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## Crime and the transition to teenage parenthood

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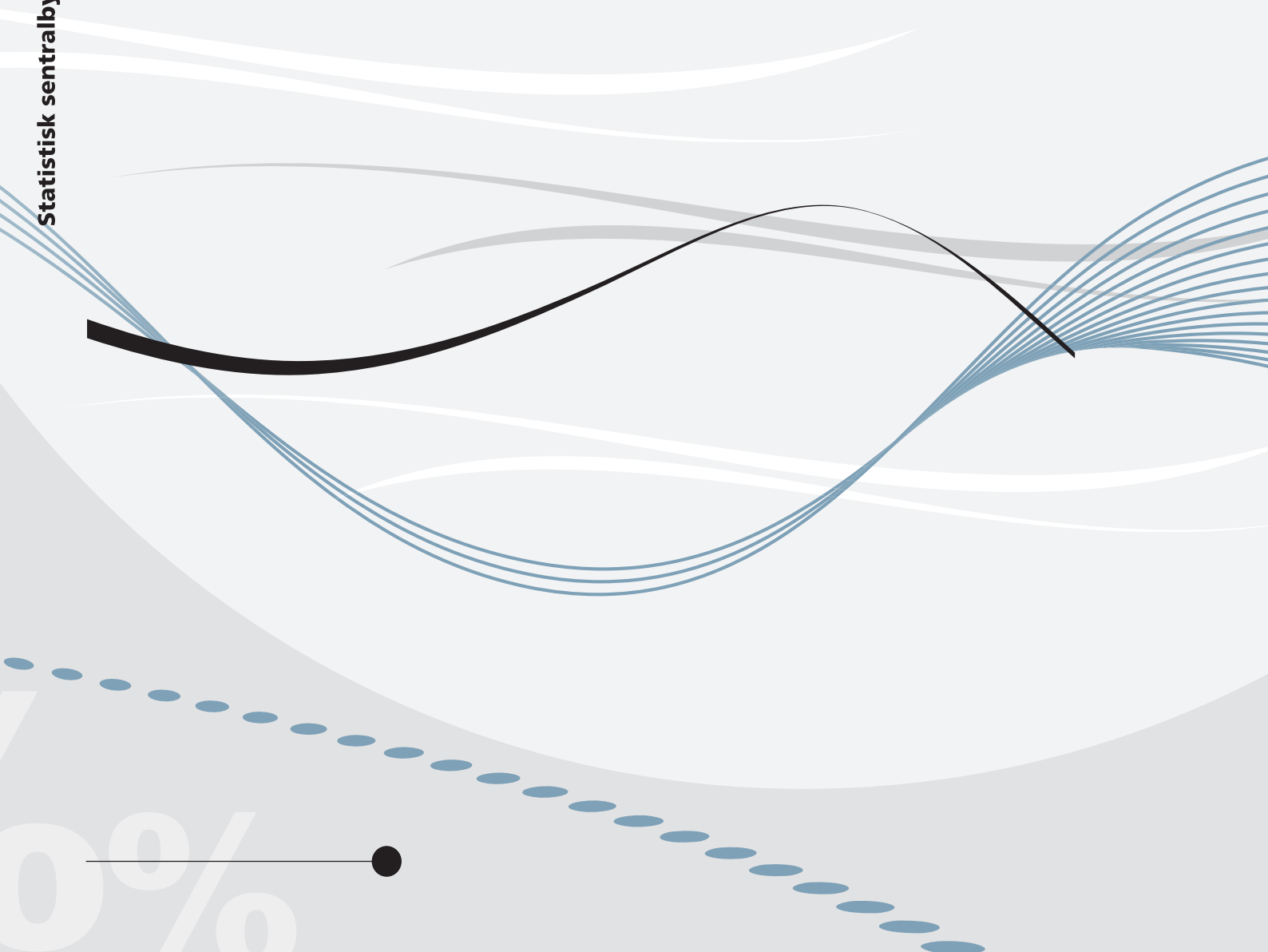
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## **Crime and the transition to teenage parenthood**





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Statistics Norway, Research Department

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## **Crime and the transition to teenage parenthood**

**Abstract:**

Age-graded social control theory suggests that parenthood can have a preventive effect on crime among adults, but it is unclear whether and how this applies to teenagers, as teenage parenthood and affiliation with crime can have mutual confounding causes. Using individual-level Norwegian administrative register data on the total population of fifteen to nineteen year olds, we assess the relationship between teenage parenthood and criminal activity. We find that teenage parents have an elevated risk of offending compared to non-parents, but that the transition to parenthood is nevertheless related to a within-individual decline in offending. This decline does not seem to be of permanent nature for girls, but for the boys it appears to stabilize on a lower level than before the transition to teenage fatherhood.

**Keywords:** teenage parenthood, crime, life course, desistance

**JEL classification:** D19, K49

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## **Sammendrag**

Aldersgradert sosial kontroll-teori postulerer at overgangen til foreldreskap kan bidra til å redusere kriminell aktivitet blant voksne, men det er usikkert i hvor stor grad dette gjelder for tenåringer, ettersom tenåringsforeldreskap og erfaring med kriminalitet kan ha felles bakenforliggende årsaker. På grunnlag av administrative registerdata for utvalgte fødselskohorter fra 15 til 19 år undersøker vi sammenhengen mellom overgangen til tenåringsforeldreskap og registrert kriminalitet. Vi finner at tenåringsforeldre har høyere odds for å begå lovbrudd enn tenåringer som ikke har barn, men overgangen til å bli foreldre er likevel knyttet til en individuell nedgang i oddsen for å begå lovbrudd. Nedgangen ser imidlertid ikke ut til å være permanent for jentene, mens for guttene stabiliserer oddsen seg på et lavere nivå etter enn forut for overgangen til tenåringsfarskap.

# 1 .Introduction

The life course perspective has become a highly influential theoretical perspective in criminology over the past decades. It is largely inspired by the age-graded social control theory, which states that significant life-course transitions can promote changes in criminal behavior. The key argument is that life course transitions can serve as “knifing off” from the past by strengthening social bonds, alter routine activities, and promote identity transformation (Sampson and Laub, 1993, 2003, 2005). Family-related transitions has received most attention, in particular the effect of marriage on crime (Farrington and West, 1995; Laub, Nagin and Sampson, 1998; Savolainen, 2009; Massoglia and Uggen, 2010; Lyngstad and Skardhamar, 2011), but some have suggested that becoming a parent might be equally important (Sampson and Laub, 2003:135; Giordano, Seffrin and Manning, 2011; Monsbakken, Lyngstad and Skardhamar, 2013). There are reasons to expect the transition to parenthood to serve as a turning point because the theoretical mechanisms used to explain the changes in criminal behavior related to marriage, are also relevant to the transition to parenthood. Like marriage, being a parent involves more responsibilities, social expectations, changes in routine activities, and (more) involvement in the home and family, all of which are mechanisms associated with desistance from crime (Sampson and Laub, 2005).

Parenthood in general is associated with positive consequences (Edin, Nelson and Paranal, 2001; Giordano, Cernkovich and Rudolph, 2002; Giordano et al, 2011; Carlsson, 2012). It follows from the age-graded theory of social control that there might be different mechanisms at work at different ages. Thus, even if parenthood in adulthood might curbe crime, this is not necessarily the case for teenage parenthood. Teenage parenthood is related to several disadvantageous outcomes, such as poor economy, postponing education, less education and less contact with peers (Kiernan, 1997; Hobcraft and Kiernan, 2001; Kleven and Haugen, 2004; Holmlund, 2005; Boden, Fergusson and Horwood, 2008). It has been suggested that teenage parenthood also correlates with a higher probability to commit crime (Khurana and Gavazzi, 2010), but there is not much research on this association (but see, Hope, Wilder and Watt, 2003; Giordano et al, 2011).

There are reasons to believe that there are gender differences in the impact of transition to parenthood. For example, it has been argued that crime is more of a violation of expectations to femininity than to masculinity (Estrada and Nilsson, 2012), which we would expect to be no less by the transition to motherhood, as motherhood is associated with responsibilities, caretaking and time spent at home with he child, rather than deviance. Estrada and Nilsson (2012:203-204) argue that since women have more

to lose by offending whilst being a parent, desistance is more typical than (continued) offending (Estrada and Nilsson, 2012:203-204). Parental responsibilities are likely to differ for boys and girls as well, to some extent depending on whether the parents share household. Although we do not have reliable information on cohabitation for young parents, we expect that the mother will live with the child in almost all cases while this is less so for the father. This would imply that, on average, parenthood will affect the mother's routine activities and overall situation more than for the father.

This paper investigates both whether teenage parenthood is associated with elevated risk of crime, and whether there are any within-individual changes in risk of crime after becoming a parent. By focusing on teenagers, we address whether the hypothesized association in adulthood also holds for younger individuals. We investigate gender differences by doing separate analysis for males and females. The data are from administrative records and comprise the total Norwegian birth cohorts born between 1977 and 1987 (N = 566 114).

## **2. Theoretical perspective**

The theory of age-graded social control suggests that the strengths of social bonds to society affect individuals' decisions to commit – or not to commit – crime. Thus, crime and delinquency are more likely to occur when the person's social ties to society are weakened or absent (Sampson and Laub, 1993:18). As these social bonds might change during the life course, the propensity to commit crimes will vary accordingly. The more attachments one has to society at any point in time, the less crime and deviance, regardless of differences in criminal propensities (Sampson and Laub, 2005). It follows that changes in social bonds have the capacity to redirect a criminal trajectory, and such changes typically occur in relation to important life events, which alter informal social control, routine activities and promote identity shifts (Laub and Sampson, 2003).

While there are many potentially important life events that might lead to desistance from crime, the ones receiving the most attention in the literature is marriage (Craig, Diamond, and Piquero, 2014) and employment (Uggen and Wakefield, 2008). Laub and Sampson (2003:35) argue, in a short passage, that also parenthood can represent a potential turning point in a criminal career. There is now a growing literature on how becoming parents might affect crime (Kreager, Matsueda, and Erosheva, 2010; Giordano et al, 2011; Zoutewelle-Terovan, van der Geest, Liefbroer and Biljeveld, 2014), arguing that the same mechanisms apply to parenthood as potential turning points. Having a child involves changes in routine activities, which are more home centered, and thus gives less time to spend with deviant peers. Furthermore, it opens for more informal social control from others, such as



the family, child health clinics, and later kindergarten employees and so forth. Especially, when the parents are teenagers there is reason to assume that the family and/or the Child Welfare Service will increase their involvement. The transition to parenthood is also likely to change a young person's perception of his or her identity, and can be an opportunity to become a more responsible person and parent (Giordano et al, 2002; Sampson and Laub, 2005).

Sampson and Laub (1993, 2003) are mainly concerned with external factors as basis for a change in criminal behavior. Giordano et al (2002) point out that a significant event can only be a turning point, or a "hook for change", if one is ready for an alteration of the self. Also embedding a life course perspective into their theory, they argue that a cognitive transformation theory fits better when explaining desistance throughout the life course. An important prosocial event, like transition to (teenage) parenthood, can be a "hook for change" if the person chooses to use the event as a catalyst for different behavior (Giordano et al, 2002). The subsequent shift in criminal behavior following such event, is thus the outcome of internal forces (ibid). Sampson and Laub (2005) revised their theory in their later work, arguing that a transformation of the self is embedded in the theory.

Both theories are constructed to explain *adult* desistance from crime. How a pregnancy or a forthcoming baby changes the selves of teenagers are probably different from that of an adult. While adults have more "behavioral leeway" (Giordano et al, 2002:998-999), teenagers are more prone to reckless and impulsive behavior. The life course perspective emphasizes the importance of timing of life course events to enjoy the consequences of them (Elder, 1994). Elder (1994:6) specifically mentions pregnancy as an event with positive attributes in adulthood, but with high costs during adolescence. According to Elder (1998:6), events happening "off time" accumulate costs over the life course. Having a baby whilst being a teenager is definitely "off time" in Norway, whose teenage birth rates are among the lowest in Europe (Statistics Norway, 2015a). Hence, it is less likely that a teenager can use prosocial events as a "hook for change", and that the viable disadvantages following such events can increase through the life course. Some suggest that because becoming a teenage parent is perceived as delinquency, and is associated with a range of problem behaviors and negative outcomes, (Kiernan, 1997; Hobcraft and Kiernan, 2001; Kleven and Haugen, 2004; Holmlund 2005; Boden et al, 2008) it will be a catalyst for further deviant behavior (Thornberry, Stouthamer-Loeber and Van Dyke, 2000 and Khurana and Gavazzi, 2010). The transition to teenage parenthood can thus have quite different consequences than the transition to parenthood in adult life. In other words, it is not quite clear whether and how teenage parenthood is associated with crime.

How parenthood affects one's life situation and sense of self is likely to depend on whether one resides with the child (Monsbakken et al, 2013) as the consequences for routine activities are substantial. It is also reasonable to suggest that not living with the child has consequences for emotional bonding and thus also potential changes in sense of self. While there is a substantial proportion of single mothers, and perhaps particularly so among teenage parents, this does not necessarily mean that the father does not take any responsibility. Since the child would in most cases live with the mother, any effect is likely to vary by gender.

### **3. Previous findings**

There are a growing number of studies on the association between parenthood and criminal activity, but the prior quantitative studies are scarce and with ambiguous results. The qualitative studies, on the other hand, are in general agreement. Several report informants who clearly express how the transition to parenthood was an important incentive and gave motivation for changing behavior. For instance: "She changed my life a lot. I was headed down the wrong path. I grew up on the streets, everything from drugs to this and that. I mean, I've been in jail before. But ever since she's been born, I slowed down a lot" (Edin et al, 2001:26). These studies highlight explicitly the transition to parenthood as an important turning point for changing one's life (Edin, et al, 2001; Giordano et al, 2002; Giordano et al, 2011; Carlsson, 2012). Although the qualitative research suggests that parenthood is a "hook for change", the quantitative material shows results pointing in several directions.

Some studies have found that parenthood correlates with increased crime. Farrington and West (1995) report fatherhood to be positively associated with crime, if the child was conceived outside of marriage. Blokland and Nieuwbeerta (2005) also found a small positive effect of having children, but only among Dutch high-rate offenders, and no effect among moderate or low-rate offenders.

Other studies have found parenthood to be associated with desistance from crime. Zoutewelle-Terovan et al (2014) report that among high-rate male offenders, parenthood can promote desistance to a higher extent than marriage, but the "full family package" brings the most benefit. Similarly, among female gang members in Illinois, pregnancy and childbirth were events that decreased violence (Fleisher and Krienert, 2004). The transition to motherhood was the most important reason for quitting marihuana for female marihuana users, but the longer since start-up, the more difficult it was to stop (Chen and Kandel, 1998).

A couple of studies from the Nordic countries suggest a negative association between parenthood and crime, at least in adulthood. Using data on Finish men on two occasions, Savolainen (2009) found a negative association between becoming fathers and crime for adult male offenders. Using Norwegian register data, Skardhamar and Lyngstad (2009) found decline in offending in the years prior to fatherhood, supporting an association between becoming fathers and crime, but not of permanent nature. Similar results were found also for motherhood using similar data (Monsbakken et al 2013). For the men in the latter study, the crime rate stabilized on a lower level than prior to fatherhood (ibid). The Nordic countries are in a special position because of a strong welfare state, less inequality and low crime rates (Statistics Norway, 2015b and 2015c). The welfare state offers relatively generous benefits for parents, probably making the desistance process easier than in many other countries, because the incentives for (continued) offending might be fewer when the economic situation is better.

Most of the prior studies use a sample of only one gender. However, parenthood might affect mothers and fathers differently, which also is likely to apply to teenagers. First of all, since very few of the very young couples are married and/or live together, any effect is likely to differ as the consequences for routine activities and social control are, on average, greater for the mother. Some might be cohabiting, but we do not have reliable information on cohabitation. Gauthier and Furstenberg (2002) argue that the transition to parenthood is more time consuming than transitions to employment and partnership, and that the extra time spent usually falls on the mother. Gender differences have been found in studies including both men and women. A study of drug users by Thompson and Petrovic (2009) found that single mothers *reduced* their drug use after the transition to motherhood, while couples and single fathers *increased* their drug use after becoming parents. Very similar results were found in Uggen and Kruttschnitt's (1998) study of illegal income. For women, becoming a mother had a negative impact on illegal earnings, but the effect was almost nonexistent for fathers. Giordano et al (2011) found a higher probability for desistance among females, although depending on the desire to have a child. Theobald, Farrington and Piquero (2014) found that men who stayed with the child for five years after birth were more likely to reduce crime than other men. This supports the findings that having responsibility for the child increases the chance of desistance. On the other hand, the negative association found by Zoutewelle-Terovan et al (2014) is only evident among men; being a mother had no significant influence on women's desistance.

In most of the studies the majority of the sample are adults when becoming a parent. As parenthood whilst being a teenager may be different from parenthood in adult life, it is unclear how applicable the results described above are for teenagers. A few have investigated the association between parenthood

and criminal behavior among teenagers, but also these results are inconclusive. Hope et al (2003) reported that teen mothers have a higher rate of delinquency before pregnancy, but after the transition to motherhood it was similar to never pregnant girls. Giordano et al (2011) also found that transition to teen parenthood can promote the desistance process, but that the effect is dependent on both the desire to become parent and socioeconomic status. Khurana and Gavazzi (2010) on the other hand, report that teen fatherhood occurs more frequently among juvenile offenders, and that fatherhood further increases their delinquency rate. Similar results were reported by Thornberry, Smith and Howard (1997) and Thornberry et al (2000).

Perhaps the strongest evidence on teenage parenthood is provided by Kreager et al (2010) who studied within-person changes in a sample of disadvantaged young women up to age 26. They found that delinquency dropped substantially when becoming a mother, and although there were some signs of a rebound, there were nevertheless long-term effects (Kreager et al, 2010).

There are some notable limitations of previous research. As pointed out by Kreager et al (2010), some of the studies compare parents with non-parents rather than how the same person changes behavior. Only a few studies focus on *teenage* parenthood, which might differ substantially from parenthood in adulthood. A limited number of the studies include both genders, and none of them are based on general population samples, but rather on particular high-risk or disadvantaged groups.

In this study, we investigate the relationship between teenage parenthood and crime for both genders using a longitudinal total population sample from Norway. We consider both whether teenage parents are more crime-prone as well as whether they reduce offending when becoming parents. We use a similar approach as Kreager et al (2010) for the within-person analysis, capturing the gradual changes in offending after childbirth.

## **4. Data and methods**

The data is extracted from Norwegian administrative registers available at Statistics Norway and includes the entire population of Norway. The sample is selected from the population register and merged at the individual level to police data on solved cases to establish possible criminal records. Information on socioeconomic background is based on data on the person's parents, identified in the population records and merged to educational records and tax records.

One of the main advantages of register data is the high coverage of the population and high level of accuracy on the available variables, but also the possibility of studying groups which easily become too small in general population surveys (see, Lyngstad and Skardhamar, 2011). Using total population data imply that potential selection bias in survey response is not considered a problem. In addition, the registers are longitudinal on all measures, which make it possible to follow the ones who actually experience the transition to parenthood, and hence detect any changes in criminal activity following the transition. Thus, the data cover the transition to teenage parenthood and offending for the entire juvenile population of Norway.

The minimum age of criminal responsibility in Norway is 15 years of age, and the available data on crime is available to us from 1992 to 2012. To ensure complete records on all persons, immigrants are dropped from the analysis. By selecting those born between 1977 and 1987, we get a sample of N=566 114 persons who are followed annually from 15 years of age until the end of the year they turn 25. This constitutes a panel of up to 11 annual observations for each person. A person who dies or emigrates contributes to the analysis up to that year. In total the sample consists of 6 184 749 person-year records.

#### **4.1. Measures**

The dependent variable, committing a (new) crime, is dichotomous, taking the value 1 each year at least one crime is committed and 0 otherwise. The explanatory variable of key interest, transition to teenage parenthood, is operationalized in two ways: First, as a regular dummy variable where the value is 0 for each year, but shifts to 1 the year he or she becomes a parent. For all the years after, the dummy remains 1. Second, as a categorical variable capturing the years as parent, which represent the potential changes over time (see, Kreager et al 2010). This variable is coded 0 when not a parent, and 1 the year of child birth, and increasing by one in the subsequent years. We only consider the birth of the first child, as this is the main *transition* to parenthood and only the births of teenagers. The reference group then, contains both persons becoming parents at an older age, and persons who stay childless.

Social background is measured as the highest of each parents' accomplished education when the focal persons are 16 years. To capture the economic situation, we use longitudinal information on father's gross pension income each year, expressed in 2012 Norwegian Kroner (NOK). Age is included as a categorical variable.

## 4.2. Methods / Analytical strategy

The data has a panel structure, and we analyze changes in the probability of offending conditional on changes in parental status, following each individual from the age of 15 to 25. We take a dual approach, first using ordinary logit models to compare teenage parents with teenage non-parents. As several previous studies report between-person differences, these results are comparable to previous studies. Second, we estimate within-person effects using fixed effects (FE) models, which minimize selection bias into teen parenthood. These models are estimated on the basis of those who actually made the transition to teenage parenthood. Although there are fewer observations, the estimate is based solely of observations with variation in the explanatory variable (Firebaugh, 2008). However, this does not necessarily yield a causal estimate since time-varying unobservable variables, for instance motivation or “readiness for change” (Giordano et al, 2002) cannot be ruled out. The key advantage is rather that a FE model assures that the estimates reflect strictly within-person changes.

## 5. Results

Table 1 provides an overview of the sample. It is important to note that the number of teen-age parents is very low for both genders, but lowest for boys. This reflects that girls often have a partner who is one or two years older than themselves. It also reflects the very low rates of teenage parenthood in Norway, which is one reason why we need very large datasets to study a phenomenon that is marginal in this social context.

There are few teenage parents in total, and the proportion of parents increases with age (Statistics Norway, 2015a). Since the 1970s, the number of teenagers who have become parents have declined steadily. In 2014, only 5 out of 1000 births were by teenage girls, and there were even fewer teenage fathers (Lappegård, 2000; Statistics Norway, 2015a). Compared with the US and UK, the rate of teenage births is very low (Kiernan, 1997; Hobcraft and Kiernan, 2001; Oxford, Lee and Lohr, 2010; Statistics Norway, 2015a), but there are some geographical differences within the country. In the southern part of Norway where religion (Christianity) is more widespread, and in the northern part where the level of education typically is lower, teenage parenthood is more common than in the rest of the country (Ødegaard, 2013).

Affiliation with criminal activity is more widespread than teenage parenthood, primarily among the boys, as is expected (Statistics Norway, 2015b and 2015c). Those with low socioeconomic background have an elevated risk of becoming teenage parents and/or offending (Kiernan, 2001; Lappegård, 2000; Kleven and Haugen, 2004; Galloway and Skardhamar, 2010).

**Table 1 Descriptive statistics of the sample.**

	Boys		Girls	
	N	Percent	N	Percent
<b>Offender</b>				
Yes	14 190	4.9	2 326	0.9
No	275 932	95.1	273 666	99.2
<b>Parent</b>				
Yes	2 502	0.9	9 864	3.6
No	287 620	99.1	266 128	96.4
<b>Socioeconomic background</b>				
Higher university degree	29 556	10.2	28 008	10.2
Lower university degree	76 935	26.5	73 584	26.7
High school	148 900	51.3	141 419	51.2
Elementary school	34 068	11.7	32 387	11.7
Unknown	663	0.2	594	0.22
<b>Fathers income</b>				
< 200.000	48 213	17.5	45 642	17.6
200.001 – 400.000	94 957	16.6	90 659	16.5
400.001 – 600.000	58 729	32.7	55 520	32.9
600.001 – 800.000	20 388	20.2	19 186	20.1
800.0001 <	17 158	7.0	16 355	7.0
Unknown	50 677	5.9	48 642	6.0
<b>Region</b>				
Oslo and Akershus	55 694	19.2	58 091	21.1
Hedmark and Oppland	18 904	6.5	17 019	6.2
Southeastern Norway	46 113	15.9	43 095	15.6
Agder and Rogaland	40 940	14.1	38 062	13.8
Western Norway	48 710	16.8	44 776	16.2
Mid-Norway	24 977	8.6	23 179	8.4
North of Norway	26 019	9.0	23 439	8.5
Unknown	28 765	10.0	28 321	10.3
N = 566.114	290 122		275 992	

Table 2 shows the results from regression analysis for the association between transition to parenthood and criminal activity. The first two columns display the estimates for males, and the last two columns the corresponding estimates for females. Both models compare teenage parents with other teenagers, who have parents with the same level of education and income, are at the same age and who lives in the same region, who either had their first child after the age of 19, or did not have children at all. The second model includes years since transition to teenage parenthood to capture gradual changes after the transition rather than just a dummy. The reference group is the same as in model 1. The estimates for the control variables are in the expected direction across all models: The age parameters shows the conventional age-crime curve, higher parents' educational level is associated with lower probability of crime and low parental incomes is positively associated with crime. There are some moderate differences in place of residency, primarily related to higher crimes in the capital (Oslo) and the southern parts of Norway.

**Table 2 Ordinary logit models for the association between teenage parenthood and offending. Odds ratios.**

	Model 1 (Boys)	Model 2 (Boys)	Model 3 (Girls)	Model 4 (Girls)
Intercept	0.147 ***	0.147 ***	0.026 ***	0.027 ***
Parenthood	2.380 ***		1.847 ***	
<b>Years of parenthood (ref.= Not a teenage parent)</b>				
1 year		2.084 ***		0.826 *
2 years		2.113 ***		1.262 ***
3 years		2.332 ***		1.668 ***
4 years		2.379 ***		2.233 ***
5 years		2.538 ***		2.304 ***
6 years		2.560 ***		2.637 ***
7 years		2.741 ***		2.501 ***
8 years		2.666 ***		3.119 ***
9 years		2.743 ***		3.161 ***
10 years		3.055 ***		5.047 ***
11 years		5.393 **		5.733 ***
<b>Socioeconomic background (ref. = High school)</b>				
Higher university degree	0.471 ***	0.470 ***	0.566 ***	0.566 ***
Lower university degree	0.648 ***	0.648 ***	0.716 ***	0.716 ***
Elementary school	1.619 ***	1.619 ***	1.562 ***	1.562 ***
Unknown	1.835 ***	1.833 ***	1.520 ***	1.511 ***
<b>Fathers income (ref. = &lt;200.000)</b>				
200.001 – 400.000	0.811 ***	0.811 ***	0.819 ***	0.818 ***
400.001 – 600.000	0.754 ***	0.754 ***	0.739 ***	0.740 ***
600.001 – 800.000	0.697 ***	0.697 ***	0.653 ***	0.655 ***
800.0001 <	0.652 ***	0.652 ***	0.649 ***	0.653 ***
Unknown	1.217 ***	1.217 ***	1.417 ***	1.416 ***
<b>Age (ref. = 19 years)</b>				
15 years	0.366 ***	0.365 ***	0.674 ***	0.655 ***
16 years	0.539 ***	0.538 ***	0.748 ***	0.727 ***
17 years	0.655 ***	0.654 ***	0.830 ***	0.811 ***
18 years	0.819 ***	0.818 ***	0.972	0.958 *
20 years	0.950 ***	0.950 ***	0.905 ***	0.889 ***
21 years	0.867 ***	0.865 ***	0.763 ***	0.737 ***
22 years	0.779 ***	0.777 ***	0.704 ***	0.670 ***
23 years	0.680 ***	0.678 ***	0.603 ***	0.570 ***
24 years	0.558 ***	0.555 ***	0.509 ***	0.477 ***
25 years	0.489 ***	0.486 ***	0.449 ***	0.418 ***
<b>Region (ref. = Oslo and Akershus)</b>				
Hedmark and Oppland	0.771 ***	0.771 ***	0.723 ***	0.722 ***
Southeastern Norway	1.042 ***	1.042 ***	0.997	0.995
Agder and Rogaland	1.011	1.011	1.008	1.006
Western Norway	0.865 ***	0.865 ***	0.727 ***	0.726 ***
Mid-Norway	0.822 ***	0.822 ***	0.779 ***	0.778 ***
North of Norway	0.919 ***	0.919 ***	0.786 ***	0.785 ***
Unknown	0.094 ***	0.094 ***	0.101 ***	0.101 ***

\*\*\* p&lt;0.001 \*\* p&lt;0.01 \* p&lt;0.05 ^ p&lt;0.1



Model 1 shows that teenage fathers have in average 138 percent higher odds of offending than boys with the same socioeconomic background, age and from the same region, who did not become teenage fathers. Thus, teenage fathers have a much higher probability of offending than the rest of the population. Model 2 elaborates on this model by estimating the yearly changes after making the transition to fatherhood. Teenage fathers have more than double the odds of offending all years, and increasingly so for each year, with the lowest odds ratio the first year as a teenage father.

Model 3 and 4 present the results for girls. Model 3 shows a similar pattern as for boys, as teenage mothers have 84.7 percent higher odds of offending than girls at the same age and with the same socioeconomic and geographical background, that did not become teenage mothers. Model 4 shows the yearly odds of committing at least one offense for each year after the transition to motherhood and reveals that teenage mothers have lower odds of offending the first year as a teenage mother, but with a gradually increasing risk the following years.

That the risk of offending increases since the time of childbirth is in line with previous findings (Kreager et al, 2010; Monsbakken et al, 2013). The first year(s) is the time when the baby is most time consuming, and thus requires the parents' involvement in family life to a higher degree. This is also when the direct social control is at its peak, with health control of the baby every few months, in addition to Child Protection Service if the new parents are under the age of 18. The informal control is probably also more present, through family and friends.

From these results it seems as if teenage parents are more crime-prone than the rest of the population, and increasingly so with time. We now turn to the strictly within-person analysis as displayed in Table 3.

Table 3 is organized in a similar way as Table 2 above, but given that FE methods are strictly within-person estimates, the interpretation is different. In contrast to Table 2, which displays the odds ratio between teenage parents and the rest of the population, the estimates in Table 3 refer to the changes within the same individual, before and after the transition to parenthood.

**Table 3 Fixed effects models for the association between teenage parenthood and offending. Odds ratios.**

	Model 5 (Boys)		Model 6 (Boys)		Model 7 (Girls)		Model 8 (Girls)	
Parenthood	0.682	***			0.599	***		
<b>Years of parenthood (ref.= Before transition to parenthood)</b>								
1 year			0.597	***			0.267	***
2 years			0.601	***			0.415	***
3 years			0.683	***			0.554	***
4 years			0.694	***			0.765	***
5 years			0.743	***			0.791	***
6 years			0.745	***			0.914	
7 years			0.809	**			0.854	*
8 years			0.633	***			0.972	
9 years			0.585	**			0.850	
10 years			0.443	*			1.255	
11 years			0.580				1.054	
<b>Fathers income (ref. &lt; 200.000 NOK)</b>								
200.001 – 400.000	1.068	***	1.068	***	1.048	*	1.046	*
400.001 – 600.000	1.048	***	1.048	***	0.933	*	0.937	*
600.001 – 800.000	0.960	^	0.960	^	0.835	***	0.843	***
800.0001 <	0.894	***	0.894	***	0.802	***	0.817	**
Unknown	0.770	***	0.771	***	0.824	***	0.825	***
<b>Age (ref. = 19 years)</b>								
15 years	0.291	***	0.290	***	0.607	***	0.591	***
16 years	0.461	***	0.460	***	0.677	***	0.660	***
17 years	0.582	***	0.581	***	0.765	***	0.750	***
18 years	0.770	***	0.769	***	0.933	**	0.923	***
20 years	0.929	***	0.928	***	0.890	***	0.872	***
21 years	0.817	***	0.815	***	0.728	***	0.701	***
22 years	0.714	***	0.712	***	0.670	***	0.635	***
23 years	0.604	***	0.602	***	0.569	***	0.536	***
24 years	0.476	***	0.474	***	0.478	***	0.447	***
25 years	0.401	***	0.400	***	0.423	***	0.395	***
<b>Region (ref. = Oslo and Akershus)</b>								
Hedmark and Oppland	1.057		1.057		0.976		0.967	
Southeastern Norway	1.113	***	1.112	***	0.955		0.948	
Agder and Rogaland	1.181	***	1.181	***	1.041		1.037	
Western Norway	1.100	**	1.099	**	0.963		0.960	
Mid-Norway	1.020		1.020		0.962		0.956	
North of Norway	1.081	*	1.081	*	0.836	**	0.832	**
Unknown	0.168	***	0.167	***	0.170	***	0.170	***

\*\*\* p<0.001 \*\* p<0.01 \* p<0.05 ^ p<0.1

In Model 5 the average odds of offending after the transition to teenage fatherhood is 0.682, implying an average *reduction* in odds of 31.8 percent. In model 6, we include the yearly changes, and all of the

yearly estimates are below 1. The interpretation of this is that for all the years after making the transition into teenage fatherhood, the odds of making at least one criminal act is lower than before. The girls (model 7) have an even greater reduction as the transition to parenthood is associated with a 40.2 percent decrease in the odds of offending. The yearly estimates in Model 8 are in line with those of the boys, although with fewer significant estimates, but with an even lower odds ratio the first year as a teenage mother. The increasing odds ratios over time since childbirth are also in accordance with the estimates in Table 2, albeit now changing from being strongly negative to slightly positive. It still points to the conclusion that the odds of offending is at its lowest when social control is peaking.

The results in Table 3 thus indicate that teenage parenthood has a negative impact on offending, which might seem in contradiction to the conclusion based on Table 2. However, the results in Table 2 show the relative odds between teenage parents and the rest of the population, while Table 3 shows the change in the odds of offending within individuals who become parents. Although the results may appear to contradict each other, they do in fact complement each other by confirming the elevated risk of crime for teenage parents while also pointing out that there nevertheless might be a reduction after parenthood. These results are in line with previous findings by Kreager et al (2010) and also Monsbakken et al (2013).

## 6. Discussion

In this article we have examined the association between teenage parenthood and offending. Between-groups analysis shows that those experiencing teenage parenthood are more prone to committing crime than the rest of the population. Teenage parents have higher odds of offending than non-parents, both in average and in the years following childbirth. By just focusing on these results, one might conclude that teenage parenthood is a risk factor for delinquency. This would be in line with the findings of Khurana and Gavazzi (2010) and Farrington and West (1995), whose results point to increased odds of offending after transition to parenthood. These results are not surprising as teenage parenthood tend to occur among high risk groups due to mutual confounding variables, like low socioeconomic background, lack of education, low self-control and/or other risk factors (Farrington and West, 1995; Lappegård, 2000; Kiernan, 2001; Kleven and Haugen, 2004; Gottfredson and Hirschi, 2007; Galloway and Skardhamar, 2010). However, the within-person analysis shows that the risk of offending *decline* after the transition to parenthood. The fixed effects models suggest that much of the seemingly elevated risk of offending is in fact a result of selection into teenage parenthood. The results are quite unambiguous, and are interesting because it suggests that the transition to parenthood is

associated with desistance in a similar way for teenagers and adults (Skardhamar and Lyngstad, 2009 and Monsbakken et al, 2013).

Our findings are in accordance with the age-graded social control theory (Laub and Sampson, 2003) as the transition to parenthood leads to reduction in crime. Although not directly measured in our study, these changes can be explained in terms of changes in social control, routine activities and identity change (Sampson and Laub, 2005:34). All our results showed the lowest risk of offending the first year as a teenage parent. This is reasonable as this is when caring for the baby is the most time-consuming, which leaves little time to spend with (deviant) friends. Informal social control might increase the first year through family, friends and perhaps the partner, but also more formal controls imposed by health controls and Child Protective Services. In addition, if the teenager is motivated, this is a potential foundation for a transformation of the self and entering a new role as a parent – a "hook for change" (Giordano et al, 2002).

As pointed out by Estrada and Nilsson (2012), (continued) offending is more of a breach of norms for women than for men. Women offend less than men, and this applies to parents as well, but the reduction in offending is also more substantial for women than for men, which is in accordance with previous studies (Estrada and Nilsson, 2012; Uggen and Kruttschnitt, 1998; Thompson and Petrovic, 2009; Giordano et al, 2011). Our findings are similar for boys and girls, suggesting only minor gender differences in how parenthood affects offending. However, parenthood seems to have a more lasting impact on boys' offending than on girls', in line with the results of Monsbakken et al (2013).

Several studies report that teenage parenthood brings negative consequences in itself, like lower educational level, lower income level and higher chance of alone-parenting, (Hobcraft and Kiernan, 2001; Olausson, Haglund, Weitoft and Cnattingus, 2012 and Kleven and Haugen, 2004). In addition, Elder (1994) points out that teenage parenthood is so deviant, that the possible positive outcomes of parenthood in adulthood are replaced by negative ones. The analysis presented here suggests that teenage parents adapt to the new situation by reduction in crime. Given mutual confounding variables and self-selection into parenthood, the consequences of teenage parenthood are not exclusively negative, and the transition can be a base for changing a life course with elevated risk of offending. Despite this, we observe a rebound in our data, and the pattern of reduction in crime might not look quite like the pattern of a turning point. We speculate that parenthood represents an opportunity for change, but the continuation of a desistance process will rely on the desistance process being maintained or supported by other opportunities. Teenagers are at the brink of making the transition to

adulthood, ending school, becoming of full age and legal capacity, and about to enter the labor market or going to college or university. While parenthood might promote positive change in itself, it might hamper these other transitions and any effect in the longer run will depend on the outcomes along such dimensions. In other words, the desistance process might be set in motion, but is dependent upon changes in life style to be supported by other structural opportunities.

The social context has probably some influence on the results. While some of the most influential studies on parenthood and crime are from the US (Laub and Sampson, 2003; Kreager et al, 2010; Giordano et al, 2011), the Norwegian welfare state is a much different setting. Free health care, free or largely subsidized birth control and sexual education in school have led to very low rates of teenage parenthood (see also Table 1), which we must assume leads to a stronger selection into teenage parenthood. Institutions like health clinics, Child Protective Services, and later kindergartens provide a relatively high level of monitoring of the baby and its family. This means that if the teenage parents have a lower frequency of criminal activity after the transition to parenthood, then it is an indication that high level of social control leads to desistance also for teenage parents. Generous welfare for new parents will probably make the "need" to (continued) criminal activity lower than in other countries.

Some limitations to our study are worth discussing. First of all, as for all studies using official records on crime there is always the issue of whether it reflects their true offending. However, for that to be a problem there would need to be a change in the probability of getting caught by the police related to becoming a parent. That could happen if parental responsibilities lead to switching to less risky crime types or generally becoming more careful when committing crimes. We cannot check such assumptions with these data, but we note that the prior literature do not suggest such kind of changes either.

Second, our fixed effects models rules out much selection effects, but not all. Thus, causality is not established, and there could potentially be other events happening at about the same time causing the changes. A sober interpretation is thus that we have documented within-individual changes in relation to childbirth. For such a young sample, it is less likely that such confounders would be transitions like marriage or work as often suggested in the literature on life-course criminology. In Norway, hardly anyone marries until the mid-20s, and regular employment is not common among teenagers either. It would be more relevant to explore other transitions related to ending primary and secondary school, and becoming of full age and legal capacity (which is 18 in Norway).

Third, our data do not allow us to explore further the reasons for the rebound in offending a few years after becoming a parent. Explanations might be sought in other transitions – or failure in successful transitions to adult roles – which might be necessary to maintain a desistance process.

In conclusion, we find that teenage parents are more likely to have an elevated risk of offending at the outset, but that the transition to parenthood is associated with a notable reduction in offending. This is in line with the focal points of age-graded control theory, but our results expand the limits of the life course perspective by showing that undergoing life events “off time” does not necessarily mean lack of positive changes. Parenthood is a potential turning point for teenagers similar to adults. However, teenagers are in a position where they are about to make additional transitions into adult roles, and a lasting impact of parenthood will necessarily also depend on their situation along such dimensions. Future research efforts could focus on the role of early parenthood in making successful transitions to adult roles, and how these transitions combined affect crime.

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