Cannabis changes: Understanding dynamics of use and dependence

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PERSISTENCE AND DESISTANCE IN HEAVY CANNABIS USE: THE ROLE OF IDENTITY, AGENCY AND LIFE EVENTS

Abstract
Many cannabis users ‘mature out’ of their drug use, and factors of cannabis use cessation have been identified. However, very little in-depth knowledge is available about the mechanisms underlying this phenomenon. Criminological studies have gained interesting insights in desistance from crime, yet these perspectives are rarely used in drug research. This qualitative, three-year longitudinal study explored the processes involved in desistance from frequent cannabis use for young adults. Using a narrative approach, desisters (frequent users who successfully quit their cannabis use) and persisters (frequent users with a persistent desire and unsuccessful attempts to quit) were compared. In the course of the study, desisters mainly exhibited increasing agency and goal setting, established strategies to achieve these goals, and could envision another self. Desistance was generally induced by life events that became turning points. Persisters experienced largely similar events, but lacked goals and strategies and held external factors responsible for their life course and failed quit attempts. Identity change is at the core of desistance from frequent cannabis use, and the meaning-giving to life events and experiences is essential. Agency is a necessary ingredient for desistance, develops over time and through action, and leads to a new drug-free identity with desistance in turn increasing agency.

Keywords: Cannabis trajectories; Desistance; Narratives; Longitudinal; Agency; Identity
Introduction
Drug use, like crime, generally peaks in adolescence and young adulthood and then declines. Although both age curves peak somewhat earlier in the USA than in the Netherlands, the overall patterns are very similar, showing a steep increase during adolescence and a more gradual decrease from young adulthood onwards, with cannabis being mostly the first, and often the only illicit drug ever used (Johnston et al., 2001; Kalidien & De Heer-de Lange, 2011; Van Laar et al., 2013). While involvement in such behaviour is a temporary phase for most, not all individuals desist. In recent decades, desistance has been increasingly studied, and predictors that were identified include marriage, stable relationships, stable employment, engagement in prosocial activities, psychological reorientation, and motivation (Veysey, Martinez, & Christian, 2013). Yet, the mechanisms underlying desistance are less well studied (Veysey et al., 2013). The aim of this study is to improve our understanding of these mechanisms, particularly in desistance from frequent cannabis use. Our focus is on ‘natural’ or spontaneous desistance, leaving aside treatment-related desistance. Despite progressing insights into desistance from crime, only few studies have applied perspectives from desistance research to drug use. We assume that research into desistance from frequent cannabis use could benefit from the criminological literature on desistance from crime, as both are gradual processes of discontinuing deviant behaviour. Our line of reasoning is not that crime and drug use are similar in content. Instead, we assume that scholar insights into desistance from crime can aid unpacking processes and mechanisms underlying desistance from frequent cannabis use. There are multiple pathways into and out of drug use, and self-change and maturing out do not imply effortless or passive processes. In a review on self-change from drug use, Klingemann, Sobell, and Sobell (2010) conclude that despite considerable progress in natural recovery research, several topics deserve attention, including studying mechanisms through which people change or fail to change. In this study, we address this lacuna by exploring these topics from a desistance approach, focusing on frequent cannabis use.

Desistance from crime
Desistance is a common term in criminology and has been well studied in recent years. Studies showed that desistance is a process of ‘drifting’ toward desistance, including progression and relapse (Carlsson, 2012; Farrall, 2005). In addition, it has been suggested to distinguish primary desistance, referring to any crime-free gap in the course of a criminal career, and secondary desistance, which comprises more than behavioural change, specifically the internalization of change and the reconstruction of a delinquent identity (Farrall & Maruna, 2004; Maruna, Lebel, Mitchell, & Naples, 2004). It is
increasingly recognized that desistance is a process comprising an interplay between structural factors (social institutions, e.g. marriage, employment) and individual factors (subjective meaning, identity, and personal agency), as well as aging (Farrall et al., 2011; Maruna, 2001; McNeill, 2009). Desistance is not likely to occur under the appropriate structural conditions alone, or with willpower only (King, 2013) and change is rarely the result of a specific event, rather the result of a process (Carlsson, 2012; Maruna, 2001). Life events can act as a trigger for the decision to change, yet they will only be influential if a person considers them as meaningful and desirable (Lloyd & Serin, 2012). Consequently, desistance cannot occur without individual’s given meaning to events or without agency. Agency refers to an individual’s self-efficacy, the ability to be self-reflexive, to set personal goals and to decide upon courses of action to realize them, and a sense of feeling in control over one’s life. Some scholars place in desistance more emphasis on structural factors (Laub & Sampson, 2003), others on individual factors (Paternoster & Bushway, 2009; Vaughan, 2007), including cognition (Giordano, Cernkovich, & Rudolph, 2002).

People construct personal narratives to give meaning to their lives, and these shape their identity and guide their behaviour (Farrall & Maruna, 2004; Irving, 2011; Maruna, 2001). Maruna (2001) compared desisters (those who quit crime) and persisters (those who continued in crime) and found that persisters attributed their life story to external forces, lacked agency and the belief or hope in another self; life happened to them. Desisters, conversely, created a narrative in which they found ways to ‘make good’ for their past behaviour. They reconstructed their life story which reflected a strong sense of agency, clear future goals, and the desire to prove others they had changed and achieved a new identity. Paternoster and Bushway (2009) distinguish between a current identity (a sense of who we are) and a future identity (a sense of who we want and do not want to become). They believe that agency is expressed through intentional self-change. Here, a key concept is the self-regulating component of the possible self, that compares the current and the future self, and provides directions, strategies, or plans, which are necessary for successful change (Bushway & Paternoster, 2013). In a similar vein, King (2012) showed that agency is essential for desistance and comprises two aspects: the desire to desist and recognition of the ingredients necessary for change, and the ability to envision new social roles and future identities to detach oneself from the past. It is important to note that this ability and intentional self-change are enabled by social structures. Would-be desisters may relapse or be less likely to desist when confronted with unmanageable or uncertain social contexts (King, 2012).
Recovery from cannabis and drug addiction
When it comes to drug use, instead of desistance, more common terms are: cessation, natural recovery, or self-change (and in clinical research: remission). Several factors have been linked to successful recovery from cannabis use, e.g. life changing events and responsibilities, less leisure time, developing activities unrelated to cannabis use, avoidance of triggers to use, self-control, and health concerns (Chauchard et al., 2013; Ellingstad et al., 2006; Kwong et al., 2010; Liebregts et al., 2013b). Rooke, Norberg, and Copeland (2011) were among the first to compare frequent cannabis users with successful and unsuccessful quit attempts and found that unsuccessful quitting was predicted by amongst others frequent exposure to other users. Caviness and colleagues (2013) focused on the perceived ability to resist cannabis use in tempting situations (‘refusal self-efficacy’) and found that this was positively associated with motivation to quit and prior quit attempts. They suggest that prior attempts to quit, whether or not successful, via enhanced skills and experiences might enhance one’s refusal self-efficacy. However, Terry et al. (2007) argue that these studies are unable to make causal statements and that findings might be different at the individual level. A users’ perspective might help disentangle cause and effect for changes in cannabis use, so they analysed the reasons that regular cannabis users gave for changes in use. Almost their entire sample reported periods of abstinence because of short-term events such as holidays or exams, while (periods of) decreased use was due to long-term life changes such as a new job or to negative effects of cannabis.

Similar to desistance studies, some scholars explored the role of identity in cessation and concluded that quitters often realized they had become someone with undesirable features related to their drug addiction to cannabis and/or other illegal drugs. This is described as a ‘spoiled identity’ (Goffman, 1963; Biernacki, 1986). According to McIntosh and McKeeganey (2000; 2001), the motivation to restore one’s spoiled identity, and the envisioning and advantages of an alternative future, and a new self were important elements for a successful decision to stop using drugs. Individuals distanced themselves from the person they had become by their addiction, and the belief that a new identity and lifestyle were feasible was essential for cessation. Similarly, reorientation to the future and an increasing sense of agency are central for recovery from gambling addiction (Reith & Dobbie, 2012). Yet, these scholars argue that recovery is more than an identity change and also involves social relationships and material conditions.

This study and aims
In summary, identity change thus seems the core of desistance, and previous research generally suggests that a conflicting current and future identity
could lead to a desistance narrative and (re)construction of a nonoffender (nonuser) identity. Agency in this process would be achieved through action and developed over time (King, 2012). Strategies and a realistic, feasible plan for identity change have been linked to successful desistance (Maruna, 2001; McIntosh & McKeeganey, 2001; Paternoster & Bushway, 2009; Rooke et al., 2011).

Despite these increasing insights from desistance studies in deviant careers, perspectives from desistance studies have been rarely used in studies on natural recovery from drugs. Although a few scholars (McIntosh & McKeeganey, 2000; 2001) revealed the role of identity in drug addiction recovery, they specifically studied problematic drug use (i.e. addiction) and drugs in general. While factors of cannabis use cessation have been identified in previous studies, most studies focused on irregular use, or on quitters only, or investigated risk factors of use leaving out perceptions of users (Rooke et al., 2011; Terry et al., 2007).

Our aim is to better understand the underlying processes of desistance from frequent cannabis use. We compare and portray persisters and desisters in frequent cannabis use, cross-sectional and longitudinal, and we mainly focus on aspects/concepts that have been shown to be important in desistance studies, such as the role and development of identity change, agency and life events, and strategies. Recovery studies might benefit from a broader desistance approach, as this knowledge can help develop prevention and treatment specifically at frequent users at risk of persistence and to advance desistance. Qualitative methods, particularly a narrative approach, can uncover the dynamics underlying the relationship of cannabis use with identity and agency (Sandberg, 2012). Furthermore, as recovery or desistance is a process, which occurs over time, it is best captured with longitudinal research methods (Klingemann et al., 2010). We examined the three-year developments of initially frequent cannabis users taking a narrative (identity) approach.

**Methods and data**

This study is part of CanDep, a project on the course of frequent cannabis use and dependence, including a quantitative prospective cohort study among 600 at baseline (T0) frequent cannabis users (>3 days use per week in the past 12 months), with follow-up assessments at 1.5 and 3 years (T1, T2). The project was ethically approved and participants provided written informed consent.

At baseline, participants were 18–30 years old and recruited from so-called coffee shops and via respondent-driven sampling (Liebregts et al., 2011; van der Pol et al., 2011). Overall, cannabis use declined over the years of follow-up. Yet, two-thirds remained a frequent cannabis user, and only one in eight
participants had desisted and considered themselves quitters. Two thirds reported at least one phase of abstinence (i.e. primary desistance).

To gain deeper insights into the dynamics underlying changes, a random – gender stratified – selection of 47 participants (32 males, 16 females) from the total sample was also interviewed in-depth twice about their life and cannabis use (Liebregts et al., 2013a). The topic list included participants’ cannabis use career (i.e. changes in cannabis use, motives for change), occurrence of life events, personal goals, and feelings of control over their life. The first in-depth interviews (I1) took place December 2010–April 2011, some months after the first follow-up interview (T1), and focused on the period between T0–T1. The second in-depth interviews (I2) were conducted March–April 2012, shortly after the final follow-up interview (T2), with focus on the time span between T1–T2.

In the current study, among the 47 participants in the qualitative sub-study, we focus on two extreme groups to maximize contrast and uncover mechanisms of desistance. Inspired by Maruna (2001), we explore differences and commonalities between desisters, i.e. frequent cannabis users who quit using cannabis during follow-up (n = 7), and persisters, i.e. interviewees who from baseline onwards reported a persistent desire to quit or cut back and/or had unsuccessful attempts to do so, but were still using cannabis regularly the whole study period (n = 7). None of the participants were in treatment for their cannabis use during the study.

**Analysis**

All qualitative interviews were digitally recorded, fully transcribed, and imported into QSR Nvivo. Transcripts were analysed combining deductive and inductive strategies. Codes and categories were partly developed beforehand, based on the literature (a priori coding, Miles & Huberman, 1994), mainly desistance from crime. Categories and codes included: current and future identity, future goals, strategies to quit/reduce, refusal self- efficacy, agency, and life events. In addition, new codes and categories evolved from the data, and new patterns emerged, such as desire and reasons to quit, and negative effects of use. Interview transcripts were read and reread to identify and link evolving codes, categories, and themes (pattern coding, Miles & Huberman, 1994). Interviewees are identified with fictitious names to guarantee anonymity.

**Participants**

Although both groups varied, desisters and persisters were rather comparable in age (M = 20.9 vs. 22.0 years), educational level, and gender (three females in both groups). Both groups included students and employed interviewees, but desisters also included students who during the study became employed,
and persisters included a full-time mother and a participant on benefits for disabled persons. At baseline (T0), 3/7 desisters were (near-) daily users and the others used 3–4 times per week, while 6/7 persisters were (near-) daily users. Persisters had at T0 somewhat longer cannabis careers than desisters (M = 7.3 vs. 6.6 years) and tended to use cannabis more often alone (6/7 vs. 3/7).

All desisters had actively decided to quit using cannabis. Some quitted soon after baseline, others near the end of the study. At the last in-depth interview, three desisters had not used cannabis for one year or more and said they had quit permanently, and another three considered themselves as quitters, and had been using cannabis (‘some puffs from friends’) only rarely in the past year. The last desister still used cannabis between T1–T2, but had seriously cut down and at the last in-depth interview she considered herself a nonuser. Of the persisters, all who were (near-) daily users at baseline still used (near-) daily at the last in-depth interview, and the other persister reduced his cannabis use from 3–4 times to 1–2 times per week. The course of their cannabis use during the study varied: 2/7 persisters were rather stable daily users, and cannabis use of the others fluctuated (mostly between daily and weekly, sometimes with periods of no use) with a slight decrease or increase at the end of the study.

Results
Reasons and desire to quit
For desisters, generally a combination of reasons led to the decision to quit, which they were generally able to verbalize very well. Two main patterns emerged: quitting because of acute negative effects and quitting because of an event that made cannabis use no longer suitable in the interviewees’ live. For some desisters (4/7), an important reason was that the acute effects when using cannabis suddenly had changed for the worse. Interviewees talked about ‘attacks’ that implied feelings of fear, panic, or insecurity, and sometimes paranoia. They started to worry after using cannabis and sometimes even without using. After years of frequent cannabis use, the first time they experienced these symptoms took them by surprise. They sometimes heard about this phenomenon before and then recognized the uncomfortable effects. Later on, participants experienced more ‘attacks,’ and although they all thought that these might have been induced by fear for an attack rather than by cannabis per se, using cannabis lost its attraction.

In the beginning they weren’t so bad: a bit short of breath, nauseous, weak legs. Suddenly. It just was all too much, I was very busy with my study (…) So I decreased my use. But they became worse. Probably these attacks were not related to cannabis use, but to the whole situation. Using cannabis suddenly had
changed: I once used during such an attack, or the attack occurred just after I used cannabis, and you link those two. From then on whenever I used, I worried it could happen again, and obviously sometimes it happened. And at a certain point when you’re stoned and nothing happens, you’ll think: oh still I don’t feel really good, and you deceive yourself. I created the connection of cannabis with these feelings. Eventually, I thought: I do have some issues [to deal with], so if I can quit using, I’ll do that too. A new me. (Steven, I1, desister)

For these desisters, acute negative experiences after using cannabis were at the core of the changed reflections on their use. They were uncertain about the causality of the sudden unpleasant effects and attributed them not only solely to cannabis, but also to life events such as a very stressful final year at university, or a more general sense of not feeling well. Whether they saw the ‘attacks’ as the main reason or as one of the multiple reasons seems to be less important, and all believed that for them, using cannabis had become largely unpleasant and they quit using. Other desisters (3/7) experienced life events that made them reflect on their cannabis use and brought about a drastic change. For one, a more demanding study period was a major reason to quit (see Liebregts et al., 2013b). Another desister faced a hard time when his mother fell ill, and he also entered a new romantic relationship, and decided to immediately quit using. The final desister stopped using overnight when she travelled abroad for four months. While traveling, she was surprised to feel so much better when sober, and when she returned home the desire to use cannabis had strongly diminished. Nonetheless she resumed her use, according to herself due to routine, but now she used only weekly instead of daily. After some months she decided not to buy cannabis anymore, and only used when offered by peers. From then on, her use decreased more and more, also because of new friendships with nonusers, and within a year her use had changed from a joint per day to a few puffs every now and then, and she considered herself as a quitter. Persisters’ reasons for wanting to quit were mainly related to general health concerns, such as (future) respiratory problems. They also argued that they experienced negative effects of use on their daily functioning, e.g. difficulties getting out of bed, memory loss, and decreased productivity. Additional reasons were financial costs of cannabis and wasting time when being ‘stoned.’ Unlike desisters, none of the persisters reported ‘attacks.’ Even though persisters also had feelings of discomfort concerning their use, their motivations for quitting or reducing were more abstract and less pronounced or personalized.

I think I’ll soon have to quit. At a certain point, you have to start doing things. I notice that my productivity heavily decreases by it [cannabis use]. It’s not really an
obstructive level, I can still function. But if I have to write a bachelor thesis some time, I can’t keep living like this. (Eduard, I1)

All persisters experienced failed attempts to quit or reduce their use during our study. Their use fluctuated, with decrease being attributed to focus on exams or to reclaim feelings of being in control and increase to stress, more leisure time, or negative events. They kept reporting a desire to quit or cut back and to change their use. Their attempts greatly varied in seriousness, time they persevered, and reasons of failure. Some pursued to quit completely, but most wished to decrease or to gain better control over their use, and over time some persisters became more convinced that they wanted to quit. Zooming in on openness to change, all persisters believed that their cannabis use had a negative impact on their life. Nonetheless, while for some the desire to quit was an almost daily struggle to decide whether or not to use, others hinted that quitting or reducing was a matter of should, or should want, rather than actually want.

Quitting, not quitting ... I want it really badly, but at the same time not at all. The word addiction is very negatively charged, addiction in our society is bad: then you’re weak and should find help. But for me, it’s not that negative, perhaps I even cherish it a bit. (Eva, I1, persister)

We noticed that for several desisters life events played an important role in their decision to quit. Persisters also experienced life events. Although both groups experienced a similar number of life events (52 and 47 in total, respectively, both included 21 negatively experienced events) and life events were of a similar type (e.g. ended/new relationship, job loss, disease of relative, traveling), their (subjective) attributed meaning appeared to be very different. Desisters gave meaning to events in a way that they would better quit using. In contrast, life events (especially negative ones) gave persisters reason to continue or even increase their cannabis use. When feeling out of sorts, they were inclined to use (more) cannabis, even when they thought they suppressed emotions by doing so. Their mood was in turn influenced by other, mainly external factors, they claimed.

Desistance process and identity
Desisters’ narratives revealed some interesting patterns in their desistance process. For most, the decision to quit was preceded by negative experiences or life event(s), which led them to reflect on their life. For all but one desister quitting was a process of drifting, in both their mind and behaviour. They gradually reduced their use, sometimes interrupted by a temporary increase, and step-by-step cut down on their use. Usually this process took 2–6
months. Rather than not using at all, quitting cannabis use implied breaking the (daily) habit, not purchasing cannabis anymore, little to no use, and feeling oneself a nonuser. Taking a few puffs every now and then when with a using friend, did in their perspective not count for being a user. For several reasons, quitting was easier than desisters generally had expected: they felt better, more self-confident, more energetic, and more in control of their life. Also, it was not uncommon that desisters started to hang out more with nonusers and as a result were less tempted to use. Some also said that occasional use is more difficult to integrate in their life, because the effects are stronger and last longer. Desisters generally reported having little difficulties to refuse a joint when offered by peers, even in exactly the same situation as when they were frequent users. They exhibited a high level of refusal self-efficacy, which went rather naturally. Cannabis was no longer attractive, they had turned the page and had distanced themselves from their past user identity. The desisters’ narratives showed elements of reinterpreting the effects of cannabis from pleasant into unpleasant. They realized they were unhappy with how their life had become (i.e. ‘spoiled identity’, McIntosh & McKeganey, 2001).

One reason to quit was my study delay; the main reason. Yet also the fact that I didn’t enjoy life anymore. I used to be very active, but I had become so passive, didn’t do anything anymore. I couldn’t summon the motivation anymore to do fun things, to meet new people. When you’re stoned everything is too much effort. I didn’t want that any longer, I was done with it. (…) I changed my mind about cannabis use. If other people enjoy it, fine, but for myself I’m like: it gave me all this shit, catching up and so on … unnecessary. (Sofie, I1, desister)

In contrast to findings of McIntosh and McKeeganey (2001), desisters’ sense of spoiled identity was not accompanied by a general revulsion toward the ‘cannabis scene’ they had been part of. Instead of disapproving or regretting their past, desisters had often integrated their cannabis use history into their new future self, and it had contributed to the person they had become. They no longer were users, but their attitude toward cannabis had not necessarily become negative.

Both desisters and persisters reflected on negative effects of their cannabis use such as laziness, passivity, feeling bad, and troubles getting out of bed. However, desisters mainly acknowledged these effects in retrospect and compared to how they felt after they had quit. In fact, they placed more emphasis on how their life had improved since. Desisters created a distance between their life and well-being as users in the past and as ex-users today. A clear example is Lisa, who at the first in-depth interview was a daily user for several years. When asked about her future view regarding her cannabis use,
she replied that she expected no change in the years ahead. She felt no need to quit, as she experienced no unpleasant consequences of her use, except difficulties waking up. But at the second in-depth interview, 16 months later, she stated:

I quit using a long time ago – well, if I use, it’s only on some occasions with/from friends. It works really well for me. And I noticed that since I’ve quit, many things have become so much clearer, and that cannabis … withheld many things, or suppressed them. I suddenly see things in a way I’d never thought about, or paid attention to. I feel so good now, so much better than in previous years – again, I think quitting cannabis did so much for me. (Lisa, I2, desister)

Lisa effused that quitting opened her eyes, and made her see that, different from what she previously believed, regular cannabis use had blurred her vision. It could be argued that after quitting, she produced this narrative to make her life coherent and give meaning to and reinforce her behaviour and new identity, distancing herself from her old identity. Alternatively, when she was still using, she might have preferred to be unaware of possible effects, to make her narrative coherent and support her behaviour at that time. Lisa gave insight into this dynamic phenomenon:

My friends don’t mind I’ve quit. Like real stoners, they don’t say much about it ha-ha. I’m telling them how happy I am that I’ve quit using, and how good I feel now, and then they reply with: ah okay, well I still enjoy smoking. Yes of course, I would have said that too if I was still a daily user. You don’t wanna know. (Lisa, I2, desister)

This example shows the importance of reinforcing new behaviour through distinction. Distancing oneself from being a user, critically reflecting on previous life, and identity reconstruction were also visible in other desisters’ narratives. This supports Vaughan’s (2007) notion that would-be criminal desisters who can take both an internal and external self-reflexive perspective, judge their actions and construct a new nonoffender identity, are more likely to become successful desisters. Similar to desisters, persisters’ narratives revealed features of a spoiled identity: effects of cannabis had become unpleasant and they felt unhappy with how their life had become.

Using cannabis has negative effects, certainly. It affects your memory. And you get a sort of paralysed, both in thinking and in behaviour, you suppress things. That can’t be good, although I do talk about emotions. I think that when you feel bad and accidentally gonna smoke you notice you eliminate your emotions. The next
day you just continue, but if you do that too often, you notice at the end of the week you don’t feel better. And maybe if you hadn’t used, you could have dealt with it. But you only notice the difference when you stop doing that. (Ryan, I1, persister)

Some persisters also expressed the impact of not using cannabis for some time, yet resumed to use. All persisters believed that cannabis negatively affected their life and were unhappy with that, but they did not manage to structurally change their cannabis use. Notably, when talking about decreasing or quitting, desisters referred to the number of days of use (or nonuse), whereas persisters mentioned the number of joints per day, or postponing use to a later time of the day. Persisters’ attempts to quit generally lasted a few weeks at most. Some participants reported that they just gave up quitting, because they found it difficult to persevere or ‘didn’t feel like it anymore.’ Some started again after a negative experience such as a breakup, others stated that their attempt failed because they ‘forgot’ they had quit. Although persisters did not explicitly talk in terms of craving, their narratives suggested a strong desire to use cannabis again.

Once you want to try quitting, your mind fools you. You think like: well, now I may well use. You can’t really sustain and you start fooling yourself. Or you just forget it because you’re used to use at a certain time, after school for example, and you might resolve it. (Charlotte, I2, persister)

Finally, persisters often explained that they relapsed when they were in company of using peers or partners, as they had difficulties not to use cannabis when it was around – even though they used more often alone than desisters did before they had quit.

Agency, goals, futures, strategies
Desisters’ narratives exhibited high levels of agency, reflected in goals and future directions, the know-how and belief to achieve them, and a sense of being in control over their life. For some, their goals and alternative future were quite specific, e.g. obtaining an academic degree, while other desisters envisioned a fully new lifestyle. All were firmly convinced they could achieve their goals. Quitting cannabis use was a necessary step for that. Their main quitting strategies were to actively search for substitution or distraction, to have a plan to cut back, and/or to consciously decide how to handle or avoid certain situations.

I began to cut back: only at weekends or only when I really felt like it. And no longer smoking alone, if I really felt like it, then I should share a joint with friends,
instead of smoking away half a gram at home only because I allowed myself to smoke that night. I was consciously working on it. It was hard, and I started to smoke cigarettes a lot. Well, when I had things to do it was okay, you’re busy and you can use the energy. But the nights were the hardest; I wanted to go to bed stoned, lovely, dreaming away. But that doesn’t outweigh waking up tired, not getting started (...). My friends surely respect that I’ve quit. They think it’s really good, and some say: ‘I would like that too.’ That motivates as well. (Sofie, I1, desister)

All the sudden I didn’t want to smoke anymore, overnight actually. I smoked for a long time and then I thought: fuck it. A sharp decrease and quit. My consciousness changed, due to what was going on at home, and my new girlfriend. I realized cannabis added nothing anymore. It wasn’t hard to quit, it’s just a state of mind. You make a choice and act upon it. I didn’t search for substitution, just kept going with my life. I needed to keep both feet on the ground, substitution wasn’t necessary, I moved on. My friends still used, and said ‘hey good thing you’ve quit, dude.’ That really has a positive effect. (Leroy, I1, desister)

These narratives show that desisters fully acted on their decision to quit using cannabis, although it sometimes was hard. Reactions from their social environment were also important in supporting and maintaining their new behaviour. All desisters reported that they had changed since they had stopped using. They felt better, their self-confidence had grown, and they thought more consciously about their life and what they wanted to achieve. Their level of agency contributed to the decision and action to quit and quitting strengthened their self-efficacy. Some participants stressed to feel particularly in control over their life since they had quit cannabis use.

If I want to achieve something, I will. You see, your unconsciousness seeks to justify things, especially when you’re using cannabis. If I had continued using, my life wouldn’t be like I wanted it to be. Because I had the most beautiful and nicest ideas, however they remained ideas, intentions. You won’t take actions, like it prevents you. (Leroy, I1, desister)

After quitting, several desisters had taken other big decisions that contributed to a change in their life (e.g. ending their relationship after years, stopping their study, or planning a long journey), putting themselves first now and willing to re-evaluate and realign their life goals. This further supports reciprocity in agency, i.e. higher levels of agency facilitate quitting cannabis use and quitting strengthens agency. While all but one persisters stated to feel in control of and responsible for their life, their narratives indicated that their level of agency was rather low.
when compared to desisters. Persisters tended to explain occurrences, predominantly negative ones, by external factors, in which to their opinion they had little choice or influence. While desisters deployed strategies for quitting, only one persister did so, including avoiding using peers and physical exercise. Particularly unsuccessful attempts to change their cannabis use were attributed to external factors, such as a broken relationship, using peers and/or partners, or stress that would make them return to cannabis. Notably, persisters often expressed to prefer a structured life and things to stay the same, while desisters reported to embrace change. Persisters argued that they would be able to quit under certain conditions (e.g. structured life, no using peers), but often these circumstances were just not there yet.

If I quit I need to plan every minute of my entire life, so I have a daily structure without the temptation. In that way, I managed to stop using for 1–2 weeks a few times over the past years, but I really needed a Spartan discipline. And a job. And as few stress as possible. (...) And good weather, a good shape, so that I can run two hours a day instead of one, and go to bed immediately after running. (...) And if I quit, I’ll have fewer friends. I have to find an alternative for that, so that when I finally really have quit, my whole social life won’t fall apart. It’s hard. (Lars, I2, persister)

Although Lars was a rather extreme example, other persisters echoed the presence of ‘the right circumstances to quit.’ As mentioned earlier, life events were quite comparable in number and type for desisters and persisters. However, a closer look at life events and contextual factors reveals some striking differences. For all persisters, the main daily occupations (work, study, or other) remained unchanged during the study. This was less so for desisters (3/7 who were students got full-time jobs). Most desisters experienced several events in different domains, such as a new relationship and a new job; persisters usually just one. Again, the relevance of the attributed meaning of life events becomes apparent. For instance, both persisters and desisters entered new relationships with nonusers. While desisters considered new relationships meaningful and seized them as contributing to the decision to quit, persisters ascribed little value to their new partner and saw no reason to change their use, even though both described comparable attitudes of their new partner toward cannabis use. Similar differences were shown for other events (i.e. study delay, ended relationship).

Despite persisters describing concerns with quitting or decreasing, their narratives revealed a tendency to postponement.
Actually, I had this plan to decrease my use until my birthday. But that’s within two weeks ... So I probably just keep smoking and then I quit. I’ve set another date again: some days after my birthday. (Charlotte, I2, persister)

Goals and envisioned future selves were also repeatedly postponed, with arguments such as ‘when I turn 30,’ ‘when I have to write my bachelor thesis,’ and ‘when the weather gets better.’ In fact, contrary to desisters, persisters expressed no clear, tangible goals that motivated them to maintain their changed behaviour. If at all, their goals were generally not in the near future, and without clear visions about how to realize them. Interestingly, several persisters were convinced that cannabis use impacts the envisioning of and the willpower to achieve goals: it would cause passivity and lower ambitions or the necessary actions related to future goals.

It’s not so much that you don’t have goals, but the distance between goal and starting point is enlarged in your head, that’s the problem. I can say to myself, okay I have to read mortgage documents so I cannot use for a week. But things like I want to do a study ... cannabis use is such a part of your life, and you’ll keep it in mind. Four years using less or not at all ... you’ll have to change your life. Then I appeal to cannabis. (Daphne, I1, persister)

The latter quote indicates that persisters had a weak sense of self-efficacy: although they sometimes could envision an alternative future self, the know-how to achieve this, i.e. strategies, was insufficient. Paradoxically, some persisters not only seemed quite reflexive about their cannabis use and quitting behaviour, but also acknowledged they would always find excuses for themselves to postpone the moment of quitting.

**Discussion**

To better understand the processes underlying desistance from frequent cannabis use, we analysed narratives from two groups of young adult experienced users who were followed-up in a three-year longitudinal study: desisters and persisters. Both desisters and persisters were experienced users, albeit persisters were at baseline more often daily users, and used more often alone. During follow-up, both experienced life events, comparable in number and type, and both reported on similar negative effects of cannabis use. Both persisters and desisters expressed that due to their use, their life was no longer as they actually wanted, and therefore that their cannabis-using identity should change. This recognition can be understood as the central feature of a ‘spoiled identity’ (McIntosh & McKeganey, 2001). How then can we explain that desisters could and persisters could not manage to change and/or reconstruct their identity? In line with previous desistance
Our findings reveal that desistance from cannabis is a process involving agentic and structural factors. Desisters’ narratives indicated rather high levels of agency. They set goals that enabled them to envision another future self and exhibited self-efficacy. Refusal self-efficacy (Caviness et al., 2013) appeared important to maintain behaviour change and contributed to desistance. Simultaneously, it increased through successfully resisting cannabis use in tempting situations, thus confirming the new nonuser identity. In contrast, persisters were rather incapable to set goals and to take stock of the actions to realize them. Notably, while for persisters quitting or decreasing cannabis was an end in itself, for desisters quitting was a means necessary to achieve goals. Desisters could and persisters could not envision another self. Sometimes persisters were able to reflect upon their own behaviour, suggesting features of having an internal conversation and an ingredient for successful desistance (Vaughan, 2007). However, despite reporting feelings of control over their life, persisters tended to hold external factors responsible for events in their life course and more specifically for failed quit attempts. Persisters exhibited low refusal self-efficacy: quit attempts were often postponed, and relapses were often attributed to the company of using peers or partners.

Structural influences also played a role in the desistance process. Regarding social factors, significant others were important in desisters’ identity reconstruction and behaviour change. First, by distancing themselves from other users (peers, partners) and reflecting upon their ‘user behaviour’ (and thus their own previous behaviour as well), the process of identity reconstruction was supported, and consequently their new behaviour reinforced. Second, acknowledgments of their quitting by significant others (social feedback) reinforced their new nonuser identity and behaviour (cf. Maruna et al., 2004). Life events also supported desistance. Both positive and negative events triggered desisters to reflect on their life (cf. Paternoster & Bushway, 2009) and to decide that cannabis was not conducive anymore.

We should emphasize that this study was based on participants’ narratives, their constructions of their life and the world, and are our selections and interpretations. Aware of our role as researchers, we kept questions as open as possible during the interviews and aimed in the writing process to clearly distinguish between participants’ stories and our interpretations/analyses. Also, as numbers of participants in each group are rather small, we cannot claim our findings to be representative for all frequent cannabis users, or all desisters and persisters. However, we conducted an exploratory study concerned with meaning, and representativeness was not our goal. Moreover, both groups were rather heterogeneous in socio-demographics.
and lifestyle and we believe that these desisters and persisters are no stand-alone cases. Also, small sample sizes are generally considered more powerful to achieve depth (Crouch & McKenzie, 2006), and focusing in-depth on these two contrasting groups enabled true understanding of the underlying mechanisms of desistance. Although we cannot claim with these numbers that saturation was achieved, our analyses consistently showed important dominant patterns. Furthermore, we used the terms persister and desisters as analytical categories, with focus on differences. Thereby, our analysis does not completely do justice to all empirical diversity we discovered within and between the two groups. However, we kept an open eye for similarities. Also, we applied contrast analyses to portray processes of change and of continuity, while there is actually a whole world between, as well as variation within, these two contrasts. Finally, apart from exceptional cases, desistance was a gradual process (drifting). Although participants were followed-up for three years, interviews were still snapshots of a life course, which could change in the future. As agency is achieved through action and developed over time, and level of agency is likely to interact with feelings of (un)certainty to quit, persisters might at a later age become desisters and vice versa.

For many years cannabis has been decriminalized in the Netherlands. It is not illegal to use cannabis, and selling cannabis to consumers in coffee shops is condoned. Therefore, it could be questioned whether the term ‘deviant’ is appropriate. However, despite the Dutch ‘normalisation policy’ (Van Vliet, 1990), the frequent cannabis users in our study sometimes fear stigma (Liebregts et al., 2015). This is probably different for nonfrequent users. In case of full legalization, it might also be different for frequent users, but even then it is not self-evident that frequent cannabis use will be stripped of stigma. Probably, more important is that stigma is no prerequisite for people (in our case frequent cannabis users) to experience a ‘spoiled identity.’

Our study underlines the importance of meaning-giving. Life events can only become turning points if they are considered as meaningful (Lloyd & Serin, 2012). Similar life events gave persisters reason to keep using and desisters reason to quit. Until now, it was unclear whether agentic individuals are more likely to desist or if desistance increases individuals’ sense of agency (Lloyd & Serin, 2012, p. 547). Our findings indicate that agency is a necessary ingredient for desistance, yet also is developed over time and through action, and desistance increases individuals’ sense of agency. Our study hereby corroborates previous desistance research (e.g. King, 2013) and contributes to new insights on desistance from frequent cannabis use and the role of agency. We acknowledge that dependence is a factor that can make the content of mechanisms in the process of desistance from frequent cannabis
use different from the content in desistance from crime. However, when it comes to agency and self-defined identity, such differences might be less relevant, as it is not uncommon for individuals frequently involved in crime to perceive themselves as ‘addicted’ to crime (Potter & Osiniagova, 2012). Furthermore, we found that rather than whether or not people fully stop using cannabis, desistance is above all about the internalization of change and identity reconstruction (i.e. secondary desistance, Maruna et al., 2004). Desisters considered themselves as ex-users, even though some of them still used once in a while. Resemblances and differences between desisters and persisters, such as self-efficacy, levels of agency, integration of their past behaviour, and identity into the new sense of self, were strikingly similar to what has been found in studies on desistance from offending (Maruna, Wilson, & Curran, 2006; Maruna, 2001). Correspondingly, desisters and persisters differed in their balance of internal and external locus of control: desisters saw themselves as active agents, responsible for their life course, and in control of their future (‘you reap what you sow’), while persisters attributed experiences, particularly failure, to external forces, and had little belief in achieving goals by own actions only (‘life is like a game of chance’). In conclusion, our findings overall support that identity change is at the core of desistance processes, whether desisting from offending or cannabis use. A discrepancy between one’s current identity and future identity seems essential, yet change implies a sense of who one does not want to become (Paternoster & Bushway, 2009), involves social relationships (Reith & Dobbie, 2012), and strategies to change (McIntosh & McKeganey, 2001; Paternoster & Bushway, 2009; Rooke et al., 2011). Our findings point to lacuna not only in previous quantitative but also qualitative studies on recovery from cannabis as they seem to neglect the role of agency and identity, as well as meaning-giving and the relevance of strategies for change. Accumulation of meaningful events combined with agency to change might have created the ‘right circumstances’ for desisters (cf. Paternoster & Bushway, 2009). Persisters, by emphasizing the ‘right circumstances,’ expected their context to change and blamed external factors for their unsuccessful attempts to quit/reduce. It has been argued that would-be desisters in supported accommodation are more likely to relapse when they are uncertain to change and vulnerable to influences of negative social relationships (Mackintosh & Knight, 2012). Could this apply to our persisters? Indeed, vulnerability to social influences was clearly expressed in their narratives, for example, their difficulties with not using cannabis when in company of other users. And although in the in-depth interviews (as well as at all standardized interviews) they reported a strong desire to quit, sometimes their narratives did show uncertainty, and some stated explicitly that desistance was something they should do, instead of really wanted to do.
Consequently, persisters failing to change their use might produce narratives that support that fail, just as desisters might produce narratives that support their changed behaviour, in order to make sense of their life retrospectively. Nonetheless, this study presented in-depth insights and novel patterns in the mechanisms of desistance from frequent cannabis use and more broadly the process of maturing out. As for implications for prevention, treatment, and self-supported change of use, our findings suggest to empower agency and refusal self-efficacy, to encourage would-be desisters to set goals and concretize strategies to achieve them, and to support users to cope differently with experiences and not to increase their use in tempting situations. Eventually, it is not what happens, rather the reaction to what happens that makes a change.