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Desisting from Crime in Emerging Adulthood: Adult Roles and the Maturity Gap

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Abstract

Objectives: Test whether Moffitt's theory of adolescence-limited offenders, which contends that as young people enter adult roles they exit the "maturity gap" of adolescence and desist from crime, still applies given the changed nature of the early adult years. Examine whether spending time in adult roles remains a driver of desistance, and whether today's emerging adults are at risk of experiencing a maturity gap between how adult they feel and the reality of their social situation. **Methods:** Using longitudinal data from a Dutch general population sample aged 18 to 24 years, fixed-effects models were run examining the effect of within-person changes in time spent in adult roles on self-reported delinquency and moderation of this effect by feelings of adulthood. **Results:** The more

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time spent in adult roles, the less delinquency respondents consequently reported. This effect was moderated: When spending more time in adult roles and feeling more adult, higher delinquency was reported than when spending more time in adult roles and feeling less adult. *Conclusions:* Today's emerging adults desist from delinquency in response to taking on adult roles. Possible interpretations for the unexpected qualification of this conclusion are discussed, as well as limitations such as the simplicity of our feeling adult measure.

Keywords

emerging adulthood, delinquency, adolescence-limited offending, maturity gap, desistance

The age-crime curve based on self-reported delinquency generally shows that around the age of 18 prevalence of crime begins to drop off, continuing this downward trend throughout the 20s (e.g., Farrington, Loeber, and Jolliffe 2008; Kirk 2006). Earlier explanations for this decrease in delinquent behavior often referred to maturation (Matza 1964). For example, Glueck and Glueck (1940) concluded their subjects simply aged out of crime. More recently, Gottfredson and Hirschi (1990) put it down to a natural spontaneous change in behavior which occurs with time. What these maturation explanations fail to achieve however is to “unpack the meaning of aging” (Maruna 2001).

Life-course criminology, including Moffitt's (1993) dual taxonomy, offers more detail. Moffitt states that the criminal behavior of adolescence-limited offenders, who make up the bulk of the increase and consequent decrease in criminal offending, is a means of dealing with the maturity gap experienced during adolescence, that is, when young people are biologically but not yet socially mature. In the absence of legitimate alternatives, delinquency is perceived by many adolescents as a means to overcome their immature social status. Once legitimate adult social roles become available, this changes the incentive structure for deviance, and motivation for delinquency decreases (Moffitt 1997).

However, entering traditional adult roles, such as a permanent job, marriage, and parenthood, is increasingly delayed by emerging adults in contemporary Western societies (Arnett 2000, 2015; Côté 2000). Rather than being seen as markers of adulthood, many modern day emerging adults see

these roles as temporary statuses to be explored and experimented with as they discover “who they are” (Arnett 1997; Mayseless and Scharf 2003). Emerging adults generally still aspire to a successful career and a lasting romantic relationship in the long run: They do want to make these kinds of long-term commitments, just not yet. Furthermore, some roles, such as stable employment, are increasingly difficult to achieve in today’s employment market (Côté and Bynner 2008). This raises the question of whether, given the temporary nature of adult roles in emerging adulthood, these roles continue to promote desistance among young people today.

In this study, we test whether time spent in adult social roles is associated with self-reported criminal behavior during emerging adulthood. Using a longitudinal data set, we examine the cumulative effect of spending time in the adult roles of being in a relationship, being in employment and not education, and living independently of parents or caregivers, on desistance from crime in the late teens and early 20s. We also examine whether the maturity gap, that is, feeling subjectively adult but not having an adult social status to match this feeling, remains a risk factor for delinquency during emerging adulthood. To address these questions, the study uses data from a Dutch, contemporary, general population sample, aged 18 to 24 years, with an oversampling of respondents with police contact prior to age 17.

Desistance and the Transition into Adulthood

Whereas traditionally criminology has been interested in the onset of offending, with the introduction of the life-course perspective, the question of why individuals desist from crime has also become a focus of concern (Laub and Sampson 2001). Most life-course criminological theories suggest that individual offending patterns, including desistance, are somewhat open to outside influences (Blokland 2015). The outside influences often referred to are changes and transitions that occur in life-course domains of, for example, school, work, or romance. As they age, adolescents tend to become increasingly anchored in conventional society, taking on adult social roles and the obligations and expectations that come with them. Taking on these adult roles triggers changes in adolescents’ routine activities and associations, their stake in conformity, and their personal identity; all of which have been linked to desistance. Focusing on changes in routine activities, Osgood et al. (1996) point to the decrease in unstructured socializing that occurs during adulthood. Warr (1998) also highlights the decline in contact with delinquent peers. Sampson and Laub (1993; Laub and Sampson 2003) attribute desistance from offending to the increasing levels

of social control that result from continued investment in and commitment to adult roles of employee, spouse, or parent. Moffitt (1993) similarly stresses how, for the bulk of offenders, the adult social roles available as they enter adulthood are crucial. She refers to these offenders as “adolescence-limited.”

These adolescence-limited offenders, who start offending during adolescence only to cease as they reach adulthood, in terms of prevalence as well as frequency of crimes committed, make up the greater part of the increase and subsequent decrease in criminal behavior which gives the age-crime curve its typical bell shape. Moffitt explains the increase in criminal behavior during adolescence as resulting from the gap that exists between biological and social maturity. When adolescents feel adult but do not have the social status to match this feeling, delinquency may be used as a means to fulfil this need for adult status. To Moffitt, increasing access to conventional adult roles both reduces adolescence-limited offenders’ motivation for delinquency by resolving the maturity gap and increases the costs of continued offending by increasing their stake in conformity. Others have also argued that changes in individuals’ self-perception and identity, not being a child anymore, are important in explaining desistance during the early adult years (e.g., Massoglia and Uggen 2010).

Regardless of the exact underlying mechanisms, studies in both the United States and Europe have demonstrated desistance effects of employment (Savolainen 2009; Verbruggen, Blokland, and Van der Geest 2012), marriage (e.g., Blokland and Nieuwbeerta 2005; King, Massoglia, and Macmillan 2007; Laub and Sampson 2003; van Schellen, Apel, and Nieuwbeerta 2012), and parenthood (e.g., Blokland and De Schipper 2016; Zoutewelle-Terovan et al. 2012). The desistance effect of these “traditional” adult roles, such as marriage, has been shown to apply to both genders and to both older and more recent cohorts (e.g., Bersani, Laub, and Nieuwbeerta 2008). The effect has been found to lead to change in offending both in the short- and the long term (Horney et al. 1995; Laub, Nagin, and Sampson 1998). However, many of these studies have used older-aged and/or convicted samples (e.g., Blokland and Nieuwbeerta 2005; Farrington 1998; Horney et al. 1995), who are arguably not very representative of Moffitt’s adolescence-limited offenders, for whom the effects of adult social roles are predicted to be the strongest.

During the early years of adulthood, the age when criminal behavior first starts to decline as, according to Moffitt, the maturity gap is bridged, findings of the positive effects of adult roles are far less clear (Siennick and Osgood 2008; Weerman 2010). For example, Uggen (2000) found that

employment only starts to have a desistance effect after the age of 26. In fact, Lustig and Liem (2010) found that earning higher wages was associated with an increase in emerging adults' deviance. Regarding marriage, with the low marriage rate in developed countries during the early adult years (United Nations [UN] 2009), researchers have looked at cohabiting or intimate relationships. Meeuws, Branje, and Overbeek (2004) found that for older adolescents and young adults having an intimate partner had no effect on delinquency. Siennick and colleagues (2014) found that cohabitation only had a desistance effect for people intending to marry. Becoming a parent in the early 20s is no longer the norm. For example, in the Netherlands in 2014, the average age of first birth was 29 years for women and 32 years for men (Statistics Netherlands 2016). In fact, early parenthood has been shown to be a risk factor for delinquent behavior (e.g., Moffitt, Caspri, Harrington, and Milne 2002; Stouthamer-Loeber and Wei 1998). Craig (2015) found that parenthood during early adulthood did not have a desistance effect for all ethnic groups and that there were differences depending on whether the child lived with the parent or not. Similarly, Dutch research found that, unlike having a child at the normative age, those entering parenthood at a young age do not differ in their delinquent behavior from nonparents (De Goede, Blokland, and Nieuwbeerta 2011). Finally, Thornberry (2005), in an analysis of data from the Rochester Intergenerational study, concluded that much of the desistance in early adulthood happens before work or marriage transitions have occurred. The evidence that adult roles have a desistance effect for emerging adults is, therefore, far from conclusive.

Due to economic and social shifts in Western societies, the early years of adulthood have changed dramatically for today's young people. Arnett's (2000, 2015) research on emerging adults, defined as young people aged 18 to 29 years, has demonstrated that this period of life is demographically different for today's generations, compared to previous generations, with finishing school, marriage, and parenthood being delayed until later ages (for European examples, see Buhl and Lanz 2007). For today's young people, traditional and more permanent adult roles are often seen as "perils to be avoided" until later in their lives (Arnett 2015:6). Present day emerging adults tend to perceive themselves as "being somewhere in between" adolescence and adulthood, still devoid of long-term commitments, and free to experiment and explore what kind of person they want to be in life (Arnett 2015). Research on the perceptions of the emerging adult years shows these to be highly similar across gender, ethnic background, and social class (e.g., Hill et al. 2015; Reifman, Arnett, and Colwell 2007).¹ Nevertheless, the lives of emerging adults do still change as they leave adolescence, and despite the

decrease in prevalence and desire for traditional adult roles, this time of life remains demographically dense (Rindfuss 1991).

Young people today stay in education for longer than previous generations, moving from compulsory education to higher education. Nevertheless, with an average age for completing education in the Netherlands of 22.5 years (Eurostat 2012), many emerging adults do still leave education during the first years of emerging adulthood. Furthermore, the majority of Dutch young adults enter employment (over 80 percent) once education is completed (Eurostat 2012). Notwithstanding the delaying of marriage in the Western world, romantic relationships also remain important for emerging adults, with many spending time dating and in shorter-term relationships before undertaking marriage or cohabitation (Fincham and Cui 2011). Finally, the average age of leaving home in the Netherlands is 22.8 years (Stoeldraijer 2014), and so this too is another important transition undergone during the emerging adult period.

So, while emerging adults do not yet see themselves as entirely adult (Arnett 2000), their lives are no longer like those of adolescents. We can see that in the period during which the age-crime curve first shows decreases in criminal behavior Dutch young people are starting to spend time in more adult-like roles. However, these transitions to adult roles are increasingly blurred and ambiguous, as well as reversible (Rindfuss 1991). This has increased the heterogeneity of the life course for young people today compared to previous generations (Elzinga and Liefbroer 2007). The roles they take on during emerging adulthood are likely to be more temporary in nature than adult roles previously were. Whereas new roles are still taken on, it is possible that due to their temporary nature, they no longer promote desistance from delinquency but that they allow the period of adolescent-like delinquent behavior to be prolonged. It is also possible that these adult roles, at this time of life, lead to an increase in delinquent behavior. For instance, moving out of the parental home has been found to increase substance use among emerging adults (Krohn, Lizotte, and Perez 1997), while Lustig and Liem (2010) found a positive effect of higher wages on delinquency in emerging adulthood. Other adult roles may similarly lead to an escalation in delinquency, as they offer increased freedoms without increased responsibilities. The main aim of this study is, therefore, to determine whether, in light of the changing nature of adulthood, the adult roles emerging adults take on have a desistance effect, have no effect, or have a delinquent effect.

A second aim of the study is to ask whether, if indeed these roles do promote desistance, those who do not experience them remain at risk of

experiencing a maturity gap. To recap, Moffitt's (1993) theory of adolescence-limited offenders states that a mismatch between biological and social maturity results in a maturity gap, the strain of which is dealt with by some, through engaging in delinquent behavior. With the exception of Haynie, Weiss, and Piquero (2008) who find an economic maturity gap for African Americans, and Salvatore, Taniguichi, and Welsh (2012) who find evidence of a prolonged adolescent offender, little work has examined the maturity gap issue for emerging adults. We therefore first turn to research by Galambos and colleagues (2003, 2000, 2005) who have investigated the maturity gap during adolescence. They found that pseudo-mature adolescents, who feel older than their age but who lack psychological maturity, are at higher risk of problem behavior than mature adolescents, who feel older than their age but also have high psychological maturity, as well as immature adolescents, who lack psychological maturity but also feel younger than their age. This research demonstrates how the maturity gap catches only those adolescents who experience a mismatch between their subjective age and the reality of their maturity in terms of being self-reliant, having a consolidated identity, and having a strong work orientation.

In contrast, research by Massoglia and Uggen (2010), examining subjective adulthood in a sample of 29- to 30-year-olds, that is, people at the end of emerging adulthood, found that delinquent behavior was associated with feeling *less* adult. Desistance went hand in hand with feeling more adult and with transitioning into adult roles. It seems, therefore, that by the time young people are exiting emerging adulthood delinquent behavior is no longer seen as normative for their age-group and hence is associated with feeling less adult. However, for young people in their late teens and early 20s, feeling adult in some ways but not others (Arnett 2000), it is likely that some are still at risk of experiencing the maturity gap of adolescence. If they feel subjectively adult, but they have not yet achieved the associated adult social status, this may lead to the continuation or escalation of delinquency rather than desistance.

The Current Study

In this study, our goals are twofold. First, we test whether spending time in adult roles, specifically those which are normative for today's generation, still leads to a decrease in delinquent behavior, as Moffitt's theory of adolescence-limited offenders contends. Regarding adult role transitions, we look specifically at the cumulative effect of being in a relationship, being in employment and not in education, and living independently of

parents on delinquent behavior.² Our choice to examine the cumulative effect of adult roles is based on the assumption that combinations of roles are important and more likely to have a stronger effect during the transition from adolescence to adulthood (e.g., Bosick 2012; van der Geest, Verbruggen, and Blokland 2015). Furthermore, due to the temporary and reversible nature of these roles during emerging adulthood, we chose not to examine adult role statuses as an end point, but rather the proportion of time spent in the roles over a given time period, recognizing that the roles can be moved into and out of.

Our second goal is to examine whether emerging adults experience a maturity gap which they cope with through delinquency, as outlined by Moffitt's theory and characterized by Galambos' pseudo-adults. If they do, we would expect that when emerging adults feel more adult, but have spent less time in adult roles, they will be more delinquent than when they feel less adult and have spent less time in adult roles. We set out to answer these questions using a Dutch, contemporary, general population sample of emerging adults.

Method

Sample

This study used data from the Transitions in Amsterdam project, a self-report study among a multiethnic sample of Dutch emerging adults, conducted by the Netherlands Institute for the Study of Crime and Law Enforcement (Blokland 2014). Men and women aged 18, 19.5, and 21 years, of Dutch, Moroccan, and Dutch-Caribbean descent, defined by parental birth country and residing in Amsterdam in October 2010 were randomly selected from the municipal registry. Sampling was stratified to contain about equal proportions of males and females and to overrepresent ethnic minorities and individuals with registered police contacts prior to age 17. Potential respondents were first contacted by mail followed by home visits. Of the 3,408 reached, 970 (28 percent) agreed to participate and completed the first interview. Sampled respondents came from all 7 of Amsterdam's city districts and from 84 of 89 possible neighborhoods, excluding only some very small neighborhoods (neighborhood population <2,000). Comparing the final sample to the total population of Dutch, Dutch-Moroccan, and Dutch-Caribbean emerging adults in Amsterdam, 10.0 percent of the total population had a police record prior to age 17 compared to 19.2 percent of the final sample. The limited information

available therefore suggests that the project succeeded in its aim to gather a representative sample of emerging adults, with a deliberate oversampling of those of with previous police records. Data collected included information on relationships, romantic, peer and parental, education and employment statuses, delinquent behavior, and a range of psychometric measures. In total, four waves of interviews were carried out. The goal was for these to be carried out at six month intervals. Average monthly interval between waves 1 and 2 interviews was 6.4 months; between wave 3 and the previous interview (either wave 1 or 2) was 6.2 months; between wave 4 and the previous interview (wave 1, 2, or 3) was 10.5 months. The reason for a higher mean interval period to wave 4 interviews was that all respondents, including those who had not participated in either or both waves 2 and 3, were repeatedly contacted to increase participation in wave 4. See Table 1 for demographic details of the complete samples at waves 1, 2, 3, and 4.

Measures

Delinquency. Respondents were asked whether they had committed any of 48 offenses during the last six-month period (waves 1 and 4) or in the period since the last interview (waves 2 and 3). If so, they reported the number of times they had committed each offense. Some respondents reported a very high number of offenses (see Table 2). We adjusted this variable to allow for a maximum total number of offenses of 10 (5 percent of respondents reported 10 or more offenses) in order to limit skewedness. The list of offenses used (available from the authors on request) was adapted from the Self-report Delinquency Study (Junger-Tas, Terlouw, and Klein 1994) and the South Holland Study (Hofstra, van der Ende, and Verhulst 2001).

Adult roles variable. At each interview, respondents were asked about their relationship status, work status, educational status, and living arrangements for the previous six months (wave 1) or the period since the last interview (waves 2–4) which varied in length per respondent. Status was recorded for each month, along with additional information such as hours worked, partner age, level of education, and neighborhood lived in. Relationship status referred to any romantic/intimate relationship the respondent was in, that is, not restricted to cohabiting couples. From this information, variables were created indicating the proportion of the preceding period in which respondents were in a relationship, in work and not in education, or living independently, that is, not in the same accommodation as their parents/caregivers. For each variable, a maximum score of 1 indicated the

Table 1. Demographic Details of Sample.

	Wave 1 (N = 970)	Wave 2 (N = 827)	Wave 3 (N = 721)	Wave 4 (N = 693)
Sex	527 (54 percent) female	456 (55 percent) female	433 (56 percent) female	405 (58 percent) female
Age (years)	$M = 20$, $SD = 1.44$, min 17, max 23	$M = 20.5$, $SD = 1.4$, min 18, max 23	$M = 21$, $SD = 1.44$, min 18, max 24	$M = 21.6$, $SD = 1.37$, min 19, max 24
Ethnicity	Dutch = 414 (43 percent), Moroccan = 367 (39 percent), and Dutch Caribbean = 181 (19 percent)	Dutch = 381 (46 percent), Moroccan = 286 (35 percent), and Dutch Caribbean = 154 (19 percent)	Dutch = 382 (49 percent), Moroccan = 250 (32 percent), and Dutch Caribbean = 139 (18 percent)	Dutch = 350 (51 percent), Moroccan = 210 (30 percent), and Dutch Caribbean = 130 (19 percent)
Police contact < 17 years	N = 176 (18.1 percent)	N = 134 (16.2 percent)	N = 125 (16.1 percent)	N = 108 (15.6 percent)

Table 2. Descriptive Statistics of Self-reported Delinquency, Adult Role Transitions, and Feeling Adult from Four Interview Waves.

Self-reported delinquency	One or more delinquent act	Mean (SD)	Maximum number reported delinquency	Variance
Wave 1	36 percent	3.61 (16.83)	316	250.68
Wave 2	27 percent	2.67 (9.8)	300	207.55
Wave 3	25 percent	2.24 (8.51)	155	116.17
Wave 4	31 percent	3.61 (14.71)	203	275.16
Cut off at maximum 10 offenses				
Wave 1		1.62 (2.9)		8.41
Wave 2		1.32 (2.67)		7.15
Wave 3		1.11 (2.46)		6.46
Wave 4		1.29 (2.72)		7.38
Adult role transitions	Proportion of period in adult roles <i>M</i> (SD)	Maximum in adult roles (possible total = 3)		
Wave 1	0.79 (0.72)	3		0.53
Wave 2	0.71 (0.62)	2.64		0.39
Wave 3	0.73 (0.62)	2.53		0.38
Wave 4	0.83 (0.66)	2.82		0.43
Relationship status	Proportion of period in a relationship <i>M</i> (SD)	percent in relationship at time of interview		
Wave 1	0.44 (0.47)	61 percent		
Wave 2	0.39 (0.46)	61 percent		
Wave 3	0.41 (0.46)	60 percent		
Wave 4	0.47 (0.46)	52 percent		
Employment status	Proportion of period exclusively in employment <i>M</i> (SD)	percent exclusively in employment at time of interview		
Wave 1	0.12 (0.29)	14 percent		
Wave 2	0.15 (0.31)	16 percent		
Wave 3	0.18 (0.33)	17 percent		
Wave 4	0.18 (0.33)	20 percent		

(continued)

Table 2. (continued)

Living independently	Proportion of period living independently <i>M</i> (<i>SD</i>)	percent living independently at time of interview		
Wave 1	0.24 (0.42)	24 percent		
Wave 2	0.17 (0.26)	31 percent		
Wave 3	0.14 (0.19)	36 percent		
Wave 4	0.18 (0.23)	41 percent		
Feeling adult	<i>M</i> (<i>SD</i>)	Range	Within-individual change	<i>M</i> (<i>SD</i>)
Wave 1	7.3 (0.92)	2–10	Wave 1–2	0.88 (0.96)
Wave 2	7.7 (1.17)	1–10	Wave 1–3	0.85 (0.99)
Wave 3	7.7 (1.17)	1–10	Wave 1–4	0.62 (0.72)
Wave 4	7.4 (0.92)	1–10		

entire period was spent in a particular status. These three variables were then summed, resulting in a single variable, indicating the proportion of the previous period spent in the adult roles of being in a relationship, working and not studying, and living independently.³

Feeling adult. At each interview, respondents were asked “How adult do you feel.” Responses were given on a Likert-type scale from 1 to 10. This measure was developed following previous research by Arnett (2001) in which he asks “Do you think that you have reached adulthood.”

Analyses

Unobserved differences between respondents, linked to both time spent in adult roles and delinquency, are likely to complicate causal inference when using observational data. Therefore, in order to control for any bias from these unobserved characteristics, fixed-effects models were run to test our hypotheses. In a fixed-effects model, within-person change over time is examined, and therefore each person acts as their own control (Allison 2009). By examining within-person change, fixed-effects models automatically control for all time-invariant characteristics, and we can therefore be surer that any effects found are due to the variables included in the model. As our outcome delinquency variable was a count measure, with evidence

of overdispersion (see means and variance for delinquency variable in Table 2), the use of negative binomial models was preferred. However, as Allison and Waterman (2002) discuss, the fixed-effects negative binomial model (in Stata command *xtnbreg*) is not a true fixed-effects model and it does not control for all time-invariant characteristics. To solve this problem, we ran unconditional maximum likelihood negative binomial models including dummy variables for all respondents, as recommended by Allison (2009). The statistically significant parameters indicating overdispersion (α) in our models indicate the choice for negative binomial over Poisson models was the correct one.

We included age in the models. Interval period between each interview was also added, to control for the fact that the length of time between interviews varied per respondent, and thus would affect the delinquency outcome variable as well as the adult roles predictor variable. The interval variable was measured in months. Predictor variables were lagged by one interview wave, that is, the effect of predictor variables measured at $(t - 1)$ was tested for outcomes measured at (t) . This method, while leading to the loss of data through the use of three measurement points rather than four, strengthens conclusions about causal direction of effect.

We first ran two unconditional maximum likelihood negative binomial models estimating the effect of spending time in adult roles and the effect of feeling adult in one time period on self-reported delinquency in the following time period. In order to test whether the maturity gap remains a risk factor for delinquency for this age-group, we needed to examine whether the effect of by spending time in adult roles on delinquent behavior is moderated by feeling adult. We, therefore, added an interaction term between the feeling adult and adult roles variables to the final model. All models included the control variables age, representing age for the period of reported delinquency, a lagged interval between interviews variable, to control for differences in time period reported on for time spent in adult roles, and a nonlagged interval between interviews variable, to control for differences in time period reported on for number of delinquent acts.

Reversed models were also run with delinquency as lagged predictor variable and adult roles and feeling adult variables as outcome variables. By reversing the regression models, we are able to determine whether delinquency at one time period predicts being in adult roles or feeling adult in the following time period. It is important to determine the temporal sequence of delinquency and adult roles, to rule out the possibility that first desisting from delinquency occurs and then more time is spent in adult roles, that is, that desistance causes spending more time in adult roles. It

is also possible for both sets of models to be significant. This would indicate a cyclical process, whereby delinquency predicts adult roles which in turn predicts delinquency.⁴

Attrition

Of the 970 original respondents with whom interviews were carried out in wave 1, 827 took part in wave 2, 721 took part in wave 3, and 693 took part in wave 4, giving a response rate at wave 4 of 71 percent. Respondents were more likely to take part in wave 4, if they had a native Dutch ethnicity ($\beta = 1.73$, $SE = 0.8$, $p = .031$), if they were not male ($\beta = -0.72$, $SE = 0.17$, $p < .001$), and if they had a higher socioeconomic status ($\beta = -0.32$, $SE = 0.1$, $p = .002$). Participation in wave 4 was not predicted by self-reported delinquency at wave 1, being in adult roles at wave 1, feeling adult at wave 1, or having a police record prior to age 17 years. Our choice of analyses, looking at within-person change, means that any bias from attrition is minimized, although the generalizability of our results may be compromised.

Results

Descriptive Statistics

Table 2 gives descriptive details of all the variables included in the models for each of the four waves. Here, we outline differences between waves 2 and 4 on the dependent variables and differences between waves 1 and 3 on the independent variables, as these are the relevant variables used for the lagged analysis. Overall, the number of respondents reporting delinquent behavior in the sample increased by 4 percent between waves 2 and 4. Looking at the uncapped delinquency count variable, mean number of offenses reported increased between waves 2 and 4. The capped variable shows a slight decrease in mean number of reported offenses between waves 2 and 4, from 1.32 to 1.29, suggesting that the increase in the uncapped variable was due to a few individuals offending at a higher frequency in wave 4.

The number of respondents who were in a relationship at the time of interview dropped from 61 percent in wave 1 to 60 percent in wave 3. The average proportion of time respondents spent in a relationship during the period of either six months (wave 1) or since previous interview, decreased slightly between waves 1 and 3 (from 0.44 to 0.41). The number of respondents at the time of interview who were exclusively in employment and not in education increased from 14 percent in wave 1 to 17 percent

in wave 3, with the average proportion of the period spent in exclusive employment rising from 0.12 in wave 1 to 0.18 in wave 3. The number of respondents who were living independently at the time of interview increased from 24 percent in wave 1 to 36 percent in wave 3. However, the average proportion of period spent living independently decreased from 0.24 in wave 1 to 0.14 in wave 3. Due to the increase in number of respondents starting to live independently during this wave, on average respondents have spent less time in this role. The average proportion of time spent in a combination of these adult roles decreased slightly from 0.79 in wave 1 to 0.73 in wave 3. Average within-individual change in time spent in adult roles between waves 1 and 3 was -0.12 ($SD = 0.65$), indicating that in general across the three roles respondents spent less time in these roles at wave 3 than at wave 1. Looking at within-individual change in the three roles separately, between waves 1 and 3, respondents spent on average less time in relationship or living independently (relationships: $M = -0.03$, $SD = 0.41$; living independently: $M = -0.15$, $SD = 0.31$),⁵ but more time in work and not in education ($M = 0.07$, $SD = 0.36$). Average responses to the question of how adult respondents feel increased slightly between waves 1 and 3 from 7.3 to 7.7. Looking at within-individual change, 49 percent of respondents felt more adult at wave 3 than wave 1, 38 percent remained the same, and 14 percent felt less adult at wave 3 than wave 1. Average within-individual change in score for feelings of adulthood between waves 1 and 3 was 0.43 ($SD = 0.95$).

Effect of Spending Time in Adult Roles and Feelings of Adulthood on Delinquency

From model 1 (Table 3), we can conclude that, controlling for age and interval between interviews (lagged and nonlagged), spending time in adult roles has a significant negative effect on delinquency. For every one-point increase in adult roles during one time period, where one point indicates the entire period spent in an adult role, delinquency decreases by 23 percent⁶ in the following time period. Model 2 (Table 3) shows that feelings of adulthood in one time period do not have any significant effect on delinquency in the following time period.⁷ Model 3 (Table 3) shows that the effect of adult roles in one time period on delinquency in the following time period remains significant, and of a similar magnitude, when feelings of adulthood are added to the model. These three models indicate that there is no statistical mediation of adult roles and feeling adult, that is, the effect of one variable on delinquency is not explained by the other. When the interaction term is added in

Table 3. Fixed Effects Negative Binomial Regression Models Including Dummy Variables Examining the Main and Interaction Effects of Adult Roles and Feeling Adult on Delinquency (Results for Dummy Variables Not Shown).

	Model 1 (N = 1,896)		Model 2 (N = 1,792)		Model 3 (N = 1,792)		Model 4 (N = 1,792)	
	β	SE	β	SE	β	SE	β	SE
Age	.259*	.1	.086	.11	.088	.12	.085	.109
Interval lag	.089**	.034	.066	.04	.072	.05	.078	.04
Interval	.155***	.042	.087	.045	.104*	.046	.104*	.046
Adult role	-.266*	.112			-.264*	.117	-1.56*	.653
Feeling adult			.038	.059	.038	.059	-.093	.088
Adult role $\times$ feeling adult							.173*	.085
Intercept	-5.552*	2.383	-1.995	2.652	-1.874	2.643	-.947	2.667
α	.422***	.052	.407***	.052	.403***	.052	.395***	.051

Note: N = number of observations.

* $p < .05$. ** $p < .01$. *** $p < .001$.

model 4 (Table 3), the negative effect of spending time in adult roles is considerably larger. Feelings of adulthood were mean centered in these analyses. Therefore, in model 3, the parameter for adult roles ($-.264$) represents the effect of being in adult roles on delinquency, while, in model 4, the adult role parameter (-1.56) refers to the effect of spending time in adult roles at average levels of feelings of adulthood. Therefore, at average levels of feeling adult, for one-point increase in adult roles in one time period, delinquency rates in the following time period decrease by 80 percent. Surprisingly, model 4 shows a significant positive interaction effect between being in adult roles and feelings of adulthood in one time period on delinquency in the following time period. A negative coefficient for being in adult roles and a positive coefficient for the interaction effect indicates that the negative effect of adult roles on delinquency increases as feelings of adulthood decrease. Figure 1 illustrates this. As the figure shows at times when respondents felt less adult, they reported lower rates of delinquency as they spent more time in adult roles. At times when they felt more adult, they reported slightly higher rates of delinquency as they spent more time in adult roles. When spending less time in adult roles, the difference in delinquency when feeling more of less adult was not considerable.

When the models were reversed, delinquency in one time period neither significantly predicted feelings of adulthood nor spending time in adult roles

Figure 1. Moderating effect of feeling adult on relationship between time spent in adult roles and delinquency.

in the following time period (results not shown), thus ruling out the possibility that the causal direction of effect also runs in the opposite direction.

Discussion

In this study, our principle aim was to examine whether for today's emerging adults spending time in adult roles leads to desistance from crime in the first years of adulthood, as contended by Moffitt's theory of adolescence-limited offenders, or whether, due to the changed nature and meaning of these roles, their effect is negligible or even delinquent. We also aimed to test whether the maturity gap, whereby emerging adults feel adult but lack the corresponding adult social status, still poses a risk factor for delinquency during the emerging adult period.

Our results indicate that the more time emerging adults spend in adult roles, the less delinquent behavior they engage in. The more time our respondents spent in a romantic relationship, exclusively in employment and not in education, and/or living independently from their parents in one time period the fewer delinquent acts they reported committing in the following time period (vice versa is also true, i.e., the less time spent in adult roles the more delinquency reported). These findings support Moffitt's theory (1993) that adolescence-limited offenders desist from crime in response to

assuming adult social roles. We questioned whether adult roles would still have an influence on delinquency for this generation of young people, given the changed nature of these early adult years. Arnett and others' research (Arnett 2015; Mayseless and Scharf 2003) has found that emerging adults do not generally aspire to traditional more permanent, adult roles during this time of life, often preferring to experiment and explore different roles before settling down. Furthermore, societal expectations concerning the early adult years have shifted, and changes in the labor market mean that permanent stable employment is less common (Côté and Bynner 2008). We consequently might have expected spending time in these roles to have little or even an escalating effect on delinquent behavior. As it is, despite their often temporary and reversible nature, these roles remain important in terms of leaving adolescence and adolescence-limited offending behind.

In our sample of emerging adults, feeling more or less adult had no significant main effect on delinquency. However, we did find a significant interaction effect between feeling adult and being in adult roles. Regarding our hypothesis on the maturity gap, while the effect of feeling adult on delinquency was dependent on time spent in adult roles the direction of effect did not support our prediction. Feeling more or less adult did not have a differential effect on delinquency, when less time was spent in adult roles. Instead, feeling more adult and spending more time in adult roles resulted in slightly higher delinquency, and feeling less adult and spending more time in adult roles resulted in lower delinquency. How can we explain these findings that delinquency increases at times, when respondents feel more adult and spend more time in adult roles? Why is it that only when feeling less adult does increased time spent in adult roles reduce delinquency?

As Arnett (2000) has highlighted, during emerging adulthood young people have increased freedom to experiment and explore their identity. They experience increased freedom from parents and educational institutions as they leave adolescence, but are generally not yet troubled by career or relationship obligations and responsibilities. As we have discussed, their adult role experiences, be they romantic relationships, employment, or living arrangements, often have a temporary nature. This temporary nature may be a choice for some, whereas for others it may be a consequence of, for example, a lack of stable employment opportunities. Thornberry (2005:171) points out that certain young people may be susceptible to these increased freedoms, becoming caught up in antisocial behavior as a result. It appears that when our emerging adult respondents feel more of adult they are at risk of responding to the greater freedom afforded by adult roles by increasing their delinquent behavior. Our results, therefore, partially

correspond with the previous work on employment in emerging adulthood which has found increased employment or wages led to higher levels of delinquency (Blokland 2014; Lustig and Liem 2010). However, this effect is not universal. When emerging adults do not feel so adult they appear to avoid this risk. They respond to the changes in their lives, such as increasing freedoms and possibly instability, by desisting from delinquent behavior. A potential explanation for these differences may lie in who these emerging adults are comparing themselves to, who their reference groups are.

During adolescence, young people feel subjectively older than their chronological age (Montepare and Lachman 1989). Around their mid-20s this changes, with people beginning to feel younger than their chronological age. Galambos and colleagues (2005) speculate that this crossover is a consequence of young people changing their reference group: Whereas in the first years of adulthood, they still compare themselves to adolescents and so feel older, as they age they begin to compare themselves to older adults, making them feel younger. While we have examined feelings of adulthood rather than subjective age,⁸ it is possible that the respondents who reported feeling less adult were comparing themselves to older adults. This would explain why lower feelings of adulthood combined with adult roles would result in the adult normative behavior of desistance. In contrast, for those who reported higher feelings of adulthood, if they were continuing to compare themselves to adolescents, moving into adult roles would not necessarily prompt a decrease in delinquency, a behavior that is more typical of adolescents. This explanation could also clarify why Massoglia and Uggen (2010) found that people later in their 20s felt less adult when engaging in delinquency. By this point in their lives, they are more likely to compare themselves to older adults, rather than younger adolescents. Seeing as delinquency is a normative behavior in adolescence, but not adulthood, this would cause them to feel less like adults.

This negative aspect of emerging adulthood is one that has not previously been explored in the emerging adult literature. Arnett's theory of emerging adulthood has in the past been criticized for painting a too rosy picture of this time of life (e.g., Bynner 2005; Côté and Bynner 2008; Twenge 2006, but see also Arnett's responses 2006, 2015). Our results provide evidence of possible adverse consequences arising from the changing nature of the first years of adulthood. The increasing freedoms from parental, educational, or spousal control, or as the above mentioned critics might argue, the lack of opportunities for permanent employment or affordable housing that today's young people experience, appear to result in some emerging adults delaying the desistance, or not receiving the support which encourages the desistance, that

we would expect to see during adulthood. Supporting young people in the choices they make during this time of life, and adopting policies that help ensure possibilities are open to them, may help them leave the delinquency of adolescence behind.

This finding that some emerging adults are at risk of continuing to display behavior more typical of adolescents is perhaps not surprising if we consider other aspects of the emerging adulthood literature and previous research findings. Arnett and others (Arnett 2001; Facio and Micocci 2003; Hill et al. 2015) have found that this is an age of feeling in between adolescence and adulthood. This age-group thus shows signs of still being on Arnett's (2015) winding road to adulthood. Whether our respondents who feel more adult will eventually age out of crime in response to other changes, such as increased responsibilities, stability, or social control, is as yet unclear. Continued longitudinal research on this group as they mature further into adulthood is therefore needed.

Strengths, Limitations, and Future Research

Our study has addressed a number of relevant points concerning the desistance process during the transition to adulthood. However, there are also some important limitations to be raised. Firstly, life-course criminology highlights the importance of viewing desistance as a developmental process rather than something that occurs overnight (Bushway et al. 2001; Laub and Sampson 2001). This view matches the conceptualization of the transition from adolescence to adulthood as a gradual process, taking shape throughout the emerging adult years, rather than as an abrupt transition. By using a count, rather than dichotomous, dependent variable to measure delinquent behavior we try to tap into this idea that desistance can be a gradual process, unfolding over time. Our measure of time spent in adult roles similarly reflects this gradual process. Yet, while previous research has shown that a single-item indicator of adulthood is meaningful in predicting important differences in markers of adulthood (Johnson and Mollborn 2009), using such a simple measure does have its limitations. We are unable to distinguish between feeling adult emotionally, psychologically, or physically. Were future research to remedy this issue, we would have a better understanding of the differences between feeling more and less adult. Furthermore, future research is necessary to test our speculation that when at opposite ends of the feeling adult spectrum young people are in fact comparing themselves to different reference groups.

A further strength of our study was that we had a general population sample, and thus our findings are particularly pertinent to low-risk

offenders rather than restricted to the more serious offenders often studied in relation to desistance in adulthood. Moreover, unlike much research in the emerging adult literature that uses college samples, our respondents came from a range of socioeconomic and educational backgrounds and included an overrepresentation of Dutch-Moroccan and Dutch-Caribbean young people (see Table 1). This increases the generalizability of our findings across demographic groups within the Netherlands. As emerging adulthood has been shown to be relevant in different countries (e.g., Fadjukoff, Kokko, and Pulkkinen 2007; Lanz and Tagliabue 2007; Macek, Bejcek, and Vanickova 2007; Nelson, Badger, and Wu 2004), including the Netherlands (Hill et al. 2015), and the effect of adult roles has also been demonstrated in a range of countries (e.g., Finland: Savolainen 2009; the Netherlands: Blokland and Nieuwbeerta 2005; UK: Farrington 1988; and USA: Siennick et al. 2014), we are confident our findings would apply to other Western countries until future empirical research finds otherwise. Exploring whether and how the changing nature of young people's lives applies to desistance from criminal behavior in other countries, would therefore be an important avenue for future research.

By using lagged variables and running reverse models, as well as employing fixed-effects analysis to look at within person changes, we have attempted to provide strong evidence for causal inference. By showing that changes in adult roles precede changes in delinquency and that they are related to each other, we go some way toward demonstrating cause and effect. Of course, a consequence of using observed and nonexperimental data is that we cannot rule out the possibility that something else caused both our respondents to spend more time in adult roles and to desist from delinquent behavior. Fixed-effects models do not automatically control for time-varying factors. Nevertheless, we are happy that in the absence of evidence to the contrary our conclusions hold true.

A further strength of our study was the short time interval between measurements. Life-course researchers have in the past called for more frequent measurement intervals precisely to help determine such issues of causality (e.g., Siennick et al. 2014). However, having only four waves of data collection, and thus following our respondents for a total of only 24 months, is rather limited. Following our respondents up to and including their exit from Arnett's emerging adult period, that is, age 29 years, would be advantageous. This would allow us to determine whether those who responded to the adult roles we measured by increasing delinquency do eventually desist, as they transition into other markers of adulthood, adjust to their increased freedom, and/or find stability in relationships, housing, and employment.

Our measure of adult roles was particularly able to capture the unstable transient nature of young people's lives, rather than being restricted to a dichotomous measure of being in or out of certain roles. However, at present, we are unable to make any definitive conclusions about the mechanism behind the effect of spending time in these adult roles. The nature of the variable would seem to suggest that it is unlikely to be the stability, and therefore social control, which these roles provide that led to behavior change. It is possible that the change was due to a shift in routine activities. However, that for some of our respondents spending time in these roles did not have a desistance effect suggests that a change in routine activities cannot be the sole explanation. Further research with this data set should be able to shed light on this issue. Additionally, the adult role variable we created gave equal weight to all three roles included. While previous research has demonstrated that combinations of roles are important during the transition from adolescence to adulthood (e.g., Bosick 2014; Palmen et al. 2014), it may nevertheless be informative to examine the relative importance of the different adult roles for desistance, particularly with reference to our differing results for those who felt more and less adult.

One final point for discussion concerns our choice of analysis method. We chose to analyze our data using fixed-effects models, rather than the group-based trajectory models often used to examine Moffitt's taxonomy. While space restricts us from examining the pros and cons of each approach here (yet see Skardhamar 2010 and Brame, Paternoster, and Piquero 2012 for discussion), we briefly outline the reasons behind our choice. Our sample was a general population sample, albeit with an overrepresentation of young people with police contact during adolescence. As such, we made the *a priori* assumption that the majority of offenders among our respondents were likely to resemble Moffitt's adolescence-limited offenders, rather than life-course persistent offenders. Furthermore, previous research supports the idea that similar processes of desistance apply across different offender "groups" (Blokland and Nieuwebeerta 2005; Bosick, Bersani, and Farrington 2015). We therefore examined whether a mechanism, in our case time spent in adult roles, applied across the board.

Conclusion

This study has shown that, as Moffitt's theory for adolescence-limited offenders contends, adult roles lead to desistance during the early years of adulthood when the age-crime curve first shows decreases in criminal

behavior. Our results demonstrate that this process is true when examining age-normative adult roles for a contemporary sample of emerging adults for whom the pathway to adulthood looks very different to that of previous generations. However, we have also found that for some of these emerging adults the road to desistance in adulthood is not a simple one. Those who feel more adult, as they spend more time in these adult roles, respond to these changes in their lives by increasing their delinquent behavior. This finding has important implications for identifying young people at risk of continuing delinquent behavior into adulthood.

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Notes

1. The concept of emerging adulthood has been criticized as a middle-class phenomenon, arguing that young people with lower socioeconomic status (SES) have little room for experimentation (e.g., Bynner 2005). As such, emerging adulthood might be less relevant for explaining delinquent behavior as this tends to concentrate in lower SES groups. Still, the huge shifts in the mean age of transitioning to adult roles and the similarities in perceptions of the emerging adult years between high and low SES groups suggest that emerging adulthood effects all Western youths, regardless of social class, at least to some extent (Arnett 2006).
2. We do not include parenthood in our analyses as only 17 respondents (<2 percent) had become parents by the final interview wave. This is not unexpected, given the trend for late childbirth in the Netherlands.
3. Many of the demographic changes occurring for today's generation of young people are the result of more young people engaging in postsecondary education. Going to college or university provides freedom from the constraints of compulsory education and often also from parents. Nevertheless, we chose not to consider this as an adult role. This is a role that is generally confined to early adulthood and one which the majority of young people move out of after a few years. In this way,

it does not provide an adult social status in the same way as employment or living independently does.

4. Details of data structure, as well as the syntax used for analysis, are available from the authors on request.
5. The fact that living independently is a negative change even though more people are living independently is possible if those who were living independently at wave 1 returned home before the wave 3 interview. This also partly explains why the proportion of time spent living independently decreases between waves as well.
6. In the text, we report incidence rate ratios rather than coefficients, as these are intuitively easy to interpret.
7. Age and interval lag are significantly correlated with feelings of adulthood. This may explain their nonsignificance in this model.
8. We measured subjective age in waves 1 and 4 of our data. As we only have two data measurement points, we could not include these in our analyses. However, subjective age is significantly positively correlated with our feeling adult measure; wave 1: $r(965) = .16, p < .001$; wave 4: $r(684) = .12, p = .002$.

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