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The role of parents, peers and partners in cannabis use and dependence trajectories among young adult frequent users

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In a 3-year qualitative longitudinal study the role of social relationships in cannabis use and dependence in young adults (all frequent users at baseline) was explored. Overall, cannabis use and dependence declined. Changes in use were, for a considerable part, attributable to processes and life events in social relationships with peers and partners, while parents had little influence. Negatively experienced events often triggered increased use and positively experienced events decreased use. Participants often adapted their use to others, depending on associate's use. Underlying mechanisms appear related to both socialization and selection. Gender-specific processes occurred, particularly with regard to partners; females selected using partners and males nonusing partners, and subsequently cannabis use increased (females) or decreased (males) by socialization. Transitions in cannabis

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dependence could be explained by using peers, cohabitation and, for females, a new partnership. Persistent and newly nondependent participants were less susceptible to social influences than dependent interviewees.

KEY WORDS: *Frequent cannabis use, cannabis dependence, cannabis careers, social relationships, qualitative, young adults.*

Social environment plays an important role in the initiation into and continuation of drug use (Becker, 1963; Zinberg, 1984), but also in desistance from drug use (Biernacki, 1986; Laub & Sampson, 1993). From a life-course-theory perspective, trajectories into and out of drug use are largely bound by social relationships (Granfield & Cloud, 2001; Hser, Longshore, & Anglin, 2007). Parents are generally most influential during childhood; adolescence marks a decline in parental influence as peers, and in emerging adulthood, also partners, become the most important reference group in the private domain for (deviant) behavior (Arnett, 2005; Erikson, 1980). A rich body of literature has focused on the association between parents and/or peers and initiation of adolescent drug use. The number of studies focusing on the link between adolescent romantic relationships and drug use has increased in recent years. Yet the influence of these relationships in young adulthood—a phase often associated with cannabis use progression and dependence—are relatively unknown (Wittchen et al., 2008), with most of the available literature focused on marriage (Larson & Sweeten, 2012). While much research has been conducted on the role of social environment in substance use among adolescents, only a few studies have considered young adult substance use. Moreover, studies on the association between social relationships and substance use in young

adulthood are largely restricted to the role of partners. In this study we will focus on the course of cannabis use in young, initially frequent cannabis users in relation to parents, peers, and romantic partners (i.e., dates, lovers, spouses; further referred to as partners).

Parents have received much attention in adolescent-substance-use research. Identified risk factors for adolescent cannabis use and onset of cannabis dependence include stressful life events such as early parental death, low quality parent-child relationships, and parental cannabis use (Hopfer, Stallings, Hewitt, & Crowley, 2003; Johnson, Shontz, & Locke, 1984; McCutcheon et al., 2013; von Sydow, Lieb, Pfister, Höfler, & Wittchen, 2002). Most studies on parental influence in substance use are limited to adolescence, as well as to first use. Some studies show that certain parental aspects at early age (such as drug use, low monitoring, and relationship quality) indirectly predict associations with deviant peers in late adolescence, thereby contributing to drug use in young adulthood, including continued cannabis use (Brook, Zhang, Koppel, & Brook, 2008; Dishion, Nelson, & Bullock, 2004; Van Ryzin, Fosco, & Dishion, 2012). However, the question remains to what extent current parental aspects influence young adults' drug use, specifically when they have become frequent users.

Many studies acknowledge that peers play a strong role in drug initiation and continuation (Bahr, Hoffmann, & Yang, 2005; Brook, Brook, Arencibia-Mireles, Richter, & Whiteman, 2001; Coffey, Lynskey, Wolfe, & Patton, 2000; Kandel, 1985), through mechanisms that can be grouped into three areas: peer pressure, peer selection (or assortative mating), and peer socialization (or contagion, association, and reciprocal exchange). Studies have shown that adolescents select peers with drug use similar to their own and increase their use when they socialize with drug-using peers (Coffey et al., 2000; Kandel, 1985; Kuntsche & Jordan, 2006). Drug use over the course of adolescence has been associated with drug-using peers (Duan, Chou, Andreeva, & Pentz, 2009; Ragan & Beaver,

2010), with both peer socialization and peer selection arising (Dishion & Owen, 2002). Research investigating the role of peers in young adult substance use is limited, but findings appear to be similar to adolescent peer associations (Andrews, Tildesley, Hops, & Li, 2002; Van Ryzin et al., 2012).

Similar processes have been found for associations between partners and drug use. Some scholars argue that individuals select partners with similar attitudes and behavior (Knight, 2011; Yamaguchi & Kandel, 1993), others that they socialize towards partners' drug use behavior (Homish & Leonard, 2005; Knight, 2011), or both (Rhule-Louie & McMahon, 2007). Common interests in drug use and shared experiences appear essential for finding and maintaining steady relationships (Dishion & Owen, 2002; Vervaeke & Korf, 2006). Although support has been found for all three mechanisms, Rhule-Louie & McMahon (2007) concluded in an extensive review on antisocial behavior (including drug use) that many studies unjustly assume a prosocial role for partners while, in fact, the particular influence on the individual's deviant behavior depends on the partner's deviant behavior. Interestingly, a recent systematic review on partner similarity and antisocial behavior pointed to methodological differences: while retrospective data almost all supported selection over socialization, prospective data provided evidence of socialization (Knight, 2011).

Specifically regarding cannabis, a longitudinal study concluded that frequent users in particular were more likely to have a cannabis-using partner than a nonusing partner and were less likely to be married or cohabit (Brook, Lee, Brown, Finch, & Brook, 2011). However, little is known about young adult cannabis use and partner relationship types other than marital. Fleming et al. (2010) demonstrated that young adults with a married, cohabiting, or dating relationship status exhibited lower levels of substance use than singles. They conclude that "protective mechanisms are generally present in all types of romantic relationships in early adulthood, although stronger

for more ‘serious’ relationships” (p. 164). Concerning cohabitation, previous studies showed mixed results. Some found negative associations between drug use and (entering) marriage, but not between cannabis use and cohabitation (Bachman et al., 2002; Duncan, Wilkerson, & England, 2006), while other studies concluded that cohabitation compared to noncohabitation is associated with decreased drug use (Lonardo, Manning, Giordano, & Longmore, 2010) or increased drug use, including cannabis (Guagliardo, Peretti-Watel, Combes, Obadia, & Verger, 2009).

Turning points in drug use are associated with romantic partnerships (cf. Cloud & Granfield, 2004; Measham, Williams, & Aldridge, 2011; Vervaeke & Korf, 2006). While studies on this theme include young adults, the emphasis is often on marriage. The transition to marriage appears to have the greatest impact and is associated with less drug use or desistance (Chen, Kandel, & Davies, 1997; Maume, Ousey, & Beaver, 2005; Ragan & Beaver, 2010; Rhule-Louie & McMahon, 2007). Recovery from cannabis dependence has been linked to being married (Agosti & Levin, 2007). Regarding nonmarital partners, life events associated with changes in cannabis use refer to new and ended relationships. In some studies new relationships were associated with a (temporary) decline in cannabis use (Decorte & Slock, 2005; Hathaway, 2004), but in another study no decrease in cannabis use was found when entering new partner relationships or more committed relationships (Fleming et al., 2010). Larson & Sweeten (2012) found an increase in marijuana use among young adults after ending a dating relationship, but not if they subsequently entered a new relationship. Furthermore, they suggest that future research should distinguish between “the leaver” and “the left” to better understand the underlying mechanisms.

It has also been suggested that partner behavior influences females more than males, because females would usually be more interpersonally oriented. Rhule-Louie & McMahon (2007) concluded that desistance is weakened for both genders

by partners' deviant behavior, but for females the latter might produce socialization. According to Measham et al. (2011) females increased their drug use in new relationships with drug users, but stopped or decreased their use when the relationship ended, mainly due to access to drugs via their male partners. For most males new relationships had no impact on their use. However, Leonard & Homish (2005) found that when married, female marijuana users were more likely to exert influence on their male partner than vice versa: men had the tendency to start using marijuana if their spouse used, and men were also more likely to stop using if their wives were not users. Finally, no gender differences were found in the increase in young adult marijuana use after romantic breakups (Fleming et al., 2010; Larson & Sweeten, 2012).

In conclusion, much research on the influence of parents on drug use is restricted to initiation, rather than continuation or desistance. Many studies show associations between substance use and social relationships with peers and partners, but yield different results regarding underlying mechanisms (selection and/or socialization) and directions (more or less use, or desistance). Changes in drug use are associated with entering and ending a partnership, and turning points in use seem to mainly involve life events in partnerships, with studies conducted in the United States often focusing on entering marriage. In addition, as cultural contexts can differ across countries, the role of marriage in the development of drug use might be less pronounced in (Northern and Western) Europe, where (unmarried) cohabitation is more common. For example, Finnish research on recidivism showed that the transition to cohabitation was associated with greater reduction in criminal activity than getting married (Savolainen, 2009). Few studies have examined drug use of partners, and findings regarding gender specific influences of partner relationships on substance use are inconsistent.

Much research on the role of social environment and drug use, more specifically cannabis use, has been restricted to adoles-

cence. However, cannabis users are often adults. In the Netherlands, for example, mean age at first use is 19.6 years and mean age of last-year users 30.5 years (Van Laar et al., 2012). In addition, the measure of cannabis use is often undifferentiated, e.g., lifetime or last-year use, but not frequent and high-risk use or dependence. Finally, research on what mechanisms underpin turning points in cannabis use is scarce (Rhule-Louie & McMahon, 2007; Teruya & Hser, 2010).

The main purpose of this study is to contribute to a better understanding of the social factors influencing the course of frequent cannabis use and—since not all frequent users are dependent—cannabis dependence in young adults. The objectives are (a) to explore in depth the role of parents, peers and partners in frequent cannabis use; (b) to investigate the association between events in social relationships and changes in cannabis use, and the underlying mechanisms (selection, socialization); and (c) to analyze the role of social environment in cannabis-dependence trajectories.

Methods

The current (qualitative) study is part of a broader longitudinal study (CanDep) on cannabis use and transitions in cannabis dependence in young adult frequent cannabis users in the Netherlands (see for details van der Pol et al., 2011). While cannabis policies vary across Europe, cannabis is available and used in every country of the EU (Europol, 2013). The Netherlands is the only Western country where the sale of cannabis for personal use is legally tolerated for adults in so-called coffee shops (Wouters, Benschop, & Korp, 2010). Approximately 75% of current users buy their cannabis at these venues (Wouters & Korf, 2009). Still, prevalence of cannabis use is at about the European average (Europol, 2013; Van Laar et al., 2012). At baseline (T0, September 2008–April 2009) 600 frequent Dutch cannabis users (≥ 3 days cannabis use per week in the past 12 months) aged 18–30 years were

recruited in coffee shops and via respondent-driven sampling, to also include frequent cannabis users from the community who do not (often) visit coffee shops (see for details Liebrechts et al., 2011). They were interviewed using a structured (“quantitative”) questionnaire and monitored for 3 years, with two largely similar follow-up interviews 18 months and 36 months after baseline (T1, March–November 2010 and T2 September 2011–March 2012). At T0, DSM-IV diagnoses of 12-month cannabis dependence were assessed with the Composite International Diagnostic Interview (CIDI 3.0); T1 and T2 included an assessment of their cannabis dependence status since the previous interview. Between T0, T1, and T2, participants were contacted every 4–5 months via e-mail and/or telephone (intermediate updates) with a short questionnaire, providing timely information about possible changes in cannabis use and various life domains between the interviews. In all interviews and in the updates, frequency and quantity of cannabis use were assessed (days of use in the past month and number of joints per cannabis day).

At T1, four trajectories in cannabis dependence were distinguished: persistent nondependent ($n = 213$); persistent dependent ($n = 104$); transition from dependent to non-dependent ($n = 118$); and transition from nondependent to dependent ($n = 65$). At T2 the number of trajectories extended to eight.

In a qualitative substudy, the dynamics underlying changes in cannabis use and transitions in cannabis dependence were investigated. We conducted in-depth interviews, in which users expressed themselves through their narratives to improve our understanding of the processes and the context involved in these changes (cf. Carlsson, 2012; Maruna, 2001; Sampson & Laub, 2005). From each of the four trajectories at T1, 12 participants were randomly selected. As prevalence of cannabis use is generally higher among males than females (Europol, 2013), in the qualitative study we stratified for gender (8 male, 4 female) to guarantee a theoretical, but feasible, gender balance, totaling 48 interviewees. At T2,

these interviewees represented seven trajectories (Table 1). The first qualitative interview (I1) took place in December 2010–April 2011, the second (I2) in March–April 2012. One participant could not be traced back at I2 and was excluded from the analysis, thus resulting in a final sample of 47 participants.

TABLE 1 | **Transitions in cannabis dependence status T0-T1-T2 (*n* = 47)**

	T0	T1	T2	<i>n</i>
NNN	Nondependent	Nondependent	Nondependent	12
NDN	Nondependent	Cannabis dependent	Nondependent	7
NDD	Nondependent	Cannabis dependent	Cannabis dependent	4
DNN	Cannabis dependent	Nondependent	Nondependent	10
DND	Cannabis dependent	Nondependent	Cannabis dependent	2
DDN	Cannabis dependent	Cannabis dependent	Nondependent	5
DDD	Cannabis dependent	Cannabis dependent	Cannabis dependent	7

For the in-depth interviews a topic list was used that included questions about participants' cannabis use career (i.e., changes in patterns of cannabis use, motives for changes in cannabis use, and the occurrence of life events in various domains). Interviewees were asked to recall changes in different life domains and in their cannabis use patterns between T0 and T1 and between T1 and T2, respectively, using detailed personal timelines (cf. Bedi & Redman, 2006; Vervaeke & Korf, 2006). One timeline referred to their cannabis use (including frequency and number of joints per day; Figure 1), the other timeline to life domains (including social life, i.e., parents, peers and partners; Figure 2). Both timelines were prepared before the in-depth interview and included data derived from the quantitative interviews and intermediate updates, which included questions about their cannabis use and social relationships (i.e., parents, peers, partners). During the interviews these

timelines were used as guidelines and elaborated in detail. Every interview started with an open question (“Thinking about your life between T0-T1/ T1-T2, what has happened and what experiences have been important to you?”), and ended with a similar, but slightly different question (“Looking back at the period between T0-T1/ T1-T2, what experiences or processes do you consider to have had a (positive or negative) impact on your life and cannabis use?”). Both in-depth interviews (I1 and I2) focused on the period between the standardized interviews (T0-T1 and T1-T2 respectively), but in the first in-depth interview (I1), participants’ previous cannabis career and life history were also discussed.

All participants provided written informed consent at the start of the study, acknowledging that their participation was voluntary. They were assured that the interviews were confidential and data was kept safe, separated from any personal information, and that anonymity was guaranteed. Interviews took place at a quiet location, mostly at participants’ homes, and sometimes at the research institute. The interviews lasted between 1.5 and 3.5 hours. After completion, participants received a financial compensation of €25. The study was approved by a Medical Ethics Committee.

Analysis All qualitative interviews were digitally recorded (with participant’s consent), transcribed verbatim and imported into QSR Nvivo. Transcripts were analyzed combining deductive and inductive strategies. Codes and categories were partly developed beforehand, based on the literature (a priori coding; Miles & Huberman, 1994). In addition, new codes and categories evolved from the data, and new patterns emerged. Interview transcripts were read and reread to identify and link evolving codes, categories, and themes (pattern coding; Miles & Huberman, 1994). To guarantee anonymity, interviewees were identified with fictitious names.

Results

- Participants** Age of participants at baseline ranged 18-30 years ($M = 21.3$ years, $sd = 2.7$). As intended, one third was female. At baseline, length of cannabis use careers ranged between 2-14 years ($M = 6.7$ years, $sd = 2.7$), for some with intervals of no use. At baseline (T0), 29 participants were (near) daily users (5-7 days per week) and the other 18 participants used 3-4 days per week. Over time there was an overall decline in cannabis use frequency. At T2, 20 participants were (near) daily users, 19 used 3-4 days per week, 5 used one day per week or less and 3 had not used cannabis for one year or more, and said they had quit permanently. Also quantity of cannabis used decreased, from on average 2.9 joints ($sd = 1.7$) per using day at T0 to 2.4 ($sd = 3.0$) at T2 (excluding 3 non-past-year users). Between T0-T2, cannabis use of 24 interviewees remained stable, 19 showed a general decrease, and 4 participants reported more cannabis use at T2 than at T0. At T0, 24 participants were cannabis dependent, versus 13 at T2 (Table 1).
- Parents and cannabis use** About half of the participants were raised in broken families, most of them had divorced parents, two had lost their father, and five never knew him. The majority (78%) said they had a good relationship and frequent contact with at least one parent, usually with both. Participants with poor family ties had less contact, often monthly instead of weekly. A few had ended parental contact, but most participants felt supported by their parents.
- Most participants reported their parents had tried cannabis when they were younger. Some (21%) had parents who were current users ($\geq$ once per month). Two interviewees lived with a cannabis-using parent. About a quarter said their parents were not aware of their use, or to what extent, or assumed that he/she had quit using. For interviewees living with their parents this commonly had little influence on their cannabis use, as they did not use at home. Generally, participants said they

did not care much about their parents' opinion. They did not use cannabis when visiting their nonusing parents, but smoked a joint afterwards, and also when visiting them for a weekend. Any influence of nonusing parents seems indirect and often temporarily deterring. Interviewees with cannabis-using parents generally reported that parents had no influence on their cannabis use. Now and then they smoked a joint together with their parent(s).

Peers and cannabis use

Most interviewees had quite a large circle of friends (8 on average, $sd = 5.5$), including some very close friends, with whom they often shared joy and sorrow. Although participants emphasized that quality does not equal quantity, half of them spent time with peers several times per week, sometimes daily, while the others saw their peers weekly or fortnightly. Most interviewees believed friendships to be important and some expressed that they valued friendship more than their partners or family ties. Some participants occasionally switched friends, but most had a steady peer group for many years.

At baseline, all participants had peers who regularly ($\geq$ weekly) used cannabis; for two thirds at least half of their friends used cannabis regularly, often most of them. In the course of the study, the overall number of cannabis-using peers decreased, in two ways. Some interviewees had peers who cut down on use, while others started to associate with nonusing rather than using peers. Consequently, some interviewees used alone more often, while others reduced their use. Generally, the more cannabis-using peers someone had, the more cannabis was used together.

Smoking cannabis together used to be bound by certain rituals (e.g., order of smoking, collectively rolling the joint, playing games) when participants were younger, but these rituals gradually declined with age. Many participants stressed that these rituals were common for novice users, when using cannabis was still exciting and often also money was insufficient for everyone to use "enough." The only ritual that had survived

was passing the joint. In conversations with nonusers, cannabis was barely a topic, but with co-users they discussed both positive aspects (quality of marijuana or hash, recalling occasions when they were high or stoned) and negative aspects (adverse effects, using too much). In addition, most interviewees referred to informal social control, and explained how they called each other to account when they thought peers were using too much.

When a friend wants to be alone all the time, stays inside and does nothing but smoke joints, then it's time for an intervention. We drop by or have some drinks and talk to him. (Jesse, I1, DNN)

Most participants (87%) believed their cannabis use was influenced by their peers. Some reported a two-sided effect: not only can peers influence each other to use more, also they can stimulate each other to use less. For most participants however, peer influences implied more use when being with other users. Particularly interviewees with many using peers stated that they frequently used more cannabis than they would use when not in company of their peers, as Max explained.

We always use when we're together. A default question when we meet is: Do you have stuff, should I go to the [coffee] shop? I keep it in mind. Sometimes it has an adverse effect: when you actually just want to hang out with friends, not using. Yet if it's available and they're smoking, it's really hard to say no. Sometimes I use alone at home but then I smoke far less. (Max, I1, DDN)

Partners and cannabis use

Three types of romantic partnerships were distinguished: steady relationships, temporary relationships, and no (serious) relationships. No participant was ever married. Roughly one in five (19%) had the same partner during the whole study period (T0-T2) (steady relationships). Just as many had had no (serious) relationships, although most of them had had one or more flirtations. A slight majority (62%) was part of T0-T2 in one or more temporary relationships, varying from new relationships, through short relationships that lasted a couple of months, to long-term relationships that ended during the study period. Some had several partners and quickly found a new partner

after the previous one. Most interviewees were in heterosexual relationships (including all males); four females with temporary relationships (also) had same-sex relationships.

Concerning cannabis use, many participants with relationships said it made little difference to them if their partner was using cannabis or not. However, males without (serious) relationships often reported that they would prefer a nonusing partner: for some because it might decrease their own use, while others pictured a using girlfriend as passive and sluggish.

I'm quite sensitive to girlfriend influences. If she would smoke a joint, I would take part. So perhaps I want a girlfriend who doesn't drink or smoke cannabis a lot. Yet, I want to be able to do that. . . . maybe a little hypocritical ha-ha. It would be regrettable if my girlfriend would use cannabis daily. It would be very tiring, a stoned girlfriend, probably lying on the couch all the time. (Julius, I1, DNN)

Conversely, female interviewees said that they preferred a using partner, mostly because they value compatibility or because they foresee problems should their partner not use.

My future partner, well, he shouldn't be opposed to it. Or forbid me to use, because I do what I want! I would like it if he would use at least occasionally. If someone doesn't use and you do, he is sober while you're stoned and that ain't fun for nobody. I once had a relationship which ended because he firmly opposed my tobacco and cannabis use. (Kim, I1, DDD)

Flirtations were said to have little impact on cannabis use, as they were too brief or were of too little quality (meaning). Yet partner use was important in relationships: half of the participants with steady relationships had a frequent-cannabis-using partner, versus one in three interviewees with temporary relationships. For both types of relationships, the same pattern emerged: Almost all women had a using partner (93% with relationship), while most men had a nonusing partner (91%). Most participants in a steady relationship with a nonusing partner reported no influence of their partner on their use, nor was cannabis a recurring topic of conversation. Participants

typically discussed their partner's opinion once, though some received an occasional remark about using too much. Interviewees in a steady relationship with a using partner discussed cannabis more often (e.g., who would buy cannabis, who rolls the joint, how much is used, and sometimes adverse effects, difficulties getting out of bed). A few said their partner used as much as they did, but most interviewees—especially females—stated their partners used more. As a result of being in the company of their using partner, the majority reported to regularly use more.

It sometimes happens that I don't want to smoke and he does and then we don't use. But...well, no, if he wants to smoke he rolls a joint anyhow. If I really don't want to use, I won't, but mostly I participate anyway. Not because it's no fun when I'm sober and he's stoned or something. I don't know, just because it's there. (Isabel, I1, DNN)

Socialization and selection

In sum, for all participants cannabis use was present in their social relationships, albeit in different gradations. Some had cannabis-using parents and sometimes used together, others withheld their use from their parents. Apart from some exceptions, participants reported that parents were of little influence on their cannabis use. On the contrary, peers and partners, especially when they also used cannabis, were influential. All participants had cannabis-using peers, and almost all female interviewees had a using partner.

Mechanisms for partner influences on cannabis use appeared to be to both socialization and selection, but were gender specific: Whereas males predominantly selected nonusing partners and as a result often reduced their use, females selected using partners and thereby often increased their use. Regarding peers, socialization effects are clearly existent in present friendships, often resulting in more use when in company of other users. As most friendships started in adolescence, conclusions on the extent of selection effects on cannabis use are difficult to draw, but since participants also bond with nonusers (sometimes creating less use through socialization), peer selection did not

seem to apply. Peer influences did not differ strongly for gender, but females more often reported to be only influenced by their partner (more use), while males referred to influences of both partner (less use) and peers (more use).

Events in
relationships
and cannabis
use

Many interviewees reported life events in relationships that had taken place during the course of our study (152 events in total, averaging at 3.2 per interviewee). Slightly more events were evaluated as negative rather than positive (Table 2).

Events concerning parents occurred the least ($n = 22$ events; 14% of all events in relationships). Negative parent events mostly concerned physical or mental health of parents (including death), and to a lesser extent social problems (e.g., conflicts with parents). Positive parent events (e.g., disease cured) occurred less often than negative (27% vs. 73%). While some interviewees said that the negative event did not bother them very much, others found it more difficult to handle.

Peer events were more common ($n = 49$, 32% of all events in relationships). The majority considered peer events such as broken or diluted friendships to be negative experiences. Some interviewees, however, regarded dissolved friendship as a positive event. Other positive events included new friendships, the renewal of old friendships, or deepened friendships. Unlike events regarding parents and partners, peer events generally exhibited less abrupt changes. Some participants ended friendships and made new friends, but these events did not happen overnight, nor did anyone obtain a whole new peer group. This could explain why many interviewees felt that peer events did not have much of a positive, nor negative impact on their lives. Most acknowledged that in life, friends simply come and go.

Partner events were experienced most frequently ($n = 81$, 53% of all relationships events) and often occurred suddenly. Most experienced romantic dissolution as a negative partner event, but also referred to the relocation of a partner, or a partner's incarceration. All participants emphasized breakups were not caused by their

cannabis use. Partner events regarded as positive experiences mainly concerned new relationships; other events included moving in together, a temporary breakup and, for one interviewee, ending a relationship. Partner events usually had a significant impact on participants' daily life, simply because, for many interviewees, their partner was the person with whom they spent most of their leisure time. Some partner relationships ended more abruptly or painfully than others and yet, either as "the leaver" or "the left," interviewees experienced a broken relationship as very negative—and for most it took time to get over it.

Interviewees talked about changes in their cannabis use related to events in terms of more use (i.e., more frequently, more joints per occasion, or larger amounts of cannabis), or less use (i.e., less frequently, less joints per occasion, or smaller amounts), or said their cannabis use had not changed (stable use; including a few participants alternating between more and less use). Partner events were most likely to impact cannabis use (56%), followed by peer events (39%) and parent events (32%). Though over half of the participants experienced more than one relational event, only a few events invariably had a similar effect on the cannabis use of these participants (mostly stable use). It was more common for different events to have different influences on cannabis use.

Parent events and cannabis use

Events related to parents were experienced by 12 participants. These events mostly did not change participants' cannabis use (68%), and rarely resulted in less use (Table 2). Positive events occurred less often than negative events, and generally had no impact on participants' cannabis use. Some interviewees responded to negative experiences by increasing use, either as a means of distraction or to temporarily forget their troubles, as in the case of Isabel.

When I heard that my father had a brain hemorrhage, I just smoked more. When you're grieving, you want to have a joint, and forget. Well, you want to forget at that moment. After that, you are confronted with reality, and then you can't avoid thinking. It's not that I smoke another joint, oh no! Then I would've been a wreck by now. (Isabel, I2, DNN).

TABLE 2
Cannabis-dependence trajectories, life events in social relationships, and cannabis use

<i>Trajectory (n participants) -> Cannabis Life event experienced (n)</i>	<i>NNN (12)</i>	<i>NDN (7)</i>	<i>NDD (4)</i>	<i>DNN (10)</i>	<i>DND (2)</i>	<i>DDN (5)</i>	<i>DDD (7)</i>	<i>Total (47)</i>
PARENTS								
Negatively (16)								
More	-	1	1	2	-	1	-	5
Stable	3	3	-	3	1	-	-	10
Less	1	-	-	-	-	-	-	1
Total	4	4	1	5	1	1	-	16
Positively (6)								
More	-	1	-	-	-	-	-	1
Stable	1	2	-	1	-	1	-	5
Less	-	-	-	-	-	-	-	-
Total	1	3	-	1	-	1	-	6
PEERS								
Negatively (22)								
More	-	-	-	1	-	1	-	2
Stable	5	3	2	3	1	-	2	16
Less	1	-	-	-	-	3	-	4
Total	6	3	2	4	1	4	2	22
Positively (27)								
More	-	3	1	1	-	2	1	8
Stable	6	-	1	3	1	1	2	14
Less	2	-	-	-	-	2	1	5
Total	8	3	2	4	1	5	4	27

PARTNERS										
Negatively (40)	More	2	3	2	3	2	4	3	3	19
	Stable	3	3	1	4	2	2	3	3	18
	Less	-	1	1	1	-	-	-	-	3
	<i>Total</i>	5	7	4	8	4	6	6	6	40
Positively (41)	More	-	1	4	2	-	-	-	-	7
	Stable	5	4	-	5	1	-	3	3	18
	Less	6	2	2	1	1	2	2	2	16
	<i>Total</i>	11	7	6	8	2	2	5	5	41
ANY										
Negatively (78)	More	2	4	3	6	2	6	3	3	26
	Stable	11	9	3	10	4	2	5	5	44
	Less	2	1	1	1	-	3	-	-	8
	<i>Total</i>	15	14	7	17	6	11	8	8	78
Positively (74)	More	-	5	5	3	-	2	1	1	16
	Stable	12	6	1	9	2	2	5	5	37
	Less	8	2	2	1	1	4	3	3	21
	<i>Total</i>	20	13	8	13	3	8	9	9	74
Average number events per participant										
Negatively (78)		1.2	2.0	1.8	1.7	3.0	2.2	1.1	1.1	1.7
Positively (74)		1.7	1.8	2.0	1.3	1.5	1.6	1.3	1.3	3.2
<i>Total (152)</i>		2.9	3.8	3.8	3.0	4.5	3.8	2.4	2.4	1.6

*Peer events and
cannabis use*

Peer events were experienced by 29 interviewees, with slightly more positive than negative events (Table 2). Peer events were often paired with stable use (61%), and in similar numbers with more or less use. Influence of peer events on cannabis use appeared to be related to whether peers were using cannabis or not, rather than to whether peer events were regarded as positive or negative experiences. More use tended to go hand-in-hand with new friendships (positive) with cannabis-using peers, and less use with new friendships with nonusers (positive) and/or less or no longer in contact (mostly negative) with using peers.

Because less of my classmates use cannabis, I smoke less. Now we go for drinks or a meal after school instead of going to the coffee shop. So that had an impact for sure. And also another friend—he uses quite a lot—I don’t see him as much lately, since I am too busy. That also resulted in less cannabis use. (Ryan, I2, DDN)

*Partner events
and cannabis
use*

The field of partners was most dynamic: During our study, 38 participants reported 81 partner events altogether. Positive and negative events occurred quite evenly. Although partner events generally did not change cannabis use (stable use, 44%), they affected cannabis use more often than parent and peer events (Table 2). While some interviewees with a broken relationship did not feel like using cannabis as much when feeling down, negative partner events typically resulted in more use. Some participants (temporarily) used more to cope with grief, others increased use when no longer influenced by a (nonusing) partner.

Yeah that hit me quite hard, wasn’t a pleasant period. To forget I started to smoke a lot. I had enough time to think it through and enough money to smoke plenty. And that’s what I did. Even when my friends started criticizing my behavior I continued using for a while, but ultimately time heals all wounds. (Dylan, I1, NDN)

Both the leaver and the left increased their use after breakups. Most interviewees who changed their use during the relationship resumed their old use patterns after breaking up. Positive partner events were commonly coupled with stable use or less use. Stable use was generally observed in participants who

indicated that their partners adopted an impartial attitude towards their cannabis use (whether using in their partner's presence or not), and was not influenced by their partners' cannabis use. Interviewees who entered a relationship or moved in with a nonusing partner used less. The reasons for using less are similar to those given by participants when in the company of nonusing parents and peers; some stated that being stoned around a sober person was unpleasant, others wanted to use less in order to please their partner.

Conversely, participants who entered a new relationship or moved in with a using partner proved more likely to report more use. They found it difficult to refrain from using cannabis whenever their partner smoked a joint; Eva, for example, found a new partner (T0-T1), and subsequently moved in with him (T1-T2).

He'll easily smoke 3 grams in one sitting. And I try to keep up with that, though I normally smoke at a very slow pace. I'm glued to the couch and completely useless when I smoke a lot. But I still do it and then, well . . . I become totally sluggish. He keeps passing and so I keep smoking, keeping up with him. (Eva, I1, NDD)

Strikingly, all participants who had experienced positive partner events and were using more, were either females who had entered a new relationship or moved in with a cannabis-using partner. Conversely, almost all participants who had experienced positive partner events were males who had entered a new relationship or moved in with a nonusing partner. Both male and female participants attributed changes in use to their new partner, which suggests socialization. Male participants were quite evenly distributed between the leaver and the left, and in some cases the relationship ended consensually; apart from one interviewee, female participants were all the leaver.

Similar patterns of selection and socialization were found in interviewees who were cohabiting with their partner (30%). Female participants all lived with a partner who used more than them, and believed that their cannabis use had increased as a result.

Interestingly, male participants who had lived with a partner for a longer period (i.e., a couple of years) said that their partner ultimately had no influence on their cannabis use.

**Relationships,
events, and
cannabis
dependence
trajectories**

With regard to cannabis dependence, seven trajectories evolved during follow up, with persistent nondependence (NNN) and a shift towards nondependence (DNN) as the most common trajectories (Table 1). While the number of participants in most trajectories is limited, some patterns appear to emerge when considering social relationships (Table 3). Family background did not show clear associations with trajectories. Participants from broken homes were present in all seven trajectories, and participants whose parents were current cannabis users were present in five trajectories—including persistent nondependent (NNN) and persistent dependent (DDD). Participants who initially had many cannabis-using peers (half of their peer group or more) are evenly divided into those who were nondependent at baseline (74%) and those who were dependent users (71%). However, a decrease in the number of cannabis-using peers during the study was more common among participants who were nondependent at end of the study (41%) than among those who remained or became dependent (23%). Using partners (32%, both at T0-T1 and T1-T2) were less common in the persistent trajectories (NNN: 25% T0-T1 and 17% T1-T2, respectively; DDD: 14% T0-T1 and 29% T1-T2). In the persistent-dependent trajectory, however, participants were also more likely to be single (43%, both at T0-T1 and T1-T2; vs. NNN 25% and 33%). Strikingly, there were relatively more female participants in the persistent-dependent or shift-to-dependent trajectories (46%), than in the persistent-nondependent or shift-to-nondependent trajectories (29%) (Table 3).

Concerning events, other patterns emerged (Table 2). The lowest average number of events per participant was reported in persistent trajectories (DDD and NNN). Stable use was coupled with positive as well as negative events in all trajectories. More use was more common in negative events and less use in positive events (particularly in NNN).

TABLE 3
Characteristics relations and cannabis-dependence trajectories

<i>Trajectory (n)</i>	<i>NNN</i> (12)	<i>NDN</i> (7)	<i>NDD</i> (4)	<i>DNN</i> (10)	<i>DND</i> (2)	<i>DDN</i> (5)	<i>DDD</i> (7)	<i>Total</i> (47)
Parent(s) current user (T0-T2)	3	-	1	4	-	1	3	12
Broken family	9	2	2	3	2	3	4	25
≥ half of peers used T0-T1	7	7	3	5	1	5	6	34
Decrease in number of using peers T0-T2	6	3	-	1	1	4	2	17
Partner (steady or temporary) T0-T1	9	6	3	6	2	4	4	34
Using partner (also) T0-T1	3	3	2	3	1	2	1	15
Partner (steady or temporary) T1-T2	8	5	3	9	2	5	4	36
Using partner (also) T1-T2	2	2	2	4	1	2	2	15
Female	4	2	2	3	1	1	3	16

Parent events were reported in all trajectories, except for the persistent-dependent trajectory (DDD). Parent events (both positive and negative) went along with stable or more use, except for one NNN participant who permanently stopped using cannabis.

Peer events were reported in all trajectories (Table 2). As stated before, peer events generally did not change participants' cannabis use. More use occurred in five of the seven trajectories, but not in the persistent-nondependent trajectory (NNN). In all but one case, less use occurred in the latter (NNN) and in one of the shift-to-nondependence (DDN) trajectories. Persistent nondependent participants only initiated new friendships with nonusers, and reported stable or less use. Participants in the DDN trajectory also declared that they used less because of these new nonusing peers (between T1-T2).

The three types of partner relationships were represented in all trajectories, and partner events occurred in all trajectories (Table 2). However, partner events regarded as positive experiences most clearly outnumbered negative ones in the persistent nondependent trajectory (NNN; 69% partner events vs. 51% in all trajectories). Moreover, less use coupled with positive partner events was also more common in this trajectory (55% positive partner events vs. 39% all trajectories). Finally, regardless of their partner's cannabis use, participants who started to cohabit between T0-T2 were more likely to shift to or to remain nondependent (73%; including 3/16 females) than to become dependent (27%; including 1/16 females).

Some participants seemed better able to deflect social influences on their cannabis use than others. These participants stated they had little difficulties refraining from use, even if their peers or partners were using. They reported feeling in control over their use, and during the course of our study they often decreased their use.

Last year I already used little cannabis, but in the past 3 months I haven't used at all. I see my friends just as often, and they use when

we're together. Sometimes they forget that I don't use, and pass me the joint, but that's no problem. I don't think I'll start using again. (Mike, I2, DNN)

Other interviewees felt less in control, and reported having difficulties refraining from cannabis use in the company of other users. They would occasionally attempt to quit in vain, and blamed their inability to stop using on their peers or partners.

I don't want to be totally dependent on cannabis. But I am now. My cannabis pattern has changed in the last year, I use less regularly and with every attempt to stop I'll see how long that lasts. I always allow myself to give in at parties, the special occasions, when we meet a group of friends, when friends who always use drop by. My friends influence me. If someone would come over every day, saying, come on let's smoke a joint, I'm afraid that would affect me. (Jonas, I2, DDD)

Still others indicated that, as time progressed, they had learned to better manage their use, while this was not the case at an earlier stage of our study. The narratives showed that interviewees with more control over their cannabis use were mostly found in the persistent nondependent and shift-to-nondependent trajectories, while participants with less or little control in persistent or shift-to-dependent trajectories. For example, two female interviewees in NDD trajectory who had entered a new relationship (between T0-T1) with a using partner stated that their partner greatly influenced them and that they were struggling to stay in control of their own cannabis use.

Discussion

In this qualitative study we explored the role of social relationships in cannabis use among young-adult initially-frequent cannabis users. During the 3 year follow-up period, although patterns of use and dependence trajectories varied, there was an overall declining tendency in cannabis dependence and in use, including some interviewees who stopped using cannabis altogether.

Taken together, and in line with life course theory, participants' narratives indicated little influence of parents on young adults' general cannabis-use patterns; yet influence of peers, which during the follow up for some users had shifted to primarily partner influence, was considerable. Commonly, interviewees with more cannabis-using peers were more likely to use cannabis together. As a result they often used more than they would normally do alone, especially in the case of participants without partners. While short-term relationships had no effect on cannabis use, the influence of longer relationships mainly depended on the partner's use (cf. Rhule-Louie & McMahon, 2007).

Our findings are largely in accordance with previous research on selection and socialization of peers (cf. Andrews et al., 2002; Van Ryzin et al., 2012) and of partners (Rhule-Louie & McMahon, 2007). On the one hand, narratives of many participants indicated socialization effects in current friendships and partnerships: They reported to frequently use more cannabis in the company of using peers and/or partners, and to use less in the company of nonusing peers and/or partners (cf. Andrews et al., 2002). The latter applied to parents as well, yet to a much lesser extent, as interviewees generally spent considerably less time with them than with peers and partners. On the other hand, our findings suggest selection mechanisms. People can select their peers and partners, but not their parents—they only have a say in how much time they spend together.

Many interviewees reported life events in relationships that had taken place during the course of our study. In line with life course theory, peer events were more common than parent events, and partner events were more common than peer events. Even though the meaning of an event was rather similar for all participants, the impact of events on their cannabis use could differ. About half of all events in participants' social relationships had not changed their cannabis use. As far as events did have an impact, negative experiences were more likely coupled to more use and positive experiences events to less use.

Compared to parent and peer events, partner events affected cannabis use more often. While the impact of new relationships mainly depended on partners' use, dissolution of partner relationships commonly resulted in (temporary) increased use. This confirms theoretical suggestions of other studies, yet while other studies could only speculate about the mechanisms causing an increase (Fleming, White, Oesterle, Haggerty, & Catalano, 2010; Larson & Sweeten, 2012), our study demonstrates the causal role of decreased informal social control as well as straining experiences due to romantic loss.

Inspections of the association between social relationships and cannabis-dependence trajectories revealed that fewer events were reported in persistent trajectories compared to dynamic trajectories, indicating the importance of events in social relationships in changes in cannabis dependence. Both a decrease in the number of cannabis-using peers and the act of moving in with a partner were linked to (a shift toward) nondependence. This is consistent with past research showing that protective mechanisms of romantic relationships are stronger in more serious relationships (Fleming, White, Oesterle et al., 2010) and that cohabitation is related to decreased use (Lonardo et al., 2010). Also, suggestibility emerged as an explanatory factor. Interviewees who overall seemed to be more in control of their use, and to be less susceptible to the influences of (events in) social relationships than others, were often persistent or became nondependent.

Interestingly, clear gender differences concerning partnerships emerged: Females tended to remain or become dependent more often than males. This transition toward dependence among females could be explained by a new relationship with a using partner. While past research (Brook et al., 2011) showed that frequent users were more likely to have a cannabis-using partner than a nonusing partner, we found this only to be the case for females. Almost all males had nonusing partners and, as a result, often reported decreased use; almost all females had using partners and often said that, as a result, their use had

increased. These findings are in accordance with previous research indicating that the behavior of partners would be more salient to females than males' problem behavior (Rhule-Louie & McMahon, 2007). Regarding underlying mechanisms, in contrast to previous research (Knight, 2011), our prospective study indicates that partner selection plays a more important role than socialization. Partner selection is influential for both genders, but in different ways. While it has been argued that female involvement in drug use is often facilitated by their partner (Rhule-Louie & McMahon, 2007), our females were already users, and in fact, sought out using partners.

Previous research conducted in the United States showed that close to half of the male cannabis users had wives who also used, and determined that married men are more likely to stop or decrease use if their partners are not users (Leonard & Homish, 2005). Although none of our participants were married, it seems fair to assume that longer steady relationships and cohabitation are more similar to marriage than new and/or temporary relationships. While the American researchers suggest that socialization is the dominant mechanism, we only found a decrease in cannabis use for males entering a new relationship, not for males in longer, steady/cohabiting relationships. In accordance with Measham et al. (2011) we found that females in new relationships with users increased their use, and reduced or stopped their use when the relationship ended. However given the context of the relatively easy access to and purchase of cannabis in the Netherlands via coffee shops, compared to other countries (Reinarman, Cohen, & Kaal, 2004; Wouters & Korf, 2009), we seriously doubt this should primarily be ascribed to drug access through male partners, as the United Kingdom researchers suggested. Especially since in partner-relationship dissolution, females were almost always the leaver while male participants were equally often the leaver or the left. More convincingly, and contrary to the United Kingdom findings, our results do support the fact that entering a new relationship has an impact on male (users') cannabis use, as demonstrated by others (e.g.,

Hathaway, 2004); i.e., a (temporary) decline in use, but only in relationships with a nonusing partner.

How can these notable variations in partner influence, which largely depend on gender, then be theoretically defined? If women are indeed more interpersonally focused than males (Rhule-Louie & McMahon, 2007), it could be argued that unlike males, females—especially “deviant” females—actively pursue common interests and acceptance in a relationship (considering the context, it may be significant to note that four out of sixteen females were in a same-sex relationship). Alternatively, from a stereotypical heterosexual gender perspective, it could be that males prefer a partner who sets limits and assumes a caring role. In their narratives, many males expressed negative opinions about frequent female cannabis users, picturing them as “sluggish” and “lazy,” while female interviewees did not use such terms when talking about male users. Since motivations and processes concerning why and how individuals change their cannabis use differ by gender, these issues are worth investigating more deeply in future research.

Cannabis use and social relationships in our study were quite dynamic, but to some extent this was due to the study design. From the life course perspective, a decline in cannabis use during young adulthood was to be expected with age and “maturing out.” We deliberately included dynamic-dependence trajectories between T0-T1 for in-depth interviews and young adults are likely to be dynamic or even volatile in different aspects, including social relationships. In light of this, causal factors of declining cannabis use and even more of dependence are hard to claim. Our finding, for example, that cohabitation was more frequently associated with a decline than an incline of dependence, leaves room for different interpretations. It can be argued that cohabitation contributes to or causes a shift to nondependence, as it is generally a major life event which comes with mounting responsibilities, more social ties, and informal social control (Laub & Sampson, 2003), and thereby creates forms of

desistance. However, it might as well be that desistance effects preceded the decision to cohabit. Also, in this study we focused on social relationships. Although our study is one of the few to take various social relationships into account, rather than simply focusing on either peers or partners (cf. Rhule-Louie & McMahon, 2007), we decided to “artificially” take the social domain out of its wider context. Life events in other areas, for example study and work, might play an important role.

We are well aware that our study had limitations, but our approach also had important advantages. Unlike most cannabis-use researchers, we studied young adults rather than adolescents, and applied a prospective rather than a retrospective design (cf. Knight, 2011). We mainly looked into the subjective meanings of social relationships. Although subjective, participants’ evaluation of events often corresponded with how one would categorize them objectively (from an outsider’s perspective). Additionally, the use of context-based timelines, including data participants (quantitatively) reported intermediately, positively contributed to the recollection of their lives and cannabis use. More important, our approach provided interesting insights into the perceptions, experiences, and attributed meanings of participants. Our study does not solely focus on marriage, but rather includes other relationship types, whereas most of the research on partners to date is either cross-sectional, or is based on clinical samples (Rhule-Louie & McMahon, 2007). Furthermore, our study revealed new insights into gender differences and underlying mechanisms between partner influence and cannabis use.

In light of all this, our study has demonstrated that life events in social relationships are rather common in young adults’ lives and can have a strong impact on their cannabis use, although this varies depending on gender. Participants were largely influenced by the ones they spent most of their time with (cf. Rhule-Louie & McMahon, 2007), and often assimilated their cannabis use to others, depending on cannabis use of the associate. Yet interviewees who were less susceptible to

social influences typically remained or became nondependent, which indicates the importance of self-control mechanisms. Nonetheless, changes in cannabis use were for a considerable part attributable to processes—either selection or socialization—and events in social relationships.

With regard to treatment and prevention, important recommendations may be to acknowledge the role of social context in cannabis use, to advise users who want to change (whether they are being treated or simply want to quit on their own) to refrain from associating with couusers. Additionally users, particularly female users, should be made aware of the possible deteriorating effect of relationships with couusers, and should be encouraged to exhibit more self-control and less suggestibility.

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