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CHOOSING WHEN CHOICES ARE LIMITED: THE ROLE OF PERCEIVED AFFORDED CHOICE AND AUTONOMY IN PRISONERS' WELL-BEING

Although prison life is generally characterized by little choice and autonomy, there exists considerable variation in the number and type of choices offered to different prisoners. Based on self-determination theory, which maintains that perceived afforded choice and autonomy are of crucial importance for individuals' psychological functioning, we investigated the relation between choice, autonomy satisfaction, and subjective quality of life among prisoners. We drew on quantitative cross-sectional data gathered among 156 Belgian prisoners ($M_{age} = 38.60$, 88.5% men). Participants filled out questionnaires measuring perceived afforded choice, autonomy satisfaction, and quality of life. The main hypotheses were tested using structural equation modeling. Results showed that perceived afforded choice related to higher subjective quality of life within prison. This relation was partially accounted for by elevated levels of autonomy satisfaction. Supplementary analyses revealed that the benefit of choice emerged regardless of participants' valuation of choice, and that perceived afforded choice with regard to daytime activities (i.e., leisure activities, work, and education) yielded the strongest effect. Collectively, results suggest that enhancing perceived afforded choice and autonomy satisfaction may provide important avenues for promoting prisoner quality of life. These findings are discussed in light of the growing focus on strength-based approaches and psychological well-being within the prison context.

Public Significance Statement

Prisoners who experienced a higher level of choice within prison, especially with regard to their daytime activities, reported a higher level of quality of life within prison. This relation between choice and quality of life was partially explained by prisoners' feelings of volition and self-endorsement. Notably, the benefits of choice were even apparent for prisoners stating that they do not value choice, suggesting that the promotion of choice and volition among prisoners is important for prison policy.

Keywords: perceived afforded choice, autonomy, prisoners, quality of life, self-determination theory

Prisoners generally experience relatively low levels of wellbeing and high rates of psychopathology compared to nondetained individuals (e.g., Boothby & Durham, 1999; Diamond, Wang, Holzer, Thomas, & Cruser, 2001; Green, Miranda, Daroowalla, & Siddique, 2005). Although reduced psychological well-being may predate imprisonment for many individuals (Adams, 1983), research also points to the detrimental effects of incarceration itself (Haney, 2001, 2006;

Liebling, 2011; Paulus, Cox, McCain, & Chandler, 1975). It is important to study well-being and its antecedents in prisoners because well-being has been found to relate to prison suicide and other negative outcomes during incarceration (Liebling & Ludlow, 2016). In addition, preliminary evidence among forensic psychiatric outpatients suggests that subjective well-being may also be negatively related to reoffending (Bouman, Schene, & de Ruiter, 2009). Strengthening prisoners' well-being may thus represent a route to reduce recidivism. Given the potential importance of prisoners' well-being and guided by strength-based theories (Ward & Brown, 2004), the literature has witnessed an increased interest in identifying the contextual and personal factors *568 involved in prisoners' well-being (e.g., Crewe, Liebling, & Hulley, 2011).

The emerging research on prisoners' well-being has successfully identified several individual and institutional factors that can buffer decreases in prisoners' well-being. For example, Picken (2012) found in a recent review that emotion-focused coping, receiving visits, engagement in structured activities within prison, and less fear of victimization all related to better adjustment and well-being among male prisoners. Although an increasing number of factors promoting prison well-being have been identified, the potentially important roles of autonomy and perceived afforded choice have received little attention, possibly because individuals are believed to experience little autonomy in prison. Indeed, imprisonment, by its very definition, restricts an individual's liberty. The inherent power inequalities present within prison settings (Bosworth & Carrabine, 2001; Crewe, Liebling, & Hulley, 2015) might also be expected to further compromise prisoners' sense of choice and autonomy. As outlined below, both theoretical accounts (Ryan & Deci, 2000) and testimonies of prisoners (Ashkar & Kenny, 2008) highlight the importance of perceived choice and autonomy for well-being. Limitation of these may thus come at a psychological cost for many prisoners. Even within the restrictive context of prison, however, there is likely to be considerable variation in the perceived degree of choice and autonomy experienced by individual inmates. In the current study we therefore examined the relations between perceived afforded choice, autonomy, and quality of life among Belgian prisoners.

Psychological Freedom and Volition Within Prison Walls

This study was based on self-determination theory (SDT), a broad theory on human motivation and socialization (Deci & Ryan, 2000; Vansteenkiste, Niemiec, & Soenens, 2010). Within SDT, autonomy is, together with competence and relatedness, conceived as a fundamental and universal psychological need, the satisfaction of which is conducive to individuals' well-being and quality of life. The need for autonomy denotes the experience of a sense of volition, psychological freedom, and self-endorsement when carrying out an activity. Satisfaction of this need in the prison context is apparent, for example, when prisoners willingly conform to prison rules or when they feel free to voice their irritation vis-à-vis prison staff. In contrast, autonomy frustration is characterized by feelings of pressure and inner conflict, for instance, when prisoners feel forced to take part in nonvalued activities. We focus specifically on the need for autonomy (rather than the needs for competence and relatedness) as perceived afforded choice, another key variable in the current study, is expected to relate most strongly to autonomy (see Reeve, Nix, & Hamm, 2003; but see Patall, Cooper, & Robinson, 2008 for a link with competence).

An extensive body of empirical work underscores the benefits associated with autonomy satisfaction and the mental health costs associated with autonomy frustration (for an overview see Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013). To illustrate, in an earlier study, Vansteenkiste, Lens, Soenens, and Luyckx (2006) reported that in a sample of Chinese immigrants autonomy satisfaction related positively to positive affect, life satisfaction and vitality, while being negatively related to depressive symptoms. More recently, Chen et al. (2015) showed in a large-scale study comprising college students from four culturally diverse countries (i.e., Belgium, China, Peru, and the U.S.) that autonomy satisfaction related positively to life satisfaction and vitality, while autonomy frustration related to depressive symptoms. Notably, these effects were similar across all four countries, underscoring the universality claim of SDT. Although numerous studies within the SDT framework have indicated the beneficial effects of autonomy, studies concerning autonomy among prisoners are scarce.

From a theoretical perspective, many scholars have pointed to the autonomy-restrictive nature of prison and the need to acknowledge prisoners' autonomy (e.g., Goffman, 1961; Sykes, 1958). For example, Andorno, Shaw, and Elger (2015) recently argued that prisoners should be allowed to make autonomous health care decisions. While, to the best of our knowledge, no SDT-based studies on the need for autonomy in the prison context have been carried out, a small number of studies provide indirect evidence for the potential importance of prisoners' perceived autonomy for well-being. It should be noted, however, that the definitions and operationalizations of autonomy in these studies are often less specific than the notion of autonomy as defined in SDT. For example, Windzio (2006) reported that male juvenile offenders felt moderately restricted in their autonomy, with autonomy being defined fairly broadly and referring to perceived loss of control, a sense of having too many restrictions, and experiencing depersonalization and infantilization. In a more direct examination of the role of autonomy in well-being, Ashkar and Kenny (2008) found, via semistructured interviews, that detained adolescent males experienced incarceration as autonomy-reducing and that this lack of autonomy engendered negative feelings. Given the limited number of studies on autonomy among prisoners, we sought to examine whether prisoners' experience of volition and psychological freedom during detention predicts their quality of life in prison.

Contextual Affordance of Choice as a Facilitator of Autonomy

As theory and (preliminary) research has highlighted the importance of autonomy for prisoners' well-being, a natural next step is to examine what conditions facilitate feelings of autonomy. In SDT, the provision of choice is considered one important pathway through which social contexts can facilitate satisfaction of the need for autonomy and subsequent well-being (Ryan & Deci, 2000). When afforded a menu of meaningful choices, people have the opportunity to select a course of action that best fits their interests, preferences, and values. When activities are better aligned with personal preferences and values, people are more likely to experience a sense of self-endorsement, volition, and psychological freedom (i.e., autonomy satisfaction; Mouratidis, Vansteenkiste, Sideridis, & Lens, 2011). Thus, prisoners who perceive higher levels of afforded choice within prison (e.g., regarding leisure and other activities) are expected to feel more volitional during their daily activities.

Although effects of afforded choice can be complex and may depend on a number of factors (e.g., the type of choice, personal characteristics, and cultural background), multiple studies have shown that choice, on average, has a beneficial effect on motivational outcomes such as intrinsic motivation, effort, task performance, and perceived competence (see Patall et al., 2008 for an ***569** overview). A smaller number of studies have found beneficial effects of choice on individuals' well-being (e.g., Meng & Ma, 2015; Quine, Wells, de Vaus, & Kendig, 2007). Conversely, experiencing a lack of choice has been found to relate to maladjustment, including emotional stress, physical strain, and decreased health (Schulz et al., 2012).

Having a sense of choice may be particularly important in autonomy-restrictive settings, where afforded choice can increase individuals' rather limited sense of autonomy. In a now-classic study, Langer and Rodin (1976) experimentally examined the role of afforded choice in an autonomy-restrictive context, namely among nursing home residents. Residents who were allowed to make choices (e.g., if and when they wanted to attend a movie and how to take care of a plant) reported greater happiness and alertness, and participated more actively compared with residents who were not provided such choices. Similarly, Kasser and Ryan (1999) reported that perceived autonomy support by nursing home residents contributed to more autonomous functioning, with the latter relating to greater well-being and a decreased mortality-risk one year later (see also Vallerand, O'Connor, & Blais, 1989).

As is the case with autonomy, few studies have addressed the role of perceived afforded choice in the prison context. Three different strands of work provide indirect evidence for the potential growth-promoting role of choice in prison. First, a number of scholars note that opportunities for choice are very limited within prison (e.g., Crewe, Liebling, & Hulley, 2014; Goffman, 1961; Sykes, 1958), and that even when several options are available, these options may all be seen as undesirable or personally unimportant (see Goodstein, MacKenzie, & Shotland, 1984). For instance, prisoners often have limited choices about what to eat, which activities to undertake, daily schedules, and with whom to interact.

Despite this theoretical recognition of the potential importance of choice in a prison context, few studies have empirically investigated the perceived affordance of choice among inmates. In one of the few studies so far, Woodall, Dixey, and South (2014) found that prisoners appreciated choice and considered it to be adaptive, while a lack of choice engendered feelings of frustration and even anxiety. In addition, some prisoners recognized that prison offered them options they did not have access to before imprisonment (e.g., education and health care). In this sense, prison may yield both a restraining and liberating function via the denial and affordance of choice.

Second, additional indirect evidence for the potential beneficial effects of contextual affordance of choice comes from research focusing on juvenile delinquents' perceptions of their living group as being open or more repressive (e.g., Van der Helm, Beunk, Stams, & Van der Laan, 2014). Juvenile delinquents' perception of an open living group is partially dependent upon available opportunities to choose. To the extent that juvenile delinquents perceived their living group as more open, they reported more active coping, greater treatment motivation, and less aggression, while a perceived repressive living group climate related to passive coping (Van der Helm et al., 2014; Van der Helm, Stams, Van Genabeek, & Van der Laan, 2012). Because afforded choice is only one element distinguishing open from repressive group climate, it is unclear to what extent the benefits associated with an open climate are specifically due to perceived contextual affordance of choice as such.

Third, previous research on procedural justice or the degree to which decision-making (within prison) is perceived to be fair and transparent is also indirectly relevant. Essential for perceived procedural justice is the experience of being able to express one's own viewpoint (which relates to the notion of choice) and experiencing this viewpoint to be taken into account (which relates to the experience of autonomy need satisfaction; Vandeveldt et al., 2017). Several studies have indicated that prisoners who perceive a higher level of procedural justice exhibit not only a lower degree of misconduct within prison (e.g., Reisig & Mesko, 2009), but are also less likely to be reconvicted (Beijersbergen, Dirkzwager, & Nieuwbeerta, 2015). In short, several bodies of work point out that perceived afforded choice may be conducive to prisoners' wellbeing, yet, the scarcity of work in this area that directly addresses this question in a detailed manner highlights the need for more research.

The Role of Choice Valuation and Type of Choice

In addition to exploring in the present study how perceived afforded choice, in general, relates to autonomy satisfaction and subjective well-being we also considered two additional issues related to choice. First, in order to examine whether the benefits of perceived choice could be generalized to all prisoners, we investigated the role of the personal valuation of choice. If the valuation of choice does not play a moderating role, the findings would suggest that prisoners, even those who devalue choice, would benefit from perceived afforded choice.

Reasoning from a dispositional motives perspective, it could be argued that especially individuals with a strong preference for choice may benefit from potentially autonomy-enhancing conditions and experiences (Schüler, Sheldon, Prentice, & Halusic, 2016; Schultheiss, 2008). The more extreme interpretation of this perspective would even suggest that benefits of perceived choice in terms of autonomy need satisfaction and well-being are confined to those attaching importance to choice, while not surfacing for those who devalue choice. However, from the perspective of SDT, such individual differences in the valuation of choice would have no or only a minimal moderating role, as autonomy is seen as a universal nutriment for people's quality of life, with perceived afforded choice nurturing its satisfaction (Deci & Ryan, 2000). Thus, on the basis of SDT everyone is expected to benefit from perceived choice. Still, SDT does recognize that people may differ somewhat in the degree to which they reap the benefits of the provision of choice (Soenens, Vansteenkiste, & Van Petegem, 2015). In statistical terms, this means that, although the strength of the association between perceived afforded choice and the outcomes may differ between people depending on their valuation of choice (resulting in an ordinal interaction), it is unlikely that the association would be absent among people who devalue choice, let alone that it would be reversed among these people (resulting in a disordinal interaction). Although no previous study has examined the possible moderating role of choice valuation in the relation between perceived choice and autonomy satisfaction,

available studies on the moderating role of autonomy valuation have found mixed results (Chen et al., 2015; Schüler et al., 2016).

Second, to gain insight into the types of afforded choice that relate to autonomy and well-being, we also examined--in a more explorative way--whether the benefits of perceived afforded choice would depend upon the type of activity the choice related to. In doing so we differentiated between four general domains of prison life, that is, choice with respect to the execution of daytime activities (e.g., how to spend leisure time), social interaction (e.g., when to make phone calls), physical needs (e.g., when to shower), and religion (e.g., whether or not to take part in religious activities). By examining associations of contextual provision of choice with autonomy satisfaction and well-being within each of these four domains, we aimed to gain knowledge about which type of choice is most essential to prisoners' adjustment. This knowledge has important practical relevance because it may inform policy and structural measures attempting to increase prisoners' well-being through the provision of particular types of choice.

The Present Study

Although afforded choice and autonomy are unavoidably restricted in a prison environment, we argue that perceived possibilities for choice and experiences of autonomy are important for individuals' well-being even within this context. The overall goal of the present study was to investigate whether perceived afforded choice and autonomy satisfaction are related positively to prisoners' quality of life and to address the role of valuation of choice herein (see Figure 1). Specifically, using a sample of Belgian prisoners, we investigated three theory-driven hypotheses and one exploratory research question. First, on the basis of SDT, we expected that autonomy satisfaction would be positively related to quality of life (Hypothesis 1). Second, we expected that perceived afforded choice would be positively related to quality of life through heightened levels of autonomy satisfaction (i.e., mediation; Hypothesis 2; see Figure 1). Third, based on SDT we expected that the relation between perceived afforded choice and both autonomy and quality of life would be positive, regardless of whether prisoners valued choice or not (Hypothesis 3). Finally, in an explorative way, we aimed to examine whether perceived afforded choice in some domains would be related more strongly to autonomy satisfaction and quality of life than in others.

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Figure 1. The hypothesized model based on self-determination theory.

Method

Participants

Demographic and imprisonment characteristics for our sample are presented in Table 1. For descriptive and comparative purposes, information regarding these same characteristics for the general population of Belgian prisoners is also displayed. The study sample ($N = 156$) consisted of mostly males and Belgian nationals. A minority was currently married, while most had at least one child. Further, the highest educational qualification achieved by most participants was lower secondary education or less. With regard to participants' sentencing status, most were convicted, with an average sentence length of nearly 7 years. Prisoners reported the following reasons for their imprisonment: 32.1% crimes of violence, 18.6% drug-related crimes, 9.6% crimes of property, 15.4% other type of crimes (e.g., distribution of child pornography), and 22.4% of the prisoners were detained because of multiple crimes (for three participants this information was missing). The relatively long average sentence length and high frequency of serious crimes in the current sample likely reflects the tendency in Belgian sentencing policy to assign individuals sentenced to three years or less, to electronic monitoring instead of detention in prison (Elektronische toezicht als, 2016).

TABLE 1

COMPARISON OF CHARACTERISTICS BETWEEN STUDY SAMPLE AND THE GENERAL PRISON POPULATION

CHARACTERISTICS	STUDY SAMPLE	GENERAL PRISON POPULATION
Male gender	88.5%	95.6% ^a
Age	$M_{\text{age}} (SD_{\text{age}}) = 38.60 (11.68)$	52% between 21 and 35 years ^b
Belgian nationality	86.0%	55.0% ^a
Married	9.0%	19.3% ^c
At least one child	59.9%	49.0% ^c
Highest educational qualification: Lower secondary education	52.6%	53.1% ^c
Sentence status		
Convicted	65.0%	58.5% ^a
Accused	26.1%	31.7% ^a
Interned ^d	8.3%	8.2% ^a
Sentence length ≥5 yrs (convicted prisoners only)	52.6%	53.0% ^c
Previously incarcerated	42.0%	55.4% ^e

Footnotes

- ^a Justice Federal Public Services (2015).
- ^b Van Malderen, Pauwels, Walthoff-Borm, Glibert, and Todts (2011).
- ^c Maes (2016).

- d Internment is the imprisonment of mentally ill offenders who are regarded not to be responsible for their crime due to a psychiatric disorder. Through incarceration, internment is intended to prevent further harm both to the interned and to society (see also Vandeveldde, Soyez, Vander Beken, De Smet, Boers, & Broekaert, 2011 for an overview of internment in Belgium).
- e Vanhaegendoren, Lenaers, and Valgaeren (2001).

Procedure

The study was conducted between December 2014 and March 2016 in seven prisons within Flanders (the Dutch-speaking part of Belgium). Once approval for this study was obtained from the Federal Public Service of Justice and the ethical committee of Ghent University (no. 2014/38), we contacted and informed the directorial board of each prison concerning the study objectives and methodology. Subsequent practical arrangements were discussed and made with each of the prison's internal contact person. All prisoners were informed about the study through a flyer describing the main goal of the study (gaining insight in prisoners' well-being) and the procedure. On this flyer, prisoners could indicate whether and when they wanted to participate. Flyers were distributed and collected via the prison's internal mailing system. Based on this information, a schedule was made for the individual testing of each prisoner who wanted to participate in this study. Subsequently, participants who were willing to participate but who were deemed to be too dangerous by the directorial board, who had a sanction (e.g., solitary confinement) at the time of the assessment, or had insufficient Dutch language skills, were excluded from participation. Although prisoners' names were gathered during recruitment, these were discarded and not collected as part of the subsequent enrollment process.

The questionnaires were first pilot-tested among two prisoners to ensure that all items were clear and understandable. Based on this pilot test, we made a few minor changes to some of the items (e.g., prisoners preferred a Likert scale instead of a Visual Analogue Scale). All questionnaires were filled out individually in a private room within the prison, under the supervision of the second author. Participants first received an information letter concerning the study aims and procedure, which were, subsequently, also explained orally. Participants were informed that participation was ***571** completely voluntary and that they could cease their participation at any moment. Participants did not receive any financial compensation. Participants then filled out an informed consent. This was followed by a paper-and-pencil administration of the questionnaires during which time the participant was welcome to ask questions. As seven participants experienced difficulties in reading the questionnaires, these were read aloud to them. After completing the questionnaire, participants received a debriefing (both orally and in writing) in which the study aims were explained in more detail.

Measures

Background variables. We assessed several background variables including age, gender, nationality, education, marital status, and parental status (i.e., having a child or not). In addition, a number of variables related to the prison regime and participants' incarceration history were coded including the prison (one of the seven prisons), sentencing status (i.e., accused, convicted, interned), prison regime (i.e., open, half open, closed), time spent in prison, sentence length (for those who were convicted), previous imprisonment, and reason for current imprisonment. Reason for imprisonment was reported by the prisoners and was later coded based on a subscale of the European Addiction Severity Index-Treatment Demand Indicator (EuropASI-TDI; Kokkevi et al., 1993; McLellan, Luborsky, Woody, & O'Brien, 1980), a standardized screening measurement mainly used in individuals with substance-use related problems.

Perceived afforded choice. The degree to which participants experienced afforded choice was assessed in eight domains, categorized into four general types: (a) daytime activities (domains: leisure activities, work, education); (b) social networking (domains: receiving visits, making phone calls); (c) physical needs (domains: eating; taking a shower); and (d) religious beliefs (domain: religion/spirituality). These domains were chosen based on consultation with one of the prisons'

Psychosocial Service units (responsible for the evaluation of prisoners' possibilities for social reintegration and risk of recidivism; Snacken, Beyens, & Beernaert, 2010) and based on previous empirical studies showing the importance of daytime activities (e.g., Tuastad & O'Grady, 2013), social networking (e.g., Cochran, 2014), physical needs (Vanhouche, 2015), and religious beliefs (e.g., Maitland & Sluder, 1996) for prisoners' well-being. Within each of the aforementioned domains, two questions were asked pertaining to the degree of choice (e.g., leisure domain: "I experience a sense of choice concerning whether or not I am allowed to participate in a leisure activity (for example, sports)"). Items were rated on a 5-point Likert scale ranging from 1 (*no choice*) to 5 (*a lot of choice*). In addition to the domain-specific afforded choice scores, we also averaged participants' responses across the eight domains to produce an overall choice score.

Choice valuation. The degree to which participants valued choice was assessed for each of the eight domains outlined above (e.g., leisure domain: "I find it important to have choice in the domain of leisure activities (for example, sports)"). Items were rated on a 5-point Likert scale ranging from 1 (*not at all important*) to 5 (*very important*) and were summed to create an average score of choice valuation across the eight domains.

Autonomy satisfaction. We employed the autonomy subscale of the Basic Psychological Need Satisfaction and Need Frustration scale (BPNSNF; Chen et al., 2015) to assess participants' generally experienced level of autonomy satisfaction (four items; e.g., "I experience a sense of freedom in the things I do") as well as frustration (four items; e.g., "I feel forced to do many things that I actually do not want to do"). To ensure that the items would be understandable for all participants we used a simplified version (Van der Kaap-Deeder et al., 2015). Items were rated on a 5-point Likert scale ranging from 1 (*not at all true*) to 5 (*completely true*). We reverse scored the four items assessing autonomy frustration and averaged these with the four items assessing autonomy satisfaction to obtain an aggregate score of autonomy satisfaction versus frustration, as has been done in previous research (e.g., Baard, Deci, & Ryan, 2004). For ease of presentation, we will refer to this score as a score for autonomy satisfaction.

Quality of life. The EUROHIS-QOL eight-item index (European Health Interview Survey-Quality of Life; Schmidt, Mühlan, & Power, 2006), a short measure derived from the World Health Organization-Quality of Life measures (i.e., WHOQOL-100 and the WHOQOL-BREF), was used to assess participants' quality of life, as has been done in a number of previous studies among prisoners (e.g., Zwemstra, Masthoff, Trompenaars, & De Vries, 2009). This scale represents quality of life in the psychological, physical, social and environmental domain. An example item is: "How would you rate your quality of life?" Items were rated on a 5-point Likert scale ranging from 1 (*very bad/very unsatisfied/not at all*) to 5 (*very good/very satisfied/completely*). Scores across the eight items were summed to create a general index of quality of life.

*572 Results

Descriptive Statistics and Preliminary Analyses

Basic descriptive and bivariate analyses were first carried out to get a sense of the frequencies and simple associations between the key variables of interest for the study. As displayed in Table 2, prisoners in general experienced moderate levels of perceived afforded choice, autonomy satisfaction and quality of life, whereas they greatly valued choice. With regard to correlations between variables, perceived afforded choice was positively related to autonomy satisfaction and quality of life, with the latter two also being positively interrelated. The valuation of choice, on the other hand, was unrelated to perceived afforded choice, autonomy satisfaction, and quality of life.

TABLE 2

DESCRIPTIVES OF AND BIVARIATE PEARSON CORRELATIONS BETWEEN THE STUDY VARIABLES

VARIABLES	M (SD)	1	2	3	4
1. Perceived afforded choice	3.14 (.79)	.89			
2. Choice valuation	4.36 (.53)	.12	.70		
3. Autonomy satisfaction	3.10 (.87)	.24 ^{aa1}	.03	.86	
4. Quality of life	3.26 (.71)	.31 ^{aaa1}	.04	.31 ^{aaa1}	.79

Note. Chronbach's alpha internal consistencies for each scale are displayed on the diagonal.

Footnotes

aa1 $p < .01$.

aaa1 $p < .001$.

With respect to the background variables, results of an ANOVA indicated significant differences in perceived afforded choice, $F(6, 149) = 3.80, p = .002, \eta^2 = .13$, between the prisons. There were also significant differences in perceived afforded choice depending on sentencing status, $F(2, 152) = 7.03, p = .001, \eta^2 = .09$. Post hoc comparisons using the Tukey's HSD test indicated that accused prisoners ($M = 2.76, SD = .66$) experienced significantly less choice than convicted ($M = 3.26, SD = .76$) prisoners (mean difference = $-0.51 (SE = .14), p = .001, 95\% CI [-.839, -.180]$, Hedges' $g = .69$). Additionally, interned prisoners ($M = 3.30, SD = .92$) did not differ with respect to choice from the accused (mean difference = $-0.54 (SE = .24), p = .07, 95\% CI [-1.107, .026]$, Hedges' $g = .74$) or the convicted (mean difference = $-0.03 (SE = .22), p = .99, 95\% CI [-.556, .493]$, Hedges' $g = .04$) prisoners. Further, there were differences with respect to prison regime, $F(2, 153) = 7.10, p = .001, \eta^2 = .09$, with prisoners in an open regime ($M = 3.51, SD = .84$) reporting significantly more afforded choice than those in a closed regime ($M = 2.94, SD = .75$; mean difference = $.57 (SE = .16), p = .001, 95\% CI [.201, .935]$, Hedges' $g = .73$), while prisoners in the half open regime ($M = 3.23, SD = .71$) did not significantly differ from prisoners either the open (mean difference = $.28 (SE = .17), p = .26, 95\% CI [-.138, .689]$, Hedges' $g = .36$) or the closed regime (mean difference = $.29 (SE = .14), p = .11, 95\% CI [-.050, .634]$, Hedges' $g = .40$). There were no further significant

relations between the background and the main study variables. As there were no significant relationships between the background variables and the moderating (choice valuation), mediating (autonomy satisfaction), or dependent (quality of life) measures, we did not control for these variables in our main models.

Primary Analyses

The main hypotheses were examined with three structural path models (see also Figure 1) using Mplus 7 (Muthén & Muthén, 1998-2012) with maximum-likelihood as an estimator (i.e., a method of parameter estimation which aims to find the most likely function that explains the observed data). Only 0.17% of the data was missing. Little's (1988) MCAR test indicated that these missing data were missing completely at random, $\chi^2(5) = 6.76, p = .24$. The use of the full information maximum likelihood (FIML) procedure was therefore appropriate to estimate missing data (Schafer & Graham, 2002). As the estimated models were fully saturated (i.e., contained exactly as many parameters as (co)variances in the raw data), all models had a perfect fit, $\chi^2(0) = 0.00$.

Hypothesis 1 and 2: The relation between perceived afforded choice, autonomy satisfaction, and quality of life. In a first structural model, we investigated the relation between autonomy satisfaction and quality of life (cf. Hypothesis 1). Autonomy satisfaction was positively related with quality of life ($\beta = .31, p = .00, 95\% \text{ CI } [.169, .454]$). In the second structural model, we built upon the first model by adding perceived afforded choice as a predictor of both autonomy satisfaction and quality of life (cf. Hypothesis 2). As displayed in Figure 2, perceived afforded choice was positively related with both autonomy satisfaction ($95\% \text{ CI } [.098, .376]$) and quality of life ($95\% \text{ CI } [.079, .413]$). Similar to the first model, autonomy satisfaction related positively to quality of life ($95\% \text{ CI } [.103, .404]$). To test the significance of the indirect effect from perceived afforded choice to quality of life via autonomy satisfaction, we used bootstrapping (using 1,000 draws), a nonparametric resampling procedure that is currently recommended as it has a high power while maintaining reasonable control over the Type I error rate (Preacher & Hayes, 2008). This effect was found to be significant ($95\% \text{ CI } [.012, .108], \beta = .06, p = .02$). Thus, quality of life was both directly and indirectly (via autonomy satisfaction) predicted by perceived afforded choice.

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Figure 2. Structural model depicting the relation between perceived afforded choice, autonomy satisfaction, and quality of life. * $p < .05$. ** $p < .01$.

Hypothesis 3: The moderating role of choice valuation. In a third structural model, we examined whether the valuation of choice moderated the relation between perceived afforded choice and autonomy satisfaction (cf. Hypothesis 3). Building upon the second model, we added the choice valuation and its interaction with perceived choice as predictors of autonomy satisfaction, which were both found to be nonsignificant ($\beta = -.01, p = .89, 95\% \text{ CI } [-.181, .157]$ and $\beta = -.04, p = .62, 95\% \text{ CI } [-.191, .111]$, respectively). Similarly, to investigate whether choice valuation moderated the relation between perceived afforded choice and quality of life, we added choice valuation and its interaction with perceived afforded choice to the second model. Both paths were nonsignificant ($\beta = -.02, p = .81, 95\% \text{ CI } [-.179, .141]$ and $\beta = -.07, p = .47, 95\% \text{ CI } [-.256, .118]$, respectively). In both of these models, the remaining paths were similar to the second structural model.

Exploratory Research Question 1: Examining domain-specific afforded choice. To gain further insight into the role of perceived afforded choice in the prediction of autonomy satisfaction and quality of life at the domain level, we broke the composite score of perceived afforded choice down into eight domains. Next, we employed bivariate correlations between perceived choice for each of the eight domains and these two outcome variables (Exploratory Research Question 1). As displayed in Table 3, especially *573 perceived choice with regard to daytime activities (i.e., leisure activities, work, and education) related to higher levels of autonomy satisfaction and quality of life, whereas perceived choice in the domain of religion or spirituality related the least strongly to these outcomes. Perceived choice in the domain of social networking and physical needs related mostly to quality of life and to a lesser degree to autonomy satisfaction.

TABLE 3

DESCRIPTIVES OF PERCEIVED AFFORDED CHOICE PER DOMAIN AND BIVARIATE PEARSON CORRELATIONS WITH AUTONOMY SATISFACTION AND QUALITY OF LIFE

PERCEIVED AFFORDED CHOICE PER DOMAIN	<i>M (SD)</i>	AUTONOMY SATISFACTION	QUALITY OF LIFE
DAYTIME ACTIVITIES			
1. Leisure activities	2.83 (1.11)	.16 ^{a1}	.35 ^{aaa1}
2. Work	2.99 (1.17)	.24 ^{aa1}	.33 ^{aaa1}
3. Education	3.19 (1.01)	.22 ^{aa1}	.15 ^{d1}
SOCIAL NETWORKING			
4. Visits	3.05 (1.15)	.20 ^{a1}	.22 ^{aa1}
5. Phone calls	3.37 (1.05)	.10	.20 ^{a1}

PHYSICAL NEEDS			
6. Eating	3.40 (1.17)	.08	.15 ^{d1}
7. Shower	3.05 (1.29)	.16 ^{a1}	.24 ^{aa1}
RELIGIOUS BELIEFS			
8. Religion/spirituality	3.17 (1.09)	.15 ^{d1}	.04

Footnotes

d1 $p < .10$.a1 $p < .05$.aa1 $p < .01$.aaa1 $p < .001$.**Discussion**

According to the well-researched self-determination theory (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013), satisfaction of the need for autonomy, which can be fostered through autonomy-supportive contexts, is deemed essential for individuals' wellbeing. Although many studies have indicated the beneficial effects of autonomy satisfaction (e.g., Chen et al., 2015) and of the perceived provision of choice (as a way of supporting the need for autonomy; e.g., Quine et al., 2007) in nonprison contexts, no study to date has directly examined these constructs and their relation with quality of life among prisoners. As prisoners have been found to experience relatively low levels of well-being and high levels of psychopathology (Boothby & Durham, 1999; Green et al., 2005), identifying factors that may act to promote psychological health in this population is crucial. The aim of this study was to investigate the relations between Belgian prisoners' perceived choice provision, their quality of life, and the possible mediating role of autonomy satisfaction. A number of conclusions can be drawn from our findings.

First, in line with previous studies showing the beneficial effects of choice for individuals' well-being in other settings (Quine et al., 2007), and consistent with our first two hypotheses, we found that perceiving that one can make decisions in the prison context related positively to quality of life, an association which was partly explained by higher levels of autonomy satisfaction. As autonomy satisfaction was only found to be a partial mediator of the relation between perceived afforded choice and quality of life, future studies could examine other possible SDT-mediators such as competence and relatedness. Indeed, previous studies found that perceived choice related positively to competence (Patall

et al., 2008), presumably because the offer of choice by socializing agents may signal the fact that one has confidence in the chooser to competently carry out activities or fulfill certain responsibilities.

Second, in relation to our third hypothesis, we found that the beneficial effects of perceived afforded choice were independent of the value attached to choice. This finding indicates that perception of afforded choice is conducive to individuals' autonomy and quality of life, even among individuals who indicate not valuing or even devaluing the importance of making independent choices. Such a finding is congruent with the SDT-based universalistic assumption that *perceived* contextual autonomy support (with offered choice being one of its markers) and the experience of autonomy satisfaction is beneficial to all of us (Deci & Ryan, 2000; Soenens et al., 2015). Specifically, our result is consistent with Chen's et al. (2015) findings which showed that individuals from four culturally diverse countries (i.e., Belgium, China, Peru, and U.S.) benefited from autonomy satisfaction, independent of the desire for and importance attached to the need for autonomy.

Third, perceived afforded choice was found to be most crucial in the domain of daytime activities (i.e., leisure activities, work, and education), which was related to greater autonomy satisfaction and a higher quality of life compared with choice in other domains. Presumably, these greater benefits are due to the fact that prisoners spend a substantial part of their time on these daytime activities (compared with the time spent in the other assessed domains) and, hence, being capable to make choices in these daily activities may play a more profound role in their overall well-being. In contrast to the importance of choice regarding daytime activities, perceived afforded choice in the domain of religion related the least strongly to our outcomes. This may be because other factors, such as an individual's dedication to religion, also likely influence the degree to which choice with respect to religious activities is beneficial. Finally, perceived afforded choice in the domains of social networking and physical needs related mostly to quality of life but little with autonomy satisfaction. Perhaps choice in these domains is more relevant for the other two psychological needs proposed within SDT (i.e., relatedness and competence). Being allowed to have some choice over the length or the frequency of visits may, for instance, be especially beneficial for satisfying the need for relatedness, as it allows one to connect more strongly to other individuals.

Taken together, the current findings address the generalizability of the benefits of perceived afforded choice across prisoners' *574 valuation of choice and the domain in which they are offered choice. While the benefits of afforded choice were found to be independent of individuals' choice valuation, afforded choice yielded more pronounced autonomy and well-being benefits in some domains compared to others. At first sight, this can be considered as conflicting evidence for the claimed generalizability of choice. Yet, we do not think the current findings are in contrast with one another. Although domain-specific choice did not relate positively to general autonomy and general well-being across all domains, it is possible that each of the domain-specific experience of afforded choice may be conducive to domain-specific autonomy and well-being, an issue we could not sort out in the present study due to the lack of domain-specific indicators of autonomy and well-being.

Two other findings deserve mention. First, in line with previous studies (e.g., Green et al., 2005; Windzio, 2006), we found that prisoners experienced only moderate levels of perceived afforded choice, autonomy satisfaction, and quality of life, whereas almost all prisoners expressed a moderate to high valuation of choice. Such high valuation of choice might have its origins in autonomy frustration, as such frustration has been found to stimulate desire for this specific need (Sheldon & Gunz, 2009). Either way, the fact that prisoners placed such high value on the right to choose indicates that this may be an important factor to take into account in prison programming.

Second, we found some interesting results with respect to our background variables. Within the broader literature on factors influencing prisoners' adaptation to and well-being in prison, a distinction is often made between deprivation factors (i.e., factors that are characteristic of current prison life, such as prison regime or number of prisoners per prison cell; Sykes, 1958; Sykes & Messinger, 1960) and importation factors (i.e., factors related to prisoners' experiences before their imprisonment and prisoners' unique personal characteristics such as age and gender; Irwin & Cressey,

1962). Although we mainly focused on a deprivation factor (i.e., perceived afforded choice), we also examined relations between numerous background variables (mostly importation factors) and prisoners' level of perceived afforded choice and psychological functioning. Not surprisingly, we found that accused (vs. convicted) prisoners and prisoners serving in a closed (vs. open) regime experienced the least sense of choice. We also found significant differences between prisons in the perceived level of choice, which may reflect key institutional differences between them (e.g., the density of prisoners). These observed variations suggest that while some structural and institutional factors appear to hinder perceived choice, modification of these factors may also have the potential to improve prisoner quality of life.

Limitations and Future Studies

As the first study to empirically investigate perceived afforded choice and autonomy satisfaction in prisoners, we believe that this study provides important new insights regarding factors that contribute to promoting prisoner quality of life. However, future research would benefit from addressing some of the limitations of the current study. First, our sample was rather selective and homogenous as it consisted of relatively old prisoners (compared with the general Belgian prison population; Van Malderen et al., 2011; see Table 1), all of whom were Dutch-speaking. Moreover, as noted above, prisoners who were deemed to be too dangerous or who had a sanction were excluded from the present study, although these individuals might be especially vulnerable to a lack of perceived afforded choice and autonomy. Future studies with more heterogeneous samples are needed to explore the generalizability of the current findings. Such studies could also include more interned prisoners (who represented only a small portion of our sample), to shed light on this particularly vulnerable population within Belgian prisons (see also Vandeveldt et al., 2011). Not only has the use of exclusion criteria (e.g., mastering the Dutch language) introduced a selection bias but also factors like prisoners' willingness to volunteer may further led to a homogeneous and self-selective sample, the findings of which are not necessarily generalizable to nonparticipating prisoners.

Another limitation of the current study was its exclusive focus on global quality of life as an indicator of well-being. Future research could usefully incorporate additional indicators of personal well-being, like life satisfaction and depressive symptoms, as well as more prison-specific measures of quality of life (e.g., Liebling's Measuring the Quality of Prison Life scale). Future investigation of interpersonal well-being would also be relevant, as choice (Langer & Rodin, 1976) and autonomy (Costa, Ntoumanis, & Bartholomew, 2015) have also previously been shown to be beneficial for social relationships. Additional research exploring choice domains other than those investigated here (e.g., interpersonal contact within prison) would also help to further clarify the relations between perceived afforded choice, autonomy satisfaction, and well-being identified in this study.

Another avenue for future research would be to carry out more fine-grained tests of the choice hypothesis. For example, previous studies in noncriminal justice contexts have pointed to the importance of providing choice in a need-supportive way (Moller, Deci, & Ryan, 2006; see Katz & Assor, 2007, for an overview) and the need to adapt the complexity of choices to the cognitive capabilities of individuals (e.g., Iyengar & Lepper, 2000). Choices that are communicated in a controlling way (e.g., pressuring the individual to choose a specific alternative), may, in fact, do more harm than good (Patall et al., 2008). Exploring this possibility in the prison context, could provide important insights of value not only for the penal policy, but also for theoretical work on SDT, perceived afforded choice and autonomy satisfaction.

Exploring cross-cultural variations in choice and autonomy satisfaction across different penal systems might also be valuable (see van Mastrigt, 2015, for a recent discussion of SDT and the notion of Scandinavian exceptionalism), as would examinations of the relationships between perceived procedural justice, autonomy satisfaction, and afforded choice.

Finally, future research exploring contextual influences on autonomy satisfaction should also go beyond an examination of afforded choice, as the offer of choice represents just one pathway for prisoners to experience greater volition in detention. For example, Van der Laan and Eichelsheim (2013) showed in a sample of detained juvenile offenders that

positive interactions with peers and staff, the perception of clear and fair rules, and a high quality of daily activities related to higher levels of autonomy (conceptualized as the perceived possibility to regulate own behavior and to complain about rules). This study and others (see, for instance, Crewe et al., 2011) suggest that several features of the context are important for individuals' autonomy and that more insight is needed into the unique role and interplay between different features of an autonomy-supportive prison climate.

Theoretical and Practical Implications for Quality of Life and Prisoner Rehabilitation

Although this study was mainly based on a SDT framework, the current findings also accord well with both the General Personality and Cognitive Social Learning perspective (GPCSL)/Risk Needs Responsivity Model (RNR; Andrews & Bonta, 2010) and the Good Lives Model for Offender Rehabilitation (GLM; Ward & Stewart, 2003).

The GPCSL, developed by Andrews and Bonta (2010), states that the causes of criminal behavior are to be found both within the individual (e.g., substance abuse) as well as in his or her social learning environment (e.g., antisocial associates). The GPCSL underpins the well-known risk (i.e., matching the treatment intensity to the offender's risk level), need (i.e., assessing and targeting the offender's criminogenic needs), and responsivity (i.e., aligning the treatment to the offender's personal needs)--principles of effective treatment (Andrews & Bonta, 2010). Especially this last principle, seems relevant for the current study. Besides more general cognitive social learning strategies that can be applied to all types of offenders, the responsivity-principle also refers to the importance of tailoring treatment to the unique characteristics of the offender (e.g., motivation and personal strengths). Such a matching between prisoners' characteristics and the treatment may be facilitated by the provision of choice, as this allows prisoners to choose what fits best with their capabilities, interests, and goals. Therefore, choice can be considered as a concrete strategy to operationalize the responsivity-principle. Indeed, based on the work of Schunk and Usher (2012), Decoene (2016) highlights the importance of agency (including the ability to base actions on personal values), which is likely to be an outcome of choice, for the RNR Model.

A second rehabilitative perspective that could be related to satisfaction of the need for autonomy is the good lives model (Ward & Brown, 2004). Whereas the RNR model is focused primarily on identifying and responding to criminologic risk/need, the GLM is a strengths-based rehabilitation model that focuses on both risk/recidivism reduction as well as meeting more general human needs and supporting offenders to live a "good life" (Ward & Brown, 2004). In the GLM, human needs and the "drive" for the acquisition of primary goods that stem from it (e.g., relatedness, inner peace, excellence in work, and creativity, among other) are seen as fundamental, underscoring its natural fit with SDT (Ward & Brown, 2004). Purvis, Ward, and Willis (2011, p. 14) describe the objective of the GLM as "the promotion of primary goods, or human needs that, once met, enhance psychological well-being." Two objectives that at first sight do not seem to be compatible are integratively tackled: crime reduction/protection of society as well as the promotion of the offender's quality of life/well-being (Ward, Gannon, & Fortune, 2015). Respect for the offender's autonomy and the other basic needs set forth in the SDT are likely to be quintessential in order to serve this dual goal. Although we are not aware of any empirical studies that have drawn explicit links between SDT and RNR/GPCSL or GLM perspectives, attempts to do so in future research would likely be of benefit to all of these theories.

In addition to being of theoretical relevance for various models of offender rehabilitation, our findings also have several important practical implications for promoting prisoner quality of life. In Flanders (Belgium), there is a "Decree on the organization of care and services for prisoners" that states that in each prison, high-quality programs must be offered concerning culture, education, health, sports, vocational training, and well-being (Flemish Government, 2013). As our results show that all prisoners benefitted from perceived afforded choice, regardless of their personal preference for choice, prison policies that enhance the provision of choice among such programs, particularly for daytime activities, may be useful in promoting prisoner quality of life. Apart from being able to choose what to do (within reasonable limits), prisoners could also be offered more choice in the scheduling of their activities, which may possibly also lead to increased participation rates.

Conclusion

This study showed that the perceived affordance of choice (especially in the domain of daytime activities) related to higher levels of quality of life among prisoners, partly via elevated levels of autonomy satisfaction. These results were observed independent of prisoners' valuation of autonomy. These findings point to the universal importance of supporting the need for autonomy among prisoners.

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