got a job and that and one was struggling we'd go out we're way to help them." – Glenn, GL employee

"people from different areas would not usually be pals [...] but doing all this shit, we've just bonded. Before [the GL] it would have been a completely different story [...] it would be like I want to fight with you." – John, GL employee

Consequently, most participants became friends rather than merely work associates, and some would socialise after work. Literature confirms that shared experiences in the natural environment can aid social bonding and support social cohesion, acting as a common language and baseline for all (Milligan *et al.*, 2004).

The impact of "doing good" on identity

The environmental work undertaken at the GL benefitted local communities and ecosystems. For example, the clearance of waterways improved habitats for plants and wildlife by reducing pollution while also enhancing the aesthetic appeal of the area, preventing blockages and averting flooding. Local residents (aside from the concerns regarding rival children in urban areas outlined above) had a positive response to the GL employees' work.

"like when you're in the countryside and that you get like the passer-by's and stuff just complimenting everything [...] you are actually doing something that people realise." – Julie, GL employee

"It's making it a better place isn't it? ... Everyone was telling weh we were doing a good job [...] with all the thanks and that we were getting and that it felt good to actually be doing something." – John, GL employee

"Because we are helping the environment and that, strangers just are like, that's a good job and that, they just give you good comments." – Kyle, GL employee

Children at the GL were used to the negative labels of others in their communities because of their anti-social behaviour, yet engaging in environmental work allowed them to adopt a pro-social role, one that was reaffirmed by observers. This necessarily impacted the children's own self-perceptions; scholarship identifies that identity consists of both a private self-image and a social identity that is bestowed upon the individual by others, where the latter greatly influences the former (Goffman, 1956).

"It's nice that these people don't know your past and they don't know what you've done they just know who you are now. They just see us fixing up the neighbourhood, helping people out." – Scott, GL employee

"I've been to jail and that you know so now they can see that I'm not that person and I'm willing to work [...] They see me as a different person, 100%." – John, GL employee

"The [GL] altogether has just made us a better person [...] It's made us realise [...] I want to be outside working not inside in a cell [...] there's another life out there where you're not getting locked up all the time." – Glenn, GL employee

As Glenn indicated, working for the benefit of the environment helped children gain perspective on their lives and perceive possibilities beyond involvement with the conflicts and crime that were pervasive within their local neighbourhoods. Working for the environment and greater good was a hyper-conforming role that engendered positive reactions from others and could support the formation of a more pro-social and future-orientated identity for children. As Barry (2016) emphasises, access to opportunities to invest in conventional or mainstream society, for example, through employment, is important to support desistance, but vital is also the recognition of such an investment by others.

This impact of engaging in environmental work upon children's identities is also demonstrated by the number of children who adopted more environmentally friendly practices following their involvement with the GL.

"I don't want to make areas a bad place now. I've seen all that litter and we've been trying to clean up those areas [...] when you've got a packet of crisps you don't just hoy it on the floor you put it in the bin." – John, GL employee

"It [the GL] can make young people better citizens [...] they care more about the community and they stop littering." – Greg, GL supervisor

Hine *et al.* (2008) similarly found that environmental work not only reconnects individuals to nature but can promote more positive environmental attitudes and behaviours. Work tasks such as building habitats for wildlife and planting trees necessarily require a protective, caring orientation towards these. DelSesto (2022, p. 455) states that, "such an identity runs counter to the forms of violence or aggression that are often present in people's social contexts or prison spaces". For young participants, the places in which they frequently occupied were characterised by pressures to be tough, antipathetic and feared by others. Pro-criminal identities could potentially be built upon belonging to such areas and embracing these values. However, working at the GL involved undertaking activities where the opposite of these values is required, supporting the development of a more pro-social identity.

Improving mental well-being

Sixty-one percent ($n = 14$) of the children in this study had been diagnosed with mental health problems – a disproportionate number compared to the general child population. As the Youth Justice Board (2021) reports, the mental health needs of criminalised children are far greater than those of children in general and can contribute to their reoffending.

According to YJS records, some children had attempted suicide in the past. Yet, many participants reported sleeping better, feeling calmer and being more focused since working in rural, natural areas with the GL, confirming the connections made in existing research between time spent in nature and mental well-being. By contrast, participants described previous indoor employment as frustrating and stressful and having a deteriorating effect on their mental health.

“Done some [...] admin jobs [...] I said I couldn't dey it. I need to do outdoors work or I couldn't work [...] I just couldn't handle that [...] I hate sitting in.” – Glenn, GL employee

Another child compared working indoors to his experiences in prison. The distress of incarceration at a young age meant that it was impossible for him to envisage himself being confined to working indoors. Imprisonment is strongly related to subsequent trauma and mental health difficulties, in particular for incarcerated children (Barnert *et al.*, 2017; Dye, 2010). Outdoor work opportunities may therefore be particularly important for children who have experienced imprisonment and associated pains of the removal of liberty and autonomy.

The natural environment provided the GL children with spaces where they could heal from both past and ongoing trauma. Participants mentioned appreciating the rare experience of “peacefulness” in natural areas and the impact this had on their well-being. Most participants' lives outside of the GL were chaotic. Whilst this was partly a consequence of living in areas with high levels of conflict, crime and an intense pressure to maintain their reputation, also relevant were the children's domestic environments. Many had experienced unstable housing situations, turmoil with families and incidents of domestic abuse. Consequently, 22% ($n = 5$) of participants were or had been looked after children, compared to only 0.7% of under-18s in England (Department for Education, 2022a). Children described the rural work at the GL as a chance for some respite from the high-stress environments in which they spent most of their time – “Its calm and no-ones arguing or owt, it's just chilled-out” – Alexander, GL employee.

Environmental work and reoffending

The findings discussed thus far illustrate that engaging in environmental work helped children build positive relationships, form a more pro-social self-view and improve their mental well-being, all of which could support desistance. Several participants in this study affirmed that employment with the GL helped them to stay away from crime. Indeed, most children reported having ceased offending at both final week and six-month follow-up interviews. This was also confirmed by supervisors. Furthermore, police records demonstrated that only three children reoffended during their employment with the GL and six reoffended during the six-month follow-up period. Acknowledging the limitations of binary reoffending measures, it should also be noted that the children's frequency of criminal convictions decreased by 78.1% during GL participation and 46.5% in the six months after GL participation. Nonetheless, taking these figures to be indicative of desistance is problematic, given the complexity of a persistent offender's journey towards change (for a more detailed discussion, see Drippelman, 2017) and the small sample of children in this study. Moreover, although most of the GL employment involved interactions with nature, this was not the case for all work tasks. It is unclear whether, if the GL had only provided environmental work opportunities, the impact on reoffending would have been greater.

Furthermore, the GL only provided six-month employment, after which they supported the children to find further work. However, none moved into environmental employment, despite many children expressing that they would have liked to continue with this work. Supervisors lamented that such opportunities were not available, and some were critical of partners, including environmental organisations, who were hesitant to employ criminalised children

even after their successful completion of the scheme. All those children who obtained work post-GL appeared to be (according to self and police reports) avoiding crime. However, the follow-up period was only six months in this study. During this period, many children seemed rather uninspired by their current employment, and whether this would continue was unclear.

Discussion and conclusions

This research demonstrates how work that connects children to nature, by immersing them in predominantly natural, rural areas and involving tasks that benefit plants, wildlife and ecosystems, can support their desistance. Engaging in such work can provide opportunities for learning and fun in a safe and relaxed setting, allow children to try out a more pro-social identity and improve mental well-being. While existing research on greenspaces and urban crime, as well as emerging studies of therapeutic horticulture in interventions for criminalised individuals, provide some indication as to how the natural environment may reduce offending, the findings from this study increase understanding of how nature may be used to support child desistance from crime.

The findings convey the importance of rural areas in providing children with respite from the extremely stressful environments in which they usually resided. For many criminalised children, at least in the Northern English cities in which this research took place, their own estate, as well as many surrounding urban areas, are places where they face unrelenting pressure to maintain their self-image and reputation. The intense territoriality of children residing in the most impoverished localities in these cities resulted in conflict and violence. In natural, rural environments, this burden to “prove themselves” was lessened. Consequently, in such environments, children could fully engage with their new surroundings and learn from new experiences. The children also related to others more positively, such as their co-workers, supervisors and members of the public. Desistance theorists emphasise the relational aspect of desistance ([Halsey and Deegan, 2015](#); [Weaver, 2016](#)). However, the findings in this study make clear that for GL children, spending time in natural as opposed to urban environments was more conducive to forming the positive social relationships needed to support a move away from crime. Furthermore, participating in activities in these rural areas that involved care and conservation of the natural environment allowed children to build pro-social and (for males at least) less hyper-masculine identities, which could aid desistance.

This research highlights the relevance of situational and spatial theories of desistance, which emphasise the need for a potential desister’s routine activities to focus around pro-social people and places ([Bottoms, 2014](#); [Farrall *et al.*, 2014](#)). Whilst existing research communicates the impact of reduced time spent in the nighttime economy and increased time spent on parental duties and in family-orientated spaces, these might be less relevant to the age group of participants in this study. Nonetheless, this study’s findings suggest that more time spent in non-criminogenic spaces without associations to past offending or conflicts, such as rural environments, could be important for child desistance. Furthermore, increased involvement in de-stigmatising situations that confirm to others the child’s “reformed” status, such as partaking in community environmental activities, could also be beneficial.

In England and Wales, reparation activities for criminalised children frequently involve unpaid outdoor work in urban areas. These findings suggest this may not be the best setting for child rehabilitation to take place. The potential for children to take responsibility for their actions, learn new skills and repair harms to the community may be limited if the child is in an environment where they are focused on anticipated conflicts or threats. For interventions to effectively promote pro-social identity development and desistance, they need to take place in what children consider to be safe spaces, which are distinct from those where crime and violence occur.

Confirming the findings of many, this study demonstrated the therapeutic benefits of nature for those who have experienced difficult life circumstances (Drayson and Newey, 2014; Carter, 2007). Addressing challenges with mental health can help criminalised populations to improve relationships, reduce substance misuse and increase chances of gaining and maintaining employment, all of which are crucial for successful desistance (Link *et al.*, 2019). For criminalised children who report high levels of mental health difficulties but low engagement with treatments (Dyer and Gregory, 2014), rehabilitation techniques involving activities in nature could present an appealing alternative. Furthermore, as indicated by participants in this study, children who have experienced incarceration and associated traumas can perceive long periods of time spent indoors – including in education or employment – as similar incidences of losing their liberty. It is unsurprising with this association with past mental distress that criminalised children would seek – and indeed may need – more opportunities to spend time outdoors.

This research also draws attention to the potential of the natural environment to reduce the insularity and marginalisation of criminalised children. Many participants had limited perspective of the world (including the natural world) beyond the socially excluded estates where they resided, and this was necessarily a barrier to their desistance. For example, it restricted their understanding of wider education and employment opportunities and their ability to build social networks outside of their local areas. Environmental work widened these children's horizons.

There were limitations to this study. In addition to the difficulties with establishing desistance from a relatively short follow-up period, the extent to which the age profile and increasing maturity of children contributed to their apparent reduction in criminal activities cannot be known. Following the age-crime curve, some participants, by the end of their employment with the GL, would be approaching an age where involvement in offending typically begins to decelerate (Hirschi and Gottfredson, 1983). Furthermore, there may have been “non-environmental” aspects of the GL employment that aided desistance. In particular, the support given from supervisors, who frequently helped children with issues outside of work contributing to their offending behaviours, such as housing insecurity, negative peer pressure and drug/alcohol misuse. Equally, however, it is important to recognise the role that working in and for the benefit of the natural environment played in creating a suitable space for desistance-supporting relationships to form, including with supervisors.

It is important that future research expands upon these findings, examining other incidences where criminalised children engage with the natural environment. Comparisons could be made between the impact of environmental activities that are for the purposes of reparation, recreation, paid employment or volunteering. Furthermore, a larger sample and longer follow-up with participants would be beneficial to greater understand the implications for desistance. It is also important that future research includes more females and ethnic minorities. Research exploring the experiences of environmental volunteers (not solely offending populations) found that females displayed higher connectedness to nature than males (Hine *et al.*, 2008; Zelezny *et al.*, 2002). This research suggested that, because being “other-centric” is frequently a part of female identity, engaging in environmental activities can strengthen a pro-social self-view, indicating that this could be valuable for female desistance. Conversely, research demonstrates that children from minority ethnic backgrounds are half as likely to visit greenspaces than white children, due to a range of social and cultural factors, including inequalities of access and barriers of exclusion (Natural England, 2019). Whether such environments would also invoke feelings of safety and peacefulness and provide an opportunity to try out a prosocial identity, as reported by the predominantly white participants in this study, is unclear.

Overall, this paper lends support for criminalised children to engage with the natural environment to promote and support their desistance, and for youth justice funding to be directed towards this. Environmental activities could be used in community reparation

sentences or as an early intervention to support children who commit less serious crimes or are “at risk” of offending. Furthermore, environmental employment opportunities could be valuable for this population. Unfortunately, however, as this research highlights, organisations in the green sector may be hesitant to employ criminalised individuals. It may therefore be necessary for work-integrated social enterprises, such as the focus of this study, to provide such opportunities instead, in an attempt to challenge the stigma that persists as a barrier to the greater employment of criminalised individuals in this sector.

Note

1. This is a pseudonym, as are all names presented in this paper.

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