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Missing children: On the extent, patterns and correlates of repeat disappearances by young people

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Introduction

Missing persons investigations are arguably the most common non-crime problem the police are expected to handle. In England and Wales, there were 282,066 recorded missing persons cases in 2014/15 (NCA, 2016). This equates to a new case being recorded approximately every two minutes (Fyfe, Stevenson and Woolnough, 2015). Responding to reports of missing persons is a significant challenge for the police (Shalev Greene and Hayden, 2014; Fyfe, Stevenson and Woolnough, 2015). According to estimates from the *College of Policing* (2015), the police devote upward of 3 million ‘investigation hours’ per year to missing persons reports in the UK. Since the average cost per investigation is thought to range from £1,870 (NCA, 2014) to £2,415 (Shalev Greene and Pakes, 2013), this equates to a total annual cost of between £394m and £509m.

Missing persons are a diverse group. The literature distinguishes, for example, between individuals who go missing voluntarily (such as those seeking to escape problems or pressures), with individuals who go missing involuntarily (such as people with dementia who may become lost) as well as those whose absence is in some way ‘forced’, as with kidnappings and abductions (Quinet, 2012; Biehal, Mitchell and Wade, 2003). As Fyfe et al. (2015) observe, part of the complexity inherent in missing persons investigations is accurately locating an absentee along the ‘missing continuum’ (Biehal et al. 2003), and thereby determining an appropriate police response.

In this paper we investigate the prevalence of repeat disappearances by children¹ and examine whether children who go missing repeatedly exhibit different behaviours and socio-

¹ Throughout this paper, ‘child’ refers to any individual under the age of 18, as per the guidance issued to police forces under the College of Policing’s Authorised Professional Practice.

demographic characteristics to children reported missing once. We focus on children for two reasons. First, prior research indicates that young people make up the majority of all missing persons reports (Biehal et al., 2003; Dedel, 2006; Shalev Greene and Hayden, 2014). Second, the police place a high priority on investigating reports of missing children, in part because of the elevated crime and health risks associated with young people being away from home. This speaks to a core responsibility of the UK police, namely that of protecting and safeguarding vulnerable children, as set out under the Children Act 1989 (HMIC 2015; see also Hayden and Shalev Greene, 2018).

The remainder of this article is organised as follows. First, we review the literature on the extent of and suggested reasons for children going missing. Second, we describe the data used here and report our findings on the prevalence, time course, distance and correlates of repeat disappearances by children. The article concludes with a discussion of the limitations of our study and the implications of our results for future research and police practice.

Missing children

Evidence consistently shows that young people are overrepresented among missing person reports (Biehal et al., 2003; Dedel, 2006; Shalev Greene and Hayden, 2014). In England and Wales, under 18s accounted for 60% of all disappearances in 2014/15 (NCA, 2016). Similar observations have been made in the US (FBI, 2016) and Australia (National Missing Persons Coordination Centre, 2016). Young people are also more likely to go missing repeatedly (Henderson and Henderson, 1998; Shalev Greene and Hayden, 2014; Sowerby and Thomas, 2017). For example, the National Crime Agency (NCA) (2016) estimated that 52% of all missing persons incidents involving young people in 2015 were repeat occurrences; among

adults, just 18% were repeat incidents. Similarly, Biehal et al.'s (2003) analysis of reports to the UK Missing Persons Helpline found that 32% of ongoing cases involving those aged 24 years and under (n = 593) referred to someone who had gone missing three times or more; for those aged 25 and above, the proportion was 19% (n = 1,005). The overrepresentation of young people in missing persons data may of course reflect reporting procedures: children are more likely to be reported missing and within a shorter timeframe than adults (Hayden and Goodship, 2013).

Being away from home exposes children to various risks. According to estimates from the NCA (2016), of the 112,853 missing child incidents in 2014/15, in 98.1% of cases the child returned unharmed, in 1.6% they were hurt or harmed (accidentally, emotionally, physically or self-inflicted), in 0.3% of cases they were the victim of a sexual offence while missing and in less than 0.1% they were found deceased. Alternative data paint a different picture. Self-report figures from a representative sample of 14-16 year olds in England (n = 7,349) indicated that 11% of missing children were harmed in some way while away from home (Rees, 2011). This disparity may reflect an unwillingness among young people to speak openly to the police about their experiences whilst reported missing and their reasons for disappearing. Moreover, some young people may not realise that they have been harmed, for instance because they do not recognise the abusive nature of a relationship.

Youths away from home also seem to exhibit an increased likelihood of committing crime, albeit it is often unclear whether this is the result of exploitation and/or coercion by others. Survey data shows that around 1 in 14 young people who go missing reportedly sustain themselves by committing 'survival crimes' such as stealing, begging and drug dealing (Social Exclusion Unit, 2002). Children who go missing from home are also more likely to have

previously been involved in crime, unrelated to their missing episode(s). For example, Shalev Greene (2011) found that, of 51 children who went missing more than twice in a single year, 82% had previously been arrested at least once (not necessarily while missing), while half had been arrested six times or more. Shalev Greene concluded that these findings ‘...may be indicative of their lifestyle and emotional state and highlights the need to focus resources on counselling support mechanisms for children upon their return’ (2011, p.34).

In addition to documenting the experience of missing children, considerable research has sought to identify the ‘push’ and ‘pull’ factors that explain patterns of youth disappearances (Clarke, 1967; Wade et al., 1998; Payne, 1995; Finkelstein et al., 2004). These relate to both personal characteristics (e.g. age and family history) and environmental factors (e.g. hours of darkness and temperature). ‘Push’ factors such as abuse and family conflict are thought to foster a desire to flee a harmful environment. By contrast, ‘pull’ factors such as substance dependency or social connections act to draw an individual away from their home. Survey data indicates that many children who are reported missing have experienced family conflict (Social Exclusion Unit, 2002), and that young people who are not living with family members are significantly more likely to go missing than those living with their birth parents (Rees, 2011).

Children in residential or foster care are often overrepresented in police reports of missing persons (Hayden and Goodship, 2013; Hayden, 2016; Rees, 2011). This again might partly reflect reporting conventions: carers as per their professional duty are more likely to report children missing from care than parents are to report children missing from home (Hayden, 2016). Moreover, youths who abscond from care may have had a history of disappearances *before* entering the care system (Safe on the Streets Research Team, 1999). These issues notwithstanding, survey data collected by The Children’s Society shows that nearly half of all

young people in care have gone missing at some point in their lives, compared to nearly one in ten young people living in a family home. Similarly, Hayden and Goodship (2013) using data from one large UK police force found that children in care accounted for 44.9% of all missing persons incidents involving children. Throughout this paper, 'Missing from care' refers to any missing person incident where a) the individual is recorded as being in the care of a local authority or in foster care, and/or b) the individual goes missing from a residential care unit. However, it is important to point out that many children who are 'missing from care' are simply absent without permission, and that this constitutes a large proportion of 'repeat missing' instances (Payne, 1995: p.342). To address issues such as this and to reduce demand on police resources, in 2013 the official definitions of missing persons were updated to include an 'absent' category (ACPO, 2013). This allows cases to be 'held on file' for up to 24 hours when no risk factors have been identified.

Finkelstein et al. (2004) suggest that the push and pull factors affecting children in care are often very different to those associated with disappearances from family homes (see also Hayden, 2016). They found that the most significant push factors concerned issues with staff and other children (such as bullying or peer influence) or perceived organisational failures. Many children felt that their freedoms were curtailed by the requirements of residential care, and reported feeling bored and frustrated, particularly on weekends and during the summer (Finkelstein et al., 2004). The most frequently cited pull factor was the desire to see family and friends, where most disappearances were efforts to meet with friends or boyfriends/ girlfriends, rather than family members.

In recent years, research into missing children has increasingly focussed on the possible links between going missing, sexual exploitation and trafficking (Hayden, 2016). The *Heading Back*

to Harm (Simon, Setter and Holmes, 2016) report found that children residing in care and who were suspected of or identified as being the victims of trafficking exhibited higher risks of going missing than children more generally. Research by the charity Barnardo's (2011) identified 'going missing' as a key risk factor for child sexual exploitation (see also Scott and Skidmore, 2006). Similarly, Cockbain, Ashby and Brayley's (2015) analyses of 9,042 individuals referred to Barnardo's for reasons of child sexual exploitation, found that 'going missing' was the most frequent reason for referral. However, as Sharp-Jeffs (2016) observes, it remains unclear whether the presumed link between going missing and child sexual exploitation is causal (i.e. children run away because they are being sexually exploited), consequential (i.e. children are at an increased likelihood of being exploited when missing from home) or both.

Despite extensive research on missing persons, including two recent Handbooks (Shalev Greene and Alys, 2016; Morewitz and Colls, 2016), previous literature has mainly concentrated on identifying the reasons *why* individuals go missing. Less research has focussed on patterns of missing persons events. There are however a number of studies, relevant to the research reported here, that examined the travel distances and spatial activity of missing persons. Shalev Greene, Schaefer and Morgan (2009) analysed the spatial behaviour of 70 adults reported missing in the UK. Three patterns were identified: 1) a sizable proportion of missing adults were found abroad (41%), 2) a similar proportion were found at the location of their disappearance (39%); and 3) of those adults who remained in the UK and who were found at locations other than their point of disappearance, most tended to be found within a 10km radius. Shalev Greene and Hayden (2014) analysed a dataset predominately comprising missing young persons (79%, total n = 1,321). They observed that in the majority of disappearances the missing person was located in relatively close proximity to their point of departure (63% were

found within a 5 mile radius of where they went missing). Examples of longer distances were rare, giving rise to a distance decay curve when presented graphically (see Rossmo, 1999). In contrast to Shalev Greene et al.'s (2009) exclusively adult sample, only 0.5% of cases involved the missing person being found outside the UK.

More recently, the National Crime Agency and UK Missing Persons Bureau have developed an evidence-based operational tool – 'iFIND' (Eales, 2016) – to assist officers when conducting searches for missing persons. Building on research initially conducted by Gibb and Woolnough (2007), iFIND reports time spent missing and distance travelled for over 4000 closed missing during the calendar year of 2012. Analysis revealed that young children (under 9) very rarely travelled further than 2.5km, with all children in the sample travelling either on foot or by bicycle. Children in the sample aged 12-17 travelled further distances, with around 15-20% making use of public transport, but the vast majority travelled less than 10km. Female children appear to travel shorter distances than male children, though tests of statistical significance were not reported in the findings. Importantly, more than 50% of all children in the sample aged 12-17 were found with friends, indicating the importance of police search personnel gathering information regarding the missing person's friends and peers.

The current study

This paper has three objectives: 1) establish the prevalence of repeat disappearances by young people, 2) compare the duration of and distance travelled in disappearances by children reported missing once versus children who go missing repeatedly, and 3) determine those factors that are associated with an increased likelihood of a young person going missing repeatedly. It is hoped that better understanding the patterns and correlates of repeat

disappearances by young people will allow police forces and partner agencies to target preventive resources to those individuals most at risk of going missing again following the first occurrence.

Data

The data used here comprised all missing persons reports for one predominantly rural UK police force for the period January 2011 to May 2013. The dataset was provided to the authors directly by the police force. Each entry contained an anonymised identifier, the age of the person reported missing, their sex, ethnic code, status at time of data entry (i.e. missing/found), date last seen, date found, location they went missing from (x and y coordinates), whether the police had recorded a previous disappearance, and location where they were found (x and y coordinates). The data did not distinguish between individuals who were found by a member of the public or the authorities, and individuals who returned of their own accord. Details were also provided on the individual's personal circumstances at the time of disappearance, such as whether they were in care, or whether there was a history of family conflict or mental illness, as per recommended protocol for handling calls on missing persons (see Fyfe et al. 2015). As mentioned previously, in 2013 the official definitions of missing persons were updated to include an 'absent' category (ACPO, 2013), allowing cases to be 'held on file' for up to 24 hours when no risk factors have been identified. Our data was recorded before the police force in question started making this distinction in their reporting procedures, and so our data does not distinguish between 'missing' and 'absent without permission'. From the information provided, we computed four additional variables: 1) the number of days missing per disappearance; 2) whether the individual had previously been reported missing in the same police force area over the time period for which we had data (i.e. a repeat incident); 3) the total

number of disappearances per individual, and 4) the distance between where a person was reported to have gone missing from and where they were found (kilometres). All analyses were conducted in SPSS (Version 25, IBM Corp.).

Results

On the extent of repeat disappearances by young people

There was a total of 2,577 missing persons cases recorded between January 2011 and May 2013. These incidents related to 1,258 unique individuals (578 aged 18 and over and 680 children). Of the 2,577 incidents, 692 involved an adult being reported missing and 1,885 cases referred to a child. Put differently, although children represented 54% of all *individuals* in our data, they accounted for 73% of all missing persons *incidents*. This disparity between the number of individuals and the number of incidents indicates the presence of repeat disappearances.

Of those aged under 18 who were recorded as missing, 42% (n = 288) appeared in our dataset more than once, compared to just 11% (n = 65) of adults. Overall, 64% (n = 1,205) of all missing persons incidents involving under 18s were repeats, compared to 17% (n = 114) of missing adult incidents. When under 18s were separated into two age groups (teenagers aged 13-17 and non-teenagers aged 12 and under), a chi-square test revealed a statistically significant association between teenhood and repeats, $\chi^2(1) = 15.21, p < .001$. Put differently, children in our sample aged 13-17 exhibited a greater risk of going missing repeatedly than children aged 12 or younger.

Table 1 shows the distribution of disappearances across children. It can be seen that most children were reported missing only once (58%, $n = 392$), but that over half of all youth disappearances (53%, $n = 1,001$) involved children recorded as missing 5 times or more. This group comprised only 15% of all under 18s in our dataset ($n = 101$). Moreover, the small minority of under 18s who went missing *10 times or more* made up just 5% ($n = 35$) of young persons in our data but collectively they generated 30% of all youth disappearances ($n = 573$), more than all those incidents associated with children who went missing once.

<INSERT TABLE 1 ABOUT HERE>

We assume that it is not by chance that some children go missing more frequently than others (see Green and Martin, 1973). This is confirmed by assessing the observed distribution of disappearances (Table 1) with that which would be expected if the data were Poisson distributed (using the approach described in Sagovsky and Johnson, 2007). In the context of this study, a Poisson distribution would apply if the probability of being reported missing is the same for all children and is independent of any previous disappearance. As shown in Table 2, we generally observe a greater number of disappearances than would be expected if the distribution reflected a stochastic process, particularly for those children who went missing ten times or more. A chi-square test confirmed that the difference between the observed and expected (Poisson distributed) number of disappearances was statistically significant, $\chi^2(9) = 9914.3$, $p < .001$. Simply put, our findings suggest that there is some degree of event dependency: children who have been reported missing on one occasion exhibit a greater likelihood of being reported missing in the future.

<INSERT TABLE 2 ABOUT HERE>

On the time course and distance of youth disappearances

Efforts to locate missing children might benefit from research evidence on the time course and travel patterns associated with youth disappearances. In relation to the former, we acknowledge that a limitation with our data is that the exact times that children were reported missing or found were not made available, and therefore our unit of analysis here is days. This meant that if a young person who is reported missing returns home the same day then that is operationalised as one day missing; if they return home the following day they have spent two days missing, and so on. A limitation with this approach concerns those incidents in which, say, a child was reported missing at 11pm and was found two hours later. As measured here, this would be classified as two days missing as opposed to two hours, thereby underestimating the number of missing children cases that were resolved in less than 24 hours. An alternative (more desirable) approach would be to use the number of hours missing, but again this information was not available.

The above limitation notwithstanding, we find that of the 1,885 incidents involving under 18s, the vast majority (93%, $n = 1,753$) resulted in the child returning home during the reporting period (January 2011 – May 2013). The average time spent missing was 2.54 days ($SD=3.28$). Most of those who returned home during the reporting period returned home the same or following day (77%, $n = 1,350$). In just 2.1% of cases was the young person away for longer than a week, and in only 0.34% ($n = 6$) were they away for longer than 30 days (see Figure 1). An independent samples t -test revealed no significant difference in the average number of days spent missing for children who went missing once ($n = 375$, $M=2.54$, $SD=3.8$) versus children

who went missing on multiple occasions ($n = 1378$, $M=2.53$, $SD=3.1$); $t(483.73) = 0.026$, $p = .98$).

<INSERT FIGURE 1 ABOUT HERE>

Coordinates of the location from which the child went missing were available for 1,838 of the 1,885 incidents (97.5%). Of these, 1,630 (86.5%) entries included information on the type of location the child went missing from (home, school, etc) and 776 (41.2%) included the coordinates where the child was found. Reasons for this attrition are largely due to reporting practices: it will not always be clear where an individual was last seen before going missing nor the location where they stopped being missing (for instance, if they phone home to inform relatives they are safe but do not disclose their location). Mindful of concerns about the representativeness of this sub-sample, it is noteworthy that in 98.5% of cases ($n = 1,605$) the child was reported as going missing from home or a care setting. Of these, in 46% ($n = 738$) of cases the child went missing from a family home, in 32% ($n = 514$) of cases they went missing from a care home, and in 22% of cases ($n = 353$) they went missing from foster care. Only in 25 cases was the individual reported missing from a different location, such as school, a friend's or family members' address, or public locations such as a bus stop or railway station. Information on the type of location where the individual was found was not available in our data (only the geospatial coordinates).

Figure 2 shows the aggregated distance distribution of all disappearances by children. It resembles a distance decay curve, suggesting that more missing children are found closer to their location of disappearance than further away. Similar to previous research (Shalev Greene and Hayden, 2014), we find that the median distance, as the crow flies, between point of origin

and the location where a child was found was relatively short at 5.1 kilometres, albeit with considerable variation across disappearances, as indicated by the large standard deviation (SD = 51.2).

<INSERT FIGURE 2 HERE>

We then examined the variation in distance travelled between children reported missing once and those who went missing repeatedly. An independent samples *t*-test revealed a statistically significant difference in the average distance travelled (in kilometres) for children reported missing once ($n=178$, $M=17$, $SD=61.4$) and children who went missing repeatedly ($n=598$, $M=11.46$, $SD=16.6$); $t(774) = 1.98$, $p = .048$). These results suggest that children who go missing repeatedly tend to travel shorter distances than children reported missing once. Next, we compared the average distance travelled between children who went missing 2-5 times and those who went missing more than 5 times. An independent samples *t*-test revealed no statistically significant difference between the two groups ($n=259$, $M=11.4$, $SD=21.4$; $n=339$, $M=11.6$, $SD=11.7$; $t(596) = -.164$, $p = .87$). Finally, we compared the distance travelled between children who went missing 2-10 times and those who went missing more than 10 times. An independent samples *t*-test again found no statistically significant difference ($n=391$, $M=10.8$, $SD=18.6$; $n=207$, $M=12.8$, $SD=11.8$; $t(596) = -1.383$, $p = .167$). These results suggest that, while children in our sample who went missing repeatedly tended to travel shorter distances than children reported missing once, there does not seem to be any significant differences in the distances travelled *within* children who went missing repeatedly. Possible reasons for this will be suggested in the Discussion.²

² Notably, we also found that the mean distance travelled was much greater for adults (33.75 KM, SD = 84.22) than for children (12.72 KM, SD = 32.67). An independent samples *t*-test revealed this difference was statistically significant ($t(1026) = 5.75$, $p < .001$). This observation is broadly consistent with the literature on offender mobility, which indicates that older offenders tend to make longer crime trips than younger offenders (Reppetto, 1974; Phillips, 1980; Gabor and Gottheil, 1984; Snook, 2004; Andresen et al., 2013). We suspect that the reasons

Correlates of repeat disappearances by young people

Our final analysis considers those factors associated with repeat disappearances by children. We performed a logistic regression model using the (binary) dependent variable of whether a young person was recorded missing once (0) or twice or more (1). The model included five predictor variables: care (in care/not in care); teenager (yes, 13-17/no, under 13); sex; was the disappearance considered out of character (yes/no); and was there a history of family conflict (yes/no). It should be borne in mind that for this analysis, we were concerned with analysing characteristics of individuals rather than incidents. We therefore included the 680 entries that referred to a child's first missing episode. Thus, if a child went missing multiple times, only the information recorded for the first incident was included in this analysis.

<INSERT TABLE 3 ABOUT HERE>

Table 3 shows that teenhood ($B = .866, SE = .279, p < .005$), being in care ($B = .782, SE = .166, p < .001$) and a history of family conflict ($B = .419, SE = .165, p < .05$), were all positively associated with repeat disappearances. As would be expected, those for whom going missing was judged to be out of character were found to be less likely to be reported missing on more than one occasion ($B = -.575, SE = .180, p < .005$). We found no relationship for sex.

Discussion

put forward to explain these offender travel patterns also hold for missing persons, namely that adults, all things being equal, have greater autonomy and access to financial resources and transport options (Andresen et al., 2013).

This study explored the extent, patterns and correlates of repeat disappearances by children. Analysing data from one UK police force for a period of 29 months, we found that children accounted for a disproportionately large share of all missing persons cases. The distribution of disappearances across young persons was heavily skewed, such that a small minority of children were responsible for a sizable proportion of *all* youth disappearances. Moreover, going missing once was shown to increase the risk of being reported missing in the future. Similar concentration patterns are widely observed in the crime analysis literature (see e.g. Farrell, 2015; Weisburd, 2015; Ellingworth, Farrell and Pease, 1995) and more recently have been documented for child sexual exploitation (Cockbain, 2018). We contend that the same practical implications also hold, namely, that sizable reductions in, here, the number of disappearances by young people can be achieved by reducing the number of *repeat* disappearances. In practice, this requires the ability to readily identify children who persistently go missing and prioritise appropriate preventive resources towards them.

But resources are always finite, hence the importance of identifying reliable patterns that might inform resource distribution. To this aim, we examined the duration and travel patterns associated with child disappearances. Consistent with previous research, we found that the majority of missing children were located within one or two days (NCA, 2016; Hammer et al., 2002). This was true for children who went missing once as well as those who went missing twice or more. With respect to distance, we found that most children were located relatively close to the location from where they went missing, consistent with the findings of Shalev-Green and Hayden (2014). Longer distances were rare, giving rise to an aggregated distance decay pattern akin to that which is frequently observed when analysing offender travel behaviour (Townsend and Sidebottom, 2010). These patterns lend support for the standard

police search strategy of prioritising areas in the immediate vicinity of where the young person was reported missing (see Fyfe et al. 2015). This information can also be incorporated into the sorts of spatial profiling models often consulted as part of a missing persons search (see Eales, 2016; Gibb and Woolnough, 2007).

We also found that children who went missing repeatedly tended to travel shorter distances than those reported missing once. The reasons for this are unclear. One interpretation is that children who go missing once tend to do so accidentally or because they are travelling to a specific location (a 'pull' factor). By contrast, those who go missing repeatedly might do so chiefly to escape a difficult environment (a 'push' factor) as opposed to travel a certain distance to visit a particular place or persons. Other explanations include the possibility that children in care are more likely to be reported missing even when they remain in the general vicinity of the care environment, or the possibility that a proportion of the children who were reported missing only once had in fact gone missing on other occasions, but that this was not reported to the police. Future research is necessary to establish whether this pattern is observed elsewhere. If so, supplementary work might usefully examine the relationship between children's chosen destinations and their reasons for going missing. Better understanding the relationship between the two would allow police to more accurately identify the types of location where an individual may have gone missing to, based on knowledge of the reasons for their disappearance.

As mentioned previously, much of the missing persons literature has concentrated on those factors that increase the likelihood of someone going missing (Biehal et al, 2003; Hayden and Goodship, 2013; Newis, 1999; Tarling and Burrows, 2003). In this study, we compared the attributes of young people who had been reported missing once with those who went missing

repeatedly. Four variables were shown to be significantly related to multiple disappearances. First was whether going missing was deemed to be ‘out of character’. To some extent this is to be expected. Children who have gone missing repeatedly have, by definition, gone missing before and so being reported missing again is unlikely to be judged as unusual. The second correlate is age. Consistent with previous research (NCA, 2016; Hammer, Finkelhor and Sedlak, 2002), we find that teenagers (13-17) are over twice as likely to go missing repeatedly than younger children (under 13). There are several possible reasons for this. One is opportunity: teenagers are generally allowed a greater degree of freedom than younger children and are likely to spend more time unaccompanied outside the home. After a younger child has gone missing once, they may be subject to greater supervision than older children, thereby reducing the opportunities for a younger child to go missing again, either voluntarily or involuntarily. Moreover, all things being equal, teenagers are also more likely than younger children to have a wider network of friends and acquaintances who might act in ways that increase their likelihood of going missing (i.e. encouragement, provision of food, money etc).

Third, a history of family conflict was shown to be associated with an increased likelihood of a young person going missing repeatedly. Again, this is in keeping with previous research that suggests that childhood disappearances are often a response to a stressful home environment (Rees, 2011). The final correlate concerns children in care. Our results indicate that children in residential or foster care account for a disproportionately large number of all missing persons cases, and are more likely to go missing repeatedly compared to children who went missing from the family home. Although this finding is consistent with the consensus in the missing persons literature (e.g. Fasulo et al., 2002; Finkelstein et al., 2004; Hayden, 2010; NCA, 2016; Shalev Greene and Hayden, 2014), it should be kept in mind that these results may partly reflect a reporting bias such that children in residential and foster care are more likely to be reported

missing than those not in care. Furthermore, the research reported here does not differentiate between different types of ‘care’. Care environments include children’s homes, foster care and health placements, (NCA, 2016). In some instances, children living with parents or guardians in a family home may also be recorded as being ‘in care’. There is presently a lack of research examining the locations where people go missing from (Bartholomew et al., 2009; Stevenson et al., 2013), and further research is needed to explore any differences in the extent and patterns of missing persons across different categories of care.

Limitations

This study has several limitations. First, the findings reported here may not be generalizable beyond the specific place and time in which this study was undertaken. For example, variation in the number of child care homes per police force area may affect the speed of police response, and in turn the duration of and distance travelled per missing child event. Consequently, further research is required to assess the representativeness of our findings, preferably using national data that cover a longer time period. Second is the familiar problem of under-reporting. The police are not notified of all occasions where someone goes missing. The data used here thus likely provide an incomplete picture of all missing persons events. Third, we had no way to independently verify the assessments of individuals’ circumstances, such as whether there was a history of family conflict or a disappearance was ‘out of character’. Fourth, and with respect to distance, our assumption was that the distance from where a person was reported missing and where they were located represented the distance *travelled* whilst missing. This is an assumption of convenience, owing to the fact that data on both locations were provided (for a sub-sample of children) in the police data used here. In reality, we recognise that individuals may have covered much greater distances. Finally, it should be borne

in mind that our results concerning the extent of repeat disappearances is likely to be an underestimate. This is because of the ‘time-window effect’: some children who went missing more than once may have done so before and after the period for which we had data, but these incidents would not be captured here (see Farrell, Sousa and Lamm-Wiesel, 2002).

Implications of our findings for research and practice

Our results suggest several avenues for further research. First, our data contained no information on what individuals did while missing (see also Shalev Greene et al. 2009). Better understanding the activities of children when away from home may shed light on the patterns observed here, such as why children who went missing repeatedly travelled shorter distances than those who went missing only once. Interviews with a sample of missing children might be the most appropriate mode of research for collecting such information.

Second, although our results show that children in care were more likely to go missing in higher frequency, it is likely that the rates of disappearances vary *across* different care settings. For example, Shalev Greene and Hayden (2014) found that a large proportion of all missing child incidents occurred from a relatively small number of ‘problem addresses’, the majority of which were private care homes. They go on to suggest that efforts to reduce the number of child disappearances might therefore focus not only on repeat individuals but also repeat *locations*. Building on their study and the literature on ‘risky facilities’ more generally (Eck, Clarke and Guerrette, 2007), future research could examine the relationship between children who go missing repeatedly and those locations that generate a high number of child disappearances, to determine the extent to which repeat disappearances might be attributable to certain environmental features (e.g. care home regime, insufficient security) associated with

particular settings as opposed to characteristics associated with the child themselves (see Clarke and Martin, 1971),

Third, our data contained no information on the possible links *between* youths who went missing (repeatedly). For our purposes, each individual was thus treated as independent. In reality, it is plausible that the probability of a youth going missing is affected by their exposure to and interactions with other young people who have or are liable to go missing, be it through encouragement, enticement, approval or some other causal mechanism(s). For example, in their classic study of absconding, Clarke and Martin (1971) found that boys were more likely to abscond when admitted to approved schools alongside confirmed absconders. More recently, so-called “social contagion” effects have been observed for phenomena such as homicide whereby the likelihood of an individual being the victim of homicide was significantly associated with their links (or ‘social distance’) to previous homicide victims (see Papachristos and Wildemen, 2014). Cockbain (2018) argues that similar network effects might explain the observed variation in the risk of child trafficking and exploitation. We content that further research is warranted to investigate whether the likelihood of repeat youth disappearances is associated with exposure to and interactions with other children who have gone missing previously.

Finally, research across a very wide range of fields has consistently shown that statistical forecasting is typically more accurate in predicting future risk (broadly defined) than clinical judgement alone (Dawes et al., 1989; Grove et al., 2000; Ægisdóttir et al., 2006; Kahneman and Klein, 2009; Kahneman, 2011). Despite this, in the context of missing persons, risk assessment of vulnerable individuals generally relies upon clinical judgement rather than modern statistical forecasting methods (ACPO, 2013; College of Policing, 2016; NPIA,

2010a). Bearing in mind limitations of statistical forecasting and the importance of maintaining professional clinical judgement, structured professional judgement – an approach that combines both clinical and statistical methods – is likely to be most appropriate in this context. This approach is widely used in forensic settings (Bouch and Marshall, 2005), and structured professional judgement-based risk assessment instruments such as the HCR-20 (Douglas et al. 2013) have been shown to be highly effective in informing professional assessments of future violence risk (see, e.g., Webster et al., 2013). Our findings highlight a number of specific ways in which the characteristics and behaviour of children who go missing repeatedly differ from children who go missing once. If these findings are representative, then such factors might be incorporated into risk assessment methods to better identify those individuals most at risk of going missing repeatedly.

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Tables and Figures

Table 1: Distribution of child disappearances, January 2011 to May 2013 (n = 1,885)

Number of disappearances	Number (%) of children recorded as missing	Number (%) of missing child incidents
1	392 (57.7)	392 (20.8)
2	107 (15.7)	214 (11.4)
3	42 (6.2)	126 (6.7)
4	38 (5.6)	152 (8.1)
5	20 (2.9)	100 (5.1)
6	19 (2.8)	114 (6.1)
7	11 (1.6)	77 (4.1)
8	7 (1.0)	56 (3.0)
9	9 (1.39)	81 (4.3)
10 or more	35 (5.2)	573 (30.4)
Total	680 (100)	1,885 (100)

NOTE: % in final column adds to a little over 100 due to rounding of decimal places.

Table 2: Observed and expected (assuming a Poisson distribution) frequency of disappearances per child, January 2011 to May 2013 (inclusive)

Number of disappearances	Observed	Expected
1	392	144
2	107	176
3	42	144
4	38	88
5	20	43
6	19	17
7	11	6
8	7	2
9	9	1
10 or more	35	<1
Total	680	

Table 3: Logistic regression predicting repeat disappearances by children (n = 680)

Variable	β	SE	P value
In care (1 = yes)	.782	.166	<.001
Teenager (1 = yes)	.866	.279	.002
Out of character (1 = yes)	-5.75	.180	.001
Family conflict (1 = yes)	.419	.165	.011
Sex	-.096	.163	.558
Constant	-1.260	.309	<.001
Nagelkerke R ²	.123		

Figure 1: Number of days children spent missing, January 2011 to May 2013

(n = 1,753)

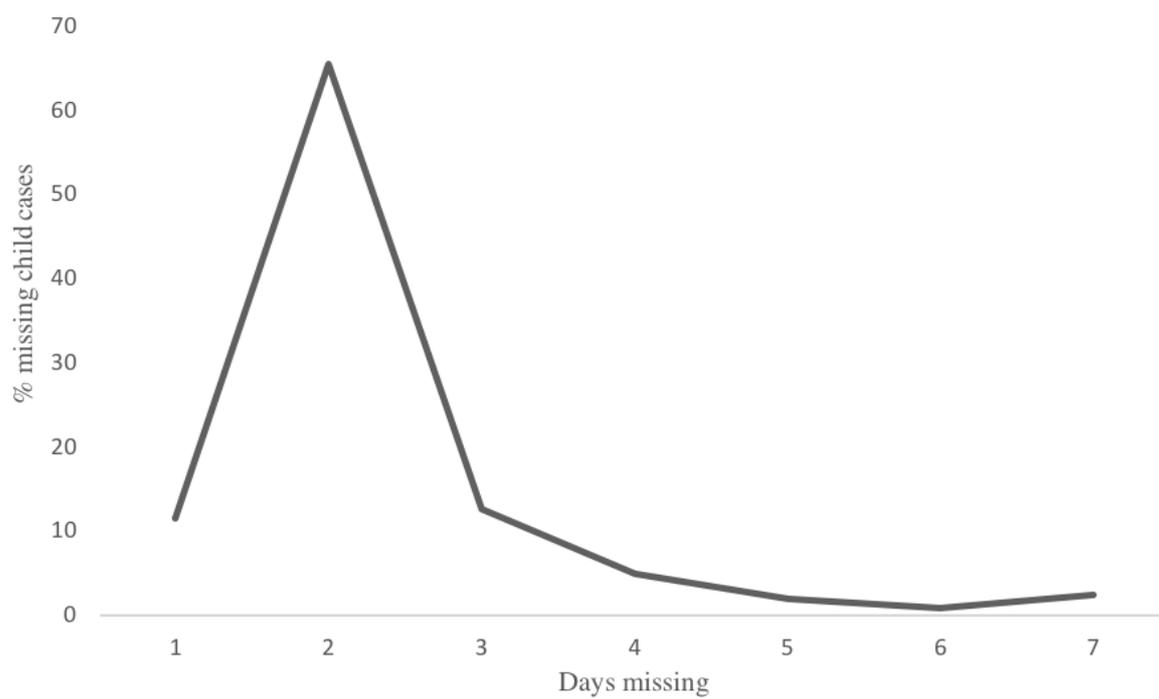


Figure 2: Aggregate distribution of distance travelled (km) by children reported as missing, January 2011 to May 2013 (n = 776)

