Ten Prisoners on a Search for Meaning: A Qualitative Study of Loss and Growth during Incarceration

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Abstract

Ten prisoners describe how their crime and incarceration challenged them to change in profound ways. Feelings of loss, guilt, shame, and despair accompanied their experience of being dehumanized by guards and rejected by former friends. The participants in this qualitative study coped with their despair primarily with social and emotional support, and a search for new meaning in life. They realized that coping with prison life was a matter of choice and involved taking responsibility for their own futures. Reported areas of growth include more insight into their own personal story, higher levels of self-worth, new found strengths, a more nuanced way of thinking, new relational skills, and a changed meaning in life.

Keywords: prisoners, offenders, existential, meaning, posttraumatic growth

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Since the origins of humankind, people have tried to make sense of the world around them and of their inner lives (Schneider, 2013). Myths and stories have served as answers to existential questions about the origin and the meaning of life, but also about more specific issues such as where evil comes from, why misfortune hits us, and how we can cope with pain and suffering in our lives (Bohart et al., 2013). One of the oldest stories about ‘evil’ and crime is to be found in the Jewish Torah. In this story recounting the first of humankind’s murders, Cain kills his brother Abel. God punishes Cain by banishing him from his land and by sending him into the unknown wilderness. Cain becomes a ‘ceaseless wanderer on earth’ (Lieber, 2001, p.27). God promises Cain that nobody will kill him while he is wandering in God’s absence. Eventually, Cain meets his partner, becomes a father and the founder of the city Enoch.

In a way, there are remarkable parallels between Cain’s story and those of many offenders who have to leave ‘their lands’ after committing a crime. They are being banished to a ‘wilderness’ called prison, and they also might feel abandoned by what was once sacred to them. But also like Cain, after wandering and feeling lost for a certain time, some prisoners eventually become the founders of their own ‘new city’. Recent qualitative studies have reported about these ‘new cities’ among offenders (Ferrito et al., 2012; Guse & Hudson, 2014, Mapham & Hefferon, 2012; Maruna et al., 2006, Vanhooren et al., 2015, van Ginneken, 2014). In modern language, this positive change after a period of wandering in the dark is called posttraumatic growth. Posttraumatic growth has been defined as a profound change in how people experience themselves, in how they appreciate others and in how they relate to life in general (Tedeschi & Calhoun, 2004). Posttraumatic growth and meaning-making

processes have been studied extensively in a wide variety of populations and situations (e.g. Cho & Park, 2013; Calhoun & Tedeschi, 2006), but only recently in offenders and prisoners.

A possible pathway to growth and meaning during incarceration

The content of prisoners' meaning in life has been identified as an important sign of desistance from crime. Maruna (2001) studied differences between ex-prisoners who desisted from crime and ex-prisoners who persisted in having criminal careers. Interestingly, no differences were found in their socio-demographic background, in the kind of crimes committed, the number of committed crimes, or even in their personality structure. However, one of the main differences between desisting and persisting offenders was the fact that they showed distinct meanings in life. Persistent offenders showed what Maruna (2001) called 'empty' meanings. Their life purposes reflected this emptiness in the pursuit of hedonic happiness, such as hyper-consumption and thrill-seeking. On the other hand, meaning in life of the individuals in the desisting group consisted of self-transcendent values and the desire to mean something for others.

Changes in meanings in life are a common result of disruptive life experiences (Tedeschi & Calhoun, 2004). As Tedeschi and Calhoun (2004) argue, posttraumatic growth and new meanings only appear after an intensive period of processing a distressing life event that has disrupted one's foundations in life. Recently, qualitative studies have argued that the act of committing a crime and spending time in prison can have a disruptive effect on how a person experiences him or herself and the world (Liebling & Maruna, 2011; Vanhooren et al., 2015a). Prison studies have documented how the entry phase of incarceration is particularly distressing. It has been identified as a period of heightened vulnerability with higher rates of self-harm and suicide (Crawley & Sparks, 2011; Harvey, 2011; Liebling & Maruna, 2011). Incarceration is often experienced as disruptive on multiple levels (Haney, 2003; Harvey,

2011). Prisoners are faced with the challenge of living in an environment that is characterized by sparse physical comfort, lack of privacy, a perceived lack of physical safety, as well as by limitations on one's physical freedom and one's agency (Haney, 2003; Liebling & Maruna, 2011). Prisoners often experience distrust towards each other and towards prison guards and staff (Haney, 2003; Harner & Riley, 2013). Being incarcerated also has consequences for one's relationship with the outside world. Imprisonment often leads to relationship breakdowns (Haney, 2003). On a personal and existential level, incarceration leads to the loss of one's identity and meaning in life (Harner & Riley, 2013; Jewkes, 2011; Maruna et al., 2006; Vanhooren et al., 2015b).

Depending on how prisoners cope with their prison experience, they can change for the better or for the worse. Negative changes as an effect of incarceration and relapse have been significantly documented by different studies (e.g. Haney, 2003; Liebling & Maruna, 2011; Phillips & Lindsay, 2011). Recently, qualitative studies have reported on the positive changes, including possible pathways that can lead to posttraumatic growth and new meanings in life (Ferrito et al., 2012; Guse & Hudson, 2014; Mapham & Hefferon, 2012; Maruna et al., 2006; Vanhooren et al., 2015a, van Ginneken, 2014).

Typically, the process that leads to posttraumatic growth is evoked by the loss of meaning itself. Initially, prisoners who reported growth in a later stage felt distress as a result from this loss. Maruna et al. (2006) describe in their qualitative study how their participants ($N = 75$) felt confused in this initial stage and how they felt challenged by existential questions that appeared together with the experience of imprisonment such as "Why did I do this?" and "Who am I?" A recurrent feeling the prisoners experienced was that the crime and imprisonment didn't make sense to them. Braswell and Wells (2014) describe the emptiness that goes along with these questions.

When prisoners experience the loss of meaning and the distress that comes along with this loss and the challenging questions, the next step on the pathway to posttraumatic growth is to search for new meanings. Ferrito et al. (2012) discovered how the search for meaning after committing a crime took a central role in the prisoners' change. The participants in the study of Maruna et al. (2006) also became active searchers for meaning. This search for meaning does not only cover the search for new purposes in life, but also the search for a deeper comprehension of the offenders' crime and their life story. Mapham and Hefferon (2012) describe how the participants of their study ($N = 14$) found it crucial to process and acquire a deeper understanding of earlier childhood experiences. Ferrito et al. (2012) also found that prisoners reconstructed their life story by searching for answers about the crime, trying to understand earlier life experiences and by engaging in a quest to understand the meaning of life. In this way, a deep recalibration of one's basic understanding of who one is and what or who to live for translated into posttraumatic growth. This whole process was experienced by prisoners in different studies as a turning point in life, evoked by committing a crime and subsequent incarceration (Elisha et al., 2013; Ferrito et al., 2012; Guse & Hudson, 2014, Mapham & Hefferon, 2012; Maruna et al., 2006, Vanhooren et al., 2015a; van Ginneken, 2014).

The reported posttraumatic growth in these studies, or the result of losing and searching for meaning, matches the areas of growth in the general population: a changed perception of self, a deeper appreciation of relationships and a changed philosophy of life (Tedeschi & Calhoun, 2004). In the case of offenders, posttraumatic growth was also accompanied by a paradigm shift in taking responsibility towards their victims and the consequences of their crime (Elisha et al., 2013; Ferrito et al., 2012; Mapham & Hefferon, 2012).

Both the qualitative studies on posttraumatic growth and Maruna's study (2001) report a content shift in the general sense of meaning in life. In order to acquire a deeper understanding of the process that leads to this shift, it would be interesting to know how this change is connected to the former experienced loss of meaning and to the coping styles offenders used to overcome the initial loss of meaning. Because the content of the new meaning of life seems to be important in how one relates to crime in the future (Maruna, 2001; Ward et al., 2007), it would be worth exploring the process of finding new meaning on a content level.

Aim of This Study

Recently, qualitative studies have described the occurrence of meaning-making processes and posttraumatic growth among offenders and prisoners (cf. supra). Maruna (2001) argued that the changed content of offenders' meaning in life is an important sign of desistance from crime. In this study, we explore whether the new content of meaning is linked to the loss of former meaning and to the way prisoners try to cope with this loss. If there is a connection, we then examine how the new content is linked to the loss of meaning and coping strategies. We are also interested in identifying how the possible pathway to posttraumatic growth (which runs through a loss of meaning, a search for meaning and finding new meaning) is connected with existential themes such as guilt, despair, choice and responsibility. In order to explore these nuanced lived experiences, as well as the connections among these phenomena, we opted for a qualitative design. Qualitative methods are sensitive to the nuances of multi-layered and interconnected complex phenomena (McLeod, 2011). Qualitative studies can explore in detail how people try to make sense of their own experience and can also illuminate abstract existential themes. Within the broad spectrum of qualitative methodology, we chose a phenomenological approach for a number of reasons. An important

difference between phenomenological analysis and other kinds of qualitative research is that it examines the meaning of a phenomenon in the context of how people relate to their experienced world (Vagle, 2014). Inspired by Merleau-Ponty, Dahlberg (2006) argues that the essence of a phenomenon can't be fully understood if the studied phenomenon is separated from its context. We think this is always the case, but in this study we argue that it is fundamental. The essence of posttraumatic growth among prisoners can only be understood if we take in to account how they relate to their full prison experience. We need to try to understand how the experience of posttraumatic growth is connected with the prisoners' intentional experience of prison itself.

Method

Preliminary reflection

Before we move to the description of our procedure, participants, and analysis, it is important to illuminate the first author's relation with this subject. As Vagle (2014, p. 30) argues: "Whatever understanding is opened up through an investigation will always move with and through the researcher's intentional relationships with the phenomenon." Churchill (2006) refers to the necessity to be explicit about one's insights and reflections prior to the actual research, because these experiences guide the whole research process in an implicit and explicit way.

The first author is a person-centered and existential therapist who has been working for fifteen years with both victims and offenders. During the last seven years, he has been working as a therapist in a prison setting. Having worked with victims and witnessed posttraumatic growth during therapy with victims, he developed an open-mindedness towards the possibility of posttraumatic growth among prisoners too. The fact that other therapists

with different backgrounds didn't perceive growth in their offender clients motivated him to pay more attention to the phenomenon of posttraumatic growth among prisoners. During therapy sessions in prison, he recognized patterns which led to posttraumatic growth, such as the prisoners' experience of a deep personal crisis, the processing of this crisis that involved a search for meaning, and finally a changed perception of one's self and others.

The experience of the first author influenced the interviews with the prisoners – he was at ease with these prisoners and open towards the possibility of change among them, and it influenced the analysis itself (cf. *infra*).

Procedure

This qualitative study was embedded in a broader study on meaning-making processes and posttraumatic growth during incarceration. Participants of this larger quantitative study in the Brugge prison (Belgium) were invited to participate in a study about their prison experiences and how this affected their meaning in life. The invitation letter contained information about the purpose of the study and the fact that participants would be interviewed, audio-taped, and that the findings would be published. The letter also contained an informed consent document. In order to assure maximum privacy, the potential participants dropped their signed informed consent letter in a private mailbox in prison. Because the time frame to perform the research in prison was limited, only the first ten responders out of 30 were invited for the interview. No incentives were given. The informed consent document and the study itself were approved by the ethical commission of the KU Leuven (University of Leuven, Belgium) and by the Belgian General Directory of prison institutions. The interviews were performed in March and April 2014. Each interview was conducted in a separate office room and took 60 to 80 minutes.

The participants were interviewed by the first author (an experienced psychotherapist). In this semi-structured biographical interview, the participants were invited to reflect on their earliest prison experiences, how they coped with incarceration and how their life evolved during their incarceration until the moment of the interview. The participants were also invited to reflect on their experience of meaning in life and their future.

Participants

The participants were prisoners of the Brugge prison; a mid to high security prison with a closed regime in Belgium. Four of the participants were female and six were male. The age of the participants ranged from 28 to 57 years ($M = 39.7$), and their time spent in prison during this incarceration ranged from one to ten years ($M = 4.2$). Five of them were first-time prisoners, two were in prison for the second time and three were in prison for the fourth time. The participants were incarcerated for different reasons: Cecilia, Aisha and Nancy were imprisoned for murder; Roger for attempted murder and domestic violence; Tom for physical violence; Chris, Jonas and Adam for sexual delinquency; and Jeff and Jill for arson. In order to protect the participants' privacy, these are pseudonyms. What these ten prisoners had in common was that they were highly motivated to change for the better during their prison time.

Analysis

A phenomenological analysis was performed on the transcripts of the audio-taped interviews. We were inspired by the 'Duquesne tradition' (Giorgi, 2009; McLeod, 2011) but also by Dahlberg's 'Reflective Lifeworld Research' approach (Dahlberg, 2006; Dahlberg et al., 2008). Giorgi's (2009) model helped us to structure our analysis in concrete steps. As Giorgi (2009) suggests, we based our analysis on the data of the interviews. We didn't include the former therapy experiences as data in this stage. Being strict about the available data on

which the analysis was based helped to perform phenomenological reduction (or bracketing) during the first two readings of the transcripts. Giorgi (2009) argues for three readings in the search of essences or invariant structures of meanings. In the first reading of interviews, we tried to get a sense of the entire description. It helped us to get in touch or to resonate with the full experience and the intentionality of the participants in their specific context. During the second reading, we identified what Giorgi (2009) calls ‘meaning units’. To identify a new meaning unit, we carefully observed shifts in meaning in the transcripts. Every new unit was written down. During this stage, as McLeod (2011) suggests, we also eliminated irrelevant information. In a third step, the different meaning units were closely read and were reflected upon in order to find invariant structures of meanings (Giorgi, 2009) or essences (Dahlberg, 2006). Especially during this stage, we felt more inspired by Dahlberg’s (2006) ideas about ‘bridling’. Dahlberg prefers bridling to bracketing. Bracketing or reduction implies that we as researchers restrain our pre-understanding of the phenomenon. Bridling however, implies that we bridle our understanding and create an openness towards the description on the one hand, but that we don’t cut off our own intentional experiencing of the phenomenon on the other hand (Dahlberg, 2006). Concretely in this stage, we gave more space to our embodied experience with clients in the past in order to empathize with the essences of the descriptions of the participants in this study. It would have felt as a loss to exclude our former experience at this point. It also would have contradicted Husserl’s idea to use one’s full experience of variations of the phenomenon in order to illuminate the essences of the phenomenon (Dahlberg, 2006). Using a the more strict form of reduction or bracketing during the first two readings helped us to identify ambiguous meaning units (e.g. examples of growth and examples of remaining pains and anxiety towards the future) and to discover new meaning units which we didn’t encounter in our therapeutic practice (e.g. examples of the element of choice). Using bridling during the third reading helped us to experience the meaning units in a

more embodied way. It made the description of the participants more alive to us, which enabled access the essences of posttraumatic growth in the context of prison. We will present these essences in our result section as themes: (1) dehumanization and disconnection, (2) guilt, despair and loss of meaning, (3) ways of coping, (4) positive change, and (5) remaining pains and anxiety for the future. They present the essential qualities which cover the participants' full experience of posttraumatic growth in this very context.

Merleau-Ponty's (1945/2002) conviction that the essence is both revealed through the particular as through the general inspired us to present our results simultaneously in a particular (participants' descriptions and meaning units) and general way (grouped in a thematic way). We hope that this choice will make our study experientially accessible to the reader and that the results will stay grounded – as Merleau-Ponty (1945/2002) suggests – in existence itself.

Results

Dehumanization and disconnection

The participants of our study described in various ways how incarceration impacted their lives. The lack of physical comfort, privacy and safety and also the harsh conduct of prison guards left a deep impression. Cecilia described the impact the first days of her incarceration had on her: "You arrive here, you have to undress yourself and you have to shower. Three people were watching me while I was showering. I felt those eyes on my body. I felt naked, vulnerable. I immediately got a sense that I was not a person anymore but merely an object. I felt humiliated as a woman. Then they give you a uniform and they put you into a cell. The door closes and there you are, with thousands of questions and your tears. It felt like those walls would crush me. I felt anxious and I couldn't breathe anymore. I was shouting for

help, but nobody came.” This type of initial incarceration experience was shared by all participants.

Participants also described how distrustful they were of other prisoners right from the start. Adam explained how he feared for his life: “I was locked up with different people. They had been together in that cell for a longer period. I was the only new one. I was scared to death. I had the sense that something terrible would happen to me during the night.” Tom explained how he never felt so lonely before: “Everybody here distrusts one another. Everybody is so self-protective. There is no one to talk to, you have no friends here. The contact with other prisoners is very instrumental: you do something for me, I will do something for you.”

Overall, there was a general experience of a lack of medical and psychological care. Seven participants complained that they had numerous personal questions during the first weeks but nobody seemed to be available. Aisha explains it this way: “I just committed a murder. I didn’t know why I did it, or what was happening to me. There was no one to talk to. It drove me crazy. I became aggressive and as a consequence I was sanctioned all the time.”

The participants also confirmed how confinement had an impact on their contact with the outside world. Although most of the participants had remaining contacts with the outside world, all of them lost important relationships. The partner of Chris cheated on him during the first months of his incarceration, which led to a relationship breakdown. Cecilia describes how people who promised to visit her simply didn’t show up: “My best friend never came to visit me because she had a new partner. She said that visiting me in prison would probably harm her new relationship.”

Being incarcerated also took a toll on one’s role as a parent. Nancy, who had been in prison for ten years by this point, described how her relationship with her children faded away: “I lost contact with my oldest daughter, with my son... I even never met his children,

my grandchildren.” Jonas wasn’t allowed to visit his wife while she was giving birth to their first child. Jeff felt like he let his son down, because he was imprisoned. Cecilia couldn’t see her children anymore because of the decision of the judge: “He simply thought that it would be a good idea that my children wouldn’t see me anymore. I lost my children... That was awful.”

Another element that made them feel disconnected from the outside world were the oversimplified comments on their cases in newspapers, and the hostile reactions on social media such as Facebook.

For some, incarceration meant a financial drain: three of them lost their own business. All of them lost a certain level of material comfort and their physical liberty. They emphasized that the dehumanizing conduct of some guards, the social anxiety of inmates, the absence of authentic human care and the subsequent loneliness were the hardest conditions of their prison experience.

Beyond these concrete conditions that are inherent in life in prison - the absence of authentic human contact and the loss of relationships - the participants had to cope with feelings of confusion, guilt, and despair.

Guilt, despair, and loss of meaning

Both the awareness of having committed a crime and of being imprisoned filled the participants with feelings of shame and guilt. Aisha tried to describe these feelings: “Shocking. Inconceivable. There are no words for what I have done. I really feel confused. I feel deeply ashamed now. I failed towards my family and towards myself.” Jill uttered: “I will never be able to forgive myself. I simply didn’t know what I was doing. Do I still have the right to live together with a partner?” As Jamieson and Grounds (2011) argue, prison and crime also can lead to a loss of identity and self-worth. Aisha describes it this way: “It is like

being in hell. Suddenly, you lose everything. Nothing remains. You don't recognize yourself anymore. So strange. Do you understand? It feels like you are totally a different person."

The awareness of guilt and the reality of being imprisoned led to moments of despair and a general loss of meaning in life. Tom says: "You enter prison and your whole life is destroyed. Everything that once was certain becomes uncertain. I'm not sure if I still have the right to live." And he goes on: "Everybody wants to mean something in life. If I would die right now my life wouldn't have had any meaning at all." Nancy had a similar experience: "Three times I tried to commit suicide here. I did it out of despair and having the feeling that I was not worthy of being alive."

These deep feelings of despair that accompany guilt and the loss of meaning appear to be quite common among prisoners (Gee et al., 2011). Braswell and Wells (2014) explain how despair and the loss of meaning can lead to profound experiences of emptiness during incarceration. Jeff describes it this way: "I felt powerless, empty, and groundless."

Coping with despair and loss of meaning

The participants described three main categories of coping with their loss of meaning and despair. First, there was seeking social and emotional support. Second, there was searching for new meaning. Finally, there were avoidant strategies such as avoiding unsafe contacts, sleeping as much as possible, and the use of drugs and medication. Interestingly, the participants described that they consciously made the choice regarding which strategy to use.

Social and emotional support. Janoff-Bulman (1992) underlined the importance of social support during periods of disruptive life events. On one hand, people who had been close to the person in distress can exacerbate the situation by taking distance from the person who suffers. On the other hand, the presence of authentic relationships can help the distressed

person to make sense of what happened, and eventually to find new meaning in life (Janoff-Bulman, 1992).

In our sample, the most common way prisoners coped was by seeking and accepting emotional support from others. The participants described how finding support from others was extremely important for them in order to crawl out of their deepest despair. Jeff describes it this way: “My son and the people around me here, psychologists and social workers, gave me the power to survive and to change.” Roger had a similar experience: “Suddenly, for the first time in my life, there were people standing up for me, and they didn’t judge me. That made a huge difference.” Chris got this message from a friend: “We will always be there for you.” It is a sentence that keeps him going when he has tough times. Even from a distance, the awareness that there somebody who cares about you is out there can make a difference. Nancy, in a moment of feeling particularly desperate, said: “My daughter knows I am still here, and that’s enough to go on”. Jonas put it this way: “My mother told me that she saw that I was changing, and that gave me the courage to go on.”

Not only friends and family fulfilled this role. Over time, other prisoners, guards and staff helped make this difference. Chris: “I felt a lot of support from my cellmate. We were going through the same problems so it was easy in a way to vent my emotions with him.” Cecilia felt a lot of support from guards: “They pulled me through my most difficult period, they constantly tried to persuade me that I still had a future ahead. Step by step, they also gave me more responsibility and I had the feeling that they really trusted me. That gave me a boost.”

Searching for meaning. Another way of coping was searching for new meaning. Jeff mentioned that he spent hours thinking in his prison cell: “You start to reflect on the meaning of your life. Shouldn’t I have done things differently? And without people who were making decisions in my place, for the first time in my life, I started to make my own decisions.” Tom:

“You start to wonder about the essential questions in life, things I never thought about before.” Some participants used religious resources as a way to make sense of what was happening. Nancy explained how religion helped her to give meaning to her situation and helped her to stay alive: “Religion is now keeping me from committing suicide. I pray a lot, and I read the Bible. The stories in the Bible help me to understand what is happening here and tell me that life isn’t easy. That comforts me.” Aisha confirms this: “I am religious. My faith in Allah will help me through this experience.” Tom says: “Faith is something to cling to in prison, in fact it is an anchor during life... I try to practice yoga everyday”. Roger explains how religion helped him: “Religion contains important values that guide me through this experience. If something happens here, I start to think: What would Jesus have done in this situation?” Trying to fulfill new purposes in life is also a means of coping with despair. Nancy set up a knitting project to support orphans in Eastern-Europe: a chaplain sold the knitted bunnies outside prison and the profit went entirely to that orphanage. The idea that she was helping people kept her going.

Therapy was also described as a way of coping with their situations, to find emotional support and as a way to find answers to existential questions. All participants went into therapy at some point during their incarceration. Therapy was experienced as a safe place where they felt really met and seen by the therapist. Participants reported that therapy helped them to make sense of what had happened, to process the crime and its consequences, and to process earlier traumatic experiences in life. Cecilia gave words to her experience: “When I entered prison, I couldn’t talk about what had happened in my life, about my thoughts of what was buried in my heart. The crime and prison destroyed the wall that I had built around my childhood experiences, and I felt overwhelmed by all those traumatic memories. I didn’t have the energy to build a new wall. First I tried to open up towards other prisoners but they made fun of me. Instead of harming myself or using drugs, I decided to go into therapy. It was very

hard in the beginning. In the beginning I talked very fast, because I wanted to get everything out of me. Step by step I learned to give my memories a place, and I became more aware how things were connected in my life. It all started to make sense. I am stronger now.”

Avoidant strategies. Interestingly, the participants didn’t open up for everybody. They made clear distinctions between safe and unsafe relationships. Six participants mentioned that they avoided contact with other prisoners. Avoidance from others could take various forms. It ranged from staying in their cell, like Nancy, but also by being ‘polite’ while having feelings of disgust towards others, which was Aisha’s approach. Another way to avoid contact with other prisoners was to sleep during daytime. Three participants reported that they tried to sleep as much as possible during the first weeks of their incarceration. One participant, Roger, kept on sleeping during the day as much as possible throughout seven years, because he preferred the quiet of the night over the noise of other the prisoners during daytime.

A common way to cope with despair in prison is to use drugs and medication (Rokach, 1997). In our sample, the prisoners tried to avoid medication and drugs but weren’t always successful. Some participants used them during certain time periods, such as before their trial, to deaden their emotions and thoughts. Cecilia: “I never took real medication in my life before. But I was so at the end of my rope that I went to the doctor. From then on, I took all kinds of medication. I felt locked up in my body, but it gave me some peace of mind. It pulled me through that period, and it helped me to survive, but then it was time to get rid of it. I just got stuck in my situation and it didn’t help me to move forward with my life.”

Remarkably, half of the participants explained that how one copes with prison is primarily a matter of choice. This reminds us of Maruna’s study (2001) where he found that actively making choices is usually avoided by persistent offenders. In this way, persistent

offenders attempt to limit their responsibility for their failures: it is easier to blame society for failure when one doesn't take responsibility for the choices made in life.

On the other hand, offenders who desist from crime seem to take more personal responsibility and make clear choices in their lives. Jeff explained: "You can easily flee into drugs, you let yourself go, you eat a lot and your prison time will soon be over. They will release you, but you will be back soon. I didn't want to take that trail. I choose a different direction." Tom put it this way: "I believe that people can change. Sometimes people need a second chance... or a sixth or seventh chance, but it is possible. But what's crucial is that the change has to come from within the person. For myself, when I came in here, it was a matter of choice: either I had to commit suicide or I have to change my life completely. I choose the latter." Adam explained his opinion: "You can learn something from your situation or you can go along with drugs and other stuff, and you will end up worse than before." At this stage in their incarceration, we see indications that are evocative of Maruna's study (2001) in which he identified one element of desistance from future crime: prisoners who take responsibility for their lives and their choices.

Positive change

The participants reported different kinds of growth, which they described as being a direct result of incarceration. Roger explained: "Incarceration was like walking with my face against the wall, which apparently I needed in order to finally wake up and change." The reported kinds of growth contained new insights in their personal stories, higher levels of self-worth, newfound strengths, a more nuanced way of thinking and processing information, new relational skills, and a changed meaning in life. The participants experienced this growth as a positive change.

Insight in personal story and dynamics. All participants experienced new insights as a result of processing the consequences of the crime and incarceration. Jeff explains: “Thanks to incarceration I have the feeling that I know better who I am and what I want in life. I had time here to search for who I was. Without this period, I would never have had such a clear vision of who I am.” Jeff also acquired insight about the underlying dynamics of the crime: “I always had to prove myself, I always had to go beyond my own boundaries in order to please others, but people didn’t appreciate it. Being disappointed I started drinking every time. I didn’t really deal with my problems. Now I know that I’m ok and that there is somebody – my son – who loves me, no matter what. I don’t have to prove myself anymore.” Roger discovered that he sabotaged himself during his life: “I discovered that I experienced myself as a loser in the past, and that defining myself that way was in fact very comfortable. Being a loser, I didn’t have to take responsibility for my life.”

Higher levels of self-worth. Participants also reported higher levels of self-respect, self-care and more autonomy. Higher levels of self-worth were expressed by being more respectful towards one’s self. On a basic physical level, Jeff and Tom both expressed that they learned to respect and to take better care of their bodies. Cecilia said that she used to obey people automatically. She described how she learned to be more assertive and to ask for respect for her boundaries. In the past, she used to obey anyone who told her what to do. Now, she is taking her first steps in paving her own way. Some participants experienced that they were stronger than they thought they were. Nancy discovered: “I never thought that I would survive prison and yet I do. I don’t know how this is possible.” Tom concluded: “For the first time in my life, I feel proud of myself, because I really have the feeling that I’m changing.”

New strengths. The participants also described new strengths they discovered or developed during their prison time. They were convinced that these new strengths would help

them in the future. Cecilia learned to ask for and to receive help from others. Jeff said that he learned to persevere, also during hard times, and not to run away from his problems. Instead of having a short-term perspective, Jonas reported that he acquired the ability to think about the consequences of his actions in the long run. Tom discovered his faith in the fact that he could change, and that change is possible.

Interestingly, strengths like perseverance, asking for help, receiving help, long-term planning and self-care have been described as ‘hardiness’ skills (Maddi, 2014). Hardiness has been defined as an attitude that enables people to turn stress into growth opportunities (Maddi, 2014), and is a typical outcome of posttraumatic growth (Tedeschi & Calhoun, 2012).

A more nuanced way of thinking. Different participants also displayed a more nuanced way of thinking and experiencing. They gave examples of how they experienced themselves and others in a more nuanced way. Roger is talking about his mother. She visited him last week, and in the midst of their conversation, there was a conflict. Roger tells us what happened at that very moment: “...And I asked her: ‘Do you really think I would do that?’ In the past, I would have left the room immediately. But now, I found myself thinking: Wait a minute, why is she saying this? Then I could see that she was in fact concerned about me.” Tom gave a similar example: “I really felt agitated with him. Then I started to ask myself the question: “Why does he agitate me?” I could see that he reminded me of myself and my junky behavior in the past. Okay, that’s not his fault.” Tom also showed a more nuanced worldview: “It is a hard world, not only within the prison but also outside. We don’t live in Utopia. I think it is a part of life, to accept that there is injustice and that we have to find a way how to cope with it.”

Relational skills. Participants also experienced changes in their contact with others. They gave examples of how they perceived others in a different way and how their empathy has grown. Tom explains: ‘For the first time in my life, I started to see people as real

individuals with their own needs and stories. A guard told me that one of his children died a number of years ago. I felt myself leaving my role as a prisoner towards a guard. I told him that this must have been terrible and that I couldn't imagine how much pain he must have felt...." He adds: "A hard thing to learn for me was to be open towards the positive in life. It still makes me sometimes anxious. I started to learn that there really is some positive in people. In the past, I only experienced distrust towards others." Adam told us how he gradually learned to listen and to talk to others: "I learned to step down from my first impression that I had of people. I learned to see the positive in others and how to communicate, to be more tolerant towards individuals and groups of people." Jill explained how she learned to be more authentic in her relationships with others: "I learned to talk about my personal problems with friends, which I avoided in the past."

A changed meaning in life. Overall, the participants experienced shifts in their appreciation for life and in their meaning of life. Maruna (2001) argues that desisting offenders shift from an empty, self-centered and materialistic way of life to self-transcendent values and purposes in life. Adam illustrates this shift: "I used to live only for luxury and money. I always wanted to have more and more. I sold drugs to buy fancy stuff, but I also started to cheat and to lie to get more. In fact, it was not worth it. I lost everything in the end, also my friends and family. Now I can tell that luxury is not worth living for. I still want to earn money in the future, but not anymore for the sake of being rich, it is so destructive." Other participants confirm this shift in values and meaning in life. Tom: "I don't want to be rich anymore or make a career. If I could make a difference in a persons' life, my life would have been successful." This shift in meaning also led to different purposes in life. Jill gives a good example: "My life would mean something if I would mean something for another person, that's why I want to study again to become a nurse."

In a concrete way, most participants referred to their children and family members as their source of meaning in life. Seven of the ten participants also became more religious or spiritual during their prison time. Jonas converted to Evangelical Christianity. He developed a strong faith in Jesus. He explained how faith filled his emptiness and that he experienced love from God. Tom became a yogi. By practicing yoga every day in his prison cell, and by reading about yoga, he took eventually a spiritual leap: “I now think that there is a God, but I don’t think I have the capacity to fully understand what ‘God’ is. I think it’s something universal, God is in each of us and it doesn’t matter if you’re a Muslim or a Catholic. I think that God transcends religions. In the past, I thought religion was for sissies, for pedophile priests and for terrorists.”

The descriptions of posttraumatic growth among these participants seem to suggest that there might be an underlying process that connects all these elements of growth. Rogers (1961) argues that personal growth – which encompasses more self-worth, autonomy, connectedness, responsibility and acceptance – is characterized by a growing openness to experience. In our sample, the participants seemed to have developed this quality. A larger openness to their personal experience helped them to acknowledge the consequences of their crime, which led to shifts in their life stories and new personal skills (such as respecting their boundaries). Openness to experience also made it possible to connect with people in a different way (e.g. to see the positive in others), and to think in a more nuanced way (e.g. being able to leave first impressions behind). A growing openness to experience can also accumulate to a shift in one’s meaning in life (Greenberg & Pascual-Leone, 2001). In this way, it is not surprising that the participants also experienced permanent losses as a consequence of their crime, although there were clear signs of posttraumatic growth.

Remaining pains and anxiety about the future

Although many signs of posttraumatic growth were obvious among the participants, they also all showed signs of remaining pain on an emotional and relational level and anxiety about the future. These pains and fears were different from what the participants experienced as the pains of their entry period. They experienced this as more of a long-lasting pain, something they would carry along with them for the rest of their lives.

The participants described feelings of guilt and shame about the crime but also about the fact that they had been imprisoned. Jill talked about the burden of being a prisoner: “I feel deeply ashamed that I have been imprisoned. In a way, I will probably feel isolated for the rest of my life. How do you tell a potential partner that you have been imprisoned?” Tom expressed it this way: “Being a prisoner became a part of my identity, more than I ever wanted.” Jeff talked about the irreversible guilt towards his son, and Chris said how he felt he failed others.

There was also a feeling that they were disconnected from the lives of important people outside prison, especially their children, and that by being imprisoned, they were missing the opportunity to be part of their children’s lives. Aisha, who had at least 7 years of incarceration still ahead, had to leave her son behind when he was not even one year old. In an act of self-defense, she killed her husband who was beating her. As the killer of the father of her son, she was not allowed to take her son – who was still a baby at that time – with her into prison. Aisha suffered over the fact that somebody else was raising her son now and that she had to miss to see him growing up day by day.

Jill worried over her future: “I wonder how to find work with a criminal record.” Nancy was afraid to think about the future outside prison. She often felt discouraged when the idea crossed her mind that she would have to rebuild a whole new life once she was released. Chris was afraid that he would give up along the way.

In the case of Cecilia, her losses and pains were in fact deeply connected to her growth: “I lost my religion but I became more spiritual. I also lost most of my friends, but my relationship with others grew deeper.”

Discussion and conclusions

In a sample of ten prisoners, we explored different elements that have been documented as important steps towards posttraumatic growth. Different qualitative studies on posttraumatic growth among this population described a loss of meaning as a consequence of incarceration and having committed a crime, a period of searching for meaning, and eventually the emergence of growth as distinct phases in this process (Ferrito et al., 2012; Guse & Hudson, 2014, Mapham & Hefferon, 2012; Maruna et al., 2006, Vanhooren et al., 2015a, van Ginneken, 2014). Overall, our study confirmed this possible pathway to growth, but also revealed some possible connections between the areas of loss, the way of coping and the new meanings. Furthermore, the participants of our study also highlighted choice as an important element in the process that leads to growth and meaning.

First, it is remarkable that the participants emphasized the relational context of incarceration to be the hardest prison condition. The way participants described the dehumanizing behavior of some guards, the absence of authentic human care, and the social anxiety towards other prisoners sounds like they predominantly experienced ‘I-it relationships’ in the beginning of their prison time. Martin Buber (1923/2003) describes I-it relationships as one of two modes of having contact with other people. I-it relationships are characterized by their non-personal and instrumental quality. People act in this mode as if the other is not more than an object. It is a way of keeping maximum interpersonal distance, a way to avoid authentic personal connection and not to feel touched by the life circumstances of the other. In maintaining I-it relationships, the other is also easily characterized as totally

‘different,’ which can lead to misconduct towards the other (Schneider, 2013). Bohart et al. (2013) argue that offenders are often portrayed as pure evil, because non-offenders often don’t own their own dark side and project it on the offender. Unfortunately, this can lead to alienation and social exclusion of the offender. It remains an open question whether this mechanism could explain why some of the former friends and relatives of the participants literally took distance from them once they were imprisoned. Stillman et al. (2009) discovered how social exclusion leads to a general loss of meaning.

We wonder if it’s a coincidence that the participants primarily tried to cope through social and emotional support from others through ‘I-Thou relationships’ and finally, that they expressed that the main source of their meaning in life was to be found in their deepened relationships with their family. Buber (1923/2003) describes I-Thou-relationships – in contrast to I-it contacts - as relationships that are marked by meeting the other person as a full human being. Mearns and Cooper (2005) argue that moments of I-Thou contact have the capacity to change both parties who are part of the relationship. Interestingly, Maruna (2001) described how having the feeling of being fully seen by another person can evoke a process of searching for meaning and deep personal change in offenders. Elisha et al. (2013) also found that feeling accepted by others was essential for prisoners to take steps towards personal change. In this study, prisoners felt accepted by others because the other took them seriously. At the same time, these others also requested that the prisoners make personal changes.

Although the reported posttraumatic growth and new meanings also reflect a process in the participant’s internal world, our findings seem to suggest that this process towards growth was predominantly experienced in the relational dimension of life. This is a hypothesis that should be further explored in the future, and it would make sense for a number of reasons. Ronel and Segev (2014) suggest that the core of crime is to be found in an existential alienation from others. In a way, this means that if there would be one area of

growth that would make a difference in the offender's life, it would be relational growth.

Furthermore, Maruna (2001) also found that the new emerging meanings in life were less self-centered and that there was a wish to serve others.

In this study, we also found a possible connection between the areas of positive change. As Rogers (1961) argued, personal growth is marked by an increasing openness towards one's inner experience. In our sample, we found that the different elements of positive change were connected by this growing openness. As Braswell and Wells suggested (2014), the result of the loss of meaning is often experienced as emptiness. In their perspective, emptiness also means that there is a potential openness to new experiences. In our sample, this openness helped the participants to reflect in a more open way, to explore the consequences of their crime and to make sense of their life stories. Openness to experience and a more nuanced way of thinking also made it possible to connect with people in a different way. The reported growth also seemed to be the fruits of a more open way of experiencing, because it didn't prevent the participants from experiencing the ongoing pains that were also part of their prison experience.

These two findings – the relational change on one hand and the inner openness to experience on the other hand – are complimentary. In a way, a personal change is always a relational change: the inner relationship with ourselves very often reflects our outer relationships with others and with the world, and vice versa (Vanhooren, 2006).

Finally, the participants highlighted the importance of choice. In their opinion, the prisoner is responsible for the way he or she relates to and copes with the prison circumstances and with the experienced losses. In their experience, the choice regarding how to deal with incarceration would also have an influence on their societal rehabilitation. Maruna (2001) found that individuals who succeed in desisting from crime differ from persisting offenders by the fact that they developed very different meanings in life, and also

by developing a new sense of responsibility. Desisting offenders take responsibility for making important choices in life. This shows how existential themes such as meaning, choice and responsibility are interconnected. Making choices helps to construct new meanings, and new meanings also give direction for making choices (Maddi, 2012).

For offenders, taking responsibility for what happened and making life-affirming choices are personal challenges. Frankl (1967) argues that in the case of guilt, offenders lose their freedom except for the freedom to choose the right attitude in how they cope with their guilt. He takes even one step further by saying that because they cannot undo what they have done, they have the responsibility to change themselves. In his opinion, the only way out of the 'wilderness' is to change. The participants in this study showed important elements of personal change and posttraumatic growth. In a way, they were paving their own way out of their wilderness and exploring new grounds to build their future lives.

References

- Bohart, A. C., Held, B. S., Mendelowitz, E., & Schneider, K. J. (2013). *Humanity's dark side: Evil, destructive experience, and psychotherapy*. Washington, DC: American Psychological Association.
- Braswell, M. & Wells, K. (2014). Correctional treatment and the human spirit: the context of relationship. In: D. Pollizi, M. Braswell & M. Draper (Eds.) *Transforming corrections: humanistic approaches to corrections and offender treatment* (p. 247-270). Durham: Carolina Academic Press.
- Buber, M. (1923/2003). *Ik en Jij*. Utrecht: Bijleveld.
- Calhoun, L.G., & Tedeschi, R. G. (2006). *Handbook of posttraumatic growth: research and practice*. New York: Routledge.

Cho, D., & Park, C. L. (2013). Growth following trauma: Overview and current status.

Terapia Psicológica, 31, 69-79. Retrieved from <http://teps.cl/>

Churchill, S. D. (2006). Phenomenological analysis: Impression formation during a clinical assessment interview. In C. T. Fischer (Eds.), *Qualitative research methods for psychologists: Introduction through empirical studies* (pp. 79-110). Burlington, MA: Elsevier.

Crawly, E., & Sparks, R. (2011). Older men in prison: survival, coping and identity. In A. Liebling & S. Maruna (Eds.), *The effects of imprisonment* (pp. 343-365). New York: Routledge.

Dahlberg, K. (2006). The essence of essences: The search for meaning structures in phenomenological analysis of lifeworld phenomena. *International Journal of Qualitative Studies on Health and Well-being*, 1, 11-19.

Dahlberg, K., Dahlberg, H., & Nystrom, M. (2008). *Reflective lifeworld research: Second edition*. Lund, Sweden: Studentlitteratur.

Elisha, E., Idisis, Y., & Ronel, N. (2013). Positive criminology and imprisoned sex offenders: demonstration of a way out from a criminal spin through acceptance relationships. *Journal of Sexual Aggression*, 19, 66-80. doi: 10.1080/13552600.2011.638145

Ferrito, M., Vetere, A., Adshead, G., & Moore, E. (2012). Life after homicide: accounts of recovery and redemption of offender patients in a high security hospital – a qualitative study. *The journal of forensic psychiatry & psychology*, 23, 327-344. doi: 10.1080/14789949.2012.668211

Frankl, V. (1967). *Psychotherapy and existentialism. Selected papers on logotherapy*. Harmondsworth: Penguin Books.

Gee, J., Loewenthal, D. & Cayne, J. (2011). Therapeutics of despair in the prison setting. *European Journal of Psychotherapy & Counselling*, 13, 317-334. doi:

10.1080/13642537.2011.625201

Giorgi, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Pittsburg, PA: Duquesne University Press.

Greenberg, L. S. & Pascual-Leone, J. (2001). A dialectical constructivist view of the creation of personal meaning. *Journal of Constructivist Psychology*, 14, 165-186. doi: 10.1080/10720530125970

Guse, T., & Hudson, D. (2014). Psychological strengths and posttraumatic growth in the successful reintegration of South African ex-offenders. *International Journal of Offender Therapy and Comparative Criminology*, 58, 1449-1465. doi: 10.1177/0306624X13502299

Haney, C. (2003). The psychological impact of incarceration: implications for post-prison adjustment. In: J. Travis & M. Waul (Eds.), *Prisoners once removed* (pp. 33-65). Washington, DC: The Urban Institute Press.

Harner, H. M. & Riley, S. (2013). The impact of incarceration on women's mental health: responses from women in a maximum-security prison. *Qualitative Health Research*, 23, 26-42. doi: 10.1177/1049732312461452

Harvey, J. (2011). Crossing a boundary: the transition of young adults into prison. In A. Liebling & S. Maruna (Eds.), *The effects of imprisonment* (pp. 232-254). New York, NY: Routledge.

Janoff-Bulman, R. (1992). *Shattered assumptions: towards a new psychology of trauma*. New York, NY: The Free Press.

Jewkes, Y. (2011). Loss, liminality and the life sentence: managing identity through a disruptive lifecourse. In A. Liebling & S. Maruna (Eds.), *The effects of imprisonment* (pp. 366-388). New York: Routledge.

Lieber, D. L. (2001). *Etz hayim: Torah and commentary*. New York, NY: The Rabbinical

Assembly.

Liebling, A. & Maruna, S. (2011). *The effects of imprisonment*. New York: Routledge.

Maddi, S. R. (2012). Creating meaning through making decisions. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research and applications. Second edition* (pp. 57-80). New York, NY: Routledge.

Maddi, S. R. (2014). Hardiness leads to meaningful growth through what is learned when resolving stressful circumstances. In A. Batthyany & P. Russo-Netzer (Eds.), *Meaning in positive and existential psychology* (pp. 291-302). New York: Springer.

Mapham, A. & Hefferon, K. (2012). 'I used to be an offender – now I'm a defender': Positive psychology approaches in the facilitation of posttraumatic growth in offenders. *Journal of Offender Rehabilitation*, 51, 389 – 413. doi: 10.1080/10509674.2012.683239

Maruna, S. (2001). *Making good: How ex-convicts reform and rebuild their lives*. Washington, D. C.: American Psychological Association.

Maruna, S., Wilson, L., & Curran, K. (2006). Why God is often found behind bars: prison conversions and the crisis of self-narrative. *Research in Human Development*, 3, 161-184. doi:10.1080/15427609.2006.9683367

McLeod, J. (2011). *Qualitative research in counseling and psychotherapy: second edition*. London: Sage.

Mearns, D., & Cooper, M. (2005). *Working at relational depth in counselling and psychotherapy*. London: Sage Publications.

Merleau-Ponty, M. (1945/2002). *Phenomenology of perception*. New York, NY: Routledge.

Phillips, L. A., & Lindsay, M. (2011). Prison to society: A mixed method analysis of coping with reentry. *International Journal of Offender Therapy and Comparative Criminology*, 55, 136-154. doi: 10.1177/0306624X09350212

Vanhooren, S., Leijssen, M., Dezutter, J. (2017). Ten prisoners on a search for meaning: A qualitative study of loss and growth during incarceration. *The Humanistic Psychologist*, Advance online publication. doi: 10.1037/hum0000055

Rogers, C. R. (1961). *On becoming a person. A therapist's view of psychotherapy*. Boston: Houghton Mifflin.

Rokach, A. (1997). Loneliness in jail: Coping strategies. *International Journal of Offender Therapy and Comparative Criminology*, 41, 260-271. doi: 10.1177/0306624X97413005

Ronel, N. & Segev, D. (2014). How the 'positive' can influence criminal behavior: Growing out of criminal spin by positive criminology approaches. In D. Polizzi, M. Braswell & M. Draper (Eds.). *Transforming corrections: Humanistic approaches to corrections and offender treatment* (pp. 303-333). Durham, NC: Carolina Academic Press.

Schneider, K. J. (2013). *The polarized mind: Why it's killing us and what we can do about it*. Colorado Springs, CO: University Professors Press.

Stillman, T. F., Baumeister, R. F., Lambert, N. M., Crescioni, A. W., DeWall, C. N., & Fincham, F. D. (2009). Alone and without purpose: Life loses meaning following social exclusion. *Journal of Experimental Social Psychology*, 45, 686-694. doi:10.1016/j.jesp.2009.03.007

Tedeschi, R. G. & Calhoun, L. G. (2004). Posttraumatic growth: conceptual foundations and empirical evidence. *Psychological Inquiry*, 15, 1-18. doi:10.1207/s15327965pli1501_01

Vagle, M. D. (2014). *Crafting phenomenological research*. Walnut Creek, CA: Left Coast Press.

van Ginneken, E. F. J. C. (2014). Making sense of imprisonment: narratives of posttraumatic growth among female prisoners. *International Journal of Offender Therapy and Comparative Criminology*. Advance online publication. doi: 10.1177/0306624X14548531

Vanhooren, S. (2006). Ergens tussen zwart en wit. Psychotherapie met daders van seksuele

delicten vanuit cliëntgericht perspectief. *Tijdschrift Cliëntgerichte Psychotherapie*, 44, 85-102.

Vanhooren, S., Leijssen, M., & Dezutter, J. (2015a). Posttraumatic growth in sex offenders: A pilot study with a mixed-method design. *International Journal of Offender Therapy and Comparative Criminology*. Advance online publication. doi:10.1177/0306624X15590834

Vanhooren, S., Leijssen, M., & Dezutter, J. (2015b). Loss of meaning as a predictor of distress in prison. *International Journal of Offender Therapy and Comparative Criminology*. Advance online publication. doi:10.1177/0306624X15621984

Ward, T., Mann, R. E., & Gannon, T. A. (2007). The good lives model of offender rehabilitation: clinical implications. *Aggression and Violent Behavior*, 12, 87-107. doi: 10.1016/j.avb.2006.03.004

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