

## Social factors boost wellbeing behind bars: the importance of individual and group ties for prisoner well-being

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Social factors boost wellbeing behind bars

**Social factors boost wellbeing behind bars: the importance of individual and group ties for prisoner wellbeing**

**Authors information:**

Kyprianides, A. University of Sussex (corresponding author)

Pevensey 1, 2C1  
School of Psychology  
University of Sussex  
Brighton, BN1 9RH  
United Kingdom  
Tel: 00447825108056  
Email: sk341@sussex.ac.uk

Easterbrook, M. J. University of Sussex

Pevensey 2, 3B4  
School of Psychology  
University of Sussex  
Brighton, BN1 9RH  
United Kingdom

### Abstract

**Background:** Prisoners often suffer from social isolation and higher levels of ill-health and ill-being. Research has demonstrated the positive health consequences that stem from social interaction, and especially *group* ties, amongst non-offender populations.

**Methods:** This work is based on a secondary analysis of a large-scale dataset that includes data on prisoners residing in all prison establishments in the UK (Study 1: N = 11,880; prisons = 113), and on a questionnaire booklet that was completed by prisoners residing in one prison in the UK (Study 2: N = 157).

**Results:** Study 1 showed that positive prisoner interactions are associated with greater prisoner wellbeing, due to the feelings of autonomy that these interactions provide. Study 2 showed that prisoners who reported being members of multiple groups had higher wellbeing, an effect mediated by the satisfaction of particular psychological needs; and an effect moderated by group contact discrepancy.

**Conclusions:** This work provides evidence that strong prisoner ties and memberships in groups are associated with greater wellbeing among prisoners, and identifies psychological needs and group contact as explanatory mechanisms; which progresses the field and has important policy and practical implications.

**Key words.** social interaction; multiple group membership; psychological needs; social contact; wellbeing; prisoners.

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## Introduction

### Health and wellbeing in UK prisons

There are currently 84,255 people incarcerated in the UK alone (Official Statistics, 2018). Prisoners have complex health and wellbeing issues, including higher rates of physical and mental health needs, drug/alcohol dependence, poorer access to health services, as well as backgrounds of poverty, unemployment, poor education and homelessness (NAO, 2017). Prisoners' mental health is further exacerbated by social isolation and prisoners suffer as a result of minimal social contacts and supports (NAO, 2017).

We therefore need to better understand what factors are capable of promoting the wellbeing of prisoners, and the processes through which these factors affect prisoner wellbeing. Wellbeing is a broad construct that has been defined in emotional, mental and physical terms (Diener, Lucas, & Oishi, 2002), and social connectedness may well be an important factor strongly affecting prisoners' wellbeing especially because prisoners are at high risk of social isolation – from each other and society in general (Nurse, Woodcock & Ormsby, 2003). Social connectedness, stemming from both close relationships (Slatcher & Selcuck, 2017; Holt-Lunstad, Smith, & Layton, 2010) and social groups (Jetten et al., 2017; Greenaway et al., 2016; Cruwys et al., 2014; Gleibs et al., 2011), has been found to be a powerful predictor of people's physical and mental health. This paper thus considers the role of social ties in promoting the health and wellbeing of prisoners: in study 1 we investigate the association between *prisoner-to-prisoner relations* and wellbeing, and in study 2 we investigate the relationship between *multiple group memberships* (inside and outside prison) and wellbeing.

### The social cure – is this the case for prisoners?

An emerging body of research has found that belonging to (many) social groups, particularly subjectively important groups that people identify with (i.e. groups that become a significant part of a person's self-concept that therefore are able to link people with others), enhances adjustment, coping, and well-being, especially for individuals dealing with illnesses, injuries, traumas, and/or stressors. The benefits of group memberships—dubbed the “Social Cure”—are well established (Jetten et al.,

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2017): people who belong to lots of groups – at home, work, the gym - are happier (Greenaway et al., 2016), healthier (Cruwys et al., 2014), and more resilient (Gleibs et al., 2011) than people with few group memberships. Yet no research has investigated its applicability to prisoners, despite the promise of the approach among vulnerable populations.

We know from existing research findings that the beneficial consequences of groups are especially strong for those who are stigmatized or suffering, such as people suffering depression (Cruwys et al., 2014), the elderly (Gleibs et al., 2011), and the homeless (Johnstone et al., 2016), who, like prisoners, are at high risk of social isolation. This work demonstrates that groups can be formed even within the most vulnerable populations, and that they have beneficial consequences for well-being and adjustment. Study 2 thus questions whether the social cure properties of groups are present in prisoners' groups.

### **Prison social life in the UK**

Prison establishments and conditions differ internationally, and prisoners experience a country-and cultural-specific social life in prison (see Jacobson, Heard & Fair, 2017). We know little about prison social life in the UK, compared to the US evidence base that is far more developed (see e.g. Adams, 1992). It is therefore important to note that this research speaks to *prisoners residing in UK prisons*.

Sociological research on men's social relationships in UK prisons (e.g. Liebling & Arnold, 2012; Crewe, 2012) has revealed a detailed, critical, and complex view of prisoner relationships. Although it is clear that prison social life is complex, with some negative aspects to it such as bullying and coercion, research (Setty, Sturrock & Simes, 2014; Harvey, 2007; Crewe, 2012; Earle & Phillips, 2015) points to the importance of interpersonal ties – inside and outside the prison – in maintaining prisoners' well-being by facilitating survival and adaptation to life inside.

Work by Harvey (2007) that explores the nature of support in prison found that cell mate relationships had the potential to offer a unique supportive role, and that the more interaction and support prisoners received from the outside, the more capable they felt to utilise supportive relations on the inside. In both cases, these supportive social relationships benefitted prisoners' well-being. Like

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Harvey , Crewe (2012) found that, although prisoner relationships were not *always* unequivocally supportive or beneficial, due to a wide range of factors (e.g. power differentials), social relationships within the prison - friendships, interpersonal loyalties and affiliations, and social groups (formed around factors such as locality, religion, age, lifestyle, and criminal identity) – generally provided prisoners with material, social, and physical support. Prisoners’ accounts in Earle and Phillips’ (2015) ethnographic study of social relations in two male prisons also revealed that support and collective security is sourced through local affiliations with fellow prisoners.

The sociology of prison social life has clear links to the psychological literature on the benefits of social groups. For example, Setty and colleagues’ (2014) account of prisoner groups showed that ‘collectives’ in prison appear to be forming in response to the prison environment, and have meaning, serve purposes, and are thus beneficial for those involved. In addition, Setty and colleagues’ (2014), Harvey’s (2007) and Crewe’s (2012) accounts imply, like social cure theorists argue (e.g. Jetten et al., 2017), that social groups enhance wellbeing because they provide their members with the psychological resources that are required for well-being (in these accounts, support – an established mediator of the social cure effect (Haslam, Reicher & Levine 2012)). However, the reviewed research is limited and primarily qualitative, heavily relying on interview methods. This is a limitation because qualitative research may include biases and does not lend itself to generalization (Creswell, 2013). We address this gap in Studies 1 and 2 by quantitatively investigating whether social connectedness in prison is positively associated with wellbeing.

### **Psychological resources as a mediator**

Although past research suggests that there will be a positive association between prisoners’ social ties – prisoner relations and membership in lots of groups – and wellbeing, it is less apparent what factors may explain this association, beyond offering prisoners a pool of social support. We therefore also examine *why* social relationships and groups might be beneficial for prisoners, considering the mediating role of the psychological needs of connectedness, self-worth, and autonomy in explaining the beneficial effects of prisoners’ social ties on their wellbeing.

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Research on the deprivation of autonomy amongst prisoners dates back to Sykes' (1958; 2007) now-classic ethnographic account of the 'pains of imprisonment', that describes the negative impact a lack of autonomy has on prisoner wellbeing. Prisoners, Sykes (1958; 2007) argues, have no independence, are denied self-determination, have very few choices; and are constantly being controlled by officers, all of which can cause helplessness and frustration, leading to increased stress and aggression. In line with Koudenburg and colleagues' (2017) we argue that social relationships and groups can afford people a sense of autonomy. Koudenburg and colleagues (2017) explained that social groups can provide their members with a sense of autonomy in two ways: by providing members with a stronger self-definition which, in turn, strengthens the experience of one's decisions as autonomous; and by providing its members with a platform to interact with fellow group members, making them aware of the ways in which they can uniquely contribute to the group, which leads to the perception of themselves as autonomous individuals.

Social Cure theorists argue that social ties and group memberships satisfy a range of other needs necessary for wellbeing (Jetten et al., 2017). These include both giving and receiving social support (e.g., Haslam et al., 2012), self-esteem (e.g., Jetten et al., 2015), meaning (Greenaway et al., 2016) and personal control (e.g., Greenaway et al., 2016). A particularly relevant study by Kyprianides, Easterbrook and Brown (2019) demonstrated that the beneficial consequences of thinking about social groups when feeling down, and the ability of groups to promote a positive outlook on life, was partly due to the greater feelings of connectedness to others (operationalised as feelings of support and relatedness) and sense of self-worth (operationalised as feelings of self-esteem and competence) that groups provide.

### **The role of social contact (moderator)**

Seeking to investigate what factors may attenuate or exaggerate the relationship between multiple group memberships and wellbeing for prisoners, we consider the role of social contact. Social contact is likely to be particularly important among this population given the challenging reality of prisoner life in which prisoners are prohibited from seeing the people that they want to see.

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The benefits for health and wellbeing of social contact are well established, as are the detrimental effects of a lack of social contact (for a review, see Holt-Lunstad, Smith & Layton, 2010). However, within the social cure literature, few studies (cf. Sani et al., 2012; Cruwys et al., 2016) have investigated whether social contact with group members is a significant predictor of wellbeing; and it remains to be seen whether social contact with group members affects the impact of multiple group memberships on wellbeing.

Considering the population under investigation, we address this gap in the literature further and consider the possibility that group contact *discrepancy* – the discrepancy between prisoners’ actual social contact and prisoners’ desired social contact – affects the link between multiple group memberships and wellbeing. We expect that this variable will be important among the prisoner population, which faces obvious barriers that hinder social contact (SEU, 2002). Furthermore, theory on actual- desired discrepancies (e.g. self-discrepancy theory; Higgins, 1987) argues that high discrepancies cause emotional vulnerabilities; and research on *social contact* discrepancy has related high social contact discrepancy to negative outcomes such as difficulties in adjustment and adaptation (Zheng & Berry, 1991). In study 2 we thus consider group contact discrepancy as a moderator of the social cure effect.

### **The present studies**

The questions this research seeks to answer are: What contribution do social factors – prisoner interactions and group memberships – make to prisoners’ wellbeing? And through what processes do these social factors enhance the wellbeing of prisoners? We use two complementary studies: 1) we conduct a secondary analysis of the Measuring the Quality of Prison Life (MQPL) dataset to investigate whether the benefits of individual ties can be observed among prison populations, and 2) we conduct the first investigation of the applicability of the social cure framework to a prison population via a questionnaire study at one male local prison. The MQPL analysis (study 1) thus investigates social interactions amongst prisoners, and personal autonomy, which may be important for well-being. The local prison study (study 2) then compliments this by investigating prisoners’ multiple group



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memberships, and the satisfaction of additional psychological needs, known to underlie the social cure process in other populations.

### Study 1 – Secondary analysis of the MQPL dataset

We first identified and created suitable measures of our key constructs from the available questions in the MQPL survey, and validated these. Then, we conducted structural equation modelling (SEM) to test the following hypotheses:

H1. Positive interactions with other prisoners will predict prisoners' well-being.

H2. Positive interactions with other prisoners will predict autonomy satisfaction.

H3. Autonomy satisfaction will predict prisoners' well-being.

H4. Autonomy satisfaction will mediate the relationship between positive interactions with other prisoners and prisoners' well-being.

Although we cannot assess causality or the direction of the relationships among these constructs, we can examine whether the associations between them follow our predicted patterns.

## **Method**

### **The MQPL survey dataset: participants, recruitment and design**

The Cambridge Prison Research Centre (PRC) designed and validated the survey that HMPPS uses to measure the quality of prison life in UK prisons (MQPL; Liebling, Hulley & Crewe, 2011). Reliability and validity of the MQPL survey was assessed in different prisoner samples. This process entailed evidencing internal consistency, test-retest reliability, and inter-rater reliability, as well as content and construct validity, across all samples (Liebling, Hulley & Crewe, 2011). HMPPS granted us access to the full data set of the HMPPS MQPL questionnaire from all participants of the most recently published HMPPS survey of each prison establishment that was still in operation with the same function on 26.05.17: 11880 questionnaires from 113 different prisons. These establishments hold people who have

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been sentenced or are on remand awaiting trial for a range of crimes, but vary in function, definition and responsibility (see House of Commons, 2018).

The survey takes about 20 minutes to complete and was distributed to 120 randomly selected prisoners at each establishment – a number deemed appropriate by the MQPL team to represent the general prison population. Prisoners who provided informed consent to participate in the study were told that the purpose of the survey is to seek their views about the quality of life they are experiencing in their current prison.

Participants were on average 36.15 years old ( $SD=12.77$ , Range = 18-91 years). 74.1% of participants were White and 25.9% of participants were Black, Asian or from a Minority Ethnic Group. On average, participants had spent between 3 and 5 years in prison throughout their lifetime. 92% of the sample were male prisoners, and only 8% were female prisoners, which is representative of the current UK prison population (made up of 95% males, and 5% females; House of Commons, 2018).

### Measures

The MQPL dataset includes items assessing social interactions amongst prisoners, autonomy satisfaction, and well-being. Apart from the measures listed below, the questionnaire included additional measures that were not relevant to our present hypotheses and so we do not report them further here (for more details see Liebling, Hulley & Crewe, 2011). All items were answered on a 1-5 (disagree- agree) scale.

**Prisoner interactions.** We measured more positive prisoner interactions using these items: “The best way to do your time here is to mind your own business and have as little to do with other prisoners as possible (reverse coded); “I feel safe from being injured, bullied or threatened by other prisoners in here”; “I can relax and be myself around other prisoners in this prison”; “In this prison, I have to be wary of everyone around me (reverse coded)”; “I have no difficulties with other prisoners in here”.

We selected these items because they capture the respondent’s subjective evaluation of their interactions with other prisoners. Although four of these items were initially designed to capture subjective feelings of safety, these particular items clearly assess the quality of the social climate

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among prisoners. In line with this, Liebling and Arnold (2012) have argued that these items shed light on prisoner's social relationships, and are likely to be related to other social factors such as trust.

Prisoners scoring high on these items are thus likely to have supportive interactions and a fulfilling social life within prison, and therefore it will likely be a positive predictor of well-being. All 5 items were combined into a unified measure of prisoner interactions by modelling them as a latent factor.

Reliability was acceptable ( $\alpha = .66$ ), with all items contributing to the reliability of the scale, but we further validate our measures in the Results section below.

**Personal autonomy.** The MQPL dataset includes a personal autonomy dimension (items measuring prisoners' feelings of agency/ self-determination) that was developed using a combination of conceptual and statistical methods (see Liebling, Hulley & Crewe, 2011). The items were: "I have no control over my day-to-day life in here (reverse coded)"; "You can keep your personality in this prison"; "The regime in this prison allows opportunities for me to think for myself"; "Wherever you are in this prison I still feel confined" (reverse coded). All 4 items were combined into a unified measure of personal autonomy by modelling them as a latent factor ( $\alpha = .71$ ), with all items contributing to the reliability of the scale.

**Well-being.** The MQPL dataset includes a well-being dimension (items measuring feelings of pain, punishment and tension experienced by prisoners) which is our primary outcome of interest. This too was developed using a combination of conceptual and statistical methods (see Liebling, Hulley & Crewe, 2011). The items were: "My experience in this prison is painful" (reverse coded); "I feel tense in this prison" (reverse coded); "My experience of imprisonment in this particular prison has been stressful" (reverse coded); "My time in this prison feels very much like a punishment" (reverse coded). All 4 items were combined into a unified measure of well-being by modelling them as a latent factor ( $\alpha = .82$ ), with all items contributing to the reliability of the scale.

## **Analysis plan: structural equation modelling (SEM)**

The data are multilevel, with prisoners ( $N = 11880$ ) nested within prisons ( $N = 113$ ). We examined whether we needed to take account of this multilevel structure by computing intraclass correlations

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(ICC) to assess the variance of the variables between prisons: 9% of the variance in prisoner interactions, 16% of the variance in autonomy, and 13% of the variance in wellbeing, can be attributed to differences between prisons. These ICCs ( $\rho > .08$ ) indicate that there is significant variation in all three measures both between and within prisons, so we controlled for this clustering using a common approach to the analysis of complex survey data in MPlus (Asparouhov, 2006): we specified TYPE = COMPLEX in the ANALYSIS command in conjunction with the CLUSTER option of the VARIABLE command. This sandwich estimator computes standard errors and a chi-square test of model fit that takes into account the multilevel structure of the data, producing unbiased estimates equivalent to those produced from multilevel modelling.

In order to validate our measures, we first tested the factorial structure of the measures we selected by specifying a measurement model using confirmatory factor analysis (CFA) in MPlus. SEM was then used to evaluate our hypotheses.

## Results

### Descriptive statistics

Descriptive statistics and correlations of the key measures are presented in Table 1. In line with our hypothesizing, (positive) prisoner interactions, wellbeing, and autonomy were all positively correlated with each other.

< Table 1 here >

### CFA measurement model

We conducted CFA in MPlus to establish a suitable measurement model for the data. We tested whether a measurement model that included three covarying latent constructs of ‘prisoner interactions’, ‘autonomy’, and ‘wellbeing’ fitted the data well. This model produced acceptable fit indices (CFI = .94; SRMR = .04; RMSEA = .06;  $\chi^2 = 2961.025^*$ ;  $df = 62$ )<sup>1</sup>. However, we followed modification

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<sup>1</sup> CFI = comparative fit index (excellent fit: CFI > .96); SRMR = standardized root mean square residual (excellent fit: SRMR < .05); RMSEA = root mean square error of approximation (excellent fit: RMSEA < .08). (Kline, 2016)

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indices and added three within-factor covariances (two covariances between the prisoner interactions items, and one covariance between the autonomy items). This respecified model provided an excellent fit to the data (CFI = .97; SRMR = .03; RMSEA = .05;  $\chi^2 = 1873.139^*$ ; df = 59) with all standardized factor loadings > .5. We therefore used the respecified model as the basis for testing our hypotheses using structural equation modelling.

### **Evaluation of the hypotheses: structural model**

We tested Hypotheses 1-4 using MPlus to specify a structural model that investigated direct and indirect pathways from the prisoner interactions factor to the autonomy satisfaction factor to the well-being factor. SEM accounts for measurement error by partitioning the variance of each factor into measurement error and true variance. The model included the (positive) prisoner interactions factor as the predictor variable, the personal autonomy factor as the mediating variable, and the wellbeing factor as the outcome variable. Age, ethnicity (White or Black and Minority Ethnic) and total time spent in prison over lifetime, which we know are going to be related to prisoners' psychological needs and wellbeing (Adams, 1992), were controlled for by including these as covariates in the model.

The quantitative results revealed that each of the individual paths were significant in the hypothesized directions: Positive interactions with other prisoners was associated with enhanced well-being ( $\beta = .68$   $p < .001$ ), confirming H1. Positive interactions with other prisoners was also associated with increased autonomy satisfaction ( $\beta = .93$   $p < .001$ ), confirming H2. Autonomy satisfaction positively predicted prisoners' well-being ( $\beta = .26$   $p = .003$ ), confirming H3. There was also a significant indirect effect of positive interactions with other prisoners on prisoners' well-being via autonomy satisfaction (*indirect*  $\beta = .24$ ,  $p = .002$ ), confirming H4: Autonomy satisfaction mediated the positive relationship between strong relations with other prisoners and prisoners' well-being. The

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\* $p < .001$ . Note that with large samples, even the smallest deviation of the data from the model being tested will yield a significant chi-square value, so this should not be interpreted to imply a bad fitting model (Asparouhov, 2006).

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model explained 86% of the variance in autonomy ( $R^2 = .864$ ), and 86% of the variance in wellbeing ( $R^2 = .859$ ).

### **Study 1 summary**

Study 1 showed that positive interactions amongst prisoners apparently benefitted their wellbeing via providing prisoners with an increased sense of autonomy. It is striking that the proportions of variance in autonomy satisfaction, and wellbeing, that the model explains are unusually high - both well above 80% - suggesting that this model has good explanatory power. This analysis allowed us to test our basic predictions among a large sample of prisoners situated in a range of different prisons, providing a convincing, albeit correlational, demonstration of the importance of social factors for prisoner wellbeing. However, no MQPL scale measures social *group* ties – so the specific benefits of group affiliations remain ambiguous in this study. We address this limitation in study 2.

### Study 2 – A local prison

In study 2 we build on study 1 using a purpose-designed study to test the social cure hypothesis amongst prisoners residing in one male UK prison. We examine the relationship between prisoners' multiple group memberships, psychological need satisfaction, and wellbeing; as well as group contact discrepancy. Five hypotheses were tested:

- H1. Multiple group memberships will be associated with prisoners' well-being.
- H2. Multiple group memberships will be associated with psychological need satisfaction.
- H3. Psychological need satisfaction will be associated with prisoners' well-being.
- H4. Psychological need satisfaction will mediate the relationship between multiple group memberships and well-being.
- H5. The wellbeing benefits associated with having multiple groups will be more pronounced for those whose social contact reflects what they want it to be while in prison.

We predict that psychological need satisfaction will mediate the effect of multiple group

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memberships on wellbeing, and that group contact discrepancy will moderate the effect of multiple group memberships on wellbeing.

## **Method**

### **Participants and Design**

Prisoner participants (N = 157; 98% male<sup>2</sup>; M age = 37.46 (*SD* =14.46, Range = 18-81 years); M time spent in prison = 24 months (Range = 1- 313 months); M sentence length = 81 months (*SD*=73.35, Range = 3-312 months); most participants were category C prisoners<sup>3</sup>; nature of offence ranged from burglary, producing and supplying drugs, and assault, to rape and murder) were recruited on the prison wings of a male local prison solely on the basis of their willingness to participate. The establishment is a Category B, local resettlement prison. It holds a total of 655 prisoners, residing on 10 residential wings. We set out to achieve at least 150 participants, the minimum sample size recommended for multivariate path analysis (Asparouhov, 2006). A single questionnaire booklet that included items assessing prisoners' social groups, psychological needs, and well-being was distributed to prisoners on the prison wings. Prisoners completed the questionnaire while on the wing in their free time. The first author was present throughout the entire process, on the wing, and provided help or support as required.

The questionnaire booklet was made up of 3 sections: Section 1 used adapted versions of published and validated measures to assess prisoners' group memberships. Section 2 used published and validated measures that assess the extent to which prisoners' groups satisfy prisoners' psychological needs of connectedness, self-worth, control, autonomy, and meaning, all of which have been found to be mechanisms through which the social cure effects operate. Section 3 used established measures of different facets of well-being. The questionnaire was finalized through discussions with the HMPPS ethics board. Informed consent was obtained from all participants.

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<sup>2</sup> Despite it being a male prison, 2% of participants identified as 'female' or 'other'.

<sup>3</sup> Category C prisoners are those who are not trusted in open conditions but who are deemed unlikely to try to escape.

## Measures

Apart from the measures listed below, the questionnaire included additional measures that were not relevant to our present hypotheses and so we do not report them further here. All items were answered on a 1-5 (agree-disagree) scale unless otherwise indicated.

**Multiple group memberships.** Multiple group membership was assessed using the four items of the Exeter Identity Transition Scale (EXITS; Haslam et al., 2008). These were: “I belong to lots of different groups”, “I am involved in the activities of lots of different groups”, “I have friends who are in lots of different groups” and “I have strong ties with lots of different groups” (all items were reverse coded;  $\alpha = .91$ ; alpha if deleted  $<.91$ ).

**Wellbeing.** Wellbeing was assessed using three distinct, albeit overlapping, constructs: positive experience ( $\alpha = .95$ ), depression, anxiety and stress ( $\alpha = .93$ ), and mental wellbeing ( $\alpha = .93$ ). Positive experience was measured using the scale of positive experience (SPANE; Diener et al., 2009). Participants rated to what extent in the past month they have felt ‘positive’, ‘good’, ‘pleasant’, ‘happy’, ‘joyful’, and ‘content or satisfied’. Depression, anxiety and stress was measured using three items from the screening tool for psychological distress (STOP-D, Young et al., 2007). Participants rated their levels of depression, anxiety, and stress over the last month: ‘...feeling down, sad, or uninterested in life’ (depression), ‘...feeling anxious or nervous (anxiety), and ‘...feeling stressed’ (stress). Mental wellbeing was measured using the Warwick and Edinburgh Mental Wellbeing Scale (WEMBS; Tennant et al., 2007). Participants were asked to indicate to what extent in the last month they have been feeling/ have been ‘optimistic about the future’, ‘useful’, ‘relaxed’, ‘dealing with problems well’, ‘thinking clearly’, ‘close to other people’, and ‘able to make up my own mind about things’. We reverse coded the SPANE and WEMBS items and then combined the items from the three wellbeing measures into a highly reliable composite measure of wellbeing ( $\alpha = .97$ ; alpha if deleted  $<.97$ ).

**Psychological need satisfaction.** Psychological needs support, self-esteem, competence, relatedness, autonomy, control, and meaning were all measured using single items to reduce participant load: social support (‘I have the support I need from other people’; adapted from items used in Haslam,



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et al., 2012), self-esteem ('I have high self-esteem'; single-item self-esteem scale; Robins, Hendin & Trzesniewski, 2001), competence ('I am good at the things that I do'; adapted from the Basic Psychological Needs Scale (BPNS); Deci & Ryan, 2000), relatedness ('I have people that I am close and connected to'; adapted from the Basic Psychological Needs Scale (BPNS); Deci & Ryan, 2000), autonomy ('How I spend my time is my own choice'; adapted from the Basic Psychological Needs Scale (BPNS); Deci & Ryan, 2000), control ('I have control over important aspects of my life'; Greenaway et al., 2016), and meaning ('I feel that my life is meaningful'; adapted from items used in Baumeister et al., 2013). All items were reverse coded.

**Group contact discrepancy.** An adapted version of the Social Identity Mapping tool (SIM; Cruwys et al., 2016) was used to assess group contact discrepancy. The SIM tool is a psychometrically validated instrument designed to provide a comprehensive overview of a person's social world. The research team use data from three studies (two longitudinal), involving student, community, and clinical samples, together comprising over 400 participants, to evidence that the tool is easy to use, internally consistent, with good convergent and discriminant validity (Cruwys et al., 2016). Participants were instructed to list three social groups, and were told that it did not matter whether these groups are inside or outside the prison. Then, participants were asked to indicate how many days in the last month they spent time with each group, and how many days in the last month they would have liked to spend time with each group. Participant responses thus ranged from 0-30. Following actual- desired discrepancy research (e.g. Watson & Thrash, 2010), the absolute value of the discrepancy between these two items was computed to reflect how far removed prisoners' social contact is from what they wanted (i.e. higher scores indicate a *greater discrepancy*) per group, and the mean of the three values, corresponding to each group listed, was computed to serve as our measure of group contact discrepancy.

## Results

### Psychological needs: Exploratory factor analysis

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Several of the proposed mediators are conceptually similar, particularly relatedness and social support, which both relate to the sense of connection and solidarity with others; and competence and self-esteem, which both relate to a sense of effectiveness and personal value (Ryan & Deci, 2000). Control, autonomy and meaning are also conceptually similar in that they all relate to a sense of agency (Pereboom, 2014). Indeed, all psychological needs were highly correlated with one another ( $r > .60$ ; see Table 1). To determine whether it would be more parsimonious to collapse the needs into composites, we conducted an exploratory factor analysis using principal component analysis and direct oblimin rotation of three factors (based on an initial scree plot and eigenvalues  $> 1$ ). Factor 1 contained the items measuring control, autonomy, and meaning and accounted for 67% of variance, with all factor loadings above .62 and no cross loadings above .30; Factor 2 was formed of the items measuring social support and relatedness, and accounted for 12% of variance, with both factor loadings above .92 and no cross loadings above .30; and Factor 3 contained the items measuring self-esteem and competence, and accounted for 10% of variance, with both factor loadings above .94 and no cross loadings above .30. We thus merged the self-esteem and competence items into a Self-Worth factor ( $\alpha = .92$ ), the relatedness and support items into a Connectedness factor ( $\alpha = .95$ ), and the control, autonomy and meaning items into a Volitional agency factor ( $\alpha = .89$ ).

### **Descriptive statistics**

Descriptive statistics of and correlations among the key measures are presented in Table 1. Although group contact discrepancy was not significantly correlated with wellbeing, in line with our hypothesizing, wellbeing, multiple group memberships, and the needs of connectedness, self-worth, and volitional agency were all positively correlated with each other.

### **Evaluation of the hypotheses**

We tested Hypotheses 1-5 by conducting moderated mediation analyses using PROCESS (2012, model 5; Hayes, 2018). The model included multiple group memberships as the predictor variable, the

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psychological need composites of connectedness, self-worth, and volitional agency as the mediating variables, group contact discrepancy as the moderating variable, and wellbeing as the outcome variable.

The quantitative results are summarized in Figure 1. Each of the individual paths were significant, in the hypothesized directions: Multiple group memberships was associated with increased wellbeing  $b = .27$   $p < .001$ , CI [.15, .39], confirming H1. Multiple group memberships was associated with enhanced connectedness  $b = .77$   $p < .001$ , CI [.62, .92], self-worth  $b = .65$   $p < .001$ , CI [.50, .79], and volitional agency  $b = .73$   $p < .001$ , CI [.56, .90], confirming H2. The satisfaction of the needs of connectedness  $b = .16$ ,  $p = .002$ , CI [.06, .26], self-worth  $b = .22$ ,  $p < .001$ , CI [.10, .33], and volitional agency  $b = .24$ ,  $p < .001$ , CI [.14, .34] was positively associated with well-being, confirming H3. There was also a significant indirect effect of multiple group memberships on wellbeing via the satisfaction of the needs of connectedness  $indirect = .12$ , BC CIs [.04, .22], self-worth  $indirect = .14$ , BC CIs [.07, .24], and volitional agency  $indirect = .17$ , BC CIs [.10, .28], confirming H4.

Finally, the interaction between multiple group memberships and group contact discrepancy was significant ( $b = -.01$ ,  $t = -2.19$ ,  $p = .030$ , CI [-.02, -.01]), and the moderation operated as predicted by H5: among those who were below the mean in group contact discrepancy (i.e. whose social contact better reflects what they want it to be), there was a stronger relationship between multiple group memberships and well-being ( $b = .36$ ,  $t = 4.88$ ,  $p < .001$ , CI [.22, .51]), compared to those at the mean ( $b = .27$ ,  $t = 4.52$ ,  $p < .001$ , CI [.15, .39]) and above the mean ( $b = .18$ ,  $t = 2.58$ ,  $p = .011$ , CI [.04, .33]) on the measure of group contact discrepancy. This moderation is depicted in Figure 2. Therefore, confirming H5, the wellbeing benefits associated with having multiple groups were more pronounced for those whose social contact reflects what they want it to be (i.e. a greater match between reality and desire) while in prison.

< Figure 1 here <sup>4</sup> >

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<sup>4</sup> We also tested whether social contact discrepancy moderates the effects of multiple group memberships on the three psychological needs using PROCESS model 8. However, although the main moderation we report here was still significant (social contact discrepancy moderates the effect of multiple group memberships on wellbeing), social contact discrepancy did not moderate any of the multiple group memberships to needs relationships.

< Figure 2 here >

## **Study 2 summary**

The single local prison analysis (Study 2) showed that multiple group memberships benefit wellbeing via the satisfaction of the psychological needs of connectedness, self-worth, and volitional agency.

Here we replicated the MQPL model but with *group* (rather than individual) ties, and more needs and psychologically robust measures, enabling us to conduct a specific test of the social cure framework's prediction within a specific context. Study 2 also showed, for the first time, that the wellbeing benefits associated with having multiple groups are more pronounced for those whose social contact reflects what they want it to be while in prison.

## **General discussion**

### **Summary of findings**

We found that a fulfilling social life in prison - strong prisoner ties and membership in groups, both inside and outside the prison - satisfy prisoners' psychological needs, and benefit prisoners' wellbeing. Study 1 showed that positive prisoner relations function to increase prisoners' wellbeing, partly due to the feelings of autonomy that these interactions provide. Study 2 showed that multiple group memberships benefit wellbeing via the satisfaction of the psychological needs of connectedness, self-worth, and volitional agency. Study 2 also showed that the wellbeing benefits associated with having multiple groups are more pronounced for those whose social contact reflects what they want it to be while in prison. These results provide support for all of our hypotheses and speak to the contribution that social factors – positive prisoner interactions and social groups – make to prisoners' wellbeing. This work therefore progresses the field by helping to unpack and harness the power of social connectedness as a psychological resource for prisoners.

### **The importance of individual and group ties for prisoner wellbeing**

In Study 1 we provide quantitative evidence that demonstrates that social connectedness in prison is positively associated with wellbeing. This finding is in line with the qualitative sociological literature

## Social factors boost wellbeing behind bars

that exists (e.g. Harvey, 2007; Crewe, 2012) that demonstrates the importance of interpersonal ties in maintaining prisoners' well-being. This finding also corroborates the large US literature base (see Adams, 1992) that focuses on the ways that connections to the outside world, and relationships inside prison walls, have special salience for inmates. Study 2 was the first to investigate the social cure amongst prisoners, and consequently the first to quantitatively demonstrate that the core associations proposed by the framework – those between multiple group membership, psychological needs, and wellbeing – are present within this population. Although research consistently shows this in non-offender groups (for review, see Jetten et al., 2017), no research has investigated its applicability to prisoners. We also build on sociological research on prisoners' social groups (e.g. Setty, Sturrock & Simes, 2014) in Study 2, demonstrating the wellbeing benefits associated with prisoners' group memberships. This finding is especially powerful because previous research has theorised (e.g. Jetten et al., 2017) and shown (Kyprianides, Easterbrook & Cruwys, 2019) that, for stigmatized groups, there are boundary conditions under which the 'social cure' associated with multiple groups can transform into a 'social curse' – whereby having multiple groups may actually be harmful for wellbeing. We were however able to show that the beneficial effects of multiple group memberships are not jeopardised for this population.

### **Individual and group ties satisfy psychological needs**

Seeking to explain *why* social relations and groups might be beneficial for prisoners, we also provide the first evidence that a fulfilling social life in prison fosters the psychological needs of connectedness (social support and relatedness), self-worth (self-esteem and competence), and volitional agency (autonomy, control, and meaning). Our mediation findings complement and extend previous work that has found that these psychological needs can account for social cure effects in non-offender populations (Kyprianides, Easterbrook & Brown, 2019: connectedness and self-worth; Koudenburg, Jetten & Dingle, 2017: autonomy; Greenaway et al., 2016: control and meaning), and provide a novel explanation of the beneficial effects of social relations and groups on *prisoner* wellbeing. It is worth noting that the capability of prisoner relations and prisoner groups to fulfil the need of autonomy was

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demonstrated in both studies 1 and 2. This is a powerful finding that speaks to the most ‘painful’ aspect of imprisonment – the deprivation of autonomy amongst prisoners that is borne out of the lack of independence, choice, self-determination, and control prisoners experience in the confined prison environment (Sykes, 1958; 2007).

### **The role of social contact discrepancy for prisoner wellbeing**

Out of the many extant studies that show the benefits for health and wellbeing of social contact (for a review, see Holt-Lunstad, Smith & Layton, 2010), study 2 is the first study to consider social contact, and more specifically group contact *discrepancy* as a moderator of the association between multiple group memberships and wellbeing. Study 2 is consequently also the first to demonstrate that the wellbeing benefits associated with having multiple groups are more pronounced for those whose social contact reflects what they want it to be while in prison. This finding complements research on social contact discrepancy (Zheng & Berry, 1991), extends the very few extant studies that have shown that social contact with *group members* is a significant predictor of wellbeing (e.g. Sani et al., 2012; Cruwys et al., 2016), and provides a novel insight into the factors that may attenuate or exasperate the relationship between multiple group memberships and wellbeing for prisoners.

### **Practical implications**

Our findings of the importance of individual and group ties for prisoner wellbeing attend to a gap in the literature: the need to better understand how to best support prisoners. This has potential significance for policy and practice, should future research demonstrate improved mental health due to social interactions in prison. UK resettlement strategies are focused around accommodation, education, training, and employment, and maintaining family ties, with the objective of assisting prisoners return to normal life, get a home and job, and handle life without re-offending upon release (MOJ, 2016). What is lacking in ongoing practitioners’ agendas, however, is a focus on helping prisoners to build *positive* group memberships that transcend prison walls; that they can interact with both in and, later, outside of prison, and that go beyond maintaining only family ties. Examples include groups that can provide prisoners with positive social identities around a particular skill or strength (see Williams et al.,

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2018), such as the Finding Rhythms group (a music-based group; see Kyprianides & Easterbrook, in-press), or the KeepOut group (a crime diversion scheme for young people delivered by a group of prisoners). This will help this population maintain continuity, which is important for successful community reintegration. Strategies to increase prisoners' social connectedness could utilise these kinds of group-based programs provided by the third sector that promote social engagement and psychological wellbeing amongst prisoners (see Kyprianides & Easterbrook, in-press). Strategies could also take the form of cost-effective psychological interventions to help prisoners develop and manage a fulfilling social life in prison. For example, researchers have developed an intervention based on the social cure (Groups4Health; G4H; Haslam et al., 2016) that directly targets the psychological distress that results from loneliness and social isolation by scaffolding the development and maintenance of positive group memberships. G4H applications and evaluations of third sector prison programs suggest that the task of increasing social connectedness amongst prisoners is not simply a matter of more time out of cell, but rather of engaging in meaningful activities that produce the right kinds of relationships.

### **Limitations and future directions**

Future research should examine whether our findings are generalizable to other countries such as the US, in which research has shown that prisoner groups take the form of highly structured hierarchical 'gangs' that are implicated in violence and misconduct in prison (Gaes et al., 2002). Such findings point to the possibility that US prisoner groups may actually do more harm than good, as has been shown amongst groups whose norms proscribe harmful activities (see Jetten et al., 2017).

Future research should also address the limitations associated with these studies, although the two complimentary studies reduce the potential impact of each study's limitations. First, data for the local prison study was collected within a specific context that limits generalisability of the applicability of the social cure framework. However, the MQPL analysis allowed an investigation of our basic hypotheses in a generalizable way. Second, in study 1, we were unable to control for other relevant factors such as contact with individuals outside of prison because this information was not available in the MQPL dataset - a limitation that was accounted for in study 2 by measuring prisoners'

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group contact. Third, it is likely that prisoners experiences diverse kinds of socialising that differentially impact prisoners that we were not able to disentangle using our research design. For example, our measure of multiple group membership in study 2 includes groups both within and outside prison. It is however possible that inside, group interpersonal ties are more associated with the perception of fitting in and being safe (Biggam & Power, 1997); while connections outside of the prison are more associated with rehabilitation and post-release adjustment (Smith & McCarthy, 2016).

Finally, further investigation is required to substantiate our findings – ideally in the form of experimental research that goes beyond the correlational design of the present studies. There are also other limitations that bear on the strength of conclusions that can be drawn on the basis of the present data. Notably, the cross-sectional design of these studies does not allow us to address the possibility of reverse causality, where, for example, prisoners with greater wellbeing may be more likely to seek out relationships with others.

## Conclusion

This work is the first to show, across two studies conducted in the UK, that prisoner wellbeing is positively associated with social processes such as maintaining and creating positive relationships and supportive groups while in prison. This work is also the first to demonstrate that social interactions and multiple group memberships foster prisoner wellbeing through satisfying the psychological needs of connectedness, self-worth, and volitional agency. We are also the first to provide evidence that group contact *discrepancy* can reduce the positive consequences of multiple group memberships on wellbeing. New directions in mental healthcare in prisons should establish methods of empowering prisoners to increase their social connectedness by developing and maintaining a fulfilling, albeit not ideal, social life in prison.

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## Figures

Figure 1. Standardised regression coefficients for the relationship between prisoners' multiple group memberships and wellbeing, as mediated by psychological needs connectedness, self-worth, and volitional agency, and as moderated by group contact discrepancy.

\* $p < .05$ ; \*\* $p < .001$ .<sup>5</sup>

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<sup>5</sup> We also tested whether social contact discrepancy moderates the effects of multiple group memberships on the three psychological needs using PROCESS model 8. However, although the main moderation we report here was still significant (social contact discrepancy moderates the effect of multiple group memberships on wellbeing), social contact discrepancy did not moderate any of the multiple group memberships to needs relationships.

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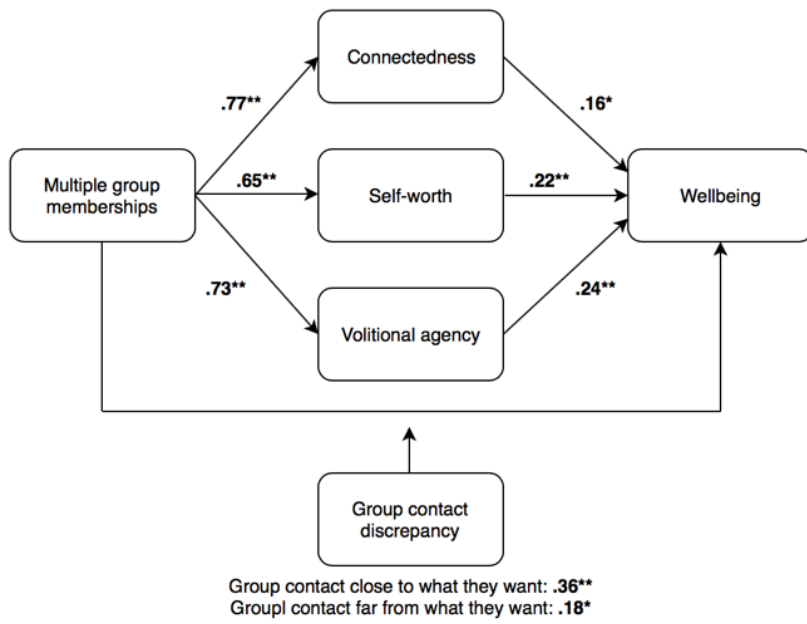
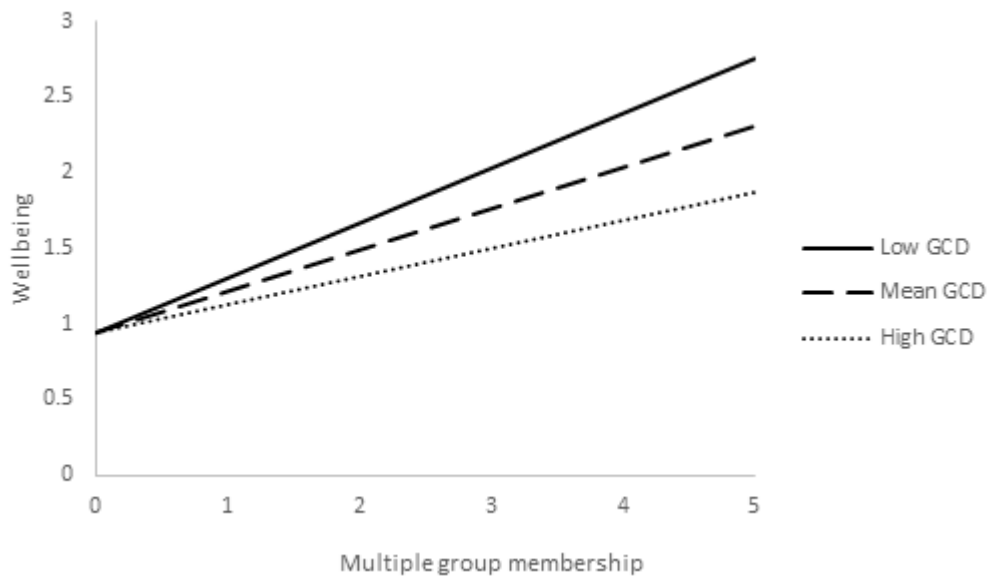


Figure 2. Prisoner wellbeing (y) by Prisoners' multiple group membership (x) at different levels of the moderator (-1SD, mean, +1SD) group contact discrepancy (GCD).

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## Tables

Table 1. Descriptive statistics and correlations

	<i>M</i>	<i>SD</i>	<i>Correlations</i>	
<i>Study 1 key variables<sup>i</sup></i>			1	2
1. Well-being	2.74	.94		

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2. Positive relationships	3.08	.73	<b>.62</b>	
3. Autonomy	2.95	.81	<b>.68</b>	<b>.56</b>

<i>Study 2 key variables<sup>ii</sup></i>			1	2	3	4	5
1. Well-being	2.89	1.13					
2. Multiple group memberships	2.94	1.15	<b>.74</b>				
3. Connectedness	3.43	1.40	<b>.73</b>	<b>.67</b>			
4. Self-worth	3.40	1.23	<b>.73</b>	<b>.61</b>	<b>.63</b>		
5. Volitional agency	2.85	1.40	<b>.75</b>	<b>.60</b>	<b>.61</b>	<b>.66</b>	
6. Group contact discrepancy	13.69	8.85	-.15	-.14	<b>-.17</b>	-.05	-.13

<i>Study 1 mediators<sup>iii</sup></i>			1	2	3	4	5	6
1. Support								
2. Relatedness			<b>.90*</b>					
3. Self-esteem			.55*	.61*				
4. Competence			.57*	.63*	<b>.85*</b>			
5. Autonomy			.53*	.51*	.55*	.58*		
6. Control			.48*	.54*	.60*	.59*	<b>.86*</b>	
7. Meaning			.54*	.62*	.58*	.57*	<b>.64*</b>	<b>.66*</b>

<sup>i</sup> N = 11880 (bold =  $p < .01$ )

<sup>ii</sup> N = 199 (bold =  $p < .05$ )

<sup>iii</sup> Bold correlations indicate relationships between needs that were combined into composite measures. \*  $p < .01$ .