Patterns of offending and desistance from crime in the 1970 British Cohort Study: The role of early socialisation

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Abstract

Crime in the UK and further afield is a serious problem, and one that receives considerable attention from politicians, policymakers, researchers, and the media. There is evidence that ineffective early family life interactions impact the prevalence of crime rates and that a person's relationship with agents of the law can encourage different levels of adherence to the law. This study uses crime data over 34 years from the 1970 British Cohort Study to examine risks of self-reported offending, and movement away from offending (desistance), over the life course.

This study uses a unique method to operationalise desistance, in a manner that is argued to be internationally comparable: the cessation or diminishment to insignificance of the act of breaking moral rules of conduct stated in law, after age 30, having previously committed these acts. Unusually this study allows desistance to be understood as a process and an end state and also uses an age definition, a way of revealing the shape of an individual's offending career in terms of social (key life events) and natural (age-crime curve) factors. Critically this work specifically focuses on the gendered nature of crime in the general populous and examines those differences in great detail.

Similar to Moffitt's dual typology, which focuses on 'adolescent peaks' and chronic offending, this study identified an *Early onset desist* group. However, unlike Moffitt's work this study identifies additional patterns that call into question the continuing emphasis on a dual taxonomy. This study adds to the work that has found five specific offending patterns (six with resist) in self-report data. And although the *Early Onset Desist* group fits in with other research what is unique to this study is the identification of an unusually late commencement of the *Late Bloomer* offending group after the age of 30.

Using carefully considered measures of early family – parent and sibling – socialisation and legal socialisation this research explores the risks associated with the offending patterns and then uniquely examines them in the specifically designed socialisation interplay theory model. In multinomial regression analysis it shows early and legal socialisation as significant influences, with lifelong impacts and distinct associations with the different offending patterns. These findings add to the evidence from other international studies, suggesting moderate to

strong predictions and the predominance of early psychosocial variables over biological ones, apart from smoking in pregnancy.

Consideration of ethical issues

This PhD uses data from The British Cohort Study1970, which is accessible for scientific research from the UK Data Archive. This data is available in anonymised format and as such is provided under strict data protection procedures. Participants and/or their legal guardian/parent in BCS70 have given their consent for the data to be used for analysis and each sweep of data collection was subject to relevant Ethical Committee approval. This PhD research adheres to the ESRC's Research Ethics Framework.

More specifically, as regards to data storage and protection, the data is in anonymised format and the computer it is used on is password protected, which ensures that it will be protected from illicit attempts of usage. This work will only be reporting aggregates, to not identify any individual. In terms of dissemination the data will be used for analysis that will hopefully be accepted by journals and papers and in accordance with their and the ESRC guidelines on secondary data analysis.

Impact Statement

In producing this thesis, I have been mindful of delivering impact for the public benefit. In focusing on desistance, movement away from crime, I have concentrated on an area that causes great personal cost to families, to communities, to victims and to society as a whole. The clearest impact of this research, which provides more understanding on criminal activity and the cessation of offending, is to support policy development that could help to encourage reduction in crime. Reduction in offending has profound implications to those who experience the cost of crime in all its guises, psychological and financial.

This analysis brings additional knowledge to the research field of criminal careers, not only by examining different offending pathways but also adding to our understanding of the early life environment and the impact of belief in, or distrust of, the criminal justice system. It also uses nationally representative data, providing a broad analysis of what is important for men and women from the population, not just criminal cohorts which a considerable number of previous studies has relied upon. Alongside this the current study has created a definition of desistance that is, arguably, usable as a comparator across international academia and therefore helps to create and provide the framework for future knowledge exchange.

This work has produced at least one journal article to date, been presented at numerous symposiums and societies including speaking engagements in both continental Europe and the US and there is a keen desire to disseminate the findings more widely should the opportunity arise. This work has also been presented to the Home Office and this has meant it has helped to influence discussions within the public policy realm. Any reduction in crime comes with a reduced need for criminal justice measures and this study flags some ideas and interventions that could make a difference.

The benefits of this work outside academia are that it provides an understanding of the impact of early high levels of conduct and hyperactive behaviours on later offending activity, and this suggests that it has some use in terms of our understanding for interventions in both education and public policy designs. The knowledge that this study provides demonstrates that smoking in pregnancy can have threads that run through the child's, and then adult's, life and further research is necessary because it suggests there are palpable impacts on the quality of life. Additionally, this work demonstrates areas that could provide policy focus, for example in terms of resourcing/ support for larger families, that might provide cost savings for different parts of the public purse.

Contents

List of Tables

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

List of Figures

Chapter 1

Declaration of Authorship

I, Annabel Mullin, declare that the thesis entitled “Patterns of offending and desistance from crime in the 1970 British Cohort Study: The role of early socialisation” is my own work, and has been generated by me as the result of my own original research.

I confirm that:

- This work was done wholly or mainly in candidature for a research degree at this university.
- Where any part of the thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
- I have acknowledged all main sources of help.
- Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed.

Signed: Annabel Mullin

Date: 27th March 2023

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And thanks to the support from my family - to my children Atticus, Wynsome and Lawson who always known me doing “a PhD, whatever that is”, to those loved ones who supported my work, to my parents for all the time given freely and because they have always been proud irrespective of how challenging the battle. This thesis would not have possible without their encouragement and assistance.

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Background to the Research

As President Obama once said, 'My Last ask is the same as my first. I'm asking you to believe - not in my ability to create change, but in yours'(Obama, 2017). And that desire to effect change was exactly the reason I started the journey of my PhD. Over the course of the last seventeen years, I have worked in various roles within the criminal justice system. I have been an agent of the law in two capacities, as a Magistrate, and previously as a police officer and so I have been actively part of what I discuss later in this PhD. And I have also worked with those who have criminal convictions and enduring mental illness, in forensic mental health wards.

It was on these wards that I really started to fully consider the holistic effects of early family life, including siblings, and views of agents of the law on the criminal careers of those I encountered. Whilst working in mental health I ran various courses that were aimed at strategies to cope with stressful situations, if and when they were to return to the community. Time and again family and police were discussed as triggers for stress often based on historic references of interactions with negative episodes, outcomes, and memories. For those at the more severe end of the offending spectrum descriptions were of care institutions required because of a lack of parenting (often through addiction) or just simply absence, older brothers who encouraged drug use and criminal activity at very early ages, abuse by family members and a tangible distrust, dislike, and lack of respect for the police and the laws they represented.

For many years I've wanted to explore what parts of early life might impact later on but how this actually might be achieved seemed out of reach. During my MSc I discovered the satisfaction of using longitudinal cohort studies and the wealth of information they can provide, and it was in this period that I started to form the ideas that are really the essence of this work. So as with many things, past striving and hard work has been the major building block to what lies in the following pages, which were in themselves challenging.

Plato, The Republic

"You know that the beginning is the most important part of any work, especially in the case of a young and tender thing; for that is the time at which the character is being formed and the desired impression is more readily taken....Shall we just carelessly allow children to hear any casual tales which may be devised by casual persons, and to receive into their minds ideas for the most part the very opposite of those which we should wish them to have when they are grown up?

We cannot...Anything received into the mind at that age is likely to become indelible and unalterable; and therefore, it is most important that the tales which the young first hear should be models of virtuous thoughts..."

Plato, The Republic (Plato, 2007)

Chapter One

What is desistance, where is the current debate and what does this work add to it?

What's to come in this chapter:

This thesis provides a framework to examine the relationship between family and individuals' perspectives of the law (and the agents of the law) on desistance, movement away from crime, and what that means for the different patterns of offending behaviours, looking at the longer-term outcomes into early middle age. To that end it's aims are to identify what are the factors that influence desistance, the risks associated with specific early life socialization, and the different patterns of offending. I examine specific processes in a model (the Socialisation Interplay Theory) created for this work, bringing together and in doing so contributing to the literature by adopting a life course approach and integrating a focus on early family socialisation, socialisation during adolescence and later in life – bridging across different approaches that emphasise influences during early life (e.g. Moffitt) and later life (for example the works of Sampson and/ or Thornbury).

This chapter introduces the subject of desistance, providing a definition of desistance from crime, before describing key theories and approaches in the debate. And within this introduction give the reader an overview of the desistance research, how problematic it can be in terms of not only the definition but in terms of operationalising it. Then it introduces Socialisation Interplay Theory (SIT) defining the key concepts that are argued to impact desistance. Alongside this revealing some of the issues with the gendered nature of desistance and to explore where the current knowledge discussions are. Finally, the chapter sets out specific research questions and aims.

Crime and desistance from crime

1. Definition of desistance

Desistance, in the context of crime, is about trying to understand how and why people stop offending (Carlsson, 2011; Hirschi & Gottfredson, 1983; Lussier, McCuish, & Corrado, 2015; T. Moffitt, 1993; Sampson & Laub, 2003; Sampson & Laub, 2005b). There is no simple route to defining desistance.

Desistance is unusual as an outcome variable because unlike most where there is an event, it is the absence of that event that is of interest, and the absence over time (Maruna, 1999). The debate additionally revolves around whether desistance requires the absolute cessation of offending or is it rather a process of diminution of offending to levels that make it insignificant (Fader & Traylor, 2015; Kazemian, 2007). Presuming that any crime is 'insignificant' is difficult, particularly for those with victims, but the idea is expressing a reduction in "frequency, variety, or seriousness of offending" (Farrington, 2007, p. 128) at an individual level. Defining desistance is then made even harder, for what seems like termination might actually only be a pause in offending (Bushway et al., 2001). That last point can only be answered with full life course data – a rare commodity. Problems associated with desistance are not only found in the framework and nature of what the word means but also in terms of accessing data about desistance. Data problems can be myriad but two examples are official data, police or government reports, which are inaccessible to researchers, or another example is when the data collected is biased, for example, by being self-report data (Kirk, 2006).

Desistance definitions are often peculiar to the research – the reality of the data collected means that in some cases they match the research design. For example, Glueck and Glueck in 1948 (Laub & Sampson, 1988) had the seriousness of the offence committed recorded and so were able to use that for their analysis but most studies do not have that detail. That means that research is restricted in the ways in which offending can be operationalised – with some studies being able to assess the frequency of offence but not type (Kazemian, 2007). Whilst in other studies, like this one, the definition is partially informed through the data available (Laub & Sampson, 2001).

2. The Criminal Career - Life Course Research

The idea of understanding progressions of behaviour is certainly not new and previous work has looked at various ways of trying to identify patterns of onset, continuation, and

cessation of criminal behaviour. The concentration of work has been on the onset phase of the criminal path rather than on the desistance, the ending of criminal behaviour. That focus on prevention rather than cure makes sense in the context of trying to reduce the costs of crime and has consequently consumed resources (Farrington, 2007; Welsh & Farrington, 2015) discouraging a focus on desistance. And influences on onset of criminal offending range from those of family (Tara Young, Fitzgibbon and Silverstone, 2013; Rocque et al., 2013; Besemer and Farrington, 2012; Van de Rakt, 2011; Farrington, 2011) to peer relationships (Aseltine Jr., 1995; Kiesner et al., 2004; Kim et al., 1999; Lervolino et al., 2002; Massoglia & Uggen, 2007; Shortt et al., 2003). Much of the research, and indeed theories, have focused on offending in the teenage years, primarily by males, and that will be discussed further.

This work uses the criminal career approach (Blumstein & Cohen, 1987; Farrington, 1992; Piquero et al., 2003), by which is meant that it looks at a longitudinal sequence of offences committed by the individual offender with an onset, an end, and that there is some career duration in between. And the reason that it is important to understand why people move away from offending behaviours, why they desist, is because it can reveal how and why people change and this in turn can encourage a more robust crime prevention understanding, with the capacity to drive policy (Maruna, 1999). Arguably teasing out what triggers the end of offending behaviours, not what continues the abstinence, is getting to the heart of desistance. And for this work I will be using the British Cohort Study (BCS70), a national study that started in 1970 and is still ongoing, which allows for the key element of a criminal career in the date – there is an onset, there is an end point (desistance), and there is duration of that offending. What the study also permits is the ability to understand behaviour by gender, not always possible in other studies.

It has been argued that prior to or instead of the cessation of criminal activity (a static measure), the *process* of moving away from crime involves reduction (a dynamic measure) in frequency, the seriousness and the types of offence committed (Farrington, 2007; Loeber et al., 2015; Mulvey et al., 2004). Consequently, scholars have more recently turned their attention not only to the ending of offending but also to the changes in offending and what those processes are. One of the studies that looked at the differences between static (cessation) and dynamic (reduction of crime) measures using the Rochester Youth Development Study (Bushway et al., 2001). This study identified a nearly 19% gap in the results for desistors, with those measured by the static method revealing that 27.6% of individuals stopped offending versus 8.4% in the dynamic model (Bushway et al., 2003, p. 146). Similarly, the Sheffield

Pathways out of Crime Study (Bottoms et al., 2004) showed different offending paths from the static and dynamic models. Arguably the dynamic approach is now the dominant model because it allows for a more comprehensive understanding of desistance (Rodermond et al., 2015). As with many areas that require data, it is often about the availability of that data that makes the difference.

Glueck and Glueck's work showed that offenders reduced the seriousness of their offending back in 1943 (Laub & Sampson, 1988) but it has been hard to establish whether this trend is reflected more widely because there is a dearth of data. As a result, research has been more oriented to the study of the reduction in frequency (Kazemian, 2007; Theobald et al., 2014) but there is relative agreement that whilst a minority of offenders increase the seriousness – the type of offence committed – of their offending in late adolescence, a greater proportion show a reduction in the seriousness and alongside that they also reveal a reduction in the frequency during the same period (Bottoms et al., 2004).

Research into criminal careers has revealed that offence type is more versatile, which means criminal offenders change and adapt the type of offence they commit, than specialised. Specialisation is understood as "the tendency to repeat the same offence type in successive arrests" (Blumstein & Cohen, 1987; Piquero et al., 2003, p. 451). Once offenders reach the age of 20 that is when specialisation increases (Piquero et al., 2011). The subject of specialisation is controversial especially concerning definition and measurement, partly due to it being highly sensitive to data type, how it is classified and time scales (Kazemian, 2007). Studies have defined specialisation as the focus of criminal behaviour on one single crime or a group of crimes (Blokland & Nieuwbeerta, 2005; Farrington, 2007; Loeber et al., 2015). Changes in the type of offending, however, have not been treated as a form of desistance in most of the literature.

The scales of studies has ranged from sample sizes of hundreds, for example the Cambridge Study (Laub & Sampson, 2001) to sample sizes that are ten thousand large in the case of the work of Wolfgang, Figlio and Sellin in 1972 using a Chicago Male cohort – cited in Blokland and Nieuwbeerta (2010) who themselves used a Dutch cohort of more than 4,000 males. What these studies collectively found were groupings of these cohort members into distinct trajectories of offending and this has given rise to a specific focus in academia on the chronic or persistent group of offenders. The subgroup of chronic offenders has been a dominant theme of the research (Laub, 2004). It is of note that most of these studies have primarily used male only cohorts and it isn't clear whether the theories of desistance are

applicable to female offenders too. There are reasons to believe that gender-specific processes contribute to desistance because of the different impacts of life events for example as Laub et al. (1998) showed women marry antisocial partners, whilst men marry prosocial, suggesting different outcomes.

3. What evidence is there for any gender difference in desistance?

Interest in criminal careers, 'defined as the longitudinal sequence of crimes committed by an individual offender' (Blumstein & Cohen, 1987, p. 985), has increased rapidly over the course of the last thirty years (Blokland et al., 2005). Whilst there has been considerable attention paid to male desistance the work on females has been far fewer in number (Andersson et al., 2012; Kruttschnitt, 2013; Liu, 2014; Rodermond et al., 2014). Indeed, knowledge on specific female offending is 'limited' (Andersson et al., 2012) because there is often limited data on females. And whether the theories that are at the forefront; age-graded theory of informal social control (Sampson & Laub, 2003) or Maruna's (1999), narrative-based theory with the autobiographical "redemption scripts" (Sundt, 2010, p. 575), are applicable for females is of interest. 'There are reasons to believe that gender-specific processes contribute to desistance'(Rodermond et al., 2015, p. 3). This thesis aims to provide some insight into these questions.

Whilst work has suggested that there are gender similarities in the shape of the criminal career trajectories, in terms of the number of trajectories (Cohen et al., 2010) there is difference in the prevalence of offending (Kruttschnitt, 2013). Studies have found that chronic offending is much more prevalent among males than females (Broidy et al., 2015). Women are more likely to populate the adult onset offender trajectory and that is the 'offending group we know the least about' (Broidy et al., 2015, p. 123). Indeed Andersson et al. (2012) found an adult-onset group unique to females using Swedish crime data. And although there are similarities, differences in the underlying factors may distinguish these trajectories for females than for males (Cauffman et al., 2015). Gender differences have also been observed in the length of the criminal career. Prime et al. (2001, p. 2) in a British cohort – the "Offenders Index", a database which contains the criminal histories of those convicted of a 'standard list' offence in England and Wales between 1963 and 1999, discovered that the average criminal career was 6.2 years for men but only 1.8 years for females. This tallies with women having far lower offending rates (*Conviction histories of Offenders between the ages of 10 and 52 England*

and Wales., 2010; Kruttschnitt, 2013; Rodermond et al., 2015; Rodermond et al., 2014; Uggen & Kruttschnitt, 1998) and that they desist earlier than men (Giordano et al., 2002).

Research in the past has specifically identified just how important sex differences are for anti-social behaviour. Understanding more about whether the causes of offending are gendered or not gendered, as proposed by Moffitt et al. (2001), is critical. In that seminal work Moffitt et al. (2001) found that males and females shared the adolescence limited offending patterns but whilst there were a number of men who were life course persist offenders there were only a very few females in that group, in fact the ratio was male: female – '10:1' (Moffitt et al., 2001, p. 228). What was also interesting about Moffitt et al. (2001)' work, and they encouraged other research to explore, was that males were found to have higher rates than females of the most important risk factors for antisocial behaviour - including compromised negative emotions, less constraint, more hyperactivity, and more peer problems – generally males were more exposed to both individual and social risks. Indeed, hyperactivity was found to account for a third of the difference in the scale of antisocial behaviour but most significantly sex differences in personality traits accounted for almost all the sex differences in antisocial behaviour.

The implications of those findings for the movement away from crime, desistance, are interesting and important. As female offenders desist from crime at higher rates than males (Weiner, 1989) understanding the processes can help guide policy and how best to tailor interventions to support desistance. With males far more likely to be involved in offending behaviour (Kruttschnitt, 2013; Laub & Sampson, 1993), it might be arguable that women would be able to desist more easily as the risks that propel them into offending are fewer. Interestingly in Gunnison (2014) works on direct comparisons of risk factors she demonstrated similarities in the psycho-social factors that distinguished those in the desist group from other offending groups by gender. For females who desisted the social bond of marriage was key unlike males who were persistent offenders or who desisted. Age was a consistent predictor of female and male participation and desistance, giving more fuel to Hirschi and Gottfredson (1983) theory, because those who were older were more likely to desist. In that same work predictors of desistance for female, not males, was having parents who experienced negative life events and also the "perception of high certainty of punishment" (Gunnison, 2014, p. 86) but not for men.

There are, however, more risk factors to explore and understand across members of these specific offender groups, indeed what the shape of these developmental pathways looks

like in regard to gender. In this work I use separate models to tease out the gender differences and try to understand more about gendered patterns of desistance. Not everyone believes this is the right approach, this is partly because on the chronic trajectory the small numbers can make analysis very difficult (Lussier et al., 2015) but understanding the differences and shining a light on the movement in and out of offending for the sexes may help to encourage desistance. And the smaller scale of female offending is not a reason in and of itself to dismiss 50% of the population and the potential patterns that might be present in their offending behaviours.

4. Life Course Theories of desistance

There are numerous different theories that seek to explain the evolution of criminal behaviour, they include the age crime curve, social control and more. I mention some of them briefly here and go on to describe specific ones in more detail further on, those ones that I give more colour on are those that have helped to inform my own approach. Whilst there is collective recognition that a dynamic understanding of the movement from crime is useful there is a dominant theoretical insight regarding desistance from crime that is based in the static narrative, the *age crime curve* (Laub & Sampson, 2001; T.E. Moffitt, 1993).

Other dominant aetiologies of understanding desistance are loosely reflected in the following overarching areas:

First, the *age crime curve/maturation theory* (Shulman et al., 2013) can be understood as a life course theory and it is one of the most consistent findings in criminology, that is the observation that criminal behaviour increases in the adolescent period and decreases into adulthood. It is arguably a critical theory for the field and has been a considerable focus of the criminal career research.

Secondly *social control theory* - which proposes that exploiting the process of socialisation and social learning creates the framework for self-control and reduces the inclination to indulge in behaviour that is offending (Nye, 1958). This theory was at odds with Akers (Akers & Sellers, 2004) *social learning theory* that argues that all delinquent behaviour has to be learned, just as an individual learns behaviour that conforms to societal norms so too they need to learn the opposite. These are theories that are based around particular timepoints (mid-adolescence), and they do not incorporate developmental behaviour. Whilst applicable to males and females, the research was vested in males primarily.

Thirdly T. E. Moffitt (1993) introduced *typologies*, which focused on the concept of a dual taxonomy of offending behaviour that proposed two types a. adolescence-limited offenders, who exhibit antisocial behaviour only during adolescence, and b. the life-course-persistent offenders, who start to behave antisocially early in childhood and continue this behaviour into adulthood. Due to the similarity of the characteristics and trajectories, this theory is applied to both females and males.

Fourthly, Thornberry's (1987; Thornberry, 2005) *Interactional Theory of Delinquency,* an elaboration and extension of theories such as social control, takes a different approach. It argues that behaviour change is one that is continually evolving and adapting to the people and the surroundings that adolescents interact with. His view was that when the bonds of society are weakened, driven through the primary attachment modes such as through those with parents, school and convention then "behavioral freedom increases considerably" (Thornberry, 1987, p. 866). But that those bonds alone are not enough for delinquency, that requires the interaction with delinquent peers and values that reinforce the negative behaviours. And notably this is the only theory that accounts for the "*Late bloomer*s" those offenders who have a delayed onset of offending. This theory posits that the late bloomer offenders have similar characteristics to the persistent types but that they have protected features with supportive families and school communities, in particular, during the early years. Again, this theory was developed with males in mind, not females although it has been tested more recently on the latter.

Fifthly, Sampson and Laub's *(1993) theory of turning points*, which sees criminality in a person's life as dynamic and not constant, that it is impacted by biographical turning points which can be associated with both desistance and the reignition of criminality. These turning points are key moments that offer complete change for the individual and they include marriage, parenthood, employment, entering military service, etc.

Sixthly, *the theory of cognitive transformation* which is based in the idea that both the cognitive changes, or shifts, within the individual, alongside the exposure to prosocial opportunities are fundamental influences leading to desistance from crime (Giordano et al., 2002),

And then there is also *Identity Theory* which points to a range of different factors such as marriage, employment, but stresses the role of identity and human agency in desistance and this has more recently been argued to be a working identity for offenders, as long as benefits outweigh the costs of committing crime (Paternoster & Bushway, 2009).

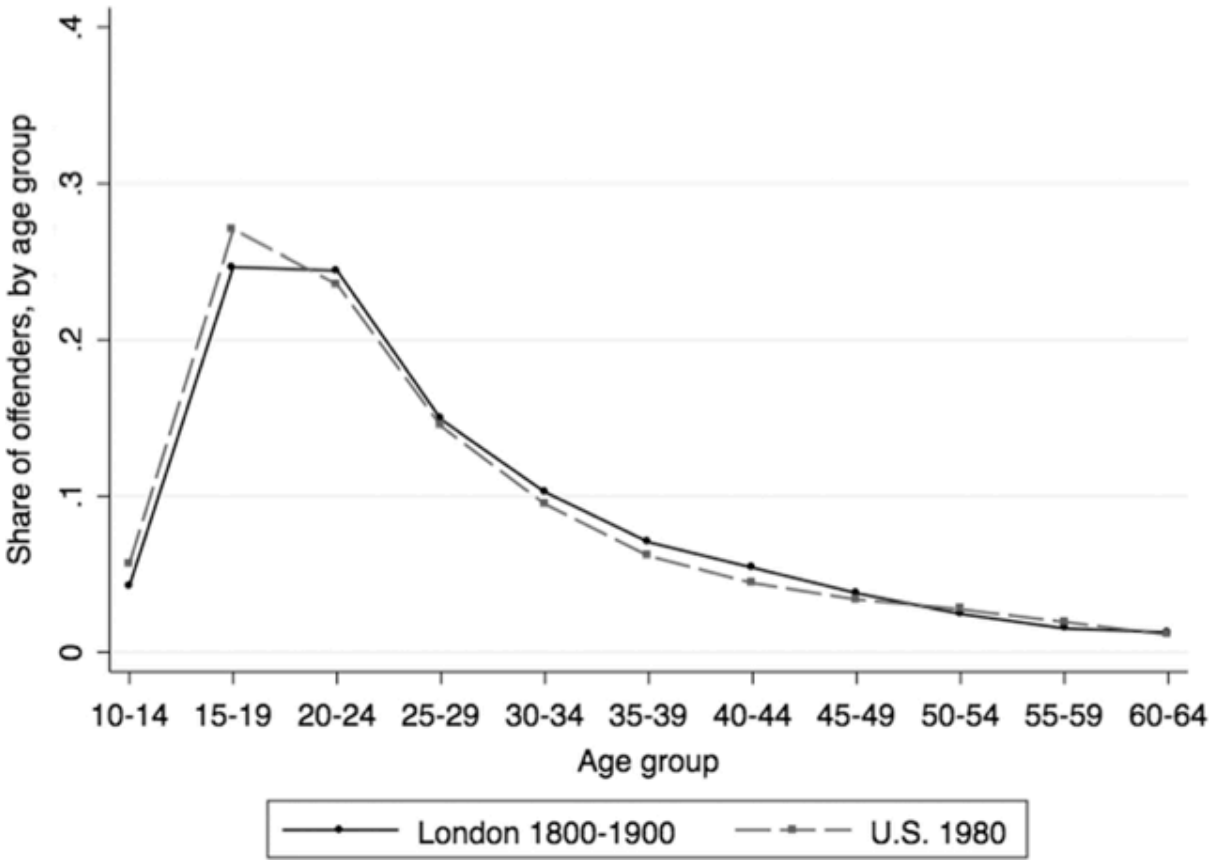
Lastly, whilst not a widely acknowledged theory, there is the process of *legal socialization* (Louin-Tapp, 1991, p. 329) which was given a theoretical framework in Tyler's (1990) theory of compliance and legitimacy. The attitudes that people hold and their views of the law and their belief in the "legitimacy of law are directly tied to individuals' compliance with the law and cooperation with legal authorities" (Piquero et al., 2005, p. 267). That individual's acquisition of attitudes and beliefs about the law, the authorities and the legal institutions who represent it, are then interwoven with their compliance with the law. A negative perception of the law will encourage a reduction in compliance and a high degree of the cynicism in which they hold the law and those representatives of it will be aligned with a greater degree of offending. There is very little research on legal socialization prior to adulthood and indeed very little that views it through the lens of the criminal career.

Of these theories it is only really cognitive transformation that included females, demonstrating a heavy reliance on males samples and very few studies have actually examined the gendered nature of desistance (Fader & Traylor, 2015). This study will, relatively rarely, investigate the gender differences in the offending behaviour and consequently add to the evidence base.

The dominant theories have traditionally relied on relationships that are one directional not allowing for dynamic, interactive effects and ignoring reciprocal effect. They also don't provide the capacity for development into early adulthood, focusing on the mid-adolescent period which means that they don't have the purview of behaviours evolving with age and experiences.

Age Crime Curve and social maturation

The career path of offending has been argued to have a natural trajectory, the age effect and it is also described as social maturation. It is arguably the most influential strain in the desistance literature - the relationship offending has with age - see Graph 1.2 (Bindler & Hjalmarsson, 2017) below. The age crime curve reflects the increase in participation of crime during the late adolescent period, ages 17 to 20, and the decrease as the individual moves into adulthood. Among those who are proponents of this are Hirschi and Gottfredson (1983) who argue that the age distribution of crime is invariant over a broad range of social conditions. Liu (2014) whose study looked at how males and females have parallel age-crime curves using self-report data, or Laub and Sampson (1988) who understand desistance as a natural progression, through social maturation, as something that happens as people get older.



Graph 1.2. Offender-age profiles. Note: share of convicts at the Old Bailey (1800–1900) and share of arrests in the US (1980) by 5-year age intervals. Source: Old Bailey Online Proceedings; BJS1; own calculations (Bindler & Hjalmarsson, 2017).

McVie (2005) also showed an age crime curve but contrary to Sampson and Laub, found that it was essential to focus on typologies in juvenile offending which is diverse and multifarious in nature. This is because in older age individuals transition to lower rates of offending. That transition, that process, is argued by some to be "invariant" (unchanging) across all individuals with only the numbers of acts of crime being different (Hirschi & Gottfredson, 1983, p. 554). The problem with that invariance, or the static crime curve, is that it does not account for those that start or increase their offending in later life. Nor does it take into account changing 'social context' (structures, culture, situations) and 'agency' (capacity to act)" (Bottoms et al., 2004, p. 368).

Much of the work investigating the role of age has been based on official source data, (Blonigen, 2010; Hunter, 2010; Laub & Sampson, 1988; Liu, 2014; Sampson & Laub, 2005a;

Wikström, 2004a), although evidence using self-report data by Loeber et al. (2015, p. 163) has also been shown to support it, 'seriously qualify the universality of the concept of age-crime curves'. Research distinguishes between prevalence of offending versus number (frequency) of incidents. The 'curve is typically presented as a count of the number of crimes committed within a specific time-period. It may also be presented in terms of prevalence of offending, i.e. as a count of the number of people within the population who have offended (or been cautioned or convicted)' (McVie, 2005, p. 3).

This has led to disagreement over what matters more to the age-crime curve, prevalence (count of people) versus the number of incidents (frequency) of offending by the individuals and their propensity to commit crime. That really boils down to whether the curve is a reflection of a larger proportion of the adolescent population who participates and that then that participation declines with ageing. Or whether it is more in relation to individuals committing a larger number of offences during their adolescent years and that then reduces in frequency as they age. It is generally accepted that the curve is reflective of the former (Farrington, 1986; Moffitt, 1993).

At the extreme end of this are Hirschi and Gottfredson (1983) who assert that the curve is static across any context and person, indeed they presented the "…age–crime curve as a brute social fact…" as quoted in DeLisi and Vaughn (2008, p. 520). This leaves no room for the complexity and subtleties of qualitatively distinct criminal offending trajectories, such as late bloomers who exhibit no offending up to late adolescence (Krohn et al., 2013). Hirschi and Gottfredson have been criticised for not including/adopting a life course perspective because they have not addressed issues of critical later changes in offending, such as the effect of marriage on the decline in offending (Bersani et al., 2008; Farrington & West, 1995; Hunter; McGloin et al., 2011; Sampson et al., 2006).

That position, that there is no variance in offending, is not reflected more broadly because as Farrington (1996) demonstrate there is a considerable variance at the individual level. Indeed Blumstein (1987) reveals how the individual matters because, as he determined, the reduction in the number of arrests after the peak age of offending was a consequence of the decrease in prevalence but for those who are active offenders, there was no decline in the number of offences. Whilst Nagin and Land (1993b) concluded that both the prevalence and offending frequency contributed to the overall pattern of convictions and mapping the shape of the two curves shows it to be broadly similar (Loeber et al., 2015). This thesis uses prevalence of offending – that is in terms of the data that underpins the work. Whilst Hirschi and

Gottfredson (1983) argued that the relation between crime and age is invariant, in this work and many others, however, the pathways of offending are understood to vary.

Social Control Theory

Some theories have argued that there is stability in offending trajectories. Hirschi and Gottfredson (1983), General Theory of Crime claims that low self-control is fundamentally 'the primary individual characteristic causing criminal behavior' (Wikström & Treiber, 2007, p. 239). They describe self-control as an unvarying trait, argued to be a latent concept incorporating an array of risky, impulsive, and ill-conceived behaviours primarily caused by poor early socialisation. Gottfredson's and Hirschi's idea that poor early socialisation is a key component to criminality is well established but to deny that there is change in the person over the life course disregards other work, e.g., the role of social bonds impacting desistance, and does not explain later onset criminal offending.

The evolution of an individual from adolescence to adulthood, with its turning points including changing social roles and the psychosocial functioning have been increasingly interesting to desistance research. Whether these are markers of adulthood and not causal in themselves is a matter of debate. Age-graded theory of informal social control, was first put forward by Sampson and Laub (1993) and developed further by them in 2003 (Sampson & Laub, 2003). This work highlights the importance of social bonds to law-abiding adults, which encourages the reduction and termination of their criminal career in early adulthood.

Rocque (Giordano et al., 2002; Rocque et al., 2013) argued that they were defining moments of adulthood and that the root of the change of offending behaviours is more in the social control aspects of responsibilities, decision-making and financial independence. His work was influenced by the social control theories of Sampson and Laub and earlier Hirshi (Hirschi & Gottfredson, 1983; Laub & Sampson, 1993) for whom desistance occurs with moments in the life-course, prompted by the life events which encourage social bonds i.e. marriage etc. Those authors have very different perspectives on the evolution of criminal behaviours with Gottfredson and Hirschi suggesting that criminal behaviour stems from a lack of self-control, which can be modified by opportunities and other constraints but that the individual's personality, that characteristic of self-control, remains a constant throughout the life course. Whilst Sampson and Laub's argued that both continuity and change exist throughout the life-course with modifications occurring in behaviour with new experiences or social circumstances.

Giordano et al also noted in their work the importance of social control in what they termed "the respectability package" of turning points in adulthood (Giordano et al., 2002, p. 1013).

It is interesting that in the period of critical change and maturation of late adolescence that we start to see resilience – the ability to desist criminality and engaging in offending behaviours. Resilience can evolve through the individual changing with life events. For example it was found in that Giordano et al. (2002) study that men with lower levels of antisocial behaviour were more likely to marry but that the tendency to refrain from antisocial behaviour was also improved by the fact of being married. Additionally, the interactive effect of monitoring of our behaviour by significant others that accompanies exposure to a variance of life events and opportunities (relationships, work, parenting etc) reduced antisocial behaviour (Burt et al., 2010). The opposite side of that coin is that the changes give rise to fears and anxiety for the future, and those pressures could play out in different ways on offending. Understanding what happens when those social controls are not in play or change is a gap in the literature. There is some debate about the association between early behaviour, as evidenced by measures of self-control, and criminal activity (Collishaw et al., 2004; Deater-Deckard & Dodge, 1997; Kim et al., 1999; Marceau et al., 2012; Murray et al., 2010; Wikström & Treiber, 2007).

Cognitive Transformation

The movement away from offending behaviours is also linked to the influences of peer relationships, romantic relationships (Monahan, Dmitrieva and Cauffman, 2014), employment, education, addiction (Craig et al., 2015) and parenting (Schoon and Mullin, 2016). The theory of Cognitive Transformation, focuses on the relationship between cognitive changes leading to personal adjustment, so called social "hooks" that prepare individuals to make those changes, and emotions that are shaped in interactions with others (Giordano et al., 2002, p. 1033; Schroeder et al., 2010). The argument is that it is the cognitive changes, or shifts, within the individual, alongside the exposure to prosocial opportunities that are fundamental influences on the desistance process. Rocque (2013) proposed that the transition points of adulthood, e.g. marriage/ employment etc, were not in themselves the causal link to desistance but symbols of the process of maturing that underpinned the life choices and that evolved the offending behaviour. Massoglia and Uggen (2007) also argue that the processes of maturing with evolving social roles, psychosocial, social bonds and hooks, alongside cognitive changes are all parts of the desistance path.

During and throughout adolescence and early adulthood, a main factor that might obstruct positive lifestyle changes was the connection to delinquent peers (Farrington, 2003; Farrington, 2007; Hirschi & Gottfredson, 1983; Nagin et al., 1995; Thornberry et al., 2003; Warr, 1998). Developmental theories suggest that peer influences are important contributors to adolescent deviancy (Krohn et al., 2013; Moffitt et al., 1996; T. E. Moffitt, 1993; Thornberry, 1987) but what is less understood is how that impacts desistance. Although peer influence is known to decline in later adolescence specifically in regards to offending (Monahan et al., 2009).

The work that Wikström produced from the Peterborough Adolescent and Young Adult Development Study (PADS+) that led (Wikström, 2004a, 2004b) to his Situational Action Theory showed that there were strong peer impact on offending behaviours. It was also observed that those who have higher propensity to offend are more likely to have unstructured activities. Research has shown that unstructured entertaining, e.g. hanging out, with friends and peers is a strong indicator of deviancy but that (Horney et al., 1995; Rocque et al., 2013) it isn't just the unstructured activity itself but also the environment, such as bars, are considered higher risk. Therefore, role transitions that reduce the above (i.e., employment, parenthood, marriage) might promote desistance from crime (Siennick and Osgood, 2008; Laub, Sampson and Sweeten, 2006).

Social Bonds

Whilst marriage is highlighted as an important factor in the desistance process, it appears it isn't the construct of marriage itself but the stable intimate relationships and partnerships that matter (Farrington & West, 1995; Monahan et al., 2014; Shortt et al., 2003; Weaver, 2013). Despite studies showing the positive impact of marriage on desistance the causal mechanisms underlying this observation are less well understood (Bersani et al., 2008; Rocque et al., 2013). There is also the causal mechanism suggested by Sampson and Laub's notion of 'knifing off' (Shadd & Roy, 2016, p. 104) of negative bonds which can be at the instigation of a new partner and a new network and mention it as one possible causal mechanism.

Marriage is able to encourage new social bonds and responsibilities and (Sampson et al., 2006), alongside life events like parenthood, and can thus alter habits and constructs of day to day life. The actual impact of the relationship within marriage has been suggested to change how a person perceives themselves and promotes a more conventional lifestyle (Giordano et

al., 2002). Whilst partners within the context of a relationship can also operate as social control agents, as Warr (Warr, 1998) showed, often becoming supervisory, reducing risky associations and peer associates. The link has been shown to not just be about the desire for marriage (Sampson et al., 2006), but also with regards the desire and perceived likelihood of being married, which when used as a control was still shown to have an effect in the National Youth Survey (Massoglia & Uggen, 2007). Whilst evidence from the Cambridge Study suggests that marriages that lasted more than five years decreased offending behaviours (Farrington, 2003).

There appears to be some discrepancy over whether the same is true in cohabitation. With some work showing there is an impact, such as reported by Sampson et al (Sampson et al., 2006) whilst others have shown no associations (Horney et al., 1995). Alongside this work, others have shown that relationships that were lasting did decrease offending (Shortt et al., 2003) and that relationship break up did have an impact on an increase in crime. This association was stronger for cohabitating relationships, and marriage was consistently associated with reductions in both crime rates and with desistance.

The quality of the partnership also matters for behaviours (Monahan et al., 2014) and this appears to play in to gender differences. For men, romantic partnerships triggered desistance regardless of quality, but for women it was partnerships with those who were supportive that saw a reduction in offending behaviour (Hunter, 2010; Monahan et al., 2014). There might be selection processes at work that impact here, so those who are less likely to commit offending behaviours are seen as more attractive marriage prospects (Burt et al., 2010; McGee et al., 2011; Monahan et al., 2014). Herrera et al (Herrera & Dunn, 1997) found an antisocial partner did increase offending, whilst others found no impact from the partner's deviance (Theobald & Farrington, 2009).

Like marriage, parenthood is a factor that impacts desistance and like marriage it restructures the lives of those involved. The social bonds and the development of the identity attached to the role have been suggested to play a part in encouraging desistance (Sampson & Laub, 2003). Research has not shown consistent results (Theobald et al., 2014) with some finding positive results for the impact on offending and indeed for desistance (Blokland et al., 2005; Blokland & Nieuwbeerta, 2005; Farrington & West, 1995; Rocque et al., 2013; Sampson & Laub, 2005b) but that depends on a number of factors including the number of children (Rodermond et al., 2015), the quality of the relationship, socio-economic status (Giordano et al., 2002; Schroeder et al., 2010) and whether there is a partner (Bottoms et al., 2004).

Identity Theory

The role of life events is well established in desistance literature. For example previous research has confirmed the influence of marriage on desistance (Bersani et al., 2008; Blonigen, 2010; Burt et al., 2010; Craig & Foster, 2013; Hunter, 2010; McGloin et al., 2011; Monahan et al., 2014; Rocque et al., 2013; Sampson et al., 2006); of military service (Craig & Foster, 2013); of stable work (Blonigen, 2010; Bushway et al., 2001; Connolly & Beaver, 2014; McNeill, 2005; Rocque et al., 2013; Sapouna et al., 2011; Uggen, 2000; Wiecko, 2014); and of parenthood (Farrall & Bowling, 1999; Farrington et al., 2014; Gozubenli & Unal, 2014 ; Laub et al., 1998; Lussier et al., 2015; Piquero, 2008; Rodermond et al., 2015; Rowe, 1995; Schoon & Mullin, 2016; Young et al., 2013). What is less well understood is the mechanism that promotes desistance.

Many social bonds are not only in themselves influential on desistence, but they impact positively on internal mechanisms of personality and identity. An individual's characteristic patterns of how they think, feel, and behave are suggested to also change offending behaviours (Blonigen, 2010; Massoglia & Uggen, 2007). And how that individual characteristic interacts with socially normative behaviour, as for example work, which creates stable social ties, commitments, and access to different peer groups. These help to limit exposure to the risk factors of offending on a variety of levels. Although the age at which the job is taken appears to matter, as does the quality of the job (Uggen, 2000).

The work of narrative based theory, proposed by Maruna (1999), focuses on the development of “redemption scripts,” by those who have offended. Those desisting produce and sculpt a rational autobiography that supports the progression and 'social and cognitive processes' of desistance (Maruna, 1999). In trying to understand the underlying change and process as to why offenders 'mature' out of deviant behaviour narrative-based theory has mostly focused on the study of males. More recently in a study also involving female offenders in work by Stone (2016) it was found “that desisting women constructed narrative identities that emphasized their moral agency and resisted the stigmatizing discourse surrounding substance-using mothers”. Whilst the theory was sculptured on males it appears that it also is found within female desistance.

The way in which we evolve and mature – in terms of personality or indeed the social bonds we explore - is impacted by the early environmental experience and that is initially framed in terms of the family interactions. What is understood by parents’ early socialisation is their child rearing and parental styles. This includes the environment, their presence, the

degree of interaction, the cognitive stimulation and their interest in the child and their development (Farrington, 2003; Milkie et al., 2015) and according to Schroeder et al. (2010) robust relationships with parents are strong predictors of desistance.

5. Gaps in previous research

Very few studies have focused on how both family and legal socialisation impact on self-reported convictions, particularly in the adolescent or earlier childhood periods (Piquero et al., 2005). Focusing on adulthood allows us to only understand the person in the formed shape, whereas looking at their childhood development we are able to see the formation of the mechanisms that they carry into adulthood and that early formation is in itself explanatory (Piaget, 2013). To examine the relationships between early family life, origins of behaviour towards the law and patterns of conviction, the following research questions are posed and in each investigatory chapter (3, 4 and 5) there are more specific questions.

Within this thesis the emphasis is on understanding what impact legal socialisation has on offending behaviour alongside that of family socialisation. The inclusion of this additional element of socialisation is important because different aspects of early socialisation have been shown in the past research to have an impact on offending. And "studies should simultaneously examine very early risk factors, later childhood experiences, and turning points in adolescence and adult life, to identify the most important moderators and mediators of early risk in determining antisocial outcomes" (Murray et al., 2010, p. 1206). Much of the work to date has been focused on American cohorts, and previous research has focused on either early family socialisation or later life events occurring during adulthood without looking at the combined risk factors. This gives this work a unique aspect, not only because it looks at a British cohort providing an interesting national perspective (creating the opportunity for international comparison), but also evaluates risks and mediators from a selection of arguably critical time points.

Using constructs that speak to both legitimacy and legal cynicism is important as they have been shown to be 'related but empirically distinct constructs' (Reisig et al., 2011, p. 1270). So, exploring not only those but also attitudes in regard to the impact on offending behaviours, teasing out more to understand the risks associated with the ages people move in and out of crime. Exploring the age crime curve and its relationship to legal socialisation is important, not least of all because age has been deployed as a 'proxy for developmental level and have routinely reported that the onset of serious, delinquent behavior begins early in adolescence'

(Cohn et al., 2010, p. 295). That is despite there being counter evidence to suggest, as noted by van Koppen et al. (2014), that there is also a distinct group who have been termed "Late Bloomers"(Thornberry, 2005, p. 170) who offend later on whilst not having been known to legal organisations before. These individuals have been overlooked in the literature, there is considerable need to understand more about offending trajectories and this specific offending trajectory.

From a personal perspective, having worked as a Police officer, as an assistant psychologist on three secure forensic wards and as a magistrate for eight years, with experience in both the lower and upper courts (on appeals), that lived experience has shown that those who view the law with contempt or indeed view it cynically are often less likely to comply with what it asks of them. As an agent of the law, if you are deemed to be found wanting in your ability to be fair and just then it would seem understandable that someone does not wish to meet what is asked of them. I suspect no one would be surprised with that but evidencing that is important because it can help to direct policy for the ways in which criminal justice system interactions occur.

6. Socialisation Interplay theory

My own approach has been to take the elements that are important within the desistance debate, family socialisation (that is detailed below) and those I view as overlooked specifically in relation to legal socialisation (described further below) and synthesize previous research into an interactionist model. This work then integrates and bridges across different approaches that have emphasised early life Moffitt T.E. Moffitt (1993) and later life Thornberry (1987) whilst also focusing on the gendered nature of desistance, because separating it out and focusing on both will help us to understand the impact and provide us with more information.

Family Socialisation

Definition:

The child rearing and parental styles, alongside the presence and interaction of the siblings, - comprising the environment, presence, interaction, cognitive stimulation, interest in child and their development.

(Farrington, 2003; Milkie et al., 2015).

Over the course of the last few decades, it has become increasingly clear that family socialisation impacts crime and the movement away from it, desistance (Laub & Sampson, 1988; McCord, 1991; Van de Rakt et al., 2009). The idea that, hypothesised by Akers in his "social learning theory" (Akers, 2009; Akers & Sellers, 2004, p. 43) was that there was a probability of criminal or conforming behaviour occurring as a function of the underlying social learning processes. Welsh and Loeber (2013, p. 81) contend that putting the family first can help to improve the "effectiveness of delinquency prevention", as socialisation is significantly linked to delinquent development (Sullivan & Newsome, 2015). The setting of the parents and siblings in the socialisation of the individual is arguably a key part in understanding the acquisition of attitudes, values, and norms. It has been hard to research these areas because, quite simply, the data has not been available. It requires such a wealth of longitudinal data that looks at a considerable number of aspects of the individual and their family and that is only possible with the right resources.

It has been revealed In numerous studies the importance of family interactions and just as robust relationships matter, so too do 'fragile families… families who were at increased risk of experiencing family disruption, instability, and economic disadvantages.'(Paat & Hope, 2015, p. 227) which provides a context for an increased risk of criminality. Unusually in this study I also look at the sibship, the number of siblings, and the presence of siblings and the interaction of them with the cohort member. It has been the case that research and work that has been done has focused on a steady, maternal perspective, "and [gave] siblings short shrift in terms of their possible contribution to deviant family interaction." (Aguilar et al., 2001, p. 279) and that seems to have missed out a potential contributory part of the family environment.

The role of parents

Parents can play a significant role in the transmission of offending. Research has found that both Mother's and Father's offending escalate the chances of their children's conviction rates (Aseltine Jr., 1995; Farrington et al., 2009; Jackson, 2013; McCord, 1991; Schaeffer & Borduin, 1999; Van de Rakt et al., 2009). This intergenerational transmission of offending, behaviour being transmitted from one generation to the next (Tzoumakis, 2014), and 'crime clustering' (Van de Rakt et al., 2009, p. 95) is argued to be because there is, in part, a direct influence of offending from one to the other, effectively learned antisocial behaviour (Farrington, 2011). But it is also part of a cycle of deprivation, and preferential mating (Frisell et al., 2011; Frisell et al., 2012). Those who are criminally inclined choose mates who are similar

due to not only proximity, in terms of meeting in similar vicinities, but people also choose partners similar to themselves (Jaffee et al., 2003).

Alongside this there have been found to be very early effects of parenthood, the nascent family influence on offending has been researched to be neonatal – these particular elements of early upbringing are a part of the setting of the individual. For example, prenatal maternal smoking was found to be predictive of criminal and antisocial behaviour (Ekblad et al., 2015; Gaysina et al., 2013; Murray et al., 2010; Shelton et al., 2011; Wakschlag et al., 2006). Primarily this is because children exposed to prenatal smoking have been shown to have altered brain structure and function, with the 'frontal lobe and cerebellum… the most vulnerable' (Ekblad et al., 2015, p. 15), whilst mother's mental health problems are also shown to negatively impact delinquency (Farrington, 2011).

In terms of parental styles mother's relationships with their children have been found to have an impact on their children's relationships with their brothers and sisters, making conflict more likely (Criss & Shaw, 2005). In terms of relationships with Fathers, decreased paternal interaction is associated with an increased likelihood of committing a crime (Besemer & Farrington, 2012; Dishion et al., 2004; Jaffee et al., 2003; Murray et al., 2010; Nettle, 2008; Van de Rakt et al., 2009; Warr, 1998). There is also research that father's create a 'double whammy' (Moffitt et al., 2001, p. 195), that as a child of a criminal father who is present in their lives they are exposed to examples of offending behaviours and that creates an increased likelihood of the risk of the child also offending (Besemer & Farrington, 2012; Jaffee et al., 2003; Mullin, 2011).

The role of siblings

The sibling context is one of the most enduring relationships, certainly at the very least in terms of longevity, that a person will forge in their life and is therefore a critical part of understanding the socialisation of the individual. Here the sibling early socialisation context is understood to be indicated by the presence and interaction - their presence in the home and as a carer, a babysitter, and the intra-generational cognitive stimulation, through reading (Buhrmester & Furman, 1985, 1990; Furman & Buhrmester, 1985; Stocker et al., 1997). Ignoring the environment of the sibling interaction has been a fundamental flaw in work aimed at trying to understand criminal paths over the life course, as siblings have undeniable impacts on behaviours (Defoe et al., 2013).

The theories of sibling socialisation and interaction suggest that siblings either learn from or expressly move away from what their sibling has done (Patterson et al., 1984; Volling & Belsky, 1992; Volling & Blandon, 2003; Whiteman et al., 2009). The emotional intimacy and affection in sibling relationships is important for "pro-social behaviors" and social understanding (Volling & Blandon, 2003, p. 7), older siblings were found to enhance younger siblings' empathy rather than vice versa (Tucker et al., 1999).

In terms of negative influence both aggression and hostility between siblings is predictive of the use of such behaviour with peers and future problem behaviours (Kendler et al., 2014; Volling & Blandon, 2003). Physical violence carried out by siblings is the most common type of family violence (K. Hoffman et al., 2005), where it is typically used as a means of resolving conflict (Eriksen & Jensen, 2009; Goodwin & Roscoe, 1990) but it might also be termed bullying, and those who are bullied in both school and home environments are at the highest risk of adverse outcomes in later life (Schreier et al., 2009; Wolke & Skew, 2012).

These key influences of early family socialisation, from both parent and sibling, are consequently argued to be important. Where they have been examined together, parenting styles mediate the sibling influence, but siblings' interaction is demonstrated to predict antisocial behaviour (Bank & Burraston, 2004; Slomkowski et al., 1997; Snyder et al., 2005). Whilst when siblings judge their parents as being "unfair" in their treatment of their children, it has been related to "poorer sibling relationship quality, individual well-being, and parent-child relationships" (Kramer & Conger, 2009, p. 8). Additionally, sibling's convictions were found to be strongly correlated with the individuals own convictions (Marceau et al., 2012; Van de Rakt et al., 2009).

The interaction of these primary family relationships is clearly essential for the development of non-normative and delinquent conduct. Less well understood is how family socialisation processes impact different trajectories of offending over time and this is what this thesis aims to elucidate. Very few studies (Farrington et al., 2009; Jaffee et al., 2003; Laub & Sampson, 1988; Lauritsen, 1993) have established associations between individual aspects of family socialisation and criminal offending.

The way in which we evolve and mature – is not only impacted by the early environmental experience and that framed by family interactions but also by our interaction with the wider world. That process of development and understanding of the criminal justice system and our views of its validity is influenced by the family but also by our knowledge and understanding of the law and those agents of it.

Legal Socialisation

Definition

It is the process through which individuals acquire attitudes and beliefs about the law, legal authorities, and legal institutions.(Piquero et al., 2005)

Legal socialisation, the development of representations and attitudes towards the law, theory predicts that pro-social beliefs are inversely related to crime (Cohn, Bucolo, Rebellon, & Van Gundy, 2010). Tyler's (1990) theory of compliance and legitimacy gives definition and shape to the concepts behind legal socialization. Critical are the actors that take part (e.g. police), their perceived institutional legitimacy and an individual's levels of legal cynicism (trust someone has in the law) because they provide the tangible reality of the law in action. There is a reciprocity to the relationship between police and citizens that sits at the hearts of their willingness to comply.

Applying both of Tyler's theories, Rocque at al's (2013) showed that individuals with lower levels of legal cynicism or higher levels of institutional legitimacy are more likely to desist. And Fagan and Tyler (2005) found experiences with police impacted compliance with the law. It is these two strands of legal socialization based on analysing both legal cynicism and perception of institutional legitimacy that are considered to shape criminal pathways.

Including the impact of legal socialisation, in the forms of the 'legitimacy and legal cynicism' and how that influences individual's compliance with the law (Nivette et al., 2014) will help us to understand offending. The impact of those around children has been shown to influence children and how they behave, for example 'social referencing theory predicts that caregiver cues have significant impact even when children are not particularly seeking them' (Kochanska & Thompson, 1997, p. 58). So legal socialisation may in part be a mediator between family and offending.

The ability of the surroundings to shape an individual has been examined through the work on the conscience (Kochanska & Thompson, 1997). 'Current research on conscience examines how young children develop mechanisms for inhibiting negative behavior and promoting positive behavior because of internalizing parental norms. Conscience is conceptualized as an inner guidance or self-regulatory system involving an integration of moral emotion and conduct (with a limited focus on cognition). This emphasis is partly on the development of a mutually responsive orientation between the parent and child that sensitizes the child to learn proper conduct, codes of caring for others, and committed compliance' (Killen

& Smetana, 2015, p. 704). Why certain children accept the caregiver's values and standards or not is not for this work but has been explored by others including (Maccoby, 1984) who suggested that it was the security of the attachment and the continuing parental practices that influenced the compliance with the law.

Socialisation Interplay Theory (SIT)

The interaction of Family and legal socialization in "Socialisation Interplay Theory" (SIT)[1] is an evolution of the work that has already looked at criminal propensity. SIT enables a longitudinal approach focusing on long-term outcomes associated with early socialisation and legal socialisation. This work will, uniquely, draw on both to try and understand the shape of offending behaviour paths. In terms of the patterns of offending, this work reflects life course theories, like Moffitt's dual typology (1993). In that it shows two trajectories, which her work focuses on, the 'adolescent peaks' and the chronic offending. What would be interesting to understand in this research is whether additional patterns of offending are identified that call into question the emphasis on a dual taxonomy. Other work has found five offending patterns (six with resist) and that is not unusual with self-report analysis which also detect a late-onset chronic group (Piquero, 2008) or as Thornberry (2005) termed them, late bloomers.

SIT has been developed specifically for this project because previous research has shown that there is an impact upon offending from different factors, such as parent and sibling presence, cognitive stimulus, legal constructs, views of agents of the law, views of laws and so it adds to previous theoretical approaches by investigating the different risks associated with these factors. Under SIT it is argued that to understand why someone might desist or persist in committing offences, early socialisation must be explored in terms of the direct influence on the choice to commit an act of crime, and through families' impact on legal socialisation.

As the famous Shakespeare line, from The Tempest, states, "What is past is prologue" and so that is true of SIT which draws heavily on Wikström's "Situational Action Theory" (SAT) (Wikström, 2004b). SAT is grounded in an interactionist view of human action, which assumes that behaviour is a function of the person and the environment. What is important in SAT is that it is trying to explain whether an act defined as a crime is committed or not and that committing a crime or not committing a crime is a moral choice. It stresses that the

[1] Theory n. a supposition or system of ideas explaining something. Allen, R. E. (1990). *The Concise Oxford Dictionary of Current English*. Oxford University Press.

environment, setting, and situation are all important for understanding action, but the way these interact will be distinct for different individuals.

That early interaction includes the prenatal conditions because other work have been previously shown that it has a role to play in later behaviours. That has been seen in work looking at mother's depression during pregnancy (Field et al., 2006 ; Ruiz & Avant, 2005), mother's smoking in pregnancy has a variety of risk factors for antisocial behaviour, conduct problems and the growth of the foetus (Ekblad et al., 2015; Gaysina et al., 2013; Melchior et al., 2015 ; Murray et al., 2015; Sellers, Warne, Rice, Langley, Maughan, et al., 2020) and also the misuse of alcohol during pregnancy (Fifer et al., 2009; Murray et al., 2015).

What distinguishes SIT from past work is that the setting, of family socialisation, is argued to be influential on the individual and so too is legal socialisation and that this interaction impacts the offending actions. The key elements are the individual, the setting and the act, which is additionally informed here by legal socialisation, and these are distinguishing markers in decisions to desist from crime (Welsh & Loeber, 2013). Welsh and Loeber or Moffitt examine family socialisation, in terms of a person's attachment to society through family (and other mechanisms) and how that is inversely related to delinquency. These assumptions do not (unlike this work) consider the role of legal socialisation. There seems to be gap in the exploration of desistance, failing to understand the family's perspectives both regarding their perceptions of the law and of agents of the law and how these perceptions set out the early context for compliance with it.

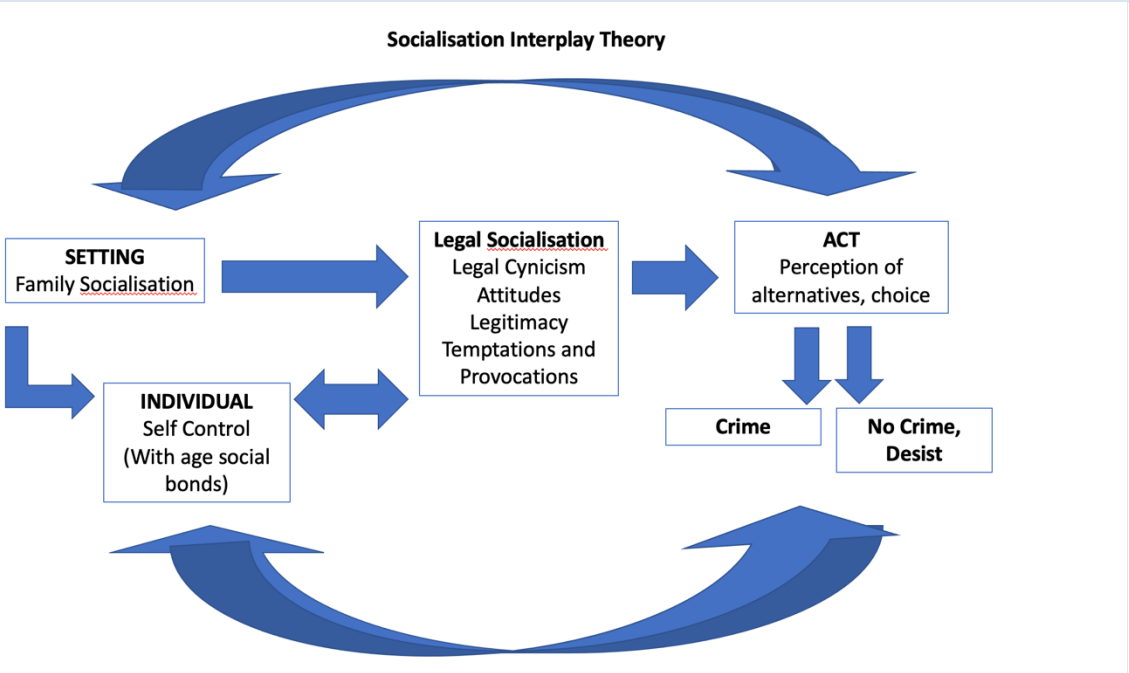
Alongside that I also draw on Moffitt's (1993) emphasis of early socialisation and the adolescent period, but I also include later offending data aiming to understand the complex matrix of offending trajectories throughout the life course. Here I do not focus solely on the early years but include experiences during adolescence that means we can understand what is happening just before the age crime curve peak. I'd argue that by combining a focus on the family and including the influence of views of the law held by families and interaction with the law it is possible to gain a more comprehensive understanding of processes leading to engagement in and desistance from crime. And of course, evaluating the differences in these processes by gender adds additional knowledge, so few have had the capacity (with data limitations) to understand how women behave across the life course in offending.

The current research will add to the debate by examining the interactions of early and legal socialisation on the decision of someone to commit an offence or desist over the life course. Understanding what factors impact the decision to commit an act of crime or to desist

is part of what SIT looks to explore – the decision making that leads to someone to act. This work brings together an operationalised offending trajectory over three time points and examines patterns of crime engagement up to age 34 years of the cohort members life. The study examines processes of family socialisation, up to and including the age or 16, and the effect of legal socialisation at 16 on the offending trajectories. This provides a comprehensive measure of those factors that are important for a person to resist, desist and persist in offending behaviours. These elements are bought together within SIT, which as a social psychological theory is "a set of interrelated universal statements, some of which are definitions and some of which are relationships assumed to be true" (Cohen, 2003).

What distinguishes Socialisation Interplay Theory (SIT), put forward and argued in my thesis, from past work is that the setting, family socialisation is influential on the individual and on legal socialisation and that this interaction affects the individual's action. The key elements are the individual, the setting and the act, which is additionally informed here by legal socialisation, and these are distinguishing markers of causal development in decisions to desist from crime (Welsh & Loeber, 2013).

Figure 1. Socialisation Interplay Theory



The definitions for SIT:

1. “Setting" is defined as the background environment of parent and sibling - attitudes, values and norms- alongside the configuration of demographic markers that the individual is exposed to.
2. The "individual" is defined by the biological (Kelly et al., 2001) and psychological attributes, including their self-control i.e. conceptualised as self-regulation and inhibition of impulse (Brannigan, 1997; Connolly & Beaver, 2014; DeLisi & Vaughn, 2008; Reisig et al., 2011; Wiecko, 2014; Wikström & Treiber, 2007), and the brackets refers to their changing social bonds, i.e. intimate relationships as they age, partnership formation and birth children (Beckley et al., 2016; Craig & Foster, 2013; Rocque et al., 2013).
3. "Legal socialisation" refers to their exposure and outlook to legal views i.e. agreement or not with the law (acts defined by parliament), and legal actors i.e. the police. (Kourilsky-Augeven, 2007a, 2007b; Piquero et al., 2005).
4. The "act" is what they do, commit a crime or not, underlying this is the individual’s perceived choice and their understanding of what the alternatives are. This is the result of the individual's interactions with the family and legal socialisation, and they then choose to commit an act of crime or desist.

In this model, combining two types of socialisation processes, family and legal, whilst also identifying a way of operationalising types of offending patterns and examining their linkages presents a unique perspective and provides "a more complete and comprehensive knowledge base of delinquency career characteristics..." (Welsh & Loeber, 2013, p. 80).

7. Operational Definitions

Many of the works quoted above, and others, rely on longitudinal research to understand how people’s criminal careers progress over time (and as they age) and in some cases throughout their entire life course (Laub & Sampson, 1988). Using longitudinal criminal careers is arguably the only way in which to understand how criminal behaviour develops over time and how it is shaped by the influence of family, friends and life events (Connolly & Beaver, 2014; Monahan et al., 2014; Tierney Williams et al.). Table 1 below from Kazemian (2007) provides an overview of the operational definitions of desistance from previous works that Kazemian (2007) reviewed. These were mostly studies that relied on official data but not all,

some used self-report, but what the table demonstrates is the diversity in the definition. The table neatly illustrates the range of ways in which studies conceptualise desistance, which is a result of both the type of measurement used and, as Bushway et al. (2001) argue, the choices for the way in which data is used. All of this makes comparisons difficult, if not impossible, and it is arguably important that researchers move to a place where there might be an element of accepted parameters in regard to the predictors of desistance from crime.

Table 1. Operational Definitions of Desistance from Kazemian 2007

Operational Definition of the Concept of Desistance in Past Studies

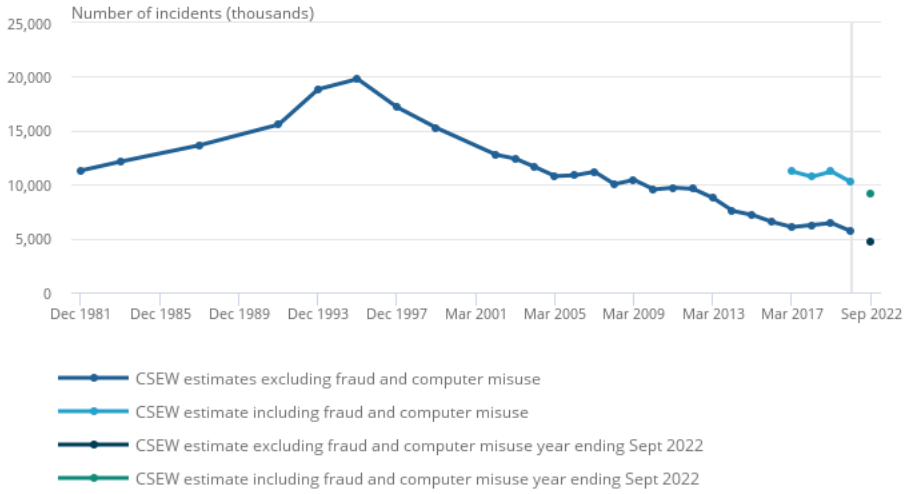
Farrington and Hawkins (1991)	Conviction at age 21 but not between ages 21 and 32
Farrington and Wikström (1994)	Age at the last officially recorded offense up to age 25
Haggard, Gumpert, and Grann (2001)	During the follow-up period, no reconviction in the previous 10 years (at least)
Kruttschnitt, Uggen, and Shelton (2000)	Absence of new officially recorded offenses or probation violation throughout a 2-year period
Laub and Sampson (2003)	Absence of arrest (follow-up to age 70)
Loeber, Stouthamer-Loeber, Van Kammen, and Farrington (1991)	Non-offending throughout a period of less than a year
Maruna (2001)	Individuals who identified themselves as long-term habitual offenders, who claimed that they would not be committing offenses in the future, and who reported at least 1 year of crime-free behaviour
Maruna, LeBel, Burnett, Bushway, and Kierkus (2002)	Absence of reconviction after release from prison during a 10-year window
Mischkowitz (1994)	Individuals who reported having committed offenses in the past but who did not report any criminal income in 1979

In terms of the validity of self-report data there is diversion in the literature about whether self-report or official data is the preeminent way to analyse progression of criminal behaviours. Both have their problems. Self-report surveys provide concerns over the 'reliability and validity of measures' with the associated recall biases and response errors (Kirk, 2006, p. 108). Alongside these are problems with longitudinal datasets of attrition rates, use of repeated measurements and lack of construct continuity (Thornberry and Krohn 2003). But self-report data has been shown to be valid, as compared with official data (Dubow et al., 2014; Jolliffe & Farrington, 2014). However, limiting the data to only convictions means that what is analysed is only the 'tip of the iceberg' (Farrington et al., 2014, p. 242; Theobald et al., 2014) and what we gain in removing concerns over policing the innocent is unfortunately balanced out by what we lose in understating about the cohort members scale of offending. Desistance rates can have large disparities within a sample when considering official criminal records versus self-reported

crime (Farrington & West, 1995; Mulvey et al., 2004; Sampson & Laub, 2003). This study, however, attempts to address that issue with the best of both worlds by using offending that is self-reported but it is only used because it is categorised as an official conviction of guilt or caution, albeit this is still reported by the individual, which means it avoids the tip of the iceberg issue by encompassing more criminality.

Whilst cross-sectional work has added to our understanding of the propensity to commit crime, it is the longitudinal research that is more suited to providing robust inferences of what matters in the development of movement into and away from crime (Blumstein & Cohen, 1987). The work presented here uses the "characterization of the longitudinal sequence of crimes committed by an individual" (Piquero et al., 2003, p. 377) as a means of identifying their offending career, so movement in and out of offending as revealed by self-reported criminal convictions. Longitudinal work has frequently looked at specific groups of the population. For instance the work of several researchers, Glueck and Glueck (Laub & Sampson, 1988), Farrington (Farrington, 2003) and Thornberry and Krohn (Thornberry et al., 2003), all focussed on males living in areas of deprivation. This current thesis, however, uses as its base a nationally representative population sample, including both males and females, now in their early fifties. It has however to be considered that the age cohort used in this study was born in 1970, a period when there was considerable volatility in the UK with political instability, three-day working weeks and the winter of discontent with strike action (Roller, 2021). For those growing up in the 1980s they were surrounded by a more conservative geo-political context (Thatcher and Regan Governments), and the generation was not exposed to social media and there was a different notion of emerging adulthood, to those born around the millennium (Arnett, 2000). Crime rates in the 1980's and 1990's saw a steady increase, unlike the post millennium period that has seen a steady decrease in crime (Jones, 2023), figure 2 below.

Figure 2. Crime estimates from the CSEW years ending December 1981 to September 2022 - England and Wales, annual estimates.



Source: Office for National Statistics – Crime Survey for England and Wales (CSEW)

8. Desistance operationalized in this thesis

Defining how desistance is to be understood must be the first port of call for any study trying to operationalize the shape of movement in and out of crime. This work is based on the idea that desistance from crime: is the cessation or diminishment to insignificance of the act of breaking moral rules of conduct stated in law, after age 30, having previously committed these acts (Wikström et al., 2012). This allows both ideas of desistance as a process and an end state and requires longitudinal assessment. A life course approach – enabled by following individuals until they have passed the chronological age in which a large number would be expected to have naturally desisted from criminal activity, through the age-crime curve and significant life events (Hirschi & Gottfredson, 1983; T.E. Moffitt, 1993; Sampson & Laub, 2003, 2005a). This definition can be used in any country, therefore has possibilities of international comparison, and is workable with any data type whether that is official data, in depth interviews or surveys.

Nevertheless, this operationalisation does have some methodological problems. Firstly, is the period between age 16 to 30 or 34? of sufficient length? Offenders show intermittent crime-free gaps throughout their criminal careers (Kazemian, 2007). These periods of not offending were frequently related to periods of a time when they had financial security or relationships that created space for shelter or support (Blaske et al., 1989; Nagin & Land, 1993a).

The suggestion here is that individuals born in 1970 can be considered to have reached adulthood by the age of 30. Culturally that age cut off may well vary (Carlsson, 2011; Hareven & Masaoka, 1988; Teruga & Hser, 2010) but it is true that key turning points including educational achievement, being in work, living independently, relationships and partnerships, and being a parent are broadly established (Côté, 2014; Sampson & Laub, 2005b; Schoon & Mullin, 2016). Using age 30/34, is both a practical decision – there is no crime data in the BCS70 after 34 despite it now being over 50 - and theoretical because as a critical window it is helpful in two ways: not only does it define a chronological age 'cut off' for working with criminal behaviour in longitudinal data, but at the same time it also takes account of the age crime curve (Blonigen, 2010; Farrall & Bowling, 1999; Hirschi & Gottfredson, 1983; Liu, 2014; T.E. Moffitt, 1993; Warr, 1998). Thus, placing an age definition on desistance is arguably a useful way of modelling the evolution of the individual's criminal career in terms of social and natural factors.

This thesis aims to understand the dimension of participation in offending behaviour and the specific roles played by a variety of factors in the onset and diminishment of offending for both males and females. This work represents the complete (up to and including age 34) self-reported criminal activity by the BCS70 cohort. It uses people's movement in and out of self-reported crime at three specific time points to establish what pathway of criminal behaviour the cohort members are on (detailed analysis of the construction of the criminal career path is in Chapter 2, Offending and Desistance Behaviour Patterns, on page 68). The age of onset is defined as the first self-reported act of criminal guilt, after the age of criminal responsibility which is 10 in England and Wales (McGuinness, 2016).

9. Research questions

Research Aims

Firstly, this thesis examines patterns of offending behaviours, highlighting what variance there is, asking whether patterns of offending vary with family socialisation, whilst controlling for child and parent/household predictors, such as social economic status and parental education. Informed by the SIT theory, it is suggested that less family interaction, reduced father involvement, greater number of siblings, mothers who drank alcohol and/or smoked in pregnancy and a lack of parental cognitive stimulation will increase the likelihood that the cohort member will have offended, and the duration of their offending will be longer.

Secondly the ambition is to understand more about whether the belief in agents of the law and the laws themselves impact observance of criminal justice. Legal socialisation is a relatively sparsely examined area of research (Fagan & Tyler, 2005). This work aims to tease out whether there is a link between the way in which the adolescent individual perceives the justice system and their compliance with it, as revealed in offending behaviour types, after controlling for the conduct and hyperactive nature of the cohort member, their mother's malaise, the father' socio economic status and their parent's educational attainment. It is anticipated that those who have greater degree of cynicism towards the law and its agents will be more likely to have a conviction and will also have more convictions, whilst those who have a greater degree of faith in the legal system will be expected to not offend.

Thirdly I study what the gender specific pathways in offending behaviours are. Separating out the work by gender is useful to help shine a light on our understanding of the gendered nature of desistance and unusually here the fullness of the data, as opposed to other work (McConaghy & Levy, 2015), provides an opportunity to explore further the rather mixed results of the current literature (Craig & Foster, 2013) and to provide insight into the relationship between sex and criminality. It is expected that male offending will be higher on all trajectories than females and that males and females will have different influences from both family and legal socialisation. It is conjectured that there will be more positive impact on women's offending behaviours from later social bonds. For example, the SIT model suggests that the positive impact of an individual's relationships to having children and to stable partnerships would help to reduce offending (Rodermond et al., 2014).

The SIT model provides a framework to examine the relationship between family influences and legal socialisation on desistance and the different patterns of conviction into middle age. This work not only contributes to knowledge because it uses longitudinal perspective from childhood to adulthood but also because few studies have focused on how both family and legal socialisation impact self-reported convictions, particularly in the adolescent or earlier childhood periods (Piquero et al., 2005). Focusing on adulthood allows us to, "perceive only mechanisms which are already formed, whereas by following childhood development, we reach to the formation of those mechanisms, and formation alone is explicative"(Kourilsky-Augeven, 2007b). To examine the relationships between early family life, origins of behaviour towards the law and patterns of conviction, the following research questions are posed and in each investigatory chapter (5, 6 and 7) there are more specific

questions. This thesis aims to identify what, if any, are contributing factors to the different patterns of offending behaviours.

10. Hypotheses

There are three main hypotheses and they focus on the impact of *family socialisation on offending variance*, how the *belief in agents of the law impacts compliance with the law* and then it looks to understand the variety and shape of the *gender specific pathways in offending behaviours.*

First Hypothesis – *Family socialisation and offending variance*

This thesis examines offending variance, whether offending behaviours vary significantly with different levels of family interactions, whilst controlling for child and parent/household predictors, such as social economic status and parental education. While positive family and parental interaction are broadly understood to be beneficial for outcomes, it is hypothesised that less family interaction, reduced father involvement, mothers who drank alcohol and/or smoked in pregnancy (a negative interaction) and a lack of parental cognitive stimulation will increase the likelihood that the cohort member will have offended and the duration of their offending will be longer. Whilst it is anticipated that a greater number of siblings is associated with a reduction in resources, there will also be an increased risk of offending. There are few works that consider prenatal influences and they are part of the early characteristics of the setting which impacts the cohort members outcomes. In the SIT model these refer to the setting for the child, in particular early child setting (sibling and parent interaction) and family situation (economic and social) and the effect on the continuum of convictions from adolescent through adulthood, so this work will add to our understanding by exploring what impact these influences have on movement in and out of offending.

Second hypothesis - *belief in agents of the law impacts compliance with the law*

Then the ambition is to understand more about whether the belief in agents of the law and the laws themselves impacts observance of criminal justice. Legal socialisation is a relatively sparsely examined area of research (Fagan & Tyler, 2005). This work aims to tease out whether there is a link between the way in which the individual perceives the justice system and their compliance with it - using factors such as cynicism in the law, belief in law and the early parent teaching of faith in authority - as revealed in offending behavior types, after

controlling for a variety of biopsychosocial indicators - such as parental educational attainment, the cohort members behaviour as defined in terms of both conduct and hyperactivity, the mothers malaise and the father's social class. It is anticipated that those who have greater degree of cynicism towards the law and its agents will be more likely to have a conviction and will also have more convictions, whilst those who have a greater degree of faith in the legal system will be expected to not offend. It is anticipated that those who have greater degree of cynicism towards the law and its agents will be more likely to have offended and will also persist offending, whilst those who have a greater degree of faith in the legal system will be expected to desist or resist criminal action.

Third Hypothesis - *gender specific pathways in offending behaviours.*

Lastly, I study what the gender specific pathways in offending behaviours are. Separating out the work by gender is useful to help shine a light on our understanding of the gendered nature of desistance and unusually here the fullness of the data, as opposed to other work (McConaghy & Levy, 2015), provides an opportunity to explore further the rather mixed results of the current literature (Craig & Foster, 2013) and to provide insight into the relationship between sex and criminality. It is expected that male offending will be higher on all trajectories than females and that males and females will have different influences from both family and legal socialisation.

Chapters in this thesis

Following this introduction to desistance there are another five additional chapters. The next chapter provides a detailed outline of the methods used, combining detailed information on the British Cohort Study 1970 data set used and the strategy for the analysis, alongside an overview about how each variable has been operationalised, and the analytical strategy including how I deal with missing data. The following three chapters form the empirical work of this thesis, and these chapters have a distinct analytical focus for early socialisation, legal socialisation and then the full SIT model, which build on a set of controls for the setting, the individual and include psychosocial variables. Lastly there is the overall discussion and evaluation section and in this I discuss a variety of general issues.

Chapter Two

Data source, analytical strategy, and preparation.

What's to come in this chapter:

In this chapter I explain about the provenance of my source data, the BCS70, and then detail what variables I use from it and how I have used them, i.e., if they have been altered in any way, and then I discuss the methods of analysis for the models including my handling of missingness present in the BCS70 sub sample that I use.

1. The Data Source - The British Cohort Study 1970 (BCS70)

This study is based on the 1970 British Cohort Study (BCS70), a large-scale nationally representative sample of British children that were born during a particular week in 1970 (Elliott & Shepherd, 2006). The data collected in the first wave in 1970, when there were 17,196 participants, was collected from mothers, midwives, and medical examinations. Nine waves of data collection took place since at ages 5, 10, 16, 26, 30, 34, 38 42, 46 and 51. Information on the study participants was gathered from different sources, including parents, doctors, health visitors, teachers and the cohort members (CMs) themselves. The scope of the study during the years has broadened from a medical focus at birth to physical, psychosocial, and educational development at age 5, educational and social development at ages 10 and 16, then to economic development during the adult years.

The BCS70 sample is primarily white with 3% ethnic minority children, approximately representing the ethnic composition of the UK at the time (Office for National Statistics, 2013; Strategy Unit, 2003). The focus on all births in a single week did not then mean it was easy to add in new participants, for example immigrants, latterly but there have been additions to the survey although not enough for the survey to reflect the ethnic diversity of the current population (Elliott & Shepherd, 2006). There was an increased likelihood of "men from lower social backgrounds whose parents were single in 1970…to drop out from the survey" (Mostafa & Wiggins, 2015). How issues of attrition and missingness are addressed in this study is discussed further on in this chapter.

As with all longitudinal studies, there has been attrition, which is defined by Mostafa and Wiggins (2015) as referring "to situations where CMs drop out of a study and never return, and situations where individual CMs have an interrupted response pattern over time". In 2004, at age 34 years, 15,289 (94% of the original cohort who were alive and living in the UK) cohort members were eligible to take part in the follow-up survey and of those 9,316 (60.9%) did. Mostafa and Wiggins (2014b, p. 8) detailed review of the attrition rate demonstrates that "over 42 years, from birth in 1970 until the ninth sweep in 2012, 7,930 CMs have dropped out for various reasons". It was found that there was a lower response overall from those who started the study in a lower socio-economic position, one of disadvantage (Ketende et al., 2010).

Table 2. BCS70 estimated longitudinal target and observed sample, wave 0 to 6. (Ketende et al., 2010)

WAVE (AGE)	wave0 (age 0)	wave1 (age 5)	wave2 (age10	wave3 (age16)	wave4 (age26)	wave5 (age30)	wave6 (age34)
Achieved (% of target	16571 (95.9%)	12939 (79.0%)	14350 (88.8%)	11206 (70.2%	8654 (55.2%)	10833 (70.4%)	9316 (60.9%)
Non-response (% of target	716 (4.1%)	2815 (17.2%)	1116 (6.9%)	3328 (20.8%	4965 (31.7%)	2213 (14.4%)	2137 (14.0%)
Uncertain (% of target	0 (0.0%)	625 (3.8%)	686 (4.2%)	1440 (9.0%)	2063 (13.2%)	2341 (15.2%)	3836 (25.1%)
Target sample (Estimated)	17287 (100%)	16379 (100%)	16152 (100%)	15974 (100%)	15682 (100%)	15387 (100%)	15289 (100%)

This analysis uses data collected at waves 1 (birth), 2 (age 5), 3 (age 10), 4 (age 16), 5 (age 26), 6 (age 30) and at sweep 7 (age 34). The table above, Table 2, demonstrates the changing shape of the data throughout the waves that are used here. The sample in the operationalisation of desistance used for this work comprises 6,127 study members that is because the approach looks to specific criteria and that impacts the sample shape but also there were several factors that caused attrition in the longitudinal sample (discussed later).

The data collected at ages 38 and 42, 46, and at 51 does not have any information about convictions, so was not included because it did not provide additional detail in terms of the outcome of interest (Sullivan et al., 2022). At age 16, during the 'Youthscan' sweep, a teacher strike resulted in a reduced analytic sample to 11,206. But Shepherd argues that this had limited impact on the demographic characteristics of the sample because of the original distribution of the sample (Shepherd, 1997) and "capitalizing on observed variables from earlier waves allows researchers to replicate the original distribution of the baseline sample, reduce bias and restore sample representativeness"(Sullivan et al., 2022, p. 3). As mentioned in the research questions, understanding gender differences is part of the purview of this work and therefore the models were all run separately by gender.

2. Analytical strategy

To put SIT theory into action I use a variety of variables from the BCS70 to demonstrate the four areas identified in the diagram in Chapter 1. The analysis in chapters 3, 4 and 5 uses the same independent variables to best isolate the true relationship between family and legal

socialisation and offending behaviours. These independent variables (Table Appendices A2) are divided into those items that situate the cohort member in a way to attempt to capture the psychosocial environment. All analysis was conducted separately by gender.

To ensure the data, the variables, were in a state of readiness to use they had to be prepared. For some variables that meant amalgamating them, editing, or revising them in some way, for example combining several variables into one or for others it meant changing the structure of them and for all the variables it meant revising the coding for the analysis. Then appropriate checks were run to ensure that the variables were robust and, in some cases, also sensitivity analysis were run. The variables are detailed in the preparation section below and that includes any checks that were run or sensitivity analysis that were undertaken. This required in some cases, factor analysis and principal component analysis, which are checks that enable researchers to identify any patterns in the correlations between variables. These patterns help to provide any evidence for the existence of underlying shared factors in the data. Then once the variables had been derived, they were first analysed by their bi-variate associations and then in multivariate models. The regression analysis was run both with imputed variables, a method of handling missingness, which I explain and discuss further in this chapter, and then the results of that analysis are used in the tables in the analytic chapters. In addition, the models for family and legal socialisation were also run without the outcome imputed, with full available information and with complete data at age 16, as a sensitivity analysis check and those results are in the appendices Table A4.1 to A4.2. Having these additional analyses gives us a better understanding of the robustness of the evidence, and where and whether some findings only become significant after imputation (or without it).

In terms of multicollinearity, a statistical concept where independent variables in a model are correlated and which causes an increase in the scale of the standard errors, I ran certain checks. Whilst even high multicollinearity does not violate OLS assumptions (the OLS estimates are still unbiased) it is something to be aware of and engaged with in any modelling. Multicollinearity in complete-data estimates would mean the pooled estimates would also be impacted, making the situations not actually that different. There is some debate about the impact of multicollinearity with Goldberger (1991) effectively suggesting ignoring the problem indeed writing a whole section on the "problem of micro-numerosity". This is because multicollinearity is not a problem in the sense that it does not give you biased estimates or misleading standard errors. The consequence of multicollinearity results in too large standard errors, and nothing is significant in your regression. But there is little you can do about it, short

of going out and collecting more data, which is hopefully not multicollinear.

With the shape of the analysis in this work and that datasets using multiple imputation it is not possible to run post analysis checks within Stata, which is a coding issue primarily, and the main effect of multicollinearity in complete-data regression analyses is the inflation of standard errors. I examined the original datasets, identifying outliers and consequently I reduced the original number of variables in the models because I was wary of multicollinearity, for example I took out additional variables on bullying and stealing from the legal socialisation variables. Because of the shape of my regression models, "mlogit" and "mi mlogit" (Long, 2013; StataCorp, 2013), it is not possible to run diagnostics that calculate the VIF, *variance inflation factor,* which is commonly used to understand multicollinearity.

Descriptive Statistics

Prior to any regression modelling, descriptive statistics were examined by cross tabulating criminal conviction patterns against the individual variables. These are presented for men and for women separately and are produced in chapters 3, 4 and 5 and are then discussed in chapter 6.

Model Approach

In both chapters 3 and 4 the models will have specific variables that are used to examine the family and legal socialisation variables separately and then in chapter 5 the variables are bought together in the combined SIT model. The models work in the same way in the chapters, with the variables that are related to the family or legal socialisation entered initially and then the controls are then added in. Practically what this method of organising the models means is that the variables are introduced in two phases, enabling us to see the associations of the variables with initially only the socialisation variables and then with the additional controls. This then gives us a baseline model (Model 1): with the offending patterns predicted by family or legal socialisation, followed by Model 2: Model 1 plus the family demographics. And then in chapter 5 I bring the two socialisation models together and Model 1 includes both family and legal socialisation, and Model 2 then adds the demographics.

This approach allows me to assess the relative importance of family versus legal socialisation. And additionally, this approach is used because it enables me to assess the direct effects without any controls and then to assess if these effects can be explained by socio-demographic characteristics of the family. This essentially implies an entry of groups (domains)

of variables in the model-building process and that provides us with a more detailed understanding of the variables on the impact on the outcome, so we can clearly examine the effects as more variables are added into the models.

All models were run by gender separately, in order for us to establish the relationship to gender. Whilst there is no 'correct' model because "any model is a simplification of reality" as Agresti (2013, p. 211) points out, they do help us understand behaviours.

It is worth noting, and this is explained in a lot more detail in the section on multiple imputation below, that all the variables were imputed in the models apart from what comprises "regular"[2] variables (Carpenter & Kenward, 2011; Schafer & Graham, 2002; von Hippel, 2007), the following: Younger and Older Siblings, Gender, Father's and Mother smoking[3] and Father's SES were used as informative variables for the marginal distribution.

Multinomial Logistic Regression

To understand the relationships between Early, Legal Socialisation and Socialisation Interplay Theory and offending it is necessary to choose variables – described in detail below - that encapsulate those factors. Data analysis as a process requires stages of deriving variables, recoding and dealing with the missingness of the data prior to analysis and that is detailed in the following explanations of the variables used. The construction of derived variables is described below, as is the outcome variable, so all those variables will then be used in the models over the course of the next three chapters. All analyses was run using Stata version 12 and version 13 (StataCorp, 2011, 2013).

The dependent variable – the patterns of offending and desistance behaviours - used in the modeling is assumed to be nominal where the categories represent unordered and unconnected groupings of offending behaviour patterns. The categories in the dependent variable are as follows – *Resist, Early Onset, Early Onset Desist, Late Onset Desist, Persist and Late Bloomer* – and are described in more detail below. In the data here the assumption that the groups are unrelated is violated, because there is ordering of the outcome. What that means is that the responses are related levels of offending albeit in a manner that is not necessarily recognised (it is a unique pattern to this data) or immediately intuitive, in that it is

[2] The term 'regular' here means those variables that are not imputed. The term comes from the stata coding that is used and works in this context because they are unvarying from their original states.
[3] The summary statistics of the imputed datasets look 'reasonable' Abayomi, K., Gelman, A., & Levy, M. (2008). Diagnostics for multivariate imputations. *Applied Statistics*, *57*(Part 3), 273–291. , Raghunathan, T., & Bondarenko, I. (2007). *Diagnostics for Multiple Imputations* https://doi.org/10.2139/ssrn. 1031750 verified using mi xeq command StataCorp. (2013). *Stata Multiple-Imputation Reference Manual Release 13*. Stata Press Publication. http://www.stata.com/manuals13/mi.pdf .

based around a definition with an age cut off.

Because of the shape of the variables the appropriate analysis is multinomial logistic regression (Long, 2013). The reason that multinomial regression was used is because:

Firstly, the relationship between having offended and the socialisation variables is highly likely nonlinear, that means that there is no obvious direction to the relationship, and that means that the categories within the variables aren't ordinal categories. A good example of categories that are ordinal would be income, where you might expect an order from low to high income. Having nonlinear constructs in the variables means they need to be analysed with specific methods that consider their shape.

The equation for the multinomial logit is shown below:

Equation 1. Multinomial logistic regression

$$\log\left(\frac{p_i}{1-p_i}\right) = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \cdots + \beta_p X_{ip}$$

Secondly, it does not assume that the effect will be equal in any category, so that the degree of impact can be understood. The assumption that these trajectories of offending are unrelated means that when comparing the *Persist* to the *Resist* group, the model runs as though it has deleted all those who were in any other category. Thirdly the multinomial regression states that the relative odds between any two outcomes are independent of other outcomes being concurrently considered. Thus, none of the categories can act as substitutes for the others. This holds with this application, as a cohort member is either classified as *Resist*, *Early Onset Limited* (Ltd) (type of desistance), *Early Onset Desist*, *Late Onset Desist*, *Early and Late Onset Persis*t and *Late Bloomer* offending typologies. The categories are distinct and being classified as one eliminates the possibility of being classified as another. In other words, the categories are mutually exclusive for the purposes of the analysis.

Missing Data, 'Missingness'

'Missingness' is a problem in any longitudinal survey and indeed it is pervasive across all studies. There are two main types of drop out from a study: a) un-contactable, cohort members

from the sample through their death, moving house etc. or b) they remove themselves from the group through unwillingness to continue to cooperate (Mostafa & Wiggins, 2014a). Within both a) and b) above there are those who become part of the 'attrition' group: permanent absence from the cohort. Whilst from the second tranche there are two types: i) Wave non-response, resulting in a temporary absence from the cohort possibly returning to the sample at least once after their non-response (known as non-monotone response, the opposite is monotone non-response is where a CM leaves the study not to return) and ii) item non-response, not responding to particular questions.

Non-response and attrition present a problem for the analyst because those people who do not respond are in all likelihood different from those who do. There are three types of missingness (Rubin, 2012); Missing Completely at Random, (MCAR), Missing at Random (MAR), and Missing Not at Random (MNAR). MCAR (Rubin, 2012; Wayman, 2003) is a 'strong assumption' to make, because it presumes that there is no connection between variables missing data and the individual characteristics. Behind MCAR is the assumption that there is no patterning to the missingness and that everyone has an equal chance of there being non-response, which is rarely possible.

MAR (Rubin, 2012), is the probability of the data being missing dependent on other variables or characteristics but not on the missing value itself. MAR assumes that the missingness is correlated with other variables included in the analysis (Howell, 2012), that other variables in the model provide information about the missingness. Specifically, that the other variables provide information about the marginal distributions of the incomplete variables - dependent on responses to other variables, missingness is random. Where the assumptions of MAR are met, the estimates are assumed to be unbiased (Allison, 2009; Carpenter & Kenward, 2011; Howell, 2012; Humphries; Karahalios et al., 2013; Schafer & Graham, 2002). If the missing data can be assumed missing completely at random (MCAR) or missing at random (MAR) it has been argued that 'missing data can be ignored (i.e., unbiased estimates can be obtained)' in these two categories (Enders & Bandalos, 2001, p. 431). In the case of MCAR this is because the missing values are independent of the observed variables, which is arguably a very strict definition and hard to accomplish in reality (Rubin, 2012).

Lastly MNAR is a far more challenging scenario. That is where the missingness on a 'question or the probability of dropping out from a particular sweep are related to unobservable factors' (Mostafa & Wiggins, 2014b, p. 5; Schafer & Graham, 2002). Which means

that when even after accounting for all the available observed information, the reason for missing observations depends on the unseen observations themselves.

Missingness in BCS70

Response rates for BCS70 sweep on sweep fluctuate (as displayed in the Table 2 above): "Response was lower for cohort members who were men, having a mother who was younger at the birth of first child, a mother who did not attempt to breastfeed, a lower birth weight baby, in a family with 2 or more children, born of non-married parents, a manual father and living in London. Many of these findings are indicators of comparative disadvantage and in addition, they were visible as indicators right from the start of the birth cohort study. This general finding about disadvantage as a marker of low response was reinforced by the separate analysis of age 34 responses; there, not managing financially was also associated with lower response." (Ketende et al., 2010, p. 30)

The lowest response, 'percentage of the target sample' (Ketende et al., 2010), in the period that this work deals with, was at the age 26 sweep at 63.5% whilst the age 5 sweep had the highest at 92.8%. See Table Appendices A2 for a breakdown of the variables used in the analysis and the actual response patterns, that table, and Table 2.3 below contains the missingness of each variable and is discussed in more detail further in this chapter.

As missingness is an inescapable fact when handling longitudinal data, it is important to detail ways in which it is accounted for, that is the strategy used to manage these gaps in the data and what was done in terms of any filling of those gaps in the data, for example how was the available data information used to impute missing values. Ignoring missingness would mean losing particular elements of the sample and possibly it would no longer be random or representative of the population (Carpenter & Kenward, 2011). The data in the BCS70 is assumed to be MAR and is treated as such in this thesis and how that is managed is detailed further in this chapter under the 'Analytical Strategy where I explain the use of the method called multiple imputation to account for the missing data in the models.

3. Preparation

To put SIT theory into action I run models with the variables from the BCS70 that speak to the four areas as identified in the diagram in Chapter 1. What follows below is the description of the chosen variables from the BCS70. The analysis in chapters 3, 4 and 5 uses the same independent variables to best isolate the true relationship between family and legal

socialisation and offending behaviours. All analysis was conducted separately by gender and at this juncture it would be appropriate to acknowledge the difference between gender and biological sex, for this study I am using the later to separate the sample.

Key Variables

1. Setting

Several variables covering early environment, presence, interaction, cognitive stimulation, and interest in the child were used to give a sense of the early family setting and these are described below (detailed in Appendix Table A2. Outline of the measures to be used in analysis).

Smoking in Pregnancy (at age 0) – a control, ordinal variable

The prenatal environment as assessed by two indicators smoking and alcohol. S*moking in Pregnancy* was included as prenatal maternal smoking has been found to be predictive of criminal and antisocial behaviour (Ekblad, Korkeila, & Lehtonen, 2015; Gaysina et al., 2013; Murray, Irving, Farrington, Colman, & Bloxsom, 2010; Shelton, Collishaw, Rice, Harold, & Thapar, 2011; Wakschlag, Pickett, Kasza, & Loeber, 2006).

During administration of the first questionnaire (Health, 1970) mothers were asked about their *Smoking* habits during pregnancy. The answers to this were provided in the form of 6 responses – from 'non-smoker' to 'smokes >=15' a day. This was included, as a three-point categorical variable reducing the answers from the original to the following:

- 'non-smoker' (N. 7,179) as the baseline,
- then 'Stopped before/ In Preg.' including the 'stopped pre-pregnancy' (N. 2,031) and 'stopped in pregnancy' (N. 814) responses.
- And then 'Smoked' which includes these three responses - 'Smokes 1- 4' a day (N. 1, 154), 'Smokes 5 to 14' a day (N. 3, 615) and 'Smokes >=15' a day (N. 2, 316).

The smoking prevalence, although seemingly high from a 2015 perspective, is a little higher than the earliest known smoking national survey in 1974 but seems to relatively reflect rates of smoking at the time (Action on Smoking and Health, 2023).

Alcohol Consumption in Early/ Late Pregnancy (at age 10) – a control, ordinal variable

Alongside this was also *Alcohol in Early/ Late Pregnancy* and there is some debate about the impact of maternal drinking in pregnancy on long term conduct problems, with Murray et al. (2015) in their work with the ALSPAC study finding that there was an association with even moderate drinking, although this does not tally with other work (Y. J. Kelly, Nazroo, J. Y., McMunn, A., Boreham, R. and Marmot, M., 2001).

When the Cohort member was aged ten-years the mother was asked to recall her drinking habits in pregnancy. The question was, "Looking back to when the mother was pregnant with the study child, can she remember how often, if at all, she took an alcoholic drink during her pregnancy? Please ask only natural mother." (Butler, 1980a) and the responses were: 'Most Days', '2 to 3 times a week', 'Once a week or less', 'Not at all' and 'Not known'.

These responses were asked under the subheadings of 'Early in Pregnancy' and 'Later in Pregnancy'. In *Alcohol in Early Pregnancy* the responses are 'Not at All' (N. 6, 689), "Once a week or less' (N. 5,354), '2 to 3 times a week' (N. 539) and 'Most Days' (N. 148). Whilst for *Alcohol in Late Pregnancy* the numbers were the following: Not at All' (N. 7, 169), "Once a week or less' (N. 4, 907), '2 to 3 times a week' (N. 447) and 'Most Days' (N. 147).

These variables were combined into a three-level categorical variable. They were recoded so that the baseline was 'Not at All' (N. 6,330), then 'Once a week or less' (N. 5,804) and '2 + times a week (N. 757). Anyone who fell into the higher drinking category in either early or late pregnancy were placed in that category for the composite variable - i.e. those who drank 2 to 3 times and most days were placed in latter. As the question was asked ten years after the event, there could be some concern about recall (Midanik, 1988) but as there is no other method of assessing alcohol use in pregnancy for this dataset it is unfortunately all that is available.

Mother's Malaise Index (at age 5) – a control, ordinal variable

Mother's mental health status has shown to negatively impact on delinquency (Farrington, 2011). Thus a measure of the mother's psychiatric problems was also included from the age 5 data; this is called the *Mother's Malaise Index* developed by Rutter et al (Rutter et al., 1970) to assess stress of the mother based on a 24-item scale (Golding, 1975) , such as "Do you wear yourself out worrying about your health?" and "Do you often get Into a violent rage?".

The variable was kept in its original form as a summative score with three categories "0-80th centile - normal behaviour" (N. 10,532), '81st-95th percentile-moderate behaviour

problems' (N. 1,703) and '95+ percentile - severe problems' (N. 643). The variable was coded as normal behaviour, 1 for moderate and 2 for severe.

Older and Younger Siblings at age 5 – a family socialisation, ordinal variable

To understand the early sibling environment two variables that report the number of *older and younger siblings* were used, in one way this provides a proxy for parental resources, as having many children will likely stretch family resources (Sampson & Laub, 2005b). Both these variables were recoded to provide shortened ordered categorical variables. *Younger Siblings* has three categories, 0 (N. 7,066), 1 (N. 4, 813) and 2 plus (N. 851), whilst the *Older Siblings* variable was again recoded into three categories 0 (N. 4,857), 1 (N. 4, 416) and 2 plus (3,457).

Afterschool at age 10 - a family socialisation, nominal variable

To understand *Afterschool* presence and consequently presumed interaction at the age of 10 a question was used that was asked of the cohort's mother, "Is anyone usually at home when your child gets back from school at the end of the day" (Butler, 1980b). This variable picks up who was present after school and thus a sense of who had the responsibility for care and so it presumes interaction and was created with four categories, '*mother'* (N 7, 795), '*father'* (N 1,390), '*sibling'* (N 21,913), '*other adult or nobody'* (1,526), using '*mother'* as baseline.

Family Time at age 10 - a family socialisation, interval variable

In order to produce a measure of the *family cohesion* at the age of 10 a variable was created that summed questions about the cohort member's families (answered by the mother) on whether they spent time together. The question was asked in relation to whether the family went for '*walks', 'holidays', 'outings', 'shopping', 'chats'*, to a '*restaurant'* or '*have meals'* together[4]. The answers were '*often', 'sometimes'* or *'never or rarely'*.

I ran a Cronbach Alpha, that is a commonly used instrument to measure the reliability of scales and in this case it was deemed reliable at the lower end of what is usable (alpha=0.66) (Tavakol & Dennick, 2011). The creation of this variable was based upon a principle component factor analysis (Kolenikov & Angeles, 2004), Table 2.1 below, using polychoric correlations for the variables. Inter-item correlations showed that there would be "evidence to indicate that there is enough commonality to justify comprising factors" (Beavers et al., 2013, p. 3). The

[4] This was originally without walks, restaurants, and holidays. As N 2,183 didn't ever go for a walk, which was actually more than didn't go on holiday, it was originally deemed that walks should not be included. After inspecting the Alpha which was.65 it was run with all the variables in.

resultant variable was run as a continuous variable, with the cut off of proposed at the median (Tustumi, 2022), and how to read the output is that every one unit less unit indicates that the family spent less time together.

Table 2.1. Principle Component Factor Analysis for the Family Time Variables – including the matrices of correlation, the principal components, factors and loadings and the rotated factor variance.

Polychoric Correlation Matrix				
	walkfamily_10	**outingfamily_10**		
walkfamily_10	1			
outingfamily_10	0.48355002	1		
mealsfamily_10	0.2240886	0.28682238		
holidaysfamily_10	0.23035971	0.55046074		
shoppingfamily_10	0.28533663	0.38363515		
chatfamily_10	0.29307721	0.32587395		
restaurantfamily_10	0.22305957	0.47216969		
	mealsfamily_10	**holidaysfamily_10**		
mealsfamily_10	1			
holidaysfamily_10	0.31707646	1		
shoppingfamily_10	0.3533283	0.25983541		
chatfamily_10	0.38121132	0.27016307		
restaurantfamily_10	0.20453301	0.44603182		
	shoppingfamily_10	**chatfamily_10**		
shoppingfamily_10	1			
chatfamily_10	0.33138747	1		
restaurantfamily_10	0.34542647	0.32431634		
Principal Component Analysis				
k	**Eigenvalues**	**Proportion Explained**	**Cumulative**	
1	3.021068	0.431581	0.431581	
2	0.943741	0.13482	0.566401	
3	0.838593	0.119799	0.6862	
4	0.700517	0.100074	0.786274	
5	0.661491	0.094499	0.880773	
6	0.475647	0.06795	0.948723	
7	0.358942	0.051277	1	
Factor	**Eigenvalue**	**Difference**	**Proportion**	**Cumulative**
Factor1	2.35703	2.10505	1.0687	1.0687
Factor2	0.25199	0.11491	0.1143	1.1829

Polychoric Correlation Matrix				
Factor3	0.13707	0.14129	0.0621	1.2451
Factor4	-0.00422	0.07232	-0.0019	1.2432
Factor5	-0.07654	0.14233	-0.0347	1.2085
Factor6	-0.21887	0.02206	-0.0992	1.1092
Factor7	-0.24093	.	-0.1092	1
LR Test:	independent vs. saturated:	chi2(21) = 2.2e+04	Prob>chi2= 0.0000	
Factor loadings (pattern matrix) and unique variances				
Variable	**Factor1**	**Factor2**	**Factor3**	**Uniqueness**
walkfamil~10	0.5045	0.0377	-0.2785	0.6665
outingfam~10	0.744	-0.191	-0.1209	0.3954
mealsfami~10	0.4904	0.2606	0.0938	0.6828
holidaysf~10	0.6196	-0.2106	0.1385	0.5526
shoppingf~10	0.5447	0.1703	0.0098	0.6742
chatfamil~10	0.5304	0.226	0.0385	0.6662
restauran~10	0.5887	-0.1475	0.1238	0.6163
Rotation				
Factor	**Variance**	**Difference**	**Proportion**	**Cumulative**
Factor1	1.15384	0.17971	0.5232	0.5232
Factor2	0.97413	0.35601	0.4417	0.9648
Factor3	0.61812	.	0.2803	1.2451
Rotated factor loadings (pattern matrix) and unique variances				
Variable	**Factor1**	**Factor2**	**Factor3**	**Uniqueness**
walkfamil~10	0.2036	0.2493	0.4795	0.6665
outingfam~10	0.5697	0.26	0.461	0.3954
mealsfami~10	0.1902	0.5127	0.1346	0.6828
holidaysf~10	0.5982	0.2432	0.1745	0.5526
shoppingf~10	0.253	0.453	0.2379	0.6742
chatfamil~10	0.2182	0.4948	0.2035	0.6662
restauran~10	0.5313	0.2689	0.1706	0.6163
Factor rotation matrix				
	Factor1	**Factor2**	**Factor3**	
Factor1	0.6605	0.5892	0.4654	
Factor2	-0.6489	0.7597	-0.0409	
Factor3	0.3777	0.275	-0.8842	

Cognitive Stimulus at age 5 - a family socialisation, nominal variable

Cognitive stimulation was assessed by a question asking who read most to the cohort member, indeed whether they were read to and that also picks up not only parent but also sibling interactions. The child's stimulation by reading has been associated with improved verbal skills (Raikes et al., 2006). This variable has four categories: '*Mother'* (N 6,612), '*Father'* (N 1,967), '*Sibling'* (N 1,817) and '*Other adult or nobody'* (1,232) and it was reorganised so that the '*Mother'* was the base category as this was the largest group.

Social Environment Variables

Then there are also two social environment variables that speak to social status and resources – parent's education and social class. This provides a sense of the individual cohort member's resources from birth and helps to indicate where there might be some limitation in their material and cultural supply. The reason that both are used is that one is not a substitute for the other, as education is about cultural capital whilst social class is more related to material resources (Kalmijn, 2005; Plewis & Bartley, 2014; Shackleton, 2013).

The *Father's Social Class* at birth was used, the reason that it was not mothers was that they move in and out of the labour force and the reasons behind this are often linked to the occupations they can afford, both fiscally and in terms of time, and often are intrinsically connected to the family's' combined social class and financial assets. Contextually during the period that is covered in the analysis, the 1970's, was a time in which fewer Mother's did work for money. For example, of the starting eligible families, 88% of Mothers were not working at the time of the cohort member's birth, which is why this current work uses the father's social class. It includes a measure of those who did not have a father figure present and so we are able to understand any relevance from growing up in a single parent family.

The other measure was *Parental Education* and was asked when the CM was aged five, in 1975. The variable construction adopts the dominance approach i.e. takes the highest educational level of either parent, provided by the mother, if the education level of one parent was 'other' but known for the other parent, then the known qualification was used (Golding, 1975). The qualifications are classified into 'No Qualifications and other' (N. 5,369), 'Vocational, Nursing Diploma, Certificate of Education' and ''O' level or equivalent' (N. 4,832), ''A' level or equivalent' (N. 990) and 'Degree +' (N. 1,739).

In addition to these indicators of individual and maternal setting I also included items to describe the social environment. Two measures were included to cover social status and

resources. This provides a sense of the individual cohort member's resources from birth and helps to indicate where there might be some limitation in their material and cultural supply.

Father's Social Class at birth – a control, ordinal variable

The *Father's Social Class* at birth, as described by the mother, which was originally comprised of 23 different types of employment ranging from 'Farmers own account' to 'Professional' with quite clearly a considerable number in between. These categories were then reduced to six prior to analysis; '*Lower Supervisory and Technical Occupations'* (N 5,993), *'Managerial, Administrative and Professional'* (N1,954), '*Intermediate Occupations'* (N 3,966), '*Small Employers and Own Account Workers and Others'* (N. 1,040), '*Semi Routine and Routine Occupations'* (N 3,351) and then '*No Father Figure'* (N 824). The marginal distribution is broadly a reflection of the attrition over time of those from lower social backgrounds and thus there is a bias towards over representation of social classes at the top end of the spectrum (Nathan, 1999). It includes a measure of those who did not have a father figure present and so we are able to understand any relevance from growing up in a single parent family.

Parental education at age 5 – a control, ordinal variable

The other measure was *Parental Education* and was asked when the CM was aged five, in 1975. The variable construction adopts the dominance approach i.e., takes the highest educational level of either parent, provided by the mother, if the education level of one parent was 'other' but known for the other parent, then the known qualification was used (Golding, 1975). The qualifications are classified into '*No Qualifications and other'* (N. 5,369), '*Vocational, Nursing Diploma, Certificate of Education' and ''O' level or equivalent'* (N. 4,832), ''*A' level or equivalent'* (N. 990) and '*Degree +*' (N. 1,739).

2. <u>The Individual</u>

To explore the characteristics of the cohort member I used psychological variables that provide an understanding of the individual's development, to do that measures of behaviour were included. These represent the role of self-control of the cohort member and to seek a more transparent approach, and a better understanding of the impact of early conduct on the conviction outcome in this work I use both *Conduct* and *Hyperactivity* as indicators of externalizing symptoms. They are from the *Conduct and Hyperactive Rutter Score* index.

There is some debate about the association between early behaviour, as evidenced by measures of self-control, and criminal activity (Collishaw, Maughan, Goodman, & Pickles, 2004; Deater-Deckard & Dodge, 1997; Kim, 1999; Marceau et al., 2012; Murray et al., 2010; Wikstrom & Treiber, 2007). And to examine this relationship it was decided that separate variables would be the most edifying. Both conduct and hyperactivity are indicators of externalizing symptoms and represent the role of self-control of the cohort member. There is some debate about the association between early behaviour, as evidenced by measures of self-control, and criminal activity (Collishaw et al., 2004; Deater-Deckard & Dodge, 1997; Kim et al., 1999; Marceau et al., 2012; Murray et al., 2010; Wikström & Treiber, 2007).

Conduct Rutter Score (at age 5) – a control, interval variable

These comprised *Rutter scores* for the cohort members at the age of 5; it was decided against using the age 10 version due to a desire to understand the impact of early behaviour markers. The Rutter score is a summary of 27 questions from the full questionnaire and was created by the Institute of Child Health (Golding, 1975) based on work by Rutter himself. The questions are reported by the biological mother and include items such as "Very restless. Often running about or jumping up and down. Hardly ever still" and "Frequently sucks thumb or finger" with three answers for each question 'doesn't apply', 'applies somewhat' and 'certainly applies'. This was kept as a summative variable. Whilst both this and the *Hyperactive Rutter* score were kept in their continuous shape without using a cut off based on the point that "cut-points will always impose some limitations in their interpretation…continuous variables represent a broad spectrum of prognosis possibilities or even a wide range of diagnostic performance parameters possibilities" (Tustumi, 2022, p. 3) but something for further work.

Hyperactive Rutter Score (at age 5) – a control, interval variable

The *Hyperactive* score was analysed using a three-factor variable; 'restless', 'squirmy' and 'cannot settle' (Elander & Rutter, 1986). As above it was deemed that this construction that had the highest internal consistency, a Cronbach Alpha of .67, was best for consistency. Subsequently after running principle component analysis (see Appendix table A.3 Principle component analysis for Rutter, run in Stata/ SE 13.1) they loaded onto a single factor which explained 68% of the variance. As with the conduct score, therefore, it was deemed best to keep it as a summative index based on these 3 items in the model.

3. Legal Socialisation

Several variables[5] covering legal socialisation were used; these were aimed at covering the concepts of views of whether the police were seen as cynical, whether they agreed with the law and desire to break it. *Teaching respect for authority* was used as an indicator of the family views on compliance and legitimacy of authority. Alongside this both viewing the *police cynically* was used as an indicator of the faith in which the cohort member held the agents of the law, and additionally included was the variable on whether they viewed breaking the law as wrong. These variables are detailed below (and in Appendix Table A2. Outline of the measures to be used in analysis).

Teaching Authority Not Important at age 5 - a legal socialisation, dichotomous variable

Teaching respect for authority at the age of 5 is an indicator of the family views on compliance and legitimacy of authority. The single-item question was asked of the mothers at home, this was the actual question asked - 'Teaching 5-year-old children obedience and respect for authority is not as important as all that' and the answers were 'Strongly agree', Mildly agree', 'Cannot say', 'Mildly agree', and 'Strongly disagree'. These were amalgamated in to a summed two-answer variable, 'Agree' (8,321) and 'Disagree' (1,807).

Police Cynicism at age 16 - a legal socialisation, ordinal variable

Police Cynicism is used as an indicator of the faith in which the cohort member in their adolescent years held the agents of the law and is provided by an amalgamation[6] of three variables. These were three questions put to the cohort members at the age of 16 and asked whether the 'Police are often rough in the way they deal with young people like me?', whether 'Police often mistakenly suspect young people like me of wrong doing' and whether the 'The police are always picking on young people like me' (Goodman & Butler, 1986). The cohort members were asked to tick one of two responses; 'Yes, I agree' or 'No, I disagree'.

A factor analysis was run and that revealed one factor with an eigenvalue of 1.1 and 96% of the proportion explained, that meant that it was appropriate to amalgamate them into one variable. This is because a factor with an eigenvalue if more than 1.0 should demonstrate that it has more predictive power than any of the measured variables alone – an eigenvalue of

[5] All variables were recoded and "not stated" or "not known" were recoded to missing.

[6] Using rsum in Stata

one or more is able to explain more variance than a single variable. In the final variable the outcomes were 'No Cynicism' – disagree with all the statements (N. 1,826), 'Little Cynicism' – agree with one statement (N.1, 837), 'More Cynicism' – agree with two statements (N.1,411) and 'Lot of Cynicism' – agree with all (N. 931).

Wrong to Break the Law at age 16 - a legal socialisation, ordinal variable

To explore whether the cohort member thought it was wrong to break the law three variables were summed[8] from questions asked of the cohort member. The three questions are;

1. 'It is always wrong to break the law even if you have no other choice',
2. 'It is always wrong to break the law even if nobody is harmed' and
3. 'It is always wrong to break the law even if the law is unfair' (Goodman & Butler, 1986)

These all had 'True' or 'False' as the answer for each of the questions. They were run through factor analysis and found to have one factor of 1.09 eigenvalue, which accounted for 99% or the variance. Which meant, as per above, that the factor with an eigenvalue of one or more explains more variance than a single observed variable (Gayle & Lambert, 2009). Then the final variable had three response labels, 'True for All' (N.2,303), 'False for 1' (N.1,373), 'False for 2+' (N.1,518).

4. The Act

Operationalising desistance is explored in considerable detail in the next part of this chapter. This study, and as with much in this area, is constrained by the data available not just in terms of the numbers in the study and attrition over time but also it is not possible to tell whether desistance is a complete termination, only those that have full life course data are in the enviable position of being able to answer that question (Laub & Sampson, 1988).

The "act of crime" is constituted as 'offending' by self-reported information on law violation and concluded interaction with the criminal justice system, i.e., police caution or court guilt. To be sure of the nature of the criminal conduct and the evidence that an act of crime has been committed, only two of the self-report of conviction variables were selected i.e. police caution or court guilt over three time periods. This means that there is less concern that it is revealing behaviour that was perceived by criminal justice agents as wrong but was in fact innocent, as may well be associated with the other self-report questions such as (moved on or warned by police), that it represents police bias (stop and search) or was a case of mistaken identity (wrongful arrest). Of course, that does not discount the possibility that there is still some

concern over agent bias. Choosing these two, the police caution and court guilt, seeks to avoid any misconception about the interaction as they provide self-reports of guilt. The caution is accepted guilt at a police station and is defined in the following way, "A caution may be given by, or on the instructions of, a senior police officer when an offender admits guilt, where there is sufficient evidence for a realistic prospect of conviction, where the offender consents, and where it does not seem in the public interest to instigate criminal proceedings." (Nicholas et al., 2005).

This study does not include frequency of offending but simply the knowledge that they have offended and been found guilty of offences since the last time they were interviewed. Frequency data is available, albeit with truncated responses and because of concerns and as discussed previously in the introduction, frequency is not necessarily more important than prevalence.

The degree of seriousness of offending is something that is of considerable interest. Certainly, many levels of behaviour are used to try and establish patterns of offending (Kazemian, 2007) with great variation in the qualification of what constitutes antisocial behaviour. This study does not have the ability to understand the degree – violent versus acquisitive crimes - of offending, as indicated in the choice of conviction variables. However, "just because someone was truant is no reason to expect that they would be involved in theft or vandalism" (Thornberry & Krohn, 2003). So, although this study is based on what might be suggested is a modest method of assessing criminal conduct it is that simplicity which gives it its robustness.

In terms of the validity of Self-Report data there is diversion in the literature about whether self-report or official data is the preeminent way to analyse progression of criminal behaviours. Both have their problems. Self-report surveys provide concerns over the 'reliability and validity of measures' with the associated recall biases and response errors (Kirk, 2006). Alongside these are problems with longitudinal datasets of attrition rates, use of repeated measurements and lack of construct continuity (Thornberry and Krohn 2003). Most recently self-report data has been shown to be valid, as compared with official data (Dubow et al., 2014). However, limiting the data to only convictions means that what is analysed is only the 'tip of the iceberg' (Farrington et al., 2014; Theobald et al., 2014) and what we gain in removing concerns over policing the innocent is unfortunately balanced out by what we lose in understating about the cohort members scale of offending. Desistance rates can have large disparities within a sample when considering official criminal records versus self-reported crime (Farrington & West, 1995;

Mulvey et al., 2004; Sampson & Laub, 2003). This work, however, attempts to deal with that issue by asking only for offending that is self-reported offending and officially designated as offending.

Operationalising Desistance

Considerable thought has been given as to how exactly to operationalise offending behaviour using the available variables. As explained in the introduction desistance in this thesis refers to a process post age 30 of not committing an 'act of crime' having done so previously. This age specific definition takes into account work on the age-crime curve (Hirschi & Gottfredson, 1983; Hunter, 2010; Liu, 2014; Sampson & Laub, 2005a; Wiecko, 2014), the maturation of the individual (Laub & Sampson, 2001) and is also partially informed by the timing of the collection of data in the BCS70. Whilst the "acts of crime" are constituted as 'offending' by self-reported information on law violation and concluded interaction with the criminal justice system, i.e., police caution or court guilt.

That said this study, and as with much in this area, is constrained by the data available. Whilst there is the ability to look at the frequency at some of the time points from the BCS70 it was not available at all three time points. And it is also not possible to tell whether desistance is a complete termination, because we do not have data after age 34 showing caution or guilt of a crime. So, teasing out specifics is hard. In BCS70 there is the ability to consider cessation of offending by age 34, using a method across the times periods. Nor do we have any ability to be sure whether those who stop committing acts of crime by age 34 do so as a pause in offending or as complete cessation. Only those that have full life course data are in the enviable position of being able to answer that question (Laub & Sampson, 1988). The age 42 data, which was collected between 1st May 2012 to the 30th April 2013[7], did not include the questions on criminal justice interactions that are used in this work, it is hoped that later sweeps may well have some acts of crime questions.

What is available from this dataset is a distinct set of questions that are repeated, with slight alterations in terminology[8], at the ages of 16, 30 and 34. Six separate questions ask about types of interactions with the criminal justice system range from the mild – 'have you ever been stopped by police' - to severe – 'have you been found guilty of crime in court' - (Collins et al., 2002; Goodman & Butler, 1986; National Centre for Social Research, 2004). The questions are

[7] http://www.cls.ioe.ac.uk/page.aspx?&sitesectionid=850&sitesectiontitle=BCS70+Age+42+survey+%282012-13%29
[8] Table 1 shows the actual questions in the surveys.

all asked with time scales attached, so the question at age 16 refers back to the age of 10, whilst the question at age 30 refers to the date of last interview either in 1991 or 1986 and at the age 34 they refer back to the year of the last interview[9]. Thus, it provides time periods in which the individuals were interacting with the criminal justice system and distinct onset ages. This work is then in the unusual position of being able to look at onset of offending, as a child from 10 then as an adolescent at 17 and as an adult at 30. Most work that incorporates adult onset is restricted to onset that is at a later timepoint, i.e. at age 21, unlike this research where it ranges from age 10 to 30 (Krohn et al., 2013; McGee & Farrington, 2010; Wiecko, 2014). The richness and depth of the data in this type of cohort data can help to give us more understanding, indeed it may well demonstrate that the age crime curve could be far more elastic in terms of onset of offending than might be at first be expected and that there may well be far more to be understood about late onset offending.

Patterns of desistance

In this study patterns of offending have been operationalized through the 'Offending and Desistance Behaviour Patterns', which defines the outcome variable in the regression analysis that follows. This outcome variable is a composite of several variables based on the cohort member self-reporting being found guilty and cautioned (admission of guilt at a police station) by the criminal justice system and this is reported at ages 16, 30 and 34. In order to create the trajectories of crime offending, six variables were used over three time periods.

These are the actual questionnaire questions:

- in 1986: "Have you yourself been formally cautioned at a police station since you were 10 yrs of age", and "Have you yourself been found guilty by court since 10 years?" (Goodman & Butler, 1986),
- in 2000: "Have you ever been formally cautioned by a police officer at a police station since ^1991/1986?", and " And finally, have you ever been found guilty by a court since ^1991/1986?" (Collins et al., 2002),
- in 2004: "Since you were last interviewed on [^Date of last interview], Have you been formally cautioned by a police officer at a police station?", and "(Since you were last

[9] Research suggests using 'interview' is better for response bias than date and here it does both, Jaccard, J., & Wan, C. K. (1995). A Paradigm for Studying the Accuracy of Self-Reports of Risk Behavior Relevant to AIDS: Empirical Perspectives on Stability, Recall Bias, and Transitory Influences. *Journal of Appled Social Psychology*, *25*(20), 1831-1858.

interviewed on [^Date of last interview],) Have you been found guilty by a criminal court?" (National Centre for Social Research, 2004).

Each time point was then combined into an offending score for guilt[10] and caution variables, with three categories as set out in Table 2.1 below. The answers "not stated" and "not known" were recoded into missing. We can see gender differences which are highlighted in the table - with a clear difference between offending rates between men and women across the time points. The number for females never having been involved in offending ranges from 89% to 97%, whilst for males it varies far more with 66% who didn't offend at the age of 30 – demonstrating the response at each time point, not the cumulative scores – versus 92% at age 34. The table shows that there is a gap between men and women of 25% of offending at age 30. Interestingly whilst overall fewer women at age 16 reported committing an offence, they are more likely – 6% - 190 falling into both categories, to have been found guilty in court and at a police station versus males – 2% of the total at age 16 - with only 55 for males.

Table 2.2. The numbers for the amalgamated question variables at each age point.

Question Responded at	Male							Female						
	None	%	Either/ or	%	Both	%	Total	None	%	Either/ or	%	Both	%	Total
Age 16	1,950	84%	315	14%	55	2%	2,320	3,019	89%	190	6%	190	6%	3,399
Age 30	3,225	66%	903	19%	725	15%	4,853	4,858	91%	254	5%	254	5%	5,366
Age 34	3,827	92%	191	5%	120	3%	4,138	4,489	97%	60	1%	60	1%	4,609

Each of the crime variables were recoded into binary variables and summed together across the three time points for each CM as shown in the following table, Table 2.3. Offending and Desistance Summary of Crime Patterns over 34 years from British Cohort study 1970 (BCS70) based on those CMs who responded at 16. Seven empirical categories are generated. The categories are labelled according to the onset and subsequent movement out of crime. Those who did not report guilt of offence or caution at the three time points were marked as *Resist'* Those who were cautioned and/or convicted pre-age 16 were labelled as the *Early Onset*

[10] The guilt proportions of the cohort population appear to reflect official data of convictions, from the 1968 cohort of the Offenders Index *Conviction histories of Offenders between the ages of 10 and 52 England and Wales.* (2010). Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/217474/criminal-histories-bulletin.pdf, for Females and whilst the age 30 data for men is mirrored, there appears to be a slight discrepancy in conviction rates for age 16 and age 34 but unfortunately it does not include caution data.

categories. Those who limited this behaviour to that adolescent period were assigned the label *Early Onset Limited* informed by the work from Moffit (1993).

The other *Early Onset Desist* group reported guilt at pre-16 but then committed offences after that time point, at age 30, and stopped before 34. So, following on from the definition they were categorised as *Desistors*. The same logic was applied to the Late Onset groups, with the Late onset term marking them out as those who started offending after 16 but stopped at 30. The *Persist* category reported guilt from an early age throughout with both early and Late onset persistent offending, so commencing before or after 16. It was decided to combine the two 'Persist' categories for two reasons: 1) it followed the definition, those who were convicted of offences before and after 30 should be categorised as persistent offenders and 2) both groups but particularly the *Early Onset Persist* was very small thereby constraining any statistical inference based on such a small group. Whilst the last category, the *Late Bloomers* using a phrase from Thornberry work (2005, p. 164), only reported guilt at age 34.

Table 2.3. Offending and Desistance Summary of Crime Patterns over 34 years from British Cohort study 1970 (BCS70) based on those CMs who responded at 16[11].

Category	Male Crime Pattern (%)	F Crime Pattern (%)	Total (%)
Resist – never, base	1,728 (66.82)	3,107 (87.74)	4,835 (78.91)
Early Onset Only (Aged10-16)	240 (9.28)	187 (5.28)	427 (6.97)
Early Onset Desist (Aged 10-30)	142 (5.49)	43 (1.21)	185 (3.02)
Late Onset Desist (Aged 17-30)	378 (14.62)	167 (4.72)	545 (8.90)
Early Onset Persist* (Aged 10-34)	Persist 47 (1.82)	Persist 12 (.34)	59 (.96)
Late Onset Persist ± (Aged 17-34)			
Late Bloomer (Aged 30-34)	51 (1.97)	25 (0.71)	76 (1.24)
Total	2,586 (100)	3, 541 (100)	6, 127 (100)

*Early Onset Persist are M=28, F=3 whilst ±Late Onset Persist are M=121, F=26.

The attraction of this measure is that it is because of careful sifting and labelling in accordance with my understanding, and research, of crime careers – the summary of crime patterns. Fortuitously, the categories also map on to those identified by more sophisticated analysis, namely 'trajectory methodology' when used with self-report data as reported by Piquero (Nagin & Odgers, 2010; 2008) where "analyses of the offending samples have consistently identified four to six trajectories" and it suggests that the approach I lay out is supported and reasonable. The semi-parametric mixed trajectory modelling that was

[11] There was, as previously noted, a teacher strike in 1986 and that meant that the numbers answering the questions were reduced, this can be seen by the lower N reported in row one in Table 2. The analysis is based on only those who answered the question at the age 16, so anyone absent from that variable was removed. This would then be a complete sample based on those responded at 16.

developed by Nagin and Land (1993a) could not have been used with the data available in the BCS70 because for Poisson analysis, required to do that type of analysis, the data needs to be count data rather than ordinal or categorical data (Walters, 2007). Trajectory modelling has been challenged with giving concepts more meaning than is due, which means they could make inferences that imperfectly represent the actual process.

In terms of the patterns of offending, this work reflects life course theories, like Moffitt's dual typology (1993). In that it shows two trajectories, which her work focuses on, the 'adolescent peaks' and the chronic offending. What the research also identifies are additional patterns that call into question the emphasis on a dual taxonomy. Other work has found five offending patterns (six with resist) which is not unusual with self-report analysis and they also detect a late-onset chronic group (Piquero, 2008). And although *Early Onset Desist* fits in with other research what is surprising is the unusually late commencement of the '*Late Bloomer'* offending group.

The fact that the patterns indicate that '*Late Bloomers'* are a larger group than 'Persist' seems to suggest that they are a serious concern and worthy of more evaluation. Previous research has suggested that women are more likely than men to have an adult onset of offending (Bergman & Andershed, 2009; Block, Blokland, Van der Werff, Van Os, & Nieuwbeerta, 2010; DeLisi, 2002). It has been suggested that although the '*Late Bloomer'* group come to notice later on in life they may well have been associated with earlier antisocial behaviour. Indeed work that was done by Farrington in the South London Development Study seemed to indicate previous delinquency in those who demonstrated later offending (McGee & Farrington, 2010).

To be sure of the nature of the criminal conduct and the evidence that an act of crime has been committed, only two of the self-report of conviction variables were selected i.e. police caution or court guilt. This means that there is less concern that it is revealing behaviour that was perceived by criminal justice agents as wrong but was in fact innocent, as may well be associated with the other self-report questions such as (moved on or warned by police), which could indicate police bias (stop and search) or a case of mistaken identity (wrongful arrest). Of course, that does not discount the possibility that there is still some concern over agent bias. Choosing these two indicators, the police caution and court guilt, seeks to avoid any misconception about the interaction as they provide self-reports of guilt. The caution is accepted guilt at a police station and is defined in the following way, "A caution may be given by, or on the instructions of, a senior police officer when an offender admits guilt, where there

is sufficient evidence for a realistic prospect of conviction, where the offender consents, and where it does not seem in the public interest to instigate criminal proceedings." (Nicholas et al., 2005).

This study does not include frequency of offending but simply the knowledge that they have offended and been found guilty of offences since the last time they were interviewed. Frequency data is available, albeit with truncated responses. The age 16 data is unclear because of the coding of the responses, see note[12], and this makes frequency difficult to assess at this time point. It provides concerns for the veracity of the data for frequency and therefore for analysis. It was felt that the frequency data available was not as important as losing the information that the age 16 data presents in the picture of criminal conduct over time. As discussed previously in the introduction, frequency is not necessarily more important than prevalence. What this study is focussed on are offenders who self-reported that they had been caught, tried (albeit not necessarily in court) and found to be guilty of an act of crime.

The degree of seriousness of offending is something that is of considerable interest. Certainly many levels of behaviour are used to try and establish patterns of offending (Kazemian, 2007) with great variation in the qualification of what constitutes antisocial behaviour. This study does not have the ability to understand the degree – violent versus acquisitive crimes - of offending, as indicated in the choice of conviction variables. However "just because someone was truant is no reason to expect that they would be involved in theft or vandalism" (Thornberry & Krohn, 2003). So, although this study is based on what might be suggested is a modest method of assessing criminal conduct it is that simplicity which gives it its robustness.

In terms of the validity of Self-Report data there is diversion in the literature about whether self-report or official data is the preeminent way to analyse progression of criminal behaviours. Both have their problems. Self-report surveys provide concerns over the 'reliability and validity of measures' with the associated recall biases and response errors (Kirk, 2006, p. 108). Alongside these are problems with longitudinal datasets of attrition rates, use of repeated measurements and lack of construct continuity (Thornberry and Krohn 2003). Most recently self-report data has been shown to be valid, as compared with official data (Dubow et al., 2014). However, limiting the data to only convictions means that what is analysed is only the

[12] For example the question asks the cohort member to say how many times up to one year ago they have been cautioned and the dataset has been erroneously given a category that did not exist in the answers, that of 'Occurred past year". This could mean that respondents ticked the wrong column when answering this question but it provides the secondary researcher no legitimate ways of reconstructing the actual responses.

'tip of the iceberg' (Farrington et al., 2014; Theobald et al., 2014, p. 225) and what we gain in removing concerns over policing the innocent is unfortunately balanced out by what we lose in understating about the cohort members scale of offending. Desistance rates can have large disparities within a sample when considering official criminal records versus self-reported crime (Farrington & West, 1995; Mulvey et al., 2004; Sampson & Laub, 2003). As mentioned earlier this work, however, attempts to deal with that issue by asking only for the offending that is self-reported officially designated as offending.

The operationalisation of desistance does not include the self-reported use of drugs in the outcome, although it is available at all age points and in considerable detail for the age 16 sweep. That does not rule out that the patterns do not already include conviction for drug use. As explained previously we do not have the 'crime type' information. The reason is that drug use is influenced by factors "more complex and nuanced than legislation and enforcement alone"(Home Office, 2014, p. 6) and perception of drug crime is different, particularly those in the lower drug classifications, than of other types of crime (Roberts, 2009). It is also believed that the international comparability of this research would be reduced if drugs were included, laws are different around the world (e.g. in Portugal drug use is decriminalised)[13], although this study does not set out to be a cross-national study.

Handling the Missingness in the BCS70 - Multiple Imputation

As discussed earlier in this chapter (page 4) there are three types of missingness (Rubin, 1976); Missing Completely at Random, (MCAR), Missing at Random (MAR), and Missing Not at Random (MNAR). Since the 1990's there has been an expansion in statistical procedures to handle missingness (Little, 1992; Rubin, 2012; Schafer & Graham, 2002). Various procedures, notably Multiple Imputation (MI) (Carpenter & Kenward, 2013; Rubin, 2012; Wayman, 2003) which make assumptions about the mechanism of missingness have been put forward. Where the assumptions of MAR are met, the estimates will be unbiased, and it is in the case of MAR that is typically assumed under Multiple Imputation (MI) procedures.

[13] "Globally, it is estimated that in 2012, some 243 million people (range: 162 million-324 million) corresponding to some 5.2 per cent (range: 3.5-7.0 per cent) of the world population aged 15-64 had used an illicit drug "UN Office on Drugs and Crime. (2014). *World Drug Report* . Although usage shouldn't necessarily be a reason to not include something particularly when it is in fact a crime. And certainly including drugs in the pattern would increase the size of the conviction trajectories, as 59 % of the male and 43% of the female cohort had tried them by the age of 34. But the nature of the extent of drug use, the very different percentages seen from the UN data and from the BCS70 data are of some interest, and the complexity of it gives cause for pause in combining it here. Bryan, M. L., Del Bono, E., & Pudney, S. (2013). *Drug related crime*. Institute for Social and Economic Research https://www.iser.essex.ac.uk/wp-content/uploads/files/working-papers/iser/2013-08.pdf.

The MI approach used in this research is based on the assumption that the data is MAR, that is that the non-response is related to a set of observable, auxiliary, variables of the cohort member. Under Stata, MI (Royston & White, 2011; StataCorp, 2013) works by running a chained equations algorithm that fills in the missing variables randomly, it does this in order of the variable with the least missing first. It takes this first variable, X1, and regresses it onto the other variables specified in the model but restricting it to those without missing data on that variable, X1. The predictions produced are then used to fill the missing values in X1. This process is repeated for all the variables in the model. The succeeding models that run, for the prediction of the other variables, will use both X1's predicted and observed values. This process is repeated a certain number of times and specified by the user, depending on the degree of missingness (Rubin, 2012), and each time it essentially produces a replicate which "fills in" the missingness.

What is particularly useful about MI is that, unlike other methods, "the imputer is free to make use of additional data (e.g., auxiliary variables) that do not appear in the analysis, and if those data are useful for predicting missing values, then MI increases power"(Karahalios et al., 2013; Schafer & Graham, 2002, p. 170). Here a few auxiliary variables are included, and the dependent (Individual Patterns of Offending Behaviours) variable was included as both an auxiliary and it was also imputed in order ensure sure the results are comprehensive and so there is no loss of the information that the variable provided (von Hippel, 2007). It is often the case that the outcome carries information about the missing values of the variables and including it can therefore provide useful information for helping with the imputation of missing data. Auxiliary variables and ones that are not part of the intended model and analysis and improve the effectiveness of the MI model by providing extra information.

The non-imputed results are demonstrated in the appendices but I will only report the imputed results from the models in chapters 3, 4 and 5. It is noted in Mostafa and Wiggins (2015, p. 144) that "what is clearly attractive about MI is that it enables the researcher to restore the sample size to include cases with partial information. But they also note that whilst the model comes closest to benchmark modelling, that is a complete cases dataset, not all the estimates were in "close agreement". The optimal solution is "make best use of the available data" and that Mostafa and Wiggins (2015, p. 144) suggest is done through not ignoring cases over time without full data but using "powerful software tools and the range of approaches now available under MAR and MNAR". For this work I used additional auxiliary variables

Mother's Social Class (CM* age 0), also Breastfeeding (CM* age 0), and Birthweight (CM* age 5) (See Appendix Table A5 Auxiliary Variables).

In order to make the best use of the available data MI is run in Stata 13 (StataCorp, 2013), across 20 replicates (Carpenter & Kenward, 2013; Rubin, 2012; Wayman, 2003). MI was run using the chained equations option, specifically MICE, (Royston & White, 2011), which means that the handling of missing data is as good as the assumption of MAR. In the regression analysis with this imputed data, the estimates are combined across the imputed data sets using Rubin's rules (Rubin, 2012).

For the logistic regression models, the 'mi estimate' command was used and the results are presented as relative risk ratios (RRR). For these analyses each category of 'Individual Patterns of Offending Behaviours' provides a relative risk ratio estimate (with 95% confidence interval (CI)) for the odds of being in that category compared to the odds of being a resister for various categories of the predictors. In terms of interpretation, what the RRR provides is a degree of association. A relative risk of 1.0 means there is no difference in rate of disease between two study populations." When reviewing relative risk, 2.0 means that the study population would have double the rate of and so on (Milloy, 2001). Although this thesis is not epidemiological, that discipline has a warning about interpretation, "Ignore Relative Risk between 0.50 and 2.0" and whilst that same blanket criteria could not be said to apply in this work, it is perhaps best to be somewhat cautious when discussing the scale, moderate would be the better phrasing, of the effect of an RRR below 2. With anything greater than 2 demonstrating a sizeable effect, for example in epidemiological terms that would mean that the variable had been the key factor in causing the disease/ ill health outcome in a particular individual (Nicolich & Gamble, 2010).

The missingness of the variables in the analysis is shown in the following table 2.4, plus Mother's Social Class (at age 0), also Breastfeeding (CM* age 5), and Birthweight (CM* age 0) as auxiliary measures (Allison, 2009), adopted prior to all regression analysis. In addition, the models were also run without the outcome imputed, as a sensitivity analysis (See Addendum Table A.4.) and they demonstrate the usefulness of using MI, as the data shows that otherwise the analysis loses a lot of information. The reason for that check was that 'although it is known that the outcome should be included in the imputation model when imputing missing covariate values, it is not known whether it should be imputed' (Kontopantelis et al., 2017, p. 1).

Like Kontopantelis et al. (2017) research I found that there were very small performance differences, slightly higher estimates between no outcome imputation, and the imputation

models but not enough to be concerned. The imputation model does not give distinctively different results and conclusions, as is demonstrated in the appendices (See Addendum Table A.4.).

Table 2.4. Description of the extent of the Missingness and the number of imputed variables for the Analysis (Nb. imputed is the minimum across m of the number of filled-in observations)

Variables	Number Missing	Number Observed	Missing %	Imputed[nb]
Offending/ desistance Behaviours	12,975	6,127	67.9	7,682
Family Socialisation Variables				
Younger Siblings (CM* age 5)	3,957	12,474	24.1	-
Older Siblings (CM* age 5)	3,957	12,474	24.1	-
Cognitive Stimulus (CM* age 5)	7,106	11,996	37.2	1102
After School (CM* age 10)	5,527	13,575	28.9	1732
Family Time (CM* age 10)	5,475	13,627	28.7	1,700
Offending/ desistance Behaviours	12,975	6,127	67.9	7,682
Legal Socialisation Variable				
Teaching Authority Not Important (CM* age 5)	7,115	11,996	37.2	1,112
Cynical view of Police (CM* age 16)	13,076	6,005	68.6	7,782
Wrong Break the Law (CM* age 16)	13,908	5,194	72.8	8,414
Control Variables				
Mother smoked in pregnancy (CM* age 0)	77	16, 354	.005	-
Alcohol Consumed Pregnancy (CM* age 10)	6,211	12,891	32.5	2,190
Conduct Rutter Score (CM* age 5)	6,078	13,024	31.8	103
Hyperactive Rutter Score (CM* age 5)	6,065	13,037	31.8	90
Mother's Malaise (CM* age 5)	6,224	12,878	32.6	237
Father's SES (CM* age 0)	65	16,366	.004	-
Parents Education (CM* age 5)	6,172	12,930	32.3	182
Marital Status (CM* age 34)	7,694	8,737	46.8	4,951

Cohort's Education (CM* age 34)	7,708	8,723	46.9	4,960

Sample sizes

Sample sizes vary between the models presented in the analysis, that is because the usage of different variables changes the scale of the samples in the models and because by default, Stata does a listwise deletion of incomplete cases. The sample sizes are reflective of the shape of the different variables as detailed in the table above and in the appendices. The table below explains the samples sizes across the chapters. For example, in Chapter Three the sample for the analysis is 6,408 for the M3.1 reducing to 6,396 as more variables are added into the model, for the male analysis. It is generally agreed that to have a larger sampling size is helpful because it is more similar to the normal distribution in the population, regardless of the shape of the population (Agresti, 2013).

Table 2.5. Description of the sample sizes used in the analyses in Chapters 3, 4 and 5

	Male N (%)	Female N (%)
Chapter Three – Early Socialisation		
M3.1	6,408	5,054
M3.2	6,396	5,020
Chapter Four – Legal Socialisation		
M3.1	2,016	2,730
M3.2	1,756	2,396
Chapter Five – Socialisation Interplay Theory		
M3.1	6,199	5,764
M3.2	6,113	5,663

Chapter Three

The relationship between early family socialisation and patterns of offending.

What's to come in this chapter:

This chapter contributes to the literature by using a unique perspective on the way in which the pattern of offending is configured, and both constituent parts of early family socialisation, by parent and of siblings are modelled to try and understand what would impact later movement into and out of offending.

Overview

This chapter contributes to the literature by using a unique perspective on the way in which the pattern of offending is configured, as explained in the preparation and methods section, and adds insight into what early risks factors might influence self-reported acts of offending, and the trends and movement into and away from crime. Here both constituent parts of early family socialisation, by parent and of siblings, both older and younger, are used to try and understand what would impact later movement into and out of self-reported crime.

This chapter aims to tease out the association between family socialisation and self-reporting offending behaviour (being convicted of an act of crime) for the BCS70 cohort members. What is understood by parents early socialisation is their child rearing and parental styles – the family environment, presence of parents and others, interactions, cognitive stimulation, interest in child and their behavioural development, as demonstrated here by their conduct and hyperactivity, Farrington (2003); (Milkie et al., 2015). Robust relationships with parents are strong predictors of desistance (Schroeder et al., 2010). Whilst 'fragile families… families who were at increased risk of experiencing family disruption, instability, and economic disadvantages.'(Paat & Hope, 2015) provide a context for raised risk of criminal justice interaction.

Family Socialisation Definition:
The child rearing and parental styles, alongside the presence and interaction of the siblings, - comprising the environment, presence, interaction, cognitive stimulation, interest in child and their development.
(Farrington, 2003; Milkie et al., 2015).

Here unusually I also look at the sibling context, specifically the presence of siblings and the interaction of them with the child, whilst 'most of the work in the latter part of the last century provided a steady, maternal focused perspective, "and [gave] siblings short shrift in terms of their possible contribution to deviant family interaction." (Aguilar et al., 2001).

My operational Definition of Desistance:
Is the cessation or diminishment to insignificance of the act of breaking moral rules of conduct stated in law, after age 30, having previously committed these acts.
(Carlsson, 2011; Côté, 2014; Hareven & Masaoka, 1988; Hirschi & Gottfredson, 1983; T. E. Moffitt, 1993; Sampson & Laub, 2003, 2005b; Schoon & Mullin, 2016; Teruga & Hser, 2010; Wikström et al., 2012).

First Hypothesis – *Family socialisation and offending variance*

As explained in the beginning chapter this work seeks to examine offending variance, whether offending behaviours are varied significantly with different levels of family interactions, whilst controlling for child and parent/household predictors, such as social economic status and parental education. While positive family and parental interaction are broadly understood to be beneficial for outcomes and those include a negative impact on

offending rates, it is hypothesised that less family interaction, reduced father involvement, mothers who drank alcohol and/or smoked in pregnancy (a negative interaction) and a lack of parental cognitive stimulation will increase the likelihood that the cohort member will have offended and the duration of their offending will be longer. Whilst it is anticipated that a greater number of siblings is associated with a reduction in resources, there will also be an increased risk of offending. This study adds to the body of research because there are few works that consider prenatal influences and they are part of the early characteristics of the setting which impacts the cohort members outcomes. In the SIT model these refer to the setting for the child, in particular early child setting (sibling and parent interaction) and family situation (economic and social) and the effect on the continuum of convictions from adolescent through adulthood, so this work will add to our understanding by exploring what impact these influences have on movement in and out of offending.

Results

The results are laid out below in two stages. In the first instance I show bi-variate associations and then following on from that the multivariate models. The modelling approach is to create the initial model as the baseline – that model includes all the socialisation variables and then adding to those are the demographic variables, which allows us to understand the direct associations and relative importance of the variables when controlling for demographics.

Below in the results I present firstly the descriptive results with commentary on the incidence of offending behaviour for each independent variable. Here I review the two-way relationships of the variables, by gender, and comment on the findings before highlighting in two tables Table 3.1. and Table 3.2. The tables are structured so that in the columns are the variables – those that give the context of family socialisation, the variables that speak to the cohort members setting, - that I use in the analysis, and these are compared against the offending behaviour categories. The results are expressed in N, numbers of cohort members, in the specific subset category of each variable and expressed as a percentage of the whole category of offending. For example, in terms of the Younger Siblings variable amongst those who are within the “Resist” offending category there are N. 1,825 (57.27%) who have 0 younger siblings.

Secondly, I then present the results and discuss the regression analysis which are presented, with the forward entry of groups (domains) of variables included, and they are displayed in two tables separately by gender, in Table 3.3. (Men) and Table 3.4. (Women).

And these tables have the offending behaviour type running across the top and the results of the regression analysis in M3.1 and M3.2 in the columns, first by RRR (relative risk ratio) and then by CI (confidence interval).

Descriptive results

The following details out the descriptive statistics for the two-way relationship between offending behaviour and each independent variable by gender. This is based on the tables, 3.1 for males and 3.2 for females, as shown below.

Males

Table 3.1. Bivariate associations between offending patterns, early socialisation indicators and family setting Characteristics of the sample for analysis, Male, N (%).

(N represents column numbers followed by %s in brackets)

Early Socialisation		Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
Younger Siblings (CM* age 5)	0	1,825	98	55	765	75	75
(N.5, 177)		(57.17)	(50.78)	(46.22)	(54.92)	(52.25)	(50.34)
	1	1,189	83	55	521	46	63
		(37.25)	(43.01)	(46.22)	(37.40)	(35.11)	(42.28)
	2++	178	12	9	107	10	11
		(5.58)	(6.22)	(7.56)	(7.68)	(7.68)	(7.38)
	Total	3,192	193	119	1,393	131	149
		(100)	(100)	(100)	(100)	(100)	(100)
Older Siblings (CM* age 5)	0	1,277	70	51	481	43	55
(N.5, 177)		(40.01)	(36.27)	(42.86)	(34.53)	(32.82)	(36.91)
	1	1,167	68	40	496	35	49
		(36.56)	(35.23)	(33.61)	(35.61)	(26.72)	(32.89)
	2++	748	55	28	28	53	45
		(23.43)	(28.50)	(23.53)	(23.53)	(40.46)	(30.20)
	Total	3,192	193	119	1,393	131	149
		(100)	(100)	(100)	(100)	(100)	(100)
Who read to the CM most	Mother	1,781	94	68	688	60	74
(CM* age 5)		(60.54)	(53.71)	(62.96)	(54.05)	(48.78)	(53.24)
(N. 4,760)	Father	565	31	11	227	20	25
		(19.20)	(17.71)	(10.19)	(17.83)	(16.26)	(17.99)
	Sibling	367	25	16	225	29	19
		(12.47)	(14.29)	(14.81)	(17.67)	(23.58)	(15.11)
	Other Adult/ Nobody	229	25	13	133	14	21
		(7.78)	(14.29)	(12.04)	(10.45)	(11.38)	(15.11)
	Total	2,942	175	108	1,273	123	139
		(100)	(100)	(100)	(100)	(100)	(100)
Who was with CM After School	Mother	2,129	138	72	858	78	77
(CM* age 10)		(63.29)	(64.19)	(55.38)	(59.87)	(54.93)	(52.38)
(N. 5,431)	Father	355	31	22	166	23	20
		(10.55)	(14.42)	(16.92)	(11.58)	(16.20)	(13.61)
	Older Sibling	506	22	19	242	23	22
		(15.04)	(10.23)	(14.62)	(16.89)	(16.20)	(14.97)
	Other Adult/ Nobody	374	24	17	167	18	28

Early Socialisation		Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
		(11.12)	(11.16)	(13.08)	(11.65)	(12.68)	(19.05)
	Total	3,364	215	130	1,433	142	142
		(100)	(100)	(100)	(100)	(100)	(100)
Family Time (CM* age 10) (N. 5,443)	Total	3,372	215	130	1,435	142	149
		(100)	(100)	(100)	(100)	(100)	(100)
		(62% of .)	(3.95% of .)	(2.39% of .)	(26.4% of .)	(2.61% of .)	(2.74% of .)
Smoking in pregnancy (5,785)	Non-Smoker	2,136	102	65	775	59	82
		(59.40)	(47.89)	(48.87)	(50.55)	(39.60)	(50.93)
	Stopped Pre/ During Pregnancy	397	30	11	195	15	15
		(11.04)	(14.08)	(8.27)	(12.72)	(10.07)	(9.32)
	Smoked	1,063	81	57	563	75	64
		(29.56)	(38.03)	(42.86)	(36.73)	(50.34)	(39.75)
	Total	3,596	213	133	1,533	149	161
		(100)	(100)	(100)	(100)	(100)	(100)
Alcohol in Pregnancy (CM* age 10) (N. 5, 283)	None	2,267	79	13	167	11	22
		(47.93)	(52.32)	(38.24)	(46.78)	(40.74)	(52.38)
	Once a Week	2,185	69	17	159	14	17
		(46.19)	(45.70)	(50.00)	(44.54)	(51.85)	(40.48)
	2 plus times a week	278	3	4	31	2	3
		(5.88)	(1.99)	(11.76)	(8.68)	(7.41)	(7.14)
	Total	4,730	151	34	357	27	42
		(100)	(100)	(100)	(100)	(100)	(100)
Hyperactive Rutter Score (CM* age 5) (N.5,155)		3,178	192	119	1,386	131	149
		(100)	(100)	(100)	(100)	(100)	(100)
		(61.6% of .)	(3.72% of .)	(2.31% of .)	(26.9% of .)	(2.54% of .)	(2.89% of .)
Conduct Rutter Score (CM* age 5) (N.5,151)		3,175	192	119	1,385	131	149
		(100)	(100)	(100)	(100)	(100)	(100)
		(61.6% of .)	(3.72% of .)	(2.31% of .)	(26.9% of .)	(2.54% of .)	(2.89% of .)
Mother's Malaise (CM* age 5) (N. 5,104)	Normal	2,681	158	97	1,099	110	119
		(85.27)	(82.72)	(83.62)	(79.99)	(83.97)	(80.41)
	Moderate Behaviour Problem (81st-95th)	356	21	13	199	16	23
		(11.32)	(10.99)	(11.21)	(14.48)	(12.21)	(15.54)
	Severe Behaviour Problem (95th+)	107	12	6	76	5	6
		(3.40)	(6.28)	(5.17)	(5.53)	(3.82)	(4.05)
	Total	3,144	191	116	1,374	131	148
		(100)	(100)	(100)	(100)	(100)	(100)
Father's SES (CM* age 0) (N. 5,798)	Routine & manual Occ.	1,817	120	79	884	102	100
		(50.39)	(56.07)	(58.52)	(57.78)	(68.00)	(61.35)
	Higher managerial, admin. & prof.	492	25	13	159	8	13
		(13.64)	(11.68)	(9.63)	(10.39)	(5.33)	(7.98)

Early Socialisation		Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
	Intermediate Occupations	1,191	59	32	428	30	26
		(33.03)	(27.57)	(23.70)	(27.97)	(20.00)	(16.99)
	Other	106	10	11	59	10	6
		(2.94)	4.67	(8.15)	(3.86)	(6.67)	(3.68)
	Total	3,606	214	135	1,530	150	163
		(100)	(100)	(100)	(100)	(100)	(100)
Parents Education	No qual. & other	1,113	76	52	618	68	66
(4, 851) (CM* age 5)		(35.25)	(40.21)	(44.07)	(45.24)	(52.31)	(44.59)
	Vocational Qualifications, SRN & C of E, O	1,221	76	47	489	44	55
	Level or Equivalent	(38.68)	(40.21)	(39.83)	(35.80)	(33.85)	(37.16)
	A Level or Equivalent	258	21	9	106	9	10
		(8.17)	(11.11)	(7.63)	(7.76)	(6.92)	(6.76)
	Degree +	565	16	10	153	9	17
		(17.90)	(8.47)	(8.47)	11.20	(6.92)	(11.49)
	Total	3,157	189	118	1,366	130	148
		(100)	(100)	(100)	(100)	(100)	(100)

Resist

The male in the "*Resist*" category is someone with fewer older (23%) and younger siblings (57.17%), who was read to mostly by their mother (60.54%) and was less likely to be read to by an "*other adult or nobody*" at 7.78%. In terms of after school, it was far more likely to be their mother who was present (63.29%), the other categories were evenly represented with about 11% each, only an Older Sibling was slightly more likely to be there at 15.04%.

In terms of their mother's this category has the largest number of non-smokers in pregnancy at 59.4%. And there is a relatively even split of those who drank once a week in pregnancy (46.19%) or not at all (47.93%), and this category has the second lowest level of drinking two or more times a week at 5.88%. In terms of the malaise variable, mothers for this cohort category were the least likely to have some abnormal behaviour problems (14.72%). In terms of social economic status, they were less likely to have a father who was in "*Routine or manual occupation*" (50.39%) than any other category, far more likely that they would be in "*intermediate occupations*" (33.03%) whilst '*Higher managerial, admin and prof*' was slightly higher (13.64%) for those in the 'Resist' category compared with the others. In both genders the 'Degree+' category is largest proportionally (17.9%) in the 'Resist' groups.

Early Onset Limited

In this category there is the next highest % of those with no younger siblings (50.78%) but the numbers demonstrate that they were more likely to have *two or more Older siblings* (25.5%), compared to the other "*Desist*" categories. This category reveals a greater number read to by "*Other adult or nobody*" (14.29%) beaten only by *Late Bloomers*. Their mother was more likely to be present than any other individual after school (64.19%) or indeed any other offending category, whilst they were read to less by *Older siblings* (10.23%) by a minimum of 4% as compared to the other categories.

In terms of their mothers, they were the most likely to stop smoking *pre or during* pregnancy (14.08%) and have the lowest rate of drinking *two or more drinks a week* (1.99%). In the results you can also see that in this group the mothers report the highest percentage (6.28%) of *Severe Behaviour Problems* at 6.28%. The cohort child's fathers are more likely to be in a *Routine or manual occupation* (56.07%) than in the *Resist* group. And this group also has the lowest level of parents with *a Degree or more* apart from those in the *Persist* category.

Early Onset Desist

The shape of the cohort members in this category are the most likely, apart from *Late Onset Desist*, to have *one or more Younger siblings* (53.78%) but less likely to have older ones (57.14%) than any other category. They were more likely to be read to by their *Mothers* (62.96%) and least likely by their *Father* (10.19%). Of the desist categories they have the lowest percentage of *Mother* being present *after school* (55.38%) and the highest for *Father* (16.92%) of all the categories, not just the desisters.

In terms of *smoking in pregnancy* only the *Persist* category has a greater degree of mother's who *smoked in pregnancy*, for this group it is 42.86% and it has the lowest percentage who didn't drink in pregnancy. Those who drank more than *two times a week* is the largest by over 3%, at 11.76%. There are no particular stand out percentages in terms of the malaise index. With regards *Father social economic* status this category has the greatest percentage of those in the *Other* occupational category (8.15%).

Late Onset Desist

Those cohort members are less likely to have *no Younger siblings* (54.92%) of the desist groups and the highest level of more than two *Younger siblings*, alongside *Persist*, at 7.68%. They are also more likely to have *Older siblings* than not. They were equally likely to have been

read to by a *Sibling* (17.67%) or their *Father* (17.83%). They have the highest percentage of any category of being with their *Older sibling after school* (16.89%).

Of the desist categories this one has the highest number of mothers who did not *smoke in pregnancy* (50.55%). Nothing stands out of the percentages for the mother drinking in pregnancy. In terms of the *Mother's Malaise index* this is the category with the lowest number percentage of *normal* behaviours (79.99%), and the highest degree of *moderate behavioural* problems at 14.48%. These boys had the highest percentage of fathers with an *Intermediate occupation* (27.97%) of the offending categories and the highest percentage of parents without qualifications (45.24%) apart from the *Persist* category.

Persist

Those who are persistent offenders, from the cohort, are proportionally far less likely to have *Younger siblings* at 57.25%, just slightly more than the *Resist* category. The more striking note, however, is the percentage difference for having more than *two Older siblings*, 40.46%, as compared with figures that run from the lowest at 23.43% (*Resist*) to next highest 30.2% (*Late Bloomer*). Mothers across the offending types are more likely, have the greatest percentage, for reading to the cohort member across the offending types, but the lowest percentage were those who fall into the *Persist* category (48.78%) and had the largest percentage of *siblings reading to them* (23.58%). And again, in the variable on who was with the cohort member *After school* this is the category with the lowest percentage presence of a *Mother* (54.93%) but then it is relatively evenly spread between *Fathers* or *Older siblings* (both 16.2%) presence and less for others (12.68%).

Whilst not unexpectedly most of the offending groups sit within the *Routine and Manual Occupations* those in the *Persist* male are nearly 18% more from that SES background than those in *Resist* and *Higher managerial, admin and prof* was lowest for the *Persist* group. Both male (and females) see the largest proportion of *Persist* having the least number of qualifications. The *Degree*+ category is largest proportionally in the *Resist* groups but for men it is lowest as a proportion in *Persist* (6.92%),

Late Bloomers

This is the category that comes only second after *Persist* for the proportion within it who have more than 2 *Older siblings* at just over 30%. The *Late Bloomers* are the category who proportionally have a greater degree of being read to by *Other or Nobody* at 15.11%, which

combines with a lower degree of mother reading to the cohort member, although not the lowest. Additionally, they were more likely to be looked after school by *Other Adult or Nobody* at 19.05%. There is a ten percent increase (39.75%) on their *Mother* who *Smoked in pregnancy* compared to *Resist* but it also has the highest degree of *non-drinking Mothers* during pregnancy. Whilst it has the lowest percentage of *Mother's* with *Normal* score on the *Malaise index* (80.41%) and the highest in the *moderate behaviour problems* (15.54%).

Whilst there is a higher degree of those in *Routine and Manuel Occupations* they aren't quite as high as the *Persist* category, although the *Intermediate Occupations* groups were proportionally smallest at only 16.99%.

Females

Table 3.2. Bivariate associations between offending patterns, early socialisation indicators and family setting Characteristics of the sample for analysis, Female, % (N.)

(N represents column numbers followed by %s in brackets)

Early Socialisation		Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
Younger Siblings (CM* age 5)	0	2,589	78	9	200	15	24
(N.5, 293)		(55.12)	(52.35)	(30.00)	(57.64)	(57.69)	(54.55)
	1	1,833	57	18	121	9	14
		(39.02)	(38.26)	(60.00)	(34.87)	(34.62)	(31.82)
	2++	275	14	3	26	2	6
		(5.85)	(9.40)	(10.00)	(7.49)	(7.69)	(13.64)
	Total	4,697	149	30	347	26	44
		(100)	(100)	(100)	(100)	(100)	(100)
Older Siblings (CM* age 5)	0	1,885	63	12	126	10	16
(N.5, 293)		(40.13)	(42.28)	(40)	(36.31)	(38.46)	(36.36)
	1	1,636	48	9	121	11	14
		(34.83)	(32.21)	(30)	(34.87)	(42.31)	(31.82)
	2++	1,176	38	9	100	5	14
		(25.04)	(25.50)	(30)	(28.82)	(19.23)	(31.82)
	Total	4,697	149	30	347	44	44
		(100)	(100)	(100)	(100)	(100)	(100)
Who read to the CM most (CM* age 5)	Mother	2,529	85	12	182	13	19
(N. 4,864)		(58.46)	(62.50)	(44.44)	(57.96)	(61.90)	(47.50)
	Father	705	23	5	52	1	6
		(16.30)	(16.91)	(18.52)	(16.56)	(4.76)	(15.00)
	Sibling	667	19	5	48	4	8
		(15.42)	(13.97)	(18.52)	(15.29)	(19.05)	(20.00)
	Other Adult/ Nobody	425	9	5	32	3	7
		(9.82)	(6.62)	(18.52)	(10.19)	(14.29)	(17.50)
	Total	4326	136	27	314	21	40
		(100)	(100)	(100)	(100)	(100)	(100)
Who was with CM After School (CM* age 10)	Mother	3,148	84	20	227	13	27
(N. 5, 607)		(63.34)	(52.05)	(54.05)	(61.35)	(52.00)	(60.00)
	Father	524	23	7	32	2	7
		(10.54)	(14.37)	(18.92)	(8.65)	(8.00)	(15.56)
	Older Sibling	691	29	5	67	4	4
		(13.91)	(18.12)	(13.51)	(18.11)	(16.00)	(8.89)
	Other Adult/ Nobody	607	24	5	44	6	7
		(12.21)	(15.00)	(13.51)	(11.89)	(24.00)	(15.56)
	Total	4,970	160	37	370	25	45

Early Socialisation		Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
		(100)	(100)	(100)	(100)	(100)	(100)
Family Time (CM* age 10)	Total	4,988	160	137	373	24	45
(N. 5,627)		(100)	(100)	(100)	(100)	(100)	(100)
		(88.6% of .)	(2.84% of .)	(2.43% of .)	(6.63% of .)	(0.43% of .)	(0.8% of .)
Smoking in pregnancy (CM* age 0)	Non Smoker	2,969	75	13	197	11	23
(6,008)		(55.72)	(44.12)	(36.11)	(49.62)	(37.93)	(47.92)
	Stopped Pre-During Pregnancy	635	27	4	47	2	5
		(11.92)	(15.88)	(11.11)	(11.84)	(6.90)	(10.42)
	Smoked	1,724	68	19	153	16	20
		(32.36)	(40.00)	(52.78)	(38.54)	(55.17)	(41.67)
	Total	5,328	170	36	397	29	48
		(100)	(100)	(100)	(100)	(100)	(100)
Alcohol in Pregnancy (CM* age 10)	None	1,557	100	59	650	53	59
(N. 5, 283)		(48.58)	(50.51)	(49.58)	(47.62)	(39.85)	(44.03)
	Once a Week	1,495	84	55	631	68	62
		(46.65)	(42.42)	(46.22)	(46.23)	(51.13)	(46.27)
	2 plus times a week	153	14	5	84	12	13
		(4.77)	(7.07)	(4.20)	(6.15)	(9.02)	(9.70)
	Total	4,681	198	119	1,365	133	134
		(100)	(100)	(100)	(100)	(100)	(100)
Hyperactive Rutter Score (CM* age 5)		4,666	146	30	345	26	43
(N. 5,256)		(100)	(100)	(100)	(100)	(100)	(100)
		(88.8% of .)	(2.8% of .)	(0.57% of .)	(6.56% of .)	(0.49% of .)	(0.82% of .)
Conduct Rutter Score (CM* age 5)		4,663	147	30	345	26	7
(N. 5,254)		(100)	(100)	(100)	(100)	(100)	(100)
		(88.8% of .)	(2.8% of .)	(0.57% of .)	(6.56% of .)	(0.49% of .)	(0.82% of .)
Mother's Malaise (age 5)	Normal (0-80th)	3,833	115	24	262	16	30
(N.5,195)		(83.04)	(79.31)	(80.00)	(77.51)	(64.00)	(73.71)
	Moderate Behaviour Problem (81st-95th)	584	24	6	50	8	7
		(12.65)	(16.55)	(20.00)	(14.79)	(32.00)	(17.07)
	Severe Behaviour Problem (95th+)	199	6	0	26	1	4
		(4.31)	4.14	(0.00)	(7.69)	(4.00)	(9.76)
	Total	4,616	145	30	338	25	41
		(100)	(100)	(100)	(100)	(100)	(100)

Early Socialisation		Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
Father's SES (age 0)	Routine & manual Occ.	2,821	109	16	235	16	25
(N. 6,007)		(52.93)	(64.50)	(44.44)	(59.49)	(55.17)	(52.08)
	Higher managerial, admin. and prof.	666	11	4	37	4	5
		(12.50)	(6.51)	(11.11)	(9.37)	(13.79)	(10.42)
	Intermediate Occupations	1,619	44	10	96	6	14
		(30.38)	(26.04)	(27.78)	(24.30)	(20.69)	(29.17)
	Other	224	5	6	27	3	4
		(4.20)	(2.96)	(16.67)	(6.84)	(10.34)	(8.33)
	Total	5,330	169	36	395	29	48
		(100)	(100)	(100)	(100)	(100)	(100)
Parents Education (age 5)	No qual. & other	1,781	65	16	171	13	19
(N.5,231)		(38.35)	(44.83)	(53.33)	(49.85)	(52.00)	(43.18)
	Vocational Qualifications, SRN and C of E, O Level or	1,807	54	11	114	9	17
	Equivalent	(38.91)	(37.24)	(36.67)	(33.24)	(36.00)	(38.64)
	A Level or Equivalent	399	11	2	22	0	4
		(8.59)	(7.59)	(6.67)	(6.41)	(0.00)	(9.09)
	Degree +	657	15	1	36	3	4
		(14.15)	(10.34)	(3.33)	(10.50)	(12.00)	9.09
	Total	4,644	145	30	343	25	44
		(100)	(100)	(100)	(100)	(100)	(100)

Resist

Looking at the percentages there is quite a similarity in proportions across the categories in terms of the sibship shape, apart from the *Early Onset Desist* group. So, the *Resist* female was more likely to not have *Younger siblings (*55.12%) and slightly more likely to have *Older siblings* (59.87%). They were *read* to by their *Mothers* more than any other person at age five (58.46%) and even more likely to be at home with their mother *After school* (63.34%).

Their *Mother* was the least likely to *Smoke* amongst the categories (55.72%) but also found that the *Mother's drinking in pregnancy* was not dissimilar to the other desist categories, but not the *Persist* or *Late Bloomers*. In terms of the *Malaise index* the mother falls in to the *Normal* group by a considerable margin at 83.04%. The *Father* was proportionally more often in the *Intermediate Occupations* than the other categories at 30.38%. Whilst they had an even split between the *Parents Education* categories of *No qualification & other* (38.35%) and *Vocational Qualification, SRN and CofE or O level equivalent* (38.91%) but the former was the smaller compared to the other offending categories.

Early Onset Limited

This category has the lowest percentage of *No older siblings* (42.28%) of the offending groups and were not quite the largest but still had 9.4% sibship with *two or more Younger siblings*. This is the greatest degree of cohort member whose *Mother read* to them at 62.5%, against not quite the lowest but nearly the lowest percentage of whose *Mother* was at home *After school* (52.05%) whilst the *Older Sibling* was more likely (18.12%).

The *Mother* was more likely to *smoke in pregnancy* and had a higher percentage who *Stopped pre or during pregnancy* (15.88%) but it is not the behaviour category that has the highest percentage who smoked at (40%). Their *Mothers* were more likely *not to drink* at 50.51%, yet they have the highest percentage who also drank *2 or more times* in pregnancy versus the other desist categories (7.07%). The mother's *Malaise index* demonstrates an increase in the numbers with *Abnormal behaviour* (20.84%).

The *Routine and Manual Occupations* was the largest at 64.5% with only 6.51% of their fathers in the *Higher managerial, admin and professional* group.

Early Onset Desist

By far the largest category for this group is the 60% for having just one *Younger sibling*, a third higher at 60% than the other categories, and then they are evenly spilt on the

percentage of having either *one* or *two or more Older siblings* (30% each). The *Mother*, whilst still the largest proportion, is the least likely to *read* to this group at 44.44% than the other categories and then *reading* is evenly split across the other categories. *After school* the cohort member was looked after by their *Mother* the most, but the *Father* presence (18.92%) is the highest of the offending categories.

The mothers were the least likely to be in the *didn't smoke during pregnancy* in this offending type (36.11%) and the highest apart from *Persist* of those who *Smoked throughout pregnancy* at (52.78%). Whilst in terms of drinking their *Mother* had the lowest proportion, by a small amount, of those who drunk more than *two drinks a week* during pregnancy (4.2%). It is also the category with the highest degree, again apart from the *Persist* group, of Mother suffering *moderate behaviour* problems (20%).

In terms of father' SES the proportion of those in the *Other* category is the highest at 16.67%, alongside being the second highest in the *Intermediate occupations* at 27.78%. Whilst they have the highest degree for parents whose educational outcomes are in the No qualification or other group 53.33%.

Late Onset Desist

In terms of the sibship is relatively unremarkable against the proportions of the other categories, apart from having the highest proportion of *no Younger siblings* (57.64%) apart from the *Persist* group and the lowest proportion of having *no Older siblings* (36.31%). They were more often with or *read* to by their *mothers* and the next highest category for who was present *After school* was the *Older sibling* (18.11%) just below the *Early Onset Limited* group.

In pregnancy this category had the highest proportion for a *Mother* who *did not smoke* (49.62%) of the offending groups. And for the cross tabulation with malaise, they have the lowest proportion (77.51%) of *Mothers* in the *Normal* behaviour categories of the desist types and the second highest who have *Severe Behaviour problem* (7.69%), only the *Late Bloomer* (9.76%) group is higher. Nearly 60% of their *Fathers* were in the *Routine or manual occupation* SES and nearly 50% of their parents are in *No qualification & Other* for their educational attainment.

Persist

The female *Persist* group have the highest proportion of not having a *Younger sibling* (57.69%) but only just and the highest proportion of one *Older sibling'* (42.31%). They have the

highest proportion of *Mother* who *read* to them 61.9% and the lowest for their *Father reading* to them at 4.76%, unlike all the other categories that were around 16%. At home *After school*, they had the lowest proportion for their *Mothers* being there (52%) and for their *Father* (8%) and were more than twice as likely to be with *Another adult or nobody* (24%) than any of the other offending paths.

In terms of smoking, they are the category with the highest number of *Mothers* who did *Smoke in pregnancy* (55.17%) and the lowest for *Stopping pre-during* (6.9%) but not the lowest for the *Non-smoking category* (37.93%). Equally they also have the lowest number of mothers who did *Not drink in pregnancy* (39.85%) and they were only just beaten by *Late Bloomer* for the numbers who drank more than *Two times a week* throughout (9.02%). They also had the lowest number of *Mothers* who were rated *Normal* on the *Malaise index* (64%) and 32% of their *Mothers* had *Moderate behaviour* problems, 12% higher than the nearest category *Early Onset Desist.*

Otherwise, the proportions for *Father SES* are relatively consistent with the other offending groups. There are, however, slightly more in the *Higher managerial, admin. and prof*. (13.79%) and slightly less in the *Intermediate (20.69%)* than for any other category. The proportions for both male and female (52%) see the largest proportion of *Persist* having the least number of qualifications and none of the parents have an *A Level or equivalent*.

Late Bloomers

Both having *two or more Younger* (13.64%) and *Older* (31.82%) *siblings* is proportionally higher for the *Late Bloomers*, for the older siblings that is twice the percentage of the others. After their mother they were more likely to be read to by a sibling (20%) and proportionally they have, by a small margin, the lowest readership by the *Mother* (47.5%) and *Father* (15%). *After school* they have similar proportions for parents' presence to the *Resist* category with slightly less for their *Mother* (60%) and slightly more for their *Father* (15.56%).

Their *Mother* was more likely to *smoke than not in pregnancy* (47.92%) and has the highest proportion for drinking *more than two times a week* of any of the categories (9.7%). After *Persist* they have the highest ratio of abnormal behaviour on the malaise index, with the highest proportion for *Severe Behaviour problem* (9.76%) of all the groups.

The *Father SES* is similar in proportions to the *Resist* group with just a slightly higher percentage in the *Other* category (8.33%). Additionally, they have the second lowest proportion

of those with *No qualification & other* at 43.18% and the lowest, apart from *Early Onset Desist* for *Degree +* (9.09%).

Multinomial Logistic Regression Results

Tables 3.3 and 3.4 below reveal the results for the models M3.1 and M3.2 for males and females. The variables are added in, initially the baseline variables in model 1 and then the controls are included in model 2, giving us a layered understanding that demonstrates the interplay of the socialisation variables with indicators of the family setting and individual characteristics. While some variables remain significant, others become insignificant, suggesting that they can fully be explained by the family setting and individual characteristics.

As mentioned, and just as a reminder, the results are expressed in relative risk ratios (RRR) with the confidence interval in the row beneath and if emboldened then the results are significant, and these are the level indicators used in the tables - + $p<0.1$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$. Each reference category, the normative category (in all cases also the largest category) is referenced in the column under the name of the variable. In both males and female models, you see a reduction in the scale of N – the number in the model as more variables are introduced from M3.1 to M3.2 and it in most cases as more variables are introduced the significance of the effect stays the same but, in some decreases, and these are noted in the reporting below.

Males

Turning now to the multinomial logistic regression analyses. Table 3.1. reports the multinomial logistic regression results for both models M 3.1-3.2 for men. It is possible to identify a pattern of specific relationships with early socialisation factors that are statistically significant across the criminal offending trajectory.

Table 3.3. Early Socialisation and Male Criminal Offending Behaviour Patterns regressed in models M5.1. and M3.2., RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001.(^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2
	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396
Number Younger Siblings (^None)										
1	**1.44***	**1.45***	**1.51+**	**1.40+**	**1.19***	**1.17+**	**1.09**	1.06	**1.42+**	**1.41+**
	1.01-2.05	**1.02-2.07**	**0.96-2.35**	**0.94-2.09**	**1.02-1.40**	**0.99-1.51**	**0.71-1.68**	0.58-1.63	**0.95-2.13**	**0.94-2.11**
2++	**1.30+**	1.27	**1.67+**	**1.87+**	**1.61*****	**1.50****	1.48	1.33	**1.68+**	1.63
	0.68-2.49	0.66-2.45	**0.46-3.60**	**0.92-3.77**	**1.22-2.12**	**1.13-1.98**	.71-3.04	0.64-2.75	**0.84-3.35**	0.81-3.28
Number Older Siblings (^None)										
1	**1.35+**	**1.36+**	0.96	1.06	**1.19***	**1.22***	0.9	0.96	1.33	1.35
	0.88-1.91	**0.91-1.81**	0.59-1.57	0.68-1.65	**1.00-1.42**	**0.86-1.53**	0.54-1.50	0.53-2.58	0.85-2.09	1.01-2.14
2++	**1.61***	**1.68***	0.86	1.14	**1.44*****	**1.48*****	**1.89***	**1.97***	**1.84+**	**1.85****
	1.01-2.60	**1.05-2.70**	0.46-1.60	0.62-2.1	**1.17-1.78**	**0.84-2**	**1.11-3.23**	**1.13-3.43**	**1.10-3.08**	**1.09-3.16**
Who read to the CM most (^Mother)										
Father	1.01	1.05	**0.56+**	**0.58+**	1.05	1.03	**1.52+**	1.19	0.99	0.92
	0.65-1.56	0.67-1.61	**0.29-1.03**	**0.33-1.04**	0.87-1.25	0.89-1.27	**0.65-1.84**	0.70-2.02	0.63-1.60	0.56-1.52
Sibling	1.09	1.02	1.31	0.92	**1.32****	**1.19+**	**1.52+**	1.32	0.96	0.86
	0.66-1.80	0.61-1.69	0.70-2.44	0.5-1.7	**1.07-1.64**	**0.95-1.28**	**.89-2.57**	0.76-2.27	0.54-1.71	0.48-1.53
Other Adult/ Nobody	**1.75***	**1.64+**	1.19	1.04	**1.29***	1.13	1.31	1.02	**1.72***	1.46
	1.08-2.86	**0.98-2.73**	0.63-2.26	0.56-1.93	**1.01-1.66**	0.88-1.45	0.69-2.50	0.52-1.96	**1.06-2.92**	0.84-2.52
Who was with the CM after school (^Mother)										
Father	1.25	1.21	**1.99****	**2.08****	1.06	1.01	**1.52+**	1.35	1.35	1.26
	0.78-1.98	0.76-1.93	**1.16-3.46**	**1.32-3.27**	0.84-1.34	0.79-1.27	**0.86-2.69**	0.75-2.44	0.77-2.34	0.72-2.20
Older Sibling	**0.65+**	**0.66+**	1.24	1.14	1.12	1.12	0.95	0.09	0.97	0.93
	0.55-1.38	**0.34-1.11**	0.68-2.28	0593-2.22	0.91-1.37	0.91-1.32	0.54-1.69	0.53-1.72	0.54-1.74	0.51-1.70

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2
	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396
Other Adult/ Nobody	0.93	0.93	1.43	1.3	1.15	1.17	1.27	1.27	**1.92****	**1.94****
	0.55-1.57	0.55-1.60	0.77-2.69	0.75-2.23	0.92-1.44	0.93-1.49	.70-2.32	.69-2.33	**1.18-3.11**	**1.19-3.17**
Family time spent together										
(^every unit is less time together)	**1.06+**	1.04	**1.09***	1.35	**1.07*****	**1.04****	**1.11****	**1.06+**	**1.06+**	1.05
	0.98-1.13	0.68-1.44	**1.00-1.20**	0.85-2.16	**1..04-1.12**	**1.00-1.08**	**1.02-1.21**	**0.98-1.17**	**0.98-1.15**	0.57-3.77
Smoking (^Non Smoker)										
Stopped Pre or During Pregnancy		1.28		1.21		**1.18+**		1.06		1.52+
		0.82-1.99		0.68-2.15		**0.89-1.53**		0.52-1.88		0.94-2.25
Smoked throughout		**1.61****		**2.08****		**1.32*****		**1.77****		**1.26***
		1.22-2.36		**1.11-2.63**		**1.03-1.79**		**0.17-2.67**		**1.02-2.26**
Alcohol Pregnancy (^No)										
Once a week		0.98		1.02		1.09		**1.07****		1.09
		0.68-1.99		0.65-1.59		0.96-1.26		**1.13-2.58**		0.72-1.64
2+ Times a Week		1.32		0.93		**1.29+**		**2.42***		**2.24***
		0.67-2.62		0.30-2.87		**0.93-1.78**		**1.13-5.19**		**1.15-4.35**
Conduct Rutter Score										
^Every unit = less normal behaviour		1.03		1.06		**1.07*****		**1.15*****		1.03
		.95-1.12		0.97-1.17		**1.03-1.07**		**1.05-1.25**		0.94-1.13
Hyperactive Rutter Score										
^Every unit = less normal behaviour		1.05		1.1		**1.09*****		1.06		1.07
		0.95-1.16		0.97-1.24		**1.04-1.14**		0.94-1.3		0.95-1.94
Mother's Malaise (^Normal)										
Moderate Behaviour Problem		0.82		0.68		1.08		0.69		1.1
		0.50-1.37		0.34-1.31		0.88-1.33		0.38-1.23		0.66-1.83

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2
	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396	N. 6,408	N 6,396
Severe Behaviour Problem		1.45		0.18		1.22		0.61		0.94
		0.78-2.85		0.46-2.71		0.88-1.69		0.24-1.59		0.39-2.23
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.		0.9		0.98		0.92		**0.39***		0.56+
		0.52-1.56		0.50-1.91		0.73-1.55		**0.16-.93**		0.28-1.14
Intermediate Occupations		0.88		0.72		0.96		**0.67+**		0.89
		0.61-1.08		0.44-1.18		0.82-1.12		**0.42-1.06**		0.59-1.34
Other		1.57		**2.09+**		1.23		**2.22***		1.89
		0.72-3.39		**0.90-4.81**		0.86-1.89		**1.03-4.75**		0.31-2.54
Parents Education (^No qual. & other)										
Vocat. Qual.,O Level, SRN & C of E		1.12		0.92		**0.85***		0.74		0.79
		0.78-162		0.51-1.42		**0.64-1.12**		0.48-1.67		0.53-1.18
A Level or Equivalent		**1.66+**		1		0.89		0.83		0.77
		0.96-2.85		0.47-2.14		0.46-1.16		0.39-1.76		0.37-1.62
Degree +		**0.64+**		0.57		**0.59*****		0.49		0.73
		0.34-1.17		0.26-1.22		**0.51-0.91**		0.22-1.03		0.38-1.33

Early Onset Limited

Having more siblings increases the risk of being in this category and the effect size does not alter in the two models, M3.1 to M3.2, as more variables are introduced. One *Younger sibling* is significantly (RRR=1.45, p<0.01 level) associated and increases the risk of being in this category, as compared with *Resisters*. And having one *Older sibling* (RRR=1.36, p<0.1 level) is also a risk but it is more significant for the *2++ siblings'* category where the effect is at the higher significance (RRR=1.68, p<0.01 level). The cohort member when *read* to by *Other adult or Nobody* is at greater risk of being in this group, the significance reduces as more variables are introduced from model M3.1 (RRR=1.75, p<0.01 level) to M3.2 (RRR=1.64 p<0.1 level).

After school the risk was decreased of being in this group if they were at home with an *Older Sibling*, although at the p<0.1 level, the introduction of more variables did not change that and the models reflect similar results (RRR=0.66, p<0.1 level). The reduction in *Family time* increases the risk of being in this group but only significant at the p<0.1 level and only for M3.1 (RRR=1.06, p<0.1 level) so as more variables are introduced it isn't significant. It is worth noting that when reporting the impact of a continuous variable what might appear to be a modest RRR gets bigger as you move along the scale.

In the M3.2 model with the additional variables only two are significant. *Smoking throughout pregnancy* increases the risk (RRR=1.61, p<0.01 level) and whilst having a Parent with an *A Level or equivalent* (RRR=1.66, p<0.1 level) also increases the risk it is at a lower significance but parents with a *Degree or more* (RRR=0.64, p<0.1 level) reduces the risk.

Early Onset Desist

There is no significance above p<0.1 level, for either model, but having more *Younger siblings* increases the risk of being in this category than just one *Sibling* (in model M3.2 – RRR=1.40, p<0.1 level) and for 2++ siblings (RRR=1.87, p<0.1 level). A *Father reading* to the male cohort member in this category was significant, in both models, for reducing the risk but again at the lower significance level (in M3.2 – RRR=0.58, p<0.1 level). Whilst a *Father* at home *After school* increases the risk of being in this category, with the effect increasing from model M3.1 (RRR=1.99, p<0.01 level) to M3.2 (RRR=2.08, p<0.01 level). With regards to *Family time* the risk of being in this group was significantly (RRR=1.09, p<0.05 levels) increased, in model M3.1, by reduced amount of *Family time* but that did not hold in model M3.2.

Again, *Smoking in pregnancy*, of the variables that are only in the M3.2 model, is significantly associated with a greater risk of being in this category (RRR=2.08, p<0.01 level).

Whilst a *Father* whose occupation was *Other* was also at increased risk (RRR=2.09) but only at p<0.1 level.

Late Onset Desist

Being in the *Late Onset Desist* group is increased and significantly by more *Siblings* and this effect is seen in both models. Having *one Younger sibling* the significance reduces from p<0.01 level with more variables to p<0.1 level but the size or the risk ratio remains broadly the same at RRR=1.19 (M3.1) to RRR=1.17 (M3.2). The association *with 2++ Younger siblings* is greater, as is the significance which again reduces as more variables are introduced but is highly significant in M3.1 it is RRR=1.61 (p<0.001 levels) and in M3.2 RRR=1.50 (p<0.01 levels). Again, with *Older siblings* the risk increases with more siblings and the effect size does not decrease in the different models. With *one Older sibling* the risk ranges from RRR=1.19 (p<0.01 level) in M3.1 to RRR=1.22 (p<0.01 level) in M3.2. The effect of even more *Siblings, 2++,* is relatively strong from RRR=1.44 (p<0.001 levels) in M3.1 to RRR=1.48 (p<0.001 levels) in M3.2.

Alongside siblings there are significant impacts from who *read* to the child, these reduce for significance in the M3.2 model. A *Sibling* reading to the child (RRR=1.32, p<0.01 level) or *Another adult or nobody* (RRR=1.29, p<0.05 level) both impact the risk of being in this category relative to the mother reading. In M3.2 a *Sibling* reading reduces to only significant at the p<0.1 level and with an RRR=1.19, whilst the *Other adult* loses significance in this model (RRR=1.13). Reduced *Family time* is also significantly associated with an increase in the risk of being a *Late Onset* Desister and the significance level holds across models: M3.1 (RRR=1.07, p<0.001 level) and M3.2 (RRR=1.04, p<0.01 level).

In terms of the variables that are only in M3.2 *Mother's Malaise* and *Father's SES* did not have significance. Both *Stopping smoking pre or during pregnancy* (RRR=1.18, p<0.05 level) and *Smoking throughout* (RRR=1.32, p<0.001 level) increased the risk of being in the *Late Onset Desist* group, as compared with a mother who didn't smoke. Having *More than two alcoholic drinks in pregnancy* also increases the risk (RRR=1.29, p<0.1 level). The impact of every less unit of normal behaviour for both *Conduct* (RRR=1.07, p<0.001 level) and *Hyperactive* (RRR=1.09, p<0.001 level). Rutter scores was highly significant to increasing the risk of being in this offending group whilst the scale of the impact seems quite modest, as mentioned, it increases further along the scale. Both parents with *Vocational Qualifications, O level etc* (RRR=0.85, p<0.01 level) and a *Degree +* (RRR=0.59, p<0.001 level) decrease the chance of the cohort male from being in this category, with the effect being greater with the latter variable.

Persist

Younger siblings do not seem to impact the chance of being in the *Persist* category as compared to *Resist*, however that is not the case with *Older Siblings*. Having *two or more Older siblings* increases the risk of being a persistent offender with the effect size increasing as more variables are introduced from M3.1 (RRR=1.89, p<0.01 level) to M3.2 (RRR=1.97, p<0.01 level). Both *Fathers* (RRR=1.52, p<0.1 level) and *Siblings* (RRR=1.52, p<0.1 level) *reading* to the cohort member has a negative impact on their risk of being in the *Persist* category, as does a *Father* at home *After school* (RRR=1.52, p<0.1 level) but it only holds in the first model and only at p<0.1 level. Reduced *Family time* also increases the chance of being in the persist category, but both the effect and the significance reduces from M3.1 (RRR=1.11, p<0.01 level) to M3.2 (RRR=1.06, p<0.1 level).

For the variables in the M3.2 model again mothers who *Smoked throughout pregnancy* are a significant and a large (RRR=1.77, p<0.01 level) risk factor for being in the *Persist* group. Whilst in terms of alcohol both *Drinking once a week* (RRR=1.07, p<0.01 level) and *2 or more times* (RRR=2.42, p<0.05 level) are significant and with the effect size in the latter rather large. Every increase in the *Conduct Rutter score* is also highly significant (RRR=1.15, p<0.001 level) and increases the likelihood of being a persistent offender. *Fathers SES* is significant across the categories, with all but *Other* (RRR=2.22, p<0.001 level) decreasing the chance of being a persistent offender. A *Father* who was in the *Higher managerial, admin and professional* category that was more significant (RRR=0.39, p<0.01 level) than the *Intermediate occupations* (RRR=0.67, p<0.1 level) for reducing the risk of being in the category.

Late Bloomer

Being a *Late Bloomer* is also far more likely with *2++ Older siblings* in both M3.1 (RRR=1.84, p<0.01 level) and M3.2 (RRR=1.85, p<0.01 level) whilst having one Y*ounger sibling* also increased the risk of being a *Late bloomer* but at a lower significance – M3.1 (RRR=1.42, p<0.1 level) and M3.2 (RRR=1.41, p<0.1 level). Also, more than *2++ Younger siblings* are significant at the p<0.1 level for model M3.1. When *Another adult or nobody* was reading to the child, (RRR=1.72, p<0.05 level) that was associated with an increased risk, but it did not hold for M3.2 and the introduction of more variables. Unlike the category *Another adult or nobody* for who was with the child *After school* where the significance and size of the effect held, in fact slightly increased, across models – M3.1 (RRR=1.92, p<0.01 level) and M3.2

(RRR=1.94, p<0.01 level). Decreased *Family time* was only significant and only at the p<0.1 level for the initial model M3.1 (RRR=1.06, p<0.05 level).

Only two variables that are only in the M3.2 model are significant, that is *Smoking throughout pregnancy* (RRR=1.26, p<0.01 level) and *Drinking 2 or more alcoholic drinks* a week (RRR=2.24, p<0.01 level) and the effect size in the latter is substantial. These both significantly increase the risk of being a *Late bloomer*.

Female

For the women cohort members the associations of the independent variables with offending behaviour reveal some important and interesting differences compared to their male counterparts. (Table 3.4.).

Table 3.4. Early Socialisation and Female Criminal Offending Behaviour Patterns regressed in models M3.1. and M3.2., RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001.(^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2
	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020
Number Younger Siblings (^None)										
1	0.96	0.93	**3.09****	**3.22****	0.92	0.89	0.89	1.29	0.96	1.11
	0.64-1.44	0.61-1.39	**1.27-7.43**	**1.32-4.34**	0.71-1.21	0.68-1.17	0.38-2.28	0.35-4.8	0.45-2.03	0.46-2.68
2++	1.43	1.34	**2.83+**	**2.98+**	1.3	1.12	1.09	0.55	**2.45+**	**3.07+**
	0.74-2.74	0.8-2.57	**0.68-8.94**	**0.71-12.5**	0.78-2.61	0.74-1.82	.22-5.43	0.19-5.14	**0.93-8.74**	**0.98-9.62**
Number Older Siblings (^None)										
1	0.75	**0.69+**	1.27	1.47	1.04	1.05	0.87	0.99	1.06	2.03
	0.48-1.18	**0.43-1.09**	0.47-3.39	0.51-2.88	0.75-1.72	0.76-1.42	0.31-5.02	0.31-5.36	0.46-4.26	0.77-5.37
2++	0.81	0.69	1.53	1.71	1.19	1.13	0.36	0.42	1.31	**3.05***
	0.47-1.38	0.39-1.21	0.50-4.68	0.53-3.76	0.72-1.69	0.72-1.62	0.4-9.64	0.33-10.44	0.51-3.35	**1.07-8.71**
Who read to the CM most (^Mother)										
Father	**0.97**	0.97	1.24	1.32	0.98	1.01	0.32	0.32	1.14	1.25
	0.61-1.55	0.7-1.74	0.40-3.18	0.28-2.07	0.73-1.71	0.73-1.39	0.4-2.38	0.42-2.43	0.35-2.95	0.35-4.46
Sibling	0.81	0.81	1.38	1.31	0.85	0.71	1.55	1.37	1.63	1.08
	0.45-1.46	0.47-1.41	0.42-4.54	0.39-2.93	0.46-1.35	0.41-1.24	0.21-5.77	0.18-8.01	0.62-4.26	0.36-3.28
Other Adult/ Nobody	**0.58+**	**0.56+**	1.97	1.6	0.97	0.82	1.09	0.93	**2.08+**	2.05
	0.272-1.20	**0.54-1.67**	0.65-5.97	0.44-2.96	0.47-1.42	0.41-1.24	0.30-3.97	0.49-9.71	**0.82-4.98**	0.62-6.78
Who was with the CM after school (^Mother)										
Father	**1.82***	**1.81***	**2.79***	**2.78***	0.88	0.82	0.37	1.27	1.45	1.06
	1.20-3.01	**1.09-3.01**	**1.08-6.06**	**1.09-7.34**	0.43-1.49	0.4-1.37	0.28-6.69	0.25-6.28	0.29-4.03	0.28-3.99
Older Sibling	**1.92****	**2.04****	1.84	1.9	1.37	**1.35+**	1.78	1.8	0.48	0.976
	1.15-3.17	**1.22-3.43**	0.58-3.68	0.6-3.86	0.55-1.5	**0.54-1.49**	0.37-8.62	0.16-8.43	0.27-2.09	0.27-3.54

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2
	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020
Other Adult/ Nobody	1.46	**1.53+**	0.57	0.55	0.95	0.94	**2.93***	**3.75+**	1	2
	0.85-2.49	**0.89-2.63**	0.23-3.77	0.23-3.88	0.74-1.98	0.75-2.01	**1.02-8.43**	**0.94-8.05**	0.74-5.65	0.71-5.66
Family time spent together										
(^every unit is less time together)	**1.11****	**1.09***	1.11	1.07	1.04	1.01	**1.26****	**1.21***	1.01	1.33
	1.02-1.92	**0.76-1.390**	.50-3.03	0.91-2.85	0.61-1.50	0.58-1.45	**1.05-1.51**	**0.19-4.03**	0.86-1.17	0.41-4.30
Smoking (^Non Smoker)										
Stopped Pre or During Pregnancy		**1.53+**		2.09		1.19		0.97		1.07
		0.95-2.28		0.67-4.94		0.78-1.81		0.35-6.06		0.37-3.09
Smoked throughout		**1.56***		**2.14+**		1.32		1.71		1.3
		1.28-2.67		**0.81-5.63**		0.92-1.89		0.37-4.64		0.53-3.21
Alcohol Pregnancy (^No)										
Once a week		0.87		1.52		1.04		1.38		0.83
		0.62-1.22		0.64-2.6		0.82-1.5		0.24-3.82		0.34-2.03
2+ Times a Week		0.42		1.99		**1.55+**		1.61		0.06
		0.26-1.51		0.42-4.88		**0.56-2.48**		0.32-4.59		-
Conduct Rutter Score										
^Every unit = less normal behaviour		**1.19***		**1.21***		**1.07****		0.99		0.98
		1.01-1.24		**0.98-1.36**		**1.00-1.14**		0.78-1.51		0.81-1.2
Hyperactive Rutter Score										
^Every unit = less normal behaviour		0.96		1.17		1.04		**1.21+**		1.19
		0.89-1.12		0.92-1.48		1.96-1.26		**0.93-1.56**		0.94-1.5
Mother's Malaise (^Normal)										
Moderate Behaviour Problem		1.07		0.99		0.75		**2.83***		0.81
		0.65-1.76		0.43-2.04		0.48-1.66		**1.12-7.15**		0.25-2.6

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2	M3.1	M3.2
	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020	N. 5,054	N 5,020
Severe Behaviour Problem		1.88		0.51		**0.79+**		0.8		0.79
		0.37-1.08		0.08-3.29		**0.93-2.26**		0.23-1.56		0.11-5.58
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.		**0.55+**		**3.05+**		0.84		1.23		1.62
		0.27-1.22		**0.53-10.48**		0.5-1.41		0.16-9.26		0.46-5.77
Intermediate Occupations		0.78		1.55		**0.96+**		0.69		1.36
		0.52-1.11		0.6-2.6		**0.68-1.37**		0.1-4.69		0.51-3.68
Other		0.43		**4.94****		1.13		2.53		2.49
		0.24-1.52		**0.85-7**		0.49-2.14		0.44-14.59		0.51-12.07
Parents Education (^No qual. & other)										
Vocat. Qual.,O Level, SRN & C of E		0.97		0.81		**0.75***		0.46		1.31
		0.65-1.45		0.34-1.97		**0.58-0.99**		0.11-1.81		0.54-3.19
A Level or Equivalent		1.03		0.68		0.71		0		1.21
		0.52-2.05		0.12-2.46		0.35-1.38		-		0.29-4.96
Degree +		0.98		**0.18+**		**0.64+**		0.63		0.73
		0.34-1.18		**0.02-1.8**		**0.34-1.08**		0.06-6.36		0.15-3.62

Early Onset Limited

Siblings reduce the risk of being in this category but only significant at the p<0.1 level for the M3.2 and simply for having 1 *Older sibling.* Similarly, *Another adult or nobody* reduces the risk of being in the *Early onset desist* group for women but at the p<0.1 level for both M3.1 (RRR=0.58) and M3.2 (RRR=0.56). Alternative after school arrangements, compared to the mother being with the female cohort member, increases the risk of being in this category across models; for the *Father* the effect is nearly the same in M3.1 (RRR=1.82, p<0.05 level) and M3.2 (RRR=1.81, p<0.05 level), whilst for *Older sibling* M3.1 (RRR=1.92, p<0.01 level) and M3.2 (RRR=2.04, p<0.01 level) and only in M3.2 was *Other adult or nobody* somewhat significant (RRR=1.53, p<0.1 level). Less *Family time* also increases the risk of being in this category and that holds across M3.1 (RRR=1.11, p<0.01 level) to M3.2 (RRR=1.09, p<0.05 level).

In terms of the M3.2 model, it is only in this, and the *Early onset desist* offending groups that there is a significant impact from *smoking*. Both stopped *Pre and during pregnancy* (RRR=1.53, p<0.1 level) and more significantly the impact of mothers who *smoked throughout* (RRR=1.56, p<0.05 level). In terms of the psychological elements there is an increased chance (RRR=1.19, p<0.05 level) of being in this group for those with C*onduct* behavioural issues. Additionally, a father whose SES was *Higher managerial, admin and professional* decreased the risk of the cohort female of being in this category but only at p<0.1 level (RRR=0.5).

Early Onset Desist

Younger siblings are a significant risk factor for increasing the cohort female of being in this offending group. In both models having *one Younger sibling* has a large effect, M3.1 (RRR=3.09, p<0.01 level) and M3.2 (RRR=3.22, p<0.01 level) whilst the effect is slightly smaller and less significant for having *two or more* M3.1 (RRR=2.83, p<0.01 level) and M3.1 (RRR=2.98 p<0.01 level). The are no significant outcomes from who *read* to the child but in terms of the presence *After school*, the *Father* greatly increases the risk in both M3.1 (RRR=2.79, p<0.05 level) and M3.2 (RRR=2.78, p<0.05 level) of the female being in this category.

In the variables for M3.2 their *Mother Smoking throughout pregnancy* is also a risk factor but whilst the effect size is large, RRR=2.14, the significance level is at p<0.1 level. Additionally for the *Conduct Rutter* score every increase in unit of *abnormal behaviour* (RRR=1.21, p<0.05 level) increases the risk of the cohort female being in this category. Having a *Father* whose SES is *Higher managerial, admin and professional* (RRR=3.05, p<0.1 level) or

Other also significantly increases the risk and with a particularly large effect size and significance in the latter case (RRR=4.94, p<0.01 level) that size of coefficients seems to indicate a large impact from parent to a female who offends early and then desists. Whilst having *Parents* who have a *Degree+* reduces the likelihood of being in this category (RRR=0.18, p<0.1 level).

Late Onset Desist

There are no levels of significance that get over the p<0.1 level in the first model, M3.1. There is a risk factor in M3.2 with an *Older sibling* being at home (RRR=1.35, p<0.1 level). In terms of the other effects, a mother who drank more than two times a week in pregnancy has an effect (RRR=1.55, p<0.1 level) but it is the *Conduct Rutter* score that has a more significant impact (RRR=1.07, p<0.01 level) of increasing the cohort members presence in this category. *Mothers* who demonstrate *severe behaviour problems* on the *Malaise index* are inversely related, but not highly significantly, to the chance of being in the group (RRR=0.79, p<0.1 level), as are *Father* whose SES is *intermediate occupations* (RRR=0.96, p<0.1 level). Whilst for *parents' education* both *Vocational qualification O level, SRN etc* (RRR=0.75, p<0.05 level) and a *Degree +* decrease the possibility of being in this category (RRR=0.64, p<0.1 level).

Persist

In both M3.1 and M3.2 models a cohort member who has *Another adult or nobody present at home* increases the likelihood that they will be in this category, the effect size is considerable – in M3.1 is it RRR=2.93 (p<0.05 level) and in M3.2 it increases but the significance reduces (RRR=3.75, p<0.1 level). Again, in both models the reduction in *Family time* impacts and increases the risk of being in the *Persist* category, M3.1 (RRR=1.26, p<0.01 level) and M3.2 (RRR=1.21, p<0.05 level). The only other significant variables in this category are scoring abnormally on the *Hyperactive Rutter index* increases the risk (RRR=1.21, p<0.1 level), as does a mother who on the *Malaise index* has *Moderate behavioural problems* and the effect size is large (RRR=2.83 p<0.05 level).

Late Bloomer

In terms of early socialisation having 2++ *Younger siblings* and 2++ *Older Siblings* increases the risk of being in this category with the effect for *Younger siblings* increasing from

M3.1 (RRR=2.45, p<0.1 level) to M3.2 (RRR=3.07, p<0.1 level). This is not the case for *Older siblings* where it is only in the second model, M3.2, that the significance meets the threshold (RRR=3.05, p<0.05 level). In M3.1 the cohort female who is *read* to by *Other adult or nobody* has a low significance increased risk of being a *Late bloomer* (RRR=2.08, p<0.1 level). No other variables are significant in either model.

Discussion

Questions as to how the early years of a child's development, especially socialisation as played out in the family, and the consequences upon lasting criminal outcomes are fraught with tensions, largely because of the notion that there might be perceived or real blame placed on already overburdened mothers and families (Milkie et al., 2015), and that this type of categorisation, indeed, the construction of offending behaviour and the potential predictors are blunt tools when trying to understand the layers and complexity of how behaviours are acted out, particularly as this analysis does not examine the actual incidents of crime nor the context of those events just the simple fact that someone reports to have acted in a manner found to be criminal and been found guilty. Yet here the idea of carefully considered aspects of early socialisation - shape of sibships, early cognitive development with reading, presence at home and family time spent together - are evaluated in the context of a cohort member's early family setting and there are found to be subtle differences and particularly gendered patterns with distinct risks associated with the individual offending behaviour groups.

The findings suggest that 'Family Socialisation' does influence crime patterns but in varying degrees and slightly different ways. Firstly, this work adds to the growing evidence that there is far higher rate of self-reported offending by males, 33.18% (of this population) versus 12.26% for females, and this is a phenomenon that needs to continue to be explored (Blokland et al., 2005; Fergusson et al., 2000; Giordano et al., 2002; Rodermond et al., 2014; Wong et al., 2010). From the Figure 1, on page 37, we can see that the suggestion is that the direction of the impact of family setting is on not just legal socialisation but also the individual, what the models demonstrated was that there was an impact on the male individual from *Smoking throughout pregnancy*, *Siblings* and *Family time.* In the case of the latter only those in the *Late Onset Desist* category were significant, as in the fuller model coefficients lost their significance and reduced in scale.

Having younger siblings impacted upon the males far more than the female patterns. In

all but one category, *persist*, for males there were significant negative effects whilst for women it was only the *Early onset desist* and *Late bloomers* who were affected negatively by younger siblings. Having older siblings reveals some negative associations but only in two categories for women, *Late bloomers* and the *Early onset limited* which was a low significance level. Whilst for men they negatively impacted in all, but the *Early onset desist* group. This may be linked to the different ways in which boys and girls are treated and interact within the family. The cost of larger families seemed to impact upon both and possibly reduces the resources available to them (Lawson & Mace, 2009). It is possible that younger siblings might "mimic each other's externalizing problem behaviour, fuelling a downward spiral in which siblings mutually maintain and reinforce each other's problematic behaviour' (Defoe et al., 2013) or both, although this is not clear from the work here. Yet women did not show the same effects across *Early onset limited* category, and this might suggest that the mechanism of sibling socialisation for role-playing are positive too, with concepts of empathy important for females (Tucker et al., 1999; Whiteman et al., 2009).

The significance across categories is interesting, it reflects what was expected that the numbers of siblings would impact across offending groups (Farrington, 2011) but it seems odd that this is not seen in the female cohorts. Previous studies have shown more impact of sibling relationships on women than for males (Oliva & Arranz, 2005), potentially the reason that is the case is that different study methodologies have different sampling methodologies, assessment tools and indeed often without the longitudinal data. For example in the study by Oliva and Arranz (2005), they asked 513 teenagers, aged 13 and 19, to complete questions relating to their relationships with parents, siblings and peers but also asked questions about self-esteem and life satisfaction. The sibling environment, the shared environment (Brody, 2004; Connolly & Beaver, 2014) might not only be bad when exhausted by too many or too much close proximity (Marganski, 2013; McMurtry & Curling, 2008; Oliva & Arranz, 2005) but the significance of the siblings seems to be key. Could it be that alongside the stretched financial or material resources of parents with greater numbers of children there is also an impact in that they have less time and ability to interact or indeed to control sibling interactions. The impact of the sibling numbers on the *Late Bloomer* category suggests that these stretched resources – whether material or emotional - have long term consequences. As Krohn et al. (2013) work found that the 'Late Bloomers' had higher social capital than other categories in their early years and it was suggested once removed from those protective factors, they offended.

The after-school socialisation appears to play a role in the offending categories. Untangling the father's role in this is difficult. Father's at home after school would be anticipated to be (Besemer & Farrington, 2012; Jaffee et al., 2003) positive but if the father is himself at home as a result of issues, for example they are unemployed or suffering from long term ill health, it could be a 'double whammy' (Besemer & Farrington, 2012, p. 220; Dishion et al., 2004; Moffitt et al., 2001). Potentially they could be presenting difficult or problematic behaviour to the cohort member. Contextually a father being at home after school might also suggest someone who was unemployed, rather than a father who remained at home out of choice (as noted previously 88% of women were *'stay at home'* in this sample) which children would have found, and still do find (Sinno & Killen, 2009), less acceptable. Maybe then this isn't so contrary with the lack of father figure or decreased father interaction; positive socialisation requires someone who wants to be positive. There is also the slightly at odds finding that for females in the *Early Onset Desist* category a father at home is a significant risk but if they read to that child, it is a positive (albeit the significance is weak). Further research would aid understanding the seeming incongruities.

The evidence that family time together – cohesion – when limited, is detrimental is significant although only in two categories for females – *Early onset limited* and *Persist*. Other research that "showed that parent time—time spent with mother and father jointly—was related to adolescent well-being too" (Milkie et al., 2015). This presupposes that those who feel valued and have a familial bond, and by extension a community bond, would then be less happy to act against the societal norms. Certainly, this research shows that early family socialisation does impact later offending and that if we understand more about these then we can begin to understand desistance and how to encourage it.

The impact of smoking is marked in relation to the early offending far more prominently for men than women; this paper is not the only one to find associations with smoking and antisocial behaviour (Connolly & Beaver, 2014; Gaysina et al., 2013; Wakschlag et al., 2006), nor the first with this dataset (Murray et al., 2010). And the findings lend themselves to a question about what extent dose smoking interact with alcohol consumption during pregnancy, which this work does not answer but the suggestion is that the development of the foetus is impacted by the chemicals, restricting foetal body and head growth. Other works demonstrate a variety of effects just some reveal nutritional deficiency (Cogswell et al., 2003), reduced growth both in birthweight and length (Jacobson et al., May 1994) and increased risk of Sudden Infant Death

Syndrome (Fifer et al., 2009). Alterations in brain structure and function have been seen in children exposed to prenatal smoking" (Ekblad et al., 2015). It is possibly the first to see such a marked discord between the genders; only one category of offending, *Early Onset Limited*, for women had any association with smoking unlike Murray et al (2010) (although they used different statistical methods to this work).

Could the explanation for the difference in effect on females and males criminal patterns be in accordance with research that suggests that boys have a 70% genetic influence for antisocial behaviour as compared with only 25% for girls (Wertz, 2015). However, Baker et al. (2013) argue that it is rather more complex, "while there is little or no sex difference in the magnitude of genetic effect on antisocial behaviour, some sex-limitation (different genetic effects in males and females) may be evident whereby different genes or environmental factors or both are important within each sex". Boys are more liable to inherit in utero the effects of a mother who smokes. Is it too large a leap to contemplate that the 23% decline in female smoking between 1974 and now (Action on Smoking and Health, 2023) and specifically a decline in pregnancy smoking (Lifestyles Statistics Team, 2014) might have some correlation with the declining crime rate, as remarked upon by Mishra and Lalumiere (2009). These rates of smoking in pregnancy vary across geographic region in England, so an examination of offending rates by region would be a useful to explore.

Interestingly the lack of impact of alcohol was something of a surprise. Over the course of this research when it was mentioned that smoking seemed to be a risk factor for conviction, the next question was always about alcohol. This then sparked an interest in investigating, alongside smoking, alcohol. The impact on males in '*Persist'* and in the *Late Bloomer* groups is marked but there is no impact on the other categories, which begs the question why early alcohol in utero might only impact these offending types and not the others.

Looking at the risk associated with early identifiers of behavioural issues in the Rutter index, it is marked to see that *conduct* problems picked up at age five were factors in both male and female later offending behaviours, as has been found in other works (Hammerton et al., 2019). It is interesting that both genders had similar risk strengths associated with c*onduct problems* for the three first offending categories for women, but *Late onset desist* and *Persist* for males, whilst *Hyperactivity* was only significant in males and for *Late onset desist*. This finding, as with others (Sullivan & Newsome, 2015), suggests that there is a place for screening and early interventions with young children and it also suggests that conduct and hyperactivity

tap into different aspects, with the crux being on early antisocial behaviours. In work by Villadsen et al. (2022 p. 2)they found in the Millennium Cohort "bidirectional association between conduct problems and school exclusion and truancy", which feeds into the debate about the relationship of early conduct issues and offending.

The impact of smoking and certainly family socialisation on persistent offenders is clear from this analysis. Although teasing out the links that ties these together is hard and suggests that there is no straightforward way to approach a method of crime reduction, certainly encouraging no smoking in pregnancy, avoidance of frequent alcohol in early pregnancy, encouraging family interaction, providing more resources as families become larger through various government initiatives and triggering some additional help when early behavioural markers declare someone is out the norm would help to reduce the onset of crime.

SES and parent's education had few strong significant associations with offending behaviour, for females it was only on the *Early* and *Later onset desist* categories whilst for males it was also *Late onset desist*. The limited significant associations with *Parental Education* are interesting, as other studies have found relationships, for example Galloway and Skardhamar (2009) work looked at the Norwegian register data, which included the entire resident population from five birth cohorts, and allowed them to identify youths charged with crime between 1992 to 2005. They concluded in their work that "family academic resources seem to be more important than monetary resources" Galloway and Skardhamar (2009, p. 437). It could well be that in the multivariate model the SES influences are fully mediated by the socialisation variables, indeed in the work of Galloway and Skardhamar (2009) they found bivariate associations unlike Laub and Sampson (1993), exploring this further will be worthwhile to understand the relationship further and that would be feasible with this dataset.

Certainly, the lack of any significant relationship between social economic status and offending patterns, apart from with *Early onset desist* for females and *Persist* for males, is expected because previous work has also demonstrated that. For example work by Laub and Sampson (1993); Wikström et al. (2012), and although that is seemingly counterintuitive, as 'Usually, higher SES reduces the probability of negative outcomes. It is therefore somewhat surprising that a large empirical literature investigating the relationship between SES and crime has not been able to provide convincing evidence' (Galloway & Skardhamar, 2009, p. 424). It may well be that using the income from one time point of the parent is not helpful and that it needs additional SES indicators along the child's life course. What the findings suggests is that

those drawn to crime in adulthood have other social bonds or traumatic life events that throw them onto a path that they might not otherwise have gone, even though their very early behaviour might have predisposed them towards it, for example Moffit identified conduct problems as a significant predictor of offending (Moffitt et al., 1996; Moffitt et al., 2008; Moffitt et al., 2001). It does not align with the theories of resource social background that Moffitt suggested, where the suggestion is that increased resources provide buffers to mitigate criminal actions, but that may well be due to the choice of variables (Moffitt, 2006).

Chapter Four

The relationship between legal socialisation and patterns of offending behaviours.

What's to come in this chapter:

This chapter uses a unique perspective on offending patterns to try and understand how legal socialisation, how the law and agents of the law are related to and perceived, impacts movement into and away from crime.

Overview

This chapter contributes to the literature by using a unique perspective on the way in which the pattern of offending is configured, as explained in the methods section, and adds insight into what risks factors might influence self-reported acts of offending and the trends and movement into and away from crime. Here the way in which the law and agents of the law are perceived is used to understand the impact on later movement into and out of self-reported crime. As explained in the introduction, legal socialisation is the development of representations and attitudes towards the law and the theory predicts that pro-social beliefs are inversely related to crime (Cohn et al., 2010).

> Legal socialisation is the process through which individuals acquire attitudes and beliefs about the law, legal authorities, and legal institutions.(Piquero et al., 2005)

Legal socialisation is considered to shape criminal pathways, through the development of representations and attitudes towards the law, based on analysing legal cynicism and perception of institutional legitimacy. With this thesis the emphasis is on understanding what impact legal socialisation has on offending behaviour. The inclusion of family as well as legal socialisation is important because different aspects of early socialisation can have, as shown in past research (Farrington et al., 2009; Kim et al., 1999; MacRae-Krise et al., 2013; Mathijssen et al., 1998; McCord, 1991; Milkie et al., 2015; Moffitt et al., 2008; Nye, 1958), an impact on offending. But it is also true that "studies should simultaneously examine very early risk factors, later childhood experiences, and turning points in adolescence and adult life, to identify the most important moderators and mediators of early risk in determining antisocial outcomes" (Murray et al., 2010, p. 1206). Much of the work to date has been focused on American cohorts, giving this work the unique aspect of using a British nationally representative cohort to understand movement in and out of crime over time. Or indeed it has focused on either early family socialisation or later life events occurring during adulthood but not both or indeed in the elements around views of law and those who enact it.

Here the models uses constructs that speak to both legitimacy and legal cynicism because they are individually important as they have been shown to be 'related but empirically distinct constructs' (Reisig et al., 2011).

Second hypothesis - *belief in agents of the law impacts compliance with the law*

Then the ambition is to understand more about whether the belief in agents of the law

and the laws themselves impacts observance of criminal justice. Legal socialisation is a relatively sparsely examined area of research (Fagan & Tyler, 2005). This work aims to tease out whether there is a link between the way in which the individual perceives the justice system and their compliance with it. This uses factors such as cynicism in the law, belief in law and the early parent teaching of faith in authority against the offending behavior types, whilst also controlling for a variety of biopsychosocial indicators - such as *Parental Educational Attainment*, the cohort members behaviour as defined in terms of both *Conduct* and *Hyperactivity*, the *Mother's Malaise* and the *Father's Social Class*.

Primarily there will be a positive relationship between those who view the law in a positive light, they will be expected to comply with it more. Consequently, it is anticipated that those who have greater

degree of cynicism towards the law and its agents will be more likely to have a conviction and will also have more convictions, whilst those who have a greater degree of faith in the legal system will be expected to not offend. It is also expected that those who have greater degree of cynicism towards the law and its agents will be more likely to have offended and will also persist offending, whilst those who have a greater degree of faith in the legal system will be expected to desist or resist criminal action.

Results

Just as in the previous chapter the results are laid out below in two stages. Firstly, descriptive results with commentary describing each independent variable in relation to offending behaviour. I review the two-way relationships of the variables, by gender, and comment on the findings before highlighting them in two tables Table 4.1. and Table 4.2. The tables are structured so that in the columns are the variables, those that give the context of legal socialisation are compared against the offending behaviour categories. The results are expressed in N, numbers of cohort members, in the specific subset category of each variable and expressed as a percentage of the whole category of offending. For example, in the *Resist* category 83% (n=3,752) of parents did not agree that *teaching authority is not important*.

Secondly the results of the regression analysis are presented, with the models replicating the methodology in the previous chapter. The initial baseline (model 1) includes information of the socialisation variables and then this is followed by model 2 which includes

controlling for family setting entry of groups (domains) of variables. The results are displayed in tables separately by gender, in Table 4.3. (Men) and Table 4.4. (Women). And these tables have the offending behaviour in the first row with the results of the regression analysis in M4.1 and M4.2 in the columns, first by RRR (relative risk ratio) and then by CI (confidence interval).

Descriptive results

The following details out the descriptive statistics for the two-way relationship between offending behaviour and each independent variable by gender. This is based on the tables, 4.1 and 4.2 below, as shown below.

Males

Table 4.1. Characteristics of the sample for analysis, Male, N (%).

Legal Socialisation		Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
Teach Authority Not. Important (CM* age 5) (N.5,023)	Disagree	2,572 (83.05)	153 (80.95)	84 (72.41)	1,103 (81.76)	103 (80.47)	112 (77.78)
	Agree	525 (16.95)	36 (19.05)	32 (27.59)	246 (18.24)	25 (19.53)	32 (22.22)
	Total	3,097 (100)	189 (100)	116 (100)	1,349 (100)	128 (100)	144 (100)
Police Cynicism (CM* age 16) (N.2,550)	No cynicism	1,496 (87.28)	161 (69.40)	91 (65.00)	301 (82.02)	30 (66.67)	43 (82.69)
	Cynicism	218 (12.72)	71 (30.60)	49 (35.00)	66 (17.98)	15 (33.33)	9 (17.31)
	Total	1,714 (100)	232 (100)	140 (100)	367 (100)	45 (100)	52 (100)
Wrong break the Law (CM* age 16) (N. 2,172)	True	525 (38.09)	62 (36.26)	38 (40.00)	114 (34.34)	16 (39.02)	9 (21.43)
	False 1	403 (29.24)	42 (24.56)	22 (23.16)	91 (27.41)	12 (29.27)	18 (42.86)
	False 2+	450 (32.65)	67 (39.18)	35 (36.84)	127 (38.25)	13 (31.71)	15 (35.71)
	Total	1,378 (100)	171 (100)	95 (100)	332 (100)	41 (100)	42 (100)

Resist

In terms of the legal socialisation variables 83.05% of the parents of the resist cohort disagreed with the statement that *Teach authority is not important* and that is the highest across the categories. Again, this category was also the highest percentage for not being *Cynical* about the police (87.28%) but the same is not true of the variable about whether it was *Wrong to break the law.* In terms of the variable used to assess whether the cohort member thought it was *Wrong to break the law* it reveals a fairly even split amongst the variables with those thinking it was true for all three of the questions at 38% but then those that thought it was false for two or more at 32%. As a reminder the questions are the following:

4. 'It is always wrong to break the law even if you have no other choice',
5. 'It is always wrong to break the law even if nobody is harmed' and
6. ''It is always wrong to break the law even if unfair'

   (Goodman & Butler, 1986)

Early Onset Limited

Nearly 81% of the male cohort's parents thought *Teaching authority* was important. Whilst the c. 16-year-old male cohort member was far more *Cynical* than the resist category with 30.6% viewing the police *Cynically* and more of them believed it was false that *Breaking the law* was wrong for two or more of the questions (39.18%).

Early Onset Desist

The number of cohort parents who agreed that *Teaching authority* was not important rises to 27.59% for this category. Alongside that this category has the highest proportion of those who are *Cynical* about the police at 35%, although also the highest proportion (40%) who answered true to all the questions about *Breaking the law*.

Late Onset Desist

This has the highest proportion after *Resist* of those whose parents disagree with the statement that *teaching authority* is not important at age 5 (81.76%). They are also the least cynical, behind the *Late bloomer* and *Resist* categories, about the police at 82.02%. Whilst they also have more think that it is okay to *Break the law* in certain circumstances at 38.25%.

Persist

The parents of these cohort member are only 3% more likely than *Resisters* to believe that *Teach authority* is not important (19.53%). They are not quite as *Cynical* as the *Early onset desist* category but nearly, with 33.33% having cynical views and they are the second highest, after *Early onset desist*, for agreeing that it is *Wrong to break the law* to all three questions (39.02%).

Late Bloomer

This category has the second highest number of parents who believe that *Teaching authority* is not important (77.78%), after *Early onset desist*. These cohort members came in third for being *Cynical* of the police (17.31%), behind *Resist* and *Late onset desist*. They have the lowest number who believe that *breaking the law* is wrong for all three questions, at only 21.43% - 13% behind the nearest other category, *Late onset desist*.

Female

Table 4.2. Characteristics of the sample for analysis, Female, N (%).

Legal Socialisation		Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
Teach authority (CM* age 5) (N.5,105)	Disagree	3,742 (82.60)	121 (82.88)	27 (90.00)	259 (77.54)	16 (66.67)	29 (70.73)
	Agree	788 (17.40)	25 (17.12)	3 (10.00)	75 (22.46)	8 (33.33)	12 (29.27)
	Total	4,530 (100)	146 (100)	30 (100)	334 (100)	24 (100)	41 (100)
Police Cynicism (CM* age 16) (N.3,446)	No cynicism	1,953 (64.56)	85 (46.96)	14 (33.33)	80 (49.38)	6 (54.55)	14 (56.00)
	Cynicism	1,072 (35.44)	96 (53.04)	28 (66.67)	82 (50.62)	5 (45.45)	11 (44.00)
	Total	3,025 (100)	181 (100)	42 (100)	162 (100)	11 (100)	25 (100)
Wrong break the Law (CM* age 16) (N. 2,919)	True	1,310 (50.60)	53 (39.26)	18 (60.00)	67 (50.00)	5 (55.56)	8 (36.36)
	False 1	636 (24.57)	41 (30.37)	7 (23.33)	30 (22.39)	2 (22.22)	7 (31.82)
	False 2+	643 (24.84)	41 (30.37)	5 (16.67)	37 (27.61)	2 (22.22)	7 (31.82)

Legal Socialisation	Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
Total	2,589 (100)	135 (100)	30 (100)	134 (100)	9 (100)	22 (100)

Resist

In terms of the legal socialisation variables 82.60% of the parents of the *Resist* cohort disagreed with the statement that *Teach authority is not important,* very similar to the numbers, although it is not the highest across the categories. This category was the highest percentage for not being *Cynical* about the police (64.56%) more than 20% below the male figures. In terms of the variable used to assess whether the cohort member thought it was *Wrong to break the law* it shows 50% thought it was true for all three of the questions and then is evenly divided between those who thought either one or two or more were false.

Early Onset Limited

Nearly 83% of the female cohort's parents thought *Teaching authority* was important. Whilst the c.16-year-old cohort member was far more *Cynical* than the *Resist* category with 53.04% viewing the police *Cynically*, far higher than the males too. And more than 60% believed it was false that *Breaking the law* was wrong for one or two or more of the questions.

Early Onset Desist

The number of cohort parents who agreed that *Teaching authority* was not important falls to only 10% for this category. Alongside that this category has the highest proportion of those who are *Cynical* about the police at 66.67%, although also the highest proportion (60%) who answered true to all the questions about *Breaking the law*.

Late Onset Desist

This has the third lowest proportion of those whose parents disagree with the statement that *Teaching authority* is not important at age 5 (77.54%) behind *Persist* and *Late bloomers*. More are *Cynical* about the police at 50.62%, although still proportionally lower than

the other desist categories. They have a similar number to *Resist* who believe that it is *Wrong to break the law* in all circumstances (50%).

Persist

The parents of these cohort member have the highest percentage of those who believe that *Teach authority* is not important (66.67%). They are not as *Cynical* as most of the other offending categories but 45.45% have *Cynical* views and they are the second highest, after *Late onset desist*, for agreeing that it is *Wrong to break the law* to all three questions (55.56%).

Late Bloomer

This category has the second highest number of parents who believe that *Teaching authority* is not important (29.27%), after *Persist*. These cohort members are second after *Resist* for being *Cynical* of the police (44%). They have the lowest number who believe that it is true that *Breaking the law* is wrong for all three questions, at only 36.36%.

Multinomial Logistic Regression for Legal Socialisation

Turning now to the multinomial logistic regression analyses. Table 4.3 reports the multinomial logistic regression results for men, whilst Table 4.4. reports results for women. The reason the models were run in two parts is that they add to our understanding. Specifically, it helps to examine the interplay of the socialisation variables with indicators of the family setting and individual characteristics. While some of the socialisation indicators remain significant, others become insignificant, suggesting that they can fully be explained by the family setting or individual characteristics.

Males

Table 4.3. Legal Socialisation and Male Criminal Offending Behaviour Patterns regressed in models M4.1. and M4.2., RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001 (^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2
	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756
Teach authority (^Disgaree)										
Agree	1.06	0.99	**1.87****	**1.69+**	0.87	0.92	1.12	1.02	1.32	1.31
	0.68-1.49	0.69-1.42	**1.19-2.94**	**0.98-2.75**	0.69-1.32	0.62-1.36	0.45-2.76	0.47-2.56	0.56-2.91	0.52-2.84
Cynical view of Police (^No cynicism)										
Some Cynicism	1.94	1.14	1.30	1.46	0.88	**0.77+**	**0.44+**	**0.32+**	1.11	0.89
	0.77-1.99	0.67-1.89	0.70-2.39	0.71-3.02	0.63-1.21	**0.54**	**0.14-1.30**	**0.10-1.04**	0.49-2.47	0.35-2.25
More Cynicism	**2.12****	**1.90****	**2.42****	**3.03****	1.04	0.89	**1.86+**	1.53	1.19	1.21
	1.32-3.38	**1.15-3.15**	**1.34-4.39**	**1.51-6.10**	0.73-1.47	0.62-1.31	**0.82-4.26**	0.64-3.62	0.49-2.87	0.47-3.15
Lot Cynicism	**3.45*****	**2.84*****	**4.46*****	**5.40*****	1.3	1.17	1.37	1.04	1.01	1.32
	2.13-5.58	**1.67-4.82**	**2.46-8.10**	**2.66-10.92**	0.94-1.79	0.77-1.79	0.49-3.83	0.36-3.01	0.35-2.96	0.42-4.08
Wrong break the Law (^True)										
False 1	1.02	0.99	0.82	0.68	1.07	1.05	1.15	1.26	1.37	1.11
	0.79-1.58	0.61-1.61	0.55-1.25	0.35-1.27	0.75-1.52	0.82-1.53	0.46-2.87	0.46-3.47	0.57-3.32	0.67-2.31
False 2+	1.3	1.22	1.10	1.07	1.22	1.14	1.02	1.22	1.26	1.02
	0.89-1.99	0.76-1.97	0.65-1.87	0.59-1.95	0.88-1.69	0.76-1.65	0.42-2.48	0.46-3.21	0.52-3.04	0.59-2.86
Smoking (^Non Smoker)										
Stopped Pre or During Pregnancy		1.43		1.29		1.27		0.92		1.15
		0.84-2.33		0.67-2.49		0.88-1.87		0.51-2.12		0.43-2.13
Smoked throughout 1-4		**1.66****		**1.98****		**1.51****		1.22		1.22
		1.12-2.46		**1.22-3.22**		**1.11-2.06**		0.50-2.39		0.69-2.48
Alcohol Pregnancy (^No)										

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2
	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756
Once a week		0.98		1.07		1.12		**2.75****		0.97
		0.67-1.41		0.68-1.65		0.91-1.49		**1.25-6.08**		0.51-1.86
2+ Times a Week		1.73		1.08		**1.63+**		1.08		**3.85***
		0.81-3.72		0.35-3.29		**0.85-3.14**		0.12-9.65		**1.18-12.64**
Conduct Rutter Score										
Every unit = less normal behaviour		**1.10+**		**1.10+**		0.99		**1.24****		0.98
		1.02-1.19		**0.99-1.23**		0.94-1.07		**1.06-1.46**		0.81-1.17
Hyperactive Rutter Score										
Every unit = less normal behaviour		1.02		**1.11+**		**1.15*****		1.02		1.12
		0.93-1.15		**0.98-1.25**		**1.06-1.24**		0.85-1.23		0.94-1.38
Mother's Malaise (^Normal)										
Moderate Behaviour Problem		0.90		0.66		1.05		**1.93+**		0.55
		0.51-1.59		0.31-1.40		0.73-1.51		**0.8-4.49**		0.13-2.41
Severe Behaviour Problem		2.12		1.27		0.76		1.34		1.26
		0.96-1.51		0.45-3.63		0.54-2.12		0.28-6.46		0.15-4.83
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.		0.91		1.01		0.82		0.59		0.46
		0.56-1.64		0.49-2.06		0.65-1.31		0.23-1.51		0.35-2.19
Intermediate Occupations		0.79		**0.56+**		1.35		0.24		0.92
		0.52-1.18		**0.34-1.03**		0.81-1.38		0.03-1.59		0.42-2.01
Other		1.24		1.51		1.35		0.58		1.52
		0.44-3.47		0.66-4.70		0.66-2.01		0.15-4.02		0.3-4.66
Parents Education (^No qual. & other)										
Vocat. Qual.,O Level, SRN & C of E		0.90		0.86		0.88		0.59		**2.25+**
		0.59-1.35		0.52-1.41		0.61-1.16		0.29-1.3		**0.85-5.92**

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M4.1	**M4.2**	**M4.1**	**M4.2**	**M4.1**	**M4.2**	**M4.1**	**M4.2**	**M4.1**	**M4.2**
	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756	N. 2,016	N 1,756
A Level or Equivalent		1.10		0.76		0.76		0.18		1.61
		0.58-12.04		0.33-1.78		0.47-1.22		0.02-1.71		0.36-6.95
Degree +		**0.58+**		**0.42****		**0.61+**		0.57		2.04
		0.28-0.85		**0.17-0.81**		**0.41-1.08**		0.13-1.43		0.60-6.95

Early Onset Limited

The views of the males towards police, in terms of viewing police cynically, show significant associations and increased risk in this group, that was for being *more Cynical* for both models M4.1 (RRR=2.12, p<0.01 level) and M4.2 (RRR=1.90, p<0.01 level). The more cynical they are the greater the effect and the significance, a *Lot of cynicism* was RRR=3.45, p<0.001 level in M4.1 and then in M4.2, RRR=2.84 at the p<0.001 level as well. There appears to be an interaction here with the scale of RRR changing after controlling for family setting. The coefficients are large and appear to demonstrate a big impact.

For the variables in M4.2 the *Mother smoking during pregnancy* was also a risk factor for being in the group (RRR=1.66 p<0.01 level). In terms of psychological characteristics performing outside behavioural norms as assessed by the *Conduct Rutter* scores was significant but only at p<0.1 level (RRR=1.10) whilst *parents* with a *Degree* + was inversely related to being in this group (RRR=0.58, p<0.1 level).

Early Onset Desist

Parents agreeing that *Teaching authority* is *not important* is a significant risk for M4.1 model (RRR=1.87, p<0.01 level) but reduces in significance in M4.2 (RRR=1.69, p<0.1 level). Again, as per the *Early onset limited* category, *Cynicism* strongly and significantly increases the risk of being in this group for both models with the scale and significance holding across them. With *More Cynicism* the risk increases from M4.1. (RRR=2.42, p<0.01 level) to M4.2 (RRR=3.03, p<0.01 level) as it does with a *Lot of Cynicism* from M4.1. (RRR=4.46, p<0.001 level) to M4.2 (RRR=5.40, p<0.001 level). *Wrong to break the law* is not a significant factor.

Mothers who were *Smoking throughout pregnancy* is a strong risk for presence in this category as compared to being a resistor (RRR=1.98, p<0.01 level). Unlike alcohol that appears to not be a factor. Having a higher level of *non-normal behaviour* on both the *Conduct* and *Hyperactive Rutter* index also gives you an increased risk of being on this trajectory albeit the strength of the association is small and only at the p<0.1 level of significance (Conduct – RRR=1.10, p<0.1 and Hyperactive – RRR=1.11, p<0.1).

For the parental setting in social economic status there was only a significant reduced risk with those who were in *Intermediate Occupations,* but the association is very weakly significant (RRR=0.56, p<0.1) whilst there is a stronger positive association with a *Parent having a degree*, the risk of being in the group is reduced (RRR=0.42, p<0.01).

Late Onset Desist

Only having some degree of *Cynicism* is weakly significant for reducing the risk of being in this category (RRR=0.77, p<0.1) but there are no other effects from the other legal socialisation variables.

Again, as with the other previous two categories, *Smoking throughout pregnancy* shows a strong increased risk of being in this category. Whilst in the *Hyperactive Rutter* score the *Late Onset Desist* category has a significant risk association with RRR=1.14 (p<0.01 level). Whilst alcohol is shown to increase the risk when those mothers drank more than *2 times a week,* but it is only weakly significant (RRR=1.63, p<0.1).

High levels of *Hyperactivity problems are* a significant risk factor for being in this category (RRR=1.15, p<0.001), while early *Conduct* problems are not a significant predictor. Otherwise only a parent with a *Degree or more* had an impact of the other variables and it decreased the likelihood of being in the category but with only weak significance (RRR=0.61, p<0.1).

Persist

Of the legal socialisation variables only having some or more *Cynicism* had an effect, and these were all weakly significant, but the direction of the effect was different. Having *some Cynicism* reduced the likelihood of being in the *Persist* category, in both models, M4.1 RRR=0.44 (p<0.1) and for M4.2, RRR=0.32 (p<0.1), whilst having *more Cynicism* increased the risk of being in the category (RRR=1.86, p<0.1).

Mothers who *Smoked throughout pregnancy* were not a risk but those who *drank once a week* were for increasing the risk of being in this category (RRR=2.75, p<0.01). Every unit increase and therefore having *less normal behaviour* on the *Conduct* score significantly (RRR=1.24, p<0.01). Whilst a *Mother* who has *moderate behaviour problems* is also a risk factor for this trajectory, albeit weakly significant (RRR=1.93, p<0.1).

Late Bloomer

None of the legal socialisation variables are significant in either model. The first factor that is significant is *alcohol in pregnancy* in M4.2. A *Mother* who drank *more than twice a week* increased the risk of the cohort member bring in this category and it is a significant association

(RRR=3.85 $p<0.05$ level). The only other factor that had a weak association was the *Vocational qualification* category that increased the risk of being in the category but only at the $p<0.1$ level (RRR=1.25, $p<0.1$ level).

Female

Table 4.4. Legal Socialisation and Female Criminal Offending Behaviour Patterns regressed in models M4.1. and M4.2., RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001 (^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M4.1	**M4.2**	**M4.1**	**M4.2**	**M4.1**	**M4.2**	**M4.1**	**M4.2**	**M4.1**	**M4.2**
	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396
Teach authority (^Disgaree)										
Agree	1.03	1.03	0.64	0.57	**1.57***	**1.49+**	1.74	1.78	1.34	1.13
	0.73-1.68	0.68-1.57	0.64-3.16	0.12-2.97	**1.02-2.41**	**0.93-1.68**	0.34-8.77	0.29-10.7	0.44-4.00	0.25-3.4
Cynical view of Police (^No cynicism)										
Some Cynicism	1.30	1.44	0.37	0.36	1.00	1.17	**5.59+**	4.93	2.14	2.36
	0.77-1.99	0.84-2.45	0.07-1.85	0.72-1.89	0.61-1.64	0.95-1.84	**0.65-4.99**	0.45-53.4	0.63-2.97	0.45-12.36
More Cynicism	**1.69+**	1.37	**2.36+**	1.48	1.36	1.41	3.08	3.55	**3.71***	3.31
	0.95-2.66	0.77-2.44	**0.84-6.68**	0.78-3.82	0.82-2.24	0.78-3.82	0.9-4.15	0.26-48.3	**0.99-4.15**	0.63-17.4
Lot Cynicism	**3.20*****	**2.67*****	**5.19*****	**3.12***	**2.02****	**2.03****	0.47	0.41	2.30	3.22
	1.94-5.29	**1.52-4.65**	**1.88-14.30**	**0.78-3.82**	**1.19-23.04**	**1.15-3.59**	0-6.7E+125	0-3.6E+178	0.45-3.74	0.52-20.05
Wrong break the Law (^True)										
False 1	**1.49+**	**1.53+**	0.78	0.79	1.02	1.08	0.42	0.01	1.90	1.59
	0.94-2.93	**0.89-2.62**	0.38-1.6	0.38-1.66	0.61-1.69	0.73-1.59	0-9.33E+91	0-1.5E+133	0.57-6.18	0.32-7.89
False 2+	**1.36+**	1.39	0.32	0.29	1.21	1.18	0.65	0.53	1.56	1.88
	0.83-2.19	0.82-2.34	0.59-1.56	0.22-1.42	0.78-1.82	0.71-1.96	0.08-5.76	0.05-5.48	0.52-3.5	0.46-7.63
Smoking (^Non Smoker)										
Stopped Pre or During Pregnancy		**1.54+**		1.54		1.16		9.23E		0.87
		0.91-2.63		0.55-3.87		0.74-1.84		0-6.3E+225		0.17-4.26

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2
	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396
Smoked throughout 1-4		**1.69****		**2.21+**		**1.39+**		2.59		1.57
		1.09-2.67		**1.05-4.63**		**0.90-2.59**		0.45-5.35		0.56-2.81
Alcohol Pregnancy (^No)										
Once a week		0.81		1.65		1.28		2.67		0.84
		0.59-1.20		0.58-2.25		0.86-1.92		0.45-15.77		0.35-2.26
2+ Times a Week		**0.36+**		2.48		1.11		1.16E		1.45E
		0.11-1.18		0.57-10.7		0.47-2.56		0-6.3E+225		0-9.5E+270
Conduct Rutter Score										
Every unit = less normal behaviour		**1.19*****		**1.29***		1.01		1.26		1.04
		1.07-1.33		**1.02-1.38**		0.89-1.1		0.79-2.00		0.73-1.47
Hyoeractive Rutter Score										
Every unit = less normal behaviour		1.00		1.15		**1.13+**		0.77		1.14
		0.88-1.37		0.95-1.39		**1.02-1.25**		0.43-1.34		0.82-1.59
Mother's Malaise (^Normal)										
Moderate Behaviour Problem		1.17		1.22		0.99		2.62		0.54
		0.66-2.07		0.38-3.86		0.62-1.65		0.21-31.55		0.65-4.38
Severe Behaviour Problem		1.04		1.41		1.55		**6.84+**		1.65E
		0.39-2.76		0-2.3E+225		0.61-2.53		**0.55-85.41**		1.7E+2.69
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.		**0.45+**		**2.90+**		0.89		1.84		**4.01***

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2	M4.1	M4.2
	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396	N. 2,730	N 2,396
		0.19-1.04		**0.49-3.89**		0.46-1.76		0.35-25.1		**1.02-15.67**
Intermediate Occupations		0.76		1.65		0.92		0.75		1.26
		0.52-1.11		0.51-2.43		0.65-1.39		0.07-8.05		0.33-4.72
Other		0.35		2.76		0.83		**11.33***		2.51
		0.82-1.48		0.67-5.59		0.46-2.22		**1.49-86.42**		0.29-21.98
Parents Education (^No qual. & other)										
Vocat. Qual.,O Level, SRN & C of E		**0.45+**		0.65		**0.69***		0.22		0.74
		0.19-1.04		0.33-1.26		**0.39-0.95**		0.02-2.08		0.23-2.39
A Level or Equivalent		0.77		0.49		0.65		4.13E		1.16
		0.43-1.47		0.12-2.09		0.36-1.26		0-4.3E+225		0.21-6.32
Degree +		0.35		**0.19+**		**0.57+**		0.66		0.22
		0.33-1.06		**0.03-1.2**		**0.38-1.2**		0.04-3.9		0.02-2.16

Early Onset Limited

For those in the *Early Onset Limited* category having a *Cynical* view of the police increases the risk of being in this category, and as the *Cynicism* increases so does the risk associated with it. For those who view the police with *More cynicism* there is a weakly significant association in M4.1 (RRR=1.69, p<0.1 level) but for those with a *Lot of cynicism* it reduces slightly from M4.1 (RRR=3.20, p<0.001 level) to M4.2 (RRR=2.67, p<0.001 level). Alongside this those who say it is *False* that it is *Wrong to break the law* are at greater risk of being in the group, but it is only weakly significant. For the answer *False 1* the effect increases as we move from M4.1 (RRR=1.49, p<0.1 level) to (RRR=1.53, p<0.1 level). And for those who answer that it is *False* that it is *Wrong to break the law* for *two* or more of the questions the risk is weakly significant but only in M4.2 (RRR=1.36, p<0.1 level).

Whilst for those who *Mother's Smoked throughout pregnancy* there is a risk, that increases in significance as the scale of smoking increases, whether they *Stopped before or during pregnancy* (RRR=1.54, p<0.1 level) or they *continued throughout* (RRR=1.69, p<0.01 level). Alcohol when ingested more than *two times a week* by the *Mother* in pregnancy has an inverse relationship with being in the group, although the significance levels are low (RRR=0.36, p<0.1 level).

For *Conduct Rutter score* there is a significant increased risk of being on this trajectory (RRR=1.90, p<0.001 level). And then a *Father* who is in the *Higher managerial* category (RRR =0.45, p<0.1 level) and with *Parents* who have *Vocational qualifications* or above (RRR=0.45, p<0.1 level) decrease the risk for the female of being in this group.

Early Onset Desist

As with the *Early onset limited* category, cynicism, increases the risk of the cohort member being in this category. As the level of cynicism increases so does the significance, for the *More cynical* category M4.1 has some significance (RRR=2.36, p<0.1 level) but for those with a *Lot of cynicism* it is highly significant M4.1 (RRR=5.19, p<0.001 level) and in M4.2 (RRR=3.12, p<0.05 level).

Smoking is also a risk factor but not a significant one (RRR=2.21, p<0.1 level) but every unit of *Less normal behaviour* on the *Conduct* index significantly increases the risk of being in this group (RRR=1.29, p<0.01 level). Alongside that those with *Father's* who categorise as

Higher managerial are at an increased risk of being in this trajectory but only at the p<0.1 level (RRR =2.90, p<0.1 level), whilst *Parents* who have a *Degree or more* means they are less likely to be in this group (RRR=0.19, p<0.1 level).

Late Onset Desist

Those whose cohort members whose *Parents* believe that *Teaching authority is not important* increase the risk of them being in this category, although the significance reduces from M4.1 (RRR=1.57, p<0.01 level) to M4.2 (RRR=1.49, p<0.1 level). The cohort member themselves having a *Lot of cynicism* is significantly linked to an increased risk of being in this category for both models, with the smallest of increases in the scale of that risk from M4.1 (RRR=2.02, p<0.01 level) to M4.2 (RRR=2.03, p<0.01 level).

A *Mother* who *Smoked throughout pregnancy* increased the risk of the child being in this category but only at the p<0.1 level of significance (RRR=1.39) and the same significance is found for the hyperactive index risk (RRR=1.13).

Having *Parents* who were in a *Vocational etc* (RRR=0.69, p<0.05 level) category or with a *Degree or more* (RRR=0.57, p<0.1 level) decreases the risk of being in this group, although the latter is weakly significant.

Persist

Only those with *Some cynicism* (RRR=5.59, p<0.1 level) has any significance from the legal socialisation variables to this group and even then, the effect does not hold into M4.2. A *Mother* who has *Severe behavioural problems* also has a large negative impact but again weakly significant (RRR=6.84, p<0.1 level). Those who *Father* is in the *other* group for SES are at a far greater risk of being on this trajectory and in this factors case it is significant (RRR=11.33, p<0.05 level).

Late Bloomer

Again, as in the *Persist category*, only *Cynicism* has any significant effect and it is only so in the M4.1 model, with *More cynicism* increasing the risk (RRR=3.71, p<0.05 level). The only other factor that has an impact in this is the *father's SES* which in the *Higher managerial etc* category which has a significant and negative effect on the chances of being a *Late bloomer* (RRR=4.01, p<0.05 level).

Discussion

In line with legal socialisation theory (Louin-Tapp, 1991), the findings suggest that the development of representations and attitudes towards the law, or more specifically pro-social beliefs are inversely related to offending behaviours. Delving into the associations between views of the law and the agents of the law and people's subsequent compliance with those laws is particularly helpful when there has been minimal research specifically in nationally representative cohorts. It is interesting to examine these associations during the adolescent years and the impact over the life course, as Piquero et al (2005, p. 267) said, 'since this is the developmental period during which individuals are beginning to form an adult-like understanding of society and its institutions". This study contributes to the literature by empirically testing what are the risks associated with a parent not believing that teaching authority is important, the cohort member holding cynical views of the police, the law and legitimacy of the law.

For both males and females, there is a higher risk of being in the three offending categories; *Early onset limited, Early onset desist,* and *Late onset desist* (albeit to a lesser extent for males in that latter category) versus being in the *Resist* group, for those who have cynical views of the agents of the law. The scale of the effects is particularly big for both males and females and demonstrates a relationship, as laid out in Figure 1, that there is an impact on the act, or decision to not act, in terms of legal socialisation for those who are in the *Desist* categories.

It is interesting to note the findings of Nivette et al. (2014) who also showed this 'age-curve' of legal cynicism is not static in adolescence but first increases before declining into early adulthood, but also that cynicism was used as a post offending justification for the act. This lack of 'law-abidingness'(Louin-Tapp, 1991, p. 335) as seen in the context of the cynicism makes intuitive sense, why would someone who views something questionably comply with it? Adolescents are arguably at a formative stage in their adherence to societal norms, as they move out of childhood into adulthood and this cynicism contributes to the cohort members offending prior to the age of 16, reproducing findings in other research (Cohn et al., 2010; Fagan & Tyler, 2005; Nivette et al., 2014).

Both genders appear to be equally impacted by their views of the legitimacy of the law and legal cynicism in the *desist* categories. Nivette et al. (2014), argued that you are

more likely to report it because, 'self-reported delinquency is the strongest predictor of legal cynicism…a post-hoc justification for wrongdoing'. Whether it is used as a means of justifying actions or of the determinant for juvenile offending will need more research. It does suggest that there is a need for policy for those who are agents of the law to build better relationships between the criminal justice system and young individuals because that may improve compliance with the law - something that feels timely, particularly for the current shape of the Metropolitan Police (BBC, 2023).

What is notable about these findings is that they are confined to the adolescent offender period, so that those cynical views from those years are not significant risk factors for later offending. Nivette et al. (2014) found that legal cynicism was stable across time, unlike perceptions of police legitimacy which wasn't, and more strongly linked with individual characteristics than with their experiences with the agents of the law. Based on that reasoning it might imply that cynicism is simply being used as a defence for offending by the adolescence but that later offending does not need such a 'post-hoc' excuse. Alternatively cynicism could be considered to play a role in the age-crime curve specified by Hirschi and Gottfredson (1983), where an individual's propensity to commit a crime typically begins around age 10 years, peaking at about 16 or 17, and that the attitude towards the agents of the law is a piece of that curve. In line with Nivette et al. (2014) the findings indicate that offending is related to the risk of cynical/ legitimate negative views only in adolescence because offending later is related to other factors. Of the variables used in the model, *cynical* views of police are a greater risk, over and above the other legal socialisation variables. Teasing out why that is and examining it further will help us understand the mechanisms that matter in this type of legal socialisation for offending and desistance. Further work could look to using structural equation modelling as the next step for the analysis, as that would better demonstrate the directional paths as indicated in Figure 1, page 37.

Those cohort member's parents who do not agree with the premise that *teaching authority* is important impacts to a far lesser extent, and for different categories for the genders; for men it is a risk factor for *Early onset desist* and for women *Late onset desist* but in both cases the introduction of additional variables indicating characteristics of the family setting reduces the strength of the association. The only legal socialisation variable that did not have significance in its association with offending was whether a cohort member believed it was *wrong to break the law*. Only among women there was a weak significant impact in the

Early onset desist group. These findings aren't in line with the previous work that identified that those who view breaking the law as permissible in particular circumstances are at greater risk of offending (Fine et al., 2018; Reisig et al., 2011). The lack of significant effect maybe a consequence of the impact of the *cynicism* variable, because as highlighted in the Kaiser and Reisig (2017, p. 135) research it was the legal cynicism that had a "direct significant effect in the within-individual offending model". It is useful to have established that there is a risk associated with the adolescent offending and their cynical views in a larger, representative study. Because as Piquero et al. (2005, p. 268) argued that would not necessarily be the case due to the lack of association with agents of the law and the general population, which would mean these types of cohort studies would offer a 'limited contribution'. It may be that the scale of this study does not pick up the nuances that small scale, offender focused studies can but it does manage to tease out that there are risks to adolescent onset offending.

Again, as with Chapter 4, the impact of *Maternal smoking* is marked, particularly for males across all but the *Late bloomer* groups yet only the *Early onset limited* at greater risk for females; this study is not the only one to find associations with smoking and antisocial behaviour (Connolly & Beaver, 2014; Gaysina et al., 2013; Wakschlag et al., 2006), nor the first with this dataset (Murray et al., 2010). I have already discussed the impact of smoking in previous chapters, but to reiterate smoking has been found to be predictive of criminal and antisocial behaviour in numerous studies (Ekblad, Korkeila, & Lehtonen, 2015; Gaysina et al., 2013; Murray, Irving, Farrington, Colman, & Bloxsom, 2010; Shelton, Collishaw, Rice, Harold, & Thapar, 2011; Wakschlag, Pickett, Kasza, & Loeber, 2006) and that appears to apply to this model too. The disparities between the impact on males and females is notable and is seen again with alcohol (below), and it raises the need for more understanding about the prenatal environment and the impact on the foetus for different genders, particularly as other work has provided evidence of sex-dependent prenatal associations in relation to non-offending outcomes (Sutherland & Brunwasser, 2018)

There is clear generalisation across models in terms of alcohol, the relationship was just as in the family socialisation model 4.2, as there is an impact on males in the *Persist* and the *Late bloomers* groups with a nearly more than threefold and fourfold risk, respectively, of being in that group versus the resist group. Again, this is just found for males and not females. Having said that there is slightly unexpected twist in that for the *Persist* group they are not at significant greater risk with more than moderate drinking whilst for the *Late bloomer* those

who mothers drank moderately show no greater risk. This seeming inconsistency would suggest that there is a need for more research to tease out the shape of the relationship further. This study reflects both the work of Kelly et al. (2012) whose research looking at the Millennium Cohort found no risk with drinking once or twice a week and also it reflects the work that has shown moderate drinking to have an impact on later conduct problems (Murray et al., 2015) and that was from work using the ALSPAC cohort.

As with the family socialisation there were risks associated with early behavioural problems as measured with the *Rutter index* (Murray et al., 2010). Those who were flagged on the *Conduct Rutter* score as having high behavioural problems were more likely to offend in all but the *Late onset desist* and *Late bloomer* groups for males. Although it was only the first two trajectories that saw a significant interaction for females – *Early onset limited,* and *Early onset desist*. Whilst for males those who have higher *Hyperactivity problems* are significantly more at risk of being in the *Early onset desist* and the *Late onset desist* groups. For females there was only a weak association between *Hyperactivity* and being in the *Late onset desist* group. The distinction between the impact of *Conduct* and *Hyperactivity problems* is interesting and this finding suggests that there are specific mechanisms within behaviours that are riskier for different types of offending paths. We need to understand what it is that encourages those who are antisocial to commit offences earlier and continue them whilst also looking at the nuances of hyperactivity versus conduct – it may well be that different types of offending are associated with different early behavioural problems. Certainly the findings suggest that there need to be policy interventions to impact behaviours in the early years to reduce early and longer-term propensity to offend (Sullivan & Newsome, 2015). For example, it would be interesting to understand if the effect of *early behavioural problems* is a more general effect across offender categories.

There was only a weak association with SES in this for males but that is not the case for females, where both *Persist* and *Late bloomer* showed significant risks with those fathers who were earning less. There must be some caution with the female results as the numbers of offenders in those categories is very small, but it does indicate that a reduction of resources has potentially a profound impact on long-term offending, and it would be worthwhile exploring this further with female studies, particularly as the difference with males is marked. For males it could well be that the *SES* effects are mediated through the socialisation experiences, and that both family setting and the individual characteristics play a part. As discussed previously in

earlier chapters, in the work of others (Laub & Sampson, 1993; Wikström et al., 2012) there has been an absence of evidence of a 'convincing' (Galloway & Skardhamar, 2009, p. 424) link with SES. What these findings suggest is that those drawn to crime in adulthood have other social bonds or traumatic life events that throw them onto a path that they might not otherwise have gone down. That is even though their very early behaviour might have predisposed them towards it, for example Moffit identified conduct problems as a significant predictor of offending (Moffitt et al., 1996; Moffitt et al., 2008; Moffitt et al., 2001). The results here for males do not align with the theories of resource social background that Moffitt suggested, where the suggestion is that increased resources provide buffers to mitigate criminal actions, but that may well be due to the choice of variables (Moffitt, 2006).

Female cohort members whose father falls into the *Higher managerial, admin or professional* have more impact on the trajectory categories and for the most part it is inverse but for *Late bloomers,* where it strongly increases the risk. It is hard to draw any conclusions from this, as it clearly needs further research, but it might suggest a driver of the female cohort offending is financial position – whilst Rodermond et al. (2015, p. 3) found in their review that theories of desistance were for the main applicable also to women they did "underscore the importance of considering how individual and social factors interact" and this was also a theme in the work of Cauffman et al. (2015, p. 265) "there is great need for a more nuanced understanding of the most common precursors to persistent female offending".

In terms of education, however, there is an inverse relationship between males' risk of being in the *Early onset limited*, the *Early onset desist,* and the *Late onset desist* (albeit a weaker association for the latter) with parent's who have a degree or more. There is weaker relationship for females with parents' qualifications, but the same inverse affect is seen with a *Degree* and in the case of *Vocational qualification* etc the impact is significantly inverse. A association with family educational attainment and offending was discovered by Galloway and Skardhamar (2009, p. 419) who posited, 'We can then conclude that family academic resources seem to be more important than monetary resources' and it appears that is also the case in this study. Although there is a less positive relationship between *Late bloomer* males and parents have higher qualifications, only in the case of the vocational etc factors is it weakly significant, but academic attainment in this case increases rather than reduces risk. Broadly the evidence is supportive of the assumption that parent's educational attainment is associated with a reduced risk of offending and that association is stronger for offending in adolescence.

There are limitations to this study. Caution must be used with the strength of the associations that are seen here. The findings for females are impacted by the small scale of the latter two offending groups, P*ersist* and *Late Bloomer* and that impacts the ability to read the findings without concerns. As with any study there are limits to abilities to understand what might cause a particular pattern of behaviour and whilst there are some moderate to strong effects with the added potency of the measures being over time and that they were prior to the behaviour we are trying to assess. That said, however, it is best to be cautious about assuming any causal relationships.

As with any cohort study data collection methods impact and as this is generally self-report, particularly the criminal outcome, and there is the possibility that there is under-reporting (Kirk, 2006), although Thornberry and Krohn (2003, p. 53) discuss that with self-report for conviction data "generally high level of concordance…..When convictions are examined, even higher concordance rates are reported" (Blackmore, 1974; and Farrington, 1973). Self-report data is always subject to bias and asking views during a teacher strike that cause a large amount of missingness in the data is clearly problematic. As with all academic work, replicating it and comparing it is best practice.

It is important to underscore what this chapter does not say about legal socialisation and the constraints placed on the work by the choice of factors used. First, although this work uses a measure of teaching authority, it is certainly only a snapshot of the family's views of authority and arguably not a robust measure because it is time and parent limited, without reconfirmation of the views or indeed of the collective parent's views, so it does not elaborate on the underlying family views of the criminal justice system. There is no measure here of the associations, if any, of the family with criminal justice. It would be useful for future work to consider alternative methods of understanding the characterisation of legal socialisation from the data set and how they might impact upon criminal behaviour. And given the findings here, it is important for further work and other researchers to examine these unexpected and interesting relationships. That said, however, cynicism and legitimacy of the law, legal socialisation, has distinct impacts on involvement in offending specifically on those who are involved in early years offending and then desist.

Chapter Five

Socialisation Interplay Theory operationalized and examined.

What's to come in this chapter:

This chapter uses Socialisation Interplay Theory (SIT), specifically developed for this project, to try and understand the influence on the shape of offending paths. In the previous chapters we have seen support of the hypothesise that both family socialisation and legal socialisation would impact desistance, we have also seen the gendered nature of desistance, now we amalgamate them to understand how they interact.

Overview

This chapter provides a synthesis of previous research into family socialisation and legal socialization, uniquely drawing together the strands to try and understand the influence on the shape of offending paths. Using Socialisation Interplay Theory (SIT), specifically developed for this project, allowing us to understand why someone might desist in committing offences, exploring the direct influence of the different aspects of socialisation on the choice to commit an act of crime whilst controlling for variables that are believed to influence this association.

As I explained in the introduction SIT draws heavily on an interactionist view of human action, which assumes that behaviour is a function of the person and the environment. What distinguishes SIT from past work is the inclusion of elements, that arguably have been overlooked before, such as legal socialisation as part of the interaction and their impact on offending acts. The key elements of the SIT model, that I laid out, are the individual, the setting, legal socialisation and the act and it is argued that these are critical factors in the decision to desist or not from offending. The model presented here, presents a unique perspective and provides "a more complete and comprehensive knowledge base of delinquency career characteristics..." (Welsh & Loeber, 2013, p. 80) because it creates a more holistic look at the cohort and their early framework.

The first hypothesis was that offending behaviour's vary significantly with different levels of family interactions, whilst controlling for child and parent/household predictors, such as social economic status and parental education. That positive family and parental interaction are broadly understood to be beneficial for behavioural outcomes, that they have an inverse impact on offending. And that the opposite is true that with less family interaction, reduced father involvement, mothers who drank alcohol and/or smoked in pregnancy (a negative interaction) and a lack of parental cognitive stimulation will increase the likelihood that the cohort member will have offended, and the duration of their offending will be longer and some of those impacts were shown in the previous chapters. That family interaction includes the impact of having a greater number of siblings which it is hypothesized would have an increased risk of offending.

Secondly it is hypothesized that legal socialisation that those who have greater degree of cynicism towards the law and its agents will be more likely to have a conviction and will also have more convictions, whilst those who have a greater degree of faith in the legal system will

be expected to not offend. It is anticipated that those who have greater degree of cynicism towards the law and its agents will be more likely to have offended and will also persist offending, whilst those who have a greater degree of faith in the legal system will be expected to desist or resist criminal action. And alongside that I lastly hypothesise that there are gender specific pathways. Separating out the work by gender is useful to help shine a light on our understanding of the gendered nature of desistance and unusually here the fullness of the data, as opposed to other work (McConaghy & Levy, 2015), permits that. It has been shown that male offending will be higher but that there are different influences on men and women and I imaging that will continue in this model.

There are few works that consider prenatal influences and they are part of the early characteristics of the setting which impacts the cohort members outcomes. In the SIT model these refer to the setting for the child, in particular early child setting (sibling and parent interaction) and family situation (economic and social) and the effect on the continuum of convictions from adolescent through adulthood, so this work will add to our understanding by exploring what impact these influences have on movement in and out of offending, desistance.

Results

Multinomial Logistic Regression for Socialisation interplay theory

As the descriptive results were discussed in the previous chapters, we now turn to the regression results for the multinomial logistic regression analyses, for this chapter those variables used are those that were tested in the previous two chapters but now they are amalgamated into the SIT framework. Table 5.1 reports the multinomial logistic regression results for men, whilst Table 5.2 reports results for women. In describing models 5.1 and M5.2, just as in the previous chapters, I have run the unadjusted baseline model (M5.1) and then the adjusted (M5.2) model. That baseline model 1 assesses the role of socialisation indicators and then the adjusted model 2 controls for family setting and individual characteristics. This manner of model means we can understand in a more fulsome manner the impact of the different variables, as we found in the previous chapters.

Using Socialisation Interplay Theory (SIT), specifically developed for this project, allows us to understand why someone might desist or persist in committing offences, exploring the direct influence of the different aspects of socialisation on the choice to commit an act of crime. This study contributes to the literature by empirically testing what are the risks

associated with early family life and the cynical views of the police, the law and legitimacy of the law on those who offend. Looking at the offending patterns, I will highlight what risks are associated with each category of offending and how it impacts the males and females within each group and then discuss them further on.

Overall, each path on the offending behaviours pattern has specific risks, some that overlap but there are factors that impact males and females and the different offending paths. Within socialisation interplay theory (SIT), as hypothesis one and two suggested, family, and legal socialisation would influence all offending patterns and that there will be gender specific influences, as suggested in hypothesis 3.

To test the possibility that there may be a gendered effect, a further multinomial logistic model was estimated with gender included but it did not change coefficients noticeably, this was followed by a Wald test, which tests the null hypothesis that a set of parameters is equal to some value (Fox, 1997), and that produced a chi-squared value of 152 for the gender variable (for females), with 5 degrees of freedom and it was significant indicating that that the coefficients are not simultaneously equal to zero and it is important to have this variable in the modelling. Then I also used a marginal effects test to measure the impact that a unit change in gender has on the outcome variable while all other variables are held constant.

Table 5.1 Marginal effects of gender from multiple regression analysis

Predictive Margins N 6,113	Resist	Early Onset Limited	Early Onset Desist	Late Onset Desist	Persist	Late Bloomer
Male (0)						
Margin	.0796576***	.0698363***	.0464789***	.1371735***	.0192***	.0176536***
Std. Error	.0128697	.0072003	.0061005	.0099305	.0041126	.0037725
95% Conf. Interval	.684433 - .7348818	.055724 - .0839486	.0345222 -.0584357	.11771 -.1566369	.0111394 -.0272606	.0102595 -.0250476
Female (1)						
Margin	.893274***	.0464422***	.0095781***	.10459408***	.0005654+	.0041994**
Std. Error	.0075447	.0052339	.0023798	.0051163	.0005649	.0015862
95% Conf. Interval	.8784866 -.9080614	.036184 - .0567005	.0049137 -.0142424	.35913 -.0559686	-.000541 -.0016727	.0010905 -.0073084

Looking at the results, you can see that, on an all-other things equal basis, male individuals are more likely to be an offender, the only category that females are more is in the resist category (e.g. for resist they are nearly 8% as opposed to nearly 9% for females). They are more likely to be *Late Onset Desist* (14% to 10.4%) and about half as likely to say they are in

excellent health (12.3% versus 24.3%). According to the model, on an all-other things being equal basis, almost 30% of males are in the offending categories, compared to less than 16.5% of females.

Males

Table 5.2. Socialisation interplay theory and Male Criminal Offending Behaviour Patterns regressed in models M5.1 and M5.2, RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001.(^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2
	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113
Number Younger Siblings (^None)										
1	1.19	1.16	1.27	1.25	**1.26***	**1.22+**	**1.54+**	1.43	**1.42+**	1.38
	0.94-1.95	0.88-1.53	0.97-2.34	0.88-1.77	**1.03-1.41**	**0.96-1.57**	**0.76-1.79**	0.81-2.52	**0.94-2.14**	0.83-2.29
2++	1.45	1.37	**1.62+**	1.52	**1.87*****	**1.78****	**2.86****	**2.53***	1.91	1.8
	0.68-2.61	0.82-2.31	**0.89-3.96**	0.80-2.91	**1.23-2.11**	**1.18-12.69**	**0.73-3.11**	**1.09-5.85**	0.9-3.58	0.73-34.49
Number Older Siblings (^None)										
1	1.17	1.19	1.27	1.1	**1.18+**	**1.18+**	1.13	1.31	1.32	1.34
	0.77-1.74	0.87-1.63	0.57-1.49	0.72-1.66	**0.99-1.39**	**0.92-1.57**	0.58-1.58	0.57-2.37	0.85-2.01	0.76-2.38
2++	**1.38+**	**1.38+**	**1.62+**	1.21	**1.35***	**1.38+**	**1.82+**	**1.85+**	**1.69+**	**1.77+**
	0.85-2.23	**0.93-2.03**	**0.44-1.58**	0.72-2.02	**1.17-1.76**	**0.97-1.97**	**1.01-2.98**	**0.95-3.99**	**1.05-2.9**	**0.85-3.62**
Who read to the CM most (^Mother)										
Father	1.02	1.06	0.81	0.83	1.06	1.08	0.79	0.82	1.11	1.11
	0.7-1.66	0.75-1.49	0.3-1.03	0.51-1.34	0.87-1.26	0.83-1.47	0.67-1.86	0.35-1.98	0.59-1.59	0.61-2.05
Sibling	1.03	0.97	1.07	1.12	0.99	0.98	1.42	1.22	0.95	0.84
	0.64-1.71	0.63-1.40	0.67-2.47	0.55-1.62	1.02-1.56	0.68-1.42	0.95-2.81	0.57-2.65	0.59-1.84	0.39-1.81
Other Adult/ Nobody	**1.39+**	1.21	1.18	1.02	1.26	1.27	1.56	1.29	1.55	1.33
	0.92-2.00	0.82-1.78	0.68-2.37	0.59-1.74	1.06-1.84	0.89-1.82	0.76-2.89	0.55-2.99	1.08-3.27	0.63-2.83
Who was with the CM after school (^Mother)										
Father	1.18	1.12	1.38	1.31	1.07	1	1.12	1.02	1.11	1.04
	0.85-2.14	0.77-1.62	1.2-3.59	0.82-2.10	0.84-1.33	0.69-1.45	0.84-2.56	0.45-2.31	0.51-2.41	0.47-2.32

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2
	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113
Older Sibling	0.94	0.93	1.09	1.09	0.99	0.98	0.83	0.8	1.22	1.21
	0.44-1.31	0.64-1.35	0.68-2.32	0.69-1.74	0.94-1.44	0.68-1.42	0.56-1.78	0.35-1.85	0.63-2.30	0.63-2.34
Other Adult/ Nobody	1.14	1.14	1.33	1.36	1.27	1.27	1.56	1.54	**1.71+**	**1.71+**
	0.53-1.5	0.79-1.66	0.71-2.47	0.84-2.22	0.88-1.39	0.89-1.82	0.78-2.53	0.72-3.31	**1.17-3.18**	**0.87-3.73**
Family time spent together										
Every unit = less time together	**1.04+**	1.02	1.05	1.03	**1.04+**	1.02	1.06	1.02	**1.09+**	1.07
	0.98-1.11	0.98-1.08	0.97-1.13	0.96-1.12	**1-1.06**	0.97-1.07	0.99-1.14	0.89-1.16	**0.96-1.1**	0.95-1.19
Teach authority (^Disagree)										
Agree	1.01	0.97	1.26	1.18	0.99	0.94	1.04	0.96	1.09	1.03
	0.73-1.68	0.73-1.27	0.64-3.16	0.89-1.72	1.02-2.41	0.97-1.07	0.34-8.77	0.52-1.77	0.64-1.83	0.61-1.76
Cynical view of Police (^No cynicism)										
Some Cynicism	**1.61****	**1.56****	**2.29*****	**2.23****	**1.25+**	1.02	1.31	1.25	1.22	1.19
	0.77-1.99	**1.12-2.19**	**0.07-1.85**	**1.36-3.66**	**0.61-1.64**	0.96-1.45	0.65-4.99	0.56-2.68	0.63-2.97	0.65-2.19
More Cynicism	**1.48***	**1.50***	**2.16****	**2.31****	0.98	0.98	**2.07***	**2.23***	0.82	0.87
	0.95-2.66	**1.02-2.22**	**0.84-6.68**	**1.35-3.95**	0.82-2.24	0.67-1.42	**0.9-4.15**	**1.05-4.72**	0.38-1.78	0.40-1.89
Lot Cynicism	**2.19*****	**2.26*****	**4.42*****	**4.54*****	1.24	1.27	1.24	1.29	0.75	0.79
	1.94-5.29	**1.49-3.42**	**1.88-14.30**	**2.69-7.65**	0.86-1.79	0.89-1.82	0-6.7E+125	0.46-3.62	0.45-3.74	0.29-2.13
Wrong break the Law (^True)										
False 1	**1.49**	**1.19**	0.91	0.9	1.07	1.08	0.91	0.9	1.13	1.14
	0.94-2.93	**0.89-1.62**	0.38-1.6	0.57-1.43	0.82-1.40	0.73-1.59	0.42-1.92	0.52-2.19	0.62-2.04	0.62-2.08
False 2+	**1.46***	**1.48***	1.01	1.01	1.21	1.24	0.83	1.32	1.31	1.23
	0.83-2.19	**1.05-2.80**	0.59-1.56	0.61-1.65	0.78-1.82	0.91-1.68	0.34-2.02	0.76-2.29	0.66-2.63	0.64-2.63
Smoking (^Non Smoker)										
Stopped Pre or During Pregnancy		1.16		1.18		0.29		1.07		1.15

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2	M5.1	M5.2
	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113
		0.82-1.61		0.76-1.83		0.86-1.36		0.52-2.19		0.59-1.71
Smoked throughout 1-4		**1.38***		**1.46***		**1.45****		1.32		**1.53+**
		1.15-2.28		**1.04-2.04**		**1.12-1.86**		0.76-2.29		**0.92-2.55**
Alcohol Pregnancy (^No)										
Once a week		1.04		1.09		1.09		1.42		1.08
		0.81-1.34		0.77-1.53		0.86-1.36		0.84-2.39		0.69-3.32
2+ Times a Week		1.15		1.03		1.15		1.16		1.42
		0.67-1.95		0.43-2.45		0.70-1.90		0.31-4.37		0.61-3.32
Conduct Rutter Score										
Every unit = less normal behaviour		1.03		1.06		1.03		1.21		1.04
		0.95-1.11		0.96-1.47		0.97-1.10		0.61-2.34		0.92-1.17
Hyperactive Rutter Score										
Every unit = less normal behaviour		**1.07+**		**1.09+**		**1.19****		0.92		**1.14+**
		0.99-1.95		**0.97-1.25**		**1.05-1.14**		0.28-3.06		**0.99-1.32**
Mother's Malaise (^Normal)										
Moderate Behaviour Problem		0.94		0.85		1.03		1.21		0.86
		0.65-1.37		0.53-1.34		0.77-1.39		0.61-2.39		0.45-1.63
Severe Behaviour Problem		1.1		1		0.98		0.92		0.9
		0.68-1.78		0.49-2.02		0.63-1.54		0.29-3.05		0.35-2.34

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M5.1	**M5.2**	**M5.1**	**M5.2**	**M5.1**	**M5.2**	**M5.1**	**M5.2**	**M5.1**	**M5.2**
	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113	N. 6,199	N 6,113
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.		0.89		0.92		0.91		0.64		0.71
		0.59-1.35		0.53-1.61		0.64-1.29		0.20-2.00		0.29-1.72
Intermediate Occupations		0.92		0.87		1.02		0.86		0.94
		0.69-1.21		0.59-1.27		0.82-1.27		0.48-1.54		0.57-1.55
Other		1.13		1.19		1.02		1.01		1.01
		0.62-2.04		0.56-2.53		0.61-1.70		0.26-3.96		0.30-3.33
Parents Education (^No qual. & other)										
Vocat. Qual.,O Level, SRN & C of E		0.88		0.84		0.84		0.82		0.92
		0.68-1.15		0.59-1.2		0.65-1.07		0.47-1.44		0.55-1.52
A Level or Equivalent		0.89		0.71		0.76		0.51		0.83
		0.57-1.40		0.33-1.41		0.51-1.13		0.12-2.09		0.34-2.14
Degree +		**0.56****		**0.55***		**0.56****		0.53		0.66
		0.36-0.37		**0.29-1.00**		**0.38-0.81**		0.19-1.47		0.28-1.56

Early Onset Limited

Of the family socialisation variables only having *Two or more older siblings* is a risk factor for this trajectory, the significance is weak, but it holds through both model 5.1 (RRR=1.381, p<0.01) and 5.2 (RRR=1.38, p<0.1 level). Those who were read to by *Another adult or nobody* also has some negative interaction and increased risk but only in the initial model M5.1 (RRR=1.38, p<0.01), without the additional factors, and this also seen with *Family time* where there is an increased risk but again only in the baseline model 5.1 (RRR=1.04, p<0.1 level).

What stands out is the scale and the effect of the legal socialisation variable for those who view the *Police cynically*, which holds across the unadjusted and adjusted models. At each degree of *Cynicism, from little to a lot*, there is a large and significant increased risk of being in this category with a negative view of the police, whether that is if you have a *Little*, M5.2 (RRR=1.61, p<0.01 level), or indeed a *Lot of cynicism*, M5.2 (RRR=2.19, p<0.001 level). There is no impact from a *Parental view of teaching authority* but there is from those who believe it is okay to break the law in certain circumstances and again that holds across the models, M5.1 (RRR=1.46 p<0.05 level) and M5.2 (RRR=1.58, p<0.05 level). The scale of the coefficients actually increases with more variables in the model, which demonstrates the strength of the relationship.

As found in the previous chapters *Smoking throughout pregnancy*, is significantly associated with all the categories apart from *persist* and in the case of *Early onset limited* it increases the risk by RRR=1.38 (p<0.05 level). There are only two other variables that have significant risk impacts, the *Hyperactive Rutter score* and whilst the size of the effect is seemingly modest (RRR=1.07, p<0.1 level), as mentioned in other chapters, it will increase further along the continuous scale. Lastly those who have parents who have a *Degree +* decreases, there is an inverse relationship, with the risk of being on this offending path versus having *No qualifications* (RRR=0.56, p<0.01 level).

Early Onset Desist

In this trajectory the negative impact of having more than *two Younger siblings* is only seen in M5.1 (RRR=1.62, p<0.1 level) and whilst it is still an increased risk in M5.2 there isn't any significance. No other variable from the family socialisation group has any significant impact. In terms of legal socialisation there is a strong and significant effect across all the

categories of *cynicism* in both of the models; those with *Some cynicism* M5.1 (RRR=2.29, p<0.001 level) to a *lot of cynicism* M5.1 (RRR=4.42, p<0.001 level) and for M5.2 model - *Some cynicism* (RRR=2.23, p<0.01 level) to a *Lot of cynicism* (RRR=4.54, p<0.001 level), demonstrating a strong relationship.

Just as in *Early onset limited*, *smoking throughout pregnancy* is significantly associated and a positive risk factor for being in this category, as compared to being in the *Resist* category (RRR=1.46, p<0.05 level). Additionally having high levels of *Hyperactivity*, having a higher problem rating, on the *Hyperactive Rutter index* (RRR=1.09, p<0.1 level) increases the risk of being *Early onset desist*. There is also an association with parents who have a *Degree +* which reduces the likelihood of being in this category (RRR=0.55, p<0.05 level).

Late Onset Desist

Siblings both *Older and Younger* are a risk factor for being in this category, although the strength of the significance is greatest for those who have more than two younger siblings. Having *one Younger sibling* increases the risk in both the baseline and the adjusted model, M5.1 (RRR=1.26, p<0.05 level) to M5.2 (RRR=1.22, p<0.1 level), and having *two or more Younger siblings* increases the degree of risk even more in the unadjusted model, M5.1, RRR=1.87 (p<0.001 level), and in the adjusted model, M5.2 and RRR=1.78 (p<0.01 level). Whilst in terms of *Older siblings* having one has the same risk in terms of the scale and significance from M5.1 to M5.2 (RRR=1.18, p<0.1 level) but for having *two or more Older siblings* the scale of the significance reduces with the models from M5.1 (RRR=1.35, p<0.05 level) to M5.2 (RRR=1.53, p<0.1 level). In terms of the other family socialisation factors only less *Family time* spent together is very mildly significant and only in M5.1 (RRR =1.04, p<0.1 level), which would increase with each unit of family not spent together so whilst the scale is small the effect with each unit of reduced family time would be greater. Unlike the last two offending categories, there is only one weak significant interaction with the legal socialisation variable for *Cynicism* and only in model 5.1 for *Some cynicism* (RRR=1.25, p<0.1 level).

Those cohort members whose *Mothers Smoked throughout pregnancy* are at greater risk of being in this category, by RRR=1.45 1.45 (p<0.01 level). Alongside smoking those who have high levels of *Hyperactivity* problems are at a significantly higher risk, RRR=1.19 (p<0.01 level) – as before the scale of that risk increases with each unit of abnormality. Again, we see the negative association with parents who have a *Degree + or more* in terms of their

qualifications, it is a protective factor (RRR=1.56, p<0.01 level).

Persist

There are few variables that impact this category in either model but those that do are *Siblings, both younger and older* to different degrees of significance. In the initial model, M5.1 having *one younger sibling* is a risk factor, (RRR=1.54, p<0.1 level) but it does not hold in to M5.2, unlike having *more than two younger siblings* which does, at M5.1 it is RRR=2.86 (p<0.01 level) and in M5.2 it is RRR=2.53 (p<0.05 level). Having *more than two Older siblings* is also a risk for this persistent offending group albeit it does not get above the p<0.1 level for either M5.1 (RRR=1.82) or M5.2 (RRR=1.75).

Of the legal socialisation variables only having *Cynicism* towards the agents of the law is a significant risk factor and only those who have *More cynicism* which in both models reveals a significance at the p<0.01 level but with slightly different strengths, M5.1 it is RRR=2.07 which increased to RRR=2.23 in M5.2.

None of the other variables were significant in either model.

Late Bloomer

In terms of family socialisation a significant risk factor for this group is who was at *Home after school* with, for both models there is an association with *Another adult or indeed nobody* being present. It increases the likelihood of being in this category with both models showing the same effect size and significance (RRR=1.71, p<0.1 level). Alongside this the *Family time spent* variable, where each unit is less time together, has weak significance in the baseline model 5.1 (RRR=1.09, p<0.1 level).

Smoking is again a risk factor in this category with those whose mothers *Smoked throughout pregnancy* having an increased risk of being a *Late Bloomer* as opposed to a *resistor* although at p<0.1 level (RRR=1.53). Then the only other variable with a significant effect is the *Hyperactive Rutter score* which for each unit has an increased risk of being in this category at (RRR=1.14, p<0.1 level).

Female

Table 5.3. Socialisation interplay theory and Female Criminal Offending Behaviour Patterns regressed in models M5.1 and M5.2, RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001.(^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M5.1	M5.2	M7.1	M7.2	M7.1	M7.2	M7.1	M7.2	M7.1	M7.2
	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663
Number Younger Siblings (^None)										
1	1.11	1.14	**1.65+**	**1.64+**	1.06	1.06	1.19	1.25	1.03	1.04
	0.78-1.58	0.80-1.62	**0.86-3.15**	**0.85-3.15**	0.73-1.53	0.73-1.54	0.33-14.27	0.34-4.57	0.41-2.61	0.41-2.69
2++	**1.74***	**1.59+**	**2.17+**	1.93	1.49	1.39	-	-	**2.94+**	**2.88+**
	0.68-2.61	**0.89-2.83**	**0.78-6.05**	0.67-5.53	0.82-2.72	0.77-2.54	-	-	**0.9-9.57**	**0.86-9.61**
Number Older Siblings (^None)										
1	1.01	1.02	1.35	1.41	1.16	1.21	0.55	1.39	1.34	1.42
	0.67-1.48	0.67-1.60	0.64-2.84	0.67-2.96	0.77-1.73	0.81-1.82	0.31-5.53	0.31-6.18	0.49-3.64	0.51-3.94
2++	1.14	1.09	1.69	1.65	1.34	1.28	1.62	1.36	1.75	1.66
	0.69-1.87	0.65-1.81	0.44-1.58	0.71-3.81	0.81-2.19	0.76-2.16	0.29-8.84	0.99-9.30	0.59-5.19	0.51-5.47
Who read to the CM most (^Mother)										
Father	1.06	1.04	1.02	1.07	1.08	1.1	0.55	0.63	1.23	1.19
	0.69-1.48	0.67-1.61	0.45-2.35	0.46-2.51	0.71-1.66	0.71-1.70	7.9e-104-3.9e	2.6e-140-1.5e	0.28-3.72	0.38-3.79
Sibling	0.89	0.8	1.11	0.98	0.86	0.77	0.42	0.45	0.68	1.08
	0.54-1.47	0.48-1.35	0.48-2.53	0.42-2.28	0.51-1.46	0.44-1.3	4.9e-144-3.5e	4.8e-154-4.4e	0.16-2.85	0.31-3.72
Other Adult/ Nobody	0.99	0.88	1.46	1.19	1.09	0.95	1.66	1.64	1.31	1.37
	0.58-1.69	0.50-1.54	0.68-3.34	0.50-2.82	0.64-1.84	0.56-1.63	0.36-7.75	0.32-8.59	0.43-4.88	0.39-4.80
Who was with the CM after school (^Mother)										
Father	**1.54+**	**1.44+**	1.74	1.62	0.97	0.9	0.23	0.22	1.03	1.05
	0.96-2.44	**0.90-2.34**	0.81-3.75	0.75-3.52	0.56-1.66	0.51-1.58	2.6e-296-2.1e	2.6e-296-2.1e	0.86-1.24	0.28-3.86

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M5.1	M5.2	M7.1	M7.2	M7.1	M7.2	M7.1	M7.2	M7.1	M7.2
	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663
Older Sibling	**1.41+**	**1.44+**	1.29	1.32	0.97	0.97	1.05	1.11	0.69	0.72
	0.89-2.21	**0.91-2.29**	0.57-2.89	0.58-2.98	0.59-1.57	0.59-1.59	0.17-6.36	0.18-7.00	0.16-2.84	0.71-3.08
Other Adult/ Nobody	1.28	1.34	1.06	1.06	1.22	1.17	**2.62+**	2.13	1.31	1.38
	0.79-2.08	0.82-2.21	0.40-2.80	0.39-2.85	0.76-1.96	0.72-1.91	**0.75-9.16**	0.53-8.43	0.43-4.00	0.44-4.30
Family time spent together										
Every unit = less time together	**1.07***	**1.04+**	1.07	1.04	**1.06+**	1.02	1.12	1.06	1.03	1
	1.01-1.48	**0.98-1.12**	0.97-1.13	0.92-1.18	**0.99-1.14**	0.95-1.11	0.88-1.43	0.81-1.40	0.86-1.24	0.82-1.21
Teach authority (^Disgaree)										
Agree	1.06	1.01	0.92	0.87	1.28	1.22	1.11	0.76	1.11	0.95
	0.73-1.52	0.68-1.57	0.46-1.85	0.42-1.79	0.90-1.83	0.85-1.76	0.34-4.08	0.15-3.79	0.43-2.89	0.33-2.71
Cynical view of Police (^No cynicism)										
Some Cynicism	**1.67****	**1.61***	**1.97+**	**1.88+**	1.21	1.17	2.01	2.3	1.45	1.4
	0.77-1.99	**1.07-2.41**	**0.93-4.16**	**0.88-4.01**	0.82-1.77	0.79-1.74	0.52-7.79	0.50-10.6	0.56-3.74	0.53-3.66
More Cynicism	**1.43+**	**1.50+**	1.5	1.55	1.11	1.09	1.13	1.43	**2.45+**	**2.23+**
	0.91-2.31	**0.93-2.41**	0.64-3.49	0.66-3.64	0.69-1.75	0.68-1.75	0.19-6.65	0.21-9.66	**0.88-6.82**	**0.76-6.50**
Lot Cynicism	**2.76*****	**2.78*****	**2.96****	**3.04****	**1.60+**	**1.60+**	-	-	0.94	0.95
	1.94-5.29	**1.75-4.42**	**1.32-6.68**	**0.33-6.89**	**0.99-2.60**	**0.98-2.62**	-	-	0.19-4.59	0.19-4.71
Wrong break the Law (^True)										
False 1	**1.40+**	**1.44+**	0.88	0.89	1.09	1.12	0.44	0.48	1.30	1.44
	0.94-2.93	**0.96-2.16**	0.38-1.6	0.44-1.82	0.73-1.62	0.74-1.68	4.15e-81-4.72	9.61e-93-2.44	0.48-3.49	0.52-4.02
False 2+	**1.46+**	**1.48+**	0.74	0.73	1.24	1.26	0.64	0.71	1.29	1.42
	0.95-2.23	**0.96-2.23**	0.32-1.68	0.31-1.69	0.83-1.85	0.84-1.90	0.13-3.18	0.14-3.74	0.46-3.63	0.46-4.17
Smoking (^Non Smoker)										
Stopped Pre or During Pregnancy		1.28		1.37		1.22		0.15		1.06

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M5.1	M5.2	M7.1	M7.2	M7.1	M7.2	M7.1	M7.2	M7.1	M7.2
	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663
		0.68-1.30		0.60-3.13		0.79-1.91		5.2e-222-4.2e		0.31-3.59
Smoked throughout 1-4		**1.51***		**1.71+**		**1.45***		1.43		1.62
		1.05-2.18		**1.13-2.69**		**1.02-2.04**		0.40-5.14		0.66-3.98
Alcohol Pregnancy (^No)										
Once a week		0.95		1.13		1.12		1.51		0.99
		0.68-1.30		0.62-2.06		0.82-1.56		0.43-5.34		0.43-2.34
2+ Times a Week		0.69		1.21		1.09		-		-
		0.29-1.59		0.35-3.83		0.55-2.16		-		-
Conduct Rutter Score										
Every unit = less normal behaviour		**1.07+**		1.1		1.03		1.01		1.08
		0.98-1.17		0.96-1.27		0.94-1.24		0.69-1.48		0.87-1.32
Hyperactive Rutter Score										
Every unit = less normal behaviour		1.05		1.12		**1.12***		1.09		**1.23+**
		0.95-1.16		0.95-1.33		**1.01-1.24**		0.76-1.54		**0.97-1.56**
Mother's Malaise (^Normal)										
Moderate Behaviour Problem		1.02		1.05		1.02		0.94		0.93
		0.66-1.58		0.48-2.30		0.67-1.57		0.15-5.81		0.30-2.91
Severe Behaviour Problem		1.03		0.64		1.15		1.29		0.79

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	M5.1	M5.2	M7.1	M7.2	M7.1	M7.2	M7.1	M7.2	M7.1	M7.2
	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663	N. 5,764	N 5,663
		0.51-2.05		0.14-2.82		0.61-2.18		0.16-10.68		0.13-4.99
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.		0.71		1.28		0.82		1		1.29
		0.39-1.29		0.49-3.33		0.46-1.45		0.11-9.19		0.30-2.91
Intermediate Occupations		0.85		1.04		0.86		0.74		1.08
		0.58-1.23		0.51-2.12		0.61-1.29		0.28-4.34		0.42-2.82
Other		0.76		1.78		0.94		2.45		1.71
		0.32-1.77		0.64-4.92		0.45-1.96		0.44-13.7		0.41-7.17
Parents Education (^No qual. & other)										
Vocat. Qual.,O Level, SRN & C of E		0.83		0.76		**0.73+**		0.53		0.97
		0.59-1.18		0.40-1.44		**0.50-1.08**		0.13-2.25		0.38-2.49
A Level or Equivalent		0.76		0.57		0.68		-		0.98
		0.41-1.42		0.16-2.05		0.35-1.33		-		0.21-4.49
Degree +		0.68		0.33		0.68		0.56		0.63
		0.37-1.26		0.07-1.53		0.38-1.22		0.06-5.48		0.12-3.16

Early Onset Limited

Just as with the males, *More siblings* is a risk factor but unlike the males in the *Early onset limited* group it is having more than two *Younger siblings* that is a risk factor, although both the effect size and the significance weakens from M5.1 (RRR=1.74, p<0.05 level) to M5.2 (RRR=1.59, p<0.1 level). Additionally, there are negative impacts, within the family socialisation variables, from not having the *Mother present after school*. In the case of having a *Father present* it is weakly significant for both models at p<0.1 level and the strength of the association reduces slightly from M5.1, RRR=1.54, to M5.2, RRR=1.44. Not only is the *Father's presence* a risk for increasing the chance of being in this category but so is having an *Older sibling* at home, as opposed to a mother, and again at p<0.1 level but the effect size increases from M5.1, RRR=1.41, to M5.2, RRR=1.44. Lack of *Family time* is also a factor in increasing the chance of being in this group, versus being a resistor, every unit less of family time increases the impact by RRR=1.07 (p<0.05 level) for M5.1 and RRR=1.04 (p<0.1 level) which seems small but that would be seen with each unit of less time together.

For those who view the police with *Cynicism* there is a significant and positive association across the degrees of *Cynicism* – from *some* to a *lot* – and in both models. It is most significant with *some* - in M5.1, (RRR=1.67, p<0.001 level) and M5.2 (RRR =1.62, p<0.01 level) – but even more so when they have a *Lot of cynicism* in M5.1, (RRR=2.76, p<0.001 level) and M5.2 (RRR=2.78, p<0.01 level). Then the other legal socialisation variable that has a significant, at p<0.1 level, impact is that of those who believe it is *Okay to break the law* in certain circumstances. For those who do not support the premise that it is *Wrong to break* the law they are at greater risk, with those who are in the *False 1* category in M5.1 (RRR=1.40) and M5.2 (RRR=1.44) – whilst those in *False 2* the relative risk increases slightly M5.1 (RRR=1.46) and M5.2 (RRR=1.48).

As we did with males, we see that *Smoking throughout pregnancy* has a negative impact and increases the risk of being in this group as compared to being in the *Resist* group in the adjusted model, M5.2 (RRR=1.51, p<0.01 level). For *Conduct Rutter* there is a significant increased risk of being in this category (RRR=1.07, p<0.1

level) otherwise there are no other effects from the other variables in the model that are significant.

Early Onset Desist

In terms of the interactions with siblings, there is a significant risk from having both *one Younger sibling*, in M5.1 (RRR=1.65, p<0.1 level) and in M5.2 (RRR=1.65, p<0.1 level), and from more than *two Younger siblings*, although only in M5.1 was it significant (RRR=2.17, p<0.1 level). All the levels of *Cynicism* in the legal socialisation variable increase the chance of being in in this category, compared to being in *resist*, although only *some* and *a lot* are significant. Having *some Cynicism* increases the relative risk by RRR=1.97 in M5.1 (p<0.1 level) and RRR=1.88 in M5.2 (p<0.1 level) whilst for having a *Lot of cynicism* it increases in terms of the risk and significance levels, RRR=2.96 in M5.1 (p<0.01 level) and RRR=3.04 in M5.2 (p<0.01 level).

Just as for the males, the females are impacted by a mother who *Smoked throughout pregnancy* albeit at the p<0.1 level (RRR=1.71). None of the other variables were significant.

Late Onset Desist

Only *family time* of the family socialisation variables has any significance and then only at the p<0.1 level in M5.1 – for each unit less time together the RRR=1.06. Whilst in terms of legal socialisation only those who have a *Lot of cynicism* are at a greater significant risk and the degree of that association and the p level stay the same for both models (RRR=1.60, p<0.01 level).

As in the males and the other categories for female offending a *Mother* who *Smoked in pregnancy* increases the risk of being in this category (RRR=1.45, p<0.01 level). The cohort members abnormal behaviour as exemplified on the *Hyperactive Rutter index* is also significantly associated with being in this category, with every unit of behaviour that is abnormal increasing the chance by a factor of RRR=1.12 (p<0.01 level). The only category that has any significant associations with *Parent's education* is this one and whilst every level of increased educational attainment has an inverse relationship with the risk of being in this group, those whose parents have

Vocational qualifications etc (RRR=0.76, p<0.1 level) were at the threshold of significance.

Persist

In this category the only significant association was seen in M5.1 with *Other adult or nobody* being present at home (RRR=2.62, <0.01 level) but the effect did not hold in the adjusted model with additional variables. Indeed, the results are obscured, as the numbers of participants involved is far smaller in this category than the males.

Late Bloomer

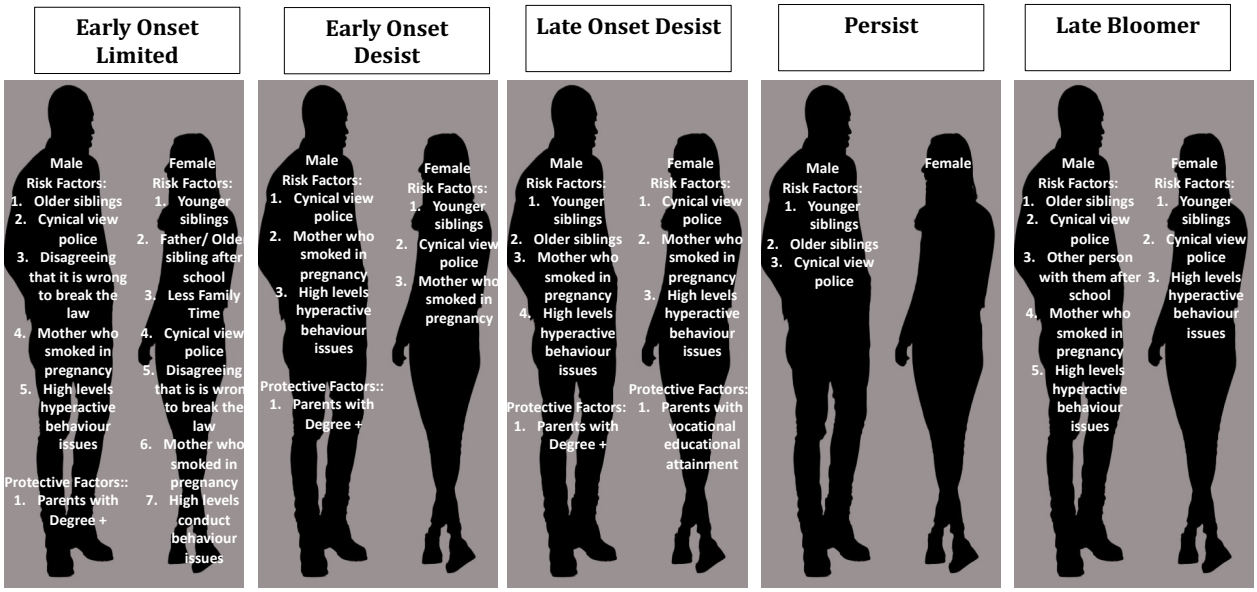
In terms of family effects, having more than *Two younger siblings* is negative and increases the chance of being in this category albeit at p<0.1 level for both M5.1, RRR=2.94, and for M5.2, RRR=2.88. And in terms of the legal socialisation variables, it is having *Some cynicism* that has a significant association with being a *Late bloomer,* again at the p<0.1 level for both models - M5.1, RRR=2.45, and for M5.2, RRR=2.23.

For the additional variables having high levels of hyperactivity problems on the *Hyperactive index* is linked to a greater risk of being in this group, compared with being in *resist,* the significance is weak at p<0.1 level but the effect is relatively robust at RRR=1.23 per unit of behaviour. No other variables reach the significance thresholds.

Discussion

As you can see in figure 3 there are gender differences, and some similarities, in the gendered nature of the trajectories which I discuss further in this chapter.

Figure 3. Male and Female Criminal Offender Patterns with the Risks/Protective factors from the SIT adjusted models, M5.2, with significance > + p<0.1



Early Onset Limited

The likelihood of a male being in the *Early onset limited*, those who offended from age 10 to 16, group is increased by several factors. *Older siblings* play their part, as does *having high levels of Hyperactivity problems.* What it seems is particularly important, however, is both *Cynicism* and believing that *Breaking the law (*in a variety of circumstances) is okay are associated with a greater chance of being this type of offender. It is interesting to note that this is the only group that the latter impacts, is that because they are more influenced by the values or is it that other factors become more mediating as they age?

But it is not only legal socialisation that impacts males it is also their *Mothers*, who if they *Smoked throughout pregnancy* (when compared with non-smokers) increases the risk, whilst parents who are educated to *Degree +* level or beyond provide a protective, positive, barrier to being in this category.

For females the risk factors of being in this category, this type of offender, are greater from a more varied array of factors, than males, in this socialisation interplay model. For women having more than *two Younger siblings* (unlike the male results) is associated with being in this group as opposed to never offending. Being looked after by their *Father* or their *Older sibling after school*, as opposed to their

Mother, and *Less family time* are also significant risks associated with being a member of this trajectory. Just as with males having a *Cynical* view of the agents of the law, the police, and believing that *Breaking the law* in certain circumstance is okay, from the legal socialisation variables, are also relevant and so is having a mother who smoked in pregnancy but additionally being scored as abnormal on the *Conduct Rutter index* is also a factor.

What is interesting is that whilst there are differences in the risk factors for males and females both have common influencing factors, *Cynicism, Law breaking* and *Mothers who smoked in pregnancy*. In terms of being cynical towards the law, it seems entirely intuitive that those who regard it with scepticism would not wish to follow it. The smoking factor replicates other work that found that 'maternal prenatal smoking is related to criminal and substance abuse outcomes in male and female off-spring' (Brennan et al., 2002). Those similarities aside though the influence for females of several early and legal socialisation factors points to a more complex and gendered approach is important for understanding transition in to, and out of, crime.

Early Onset Desist

For the males who fall into the category of *Early Onset Desist*, those offending between 10 and 30, are at a far greater risk if they view the law with *Cynicism*, that is irrespective of the degree of cynicism. Of the socialisation factors in the model that is the only one that is significant. Alongside cynicism both those whose *Mothers smoked throughout pregnancy*, and to a less significant degree those whose behaviour was abnormal on the *Hyperactive Rutter scale*, were also risks for being in this group and the only protective factor appears to be parents who have higher educational outcomes of a degree or more.

Interestingly women have a similar risk factor, in terms of being *Cynical* about the law as it increases the likelihood of them being in this group. This finding does suggest that the male and female results could lend themselves to potentially joint policy initiatives, there are individual patterns within the genders for their risks of being in an offending pathway. There were few other relationships with the

variables in this that reached a level of significance of note, *Younger siblings* and *Smoking in pregnancy* are positively but weakly associated.

Late Onset Desist

For males on *the Late Onset Desist* path, offending between age 17 and 30, *younger siblings* specifically pose an increased risk, *Older siblings* have an effect, but the levels of significance mean it is weaker, and it is particularly significant for having more than *two younger siblings*. There is no relationship between the legal socialisation variables and being on this path. In terms of the *Hyperactive Rutter*, abnormal scores on the index are associated with increased risk whilst we see again that the mother who *Smoked throughout pregnancy* has a strong impact in terms of increasing the likelihood of being in this group. A protective factor that decreases the risk is that the parents have *higher educational outcomes*, that relationship direction replicated in all the trajectories but the *Persist* and *Late bloomers* do not show that the relationship is statistically significant.

For females in the *Late Onset Desist* group there is a small but statistically insignificant risk for those who are very *Cynical,* and this path replicates the males with the impact of both *smoking in pregnancy* and the effect of being abnormally *Hyperactive* on the Rutter scale. This reflects work in other research – that it impacts both genders, although one particular study found that the cigarette smoke impacted females more than men, 'Orbitofrontal, middle frontal, and parahippocampal cortices were thinner in exposed, as compared with non-exposed, individuals; these differences were more pronounced in female adolescents.' (Toro et al., 2008).

Parent' educational attainment was also inversely related to being in this group, so those who had parents with *Vocational or equivalent qualifications* were less likely to be in the group, although it wasn't at a level that was significant.

Persist

For the males in the *Persist* offending group, those who offended from 10-34, in terms of the family socialisation variables only having a large sibship (a lot of siblings) had an impact but the degree of this association did not reach the threshold

for significance for *Older siblings* it did, however, reach it for having *Younger siblings*. The only legal socialisation factor to have impact was, again, *Cynicism* particularly significant was the category of having *More cynicism* rather than the other two which mirrored the effect direction but not the significance. And no other factors reached statistical significance.

For females the results are impacted by the small number of participants within this group, it is hard to read down the table without being concerned that the low numbers of participants aren't having a big effect. None of the variables have strong statistical inference and the only one that does in M5.2 is the *Other adult or nobody* being present after school.

Late Bloomer

Lastly this category, those who offended after age 30, the impact that was weakly significant for males was having more than *two Older siblings* and *Another adult or nobody* looking after them *After school*. This finding suggests that there needs to be more research to understand whether it is the *Other adult* or the *nobody* that plays a greater role, I would conjecture that it is the latter. Just as in the first three paths, here *Smoking in pregnancy* and demonstrating abnormal behaviour on the *Hyperactive Rutter index* are weakly significant and positively associated with being a *Late bloomer.*

For females the same interaction with having more than two *Younger siblings* and showing as abnormal on the *Hyperactive Rutter index* is found in the results but just as with the male *Late bloomer*, it is only weakly significant. Additionally, there is, again weakly, a significant relationship with *Cynicism* of agent of the law.

There is some suggestion that *Late Bloomers* aren't worthy of their own theory of why they become involved in offending because other theories answer to that (Beckley et al., 2016) but it appears that is a rather limiting. What is interesting about the findings here is that it is the early life that influences this path and teasing out why is important.

Socialisation interplay theory

The influence of both family and legal socialisation can be seen throughout

the offending patterns. Families, siblings and parents, play their part in the risks associated with offending. The impact of siblings is seen across all male trajectories and three of the four for females – *Early onset limited, Early onset desist and Late bloomer* – however, it is worth commenting on the weakness of the statistical association. There is a tentative link between the person who is at home after school and two female and one of the male offending paths, whether this is about the absence of someone who provides support and modelling behaviours, the *Other adult/ nobody* category or indeed *older sibling*. Or in the case of the father being at home, which was significant for females in the *Early onset limited,* the question is whether they were there out of choice or because of unfortunate circumstances, for example ill health or unemployment. There could thus be those cohort members who are at risk of what is called a 'double whammy' of difficult circumstances (Besemer & Farrington, 2012, p. 220; Dishion et al., 2004; Moffitt et al., 2001, p. 195). Whilst we do not know why the father was at home, and it was only weakly significant, there is work by Sinno and Killen (2009) that shows that children find unemployment less acceptable with fathers.

Looking at the legal socialisation effects, it certainly appears to make instinctive sense that someone who viewed the law cynically, whether that is seeing the agents of it (police) as unfair, the law itself as something disposable (cynical) and particularly individual laws as wrong, would show a lack of '(Louin-Tapp, 1991, p. 330). In Figure 1 on page 37, I laid out the suggestion that legal socialisation sat in between the family setting and the act itself, the scale of the coefficients in the at least three categories for males and the *Early Onset* groups for females *would* suggest that is an accurate representation and there is more to be explored about what the relationship looks like and how it impacts movement into and out of crime.

It is interesting that cynicism of the law is a risk factors across all offending types, apart for the *Late bloomer category among* males and *Persist* for females. As noted before the adolescent period is a formative stage, and there is substantial evidence for the age-crime curve in this work as in many others (Abeling-Judge, 2020; Blonigen, 2010; Hirschi & Gottfredson, 1983; Liu, 2014; Loeber et al., 2015; McVie, 2005; Moffitt et al., 1996; T. E. Moffitt, 1993; Moffitt, 2006; Sampson & Laub, 2005a; Shulman et al., 2013) . As T. E. Moffitt (1993, p. 675) states, the 'Actual rates

of illegal behavior soar so high during adolescence that participation in delinquency appears to be a normal part of teen life'. And from this study we can see that criminal conduct is clearly contributed to by the cohort members cynicism for the law, reproducing findings in others research (Cohn et al., 2010; Fagan & Tyler, 2005; Nivette et al., 2014).

Previously I touched on the findings by Nivette et al. (2014) that suggested that those who are more likely to report offending are more likely to view the law cynically but that establishing the direction of that relationship is difficult. Whether it is used as a means of justifying actions or of the determinant for juvenile offending will need more research. Another part of further research would be to explore further why females are more cynical but less likely to be offenders, and less likely to approve of breaking the law. Teasing out what is happening within those dynamics would be interesting.

In this research I can say that those in the *Early onset desist* group had responded before their second offending and so the view of the law and its agents came before that, suggesting that the views were influential, and that the direction was that legal socialisation played a role in the offending. Policy wise, and in the current circumstances, what this work shows is that those who are agents of the law must build better relationships to improve compliance with the law.

In terms of the results and what they show for the pathways suggested in Figure 1 is that of the setting variables, *Siblings* do impact risks of being in longer term offending for males but not females. *Smoking*, discussed below is also a part of the setting, as are qualifications which act as a protective feature. But there is no impact from teaching authority on the views of the law, that seems to not have any relationship on the act itself, that is mediated by other factors and the directional arrow there should be removed from the figure. Clearly there is a strength of relationship with legal socialisation on the decision to act too, that is robust and understanding what that means, the shape of the scale of that in more detail would be a worthwhile next step.

The prevalence and significance of smoking is not to be overlooked. It has an extraordinarily robust and strong effect on the first three male offending behaviour types, and there is a weak association for *late bloomers*, but no impact on *persisting*

offending. This is like the impact on females, where there is no effect on those in the *Persist* and *Late bloomer categories*. Whilst others have suggested that the links between offending behaviour and smoking are 'likely influenced by confounding factors' (Sellers, Warne, Rice, Langley, Barbara Maughan, et al., 2020) that, arguably, is not the case here because in all models I tested some confounders, for example the *Mother's malaise, Parents education* and the *Father's SES*. The model here replicates what I saw in the other chapters and this is not the only research to find significant impact of smoking on antisocial behaviour (Connolly & Beaver, 2014; Gaysina et al., 2013; Wakschlag et al., 2006), nor as explained previously the first with this dataset (Murray et al., 2010). As you can see in the appendices table the severe problems category of *Mother's Malaise* does have rather small 'n' but it does not appear to have impacted the analysis, but it might be worth new research using a different shaped variable, with simply normal and abnormal.

The process of foetal change by smoking is described by Toro et al (2008, p. 1019), 'Cigarette smoke inhaled by a pregnant woman affects the fetus in a number of ways, including the direct pharmacological effects of nicotine and the other chemicals it contains, hypoxia associated with increased levels of carboxyhemoglobin, as well as nicotine-induced constriction of the utero placental vessels and the associated decrease in the flow of oxygen and nutrients from the mother to the fetus' (Lambers and Clark, 1996; Grassiet al, 2000)'. It is especially important that this finding is evidenced from large population studies and replication in other cohort studies would be a very useful next step. From this work it would appear critical that when analysing offending mother's smoking must be a factor in any offending model.

The gender similarity here is striking, replicating analysis of early years behaviour which show no difference in gender (Melchior et al., 2015). There has, however, more inconsistency in other studies (Hutchinson et al., 2010) and there have been questions raised over the foetal adaptation for the different genders. For example Wertz (2015) suggests that there is a 70% genetic influence for antisocial behaviour for males, as compared with only 25% for girls. With smoking the evidence points to associations with later offending and this suggests that, alongside other work that has focused on health outcomes, the 'origins of adult disease are

often found among developmental and biological disruptions occurring during the early years of life.' (Shonkoff et al., 2009), the results here indicate a similar mechanism is at work and it would be worthwhile to explore further.

In terms of *alcohol* there is no significant impact on behaviours and that finding holds across the genders. That is a somewhat unexpected results, as there is considerable evidence that alcohol exposure in pregnancy leads to a spectrum of issues referred to under the phrase 'foetal alcohol spectrum disorders (FASDs)' (NHS, 2023). 'The neurocognitive deficits in fetal alcohol syndrome and fetal alcohol spectrum disorder are pervasive. They include hyperactivity, impulsivity, difficulties with planning and mental organisation, concrete thinking, visuospatial problems, lack of awareness of social cues, and difficulties understanding the consequences of their own behaviour' (Mukherjee et al., 2005, p. 375). Unlike work by Murray et al. (2015) in the ALSPAC study, which showed some drinking did have an impact on later conduct problems, this study reflects the work done with the Millennium Cohort who found no risks (Kelly et al., 2012) with drinking once or twice a week. This suggests that more research needs to be done to truly understand the relationship, if any, on offending.

Rutter score abnormality does appear to be a risk factor for those who offend and then desist in all the male groups and in two of the females offending categories – although some of these are weak associations. This suggests that those who commence offending later are almost 'hard wired' early for the offending and that it requires a policy intervention to help to reduce early and longer-term propensity to offend (Sullivan & Newsome, 2015). It is interesting how the models have evolved, in chapter 4 abnormal conduct on the *Conduct index* was significantly associated with the trajectories but the addition of the family variables has seemingly altered the influence and now only females in the *Early onset limited* category are impacted. Why it should be that *Hyperactive* is a more dominant characteristic as a risk factor for offending is intriguing and worthy of more research.

Finding that there is an association with *Parental Educational* attainment and offending was discovered by Galloway and Skardhamar (2009) who posited, 'We can then conclude that family academic resources seem to be more important than monetary resources'. Here the link is only significant for males across the first three

categories, but it is clearly a protective factor to have parents with higher qualifications. Why that does not impact females is also something to contemplate.

As before there are limitations to this study. Caution must be used with the strength of the associations that are seen here. The findings for females are impacted by the small size of the *Persist* offending path. As with any study there are limits to abilities to understand what might, 'cause' a particular pattern of behaviour. Most of the results here show effects with the added potency of the measures being over time and that they were prior to the behaviour we are trying to assess. That said, however, it is best to be prudent about assuming causal relationships.

I have mentioned it before, but worth flagging again that as this is self-report data, specifically that the offending behaviour pattern, that some have suggested it is a weakness of these types of studies. There is the possibility that there is under-reporting (Kirk, 2006). Although Thornberry and Krohn (2003, p. 59) argue that isn't always that case and that with self-report for conviction data "generally high level of concordance…..When convictions are examined, even higher concordance rates are reported" (Blackmore, 1974; and Farrington, 1973).

Again, it is important to underscore what this chapter does not say about SIT and the constraints placed on the work by the choice of factors used. First, measures whilst tested repeatedly in this work need to be replicated in other research to robustly evidence their impacts. What is missing, as with any model, is a complete understanding of the family and indeed of their interactions with criminal justice because models are only snapshots and never complete pictures, they are the 'simplification of reality' (Agresti, 2013, p. 211). Secondly it would be useful for future work to consider alternative methods of understanding the characterisation of SIT and how the different choices of variables might impact upon offending behaviour. And given the findings here, it is important for further work and other researchers to examine these unexpected and interesting relationships.

In summary SIT is a useful model for a better understanding of the complex influences on offending patterns, comprising both early family socialisation and later legal socialisation. Socialisation experiences in early childhood and adolescence have distinct impacts with different offending patterns. This work does give us 'a more

complete and comprehensive knowledge base of delinquency career characteristics..." (Welsh & Loeber, 2013, p. 80).

Chapter Six

Conclusions

What's to come in this chapter:

This chapter contemplates the findings in chapters three, four and five providing food for thought on using Socialisation Interplay Theory (SIT) as a tool to understand desistance, whilst also assessing its strengths and weakness.

As Joy Division so succinctly put it in their song Heart and Soul, 'The past is now part of my future' (Curtis et al., 1980) and so it is with the BCS 1970 cohort's offending and desisting paths, whichever offending trajectory they follow their passage has distinct risks associated with the early life and/ or adolescent period.

This work has operationalised the offending trajectory of the BCS cohort over three time points and the first 34 years of the cohort member's life. Within Socialisation interplay Theory I have combined family socialisation, up to and including the age or 16, and the effect of legal socialisation at 16, alongside the individual and social bonds to understand the risks and protective factors on the offending trajectories.

The three key overarching findings of this thesis are: 1) that both family and legal socialisation impact the risk of being on the offending behaviour paths 2) that there are distinct risks associated with the some of the biopsychosocial control factors and that they are a set of influences upon offending behaviour not merely controls, and 3) that different factors matter for the genders and that males overwhelmingly dominate in offending. I discuss these findings both in relation to the wider literature and the potential policy implications, alongside that I highlight what future research is needed. And the limitations of this research are discussed in the context of the need for further research. From a gender specific focus, it is striking the number of females in the *Resist* category versus males, 88.7% to 61.7%.

Risk, the relative risk ratio, is used in this thesis because it helps us understand the impact of variables on our desistance outcome. As explained previously it provides a method of understanding the scale of the impact, for example, a relative risk of 1.5 means that the risk of the outcome of interest is 50% higher. From my research we can see that there are moderate (as an example of that the impact of *2++ Younger siblings* on the *Late Onset Desist* group at 1.87 RRR) to strong (the same *variable, 2++ Younger siblings,* on the risk of being in the *Persist* category at 2.86 RRR) risks and that, as with life, the paths are not simple and straightforward but complex, layered, unique to the different patterns and differ by genders.

Desistance and BCS Offending behaviours

This research adds value and unique insight in terms of the derivation of the offending behaviours. I have used longitudinal perspective, identifying and uncovering patterns of offending behaviour that are not represented in the current debate. Using the criminal career approach (Francis et al., 2004) has enabled this work to find unique additional patterns of offending that call into question the dual taxonomy. This approach, as neatly demonstrated in my work, is a way to understand how criminal behaviour develops over time and how it is shaped by the influence of family and attitudes. My work has shown distinct patterns for *Adolescent limited (6.9%)*, *Life-course persistent* (.96%) and *Late bloomer* (1.24%) offenders who all have distinct trajectories (Hirschi & Gottfredson, 1983; Krohn et al., 2013; T.E. Moffitt, 1993), with the most common being the *Late Onset Desist* amongst the cohort at 8.9%.

In line with the findings of Krohn et al. (2013), my research findings replicate that there are complexities and subtleties of the qualitatively distinct offending behaviours trajectories, this is particularly noticeable with late bloomers who exhibit no offending up to late adolescence. My work has revealed there are more paths, more nuanced offending patterns, than the dominant theories permit. Movement in and out of offending are clearly differentiated in the models in chapter 5 with specific risks associations for each path. There are, however, shared factors such as large numbers of *siblings*, *cynicism* of the law and a *mother smoking in pregnancy* was also a common negative on behavioural outcomes. Whilst parents who have more qualifications was a protective feature for males in the *desist* categories.

The strength of predictors, in some cases, was evident for *late onset offending* but less for *early onset* offending. For example, the impact of *siblings* – both older and younger – was far stronger for males in the *Late Onset Desist* or *Persist* categories than it was in the *Early Onset* categories. This was not the case in terms of the legal socialisation variable, *cynicism,* which had the opposite *impact in terms of risk,* far greater in the *Desist* categories than in the *Late Onset Desist* or *Persist.*

What is unique to this work is the unusually late commencement of offending of the *Late bloomer* group. Commencing after the age of 30 is a particularly unusual

in terms of the onset of offending. Arguably it also demonstrates that the "invariant" or static crime theories ignore the dynamic nature of this specific type of offender. But whilst this research adds to the growing studies that show a distinct trajectory of late bloomers, none have been able to fully describe the shape and nature of Late onset offending in individuals who have seemingly no prior offending behaviour. One of the weaknesses of this work is that it also fails to explore the variance of the individual risks and later and differing social context, i.e. structures, culture, situations, for those who offend at this age (Bottoms et al., 2004).

Whilst other work has suggested that *Late bloomer* groups come to notice later in life they may well have been associated with earlier antisocial behaviour. Indeed that was found in the South London Development Study (McGee & Farrington, 2010). Further research could identify if that was the case for the BCS70, where they in fact delinquent but not to the extent where they were found guilty of offending? For example, where they stated they took drugs but did not get caught. The creation of my offending behaviours trajectory, which was based only on guilt or caution not any more minor non recorded offending is, arguably, a robust choice. However, because I use only verified self-reported guilt of offending, excluding behaviour such as drug taking, it will have also excluded less serious delinquency. I did, however, include early markers of problem behaviour in the models such as high levels of hyperactivity.

In this research the risk factors for males and females were from both family and legal socialisation and indeed in the psychological markers of childhood. What this finding suggests is that, just as Hirschi and Gottfredson (1983) proposed, the early years which are important for defining the ability to control, in terms of hyperactivity and conduct, have long effects that translate later into impact. As this work shows, within the cohort (and indeed the population) the risks of a disposition that has high levels of hyperactivity do not appear until much later. As Wiecko (2014, p. 110) argued, ‘some individuals might abstain from criminal and deviant behaviour until later in life, one has to speculate whether it is possible for criminal propensity to either lie dormant through adolescence or form at a later time’ and that is a possibility. But it requires analysing other measures of delinquency and is a limitation of this study and a route for further research.

My findings for males and females in the *Persist and Late bloomer* categories suggest that there are several policy interventions that would be worth looking at:

1. Those aimed at reducing smoking in pregnancy,
2. Methods for intervention, that support those who experience resource dilution created by larger families with support packages - such as after school clubs and sure start programmes - to provide help and support, alongside school interventions –
3. one to one special needs programmes - where those who demonstrate they have high levels of hyperactivity or conduct issues on behavioural indicators would be good starting points.

It would also be helpful to analyse the types of offending for *Late bloomers* because I suspect that the type and scale of offending will be different, as others have pointed out such as Gottfredson and Hirschi (2003), as cited in Wiecko (2014, p. 109), 'To say that everyone is capable of crime is not to say that everyone is capable of every crime. Indeed, opportunities for particular crimes may vary immensely over time and place'. Unfortunately, that was not possible with this data set. And whilst this work sheds light on some of the early life risks, later life, and the impact of social bonds, like marriage, and how those change outcomes is not explored. There is more to be understood, as adult offending trajectories are 'not fully explained by childhood experiences' (Kazemian, 2007, p. 7).

Unfortunately what we can't see from this data is the prevalence of the individual offences so we can't speak to Blumstein's (1987) point about the active offenders committing a large number of offences. What is clear in my analysis and the shape of offending behaviours is that the age crime curve is confirmed and reflected in the percentages of those involved and the increase in participation in crime during the late adolescent period, 17-20, and the decrease as the individual moves into adulthood. This is less obvious but still apparent with women who have very similar numbers offending between age 10-16, as the period after. This demonstrates a natural progression to desistance, something that happens as people get older, as others have demonstrated how as they age individuals transition to lower rates of offending (Hirschi & Gottfredson, 1983; Liu, 2014; McVie, 2005; Sampson & Laub, 2005a).

What the formation of the offending behaviour pattern as a whole has allowed us is the understanding of those individuals in each group, through the lens of childhood. What that has provided is an ability to move beyond the, “mechanisms which are already formed, whereas by following childhood development, we reach to the formation of those mechanisms, and formation alone is explicative” from (Piaget, 2013) as cited in (Kourilsky-Augeven, 2007b). As Maruna (1999) argued that understanding movement in and out of offending can help us to have a more complete offending prevention policy offering and this work has revealed what could be a comprehensive array of interventions in both early and adolescence to help change offending risks.

When understanding the process of desistance and critically its definition, as shown in this work, the reader and researcher is faced with a myriad of choices, it is essential that in criminology we start to move towards a more replicable and operational basis for desistance. This work attempts to create a basis for that more uniform approach with a definition that has possibilities of international comparison, and is workable with any data type whether that is official data, in depth interviews or surveys; the cessation or diminishment to insignificance of the act of breaking moral rules of conduct stated in law, after age 30, having previously committed these acts (Wikström et al., 2012).

Socialisation Interplay Theory

This work has aimed to create a way through what is a convoluted and tangled crime landscape. The movement into and away from offending is complex, particularly with data handling issues. With this model, by combining two types of socialisation, family and legal, using operationalised offending patterns and examining their linkages within the context of a population study presents a unique perspective and provides "a more complete and comprehensive knowledge base of delinquency career characteristics..." (Welsh & Loeber, 2013, p. 80). Teasing out the risk and protective factors for each offending path helps to create the building blocks towards policy interventions.

The influences on why people start committing offending range from family (Tara Young, Fitzgibbon and Silverstone, 2013; Rocque et al., 2013; Besemer and

Farrington, 2012; Van de Rakt, 2011; Farrington, 2011) to peer relationships (Aseltine Jr., 1995; Kiesner et al., 2004; Kim et al., 1999; Lervolino et al., 2002; Massoglia & Uggen, 2007; Shortt et al., 2003) whilst movement away from offending behaviours is linked to the influences of a wide range of factors including peer relationships, romantic relationships (Monahan, Dmitrieva and Cauffman, 2014), employment, education, addiction (Craig et al., 2015) and parenting (Schoon and Mullin, 2016).

This research adds more evidence to Gottfredson's and Hirschi's theories that early socialisation impacts the risk of offending and not desisting, specifically the importance of sibships and the possible proxy for a reduction in resources. Siblings are early risks and a key component to understanding criminality, but it also gives credence to the fact that early year's movement into offending is influenced by legal socialisation. Using a life course perspective has allowed me to understand the fuller picture of risk.

Using the combined SIT model gives strength to the results because it shows how important these aspects are for offending in a fuller framework. Initially, the individual's early structural context of family impacts behaviour, we can see this in the context of the *Early onset limited* group where legal socialisation and smoking are both important aspects for males and females, then in addition for women *family time* and *father and older sibling at home* are also increased risks for being on that trajectory.

The shape of the SIT model enables an interactive, longitudinal approach focusing on long-term outcomes associated with early socialisation and legal socialisation to understand the shape of offending behaviour paths. It is clear from these results that there are moderate to strong predictions from the family setting, the individual and legal socialisation to offending (the act) but what isn't explored enough is the impact of the cohort members own maturing into adulthood and their later social bonds – in terms of marriage, childrearing, academic achievement, and work. Further research needs to evolve these findings to understand the additional elements in the individuals transitions over time. There is also more to elucidate about the nature of the relationships and the way in which they increase the risk of being on a specific trajectory.

What we can see from SIT is that there are clear associations with the *number of siblings* (setting), with *having a mother who smoked* (Kelly et al., 2001), high levels of *hyperactivity* (Brannigan, 1997; Connolly & Beaver, 2014; DeLisi & Vaughn, 2008; Reisig et al., 2011; Wiecko, 2014; Wikström & Treiber, 2007) and with having *cynical views* of the law and the agents of the law (Kourilsky-Augeven, 2007a, 2007b; Piquero et al., 2005) on the shape of offending.

Family socialisation

In the introduction I referred to how over the last few decades it has become increasingly clear that various factors, family particularly, impact crime and the movement into and away from it and the work in this thesis has added to that research showing distinct effects on offending from a nationally representative cohort. What is also clear from these results is that ignoring the environment of the sibling interaction has been a flaw in work aimed at trying to understand criminal paths over the life course, as siblings have undeniable impacts on behaviours (Defoe et al., 2013). Indeed, it is about the shape of the number and type of siblings, having older or younger siblings has negative implications for offending. Siblings impact - the male *Early onset limited, Late onset desist, Persist* and to a lesser degree *Late bloomer,* although there are impacts for females the strength of those associations is weaker. The size of the sibship of the family has been established as a problem factor for criminality (Feinberg et al., 2012; Lawson & Mace, 2008; Taanila et al., 2004; Tafoya & Hamilton, 2012). Apart from the work of Taanila et al. (2004) who found that it was the lack of siblings that provided a context for problems, only children had the highest prevalence of behavioural problems, while children in very large families had the lowest. Living in a very large family was a protective factor against behavioural problems among boys but not among girls. Eldest children were at lower risk of behavioural problems than the other children. The single-parent and always one-parent family was associated with higher risk of emotional problems among girls. Unlike the work of Taanila et al. (2004) I did not find that it was a protective feature to have an older sibling, younger siblings are a stronger risk factor than having many older siblings for both males and females. And clearly the work has also revealed the issues for males who were slightly more at risk than females in

terms of the number of offending trajectories that were impacted.

It may well be that having larger families are a drain on resources and that effects on the ability of parents to provide for the children not only financially but also emotionally, just as Lawson and Mace (2009) found. The degrees of significance for the other offending categories is interesting and it aligns with Farrington (2011) work . The sibling environment, the shared environment (Brody, 2004; Connolly & Beaver, 2014) might not only be bad when exhausted by too many or too much proximity (Marganski, 2013; McMurtry & Curling, 2008; Oliva & Arranz, 2005) but the significance of the older siblings effects on those younger than them seems to be critical. Are the stretched resources of parents with greater numbers of children, not only a problem due to the inability to control some of these interactions and that without containment they encourage long-term incapability of staying within the accepted bounds of permitted behaviours.

The mechanism of sibling socialisation is complex with mixed research, some demonstrating that role-playing can be positive, with concepts of empathy important for females (Tucker et al., 1999; Whiteman et al., 2009). Others have found that siblings "mimic each other's externalizing problem behavior, fuelling a downward spiral in which siblings mutually maintain and reinforce each other's problematic behavior' (Defoe et al., 2013, p. 887) or both. However, more detailed information on sibling relationships is not available in this dataset.

Theories of sibling socialisation and interaction suggest that siblings either learn from or expressly move away from what their sibling has done (Patterson et al., 1984; Whiteman et al., 2009). The emotional intimacy and affection in sibling relationships which was found to be is important for "prosocial behaviors and social understanding" (Volling & Blandon, 2003, p. 7) is not reflected in all the trajectories and it appears that the negative influence unfolds at a later date for males with the risk in the *Late onset* and *late bloomer* suggesting that the legacy of these relationships lasts.

In terms of negative influence both aggression and hostility between siblings is predictive of the use of such behaviour with peers and future problem behaviours (Kendler et al., 2014; Volling & Blandon, 2003). Indeed work has investigated that the physical violence carried out by siblings is the most common type of family

violence (Kristi Hoffman et al., 2005), where it is typically used as a means of resolving conflict (Eriksen & Jensen, 2009; Goodwin & Roscoe, 1990) but it might also be termed bullying, and those who are bullied in both school and home environments are at the highest risk of adverse outcomes in later life (Schreier et al., 2009; Wolke & Skew, 2012) but that data was not available in this study.

Females were more affected by the family context in the shape of family time for *Early onset limited*. This might suggest susceptibility of females to that environment and a difference between males and females, but this needs further exploration, not only because the significance was weak, but it would benefit from further analysis.

Legal socialisation

My findings support, if not exactly replicating, the findings of Nivette et al. (2014) who demonstrate that legal cynicism is important and isn't static in the adolescent period but initially increases then declines into early adulthood. This shape of the curve of cynicism, as revealed in the risks associated with the offending behaviour paths does appear to be aligned to that of the age crime curve. It is hard to tease out whether it is that some of the rationale for the views of the law comes after the offending, rather than before, as has been suggested as a means of providing a justification for the behaviour (Nivette et al., 2014, p. 298). But that does not fit with the finding that *Early onset desist* result shows that the views were prior to the offending, rather than the other way around.

What is also notable about these findings is that whilst the strength of the relationship follows the curve, the cynicism effect is not entirely confined to the adolescent offender period, but it is most powerful at the age of 16 for offending. Those cynical views from those teenage years are significant risk factors for later offending albeit this is only for *Persistent* males, and weakly for *Late bloomer* females. But the fact that it is even relevant at those time points indicates a more complex and less straightforward relationship which requires more research to understand the direction and shape of the association.

It certainly demonstrates and provides more evidence that creating a trusted criminal justice system is critical for compliance with the law. Police and courts need

to work hard to build and maintain trust and create processes which provide, and demonstrate, clear and transparent procedures that do not undermine any groups within society. This would give the basis for a criminal justice system that isn't viewed with cynicism and is perceived as just, without which there is an uphill battle for compliance with the law, particularly in the adolescent period.

Biopsychosocial

Looking at the results and the impact of smoking, it appears that boys are more liable to inherit in utero the effects of a mother who smokes. It has been found in many different studies (Ekblad et al., 2015; Gaysina et al., 2013; Murray et al., 2010; Shelton et al., 2011; Wakschlag et al., 2006) and 'reducing maternal smoking in pregnancy should be a prime target for public health interventions aimed at improving these child outcomes' (Sellers, Warne, Rice, Langley, Maughan, et al., 2020, p. 396). If I might be bold and speculate that smoking, could be a 'proxy' for some dimensions of life, for example anxiety, and it would be worthy of research to investigate further the relationship, the crutch, that smoking provides.

Whilst there is some debate about the impact of maternal drinking in pregnancy on long term conduct problems, with Murray et al. (2015) finding that there was an association with even moderate drinking, although this does not tally with other work (Kelly et al., 2012) nor this work where it isn't a risk factor.

This analysis shows clearly that there is an impact of early behavioural problems (including *Conduct* and *Hyperactivity*) measured at 5, for all the categories but *Persist* for males and for females in both *Late onset* and *Late bloomer*. This might be an indication of the lack of control, in terms of conduct and hyperactivity, or indeed that the conduct itself does not allow the individual strategies to desist from offending (Collishaw et al., 2004; Deater-Deckard & Dodge, 1997; Kim et al., 1999; Marceau et al., 2012; Murray et al., 2010; Wikström & Treiber, 2007). Either way interventions for those who flag as abnormally behaved at the age of 5 would be a potential area of further research.

Gender Differences

Male offending was higher on all trajectories than females and males and

females have different influences from both family and legal socialisation. Whilst this work does show gender similarities in the shape of the criminal career trajectories, in terms of the number of trajectories (Cohen et al., 2010) there is difference in the prevalence of offending (Kruttschnitt, 2013). For males the sibling numbers matter for both younger and older, whilst for females it is the younger siblings that are more important. Interestingly within legal socialisation the impact is mirrored across trajectory for males and females – suggesting that trust in the system, the agents of the system could be the target of interventions and that would have an impact on an individual regardless of their sex. What this work suggests is that policy at the individual level is a key component of desistance from crime – that can be seen in the impact of those who are indexing abnormally for hyperactive behaviours, which seems a greater risk for males.

Cost of offending

I started this work looking at the "application of cost–benefit analysis to evaluation of the social return of early-in-life developmental interventions" in reducing or deterring young people from criminal trajectories (Hunter, 2010; Nagin, 2015, p. 585; Welsh & Farrington, 2015). Trying to understand what factors impact the onset of criminal behaviour and affect it over the life course are key to delivering a reduction in acts of crime, here we can see some evidence for developing a plan of intervention or a randomised control trial to evaluate a policy programme. Early interventions and adolescent legal socialisation interventions that will help to mediate some of the risks and consequently impact the costs over the life course.

Strengths and Weaknesses

Data is the bane of any researcher's life, and this is particularly the case with large cohort studies that are filled with traps that provide problems for any longitudinal work. Questions are susceptible to bias, data is missing, people drop out as well as item non-response and questions are asked differently at different times points as with any survey. All of these add up to concerns that can be mitigated in most cases but are never quite as good as an imagined perfect dataset – with properties such as no missing data, with questions asked in the same way, with no

dropouts and with people answering without bias and so on. The perfect dataset does not exist. Using techniques to attempt to adjust for all these issues is important and I was able to do that in terms of deal with missingness, focussing on robust measures of offending but any model is a snapshot of reality and must be viewed in that light.

In terms of the differences in the findings using the imputed offending versus the observed data, there are very small differences. Indeed, as you can see in the tables (Appendix A.4.1, A.4.2, A.4.3, A.4.4, from page 211) the estimates of the unimputed outcome regarding family socialisation and legal socialisation are slightly larger with the imputed work but it does not change the significance. This demonstrates the robustness of the evidence presented in the MI models and shows that findings follow across models in terms of significance after imputation or without it).

Nonetheless, one of the strengths of this research is the use of a large and rich birth cohort study, the BCS70. The main advantage of having access to longitudinal data set enabled me to study a cohort of individuals who reported on all aspects of their lives, some of which is related to their contact with criminal justice over time. I was able to control for several variables that were potentially confounders, but I was not able to include all the alternative factors. I was able to create a large enough sample size for the different offending behaviour paths, for the main part - *Persist* females is an exception - and to analyse those for males and females. Most importantly temporal ordering in these data provides the means to begin to isolate cause and effect. It would be extremely helpful for future work and research to assess offending beyond age 34 to gain further understanding of the motivations and factors that encourage desistance. It would be useful to have more understanding of causality, whilst we have the knowledge that temporal ordering is helpful in elucidating it is no guarantee of causation. And of course, there is always the issue of 'omitted variable bias', which I would argue I have endeavoured to tackle by having such a broad selection of 'controls'.

Most work that incorporates adult onset is restricted to onset that is at a far younger point, i.e. at age 21, than I was able to do in this research (Krohn et al., 2013; McGee & Farrington, 2010; Wiecko, 2014). This implies that there is richness

in cohort data and that the age crime curve could be far more elastic in terms of onset of offending than might be at first be expected and that there may well be far more to be understood about late onset offending. However, the lack of consistency in the measurement of variables - whether that is about how the questions were asked, the way in which they were asked or framed or the person who was asked/ was doing the asking – all of which have an impact on the consistency of the response and is problematic for understanding the relationships between offending and all the factors. So, although this study is based on what might be suggested is a modest method of assessing criminal conduct it is that simplicity which gives it its robustness. And having provided a method for measuring of offending it would be incredibly useful to see it replicated in other works.

Summary

This thesis provides an in-depth investigation of the association between different aspects of family and legal socialisation and offending behaviours. The following policy recommendations follow from the findings presented in this thesis:

1) Family socialisation interventions should be targeted from in utero, for example the focus on the reduction in smoking in those who are pregnant is a very valid current intervention,

2) Family based interventions should focus on not only the parents but also the siblings, alongside specific focus on resources for larger families

3) The criminal justice system needs to encourage and foster policies to reduce cynicism in its practices and

4) There is a need for gender specific interventions and

5) renewed attention to early conduct problems, revisiting programs such as the Sure Start, which targeted children from birth to them joining school.

This thesis contributes to the literature by providing a methodologically robust analysis, which had elements of sensitivity analysis built in, of the relationship between the offending behaviours and SIT model. Further research is needed to explain why these relationships exist. Most notably future research could consider why there are differences in the impact of the presence of no or different family

members at home, why siblings (the sibship) matter in different ways, why specific conduct is more important for males rather than females in terms of the longer-term offending and why maternal smoking during pregnancy impacts males more than females.

This thesis set out to help to provide more understanding of participation in offending behaviour and the specific roles played by a variety of factors in the onset and diminishment of offending for both males and females and I believe I have helped to do that with this study. Not only has this work demonstrated clear trajectories of offending, from a nationally representative cohort, and found that there are more than the current literature favours, indeed there are distinct paths not reflected in the dominant literature. But I have also created the offending and behaviour pattern which, in itself, has provided unique insight into the paths of desistance. Whilst the interactive framework in which they were examined, SIT, has given us a greater understanding of the risks associated with family and legal socialisation and people's movement in and out of crime. With this work we have also presented a definition for desistance - the cessation or diminishment to insignificance of the act of breaking moral rules of conduct stated in law, after age 30, having previously committed these acts - that is comparable, replicable and that may help to create a more internationally usable shape for ongoing research. Finally, we have seen gender specific pathways, commonalities in what are risks but primarily differences. All of which has helped to create a firmer understanding of early life and its consequences for criminal behaviour and we can say with some assurance that the past is part of the cohort's future.

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Appendices

Appendix Table A1: BCS70 estimated longitudinal target and observed sample, wave 0 to 6.

Appendix Table A2. Outline of the measures to be used in analysis. (*CM = Cohort Member)

Appendix Table A3. Core questions about criminal justice interactions including the basis for the pattern of offending behaviours.

Appendix Table A4.1. Family Socialisation and Male Criminal Offending Behaviour Patterns regressed without imputation using both the Complete Age Data at age 16 and also the Full Available Information, RRR and confidence intervals.

Appendix Table A4.2. Family Socialisation and Female Criminal Offending Behaviour Patterns regressed without imputation using both the Complete Age Data at age 16 and also the Full Available Information, RRR and confidence intervals.

Appendix Table A4.3. Legal Socialisation and Male Criminal Offending Behaviour Patterns regressed without imputation using both the Complete Age Data at age 16 and also the Full Available Information, RRR and confidence intervals.

Appendix Table A4.4. Legal Socialisation and Female Criminal Offending Behaviour Patterns regressed without imputation using both the Complete Age Data at age 16 and also the Full Available Information, RRR and confidence intervals.

Appendix Table A5. Auxiliary Variables

Appendix Table A1: BCS70 estimated longitudinal target and observed sample, wave 0 to 6. (Ketende et al., 2010)

WAVE (AGE)	wave0 (age 0)	wave1 (age 5)	wave2 (age10	wave3 (age16)	wave4 (age26)	wave5 (age30)	wave6 (age34)
Achieved (% of target	16571 (95.9%)	12939 (79.0%)	14350 (88.8%)	11206 (70.2%	8654 (55.2%)	10833 (70.4%)	9316 (60.9%)
Non-response (% of target	716 (4.1%)	2815 (17.2%)	1116 (6.9%)	3328 (20.8%	4965 (31.7%)	2213 (14.4%)	2137 (14.0%)
Uncertain (% of target	0 (0.0%)	625 (3.8%)	686 (4.2%)	1440 (9.0%)	2063 (13.2%)	2341 (15.2%)	3836 (25.1%)
Target sample (Estimated)	17287 (100%)	16379 (100%)	16152 (100%)	15974 (100%)	15682 (100%)	15387 (100%)	15289 (100%)

Appendix Table A2. Outline of the measures to be used in analysis. (*CM = Cohort Member)

Name Variable and Categories in Variable (baseline reported first)	Male N (%)	Female N (%)	Total N (%)	Missingness Total N (%)
Mother smoked in pregnancy (CM* age 0)	8,856 (100%)	8,242 (100%)	17,109[nb] (100%)	77 (.005)
Non-Smoker	3,722 (47.03)	3,453 (41.9)	7,179 (41.96)	
Stopped Pre/ During Pregnancy	1,445 (16.32)	1,399 (16.97)	2,845 (16.63)	
Smoked	3,390 (41.66)	3,390 (41.13)	7,085 (41.41)	
Alcohol Consumed Pregnancy (CM* age 10)	6,199 (100%)	5,879 (100%)	12,079 [nb] (100%)	6,211 (32.5)
No	3,057 (49.31)	2,842 (51.20)	5,899 (48.84)	
Once a week or less	2,813 (45.38)	2,687 (45.71)	5,501 (45.54)	
2+ Times a Week	329 (5.31)	350 (5.95)	679 (5.62)	
Conduct Rutter Score (CM* age 5)	6,544 (100%)	6,090 (100%)	12,635 [nb] (100%)	6,078 (31.8)
Hyperactive Rutter Score (CM* age 5)	6,533 (100%)	6,094 (100%)	12,648 [nb] (100%)	6,065 (31.8)
Mother's Malaise (CM* age 5)	6,477 (100%)	6,015 (100%)	12,493 [nb] (100%)	6,224 (32.6)
Normal (0-80th centile)	5,324 (82.2)	4,898 (81.43)	10,223 (81.83)	
Moderate Behaviour Problem (81st-95th)	825 (12.74)	821 (13.65)	1,646 (13.18)	

Name Variable and Categories in Variable (baseline reported first)	Male N (%)	Female N (%)	Total N (%)	Missingness Total N (%)
Severe Behaviour Problem (95^{th}+)	528 (5.06)	296 (4.92)	624 (4.99)	
Father's SES (CM* age 0)	8,871 (100%)	8,247 (100%)	17,128 [nb] (100%)	65 (.004)
Routine & manual Occ.	4,877 (54.98)	4,462 (54.10)	9,344 (54.55)	
Higher managerial, admin. & prof.	1,007 (11.35)	947 (11.48)	1,954 (11.41)	
Intermediate Occupations	2,529 (28.51)	2,348 (28.47)	4,889 (28.49)	
Other	458 (5.16)	490 (5.94)	950 (5.55)	
Parents Education (CM* age 5)	6,492 (100%)	6,052 (100%)	12,545 [nb] (100%)	6,172 (32.3%)
No qual. & other	2,717 (41.85)	2,501 (41.33)	4,684 (37.34)	
Voc. Qualifications, SRN, O Level or Equivalent	2,396 (36.91)	2,287 (37.79)	4,684 (37.34)	
A Level or Equivalent	488 (7.52)	477 (7.88)	965 (7.69)	
Degree +	891 (13.72)	787 (13.00)	1,678 (13.38)	
Younger Siblings (CM* age 5)	. 6,592 (100%)	. 6,137 (100%)	. 12,730 [nb] (100%)	3,957 (24.1)
0	3,667 (55.63)	3,399 (55.39)	7,066 (54.51)	
1	2,488 (37.74)	2,325 (37.88)	4,813 (37.81)	
2++	437	413	851	

Name Variable and Categories in Variable (baseline reported first)	Male N (%)	Female N (%)	Total N (%)	Missingness Total N (%)
	(6.63)	(6.73)	(6.68)	
Older Siblings (CM* age 5)	. 6,592 (100%)	. 6,137 (100%)	. 12,730 [nb] (100%)	3,957 (24.1)
0	2,478 (37.59)	2,379 (38.76)	4,857 (38.15)	
1	2,302 (34.92)	2,114 (34.45)	4,416 (34.69)	
2++	1,812 (27.49)	1,644 (26.79)	3,457 (27.16)	
Cognitive Stimulus (CM* age 5)	. 6,007 (100)	. 5,620 (100)	. 6,612 [nb] (100)	7,106 (37.2)
Mother	3,395 (56.52)	3,216 (57.22)	6,612 (56.86)	
Father	1,068 (17.78)	899 (16.00)	1,967 (16.92)	
Sibling	925 (15.40)	892 (15.87)	1,817 (15.63)	
Other Adult	619 (10.30)	613 (10.91)	1,232 (10.60)	
After School (CM* age 10)	. 6,492 (100)	. 6,131 (100)	. 12,624 [nb] (100)	5,527 (28.9)
Mother	3,963 (61.04)	3,831 (62.49)	7,795 (61.75)	
Father	741 (11.41)	649 (10.59)	1,390 (11.01)	
Older Sibling	1,034 (15.93)	879 (14.34)	1,913 (15.15)	
Other Adult/ Nobody	754 (11.61)	772 (12.59)	1,526 (12.09)	

Name Variable and Categories in Variable (baseline reported first)	Male N (%)	Female N (%)	Total N (%)	Missingness Total N (%)
Family Time (CM* age 10)	. 6,512 (100)	. 6,154 (100)	. 12,667 [nb] (100)	5,475 (28.7)
Teach authority Not Important (CM* age 5)	. 6,552 (100)	. 6,072 (100)	. 12,624[nb] (100)	
Disagree	5,366 (81.90)	4,934 (81.26)	10,300 (81.59)	
Agree	1,186 (18.10)	1,138 (18.74)	2,324 (18.41)	
Police Cynicism (CM* age 16)	. 2,553 (100)	. 3,452 (100)	. 6,005[nb] (100)	13,076 (68.6)
No cynicism	1,507 (59.03)	2,156 (62.46)	10,300 (81.59)	
Cynicism	1,046 (40.97)	1,296 (37.54)	2,324 (18.41)	
Wrong break the Law (CM* age 16)	. 2,237 (100)	. 2,957 (100)	. 5,194[nb] (100)	13,908 (72.8)
True	828 (37.01)	1,475 (49.88)	5,129 (85.11)	
False 1	635 (28.39)	738 (24.96)	1,373 (26.43)	
False 2+	774 (34.60)	744 (25.16)	1,518 (29.23)	

***CM = Cohort Member Age when question asked.**
Nb. = 'not stated' and 'not known' not in table

Appendix A3. Principal component analysis for Rutter, run in Stata/ SE 13.1:

Factor analysis/correlation			Number of obs = 12853
Method: principal factors			Retained factors = 1
Rotation: orthogonal varimax (Kaiser on)			Number of params = 5
Factor	Variance	Difference	Proportion Cumulative
Factor1	2.15974	1.2101	1.2101
LR test:	independent vs. saturated:	chi2(10) = 1.8e+04	Prob>chi2 = 0.0000
Rotated factor loadings (pattern matrix) and unique variances			
Variable	Factor1	Uniqueness	
destroys_5	0.6881	0.5265	
fights_5	0.6298	0.6034	
takes_5	0.6486	0.5793	
disobedien~5	0.6656	0.5569	
lies_5	0.6525	0.5742	
Factor rotation matrix			
Factor1			
Factor1	1		

Appendix Table A3. Core questions about criminal justice interactions including the basis for the pattern of offending behaviours.

Table A3. Core questions about criminal justice interactions including the basis for the pattern of offending behaviours.
Age 16 (Goodman & Butler, 1986)**.** 10. In different areas young people have different ideas about the attitude of the Police and how the law treats them. Now we are thinking about how you and your friends may have come into contact with the law. Have any of the following ever happened to you're a. close friends, b. other friends or c. yourself? A. Been moved on by the police B. Been stopped and questioned by the police C. Been accused of theft or shoplifting by a store detective. D. Been let off with just a warning by a police officer E. Been arrested by a police office and been taken to a police station F. Been formally cautioned by a police officer at a police station G. Been found guilty by a court Answer all questions a-c. This well be complete when you have put 7 ticks on each line to indicate Yes or No for A B C D E F and G which are across the top of the table.
Age 30 (Collins et al., 2002) pg. 206 – 207. Nb. After each question below there is a question asking about frequency. POLICE1 : YES/NO The next few questions are about contact with the police. Have you ever.../been moved on by the police since ^1991/1986? POLICE2 : YES/NO Have you ever... ...been stopped and questioned by the police since ^1986/1991? POLICE3 : YES/NO Have you ever... ...been let off with just a warning by a police officer since ^1991/1986? POLICE4 : YES/NO Have you ever... ...been arrested by a police officer and taken to a police station since ^1986/1991?

Table A3. Core questions about criminal justice interactions including the basis for the pattern of offending behaviours.
POLICE5 : YES/NO Have you ever... ...been formally cautioned by a police officer at a police station since ^1991/1986? COURT : YES/NO And finally, have you ever... ...been found guilty by a court since ^1991/1986?
Age 34 (National Centre for Social Research, 2004) pg. 155 – 156. Police1 (The next few questions are about contact with the police.) (Since you were last interviewed on [^Date of last interview],) Have you been moved on by the police? Police2 (Since you were last interviewed on [^Date of last interview],) Have you been stopped and questioned by the police? Police3 (Since you were last interviewed on [^Date of last interview],) Have you been let off with just a warning by a police officer? Police4 (Since you were last interviewed on [^Date of last interview],) Have you been arrested by a police officer and taken to a police station? Police5 (Since you were last interviewed on [^Date of last interview],) Have you been formally cautioned by a police officer at a police station? Court (Since you were last interviewed on [^Date of last interview],) Have you been found guilty by a criminal court?

Appendix Table A4.1. Family Socialisation and Male Criminal Offending Behaviour Patterns regressed without imputation using both the Complete Age Data at age 16 and also the Full Available Information, RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001.(^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)
Number Younger Siblings (^None)										
1	**1.32***	**1.51***	**1.41+**	**1.53+**	**1.10***	**1.18***	1.45	1.13	**1.63+**	**1.37+**
	1.09-1.93	**1.06-2.16**	**0.87-2.27**	**0.97-2.4**	**1.01-1.5**	**1.01-1.39**	0.6-3.51	0.73-1.75	**0.93-3.62**	**0.91-2.06**
2++	**1.51+**	1.47	**1.72+**	**1.66+**	**2.06*****	**1.49****	4.37	1.54	**1.47+**	1.51
	0.94-3.11	0.76-2.86	**0.94-3.95**	**0.96-3.64**	**1.23-3.45**	**1.12-2**	1.3-14.66	0.74-3.23	**0.8-7.26**	0.73-3.13
Number Older Siblings (^None)										
1	**1.51***	**1.40+**	1.05	0.96	**1.11***	**1.22****	0.69	0.95	1.57	1.25
	0.99-2.3	**0.94-2.09**	0.62-1.78	0.58-1.58	**0.9-1.55**	**1.02-1.46**	0.23-2.07	0.57-1.58	0.63-3.89	0.79-1.97
2++	**1.52***	**1.25***	1.21	0.94	**1.21*****	**1.40*****	**2.94***	**2.33****	**2.54+**	**1.81****
	1.05-2.72	**1.03-2.17**	0.61-2.42	0.49-1.82	**1.17-1.92**	**1.11-1.76**	**0.93-9.3**	**1.33-4.08**	**0.83-7.76**	**1.03-3.18**
Who read to the CM most (^Mother)										
Father	1.14	1.07	**0.56+**	**0.56+**	1.25	1.07	0.38	1.23	1.43	0.95
	0.72-1.8	0.7-1.66	**0.27-1.16**	**0.29-1.08**	0.9-1.74	0.89-1.3	0.08-1.83	0.73-2.08	0.57-3.62	0.57-1.6
Other Adult	**1.88***	**1.71***	1.07	1.13	**1.06***	**1.20***	2.03	1.02	**3.30***	1.59
	1.07-3.28	**1.04-2.82**	0.53-2.18	0.59-2.17	**0.93-1.78**	**0.94-1.53**	0.63-6.53	0.53-1.96	**1.27-8.57**	0.91-2.77
Sibling	0.99	1.00	1.17	1.23	**0.86+**	**1.20+**	2.50	1.35	0.72	0.91
	0.76-1.76	0.6-1.69	0.59-2.34	0.65-2.33	**0.53-1.41**	**0.96-1.5**	0.86-7.3	0.78-2.33	0.21-2.4	0.51-1.62
Who was with the CM after school (^Mother)										
Father	1.21	1.32	**1.81****	**1.86****	0.80	1.03	0.93	1.58	0.91	1.25

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)
	0.72-2.03	0.81-2.16	**1.01-3.26**	**1.08-3.21**	0.5-1.29	0.8-1.31	0.29-3.05	0.9-2.77	0.19-4.28	0.7-2.23
Older Sibling	**0.61+**	**0.68+**	1.18	1.27	0.94	1.12	0.45	0.97	1.90	0.84
	0.35-1.06	**0.4-1.17**	0.61-2.26	0.68-2.37	0.62-1.44	0.91-1.38	0.12-1.74	0.55-1.72	0.71-5.09	0.45-1.56
Other Adult	0.97	0.90	1.39	1.30	1.15	1.18	1.47	1.17	3.13	1.93
	0.55-1.71	0.52-1.54	0.72-2.71	0.7-2.44	0.74-1.8	0.94-1.48	0.47-4.55	0.64-2.14	1.27-7.74	1.13-3.28
Family time spent together										
Every unit is less time	**1.10+**	1.01	**1.55***	1.47	**1.86****	**1.20****	**1.13****	**1.60***	**1.63+**	0.93
	0.9-1.74	0.67-1.53	**0.87-2.78**	0.83-2.6	**1.06-1.23**	**0.99-1.46**	**0.96-3.01**	**0.92-2.76**	**0.91-4.36**	0.55-1.59
Smoking (^Non Smoker)										
Stopped Pre or During Pregnancy	1.37	1.29	1.26	1.14	1.20	1.19	0.86	1.02	1.34	1.47
	0.86-2.19	0.83-2.02	0.69-2.29	0.64-2.05	0.85-1.72	0.98-1.44	0.29-2.53	0.57-1.84	0.55-3.28	0.9-2.41
Smoked throughout 1-4	**1.70****	**1.62****	**1.94****	**1.87****	**1.39****	**1.31****	0.96	**1.70****	1.22	**1.50****
	1.18-2.44	**1.15-2.29**	**1.23-3.08**	**1.2-2.9**	**1.04-1.85**	**1.13-1.53**	0.43-2.13	**1.12-2.58**	0.57-2.62	**1-2.24**
Alcohol Pregnancy (^No)			0.00							
Once a week	1.07	1.00	1.04	0.97	1.08	1.14	3.31	1.79	1.16	1.10
	0.75-1.54	0.71-1.41	0.67-1.62	0.64-1.48	0.81-1.43	0.98-1.33	1.45-7.57	1.14-2.82	0.54-2.48	0.73-1.67
2-3 Times a Week	1.78	1.31	1.16	0.79	1.60	**1.31+**	-	**2.31***	**4.20****	**2.53****
	0.77-4.11	0.61-2.86	0.32-4.16	0.24-2.62	0.77-3.3	**0.9-1.91**	-	**0.92-5.82**	**1.07-16.45**	**1.19-5.36**
Conduct Rutter Score	1.00	0.86	1.31	1.26	**1.48****	**1.25****	1.68	**1.23***	1.57	0.99
	0.61-1.65	0.53-1.38	0.76-2.25	0.75-2.1	**1.03-2.13**	**1.03-1.52**	0.64-4.39	**0.93-2.07**	0.62-4.02	0.58-1.7
Hyperactive Rutter Score	1.34	1.37	0.44	0.41	**1.73***	**1.65****	3.80	2.96	0.82	2.10
	0.62-2.92	0.69-2.74	0.1-1.94	0.1-1.79	**0.9-3.33**	**1.2-2.25**	1.14-12.69	1.55-5.67	0.1-6.69	1.07-4.14
Mother's Malaise (^Normal)										
Moderate Behaviour Problem	0.85	0.86	0.83	0.78	1.05	1.13	1.91	0.69	0.37	1.07

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)	Complete age 16 (N.2843)	Full avail. Info. (N.4876)
	0.49-1.46	0.52-1.43	0.42-1.66	0.4-1.51	0.7-1.58	0.92-1.38	0.75-4.91	0.38-1.23	0.08-1.65	0.64-1.81
Severe Behaviour Problem	1.64	1.53	1.69	1.46	0.80	1.23	0.59	0.58	0.77	0.92
	0.76-3.55	0.79-2.97	0.62-4.61	0.6-3.59	0.36-1.79	0.88-1.71	0.06-5.67	0.22-1.53	0.09-6.38	0.38-2.23
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.	0.82	0.86	0.85	0.88	0.87	0.91	0.21	**0.39***	0.41	0.56
	0.46-1.46	0.5-1.48	0.42-1.72	0.45-1.72	0.56-1.35	0.72-1.15	0.03-1.77	**0.16-0.93**	0.11-1.56	0.27-1.13
Intermediate Occupations	0.75	0.85	0.62	0.69	1.04	0.95	0.66	**0.70+**	1.08	0.87
	0.51-1.11	0.59-1.23	0.38-1.03	0.42-1.13	0.78-1.4	0.81-1.11	0.28-1.56	**0.44-1.1**	0.51-2.27	0.58-1.32
Other	1.48	1.43	2.32	**2.25+**	1.19	1.29	1.15	**2.14***	1.34	0.87
	0.63-3.49	0.65-3.14	0.93-5.8	**0.96-5.26**	0.55-2.61	0.87-1.91	0.13-9.86	**0.99-4.63**	0.16-10.94	0.3-2.49
Parents Education (^No qual. & other)										
Vocat. Qual., SRN and C of E	0.95	1.07	0.91	1.05	0.79	0.87	1.26	**0.90+**	2.75	0.90
	0.58-1.56	0.67-1.72	0.51-1.63	0.61-1.81	0.53-1.19	0.72-1.07	0.49-3.25	**0.54-1.5**	1.05-7.2	0.54-1.49
O Level or Equivalent	1.13	1.19	0.70	0.78	1.05	0.81	0.53	0.59	1.44	0.77
	0.73-1.76	0.78-1.8	0.4-1.23	0.45-1.34	0.74-1.49	0.67-0.98	0.18-1.61	0.34-1.02	0.5-4.16	0.47-1.27
A Level or Equivalent	1.37	**1.73+**	0.77	0.94	0.89	0.91	0.27	0.84	1.72	0.83
	0.77-2.45	**0.94-2.03**	0.35-1.71	0.44-2.03	0.55-1.44	0.69-1.18	0.03-2.3	0.4-1.78	0.47-6.26	0.39-1.76
Degree +	0.49	**0.63+**	0.39	0.51	0.63	0.64	0.71	**0.50****	1.60	0.77
	0.26-0.93	**0.34-1.16**	0.18-0.87	0.24-1.11	0.4-0.97	0.5-0.81	0.19-2.64	**0.23-1.07**	0.5-5.2	0.41-1.46

Appendix Table A4.2. Family Socialisation and Female Criminal Offending Behaviour Patterns regressed without imputation using both the Complete Age Data at age 16 and also the Full Available Information, RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001.(^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)
Number Younger Siblings (^None)										
1	0.95	0.96	**3.55****	**3.34****	0.84	0.89	1.30	0.95	0.70	0.85
	0.62-1.44	0.64-1.44	**1.39-9.05**	**1.36-8.23**	0.55-1.29	0.68-1.17	0.17-9.83	0.36-2.51	0.22-2.21	0.4-1.8
2+	1.79	1.52	**4.25+**	**3.82+**	1.35	1.23	0.00	1.40	**5.87***	**2.10+**
	0.88-3.62	0.77-2.99	**0.94-19.2**	**0.89-16.47**	0.62-2.92	0.75-2.01	#VALUE!	0.27-7.19	**1.47-23.52**	**0.91-6.21**
Number Older Siblings (^None)										
1	0.89	**0.76+**	2.09	1.56	1.19	1.04	2.81	1.14	2.23	1.23
	0.55-1.42	**0.48-1.2**	0.71-6.09	0.55-4.39	0.75-1.89	0.76-1.41	0.23-34.65	0.4-3.28	0.66-7.55	0.53-2.85
2+	1.23	0.97	3.05	2.33	0.99	1.14	2.99	0.41	3.62	**2.40***
	0.67-2.24	0.55-1.72	0.82-11.39	0.69-7.88	0.52-1.92	0.77-1.68	0.1-86.99	0.07-2.31	0.81-16.09	**0.89-3.99**
Who read to the CM most (^Mother)										
Father	1.05	1.04	1.06	1.02	1.06	1.04	0.00	0.43	1.24	1.35
	0.63-1.73	0.65-1.69	0.31-3.61	0.31-3.42	0.64-1.77	0.74-1.46	#VALUE!	0.06-3.27	0.31-4.91	0.52-3.49
Other Adult	**0.64+**	0.59+	1.63	1.64	0.72	0.79	2.31	1.07	**1.67+**	1.95
	0.31-1.33	0.79-1.2	0.49-5.38	0.52-5.18	0.36-1.46	0.52-1.22	0.19-28.37	0.29-3.87	**0.81-6.86**	0.76-5.01
Sibling	0.85	0.77	1.20	1.23	0.68	0.79	0.00	1.45	1.32	1.51
	0.46-1.54	0.43-1.39	0.35-4.17	0.37-4.1	0.36-1.29	0.54-1.14	#VALUE!	0.41-5.15	0.35-4.96	0.55-4.16
Who was with the CM after school (^Mother)										

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)
Father	**1.80***	**1.84***	**2.83***	**2.77***	0.68	0.84	0.00	1.49	0.83	1.43
	1.06-3.05	**1.11-3.05**	**1.02-7.84**	**1.03-7.45**	0.33-1.38	0.54-1.3	#VALUE!	0.3-7.38	0.17-3.98	0.56-3.63
Older Sibling	**1.92****	**2.05****	1.76	1.97	0.98	**1.40+**	2.48	1.84	0.33	0.48
	1.13-3.28	**1.2-3.47**	0.53-5.88	0.63-6.18	0.54-1.76	**0.99-1.98**	0.09-71.64	0.43-8	0.04-2.71	0.12-1.98
Other Adult	1.56	**1.49+**	0.48	0.49	1.15	0.88	12.75	2.86	1.53	1.06
	0.88-2.75	**0.86-2.6**	0.06-3.92	0.07-3.56	0.66-2.01	0.58-1.33	0.75-217.23	0.93-8.74	0.41-5.7	0.37-3.08
Family time spent together										
Every unit is less time	**1.08+**	1.06	1.72	1.82	0.83	1.04	0.93	1.17	1.19	1.17
	0.94-2.34	0.99-2.46	0.21-2.41	0.25-2.66	0.52-1.34	0.77-1.4	0.02-17.92	0.48-9.73	0.33-4.27	0.73-4.31
Smoking (^Non Smoker) Stopped Pre or During Pregnancy	1.55	1.51	2.46	2.26	1.33	1.14	0.00	0.94	0.70	0.74
	0.95-2.53	0.94-2.45	0.76-8.02	0.71-7.17	0.82-2.15	0.82-1.57	#VALUE!	0.24-3.76	0.18-2.76	0.27-2.06
Smoked throughout 1-4	**1.89***	**1.59***	**2.54+**	**2.23+**	1.35	1.16	1.17	1.75	1.41	1.29
	1.25-2.85	**1.06-2.38**	**0.93-6.97**	**0.83-6**	0.89-2.04	0.89-1.51	0.15-9.42	0.66-4.6	0.52-3.79	0.64-2.6
Alcohol Pregnancy (^No)			0.00							
Once a week	0.84	0.87	1.65	1.62	1.20	1.04	3.42	1.36	0.83	0.74
	0.57-1.24	0.59-1.27	0.62-4.37	0.67-3.93	0.81-1.77	0.81-1.33	0.34-33.87	0.52-3.55	0.32-2.15	0.34-1.62
2-3 Times a Week	0.46	0.49	2.41	2.60	1.01	**1.38+**	0.00	0.92	0.00	1.07
	0.15-1.44	0.15-1.56	0.57-10.16	0.66-10.26	0.38-2.66	**0.82-2.31**	#VALUE!	0.11-7.83	#VALUE!	0.24-4.8
Conduct Rutter Score										
Every unit = less normal behaviour	**1.33***	**1.35***	**2.03+**	1.56	**1.49+**	**1.27***	4.64	2.39	2.43	2.28
	0.93-2.2	**1.013-2.2**	**0.75-5.49**	0.59-4.14	**0.9-2.47**	**0.91-1.76**	0.44-49.21	0.9-6.37	0.79-7.46	1.04-5
Hyperactive Rutter Score		1.06	1.13	1.11	1.04	1.59	0.00	1.10	0.00	2.35

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)	Complete age 16 (N.2803)	Full avail. Info. (N.5016)
Every unit = less normal behaviour		0.52-3.04	1.25-26.24	0.79-12.23	0.35-3.07	0.94-2.68	#VALUE!	0.14-8.91	#VALUE!	0.65-8.45
Mother's Malaise (^Normal)										
Moderate Behaviour Problem	1.12	1.08	0.88	1.03	1.00	1.08	0.53	2.92	1.07	1.34
	0.67-1.87	0.65-1.8	0.31-2.48	0.39-2.77	0.57-1.77	0.77-1.53	0.02-12.48	1.12-7.61	0.28-4.13	0.55-3.26
Severe Behaviour Problem	0.99	0.87	0.00	0.00	1.49	**1.34+**	3.53	0.91	1.19	1.75
	0.4-2.45	0.36-2.09	#VALUE!	#VALUE!	0.66-3.37	**0.83-2.17**	0.09-145.09	0.11-7.71	0.14-10.42	0.54-5.68
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.	0.48	0.54	**2.36+**	**2.81+**	0.63	0.74	1.23	1.29	2.10	1.26
	0.23-0.98	0.26-1.09	**0.66-8.36**	**0.8-9.86**	0.32-1.23	0.47-1.14	0.06-23.84	0.3-5.6	0.56-7.9	0.39-4.09
Intermediate Occupations	0.73	0.78	1.42	1.53	0.85	**0.81+**	0.38	0.96	1.31	1.22
	0.47-1.11	0.51-1.18	0.52-3.86	0.58-4.09	0.55-1.32	**0.96-1.07**	0.02-6.26	0.32-2.95	0.43-3.95	0.57-2.61
Other	0.45	0.44	**4.74****	**4.66****	0.75	1.16	18.22	2.51	3.34	1.69
	0.13-1.48	0.14-1.43	**1.21-18.52**	**1.34-16.26**	0.26-2.15	0.68-1.98	0.76-439.65	0.61-10.31	0.59-18.91	0.46-6.19
Parents Education (^No qual. & other)										
Vocat. Qual., SRN and C of E	0.92	0.99	0.30	0.39	**0.29***	**0.66***	0.49	0.41	1.55	1.30
	0.56-1.53	0.6-1.63	0.06-1.47	0.08-1.79	**0.14-0.59**	**0.46-0.96**	0.04-6.69	0.09-1.9	0.49-4.89	0.56-3.03
O Level or Equivalent	0.74	0.86	1.11	1.37	0.74	0.87	0.00	0.80	0.51	0.70
	0.45-1.21	0.52-1.41	0.41-2.98	0.52-3.62	0.46-1.19	0.63-1.19	#VALUE!	0.26-2.47	0.12-2.05	0.26-1.87
A Level or Equivalent	0.85	0.96	0.60	0.78	0.61	0.72	0.00	0.00	1.06	1.30
	0.42-1.7	0.48-1.9	0.12-3.01	0.16-3.79	0.3-1.25	0.44-1.18	#VALUE!	#VALUE!	0.2-5.56	0.4-4.21
Degree +	0.77	0.94	0.18	0.23		**0.74+**	1.08	0.83	0.47	0.58
	0.39-1.52	0.48-1.84	#VALUE!	0.03-2.04		**0.48-1.16**	0.04-28.9	0.18-3.92	0.08-2.8	0.14-2.33

Appendix Table A4.3. Legal Socialisation and Male Criminal Offending Behaviour Patterns regressed without imputation using both the Complete Age Data at age 16 and also the Full Available Information, RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001.(^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	Complete age 16 (N.1792)	Full avail. Info. (N.4179)	Complete age 16 (N.1792)	Full avail. Info. (N.4179)	Complete age 16 (N.1792)	Full avail. Info. (N.4179)	Complete age 16 (N.1792)	Full avail. Info. (N.4179)	Complete age 16 (N.1792)	Full avail. Info. (N.4179)
Teach Authority Not Important (^Disagree)										
Agree	1.02	1.02	**1.58**	**1.56**	0.86	0.95	1.15	0.83	1.22	1.12
	0.64-1.61	0.66-1.57	**0.93-2.68+**	**0.96-2.54+**	0.59-1.27	0.78-1.16	0.43-3.03	0.48-1.44	0.47-3.12	0.68-1.83
Police View (^No Cynicism)										
Little Cynicism	1.20	1.20	1.36	1.48	0.76	1.03	**0.31**	0.82	0.91	1.05
	0.71-2	0.73-2	0.65-2.84	0.72-3.05	0.54-1.08	0.78-1.35	**0.09-1.04+**	0.39-1.72	0.36-2.32	0.52-2.14
More Cynicism	**1.78**	**1.67**	**2.70**	**2.55**	0.89	1.22	1.47	1.30	1.11	1.38
	1.06-2.98*	**1-2.78***	**1.32-5.5**	**1.26-5.16****	0.6-1.31	0.88-1.7	0.6-3.64	0.62-2.76	0.42-2.97	0.66-2.9
Lot Cynicism	**2.30**	**2.10**	**3.93**	**3.66**	1.10	1.50	0.95	1.46	1.04	1.77
	1.31-4.04**	**1.20-3.68****	**1.86-8.31*****	**1.75-7.66****	0.70-1.75	**1.02-2.2***	0.31-2.95	0.64-3.33	0.31-3.5	0.74-4.23
Police Fair (^No Cynicism)										
Cynical	**1.65**	**1.56**	**2.18**	**2.06**	1.14	1.28	1.08	1.27	1.59	1.53
	1.06-2.57*	**1.00-2.44***	**1.29-3.68****	**1.24-3.44****	0.76-1.73	0.86-1.92	0.4-2.94	0.65-2.48	0.61-4.16	0.68-3.42
Wrong to Break the Law (^True for all)										
False for 1	1.02	1.04	0.62	0.73	0.99	1.00	1.10	1.05	1.15	1.10

	0.62-1.7	0.66-1.64	0.3-1.26	0.38-1.43	0.68-1.44	0.77-1.32	0.41-2.94	0.55-1.99	0.41-3.22	0.63-1.93
False for 2+	1.29	1.21	0.91	1.05	1.11	1.12	0.90	1.08	1.05	1.10
	0.77-2.16	0.79-1.87	0.48-1.72	0.61-1.82	0.79-1.56	0.86-1.46	0.32-2.52	0.57-2.07	0.38-2.93	0.63-1.92
Smoking (^Non Smoker)										
Stopped Pre or During Pregnancy	1.47	1.42	1.31	1.25	1.35	1.25	0.96	1.12	1.13	1.54
	0.9-2.4	0.89-2.27	0.68-2.54	0.66-2.37	0.93-1.98	1.02-1.54	0.33-2.84	0.58-2.13	0.42-3.04	0.91-2.63
Smoked throughout 1-4	**1.82**	**1.59**	**2.34**	**2.03**	**1.65**	**1.43**	1.21	**2.01**	1.22	**1.47**
	1.22-2.69**	**1.09-2.3****	**1.42-3.84*****	**1.26-3.26****	**1.21-2.24****	**1.22-1.69*****	0.54-2.72	**1.27-3.18****	0.54-2.73	**0.94-2.3+**
Alcohol Pregnancy (^No)										
Once a week	0.98	0.94	1.00	0.97	1.06	1.09	**2.90**	**1.71**	1.06	1.01
	0.68-1.4	0.67-1.33	0.63-1.58	0.63-1.5	0.8-1.4	0.94-1.27	**1.29-6.52****	**1.12-2.63****	0.49-2.26	0.67-1.52
2-3 Times a Week	1.90	1.41	1.14	0.81	1.56	1.26	-	2.23	4.68	2.74
	0.8-4.52	0.65-3.09	0.31-4.18	0.24-2.76	0.74-3.28	0.86-1.86	-	**0.89-5.62+**	**1.19-18.42***	**1.3-5.75****
Conduct Rutter Score	1.01	0.92	**1.05**	**1.06**	**1.06**	**1.22**	**2.09**	**1.59**	1.06	0.78
	0.6-1.71	0.56-1.5	**0.91-2.83+**	**0.9-2.63+**	**1.08-2.26***	**0.99-1.5+**	**0.81-5.4+**	**0.94-2.68+**	0.35-3.19	0.41-1.47
Hyperactive Rutter Scire	**1.08+**	**1.12+**	**1.11+**	**1.12+**	1.51	**1.53**	**5.08**	**2.82**	0.96	2.04
	0.45-2.59	**0.51-2.46**	**0.45-2.59**	**0.51-2.46**	0.74-3.07	**1.08-2.16***	**1.53-16.85****	**1.39-5.75****	0.12-7.93	**0.97-4.33+**
Mother's Malaise (^Normal)										
Moderate Behaviour Problem	0.94	0.92	0.76	0.75	1.12	1.26	**2.19+**	0.85	0.52	1.02
	0.53-1.67	0.53-1.57	0.36-1.61	0.36-1.57	0.74-1.7	1.01-1.57	**0.86-5.56**	0.46-1.58	0.12-2.3	0.57-1.85
Severe Behaviour Problem	**2.54**	**1.96**	1.62	1.26	0.75	1.23	0.54	0.45	1.35	1.14
	1.15-5.62**	**0.97-3.95***	0.55-4.77	0.47-3.41	0.31-1.81	0.84-1.79	0.06-4.85	0.13-1.53	0.16-11.16	0.43-3.04

SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.	0.78	0.90	1.01	0.99	0.82	0.89	**0.18**	**0.47**	0.43	0.70
	0.43-1.42	0.51-1.57	0.48-2.11	0.5-1.98	0.51-1.33	0.69-1.15	**0.02-1.48+**	**0.19-1.13+**	0.11-1.64	0.34-1.45
Intermediate Occupations	0.77	0.87	**0.60**	**0.62**	1.01	0.91	0.59	0.71	0.96	0.96
	0.51-1.16	0.59-1.28	**0.34-1.05+**	**0.36-1.06+**	0.74-1.38	0.77-1.08	0.24-1.4	0.44-1.17	0.43-2.14	0.61-1.51
Other	1.02	1.39	1.73	1.95	1.55	1.30	-	1.54	1.60	1.55
	0.35-2.92	0.53-3.64	0.54-5.58	0.65-5.83	0.65-3.69	0.81-2.08	-	0.52-4.53	0.19-13.59	0.53-4.57
Parents Education (^No qual. & other)										
Vocat. Qual., SRN and C of E	0.87	0.95	0.98	1.16	**0.66**	**0.79**	1.07	0.85	**3.80**	0.80
	0.51-1.48	0.58-1.57	0.53-1.8	0.65-2.07	**0.43-1.03+**	**0.64-0.99***	0.42-2.71	0.5-1.46	**1.33-10.91****	0.45-1.42
O Level or Equivalent	0.99	1.08	0.72	0.81	1.00	0.75	**0.31**	**0.46**	1.41	0.82
	0.62-1.59	0.69-1.68	0.39-1.32	0.45-1.46	0.7-1.44	0.61-0.91	**0.10-1.00***	**0.25-0.84****	0.43-4.65	0.49-1.39
A Level or Equivalent	1.22	1.48	0.78	1.00	0.75	0.82	0.25	0.66	1.69	0.70
	0.65-2.26	0.83-2.65	0.33-1.84	0.44-2.27	0.44-1.27	0.61-1.09	0.03-2.07	0.28-1.52	0.39-7.32	0.3-1.63
Degree +	**0.62**	0.74	**0.38**	**0.52**	**0.66**	**0.62**	0.49	0.47	2.43	0.80
	0.32-1.20+	0.39-1.37	**0.15-0.92***	**0.22-1.22+**	**0.42-1.05+**	**0.48-0.8*****	0.14-1.76	**0.21-1.03+**	0.69-8.49	0.41-1.57

Appendix Table A4.4. Legal Socialisation and Female Criminal Offending Behaviour Patterns regressed without imputation using both the Complete Age Data at age 16 and also the Full Available Information, RRR and confidence intervals (Nb. + p<0.1; * p<0.05; ** p<0.01; *** p<0.001.(^reference category).

	Early Onset Limited		Early Onset Desist		Late Onset Desist		Persist		Late Bloomer	
	Complete age 16 (N.2470)	Full avail. Info. (N.4331)	Complete age 16 (N.2470)	Full avail. Info. (N.4331)	Complete age 16 (N.2470)	Full avail. Info. (N.4331)	Complete age 16 (N.2470)	Full avail. Info. (N.4331)	Complete age 16 (N.2470)	Full avail. Info. (N.4331)
Teach Authority Not Important (^Disagree)										
Agree	1.01	1.01	0.51	0.43	**1.46**	**1.44**	1.32	3.08	1.03	1.80
	0.61-1.68	0.61-1.66	0.11-2.28	0.1-1.92	**0.92-2.3+**	**1.06-1.95***	0.13-12.95	**1.18-8.06***	0.23-4.68	0.77-4.19
Police View (^No Cynicism)										
Little Cynicism	1.45	1.39	0.37	0.38	1.19	1.11	4.16	1.71	2.77	1.08
	0.84-2.48	0.81-2.38	0.07-1.88	0.08-1.9	0.7-2.01	0.71-1.74	0.34-51.31	0.29-10.28	0.5-15.17	0.27-4.33
More Cynicism	1.33	1.32	1.48	1.58	1.38	1.17	3.91	1.47	**3.64**	1.47
	0.75-2.38	0.74-2.34	0.46-4.74	0.51-4.92	0.8-2.38	0.76-1.8	0.22-70.45	0.23-9.58	**0.68-19.62+**	0.4-5.43
Lot Cynicism	**2.58**	**2.48**	**3.68**	3.34	**1.85**	1.35	-	1.05	3.42	1.27
	1.45-4.59* **	**1.4-4.4** **	**1.14-11.84** **	1.06-10.5	**1.02-3.35***	0.87-2.11	-	0.09-11.75	0.5-23.16	0.27-5.86
Wrong to Break the Law (^True for all)										
False for 1	**1.60**	1.44	0.73	0.71	1.04	1.07	-	0.64	1.49	1.21
	0.94-2.73+	0.87-2.4	0.2-2.66	0.23-2.22	0.61-1.75	0.71-1.63	-	0.11-3.75	0.33-6.84	0.39-3.71
False for 2+	**1.55**	1.42	**0.23**	**0.23**	1.15	1.06	0.82	0.70	2.21	1.66
	0.89-2.67+	0.88-2.32	**0.04-1.28+**	**0.03-1.98***	0.67-1.96	0.72-1.56	0.07-10.35	0.11-4.43	0.52-9.42	0.58-4.79
Smoking (^Non Smoker)										

Stopped Pre or During Pregnancy	1.48	1.45	1.68	1.64	1.33	1.15	-	1.40	0.80	0.86
	0.87-2.51	0.87-2.43	0.42-6.67	0.43-6.33	0.79-2.23	0.81-1.62	-	0.32-6.05	0.15-4.19	0.27-2.76
Smoked throughout 1-4	**1.79**	**1.49**	**2.88**	**2.58**	**1.38**	**1.14**	3.01	**2.44**	1.62	1.63
	1.14-2.78**	**0.97-2.3+**	**0.98-8.52+**	**0.89-7.5+**	**0.89-2.15+**	0.86-1.52	0.38-23.97	**0.81-7.38+**	0.52-5.07	0.72-3.69
Alcohol Pregnancy (^No)										
Once a week	0.80	0.86	1.52	1.55	1.28	1.03	3.07	1.36	0.67	0.59
	0.54-1.19	0.59-1.26	0.59-3.94	0.62-3.87	0.86-1.9	0.8-1.34	0.42-22.42	0.52-3.53	0.24-1.9	0.27-1.29
2-3 Times a Week	0.38	0.44	2.64	2.84	0.91	1.37	-	0.87	-	1.01
	0.11-1.27	0.14-1.45	0.6-11.57	0.68-11.82	0.35-2.38	0.91-2.33	-	0.1-7.64	-	0.22-4.57
Conduct Rutter Score	**1.17**	**1.19**	**1.36**	1.31	1.34	1.17	1.08	1.05	1.44	1.06
	1.03-3.02*	**0.95-2.64+**	**0.85-6.57+**	0.84-6.33	0.78-2.29	0.82-1.68	0.16-17.22	0.5-4.81	0.61-9.72	**1-6.09***
Hyperactive Rutter Scire	1.91	1.41	**1.15**	**1.16**	1.05	**1.17**	-	1.01	-	2.01
	0.74-4.93	0.56-3.56	**0.68-18.94+**	**0.59-15.15+**	0.35-3.17	**0.96-2.9+**	-	0.12-8.88	-	0.41-9.86
Mother's Malaise (^Normal)										
Moderate Behaviour Problem	1.19	1.10	1.57	1.37	1.05	1.13	2.53	2.96	0.99	1.33
	0.68-2.08	0.64-1.9	0.53-4.65	0.47-3.98	0.57-1.91	0.78-1.63	0.1-64.8	**1.01-8.64***	0.19-5.03	0.46-3.88
Severe Behaviour Problem	0.86	0.76	-	-	1.59	1.37	9.12	1.23	-	1.85
	0.31-2.34	0.29-1.99	-	-	0.67-3.74	0.82-2.29	0.29-286.58	0.14-10.66	-	0.49-7.04
SES (^Routine & manual Occu.)										
Higher Mng., admin. & prof.	**0.42**	**0.44**	**2.57**	**3.01**	0.74	0.86	1.89	1.73	**4.17**	2.05
	0.18-0.96*	**0.19-1.02+**	**0.72-9.22+**	**0.85-10.66+**	0.37-1.49	0.54-1.37	0.11-31.12	0.38-7.91	**1.04-16.72***	0.6-6.98
Intermediate Occupations	0.72	0.77	1.60	1.65	0.89	0.87	0.60	1.37	1.21	1.41

	0.45-1.14	0.49-1.21	0.56-4.52	0.59-4.61	0.56-1.4	0.64-1.18	0.04-10.35	0.43-4.41	0.33-4.48	0.6-3.35
Other	**0.31**	0.38	2.52	2.80	0.83	1.10	6.82	4.27	2.53	1.77
	0.07-1.34+	0.09-1.57	0.48-13.17	0.56-14.02	0.29-2.39	0.6-2.01	0.58-79.96	**1.07-17.03***	0.28-22.83	0.38-8.23
Parents Education (^No qual. & other)										
Vocat. Qual., SRN and C of E	0.74	0.89	0.28	0.35	**0.33**	**0.65**	0.29	0.42	0.77	1.08
	0.42-1.29	0.52-1.54	**0.06-1.33+**	0.07-1.65	**0.16-0.69****	**0.44-0.96***	0.02-4.66	0.09-2	0.18-3.25	0.39-2.96
O Level or Equivalent	0.66	0.80	0.85	1.00	0.84	0.91	-	0.58	0.58	0.65
	0.39-1.12+	0.47-1.35	0.3-2.41	0.36-2.78	0.52-1.38	0.65-1.26	-	0.15-2.25	0.14-2.44	0.22-1.93
A Level or Equivalent	0.79	0.92	0.55	0.66	0.63	0.62	-	-	0.97	1.39
	0.38-1.64	0.44-1.9	0.11-2.69	0.14-3.24	0.3-1.35	**0.36-1.09+**	-	-	0.18-5.27	0.41-4.69
Degree +	0.60	0.76	**0.17**	0.20	0.72	**0.68**	0.89	0.71	0.23	0.36
	0.29-1.28	0.36-1.6	**0.02-1.49+**	0.02-1.8	0.37-1.41	**0.42-1.11+**	0.05-17.01	0.15-3.34	0.02-2.33	0.07-1.86

Table A5. Auxiliary Variables

Name Variable and Categories in Variable (baseline reported first)	Male N (%)	Female N (%)	Total N (%)
Birth weight (CM* age 0)	Male N 8,891 (100%)	Female N 8,266 (100%)	Total N 17,161[nb] (100%)
Low 200 to 2499g	2,163 36.76	2,469 40.38	4,660 38.51
Average 2500 to 3999g	3,268 24.33	3,338 30.20	6,608 27.15
High 4000 to 6463g	3,460 38.92	2,432 29.42	5,893 34.43
Breastfeeding (CM* age 5)	Male N 6,540 (100%)	Female N 6,092 (100%)	Total N 12,633[nb] (100%)
No	4,142 63.33	3,829 62.85	7,972 (63.10)
Yes	2,398 (36.67)	2,263 (37.15)	4,661 (36.90)

END