



A reinforcement sensitivity theory explanation of antisocial behaviour



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ABSTRACT

A comprehensive explanation of antisocial behaviour (ASB) needs to focus on both individual differences in personality and life events as potentially predisposing factors. The current studies investigated the relative influence of both of these in males and females. We used the Reinforcement Sensitivity Theory (RST) of personality to investigate the extent to which dispositional approach and avoidance tendencies relate to ASB. In the first study, 287 participants reported their engagement in ASB and completed the RST Personality Questionnaire (RST-PQ). In the second study, a new sample of 282 participants completed the same measures as well as reporting the extent to which they had experienced life strains. Results from both studies showed a positive association between goal-drive persistence and ASB in males; while in females, a positive association was found between impulsivity and ASB. In Study 2, life strains explained further variance in ASB and this also showed a gender differentiation: in males, there was a stronger relationship between financial strains and ASB while females showed an association between relational strains and ASB. Overall, results suggested that ASB is more pronounced in the male sample with an instrumental purpose while in the female sample personal life events are of more relevance.

To understand, prevent and deter antisocial behaviour (ASB), we need to develop a more comprehensive understanding of the systematic individual differences in personality involved in the proclivity to engage in antisocial behaviour. The two studies reported in this paper seek to address this issue in terms of the strength of dispositional approach and avoidance motivation. We define ASB in terms of the description offered by Rutter (2003), who suggested that it can be characterized as nonconformity, and disregard or unwillingness to adhere to rules and obligations imposed by society or social organizations. As such, ASB may include criminal acts that violate specific laws, but also behaviours which are not in themselves illegal but which contradict the social values and norms (e.g., cheating in examinations). Accordingly, ASB is not the sole preserve of forensic samples and can be measured within the general population – this view is supported by evidence which shows that 74% of people self-report committing at least one ‘microcrime’ (a very minor offence) in their life (YouGov, 2016).

Antisocial behaviour peaks in adolescence and for many individuals this is a relatively benign and short-lived stage in the transition to adulthood (Moffitt, 1993, 2006) – indeed, many adolescents engage in activities that could be considered antisocial. Given that it is somewhat “normal” to engage in limited antisocial behaviour (particularly in adolescence), but rare to continue to engage during adulthood,

normative models of understanding systematic individual differences, especially personality, may help better to understand the psychology of antisocial acts. One such theory, that encompasses key risk factor traits of impulsivity, self-control and goal-drive persistence, is the Reinforcement Sensitivity Theory (RST) of Personality (Corr, 2008).

Reinforcement Sensitivity Theory (RST) is a prominent neuropsychological theory of personality, conceptualised in terms of emotion, motivation, and learning (Corr & McNaughton, 2012). RST is founded on the assumption that underpinning all major personality traits are basic systems of approach and avoidance (Corr, 2015; Corr, DeYoung, & McNaughton, 2013). As detailed by Corr and Krupić (2017), individuals construct their own approach and avoidance related goals and this shapes the nature of the reinforcement to which they are sensitive and, thus, to which they react.

RST describes a behavioural approach system (BAS), defined as being sensitive to appetitive stimuli and producing motivated goal-directed approach behaviours (Gray & McNaughton, 2000). The main function of the BAS is to move the organism along a spatio-temporal gradient towards a final biological reinforcer. In order to reach this goal, there are a number of distinct but related BAS processes: “reward interest” and “goal-drive persistence” characterize the early stages of approach and these factors can be distinguished from “reward

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reactivity” and “impulsivity” which are concerned with processes closer to the final reinforcer (Corr & Cooper, 2016). Activation of the BAS is said to lead to the experience of hopeful excitement, drive persistence to reach desired goals, and elation when they have been attained (Corr et al., 2013).

A second system, the Fight-Flight-Freeze System (FFFS), mediates reactions to all aversive stimuli (conditioned or otherwise), leading to avoidance and escape behaviours. A third system, the behavioural inhibition system (BIS), is specifically sensitive to goal-conflict (e.g., equal activation of the FFFS and BAS - or, indeed, goal conflict of any kind with sufficient motivational intensity) and it motivates passive avoidance behaviour. As such, the BIS is responsible for detecting and resolving conflict, rather than simply being sensitive to punishing stimuli, and contributes to risk assessment and potentially to rumination, which can result in the experience of anxiety. This RST structure is now widely recognized, in conceptual and psychometrical terms (Corr, 2011; Gray & McNaughton, 2000; Perkins, Kemp, & Corr, 2007; for review, see Corr, 2016; Corr & Cooper, 2016).

The RST of personality is of interest to ASB given the extant evidence. For example, impulsivity has consistently been implicated in adolescent ASB (Maneiro, Gómez-Fraguela, Cutrín, & Romero, 2016) as has the related construct of sensation seeking – that is, the tendency to desire and actively seek out novel and intensely stimulating experiences and the willingness to take risks for the sake of these ‘thrills’ (Zuckerman, 1994). A large body of research has suggested that high levels of sensation seeking may be a risk factor for criminal and antisocial behaviours in student, community and convicted samples (Gomà-i-Freixanet, 1995; Hansen & Breivik, 2001; Horvath & Zuckerman, 1993; Pfefferbaum & Wood, 1994; Zuckerman, 2007). In line with the age-related prevalence of ASB, sensation seeking tends to peak in adolescence (Zuckerman, 2007). Other personality traits that have been associated with ASB include lower than average levels of social competence (Palmer & Hollin, 1999), lack of empathy (Cohen & Strayer, 1996; Jolliffe & Farrington, 2007) and impaired emotional and physical self-regulation (Eisenberg et al., 1996; Gottfredson & Hirschi, 1990; Moffitt et al., 2011). Accordingly, antisocial individuals have been shown to score less highly on measures of related constructs such as cognitive ability (Brackett, Mayer, & Warner, 2004) and trait-emotional intelligence (Bacon, Burak, & Rann, 2014), though the latter finding was found only for a male sample (no such finding was present in the female sample).

Little research to date has explored the contribution of RST personality factors to ASB. In one study, Morgan, Bowen, Moore, and van Goozen (2014) indicated heightened BAS and lowered BIS in a sample of male antisocial adolescents, as compared with a non-offending sample. These findings present a useful insight into motivational drive towards ASB. However, Morgan et al. used an RST questionnaire measure (Carver & White, 1994) which assesses personality factors on the basis of the original conceptualisation of the theory (Gray, 1982) – specifically, they measured BIS and BAS as unitary concepts and did not include a measure of the FFFS. As such, their results did not take into account the most recent developments in RST (Corr, 2016; Corr & Cooper, 2016).

In the present two studies, we employed a contemporary and more comprehensive psychometric approach that differentiates FFFS and BIS, as well as providing a more nuanced conceptualisation and measurement of the BAS (Corr & Cooper, 2016). In addition, Morgan et al.'s (2014) study comprised only male participants - males typically report higher levels of ASB than females especially for more criminal and violent activities, although the gender gap narrows when minor offences are taken into account. It is also known that, as a group, males score more highly on measures of sensation seeking (Zuckerman, 1994, 2007). In the present research, we explored possible gender differences in the relationships between ASB and an expanded theoretical and psychometric definition of RST personality factors.

1. Study 1

In Study 1, our aim was to examine the relationship between ASB in adolescence and emerging adulthood and personality traits assessed within the revised RST framework. In line with what is known about personality and ASB, we predicted a positive association between levels of ASB and impulsivity for both males and females. Given Morgan et al.'s (2014) study, we also expected to observe a positive association between ASB and BAS traits and a negative association with BIS.

1.1. Method

1.1.1. Participants

Two hundred and eighty-seven undergraduates participated in return for course credit: 169 females ($M^{age} = 20.66$, $SD = 2.44$) and 118 males ($M^{age} = 20.29$, $SD = 2.12$, $p = 0.21$, $d = 0.16$).

1.1.2. Materials and procedures

1.1.2.1. Antisocial behaviour. We presented a list of 35 behaviours and participants were asked to respond yes to any they had engaged in since the age of 12 years. Items ranged across non-illegal but undesirable behaviours, such as cheating in an exam, interpersonal behaviours such as bullying, relatively minor criminal offences such as using public transport without a ticket to more serious offences such as assault. This method has been used in previous published research on ASB (Bacon et al., 2014; Bacon, Lenton-Maughan & May, 2018). Scores were obtained by summing the yes responses to provide an overall ASB score which presented good reliability ($\alpha = 0.88$).

1.1.2.2. Reinforcement Sensitivity Theory of Personality Questionnaire (RST-PQ, Corr & Cooper, 2016). This 65-item scale measures three major systems: Fight/Flight/Fear System (FFFS; e.g., “I am the sort of person who easily freezes-up when scared”); Behavioural Inhibition System (BIS; e.g., “When trying to make a decision, I find myself constantly chewing it over”); and four Behavioural Approach System (BAS) factors: Reward Interest (e.g., “I regularly try new activities just to see if I enjoy them”), Goal-Drive Persistence (e.g., “I am very persistent in achieving my goals”), Reward Reactivity (e.g., “I get a special thrill when I am praised for something I've done well”), and impulsivity (e.g., “I find myself doing things on the spur of the moment”). Participants respond on a scale from 1 (not at all) to 5 (highly). The RST-PQ scales presented good internal reliability with the present sample: FFFS = 0.79; BIS = 0.94; BAS reward interest = .79; BAS goal-drive persistence = 0.87; BAS reward reactivity = 0.81; BAS impulsivity = 0.70.

1.1.2.3. Social Economic Status (SES). We collected family background SES as a control measure. Participants were shown a list of six occupational levels based on the NRS social grades, a system of demographic classification used in the UK for market research purposes (Market Research Society, 2016). The SES levels were coded from 1 (long-term unemployed, for whatever reason) to 6 (professional occupations). Participants were asked to indicate which best reflected the home where they grew up and as such, higher score suggested a higher family SES.

Ethical approval was obtained from the university faculty ethics committee. All participants completed the following measures presented online via the Survey Monkey platform.

1.2. Analysis

Analysis was conducted using SPSS version 22. Gender differences in ASB were calculated by an independent samples t-test and in the RST factors by a multivariate analysis of variance (MANOVA). Associations between variables were examined using Pearson's product moment correlations (two-tailed). Linear multiple regression was used to examine the extent to which the RST factors could account for variance in

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