

The Development of Delinquency in Adolescence:

Employment, gender, SES, and ethnicity

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INTRODUCTION

Adolescent delinquent behavior and involvement in crime is a wide known problem to society. Delinquent behavior comprises of several kinds of activities such as theft, vandalism, joyriding, and truancy but also violent forms including fighting and weapon carrying. Engagement in these behaviors is not only a burden to society but can also pose restrictions to adolescents' developmental pathways in life. Empirical research has shown that involvement in delinquency does not stay constant over the life course but varies in different stages of life. Age crime curves show that antisocial behavior and delinquency increases in early to mid-adolescence and then declines throughout mid adolescence and emerging adulthood (Moffitt, 1993; Sampson & Laub, 2005). This general pattern can be observed across different samples and has been reported in contemporary as well as past studies. Looking at adolescence in the context of the life course, different developmental pathways of delinquency can be identified. Although two groups with little developmental variation are observable (i.e., stable low delinquent and stable high delinquent), a non-negligible group of young people "takes up" delinquency for the duration of adolescence. In detail, these individuals show delinquency only in adolescence and desist as they transition into adulthood (e.g., Aguilar, Sroufe, Egeland, & Carlson, 2000; Brody et al., 2009; Nagin, Farrington, & Moffitt, 1995; Odgers et al., 2008). Research on adolescent delinquent behavior has focused on reasons for this increase in engagement in delinquent or antisocial behavior in early and mid-adolescence (e.g., Moffitt, 1993; van Lier, Wanner, & Vitaro, 2007). However, much less is known about the reasons for desistance from delinquency in late adolescence and emerging adulthood.

How can we explain the changes in delinquent behavior and the decline or desistance in most adolescents as they get older whereas others retain this behavior throughout their life course? Our approach is to look at the role of transitions in adolescents' life course. Transitions describe a change in state which may or may not be a turning point. Turning

points refer to events that can initiate a change in life trajectories, for instance, elevate adolescents' involvement in delinquency or pull them away from it (e.g., Carlsson, 2012). For many adolescents, one of the most important transitions is the onset of employment (Uggen, 2000). Adolescents' transition into employment may initiate a change in behavior and can cause a decline in delinquent behavior in late adolescence. Recent research by Van der Geest, Bijleveld and Blokland (2011) as well as by Van den Berg, Bijleveld, Hendriks, and Mooi-Reçi (2012) supports this assumption by showing that entering the labor market and remaining employed decreased delinquent behavior in young sex offenders. However, the mere transition into employment itself may not be sufficient. The effect of employment on delinquency might differ by various factors such as adolescents' age at the onset of employment. We therefore seek to investigate the association between employment and delinquent behavior throughout adolescence and to examine which demographic characteristics facilitate or impede the effect of employment on delinquent behavior. Demographic characteristics may be related to developmental patterns of delinquent behavior independently and in interplay with employment patterns. To account for such interplay, our study also examines the extent to which we can observe developmental variation by gender, socio-economic background, and ethnicity.

Employment and Changes in Delinquency

Many attempts have been made to explain the changes in delinquency, that seem to coincide with developmental milestones in late adolescence. The empirical observation that the majority of adolescents desist from delinquent behavior as they get older supports various theoretical assumptions such as Moffitt's (1993) propositions of a Dual Taxonomy of Antisocial Behavior in adolescence which differentiates between 'life-course persistent' and 'adolescence-limited' offenders. The first type constitutes a rather small group of less than 5% of the male population and less than 1% of the female population. This group is usually

characterized by specific risks such as impaired cognitive functioning and low self-control – factors that have been found to increase the likelihood for engagement in antisocial or delinquent behavior (e.g., Brennan et al., 2003; Moffitt & Caspi, 2001; Moffitt, Lynam, & Silva, 1994). These individuals show changing manifestations of delinquency across situations and in different stages in life.

The second type, coined “adolescence-limited offenders”, constitutes a more common and larger group of adolescents. Individuals on this developmental trajectory do not appear to suffer from underlying neuropsychological problems and a history of delinquent behavior in childhood. This group tends to show an onset of engagement in delinquent behavior in early adolescence and a decrease in late adolescence or emerging adulthood, with behavior showing little consistency across settings. The inconsistency in adolescent-limited offenders’ behavior suggests that delinquent activities may be reinforced in some and punished in other contexts. For this group of adolescents, delinquent behavior may be a temporal reaction to their environment. Moffitt (1993) proposed that the *maturity gap*, that is, the discrepancy between adolescents’ biological maturity, and social and material position in contemporary Western societies, leads adolescent-limited offenders to initially engage in delinquency but also to desist from it once this maturity discrepancy is reduced (e.g., by earning money). During adolescence, adolescence-limited offenders mimic their life-course persistent peers’ behavior in order to attain adult status and the associated power and privileges that they associate with the life-course persistent adolescents’ deviant behavior. In late adolescence and early adulthood, adolescents experience the transition into formal adult roles. Normatively, older adolescents enter the labor market and obtain formal and legal access to both material goods and adult status. At this stage, delinquent behavior does not provide benefits anymore but poses a substantial risk to the newly gained adult status. For most adolescence-limited offenders, delinquent behavior appears to cease at this age. Two main factors in this line of reasoning are 1) the role of others, especially peers, and

2) the role of the environment that can either discourage or reinforce delinquent behavior.

A different explanation to changes in delinquency throughout adolescence has been forwarded by Sampson and Laub (2005). Their Age-graded Theory of Informal Social Control states that entering the labor market is accompanied by various changes in adolescents' social environment, among which an increase in their exposure to informal social control. Entrance into the labor market has the potential to initiate changes in adolescents' engagement in delinquent behavior as young people experience the transition from adolescent social roles into adult roles and the associated changes in social structures. Specifically, Sampson and Laub (2005) suggest five potential mechanisms for decreasing engagement in delinquent behavior at life transitions. (1) Transitions provide a cut; they separate the past from the future by changing adolescents' social context. (2) Relationships with peers change. In their novel social contexts, adolescents form new relationships with adults that may offer support and potential for personal growth. (3) New social contexts exercise direct and/or indirect social control over adolescents' behavior. In terms of the workplace, colleagues and superiors monitor young people's behavior and may impose sanctions. (4) Entering institutions such as the workplace changes daily routines and reduces the time adolescents spend in unstructured unsupervised settings with peers. This, in turn, reduces the opportunity to engage in delinquent behavior. (5) Finally, the transition into different social contexts and the changes in social relationships along with changing roles and responsibilities create situations that allow for identity transformation and may change adolescents' propensity to delinquent behavior.

These mechanisms overlap with other theories of (desistance from) delinquency. Routine Activities Theory (e.g., Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996) states that delinquent and criminal behavior emerges by opportunity and in the absence of supervision or social control. Life transitions such as entering the labor market reduce adolescents' contact with potentially delinquent or criminal peers. Less time spent in

unstructured and unsupervised settings reduces the opportunity to engage in delinquent behavior and consequently its prevalence (Warr, 1998). Put differently, exposure to unstructured socializing settings with peers and the absence of instances of punishment or authority enable and encourage delinquent behavior. Research by Haynie and Osgood (2005) provided support for this notion. Adolescents' time spent in unstructured socialization settings with peers was positively related to their engagement in delinquent behavior, even after controlling for their peers' levels of delinquent behavior. In contrast, the more time adolescents spend in structured socialization settings such as the workplace and the more social control they experience, the less likely they are to engage in delinquent behavior.

Whereas previous theoretical approaches emphasize the transition into new contexts, Situational Action Theory (Wikström, 2005) includes adolescents' personal characteristics in the explanation of changes in delinquent behavior. It argues that (im-)moral action and crime can be explained by an interaction between the environment and factors on the individual level (individual propensity). Delinquent behavior is seen as an action that strongly depends on the given environment and the individual's perception of what is right or wrong to do in this environment. Hence, people engage in delinquent behavior because they perceive it as a viable choice of action under the given circumstances. According to Situational Action Theory, changes in delinquent behavior depend on changes in the environment such as the transition into the labor market.

Finally, the notion that changes in the social environment can change engagement in delinquency is not a recent one. Matza's theory of delinquency and drift (see Velarde, 1978 for a review) suggests that delinquent adolescents are committed to neither delinquent nor law-abiding behavior. Instead, they are in a constant stage of drift between delinquent and non-delinquent behavior. Adolescents engage in delinquent behavior when they are embedded in a peer group that encourages delinquency, but are expected to decline or desist when they leave the delinquent peer group.

The Effects of Gradual Onset of Employment

For some adolescents, graduating from secondary education and entering the workplace represents a clear cut. However, for others the transition into the labor market is not abrupt but a gradual process. In the latter case, adolescents may already engage in part-time employment of different time intensity while still attending school. Their participation in the labor market, which is often characterized by holding one or more part-time jobs, is of a different kind than the participation of those who enter the labor market after completing formal education. Part-time jobs that are available to adolescents are often low-paid and offer little potential for personal growth and little adult supervision (Wright, Cullen, & Williams, 2002). Instead of providing adolescents with a contextual change that discourages delinquent or criminal behavior, engagement in part-time jobs in school-aged adolescents may in fact increase their delinquent behavior (Wright et al., 2002). Moreover, school-aged adolescents who choose part-time employment may be more focused on gaining material wealth than their non-employed peers who choose to invest their time in education, sports, or other hobbies. Because material wealth is not readily available at this age, adolescents who value material goods may also resort to more delinquent means of attaining these goods. Thus, whereas entering the labor market on a full-time basis following completion of formal education seems to support a decline in delinquency, low qualified and part-time employment might yield the opposite effect.

The Present Study

This study aims to investigate the association between employment and delinquency throughout adolescence, comparing effects at different ages. It is expected that employment in late adolescence is associated with decreased delinquent behavior, whereas employment at an early age is associated with increased delinquent behavior. Analyses of the

development of delinquency throughout adolescence will show whether the transition into the labor market coincides with changes in delinquent behavior.

Additionally, demographic factors are taken into account to investigate whether associations between employment and delinquency are different for specific groups within the population. Prior research has shown that adolescent delinquent behavior differs according to a number of demographic factors. First, gender comparisons have indicated that males show more delinquent behavior than females (Moffitt, Caspi, Rutter, & Silva, 2001). Second, it has been shown that adolescents from lower socioeconomic backgrounds have a higher risk of delinquency than their peers who grew up in more advantaged socioeconomic conditions (Moffitt et al., 2001). Finally, research among Dutch adolescents has found that associations between adolescents' relationships with parents and peers and their levels of delinquency vary by ethnicity (Dekovic, Wissink, & Meijer, 2004). Given that changes in peer relationships are among the main effects brought about by the onset of employment, effects of ethnicity on delinquency and its link to employment will be examined.

METHOD

The TRAILS Data

To examine the associations between employment and delinquency throughout adolescence, we use data from the TRAILS (TRacking Adolescents' Individual Lives Survey) study; a Dutch cohort study conducted in the Northern part of the Netherlands with bi- or triennial measurements from age 11 to at least age 25 (De Winter et al., 2005; Huisman et al., 2008; Nederhof et al., 2012; Oldehinkel et al., 2014). Of the initially contacted target sample ($N = 2935$), $n=2230$ (76.0%) children were enrolled in the first measurement wave in 2000 and 2001 (M_{age} : 11.09, $SD = .55$; 50.8% female) with high retention rates in the following waves; 96.4% at T2 ($n = 2149$; M_{age} : 13.5, $SD = .53$; 51.0% female); 83.0% at T3 ($n=1816$; M_{age} : 16.30, $SD = .73$; 52.1% female) and 84.3% at T4 ($n=1881$; M_{age} 19.1, $SD = .60$; 52.3%

female). Longitudinal information on delinquent behavior and life events (including employment-related items) allows us to examine the impact of changes in the domain of employment on delinquency in adolescence. The present study uses information on delinquency on all four time points and information on employment from T2 onwards.

Measures

Delinquency

Delinquency was measured using items from the Antisocial Behavior Questionnaire (ASBQ, Moffitt & Silva, 1988) that tap into delinquent behaviors. Questions in this measure included “How often have you destroyed something on purpose?” or “How often have you stolen something from a shop?”. Across all waves, the ASBQ was administered with slightly varying number of items, reflecting developmental appropriateness of the measures: T1 (31 items, $\alpha = .88$), T2 (26 items, $\alpha = .86$), T3 (28 items, $\alpha = .86$), and T4 (29 items, $\alpha = .88$). At all times, items on the list were rated as (0) *no/never*, (1) *once*, (2) *two or three times*, (3) *four to six times*, and (4) *seven times or more*. When investigating delinquent or antisocial behavior it has been recommended to differentiate between the total number of all acts that were committed and the range of different acts (Bendixen, Endresen, & Olweus, 2003). Therefore, delinquency has been operationalized to tap into adolescents’ frequency of delinquent behavior and the variety of behaviors they engage in. *Frequency scores* represent the number of times an act has been committed. They give an indication of the volume of acts committed by each participant. They are calculated by adding the responses to the different items of the ASBQ into a composite score. *Variety scores* represent the range of different acts committed by each participant. They are calculated by taking the sum of scores of each different type of delinquent behavior exhibited by each participant. How often each type of behavior has been committed is not relevant.

Employment.

Starting from T2, information is available at each wave on whether or not participants were employed at the time of measurement. A dichotomous variable has been devised for each wave to characterize participants as either working (1) or non-working (0). At T2 and T3, this indicator refers to working in part time jobs next to following education, given the age of the respondents. At T4, participants may have already completed their formal education. To account for this, all analyses at T4 were repeated with four conditions to differentiate between participants who are (1) not working and not following education, (2) working only, (3) following education only, and (4) working and following education at the same time.

At T2, 11% ($n=245$) of all participants were working whereas 82.5% ($n=1835$) were not working (6.5% of adolescents did not provide data on this item). At T3, 28.2% ($n=628$) of all participants were working whereas 44.8% ($n=999$) were not (27.0% missing). On T4, 52.9% ($n=1180$) of all participants were working whereas 23.7% ($n=528$) were not (23.4% missing). Splitting information derived at T4 into the aforementioned categories shows that 3.5% ($n=77$) of all participants were not working and not following any education, 7.0% ($n=157$) were solely working, 20.2% ($n=450$) were solely following education, and 45.3% ($n=1010$) were combining work and education (24.0% missing).

At T3 and T4, percentages of missing information on the employment status of adolescents were rather high. Comparison of mean scores shows that adolescents who provided information on employment did not significantly differ in delinquency from adolescents who did not provide information on employment at T3 ($F(1,1624) = 1.65$, *n.s.* for frequency and $F(1,1624) = 2.47$, *n.s.* for variety) and T4 ($F(1,1648) = 1.11$, *n.s.* for frequency and $F(1,1648) = 0.12$, *n.s.* for variety). Also, there were no significant ethnic differences between adolescents who did or did not provide information on their employment status at T3 ($\chi^2(8,1627) = 13.94$, *n.s.*) and T4 ($\chi^2(8,1708) = 9.89$, *n.s.*). However, more males than females did not provide information on employment at T3

($\chi^2(1,1627) = 21.87, p < .01$) and T4 ($\chi^2(1,1708) = 7.11, p < .01$). Also, adolescents who did or did not provide information differed in their socio-economic background at T3 ($\chi^2(2,1608) = 7.78, p = .02$) and T4 ($\chi^2(2,1685) = 22.36, p < .01$), with adolescents from lower socio-economic backgrounds being underrepresented.

Demographic Factors

Gender was coded as 0 (*female*) and 1 (*male*). Scores for adolescents' socio-economic background were based on parent-reported information on maternal and paternal education, occupation level of both parents, and household income. After standardization, the five variables were combined into one measure of socio-economic status (SES; $\alpha = 0.84$). Next, SES has been classified into three categories, with the upper 25% on the scale being classified as high SES ($n=553$), the middle 50% as middle SES ($n=1084$), and the lower 25% as low SES ($n=551$). Finally, participants have been classified according to their ethnicity. Of the total sample, 86.5% ($n=1928$) indicated being Dutch and 13.5% ($n=302$) indicated being non-Dutch. Given the variety of countries of origin among the non-Dutch participants, ethnicity has been dichotomized as 0=*non-Dutch* and 1=*Dutch*.

RESULTS

Trajectories of delinquent behavior throughout adolescence were examined. First, changes in adolescents' frequency of engagement in delinquent behavior and the variety of delinquent behaviors exhibited were compared from T1 to T4, covering the age groups between 11 and 19 years. Second, the role of employment in declining delinquent behavior was examined. For all analyses, demographic factors were taken into account. Overall, engagement in delinquency was modest at all assessments. Still, there is a clear decline in both the frequency and the variety of delinquent acts observable as adolescents grow older.

Delinquency throughout Adolescence

In the following section, each analysis has been conducted in two ways to assess changes in both adolescents' frequency of delinquent behavior and the variety of delinquent behaviors they engage in. First, three paired sample t-tests were conducted to compare the changes in adolescents' frequency of delinquent behavior between subsequent time points, that is, from T1 to T2, from T2 to T3, and from T3 to T4. Results show that there was a significant decline from T1 ($M = .32, SD = .33$) to T2 ($M = .29, SD = .33$) in delinquency ($t(2064) = 3.88, p < .01$), a significant decline from T2 ($M = .27, SD = .30$) to T3 ($M = .22, SD = .30$; $t(1627) = 5.48, p < .01$), and from T3 ($M = .21, SD = .28$) to T4 ($M = .07, SD = .15$; $t(1452) = 20.90, p < .01$). Second, the same strategy was applied to examine changes in the variety of delinquent behaviors that adolescents engage in. Again, results show a significant decline from T1 ($M = .19, SD = .15$) to T2 ($M = .17, SD = .15$) in delinquent behavior ($t(2064) = 8.76, p < .01$), a significant decline from T2 ($M = .15, SD = .14$) to T3 ($M = .12, SD = .14$; $t(1627) = 8.98, p < .01$), and from T3 ($M = .12, SD = .13$) to T4 ($M = .05, SD = .08$; $t(1452) = 22.43, p < .01$).

Demographic factors

In the following, changes in delinquency throughout adolescence were examined separately for (1) males and females, (2) adolescents with a high, middle, and low SES, and (3) adolescents of Dutch and non-Dutch ethnicity. Means and standard deviations of these analyses are depicted in Table 2.1.

Gender

A repeated-measures ANOVA was conducted to compare the association between gender and delinquent behavior at the different time points. Results show a significant between-subjects effect of gender, indicating that males and females differ in their frequency of

delinquent behavior ($F(1,1424) = 153.01, p < .01$). At all waves, males exhibited delinquent behaviors more frequently than girls ($F(1,2204) = 241.03, p < .01$ at T1, $F(1,2081) = 96.22, p < .01$ at T2, $F(1,1656) = 82.44, p < .01$ at T3, $F(1,1651) = 85.61, p < .01$ at T4). Within-subject effects of the repeated-measures ANOVA yielded a significant interaction between time and gender (Wilk's Lambda = 0.96, $F(3,1422) = 22.49, p < .01$), indicating that males and females change in delinquent behavior over time in different ways. A series of three paired-samples t-tests run separately for males and females shows that in line with the overall pattern, males constantly and significantly decline in delinquency from one wave to the next. In females, the onset of decline in delinquency appears to be later than for males. There is no significant difference in female delinquent behavior between T1 and T2. From T2 onwards, delinquent behavior declines significantly from one wave to the next. Figure 2.1 displays the change of adolescents' delinquent behavior by gender. Means and standard deviations for each gender at each wave can be found in Table 2.1.

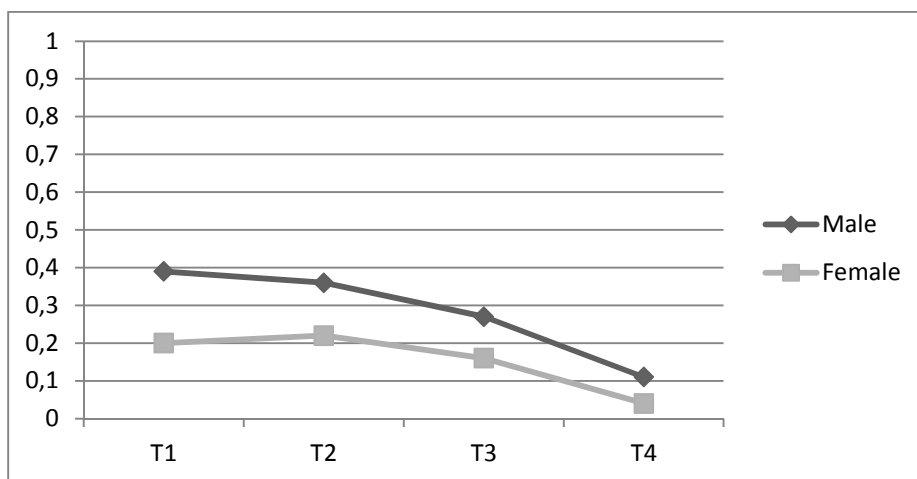


Figure 2.1. Gender differences in frequency of delinquent behavior over time

Results of a repeated-measure ANOVA are consistent with prior findings, showing that males and females also differ in their variety of delinquent behaviors ($F(1,1424) = 168.43, p < .01$). Similar to adolescents' frequency of delinquent behavior, males show a greater

variety of delinquent behaviors than girls at all waves $F(1,2202) = 226.88, p < .01$ at T1, $F(1,2083) = 119.25, p < .01$ at T2, $F(1,1656) = 93.37, p < .01$ at T3, $F(1,1651) = 106.29, p < .01$ at T4). Within-subject effects of the repeated-measures ANOVA show that the interaction between time and gender was significant (Wilk's Lambda = 0.97, $F(3,1422) = 13.59, p < .01$) indicating that males and females change in delinquent behavior over time at different speed. Just as frequency of delinquent behavior significantly declines with each consecutive wave, so does variety. This is equally true for boys and girls. However, the delayed onset of decline in delinquent behavior that has been shown in girls' frequency of engagement in delinquent behavior does not hold for the variety of these behaviors.

SES

Group comparisons show that differences between adolescents of high, middle, and low SES are significant at T1 ($F(2, 1405) = 4.37, p < .05$), T2 ($F(2,1405) = 4.05, p < .05$) and T3 ($F(2, 1405) = 5.90, p < .01$) although it should be noted that these effects are based on the difference between high and low SES adolescents. At T4, adolescents from different SES backgrounds do not show different frequencies of engagement in delinquent behaviors anymore ($F(2, 1405) = 1.88, n.s.$). A repeated-measures ANOVA was conducted to examine the differences in frequency of delinquent behavior of adolescents with different socioeconomic backgrounds over time. Between-subject effects were significant ($F(2, 1405) = 7.29, p < .05$), showing that adolescents from different SES backgrounds differ in the frequency with which they engage in delinquent behavior. The interaction between time and SES was not significant, indicating that adolescents with varying socioeconomic backgrounds do not differ in the overall way their delinquent behavior changes over time. A series of three paired-samples t-tests ran separately for adolescents of low, middle, and high SES at all waves shows that whereas adolescents with a high and middle SES show a decline in delinquency between all consecutive waves, adolescents with a low SES show a

delayed onset of decline. Although, as can be seen in Figure 2.2, adolescents with a low SES also show slight decreases in delinquent behavior throughout T1 to T3, this decrease only becomes significant between T3 and T4. Figure 2.2 shows SES differences in the change of adolescents' delinquent behavior.

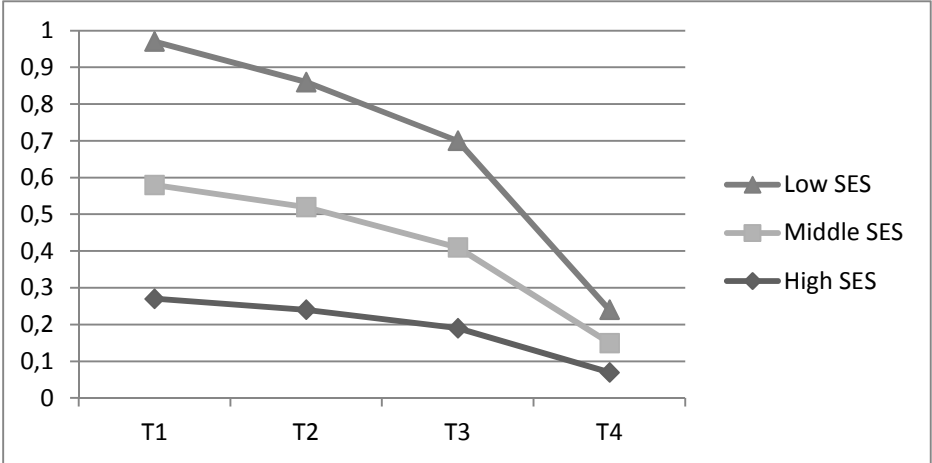


Figure 2.2 SES Differences in frequency of delinquent behavior over time

Adolescents' variety in delinquent behavior was shown to differ by adolescents socioeconomic background ($F(2, 1407) = 7.20, p > .01$). Group comparisons show that high, middle, and low SES adolescents significantly differ in their variety of delinquent behavior at T1 ($F(2, 1407) = 3.26, p < .05$), T2 ($F(2, 1407) = 7.10, p < .01$) and T3 ($F(2,1407) = 4.80, p < .01$), with only differences between high and low SES adolescents being significant at $p < .06$ trend level. At T4, adolescents from different socioeconomic backgrounds do not show any differences in the variety of delinquent behaviors they engage in ($F(2,1407) = .98, n.s.$). The interaction between time and socioeconomic status was not significant, suggesting that overall adolescents of different SES change in their variety of delinquent behavior in similar ways.

Ethnicity

To account for adolescents' different ethnic backgrounds, the next set of analyses distinguished between Dutch and non-Dutch adolescents. Separate group comparisons show that Dutch and non-Dutch adolescents do not significantly differ in the frequency with which they engage in delinquency throughout most of adolescence. Only at T2 ($t(2081) = 3.92, p < .01$) do non-Dutch adolescents engage in delinquent behaviors more frequently than their Dutch peers, potentially due to the late onset of non-Dutch adolescents' decline.

Again, a repeated-measures ANOVA was conducted to examine associations between ethnicity and delinquency at the different time points. Between-group effects were not significant, indicating that Dutch and non-Dutch adolescents do not differ in the frequency with which they engage in delinquent behavior. No interaction effect between ethnicity and gender was yielded. However, a series of paired-sample t-tests show that whereas Dutch adolescents constantly and significantly decline in delinquent behavior from one wave to the next, the onset of decline from delinquent behavior seems to be delayed for non-Dutch adolescents. In contrast to Dutch adolescents, the decline in delinquent behavior between T1 and T2 is not significant among non-Dutch adolescents. Observed declines in delinquent behavior are only significant between wave T2 and wave T3 and again between wave T3 and wave T4. Figure 2.3 displays ethnic differences in the change of adolescents' delinquency.

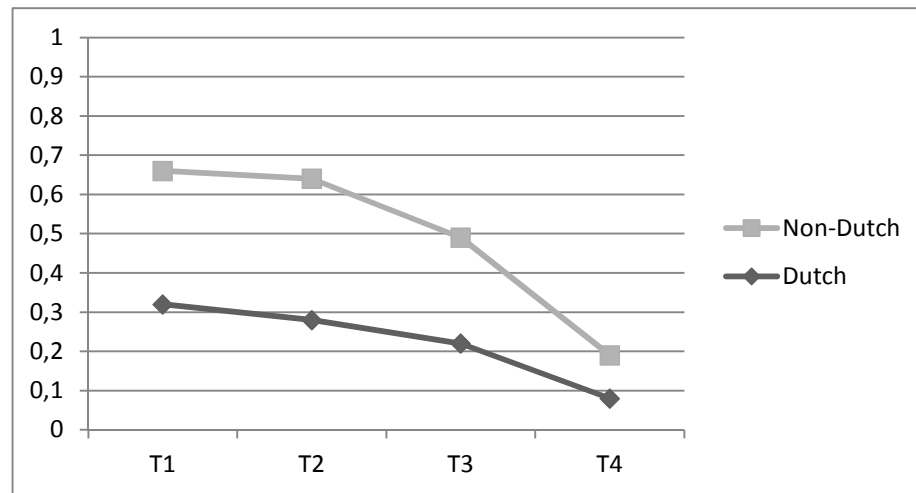


Figure 2.3. Ethnicity Differences in frequency of delinquent behavior over time

To examine differences in the variety of delinquent behaviors of Dutch and non-Dutch adolescents, a repeated-measures ANOVA was conducted. Similar to adolescents' frequency of behavior, Dutch and non-Dutch adolescents do not seem to differ in their variety of delinquent behavior. A paired-sample t-test again shows a constant significant decline in the variety of delinquent behaviors exhibited by Dutch adolescents between each wave. Non-Dutch adolescents again show a delayed onset of decline that is significant only between T2 and T3 and between T3 and T4. Consequently, only at T2 do non-Dutch adolescents show a significantly greater variety of delinquent behaviors than Dutch adolescents ($t(2083) = 4.09$, $p < .01$). At T1, T3, and T4, Dutch and non-Dutch adolescents do not differ in their variety of delinquent behaviors.

Multiway Interactions

Examining multiway interactions between the demographic factors under study did not yield any significant interaction effects. None of the three-way interactions was shown to be significant. This is true for both frequency and variety scores of delinquent behavior.

Table 2.1

Means of Frequency and Variety of delinquent behavior throughout Adolescence (with Standard Deviations in Parentheses)

Delinquency	Gender		SES			Ethnicity	
	Male	Female	High	Middle	Low	Dutch	Non-Dutch
Frequency							
Time 1	.43 (.41)	.21 (.23)	.27 (.30)	.31 (.33)	.39 (.41)	.32 (.34)	.34 (.38)
Time 2	.36 (.37)**	.22 (.26)	.24 (.30)*	.28 (.31)*	.34 (.36)	.28 (.32)**	.36 (.37)
Time 3	.20 (.35)**	.17 (.23)**	.19 (.25)**	.22 (.28)**	.29 (.37)	.22 (.29)**	.27 (.34)*
Time 4	.12 (.21)**	.05 (.11)**	.07 (.13)**	.08 (.15)**	.09 (.22)**	.08 (.16)**	.11 (.23)**
Variety							
Time 1	.24 (.17)	.15 (.12)	.18 (.14)	.19 (.15)	.22 (.17)	.19 (.15)	.20 (.16)
Time 2	.20 (.17)**	.13 (.13)**	.14 (.14)**	.16 (.15)**	.20 (.17)*	.16 (.15)**	.20 (.17)
Time 3	.16 (.16)**	.09 (.11)**	.10 (.12)**	.12 (.14)**	.25 (.16)**	.12 (.14)**	.14 (.15)**
Time 4	.07 (.10)**	.03 (.46)**	.04 (.07)**	.05 (.08)**	.05 (.10)**	.05 (.08)**	.06 (.10)**

Note. * Change compared to previous wave significant at $p = .05$.
 ** Change compared to previous wave significant at $p = .00$

Role of Employment in Delinquency

In the following sections, we look at the association between employment and delinquency across time. Again, we report both adolescents' frequency of delinquent behavior and the variety of behaviors they engage in. Due to the young age of participants at T1 and lack of information about employment, we exclude T1 and focus our analyses on T2 to T4. As stated earlier, participants may have finished formal education at T4. To account for this, all analyses at T4 have been computed with four conditions to account for participants who are (1) not working and not following education, (2) working only, (3) following education only, and (4) working and following education at the same time.

Results show that adolescents who are working at T2 show significantly higher frequencies of delinquent behavior than their non-working peers ($t(2078) = 5.17, p < .01$). However, at T3 ($t(1624) = 1.26, n.s.$) and T4 ($t(1256) = .08, n.s.$), working and non-working adolescents do not differ in their frequency of delinquent behavior anymore. Neither the differences between working and non-working participants were significant at T4, nor when groups were divided into four conditions. Similar results were found for adolescents' variety of delinquent behaviors. Whereas adolescents who are employed at T2 exhibit a significantly greater variety of delinquent behaviors than their non-employed peers ($t(2080) = 5.66, p < .01$), this pattern disappears at T3 ($t(1624) = 1.57, n.s.$) and T4 ($t(1256) = .05, p < .10$). Again, results at T4 did not change when repeating the analyses with four conditions. A graphic presentation of the results can be found in Figure 2.4.

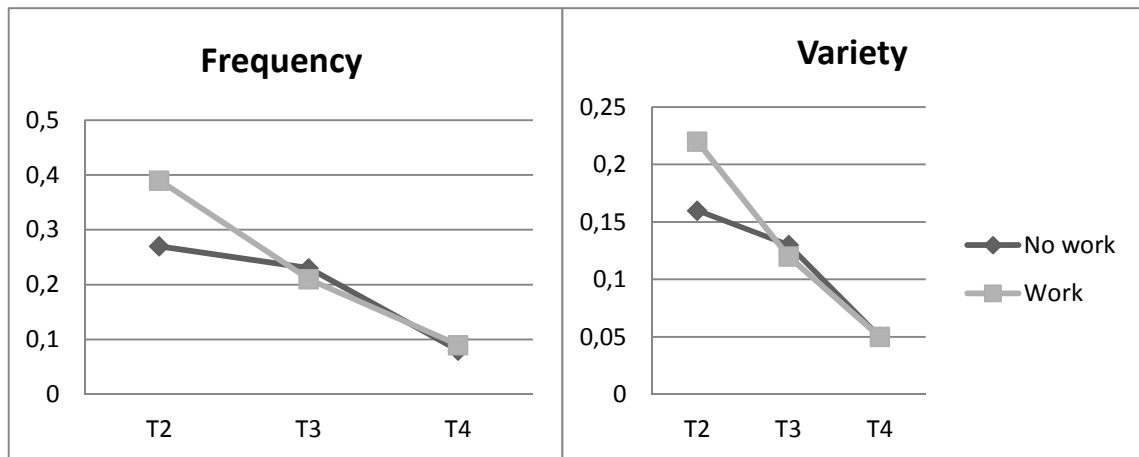


Figure 2.4. Differences in frequency and variety of delinquent behavior in working and non-working adolescents

Demographic Factors

Gender

We next examined whether the observed associations between employment and delinquency at each wave hold equally for both genders. Descriptive statistics and results can be found in Table 2.2. ANOVAs conducted to investigate gender differences in working and non-working adolescents' frequency of delinquent behavior yielded significant differences between the four groups ($F(3,2076) = 39.80, p < .001$). Post-hoc analyses indicate that in line with overall findings, males engage in delinquent behavior more frequently than females and that males and females who are employed at T2 both engage in delinquent behaviors more frequently than their non-employed counterparts. The frequency of delinquent behavior in working females does not significantly differ from that of non-working males. Both at T3 and T4, overall gender differences between males and females persist, but working males and females do not differ significantly from their non-working peers. Figure 2.5 shows gender differences in the frequency of delinquent behavior separated into working and non-working adolescents. Results concerning adolescents' variety of delinquent behaviors mirror the patterns observed in frequency of delinquent behaviors.

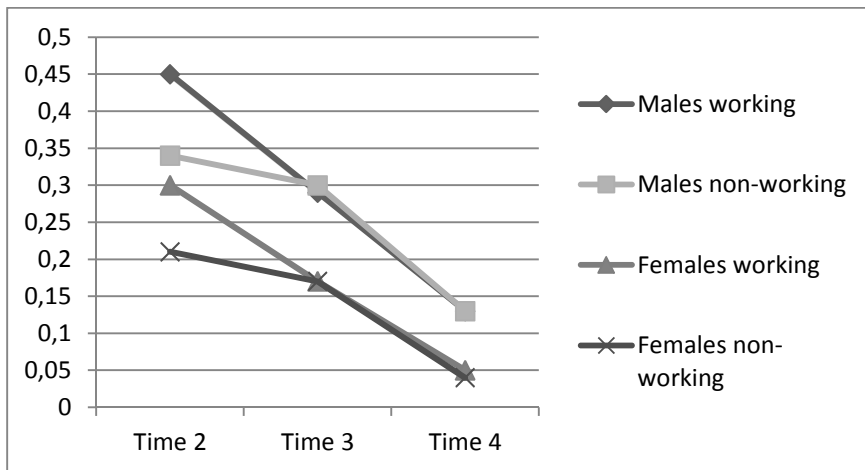


Figure 2.5. Gender differences in delinquent behavior according to employment status.

Table 2.2

Means and Standard deviations (in parentheses) of gender differences in delinquent behavior of working vs. non-working adolescents.

Delinquency	Employment	Gender			
		Male	<i>n</i>	Female	<i>n</i>
Time 2	Working	.45 (.42)	138	.30 (.32)	107
	Non-working	.34 (.36)	879	.21 (.25)	961
Time 3	Working	.29 (.35)	246	.17 (.23)	382
	Non-working	.30 (.34)	510	.17 (.24)	489
Time 4	Working	.13 (.23)	591	.05 (.11)	589
	Non-working	.13 (.23)	258	.04 (.10)	270
Variety		Male		Female	
Time 2	Working	.26 (.18)		.17 (.17)	
	Non-working	.19 (.17)		.13 (.13)	
Time 3	Working	.16 (.16)		.09 (.11)	
	Non-working	.15 (.16)		.10 (.12)	
Time 4	Working	.07 (.10)		.03 (.06)	
	Non-working	.07 (.10)		.03 (.06)	

SES

We next examined whether the associations between employment and delinquency vary by socioeconomic background. When looking at the frequency with which adolescents engage in delinquent behavior, no differences between working and non-working adolescents of high, middle, and low SES could be observed at T2 ($F(2,2043) = .36, n.s.$) and T4 ($F(2,1236) = 3.08, n.s.$). At T3, groups differed significantly ($F(2,1601) = 3.50, p < .05$). Post-hoc Bonferroni comparisons indicated that non-working adolescents from low SES backgrounds

showed significantly more delinquent behavior than all other groups except for working adolescents with a low SES background. It seems that the observed differences relate more to adolescents' SES than their employment status. When looking at the variety of delinquent behavior that adolescents' engage in, the observed patterns of behavior are similar to the finding for frequency of behavior. Groups do not differ at T2 ($F(2,2045) = .74, n.s.$) and T4 ($F(2,1236) = 2.13, n.s.$). At T3, groups again differ significantly ($F(2,1601) = 3.86, p < .05$). Post-hoc Bonferroni comparisons show that non-working adolescents with a low socioeconomic background show a significantly greater variety of delinquent behavior than all other groups. Descriptive statistics can be found in Table 2.3.

Table 2.3

Means and Standard deviations (in parentheses) of SES differences in delinquent behavior of working vs. non-working adolescents.

Delinquency	Employment	SES					
		High	<i>n</i>	Middle	<i>n</i>	Low	<i>n</i>
Time 2	Working	.33 (.42)	55	.33 (.35)	138	.48 (.44)	48
	Non-working	.23 (.29)	474	.27 (.31)	884	.33 (.35)	450
Time 3	Working	.19 (.29)	158	.22 (.28)	324	.23 (.30)	136
	Non-working	.18 (.23)	316	.22 (.28)	463	.33 (.41)	210
Time 4	Working	.08 (.15)	220	.07 (.14)	430	.11 (.25)	201
	Non-working	.06 (.14)	125	.10 (.20)	209	.08 (.16)	57
<i>Variety</i>		High		Middle		Low	
Time 2	Working	.18 (.16)		.21 (.17)		.27 (.19)	
	Non-working	.14 (.13)		.16 (.15)		.19 (.17)	
Time 3	Working	.10 (.13)		.12 (.13)		.12 (.13)	
	Non-working	.10 (.12)		.12 (.14)		.17 (.17)	
Time 4	Working	.05 (.08)		.05 (.07)		.06 (.10)	
	Non-working	.04 (.06)		.06 (.10)		.05 (.08)	

Ethnicity

Moreover, we examined whether associations between employment and delinquency differ for adolescents with a Dutch and a non-Dutch ethnic background. At T2, groups differ significantly in their frequency of delinquent behavior ($F(3,2076) = 15.49, p < .001$). Non-Dutch adolescents show more frequent delinquent behavior than Dutch adolescents and both working Dutch and working non-Dutch adolescents show more frequent delinquent behavior than their non-working ethnic counterparts. Working adolescents of Dutch origin and non-working adolescents of non-Dutch origin do not significantly differ in their frequency of

delinquent behavior. At T3 and T4, groups show no significant differences in delinquency anymore. Patterns of adolescents' variety of delinquent behavior mirror patterns of frequency. Descriptive statistics can be found in Table 2.4.

Table 2.4

Means and Standard deviations (in parentheses) of ethnic differences in delinquent behavior of working vs. non-working adolescents.

Delinquency	Employment	Ethnicity			
		Dutch	<i>n</i>	Non-Dutch	<i>n</i>
Frequency					
Time 2	Working	.36 (.38)	214	.56 (.41)	31
	Non-working	.26 (.35)	1601	.33 (.36)	234
Time 3	Working	.21 (.29)	576	.24 (.25)	52
	Non-working	.23 (.30)	868	.28 (.36)	130
Time 4	Working	.08 (.16)	771	.13 (.26)	91
	Non-working	.08 (.17)	351	.13 (.23)	45
Variety		Dutch		Non-Dutch	
Time 2	Working	.20 (.17)		.32 (.19)	
	Non-working	.16 (.15)		.18 (.17)	
Time 3	Working	.12 (.13)		.12 (.11)	
	Non-working	.12 (.14)		.15 (.16)	
Time 4	Working	.05 (.08)		.07 (.11)	
	Non-working	.05 (.08)		.07 (.11)	

Multiway Interactions

Finally, we examined if the different demographic factors under study interact to explain changes in adolescents' engagement in delinquency. At T2 and T3, none of the three or four-way interactions between the variables gender, SES, ethnicity, and employment was

significant. At T4, the three-way interaction between employment, ethnicity and SES was significant ($F(2,1218) = 3.68, p < .05$). A similar effect is found for adolescents' variety of delinquent behavior ($F(2,1218) = 3.41, p < .05$). Figure 2.5 depicts the results of the three-way interaction for adolescents' frequency of delinquent behavior. As can be seen, Dutch adolescents of all socioeconomic backgrounds show rather low levels of delinquency whether they are working or not. However, the effect of employment on delinquent behavior seems to be especially salient for non-Dutch adolescents of varying socioeconomic backgrounds. Non-Dutch adolescents from a low socioeconomic background showed substantially higher levels of delinquent behavior than all other groups when working ($M = .17, SD = .37$), see the left panel of Figure 2.5. However, the same group showed the lowest levels of delinquent behavior when not working ($M = .02, SD = .02$; see right panel of Figure 2.5). This group's behavior seems to be strongly affected by employment status. Notably, the effect appears to be reversed for non-Dutch adolescents of middle and high SES, who show higher levels of delinquent behavior when non-working rather than working.

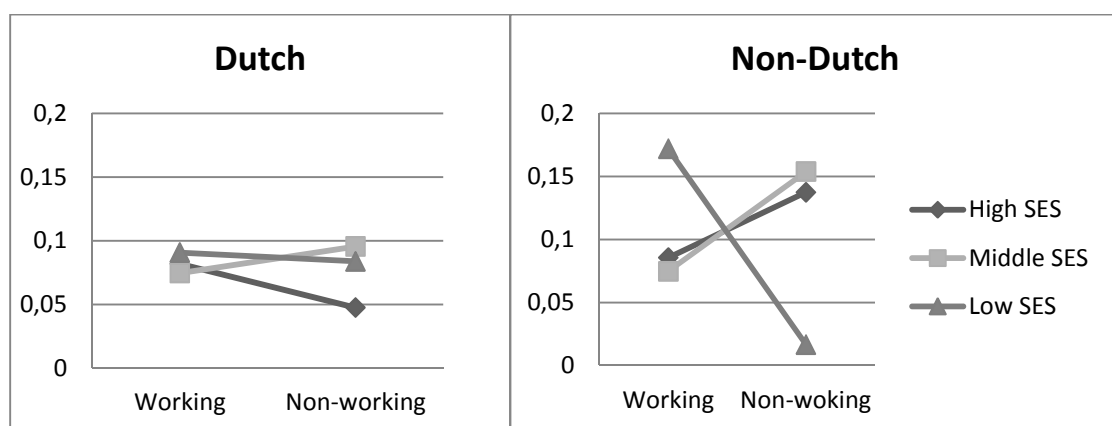


Figure 2.5 Effects of Ethnicity and SES on delinquency in working and non-working adolescents at T4.

DISCUSSION

In this chapter we examined to what extent developmental patterns of delinquency in adolescence differed by gender, socioeconomic status, ethnicity, and participation in the labor market, using data from a longitudinal cohort study of Dutch adolescents. To this end, we looked at both frequency and variety of delinquent behaviors. Whereas the former indicates the overall frequency of delinquent acts, the latter represents the number of different delinquent acts adolescents were involved in. Because results were largely consistent for both types, we will discuss the findings for delinquency in general. The analyses revealed a clear trend towards decreasing levels of engagement in delinquency even though initial levels were already relatively low. Patterns of decrease, however, varied by gender, socioeconomic status, ethnicity, and employment situation. First of all, it appeared that boys scored generally higher on delinquency across adolescence than girls. Girls showed a delayed decline in delinquent behavior, starting after T2, instead of a linear decrease as found for boys. A potential explanation for this pattern may be that early-adolescent girls engage in delinquent behavior in the context of older, male peer groups rather than with age-mates (especially if their biological maturation occurs at that time; Moffitt, Caspi, Rutter, & Silva, 2001; Veenstra, Huitsing, Dijkstra, & Lindenberg, 2010). Given that overall levels of delinquency remained higher for boys than for girls across the course of adolescence, girls may not decline in delinquency as soon because of their involvement with older boys. Moreover, it has been suggested that some girls show a delayed onset of delinquency (Silverthorn & Frick, 1999). We may not have captured the more extreme expressions of this in our sample of relatively low delinquent adolescents but the “delayed-decline” of girls in our sample corresponds to this idea. In detail, some girls are assumed to be affected by the same risk factors as early-onset boys but act out only from a later stage. In any case, these results require further research and it should not be overlooked that even though girls decline slower, their overall

levels of delinquency are lower at all ages than those for boys.

Secondly, although adolescents from lowest SES scored highest on delinquency, this difference with middle and high SES adolescents declined and eventually disappeared during adolescence. Thirdly, a similar pattern was found for non-Dutch versus Dutch adolescents. Non-Dutch adolescents started off with higher levels of delinquent behavior but in turn decreased more than Dutch adolescents, resulting in the same levels of delinquent behavior at the end of adolescence. Although a plethora of studies have examined differences in delinquent behavior by SES and membership in minority versus majority ethnic groups, little is known about developmental trends in differences that were the focus of this study. Discrepancies seem to diminish which may have different reasons, ranging from specific effects of secondary schooling (most of the participants in this sample changed schools between T1 and T2) or normative developmental effects that are more strongly observable in adolescents with initially high levels of delinquency. Future research is called to replicate and further elucidate these patterns.

The main focus of this study was looking at the role of employment in the development of delinquency. On the one hand, employment in late adolescence and emerging adulthood is seen as an important transition to the adult world with corresponding roles and responsibilities, and therefore an important demarcation point in the decline in delinquency. On the other hand, employment in early and mid-adolescence is mostly part-time, low-wage work that does not provide adolescents with the same stability and social control as full employment in adulthood would do (Lustig & Liem, 2010). Given the lack of these important factors, part-time employment in early and mid-adolescence might also have detrimental effects on delinquency. When developmental trends in delinquent behavior and engagement in part-time employment were observed conjointly, three key findings emerged. Firstly, adolescents who engaged in part-time employment in early adolescence showed the highest

levels of delinquent behavior among early adolescents. Secondly, this effect was only observed in early adolescence and not at later stages. Thirdly, non-Dutch adolescents from disadvantaged socioeconomic backgrounds who also worked scored highest in delinquent behavior in late adolescence, whereas the same group also showed the lowest level of delinquent behavior when not working. Note that it was assessed whether each adolescent was employed independently at each wave and that groups of employed and non-employed adolescents are not identical across waves. These findings are discussed in turn.

Why do we observe such high levels of delinquency in part-time employed early adolescents? Maybe the question needs to be rephrased into “Why are delinquent early adolescents more likely to seek part-time employment?”. Unfortunately not observed in the present study is materialism as a factor that may contribute both to delinquent behavior and engagement in part-time work. Adolescents who place high value on material goods and financial status may be more likely to engage in both of these behaviors – to obtain goods and status in legit or illegitimate ways. Previous research on adolescent delinquency has suggested that delinquents are neither committed to delinquent nor to conventional societal norms but drift between both (for a review see Velarde, 1978). This supports the assumption that delinquent adolescents with high material values might next to delinquent behavior also draw on legal and more conventional manners to gain material goods and seek employment. Notably, SES and ethnicity further moderated the association between delinquency and employment – non-Dutch youth from low SES backgrounds were at particularly high risk for delinquent behavior when also engaging in part-time employment. Future studies are well advised to include values and beliefs such as materialism to shed further light at such patterns.

Limitations and Future Directions

Despite the insight into demographic differences in delinquency development and co-

development of delinquent behavior and adolescent engagement in employment yielded here, our study is not free of limitations. The adolescents in our sample showed relatively low levels of delinquent behavior throughout the course of the study, which might have different reasons and consequences. For instance, rater bias might have been an issue given that adolescents reported themselves on their behavior. Moreover, we did not differentiate between minor and more serious forms of delinquent activities and higher averages as well as different developmental trends and associations may be possible when different forms are examined separately. For instance, aggressive delinquency (e.g., fighting, weapon carrying, and mugging) are more commonly observed in early-onset persistent offenders – their persistent pathway means that we would not expect this group to refrain from delinquency upon entrance into the labor market. Thus, associations between employment and aggressive and non-aggressive forms of delinquency may require separate theoretical foundations and analyses. When it comes to sample composition, our sample is biased towards adolescents of Dutch background, which may have resulted in more ethnicity differences to remain undetected. Also, at T3 and T4, there are rather high levels of missing information on adolescents' employment status. Adolescents who did not provide information on their employment status and adolescents who did provide information on their employment did not differ in terms of delinquency. However, males and adolescents from a low SES background were underrepresented among adolescents who provided information on employment at both waves. We cannot exclude the possibility that the higher amount of missing information on the employment of males and adolescents with a low SES background influenced the results. Moreover, our analyses focused on differences in delinquency based on multiple demographic characteristics as well as a combination of these characteristics. For some group compositions, especially groups focusing on ethnic minorities, this yielded rather small sample sizes. Future studies may specifically focus on these minority groups and selectively

sample according to certain demographic characteristics.

Finally, the data of the TRAILS study are not (yet) suited to explore the long-term course of delinquent behavior. Only seven percent of the participants made the transition to full-time employment in late adolescence, indicating that the vast majority did not yet enter market completely. Future assessments will allow to shed more light on the impact that the transition from school to work has on the development of delinquency. Finally, exploring potentially differential patterns for boys and girls in more depth may be an interesting avenue for further research given likely differences in the types of employment that males and females seek. Despite these limitations, this study revealed a detailed description of how delinquency develops in adolescence and the way employment as well as gender, socioeconomic status, and ethnicity affect these developmental patterns of delinquency.

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