Chapter 2
The Cambridge Study: Previous Results

2.1 Sample

The Cambridge Study in Delinquent Development is a prospective longitudinal survey of the development of offending and antisocial behavior among 411 males. At the time they were first contacted in 1961–1962, these males were all living in a working-class inner-city area of South London. The sample was chosen by taking all the boys who were then aged 8–9 and were listed on the registers of six state primary schools within a one-mile radius of a research office that had been established. Hence, the most common year of birth of these males was 1953.

In nearly all cases (94%), their family breadwinner in 1961–1962 (usually the father) had a working-class occupation (skilled, semiskilled, or unskilled manual worker). Most of the boys (357, or 87%) were White and of British origin, since both their parents were born and brought up in England, Scotland, or Wales. Of the remainder, 14 had at least one parent from the North or South of Ireland, 12 had at least one parent of West Indian or African origin, 12 had at least one parent from Cyprus, and 16 boys had at least one parent from another country (Australia, France, Germany, Malta, Poland, Portugal, Spain, and Sweden).

The major results obtained in the project between ages 8 and 40 can be found in five books (Piqüero et al. 2007; West 1969, 1982; West and Farrington 1973, 1977) and in summary papers by Farrington and West (1981, 1990), Farrington (1995c), Farrington et al. (2003), and Farrington et al. (2009). A complete list of the 200 publications (as of June 2012) from the Cambridge Study is included in Chap. 7. These publications should be consulted for more details about the earlier results. All references in this book can be found either in Chap. 7 or in Chap. 8 (Other References). This book presents the first results from the criminal record searches up to age 56.
2.2 Aims of the Study

The original aims of the Study were to describe the development of delinquent and criminal behavior in inner-city males, to investigate how far it could be predicted in advance, and to explain why juvenile delinquency began, why it did or did not continue into adult crime, and why adult crime often ended as men reached their twenties. The main focus was to study continuity or discontinuity in offending behavior and the effects of life events on delinquent development. The Study was not designed to test any one particular theory of delinquency but to test many different hypotheses about the causes and correlates of offending and to establish the relative importance of different predictors of antisocial behavior. Nevertheless, a theory has been proposed to explain these results (see Farrington, 2005b).

One reason for casting a wide net at the start and measuring many different variables was the belief that interests and perspectives in criminological theory changed over time and that it was important to try to measure as many variables as possible in which future researchers might be interested. Another reason for measuring a wide range of variables was the fact that long-term longitudinal surveys were very uncommon and that the value of the Cambridge Study would be enhanced if it yielded information of use not only to delinquency researchers but also to those interested in alcohol and drug use, educational difficulties, poverty and poor housing, unemployment, sexual behavior, aggression, other social problems, medical and psychiatric problems, and human development generally.

2.3 Methods

The Study males were interviewed and tested in their schools when they were aged about 8, 10, and 14, by male or female psychologists. They were interviewed in a research office at about 16, 18, and 21 and in their homes at about 25, 32, and 48 and by young social science graduates. At all ages except 21 and 25, the aim was to interview the whole sample, and it was always possible to trace and interview a high proportion: 389 out of 410 still alive at age 18 (95%), 378 out of 403 still alive at age 32 (94%), and 365 out of 394 still alive at age 48 (93%). Farrington et al. (1990) have described the methods of tracing and securing cooperation that achieved this remarkable high retention rate over a 40-year period. Because of inadequate funding, only about half of the males were interviewed at age 21 and about a quarter at age 25.

The tests in schools measured individual characteristics such as intelligence, attainment, personality, and psychomotor impulsivity, while information was collected in the interviews about such topics as living circumstances, employment histories, relationships with females, leisure activities such as drinking and fighting, and self-reported offending.

In addition to interviews and tests with the males, interviews with their parents were carried out by female social workers who visited their homes. These took
place about once a year from when the boy was about 8 until he was aged 14–15 and
was in his last year of compulsory education. The primary informant was the mother,
although many fathers were also seen. The parents provided details about such mat-
ters as family income, family size, their employment histories, their child-rearing
practices (including attitudes, discipline, and parental disharmony), their degree of
supervision of the boy, and his temporary or permanent separations from them.

The teachers completed questionnaires when the boys were aged about 8, 10, 12,
and 14. These furnished data about their troublesome and aggressive school behav-
ior, their lack of concentration or restlessness, their school attainments, and their
truancy. Ratings were also obtained from the boys’ peers when they were in the
primary schools at ages 8 and 10, about such topics as their daring, dishonesty,
troublesomeness, and popularity.

2.4 Previous Findings on Offending

The Cambridge Study has advanced knowledge particularly about the development
of offending and antisocial behavior from childhood to adulthood, about childhood
risk factors for later offending and antisocial behavior, and about the effects of life
events on the course of development of offending. These are the three main aims of
developmental criminology (Farrington 2002a). Since this book focuses on the
development of offending over time, previous results obtained on this topic are not
reviewed here.

The Study found that offending tends to be concentrated in families. While 40%
of Study males were convicted up to age 40 in 1993, this was also true of 28% of their
fathers, 13% of their mothers, 43% of their brothers, 12% of their sisters, and 9% of
their wives. The fact that the percentage of brothers convicted was similar to the per-
centage of Study males convicted suggests that the repeated interviews with the Study
males had no effect on their likelihood of offending. There were on average 1.5 con-
victed persons out of 5.5 persons per family (or about 600 convicted persons out of
2,200 searched). While 64% of families contained at least one convicted  person, only
6% of families accounted for half of all the convictions of all family members
(Farrington et al. 1996). More recently, Besemer and Farrington (2012) studied the
relationship between offending trajectories of parents and children.

The conviction careers of fathers and mothers (up to an average age of 70) were
very different from those of the Study males. Contrary to the view that offending is
heavily concentrated in the teenage years, the average age of conviction was 30 for
fathers and 35 for mothers. Contrary to the view that most people who are going to
offend begin before age 20, the average age of onset was 27 for fathers and 33 for
mothers. One-quarter of convicted fathers did not start offending until after age 35, and
one-quarter of convicted mothers did not start offending until after age 42 (Farrington
et al. 1998). It must, however, be born in mind that fathers reached the peak conviction
ages of 14–20 in 1937–1943 on average, when many of them would have been away
in World War II. Also, it is possible that some early convictions of fathers and mothers
could have been deleted from the Criminal Record Office before our first search in 1964. A systematic removal of files, termed “weeding,” began in 1958. For example, files of offenders aged between 40 and 70 were weeded if they had not come to the notice of the police for at least 20 years (Farrington et al. 1998, p.90).

Contrary to the view that most offenders “grow out” of crime in their twenties, the average age of desistance was 36 for convicted fathers and 38 for convicted mothers. One-quarter of convicted fathers did not stop offending until after age 45, and one-quarter of convicted mothers did not stop offending until after age 48. Contrary to the view that criminal careers are relatively short, their average duration (excluding one-time offenders) was 16 years for fathers and 15 years for mothers (Farrington et al. 1998). The absence of fathers in World War II means that their career length may have been underestimated. When complete criminal careers are studied, officially recorded offending seems far more persistent than previously thought. However, we have no self-reported offending data from fathers or mothers.

2.5 Childhood Risk Factors

Before anyone was convicted, at ages 8–10, the future delinquents differed from the non-delinquents in many respects, and similar results were obtained whether delinquency was based on convictions or self-reports (West and Farrington 1973). The key risk factors at ages 8–10 fell into six major categories (Farrington 1990b), each of which independently predicted later offending: (1) disruptive child behavior (troublesomeness or dishonesty), (2) criminality in the family (a convicted parent, a delinquent sibling), (3) low intelligence or low school attainment, (4) poor child-rearing (poor discipline, poor supervision, or separation of a child from a parent), (5) impulsiveness (daring or risk-taking, restlessness, or poor concentration), and (6) economic deprivation (low income, poor housing, large family size). There have been many later studies of risk factors (see, e.g., Farrington 2012a, 2012b; Farrington, Coid, and West 2009).

To give some idea of the extent to which convictions might be predictable in advance, a combined measure of vulnerability was developed at age 8–10, based on low family income, large family size (five or more children), a convicted parent, poor child-rearing, and low nonverbal IQ (90 or less). Of the 63 boys with three or more of these adverse factors, 46 (73%) were convicted up to age 32. The unconvicted boys tended to have few or no friends at age 8, suggesting that social isolation might be a protective factor against offending (Farrington et al. 1988b). However, social isolation predicted adult-onset offending (Zara and Farrington 2009, 2010). Later research focused on factors that might protect boys in risk categories from becoming offenders (Farrington and Ttofi 2012).

Additional investigation by Piquero et al. (2007) found that important individual and environmental risk factors not only distinguished between non-offenders and offenders to age 40 but also between membership in the five trajectory groups identified in accumulated conviction histories to age 40. Another study linking
teacher-reported aggression in early adolescence to the age-40 offending trajectories revealed that there was a strong degree of continuity in aggression/antisocial behavior, as identified by teachers, and high-rate chronic offending patterns, as measured in the age-40 conviction trajectories—and this was especially the case among the most highly aggressive children (Piquero, Carriaga, Diamond, Kazemian, and Farrington 2012).

2.6 Risk Mechanisms

While a great deal is known about key risk factors for offending, less is known about intervening causal processes. As an example of an attempt to investigate mechanisms linking risk factors and antisocial behavior, we tested different explanations of the relationship between disrupted families and delinquency (Juby and Farrington 2001). Trauma theories suggest that the loss of a parent has a damaging effect on a child, most commonly because of the effect on attachment to the parent. Life-course theories focus on separation as a sequence of stressful experiences and on the effects of multiple stressors such as parental conflict, parental loss, reduced economic circumstances, changes in parent figures, and poor child-rearing methods. Selection theories argue that disrupted families produce delinquent children because of preexisting differences from other families in risk factors such as parental conflict, criminal or antisocial parents, low family income, or poor child-rearing methods.

It was concluded that the results favored life-course theories rather than trauma or selection theories. While boys from broken homes (permanently disrupted families) were more delinquent than boys from intact homes, they were not more delinquent than boys from intact high-conflict families. Interestingly, this result was replicated in Switzerland (Haas et al. 2004). Overall, the most important factor was the post-disruption trajectory. Boys who remained with their mother after the separation had the same delinquency rate as boys from intact low-conflict families. Boys who remained with their father, with relatives or with others (e.g., foster parents), had high delinquency rates. The results were similar whether convictions or self-reported delinquency were studied.

2.7 Effects of Life Events

The effects of numerous life events on the course of development of offending were investigated. In particular, going to a high-delinquency-rate school at age 11 did not seem to amplify the risk of offending, since badly behaved boys tended to go to the high-delinquency-rate schools (Farrington 1972). However, getting convicted did lead to an increase in offending, according to the boys’ self-reports (Farrington 1977a). Unemployment also caused an increase in offending but only for crimes leading to financial gain, such as theft, burglary, robbery, and fraud. There was no effect of
unemployment on other offenses such as violence, vandalism, or drug use, suggesting that the link between unemployment and offending was mediated by lack of money rather than boredom (Farrington et al. 1986).

It is often believed that marriage, especially a good-quality marriage (Laub et al. 1998), is one of the most effective antidotes for male offending, and Farrington and West (1995) did indeed find that getting married led to a decrease in offending compared with staying single. Also, later separation from a wife led to an increase in offending compared with staying married. More detailed analyses of the effects of marriage on offending using propensity score matching confirmed these results (Theobald and Farrington 2009, 2011, 2012a). Another protective life event was moving out of London, which led to a decrease in offending (Osborn 1980). This was probably because of the effect of the move in breaking up delinquent peer groups.

2.8 Validity

Numerous tests of validity were carried out on the data collected between ages 8 and 32, in most cases based on comparisons between interview data and external information from records. For example, self-reports of convictions were compared with criminal records of convictions, and the mother’s report of the boy’s birth weight was compared with hospital records. It was shown that self-reported delinquency had predictive validity: Among unconvicted males, those who reported a particular type of offense had an increased probability of being convicted for it later (Farrington 1989d). As another example, more than twice as many of those who said that they had sexual intercourse without using contraceptives at age 18 subsequently conceived a child outside marriage as of the remainder (Farrington and West 1995).

Reliability checks were also made. For example, information about the same topic (e.g., school leaving age) from different interviews was compared, as was information about the same topic from different parts of the same interview. Generally, the men were randomly allocated between our two or three interviewers in each data collection wave in order to investigate interviewer effects, but fortunately these were rarely found (see, e.g., West and Farrington 1977, pp. 172–175). All of these validity and reliability checks suggested that in the vast majority of cases the Study males were genuinely trying to tell the truth.

2.9 Costs of Offending

Piquero, Jennings, and Farrington (2012) calculated the offending costs of the Study males’ cumulative conviction histories (to age 50) in order to arrive at an estimate of the individual monetary costs of crime. They found not only that the offending costs were differentially distributed across distinct offending trajectories but also in particular that the most chronic offenders imposed the greatest financial burden on society. These authors estimated that a male high-rate chronic offender, on average,
imposed an annual cost of £18 ($29) per UK citizen or a lifetime cost of £742 ($1,185) per UK citizen. Such offenders cost society about UK £60,000 or US$95,000, based on their convictions alone (which are the tip of the iceberg of offending).

### 2.10 Overlap between Adverse Health and Offending

There has been a surge in interest in the overlap between criminal offending and adverse health outcomes. Because the Cambridge Study was fortunate to have collected a wide range of life- and health-related outcomes, this potential overlap has received important attention. For example, Piquero, Piquero, and Farrington (2010) demonstrated that accumulated offending histories to age 40 were related to job classifications at age 48, uncovering that high-rate chronic offenders were the least likely to hold prestigious white-collar jobs, while non-offenders were the most likely to be in more prestigious white-collar occupations. In another study, Piquero et al. (2010) examined whether variation in offending trajectories to age 40 predicted a measure of life success at age 48, including outcomes such as employment and mental health. Their analyses showed that high-rate chronic offenders exhibited more life failure than other, less chronic offenders who were leading more successful lives. Additional research by Piquero, Farrington, Fontaine, Vincent, Coid, and Ullrich (2012) found that measures of psychopathy at age 48 were related to both individual and environmental childhood risk factors but especially to offending styles. In particular, high-rate chronic offenders (defined by their conviction histories to age 40) had the highest psychopathy scores at age 48, including the highest scores across all symptom clusters and a total psychopathy score.

With respect to health-related injuries, Shepherd et al. (2009) found that death and disability by age 48 was predicted by childhood and parental predictors of offending, self-reported delinquency at age 32, and conviction history. Piquero et al. (2011) made additional use of the distinct age-40 offending trajectories, finding that, by age 48, the high-rate chronic offender trajectory had the highest risk for being registered disabled and being hospitalized. Follow-up research by Piquero and his colleagues (2012) that examined the relationship between offending and early death among the Cambridge males indicated that high-rate chronic offenders exhibited the highest risk of death, a relationship that remained intact even after consideration of childhood individual and environmental risk factors as well as involvement in behaviors that are related to both offending and adverse health outcomes, such as binge drinking and excessive smoking.

### 2.10.1 Strengths of the Cambridge Study

The Cambridge Study in Delinquent Development has a unique combination of features: (a) Nine personal face-to-face interviews with the males have been
completed over a period of 40 years, from age 8 to age 48; (b) the main focus of interest is on offending, which has been studied from age 10 to age 56; (c) the sample size of about 400 is large enough for many statistical analyses but small enough to permit detailed case histories of the boys and their families; (d) there has been a very low attrition rate, so that the information is very complete; (e) information has been obtained from multiple sources: the males, their parents, teachers, peers, and official records; and (f) information has been obtained about a wide variety of theoretical constructs, including intelligence, impulsiveness, socioeconomic status, parental child-rearing methods, peer delinquency, school behavior, employment success, marital stability, medical and psychiatric problems, and so on.

No other survey in the world has yet followed up hundreds of children in a community sample for 40 years or more, focusing on offending, and including more than five personal interviews spanning the period from childhood to the late forties. One of the most comparable surveys to the Cambridge Study is the follow-up of about 700 children born on Kauai (Hawaii) in 1955 by Werner and Smith (2001), which had extensive perinatal data and four follow-up contacts to age 40. However, only 70% of the sample was surveyed at age 40. In the famous follow-up of the Glueck delinquents by Laub and Sampson (2003), only 52 men were interviewed at age 70 out of a possible 230 still alive; no others were interviewed after age 32.

Other somewhat comparable long-term surveys of offending have been conducted by LeBlanc (1996) in Canada, Magnusson in Sweden (Klinteberg et al. 1993), Pulkkinen in Finland (Hamalainen and Pulkkinen 1996), and Huesmann in New York State (Huesmann et al. 2006). Briefly, LeBlanc followed up over 400 males, first seen at an average age of 14, to age 40 by interviews and criminal records. Magnusson followed up over 1,000 children, first seen at age 10, to an average age of 44 using questionnaire and record data. Pulkkinen followed up nearly 400 children, first seen at age 8, up to age 42, using postal questionnaires and record data. Huesmann followed up over 800 children from age 8 to age 48 using interviews and records. While all these surveys are extremely important, none had more than four personal interviews with the participants, and their attrition rates were much higher than in the Cambridge Study. For example, in the Pulkkinen study, questionnaires were completed at age 42 by 67% of those who were still alive, and in the Huesmann study, 61% of those still alive were interviewed at age 48. In sum, the Cambridge Study is unparalleled in its large number of personal contacts and its very low attrition rate over a 40-year period (For a review of major prospective longitudinal studies of offending, see Farrington and Welsh 2007).

2.10.2 Limitations of the Cambridge Study

The Cambridge Study provides information about the development of offending and antisocial behavior in an inner-city, working-class British White male sample born about 1953. To what extent similar results would be obtained with females,
Black or Asian children, suburban or rural children, middle or upper class children, children born more recently, or children brought up in other countries, are interesting empirical questions. Generally, results obtained in the Cambridge Study are similar to those obtained with comparable male samples from the UK (Farrington and Maughan 1999), Sweden (Farrington and Wikström 1994), Finland (Pulkkinen 1988), and from other Western industrialized countries (Farrington 2006c).

The Cambridge Study has the usual methodological problems of prospective longitudinal surveys. While the problem of attrition was largely overcome, testing effects (the effects on the males of repeated interviews) are not clear. However, as mentioned, the percentage of brothers (who were never contacted) who were convicted up to age 40 was very similar to the percentage of Study males who were convicted, suggesting that the repeated interviews had little effect on convictions at least. The single cohort design made it difficult to distinguish between aging and period effects; for example, between ages 14 and 18, the percentage of males who had taken drugs increased from less than 1% to 31%, but this was probably a function of the time period (from 1967 to 1971). Farrington (1979) provides a good review of the advantages and problems of longitudinal surveys of offending.

The sample size was too small to study rare events, such as sex offenders or low birth weight, effectively; Piquero et al. (2012c) recently reported that sex offending and sex recidivism was extremely rare in the Cambridge Study. Because of intermittent funding, the interviews were too infrequent to establish the exact or relative timing of many life events and hence to establish developmental sequences between presumed causes and observed effects. Inevitably, some of the initial measures, based on interviews by psychiatric social workers, now appear rather old-fashioned, and great efforts had to be made to achieve consistent and valid variables. Also, asking the males to recall over a five-year period was not ideal but was necessary because of the infrequency of the interviews.

2.11 Main Aims

The main aims of the long-term follow-up study described in this book are to investigate, for a sample of males who were living in a deprived inner-city area at age 8, the development of offending from age 10 to age 56. The two general topics addressed are as follows:

1. What are the key features of official criminal careers?

   The latest conviction data was amalgamated with earlier data to establish the ages of the first and last offenses, the duration of criminal careers, the numbers and types of offenses committed at different ages, continuity in offending over time, the relation between ages of onset and the frequency and duration of offending, and the extent to which the conviction histories of the Study men are similar to one another or whether there are unique trajectories of offending that combine to form distinct age-crime pathways over the life course.
2. What is the relationship between self-reported and official offending at different ages?

The social interview at age 48 provided new self-report data that was linked up with earlier self-report data to extend knowledge about the time course of criminal careers from age 10 to age 48 (uniquely including contemporaneous self-report data at several different ages on the same men). It is also possible to compare self-reported and official offending to establish the number of self-reported offenses per conviction, which is an important but rarely undertaken analysis in the criminal career literature because of data constraints. It is worth noting that the face-to-face social interview given at age 48 was closely modeled on the previous social interview given at age 32 and includes the same self-reported offending questions asked from age 18 onward. The interview was approved by the Ethics Committee of the Institute of Psychiatry, London University.

2.12 Summary

The Cambridge Study has advanced knowledge about the development of offending, risk factors, and the effects of life events. The Study is unique especially in (a) following up hundreds of children in a community sample for 40 years, (b) focusing on offending, (c) including more than five personal interviews spanning the period from childhood to the late forties, and (d) having a very low attrition rate. This chapter has briefly mentioned only a few previous results. The publications listed in Chap. 7 should be consulted for details of numerous other findings.
Offending from Childhood to Late Middle Age
Recent Results from the Cambridge Study in Delinquent Development
Farrington, D.; Piquero, A.R.; Jennings, W.G.
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