Manuscript version, post-refereeing.

For printed version, see: Journal of Scandinavian Studies in Criminology and Crime Prevention, 2014, Vol. 15, No. 2, 128-142.

Offending, drug abuse and life chances – A longitudinal study of a Stockholm birth cohort

Anders Nilsson, Department of Criminology, Stockholm University

Felipe Estrada, Department of Criminology, Stockholm University

Olof Bäckman, Swedish Institute for Social Research and Department of Criminology, Stockholm University

Abstract

There are many factors, both empirical and theoretical, which indicate that drug abuse can play an important role in explaining the links between criminality and life chances when viewed from a life-course perspective. In this article we examine the links between crime and drug abuse and social inclusion and exclusion in adult life, and look at whether there are gender specific patterns in these regards. The Stockholm Birth Cohort database allows us to follow a birth cohort born in 1953 to age 56. The results show that drug abuse is central both to processes of continuity in and desistance from crime and to life chances in adulthood. For the adult outcomes that relate to work and health we also note a tendency towards polarization; the size of both the relative and the absolute differences between the comparison group and offenders with registered drug abuse increases over time. The same general pattern can be seen for males and females.

Keywords

Life course, Social exclusion, Crime, Gender, Sweden, Longitudinal studies

Among the factors that may make desistance from crime more difficult, substance abuse, with its close links to various types of crime, are central. Abuse of alcohol or drugs is something that in and of itself often restricts individuals' chances of entering and maintaining relationships and occupations, which in turn affects both levels of exposure to informal social control and individuals' routine activities. In this article we examine the links between crime and drug abuse and social inclusion and exclusion in adult life. We intend *firstly* to study the relationship between criminal activity and the presence of drug

abuse at different ages. What significance does drug abuse have for the age-crime curve? *Secondly*, we examine how drug abuse and crime during youth and early adulthood are linked to social inclusion, exclusion and mortality to age 56. It is widely known that involvement in crime declines with age. As a result, differences in levels of registered criminal activity become smaller in later adulthood, i.e. there is a harmonisation of crime levels across different groups of individuals. But what happens with other outcomes in adulthood? At the group level we might expect levels of inequality in living conditions to increase rather than decrease over the life course, for example, if criminally active and drug abusing individuals were compared with others. One explanation for this type of polarisation, which has been found in relation to levels of attachment to the labour market, for example, may be found in processes of cumulative disadvantage (Nilsson et al. 2013).

The article continues by first discussing the relevance of drug abuse for life-course criminology. We then present our data; the Stockholm Birth Cohort study (SBC). The results are presented in two main sections; the first section present results describing the links between drug abuse and continuity in crime in early adulthood, while the second presents an analysis of living conditions in later adult life.

The relevance of drug abuse for life-course criminology

Substance abuse is a factor with close links to involvement in crime. Alcohol is often linked to violent crime, preceded by conflicts that arise in connection with alcohol intoxication, whereas drugs are often linked to convictions associated with the handling of drugs and to offences that result from a need to finance expensive and illicit drug use (Caulkins and Kleiman 2011; Mullings et al. 2002).

Recidivism studies have also identified drug and alcohol abuse as being among the most important risk factors in relation to re-offending (Nilsson 2003). Laub and Sampson (2003) highlight substance abuse as an important factor that reduces individuals' chances of desisting from crime. Viewed from the perspective of their age-grade theory, this is in turn due to the way in which substance abuse

makes it more difficult both to acquire and then retain stable social relationships and work, and thus weakens individuals' informal social control.

Given the significance that substance abuse is viewed as having for desistance processes, it is somewhat surprising that, in the words of Schroeder et al. (2007:192), "researchers have less often investigated the role of drug use in life-course patterns of criminal behaviour." A corresponding lack of research interest, although this time from the perspective of drug abuse, has also been noted by Hser et al. (2007:529f) in their review of the life-course perspective on drug use: "relative to onset and relapse, stable cessation is the least studied phenomenon in drug abuse research /.../ Whether turning points and mechanisms underlying drug use cessation are similar to crime desistance remains to be examined." What is often absent from the research is studies that include information on both involvement in crime and drug abuse, and that furthermore cover a long observation period. In their analysis of involvement in crime over the life-cycle on the basis of Dutch cohort data, Blokland et al. (2005) for example note that the offending of the most criminal group involved a wide range of offence types, of which the majority were less serious property offences. The persistent group also tended to perform poorly in both professional and personal life-course domains. The authors argue that one possible explanation for the crime pattern exhibited by the persistent group is that the group is largely comprised of drug addicts who commit offences in order to finance their drug abuse. Blokland et al. found it difficult to examine this question further in their own study, however, since they lacked reliable data on drug abuse among the members of the cohort.

Schroeder et al. (2007) analyse the links between alcohol and drug abuse and the desistance process. They argue, in line with Laub and Sampson, that alcohol abuse is linked to both crime and to factors that affect the opportunities to establish the social bonds that facilitate desistance from crime. They also note that "drug use and its lifestyle concomitants bring together a host of distinctive social dynamics that uniquely complicate desistance processes" (p. 193). Research shows that drug use is viewed more negatively than alcohol consumption, which is linked to the fact that the handling of drugs is in itself illegal. In their longitudinal study of a group of institutionalised young offenders in

Ohio, Schroeder et al. were able to show that, controlling for crime during youth, drugs are more strongly associated with continued involvement in crime in adulthood than alcohol abuse. They also showed that an important part of this correlation is linked to the social networks surrounding drug abusers. One weakness associated with Schroeder et al.'s study, however, is that since it is based on a small clientele sample, it is difficult to capture variance in both independent and dependent variables: in their own words (p. 213): "if only a few respondents have a good job, then it is difficult for a 'good job' to exert a powerful effect on variations in offending observed across this sample group."

Hser et al. (2007) examine how the life-course framework, as employed by Elder et al. (2004) and Laub and Sampson (2003), could be applied to the study of drug use. They note clear similarities between the areas of crime and substance abuse research that focus on dynamic patterns of long-term behaviour, even though the concepts employed may vary between the two (e.g. desistance-cessation). They also note that drug abuse most commonly peaks in the late teens and that there is only a limited initiation of drug use after age 25, which is very reminiscent of the well-established relationship between age and crime. One factor that is central to our own work is furthermore that the abuse of more serious drugs (amphetamines, cocaine, heroin) often continues for a very substantial period of the individuals' lives; among those drug abusers who survive, the abuse not uncommonly continues even past the age of 50. Thus drug abuse may be assumed to have a key role to play in relation to our understanding of continuity and desistance in crime and for life chances throughout the life course.

In their study of criminal careers and life courses, Laub and Sampson (2003) recognize that criminal involvement has a detrimental effect on social and institutional bonds. Crime and society's reactions to crime serve to intensify an unfavourable career – characterised by unemployment and weak bonds to conventional society – which in turn increases the risk of continued criminality and further social marginalisation. This process of cumulative disadvantage means that criminal involvement and its consequences "increasingly 'mortgage' one's future" (Sampson and Laub 1997:147). Drug abuse and criminal involvement during youth and young adulthood can therefore be viewed both as stages in an already unfavourable life career and as triggering factors in relation to social exclusion in late

adulthood. Irrespective of whether or not an individual has desisted from crime, adult life for individuals with a history of involvement in crime and/or who abuse drugs may appear to be characterised by increasingly restricted opportunities, not least by comparison with the way living conditions develop over time among others of the same age.

The life-course of female offenders

It is well-established that the life-courses of female offenders represent an under-researched phenomenon (Block et al 2010), and it is today therefore unclear to what extent the processes affecting continuity in and desistance from offending are the same for men and women. For reasons of theory (e.g. Steffensmeier and Allen 1996), but also on the basis of a small number of research studies, it has been argued that females with a history of involvement in crime experience higher levels of social disadvantage as adults than males with the same type of history. In a study of the Dunedin cohort, Odgers et al. (2008) followed the male and female cohort members up to age 32. One important finding was that persistent female offenders experienced the most severe consequences in adulthood. Results reported from a Swedish study, based on a school-grade cohort of children from a medium-sized Swedish city born in the 1950s, indicate that females who were officially registered for crime during adolescence were at higher risk for a wide range of problems as adults compared with male offenders (Bergman and Andershed 2009). Studies from the Ohio Life-Course Study (OLS) also show that the females had more negative life outcomes than the corresponding group of males (e.g., Giordano et al., 2002, p. 1012). In another study from the Ohio project, Lancot, Cernkovich, and Giordano (2007) concluded that “gender differences were observed in every life domain... these results also indicate that previously institutionalized females face the most adverse conditions during young adulthood” (p. 148).

One explanation that has been put forward for the more difficult situation faced by women with a criminal history as adults is that they are more disadvantaged during childhood and thus constitute a more highly selected and socially skewed group than males who become involved in crime. Studies have shown that female offenders who end up being dealt with by the justice system have often grown

up in very difficult home conditions (e.g., Mullings, Pollock, and Crouch, 2002; Estrada and Nilsson 2012; Simpson et al., 2008; for reviews of gendered pathways, see also Belknap and Holsinger, 2006). Another explanation is that female offenders are more stigmatized than men as they break not only the law but also the norms and expectations associated with their femininity (Steffensmeier and Allan, 1996, p. 476). This means that both their opportunities on the labour market and their chances of finding conventional partners are more limited.

A further explanation for the more difficult life conditions faced by women with a history of involvement in crime may be that these women also have drug abuse problems more often than men who have been registered for crime. In a study of the adult living conditions of male and female offenders (Estrada and Nilsson 2012), we found that the situation of the female offenders was worse than that of the males, and that this was *essentially* associated with their more problematic backgrounds and their more extensive levels of drug abuse (see also Andersson and Torstensson 2013). This is a finding in line with research that sees drug use as an important feature of both the causes and the outcomes of persistent female criminality (Daly, 1992; Simpson et al., 2008) and is at the same time a result that life-course criminology has not paid much attention to.

In summary, there are many factors, both empirical and theoretical, which indicate that substance abuse, especially drug abuse, can play an important role in explaining the links between criminality and life chances when viewed from a life-course perspective. Given the above, we would argue that it is important to clarify the links between drug abuse and continuity in and desistance from crime between youth and adulthood. What is important is that substance abuse constitutes an additional problem that contributes to the difficulties faced by individuals with a history of criminal involvement when it comes to forming bonds in the form of relationships and employment.

Further, there would appear to be an urgent need to study the significance of involvement in crime and drug abuse for social inclusion and exclusion in late adulthood for men and women respectively. By directing a focus not at how involvement in crime declines with age, which is something that happens

sooner or later for all groups, but instead at other types of welfare problems, we will be able to broaden our understanding of the links between continuity in and desistance from crime and life chances in adulthood.

Data and methods

The Stockholm Birth Cohort (SBC) database allows us to follow an entire birth cohort born in 1953 until they reach the age of almost 60, and gives us the opportunity to make comparisons both between men and women and between those with and without a registered history of involvement in crime or drug abuse problems at different points in their lives.

SBC is a longitudinal database created by combining two data sets (for a detailed description see Stenberg et al. 2007). The first of these is the Project Metropolitan Study, which comprises all individuals born in 1953 and living in Stockholm ten years later. The Metropolitan data set includes a large amount of survey and register-based data relating to both the parents and the individuals themselves. For almost the entire length of the Metropolitan project (1963–1986) data were collected from a range of different registers. The data set includes information on e.g. income, social welfare reciprocity, educational achievement, hospital treatment, interventions from Child Welfare Committees and involvement in crime. During the 1980s, the project became the object of severe media criticism, since the register-based follow up via databases was viewed at the time as being both a frightening and unethical form of state monitoring of individuals. This debate led to the data collection being discontinued in 1986 (Stenberg 2013).

The other data set, to which the information on the 1953 Stockholm cohort from the Metropolitan data set has been linked, is known as the Health, Illness, Income and Employment database (HSIA). This database is comprised of register data on all individuals living in Sweden in either 1980 or 1990. The data set includes information on e.g. income, welfare benefit reciprocity, stays in hospital (diagnoses) and mortality. Crime data are not included in this register. Since both databases had been anonymised

a probability matching procedure has been employed. The probability matching procedure involved distinguishing unique combinations of 13 variables included in both data sets for the individual study subjects. It was possible in this way to match a total of 96 percent of the observations – 14,294 individuals (Stenberg et al. 2007). The combination of the two data sets means that it is currently possible to follow the cohort of boys and girls born in 1953 and living in the Greater Stockholm area at age ten until late adulthood. The data employed in this chapter follow the entire Metropolitan cohort (N=15,117) as far as this is possible. Thereafter the analysis is restricted to the SBC cohort (i.e. those individuals from the Metropolitan cohort for whom it has been possible to add additional register data).

Measures on Criminality and Drug abuse

The information on the cohort members' criminality employed in this study is drawn from the official Police Register of criminal records 1968–1983 (PBR).¹ In principle, PBR records correspond to convictions data. For each year, the data set contains information on the number and type of offences committed. Crime dates mirror the date that the crime was actually committed and not the date that it was officially registered. Seven per cent of the female cohort members and 33 per cent of the males had been registered as being convicted of a crime at some point up to the age of 30. The crime pattern of the cohort has been described in several publications (e.g. Wikström 1987; Nilsson and Estrada 2009). There is a substantial decrease in the level of registered crime for all groups during the final year (1983, when the cohort members were aged 30). This is probably due to an underestimation of the cohort members' registered crime during this year, due to the fact that not all cases are reported until the case is "closed". Hence, there may be a delay between the time at which a crime is actually committed (or becomes known to the police) and the date that it is officially noted in the Crime Register (SBC Codebook 4, p. 37). For this reason, we have chosen to only to present information on crime up to age 29 in the figures.

There are three main sources containing information on drug abuse in the SBC (see Appendix). The first of these is the Social Register (CWC) in Stockholm and covers the period 1966 to 1972 (i.e. 13 to

19 years of age).² The indicator we have used is registration relating to “frequent use of narcotics”. Our second source is the so-called Injection Mark Study (IMS) conducted at the remand centre in Stockholm between 1969 and 1983.³ Our third source refers to the Hospital Discharge Register (HDR) covering the period 1969 to 2007. For this study we have had access to HDR data covering the period between 1969 and 1983. On the basis of these different sources, 431 of the cohort members have been identified as drug abusers (Table 1). Given the indicators employed, it may be assumed that the individuals who have been classified as drug abusers in this study have experience of serious drug abuse, something which is further underlined by the fact that the majority had been recorded in more than one of the registers examined.

It is important to ask how well our indicators may be assumed to identify drug abuse within the cohort. Given the long follow-up period, it is reasonable to assume that a large proportion of those with serious and repeated drug abuse will have experience of registered care provision that has been included in our sources (Svensson 2000:14). In addition, we have also utilised sources other than patient data (the IMS and the CWC). These sources may be assumed to underestimate drug abuse within the cohort somewhat, however, since they are limited to the Stockholm area (until 1980). Since the IMS is based on information collected at a remand centre, these data contain a bias towards the identification of drug abusers who have also been involved in crime. At the same time, we can note that there is a substantial overlap between the three different indicators (see also Torstensson 1987).

-- Table 1 about here --

Dependent variables: exclusion, inclusion and mortality

We have three different outcomes in late adulthood (i.e. from age 37 to 56), these are inclusion, exclusion and mortality. In line with our previous analyses within this field, exclusion and inclusion are operationalized in terms of labour market attachment and health (e.g. Bäckman and Nilsson 2011). All measures are constructed on a yearly basis from population-based register data. Our definitions of

inclusion and exclusion are based on a model for measuring labour market attachment that uses information on income sources to categorise the population according to their degree of labour market attachment. As a first step, the cohort members were divided into groups on the basis of annual earnings recalculated into what are referred to as *price base amounts* (PBAs).⁴ To be classified as “included”, the individual should belong to the ‘core labour force’, which is composed of those who can support themselves by means of labour market income. All those who earn at least 3.5 Price Base Amounts (PBA) during a year are assigned core labour force status. The reason for choosing this particular income limit is that it approximates the gross income from one year’s full-time work in one of the poorest paying jobs in Sweden. Exclusion is defined as *No Labour Market Attachment*, a category that includes those with a very low income (below 0.5 PBA) or no income at all, or a disability pension. The intermediate group are categorised as *semi-included*. All of the outcomes are measured on a yearly basis and a person must have been a Swedish resident to be included in the population for that year. We have annual data relating to *mortality* within the cohort until the year 2009.

Results: Crime and substance abuse to age 30

Figure 1 presents the cohort’s involvement in crime to age 29 irrespective of experiences of substance abuse. As would be expected, we see that the number of first-time offenders declines as the cohort ages (see also Wikström 1987). Of all those cohort members who were registered for crime, only nine percent were registered for their first offence subsequent to the age of 25 among the males, and eighteen percent among the females. Among the males, the numbers being registered for crime are highest during the teenage years, and then decline substantially. Among the females, we instead see that the numbers being registered for crime continue to increase subsequent to the teenage years, and that the decline comes first after the age of 25 (see also Andersson et al. 2012).

-- Figure 1 about here --

As would be expected, there is a clear correlation between drug abuse and crime. An overwhelming majority of the individuals who had been identified as drug abusers by age 30 have also been registered for crime subsequent to the age of fifteen (94% of the males and 78% of the females, additional information, not shown in Figures). The most common offence types are theft and drug-related offences. Given the high level of involvement in crime among the group of drug abusers we would expect the age crime curve within this group to differ from that of the non-substance-abusers. That this is in fact the case can be seen from Figure 2, where we differentiate those registered for drug abuse from the remainder of the cohort.

-- Figure 2 about here --

The proportions registered for crime are significantly higher among those registered for substance abuse. For those cohort members with no registered form of substance abuse, we see the well-known age-crime curve (see the right-hand side of the Figure 2), with a clear decrease over time in the level of involvement in registered crime. When the drug abusers are divided into three categories based on the ages at which they were registered for drug abuse, the link between drug abuse and crime becomes even clearer. Those who were only registered for drug abuse during their teenage years present a high level of registered crime during this same period, but their crime level then declines. Among those who were only registered for drug abuse as adults, the pattern of involvement in crime is the reverse, i.e. the level of registered crime increases rather than decreases subsequent to the teenage years. The highest level of involvement in crime is found in the group that has been registered for drug abuse as both youths and adults. From the age of seventeen onwards, approximately half of the members of this group have been registered for crime every year. Although levels of involvement in crime are higher among the drug abusing men than they are among the corresponding group of women, the main tendencies described above are the same for both genders (not shown in the figure). The women who are registered for drug abuse as adults also present significantly higher levels of registered involvement in crime than those who were only registered for drug abuse during their teenage years. It

should also be noted that excluding drug related crimes reduces the proportions registered for crime only marginally (1–3 percentage points in the three categories with registered drug abuse. Not shown).

Table 2 presents a cross-tabulation between crime and drug abuse at different ages to age 30. In the subsequent analysis of living conditions from age 37 to 56, we will be focusing on three different groups that are of interest from a theoretical perspective: 1) *Desisters*: the 753 individuals in the cohort who were only registered for crime and/or drug abuse during their teenage years, but who were not registered for either crime or drug abuse at age 20–30. 2) *Adult offenders without registered drug abuse*: the 1,578 individuals who were registered for crime as adults, but who have not been registered for drug abuse. 3) *Adult offenders with registered drug abuse*: the small group of 249 individuals who have been registered for both crime and drug abuse subsequent to age 19. The comparison group is comprised of those who have not been registered for either crime or drug abuse ($n=11,621$).⁵ This analysis includes only the SBC cohort, i.e. those individuals for whom we have been able to add new data, since this is the only group that we have been able to follow up during their later adult years.

-- Table 2 about here --

Inclusion, exclusion and mortality up to age 56

In this section we study our three different outcomes in late adulthood (i.e. from age 37 to 56): inclusion, exclusion and mortality among early desisters, adult offenders without registered drug abuse, adult offenders with registered drug abuse and the comparison group who had not been registered for either drug abuse or crime. In the analysis we present the proportions of “included”, “excluded” and the cumulative mortality for each of the groups examined.

Figures 3a-b show that the proportion belonging to the core labour force differs substantially between the different groups. In the comparison group, the proportion categorised as “included” lies at approximately 80 percent for the men and 70 percent for the women. Among the adult offenders with registered drug abuse, the corresponding proportion is instead approximately 20 percent, irrespective

of gender. Among the early desisters, but also among the adult offenders without registered drug abuse, the levels of social inclusion are significantly better and in this respect these groups are more similar to the comparison group. The size of both the relative and the absolute differences between the comparison group and the adult offenders with registered drug abuse increases over time. This trend is in part associated with the unemployment crisis experienced in Sweden at the beginning of the 1990s, which primarily affected those groups with relatively weak attachments to the labour market (Nilsson et. al 2013). When we look to the proportions categorised as “excluded” (Figures 4a-b) the main pattern is the same, i.e. the situation of adult offenders with registered drug abuse is significantly worse than that of the other groups examined, while the situation among the desisters is relatively similar to that found in the comparison group. It is notable that the proportion categorised as “excluded” within the drug abuse group remains unchanged over time at approximately 40–50 percent, whereas the size of this proportion increases within the other three groups. Thus differences between the different groups in the level of social exclusion decrease as the cohort ages. This finding may appear somewhat surprising, but should be viewed against the background of a very high mortality rate found among offenders with registered drug abuse (Figures 5a-b). By age 56, almost 40 percent of the men and 30 percent of the women within this group have died. Among the adult offenders with no registered drug abuse, the corresponding proportions are nine and seven percent respectively. When we take the cohort members experiences of drug abuse into account, our findings indicate similarities rather than differences between the two genders.

-- Figure 3a-5b --

Discussion

Main findings

Our results show that drug abuse is central both to processes of continuity in and desistance from crime and to social inclusion, exclusion and mortality in adulthood. When we look to the age-crime curves for those who have and have not been substance abusers respectively, we see that the curve is much flatter among those with involvement in drug abuse, and furthermore lies at a considerably higher level. The same general pattern can be seen for males and females, although the crime levels of female drug abusers lie at a lower level than those found among males.

Several studies have been able to identify a small group of offenders whose offending trajectory remains relatively flat over time. Few however have been able to study the significance that drug abuse has for this trajectory pattern. There are also qualitative studies that point to drug abuse as playing a crucial part in the desistance process. This can be seen in interviews, for example, where offenders themselves argue that desistance from offending is subordinate to drug use desistance (see e.g. Colman and Vander Laenen 2012; Carlsson 2014). In our study we can also see how the level of criminal activity quickly declines among those who were only registered for drug abuse during their teenage years.

The proportion belonging to the core labour force differs substantially between our different groups. Among the early desisters, but also among the adult offenders without registered drug abuse, the levels of social inclusion are significantly better than among adult offenders with drug abuse, and in this respect these groups are more similar to the comparison group, i.e. those who had not been registered for either drug abuse or crime. We can also note a tendency towards polarization regarding labour market attachment. The size of both the relative and the absolute differences between the comparison group and the adult offenders with registered drug abuse increases over time as would be expected on the basis of processes of cumulative disadvantage. One of our more disheartening findings is the high

level of mortality among offenders with registered drug abuse. By age 56, almost 40 percent of the men and 30 percent of the women within this group have died.

Previous research has noted that compared with the group of men who have a history of involvement in crime, the smaller group of women with a criminal history is often characterised by more negative living conditions (e.g. Giordano et al. 2002; Odgers et al. 2008; Estrada and Nilsson 2012). In the current study, when we take experiences of drug abuse into account among those with a history of involvement in crime, we only find small differences between the sexes in levels of labour market attachment, social exclusion and mortality. This is due to the fact that the more problematic situation found among female offenders is linked to the more widespread drug abuse found within this group. This is in line with research that sees drug use as an important feature of both the causes and the outcomes of persistent female criminality and social exclusion (Daly, 1992; Simpson et al., 2008; Estrada and Nilsson 2012).

Limitations

In the results we have presented, no controls have been included for other factors that are of significance for long-term outcomes, such as levels of resources during childhood and school performance. The comparisons between the groups of adult offenders with and without registered drug abuse respectively do not include any controls for differences in levels of involvement in crime either, while at the same time we know that those who have also been registered for drug abuse have higher levels of registered crime. In order to better capture the significance of drug abuse for social inclusion and exclusion in adult life we will therefore in future analysis focus on comparing adult offenders with and without registered drug abuse.

Policy implications

Over recent years there has been an increasing interest in attempting to understand the processes that influence individuals' criminal activity across the entire life course. The dominant part of this research emphasizes factors related to the individual. It focuses on various deficiencies, the family situation

during childhood, and also conditions later on in life such as education, work and relationships (e.g. Farrington et al. 2006; Bäckman and Nilsson 2011). In addition, the individual's own will to change is often also highlighted (Maruna 2001). In earlier studies, we have argued for a resource perspective that takes into account the significance of both individual resources and the structural context for an individual's opportunities and choices. This perspective has a great deal in common with life course theory as it has been formulated by Elder et al. (2004:10): "Individuals construct their own life course through the choices and actions they take within the opportunities and constraints of history and social circumstance." One structural factor that we would argue may be of significance for the restricted life chances manifested by the substance abusers in our study is control policy.

Swedish drug policy has been characterised by repressive measures focused on the drug users themselves, as illustrated by the statement that "it *shall* be difficult to be a drug-misuser", which is taken from a governmental task force report (Lenke and Olsson 2002:65). The idea behind this approach has been that the more difficult it is to be a drug abuser, the more positive the other alternative, i.e., a drug free life, will appear to be. In practice, this has involved a policy that has criminalised both drug use and drug users. On the basis of our findings, we can note that the situation of drug abusers has been very difficult, and has furthermore become consistently worse over the life course. Thus making life as a drug user difficult does not appear to have functioned as a way of guiding drug users away from involvement in substance abuse and crime. Sweden instead appears to clearly manifest what Room (2005:149) has described as structural elements that promote processes of marginalization for those defined as having a drug problem, in his words: "policy decisions to be 'tough on drugs' always carry the potential to stigmatize and marginalize those who do not conform".

In our view, sound policies aimed at rehabilitation and the prevention of social exclusion should also involve the provision of alternatives. With time, individuals become increasingly dependent on crime as a source of both income and social relationships. But seeing advantages in a criminal "lifestyle" and persisting in crime and drug abuse may also be regarded as related to the difficulties involved in identifying realistic alternatives. It is widely known that a large proportion of offenders are faced with

substantial financial and social problems. Many offenders also see the resolution of such difficulties as essential if they are to avoid reoffending (Nilsson 2002:133). By comparison with Sweden, many other European countries, such as Denmark and The Netherlands, have drug policies that are less repressive and more focused on harm reduction. It would be very interesting to compare how a more care-focused and less punitive and stigmatising policy towards drug abusers may affect the links between crime, substance abuse, social exclusion and mortality over the life course, as described in this article.

Funding

This work was supported by the Swedish Research Council [grant number 2011-2206].

Notes

¹ The age for criminal responsibility in Sweden is 15.

² The Social Register contains dossiers of cases of dependency and Child Welfare Committee (CWC) cases. The information relates to problematic family conditions and the cohort members' social problems in the form of substance abuse and involvement in crime. The information contained in these dossiers has been coded manually. Registers outside the metropolitan area could not be searched, which means that cohort members are not at risk of being included until they arrive in the Stockholm metropolitan area or if they leave the area, not until they return (SBC Codebook II:38ff).

³ The IMS was initiated to follow the intravenous drug use in the arrest population in the Stockholm City area. Individuals who lived in Stockholm but committed their crimes in other municipalities were not included in the study (SBC Codebook IV, p. 65). Those who were arrested for minor misdemeanours, and those who did not consent to participate in the study, were also excluded from the study.

⁴ The PBA is a measure used by the government to calculate benefits in various social insurance programs. It is linked to the Consumer Price Index and is thus not eroded by inflation. In 2013 one PBA equals SEK 44,500 (≈ € 5,000).

⁵ This means that we have excluded three small groups which include a total of 93 individuals.

References

- Andersson, F., Levander, S., Svensson, R. and Torstensson Levander, M. (2012). Sex differences in offending trajectories in a Swedish cohort. *Criminal Behaviour and mental Health*, 22, 108-121.
- Andersson, F. and Torstensson Levander, M. (2013). Adult onset offending in a Swedish female birth cohort. *Journal of Criminal Justice* 41(3): 172-177.
- Belknap, J., and Holsinger, K. (2006). The gendered nature of risk factors for delinquency. *Feminist Criminology*, 1, 48-71.
- Bergman, L., and Andershed, A.-K. (2009). Predictors and outcomes of persistent or age-limited registered criminal behaviour: A 30-year longitudinal study of a Swedish urban population. *Aggressive Behaviour*, 35, 164-178.
- Block, C., Blokland, A., van der Werff, C., van Os, R. and Nieuwbeerta, P. (2010). Long-term patterns of offending in women. *Feminist Criminology*, 5:73-107.
- Blokland, A., Nagin, D. and Nieuwbeerta, P. (2005). Life Span Offending Trajectories of a Dutch Conviction Cohort. *Criminology* 43:919-954.
- Bäckman, O., and Nilsson, A. (2011), 'Pathways to Social Exclusion – a Life Course Study', *European Sociological Review*, 27/1: 107-123.
- Carlsson, C. (2014). Continuities and Changes in Criminal Careers. Dissertations in Criminology no 34. Department of Criminology, Stockholm University.
- Caulkins, J. and Kleiman, M. (2011): Drugs and Crime, in M. Tonry (ed), *The Oxford Handbook of Crime and Criminal Justice*. Oxford University Press.
- Colman, C., and Vander Laenen, F. (2012). "Recovery Came First": Desistance versus Recovery in the Criminal Careers of Drug-Using Offenders. *The Scientific World Journal*, 2012.

- Daly, K. (1992). Women's pathways to felony court: Feminist theories of lawbreaking and problems of representation. *Review of Law and Women's Studies*, 2, 11-52.
- Elder, G., Kirkpatrick Johnson, M. and Crosnoe, R. (2004), 'The Emergence and Development of Life Course theory', in J. Mortimer and M. Shanahan, eds, *Handbook of the Life Course*, 3–19. New York: Springer.
- Estrada, F. and Nilsson, A. (2012): Does it Cost More to be a Female Offender? A life-course study of Childhood Circumstances, Crime, Drug Abuse, and Living Conditions *Feminist Criminology*, 7: 196-219.
- Farrington, D., Coid, J., Harnett, L., Jolliffe, D., Soteriou, N., Turner, R., and West, D. (2006), *Criminal Careers up to Age 50 and Life Success up to Age 48: New Findings from the Cambridge Study in Delinquent Development*. 2nd edition. London: Home Office Research Studies.
- Giordano, P., Cernkovich, S., and Rudolph, J. (2002). Gender, crime and desistance: Toward a theory of cognitive transformation. *American Journal of Sociology*, 107, 990-1064.
- Hser Yih-Ing, Douglas Longshore and M. Douglas Anglin (2007). The Life Course Perspective on Drug Use: A Conceptual Framework for Understanding Drug Use Trajectories. *Evaluation Review*, 31(6):515-547.
- Lanctot, N., Cernkovich, S., and Giordano, P. (2007). Delinquent behaviour, official delinquency and gender: Consequences for adulthood functioning and well-being. *Criminology*, 45, 131-157.
- Laub, J., and Sampson, R. (2003), *Shared Beginnings, Divergent Lives*. Delinquent Boys to Age 70. Cambridge, Massachusetts: Harvard University Press.
- Lenke, L., and Olsson, B. (2002). Swedish drug policy in the twenty-first century: A policy model going astray. *The Annals of the American Academy of Political and Social Science*, 582(1), 64-79.

- Maruna, S. (2001), *Making Good: How Ex-Convicts Reform and Rebuild their Lives*.
Washington, DC: American Psychological Association.
- Mullings, J., Pollock, J. and Crouch, B. (2002). Drugs and criminality: Results from the Texas women inmates study. *Women and Criminal Justice*, 13:69-96.
- Nilsson, A. (2002). *Fånge i marginalen: uppväxtvillkor, levnadsförhållanden och återfall i brott bland fångar*. Kriminologiska institutionen, Stockholms universitet.
- Nilsson, A. (2003). Living conditions, social exclusion and recidivism among prison inmates. *Journal of Scandinavian Studies in Criminology and Crime Prevention*, 4(1), 57-83.
- Nilsson, A., and Estrada, F. (2009), *Criminality and Life-Chances*. Report 2009:3.
Department of Criminology, Stockholm University.
- Nilsson, A., Bäckman, O., och Estrada, F (2013). Involvement in crime, individual resources and structural constraints. Processes of cumulative (dis)advantage in a Stockholm birth cohort. *British Journal of Criminology* 53, 297-318.
- Odgers, C., Moffitt, T., Broadbent, J., Dickson, N., Hancox, R., Harrington, H., . . . Caspi, A. (2008). Female and male antisocial trajectories: From childhood origins to adult outcomes. *Development and Psychopathology*, 20, 673-716.
- Room, R. (2005). Stigma, social inequality and alcohol and drug use. *Drug and alcohol review*, 24(2), 143-155.
- Sampson RJ, Laub JH, (1997) A Life-Course Theory of Cumulative Disadvantage and the Stability of Delinquency. In Thornberry TP (ed.), *Developmental Theories of Crime and Delinquency*. New Brunswick: Transaction.
- Schroeder, R., Giordano, P. and Cernkovich, S. (2007). Drug use and desistance processes. *Criminology* 45:191-222.

- Simpson, S., Yahner, J., and Dugan, L. (2008). Understanding women's pathways to jail: Analysing the lives of incarcerated women. *Australian and New Zealand Journal of Criminology*, 41, 84-108.
- Steffensmeier, D. and Allan, E. (1996). Gender and Crime: Toward a gendered theory of female offending. *Annual Review of Sociology*, 22:459-487.
- Stenberg, S-Å Janson, Vågerö, D, Österman, R, Arvidsson, E, von Otter, C and Jansson, C-G (2007). Stockholm Birth Cohort Study 1953-2003: A new tool for life course studies. *Scandinavian Journal of Public Health* 35:104-110.
- Stenberg, S. Å. (2013). *Född 1953. Folkhemsbarn i forskarfokus*. Borea.
- Svensson, D. (2000). Levnadsförhållanden bland vårdade narkomaner 1987-1994. CAN.
- Torstensson, M. (1987). *Drug-Abusers in a Metropolitan Cohort*. Project Metropolitan research report No 25, Department of Sociology, University of Stockholm.
- Wikström, P.-O. (1987). *Patterns of crime in a birth cohort: Age, sex and social class differences* (Project Metropolitan Research Report No. 24). Stockholm, Sweden: Department of Sociology, University of Stockholm.

Appendix

Variable	Source	Variable description	Code book	Cohort age
Criminality	National crime register	See article text	IV	15-30
Drug abuse	1) The injection mark study	1) Registered for intravenous drug abuse in the Stockholm remand centre population 1966-1983	IV	13-30
	2) The Social register	2) Registered for frequent drug abuse in the Social register 1966-71	II	13-18
	3) Drug related diagnosis in the in-patient discharge register	3) ICD-8: 304; 971	VI	16-30
Inclusion	LISA-database	In employment, see article text	VI	37-56
Exclusion	LISA-database	Outside the labour force or disability pension. See article text	VI	37-56
Mortality	Cause of Death register		VI	11-56

* Codebooks are available at <http://www.stockholmbirthcohort.su.se/>

Table 1. Number of drug abusers by indicator.

Registered (age 13–30)	431
Child Welfare Committee (CWC age 13–19)	176
Injection Mark Study (IMS age 15–30)	274
Inpatient records (IR age 16–54)	241
Only CWC	52
Only IMS	95
Only IR	82
CWS and IMS	43
CWS and IR	23
IMS and IR	78
Included in all three registers	58

Table 2. Distribution of individuals by drug abuse, crime and age. N.

	No drug abuse	Drug abuse only at age 13–19	Drug abuse as adult, age 20–30	N
No crime	11,621	22	24	11,667
Crime only at age 15-19	702	29	11	742
Crime as adult, age 20-30	1,578	58	249	1,885
N	13,901	109	284	14,294

Figure 1. Numbers registered for a first offence and numbers registered for any offence, by age and gender, ages 15–29. (N males=7,719, N females=7,398).

Figure 2. Age and crime by drug abuse categories. Proportion (%) registered for crime (age 15–29) by drug abuse.

— No crime, no drugs
 — Early desisters
 Crime, no drugs
 --- Crime and drugs

— No crime, no drugs
 — Early desisters
 Crime, no drugs
 --- Crime and drugs

Figures 3a-5b. Inclusion, exclusion and mortality (ages 37–56) by drug abuse (ages 13–30) and crime (ages 15–30). Proportions (%) by age and gender.