**The Social Salience of Students’ Sub-clinical Psychopathic Personality**

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**Abstract**

We investigated the ability of undergraduate students to detect psychopathic personality traits in their new peers, after engaging in limited, naturalistic contact. Research has demonstrated that personality traits can be socially recognised in others. However, this research has not yet explored the recognition of psychopathic personality traits in newly encountered peers. This is important as some of these traits, such as manipulation, can have important social consequences in forming friendships. At the same time, manipulative tendencies only work best when not seen as such. To study the salience of psychopathic personality traits, undergraduate students (*N*=101) took part in a round robin judgment paradigm during their orientation period of university. We found that participants were able to detect the Triarchic Psychopathy Measure’s traits of Boldness and Disinhibition but not Meanness in their groups, using typical social judgments. However, Meanness was the only trait that notably related to judges reporting that they would not make friends with targets who showed more psychopathic personality traits. These results highlight the importance of psychopathic personality traits when students form first impressions and intentions to make friends. Future research should consider the influence of ‘hidden’ meanness even in sub-clinical populations.

**Keywords: Psychopathic Personality; Person Judgment; Round Robin; Undergraduate Student; Friendmaking**

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As David Funder notes, “We all make judgments about our own personalities as well as of the personalities of people we meet, and these judgments are consequential” (2012, p.177). Few interpersonal judgments can be as consequential as the judgment of the potential risk an individual poses, be that risk of physical, social or economic harm. An individual with a psychopathic personality is someone who, through a combination of affective and behavioural traits, is more liable to cause harm (in any of the above ways) to another individual. This ‘harm’ could even be relatively minor, for example social harm or rudeness, and increasingly it is of interest to investigate the whole distribution of psychopathic personality; including non-clinical individuals (Miller, Jones & Lynam, 2011). Persons who may be more inclined to psychopathic behaviour can still be a disruption in everyday social environments even if they do not meet a clinical diagnosis or engage in law-breaking behaviour. It is reasonable to expect that an undergraduate student seeking to meet new friends at the very start of a three year course would avoid those who could cause social difficulties. We were therefore interested to know if undergraduate students can detect each other’s psychopathic tendencies.

Research into participants who have had little prior contact has shown that lay participants can accurately detect personality traits in other individuals with limited interaction (Albright, Kenny & Malloy, 1988; Back, Schmukle & Egloff, 2010; Funder, 1980; Hirschmüller, Egloff, Schmukle, Nestler, & Back, 2015; McCrae, 1982; Vazire, 2010). In their review of the literature, Back and Nestler (2016) report “that judgments of personality typically reach hit rates of around 55% to 70%” (p.104) with general effect sizes of between .10 and .30. Much of this research has focused on the Big Five model of personality, showing that an individual’s neuroticism, extraversion, openness, agreeableness and conscientiousness traits are salient to perceivers. Funder’s (1995, 1999) Realistic Accuracy Model (RAM) states that interpersonal judgments are possible due to a target’s [[2]](#footnote-2) personality traits being *relevant* to their behaviour; their behaviour being *available* to judges1 who can thereby *detect* the behaviour and *utilize* these behavioural affordances to form a judgment of that target. This model explains how the Big Five traits are detectable. There are personality-*relevant* behaviours that are readily *available* on first meeting (for example a person’s smartness of dress relating to conscientiousness; Albright et al., 1998) which judges can *detect* to *utilize* to make an accurate personality judgment. The *utilization* of the information involves the synthesis of the knowledge and experiences of the judge to form an opinion of another person. This opinion can be formed in an overt sense (studies can ask questions along the lines of: *How highly does this target score on an extraversion measure?*) or in a more passive sense (*How intimidating do you find this person? Do you think they are friendly?*). This drives the idea that personality judgment is a normal part of everyday life and can affect first impressions. If a notion of psychopathic personality had (*relevant* and *available*) behaviours that met the RAM criteria then it is possible that judges could make accurate judgments of psychopathic personality too. It has previously been shown that some measures of psychopathic personality do relate to the Big Five, such as interpersonal antagonism and agreeableness (Hart & Hare, 1994; Lee, & Ashton, 200; Lynam, et al., 2005; Lynam & Widiger, 2007), so it is reasonable, from this evidence, to expect that individuals could judge the psychopathic personality of others.

Patrick, Fowles and Krueger’s (2009) Triarchic Model of Psychopathic personality has an emphasis on observable affective and lifestyle features and, as such, lends itself well to research in personality judgments. Patrick et al. (2009) define psychopathic personality as having three distinct traits; Boldness, Disinhibition, and Meanness. Patrick et al.’s (2009) ‘Boldness’ trait reflects the documented fearlessness of the psychopath which can be traced to neurological deficiencies in both defensive reactivity (Vaidyanathan, Hall, Patrick, & Bernat, 2011) and in avoidance of punishment when in pursuit of reward (Patrick & Bernat, 2009). In everyday life, this trait could be socially salient as confident behaviour and a lack of everyday nervousness (Patrick et a., 2009). In the Triarchic Model of Psychopathy the ‘Disinhibition’ construct is used to illustrate lifestyle features including the need for immediate gratification, lack of foresight, and diminished control over affect (Patrick et al., 2009). Someone who scores highly in this trait would display the tendencies of a thrill seeker and would have limited patience. The manipulative aspects of psychopathy are largely explained in Patrick et al.’s (2009) construct of ‘Meanness’. A Mean person could be described as someone who is not generous but acts in a greedy way. Meanness includes aggressive resource seeking, callousness and insensitivity. In terms of the RAM, it is possible that psychopathic personality-relevant Bold and Disinhibited behaviours (impatience and spontaneous behaviour) could be available with limited interaction. We were interested to see if Meanness is also detectable, as it does have associated behaviours (manipulation) however these behaviours work best when they are *not* detected by those in the same social environment (that is to say, it is harder to effectively manipulate an individual who is sensitive to a manipulation taking place).

Previous research has also demonstrated that these psychopathic personality facets, as measured by Patrick’s (2010) Triarchic Psychopathy Measure (TriPM), relate to the Big Five factors of personality (Poy, Segarra, Esteller, López & Moltó, 2014). The Boldness facet relates to aspects of neuroticism, extraversion and openness; Meanness relates to aspects of agreeableness and conscientiousness; and Disinhibition relates to aspects of neuroticism, agreeableness and conscientiousness. If aspects of the Big Five are detectable from limited interaction (see above), it is therefore reasonable to expect the TriPM traits could be as well.

The current study investigated the salience of these sub-clinical psychopathic personality traits (TriPM traits) between students with limited previous interaction. Fowler, Lilienfeld and Patrick (2009) comment that “preliminary impressions of psychopathy” (p.68) are under researched in general. There is research in the detection of clinical psychopathy which finds that lay people can detect psychopathic traits in criminal populations with limited excerpts from interviews (five, ten or twenty seconds of an interview with a prisoner; Fowler et al., 2009). There is also evidence of self-other rating agreement between long term acquaintances in psychopathic personality measures (Miller, et al., 2011). However, the current study focused on a more naturalistic setting, the meeting of a cohort during the first few days of university. It is of interest to investigate how salient psychopathic personality traits are in samples other than a criminal population (Fowler et al., 2009) or long term acquaintances (Miller et al., 2011). Here, we investigate two specific questions; i) are psychopathic personality traits detectable after limited interaction? And ii) is the intention to make friends with other individuals in a group related to the perceiver and/or the targets’ psychopathic personality traits?

**Method**

**Participants.** Allparticipants provided informed consent to taking part in the study. We recruited 109 first year Psychology undergraduate students (*M*Age=19.87, *SD*Age=6.10, *MinAge*= 18, *MaxAge*= 64, Gender: Female=80, Male= 28, one case missing) from a university in the United Kingdom. One participant did not complete the personality measure, so there were usable psychopathy data for 108 targets. Four participants did not engage with the judgment task (all reporting that they were unsure how to judge someone without extended engagement with the targets) and four participants did not make judgments of more than two targets (which is required for our accuracy analysis, see Analysis), leaving 101 judges. Each judge interacted with up to five others (see Procedure). Judge-target pairs with missing judgments or personality data were excluded from analysis (*N*=21), leaving a total of 393 complete judgments of targets (with known personality data).

All participants were recruited in an opportunity sample. They were first year undergraduate students taking part in activities relating to their orientation into the psychology department. The experiment took place on the second day of the university term and therefore participants had experienced limited prior contact with those with whom they interacted. On the first day of the Orientation the participants had attended a demonstration lecture and a small tutorial seminar. Participants, in the vast majority of cases (see Materials section below for amount of previous contact) had not had the opportunity for any meaningful interaction or conversation with each other. This timing is best suited to addressing our questions about the salience of psychopathic personality traits for newly acquainted (or zero acquainted in most cases) undergraduate students.

**Materials.**

***Triarchic psychopathy measure.***All participants completed Patrick’s (2010) **Triarchic Psychopathy Measure (TriPM, which is freely available at** [www.phenxtoolkit.org](http://www.phenxtoolkit.org/)**). This measure assesses traits of Boldness (with items such as: “*I am well equipped to deal with stress*” and the reversed “*I get scared easily*”), Meanness (with items such as: “*I don’t care much if what I do hurts others*” and the reversed “*For me, honesty really is the best policy*”) and Disinhibition (with items such as: “*I often get bored quickly and lose interest*” and the reverse item “*I have good control over myself*”). We excluded items relating to explicit criminal activity (items 24, 34, 40, 43, 53 and 58) due to concerns about the ethics of participant comfort as well as having little theoretical rationale to measure criminal activity in our undergraduate population. We computed the participants’ average response across the items for each subscale and their overall average response for a psychopathy score. We did this to avoid problems with items missing by our choice (see above) or by participant error (eight participants had missing items, but no individual participant had more than two items missing and never from the same subscale). Therefore, participants’ self-report scores on all three subscales as well as an overall measure of psychopathic personality ranged from 0 (not like this trait) to 3 (like this trait).**

**With these items removed our version of the TriPM had 19 items for Boldness, 18 for Meanness and 15 for Boldness.** We find good internal reliability for Boldness (α= .80), Meanness (α= .86) and Disinhibition (α= .77) with these amended measures. A confirmatory factor analysis, testing for the convergence of the reduced items on the three domains, also retains a good fit (χ2(df = 1271)= 2194.41, p<. 001, CFI= .52, RMSEA= .08 [95% CI .08, .09]). We also find intercorrelations between the measures (as would be expected), with Boldness correlating with Meanness (*r*= .36) and Disinhibition (*r*= .22) and Meanness and Disinhibition correlation with each other (*r*= .57). Overall we observe little change to the reliability of the three factor structure of the TriPM when the items referring to criminal conduct have been removed.

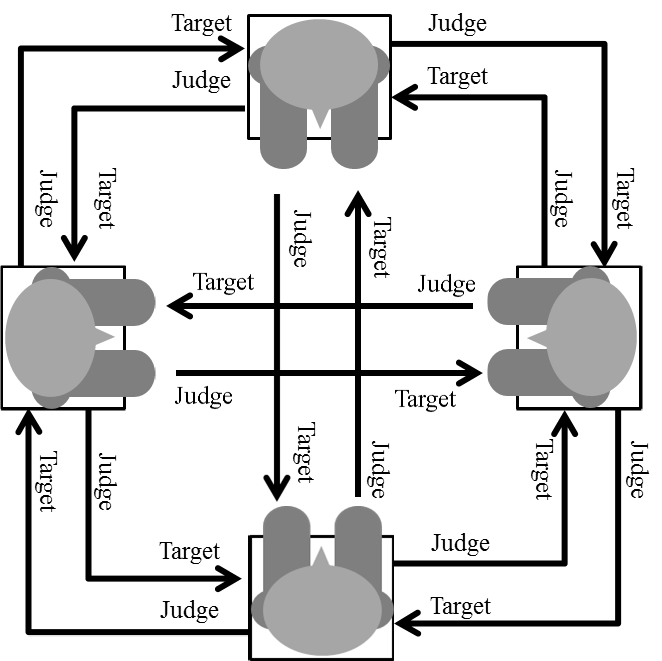
***Rating scales.* As per the standard person judgment paradigm, participants were given seven Likert scales to make ratings of their targets. The question presented to participants was “*Do you think this person is:*” and then responses on a scale of *1 –not an [adjective] person* to *9 –an [adjective] person*. Six of the rating scales were designed with the intention to reflect general understanding of Psychopathy. Boldness, theoretically, would be seen in high *Confidence* and low *Nervousness* ratings, Meanness being represented by low ratings of *Honesty* and high ratings of *Greed,* and Disinhibition being reflected by low ratings of *Patience* andhigh ratings of *Thrill Seeking* (Patrick, 2010)*.* We choose these adjectives to be a brief, but efficient measure of socially salient traits. This is not an exhaustive list of the ways that such traits may be described, however we choose these as aspects of psychopathic personality that may be socially salient on first impressions.**

**However, we wanted to investigate if participants used the scales in three broad categories as we had intended. We conducted a factor (oblique principle components) analysis on the six adjective ratings for each judgment made (*N*=393). A two factor** **solution** **(eigenvalue=1.77, explaining 61.61% of variance in ratings) was found to be the best fit for the ratings (a three factor solution had an eigenvalue of .70), suggesting that the participants treated the ratings as two groups and not three as we had intended. We used these two factors for further analysis, so as to allow for an efficient representation of the results (rather than reporting two groups of three highly similar ratings). We named these factors *Outgoingness* and general *Niceness*. Three ratings loaded most strongly onto *Outgoingness*: Confidence (.86), Nervousness (-.80) and Thrill Seeking (.72) and three judgments loaded most strongly onto the factor *Niceness*: Honesty (.80), Patience (.72) and Greed (-.76). Our factor analysis split our intended ratings for Disinhibition into being more similar to our intended Boldness and Meanness judgments. Whilst we did not expect a two factor solution, in the interest of using data-driven analyses we adopted these two factors for further analyses. We computed measures of Outgoingness and Niceness, which were the average judgments made across the composite three rating scales for each new measure, with Nervousness and Greed reverse scored.**

**The seventh rating required judges to rate targets on a scale of “*Do you think this person is:*” *1 –someone I don’t want to be friends with* to *9 –someone I want to be friends with.*  This ‘*Liking*’ rating was included as it may best capture a judge’s subjective, relational, ‘feelings’ about a target person which participants may struggle to express in the target dependent ratings above.**

**We also asked the judges to declare if they had engaged with the target before (for each target). They were asked if they had spoken with the target “*before university*”, “*in halls/shared house*”*,***[[3]](#footnote-3)**“*for the first time today*”,or were“*yet to speak with this person*”.** (44.30% of judges had never spoken to their targets before the experiment and the majority of the remainder had spoken to each other for the first time during the two days of their orientation week[[4]](#footnote-4)). Level of prior interaction was considered in the analyses as potentially influencing accuracy (see Results).

**Procedure.** Participants arrived in groups of 11-16 across eight 30 minute sessions. The laboratory was arranged so that there were two circles of five chairs and one circle of six chairs. Participants chose where to sit but were instructed to create even groups among the circles, and among people they did not know. The study was responded to with pen and paper in the format of study booklets. After choosing to consent, participants were first asked to complete the TriPM questionnaire (presented to participants as a non-specific ‘personality measure’). Next, participants were asked to pick someone from their circle of chairs, note their prior experience of engaging with that person (see Materials above) and judge that person on the seven rating scales. They then repeated the judgments until they had judged everyone in their circle. Figure 1 is a demonstration of a hypothetical four person round robin set up.



*Figure 1.* A representation of a round robin procedure. All participants act as a judge and a target in each judgment dyad. All judges judge all targets. All targets are judged by all judges.

**Analysis.** Thecurrent study investigated the relationship between targets’ self-reported psychopathic personality traits and social judgments of those targets. We refer to this self-report and social judgment relationship as ‘accuracy’ in line with Funder (2012).

***Whole sample analyses.***

We first analyse our data in the literature typical manner, using partial correlations to show the relationship between the ratings made by the judges and the self-reported psychopathic personality traits of the targets, whilst controlling for the judge, target and group. We then use the TripleR package (Schönbrodt, Back, & Schmukle, 2012) for R to conduct round robin analyses on the judgments to investigate whether judgments were more attributable to judges, targets, or the relationship between them.

***Idiographic analyses.***While whole sample analyses show how people, in general, show accuracy agreement in recognising psychopathic personality traits, such analyses do not show the accuracy of individuals in the sample. Previous research has promoted the use of ‘idiographic’ (Kolar, Funder & Colvin, 1996) analyses which show how individuals perform in person judgment tasks. This analysis is useful as it demonstrates the accuracy of one participant at one time, without nesting them in a larger group. In this way we can truly demonstrate an individual’s accuracy, which offers a more interesting and practical implication (being able to know if any one person is good at this task is more useful than knowing if people generally are). This analysis was conducted in two stages to answer our two research questions. To investigate judge accuracy, we computed individual accuracy correlations (Pearson *r*) values for each judge, i.e., an individual judge’s correlation between their rating of each target and the TriPM score of each of the targets. This allows that *r* value to be used to represent an individual’s ability to detect their targets’ psychopathic personalities. This method of ‘idiographic’ judge analysis is considered a more precise measure than more traditional analyses, using the average ratings received by targets (for more on this method see Hirschmüller et al., 2015; Kolar, Funder & Colvin, 1996; Monin & Oppenheimer, 2005). As Pearson *r* is only meaningfully calculable with three or more values, judges with judgments of only two targets were excluded from this analysis (*n*=4).[[5]](#footnote-5) Each judge had an accuracy *r* value calculated for their ability to detect the TriPM traits (the three subfactors and Overall Psychopathy) using the ratings of Outgoingness and Niceness, giving each judge eight (four traits to be detected \* two ratings) accuracy values. As the value produced is a Pearson *r* value, we interpret the accuracy value in the same way as any correlation, with an *r* value of 1 indicating linear agreement between a judge’s ratings and targets’ traits (e.g., the judge’s higher Outgoingness ratings are given to the more Bold targets they judged), a value of -1 indicating linear disagreement between judgment and traits (e.g., the judge’s higher Outgoingness ratings are given to the *less* Bold targets they judged), and a value of 0 indicating no association between a judge’s ratings of the targets’ traits. As Hirschmüller et al. (2015) demonstrate, the accuracy of a sample can be tested to investigate if it is meaningfully above random accuracy (*r*=0) using a One-sample t test.

To study the influence of target traits on judges’ intention to associate with the targets, we conducted individual Pearson’s *r* correlations between a judge’s ratings of wanting to be friends with a target and that target’s traits (we term this computed measure *Liking*). *Liking* is interpreted in the same way as the above *r* values except this measure is not considered to be measuring accuracy, rather, it is a measure of judges *wanting* to be friends with targets who score higher on psychopathic personality facets (an *r* value of 1), *not wanting* to friends with targets who score higher on psychopathic personality facets (an *r* value of -1) or no association between wanting to be friends and the psychopathic personality of the targets (an *r* value of 0).

The Liking judgment also has interesting relational implications. That is to say, it is interesting to know what influence a judge’s psychopathic personality traits may have on their wanting to be friends with targets who have higher or lower psychopathic personality trait scores. To this end, we also correlated the judges’ own psychopathic personality scores with their previously calculated Liking *r* value. A *positive* correlation between a judge’s Liking value and the judge’s self-reported psychopathic personality traits would show that the more the judge has a psychopathic personality, the *more* they like targets with a more psychopathic personality. A *negative* correlation between a judge’s liking value and the judge’s self-reported psychopathic personality traits would demonstrate that the more a judge has a psychopathic personality, the *less* they like targets with a more psychopathic personality. To summarise; a negative correlation shows a negative perception (disliking) of targets with more psychopathic personalities by a judge with a more psychopathic personality.

We wish to highlight that idiographic measures like this treat Pearson’s *r* as a descriptive value. It allows the description of how one judge can detect the personality of the targets they met. Such analysis puts a descriptive value to the activity being conducted. That is to say that we acknowledge that the targets will be different for all judges (as is the paradigm in round robin studies) but this *r* value describes how accurate a judge is at detecting the personality in their targets. This is a naturalistic measure in the spirit of the research, which aims to describe the typical early impressions among undergraduate students.

**Results**

**Sample psychopathic personality.** Table 1 reports the distribution of participant psychopathic personality traits. There was a range of factor scores with participants reporting low to high scores on Boldness (Min= 0.37, Max= 2.53), Meanness (Min= 0.06, Max= 2.33) and Disinhibition (Min= 0.33, Max= 2.13). Participants self-reported Boldness was generally between the rating scale anchors of ‘Somewhat False for me’ and ‘Somewhat True for me’ and their self-reports of Meanness and Disinhibition were generally reported as “Somewhat False”. This suggested that the self-reports generally did not strongly identify with psychopathic personality traits, as would be expected from undergraduate students. In our sample, male targets scored higher on Meanness, Disinhibition and Overall Psychopathy than female targets (see Table 1). As would be expected from an investigation using psychology undergraduate students, we have many more female than male targets in our sample so we report this result for descriptive purposes alone.

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| Table 1.  *The Distribution of Targets’ Psychopathic Personality Traits and the Differences Between Male and Female Targets’ Traits* | | | | | | | | |
|  | All Targets1  (*N*=108) | | Female Targets  (*N*=80) | | Male Targets  (*N*=27) | | Difference between Male and Female Targets | |
| Trait2 | *M* | *SD* | *M* | *SD* | *M* | *SD* | *t* | *d* |
| Boldness | 1.55 | .44 | 1.51 | .46 | 1.67 | .38 | 1.63 | .38 |
| Meanness | 0.82 | .44 | 0.73 | .41 | 1.10 | .43 | 3.62 | .88 |
| Disinhibition | 1.12 | .41 | 1.04 | .38 | 1.35 | .41 | 3.57 | .78 |
| Psychopathy | 1.17 | .33 | 1.10 | .31 | 1.36 | .30 | 3.72 | .85 |
| 1One target did not report gender information so the column ‘All Targets’ contains an additional participant.  2All participant mean scores are from a possible distribution of 0 (not like that trait) to 3 (like that trait). | | | | | | | | |

**Sample wide analysis.** Participants, on average, showed small-to-moderate accuracy in detecting Boldness (*r*(388) = .22, 95% CI [.12, .31]), Disinhibition (*r*(388) = .16, 95% CI [.06, .25]) and Overall Psychopathy (*r*(388) = .17, 95% CI [.07, .25]) using Outgoingness ratings (in partial correlations controlling for judge, target and group). There was no notable correlation between Outgoingness and Meanness (*r*(388)= .00, 95% CI [-.09, .10]).

Niceness also showed small-to-moderate accuracy at detecting Boldness (*r*(388) = -.15, 95% CI [-.25, -.06]) and Overall Psychopathy (*r*(388) = -.14, 95% CI [-.24, -.05]). Niceness did not relate to Meanness (*r*(388) = -.08, 95% CI [-.18, .01]) and Disinhibition (*r*(388) = -.09, 95% CI [-.19, .00]).

A round robin analysis on Outgoingness and Niceness judgments (using Schönbrodt et al.’s 2012, Triple R program) demonstrated the relative influence of the judge and the target on the ratings made (as standardised estimates). In the round robin analysis the Outgoingness ratings were strongly influenced by the target of the judgments (.39) and not so much by the judge (.14), perhaps explaining why Outgoingness was more a reflection of targets’ personality traits. On the other hand, Niceness was more influenced by judge bias (.29) than target variation (.14), which may explain why Niceness was less accurate at detecting the traits of the targets (being more subject to differences between judges).

**The idiographic accuracy of judges.** Table 2 reports the average accuracy value of the judge’s Outgoingness and Niceness ratings at predicting the TriPM traits and average psychopathy score of the targets. When tested against a random accuracy, Outgoingness ratings related to Boldness, Disinhibition and Overall Psychopathic personality with a large effect size (Table 2). Niceness ratings were reasonably accurate in detecting Disinhibition and general Psychopathic personality, but only with a small-moderate effect size when tested against a random accuracy, suggesting that Niceness was no better than chance at predicting the traits of targets. The general ratings of Outgoingness ratings made by the judges positively correlated with TriPM traits (a target with more psychopathy typical traits was seen as more Outgoing) and the general ratings of Niceness negatively correlated with psychopathic personality (a target with more psychopathic personality-typical traits was seen as less nice). Table 2 also reports the variation in judge accuracy (as can be seen in the Confidence Intervals of accuracy), which implies some participants were more accurate judges of traits than others.

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| Table 2.  *The Strength of Judges’ Accuracy at Detecting Targets’ Traits Through Outgoingness and Niceness Ratings (in a one sample t test against random accuracy, r=0)* | | | | | | |
|  | Mean Outgoingness accuracy correlation | | Difference from random | Mean Niceness accuracy correlation | | Difference from random |
| Target Trait | *Mean r* | 95% CI | *d* | *Mean r* | 95% CI | *d* |
| Boldness | .26 | [ .15, .38] | .95 | .01 | [-.13, .14] | .01 |
| Meanness | .03 | [-.10, .16] | .09 | -.10 | [-.23, .03] | .32 |
| Disinhibition | .22 | [ .12, .33] | .86 | -.14 | [-.25, -.03] | .49 |
| Psychopathy | .19 | [ .08, .31] | .67 | -.12 | [-.24, -.01] | .40 |

It is important to note that the degree of accuracy did not relate to the amount of interaction that a judge had experienced with a target. To measure this, we created a value for the percentage of a judge’s ratings where they engaged with a target they had not spoken to before. This, which we refer to as the percentage of *Strangers* the judge engaged with (M%Strangers=39.85, SD%Strangers=35.97) could be correlated with the eight accuracy values computed for each judge. None of these correlations were meaningfully large (all correlation sizes <=.16,) suggesting that there was no relationship between having prior contact with the target and improved interpersonal accuracy.

We also investigated the effect of judge psychopathic personality on judgment accuracy. We find that Outgoingness ratings made by more Mean participants were less accurate at detecting Overall Psychopathy (*r*(101) = -.20, 95% CI [-.38, -.03]). All other correlations between judges’ personality and judges’ accuracy were small effects (all *r* sizes <=.14) and so we conclude that judge psychopathic personality has no meaningful influence on judgment accuracy.

**Judges’ Liking of targets.** We were also interested in participants’ judgments of whether they would want to be friends with the target (which we use as an interpersonal index of ‘Liking’). This Liking value (see Analysis section above) had, on average, no relationship with the targets’ psychopathic personality traits (for all traits *M*Accuracy<=.11 and did not perform above random accuracy; all *d*<.37), suggesting that there was not a sample-wide consensus on liking or disliking targets with higher psychopathic personality scores.

To explore this further, we investigated the influence of individual differences on wanting to be friends with the targets. We tested for the influences of a judge’s own psychopathic personality on their liking of others. We find that judge Meanness meaningfully correlated with disliking for Bold (*r*(101)= -.26, 95% CI [-.41, -.11]), Disinhibited (*r*(101)= -.28, 95% CI [-.48, -.07]) and Overall Psychopathic typical (*r*(101)= -.25,95% CI [-.41, -.09]) targets, but no such relationship existed for targets’ Meanness (*r*(101)= -.10, 95% CI [-.29, .08]). It is notable that these are all negative correlations and so the more Mean the judge, the more they disliked targets with psychopathic personality traits. None of the other judge psychopathic personality traits related to their liking of targets. Judge trait Boldness (all correlation sizes *r*<=.04,) and Disinhibition (all correlation sizes *r*<=.09,) did not relate to the judge’s liking of the targets’ traits.

**Discussion**

In a naturalistic round robin judgment task, first year undergraduates with limited interaction were able to detect self-reported psychopathic personality traits in each-other. Trait Boldness and Disinhibition were best detected when the target’s thrill seeking, confidence and lack of nervousness were judged. Judgments of Niceness (or rather the factors of patience, lack of greed, and honesty) were poorer at detecting psychopathic personalities. Our findings demonstrate that, with limited interaction, judges can accurately detect some aspects of psychopathic personalities using socially typical judgments, much like any other form of personality (Albright et al., 1988; Albright et al., 1997; Back et al., 2010; Hirschmüller et al., 2015; Kenny & Albright, 1987; Kenny et al., 1994; Levesque & Kenny, 1993; Vazire, 2010). During their orientation to university, first year undergraduate students are looking to make friends for the (in this case) three years of their course. As we show here, the Meaner students are already dissociating from other individuals with more obvious psychopathic personalities. This could be considered evidence that more manipulative (although we note the population is a sub-clinical group) individuals are already preparing to find easier targets to take advantage of. These results altogether show that, from the first days of university, psychopathic personality traits are having a meaningful influence on students’ intentions to associate and dissociate.

Notably the traits with the clearest behavioural affordances (Boldness and Disinhibition) were easiest to detect (Funder, 1995; 1999; 2012). Meanness was most difficult to detect. This may be due to Meanness being a trait that *requires* itself not to be detected: to be successfully manipulative one must not be seen as such. Whilst it may be clear through action that a target is socially assertive and venturesome (Bold) or impulsive and hostile (Disinhibited), a target who is efficiently exploitative and manipulative (Mean) should not be seen as such. In fact, this finding of a lack of accuracy is, in itself, an interesting commentary on the nature of Meanness. It would be, perhaps, interesting to see if accuracy at detecting Meanness improves if judges were put ‘on guard’ to the nature of Meanness. Our current study was more interested in subtle social judgments (which people would typically make of new peers) and did not wish to overly structure participants’ judgments.

In the round robins, Meanness was difficult to detect but it did affect perception of others. Meanness was the only trait found to influence a judge’s disliking of targets with more psychopathic personalities. This effect of the ‘invisible’ Meanness driving dissociation tendencies is interesting as it suggests that part of Meanness is the ‘weighing up’ of others in a social setting. Considering a bigger picture, if there were too many individuals with Mean traits engaging in “aggressive resource seeking” (Patrick et al., 2009, p.913) in the social group then the group would not be able function sustainably. An individual with high trait Meanness needs those with lower Meanness to benefit from. We do not see similar effects with Boldness or Disinhibition as a Bold judge may not be concerned with the competition in the group and a Disinhibited judge would not plan for rivalries to emerge.

The current study exerted little experimental control over our participants, with some, albeit limited, interaction or observation between participants occurring prior to the session. The preceding day to the study required all participants to attend the same lecture session and would have given the participants the opportunity to engage with, or at the very least notice, the other participants. Given our lack of experimental control in this experiment (not limiting the type or level of prior contact participants may have had, and not restricting the information provided by targets by restricting dress or even using photos of targets), some of our effects are intriguingly strong (see Kenny, Albright, Malloy & Kashy, 1994; Richard, Bond & Stokes-Zoota, 2003). The strength of these findings warrants further investigation, especially with research that uses an interaction set-up typical of everyday life (meeting new peers and settling in amongst them). With all the inherent variation available with this form of unrestricted interaction, further research could explore lens modelling styles of analysis (such as those used by Back et al., 2010) to explore an uncontrolled setting more thoroughly. Such analyses would also allow the quantification of behaviours being elicited in the study setting and perhaps explain what behaviours facilitated the judgment of psychopathic personality traits. This would require videoing and coding the behaviour of participants in the round robin groups (not done here).

This study does not address the criminality aspect of psychopathic personality. In our research we were focusing on sub-clinical and non-offending populations and as such avoided using criminality sensitive measures (see Materials). Some previous research has tested offending related items of the TriPM with undergraduate groups (Sellbom & Phillips, 2013) suggesting that such research is ethical and possible. Whilst we are sensitive to the debate around the relevance of criminal behaviour to psychopathic personality (a matter of some dispute in the psychopathy literature; Cooke, Michie, Hart & Clark, 2004; Hare & Neumann, 2010; Skeem & Cooke, 2010a, Skeem & Cooke, 2010b), it could be of interest in future research to consider the relevance of offending or anti-social behaviours to detecting sub-clinical psychopathic personality.

Whilst it is typical for students to meet their peers in contexts similar to this study during their orientation at university, the setting itself is quite unusual. This makes the situation (of mutually engaging in groups of young strangers) interesting for psychologists but it is difficult to make assumptions about the ability of individuals not in such a context to make accurate judgments about the psychopathic traits of others. It could be the case that situations which are less socially tense would have less opportunity for self-assuredness or Boldness to be so available (Funder, 1995; 1999; 2012). Contexts where there is less goal-directed and focused behaviour could lead to less availability of restlessness or Disinhibition. In fact, in situations where negotiation is required, Meanness could be more available than it was in our setting. Future research could go beyond university students and explore the day-to-day ability of people to detect psychopathic traits away from this helpful (in the case of Boldness and Disinhibition) or unhelpful (in the case of Meanness) context.

**Conclusion.** With limited interaction, socially typical judgments of others can reflect sub-clinical psychopathic personality, in particular trait Boldness and Disinhibition. Interestingly, Meanness was difficult for judges to detect. This may be because the judges were not presented with behavioural affordances relevant to Meanness (as Meanness is dependent on not being detectable) and therefore judges could not detect nor utilize correct information to form an accurate judgment (in RAM parlance). Meanness consists of behavioural actions that may not be overt enough in this population or setting to be detected by a perceiver. Meanness was also however the only trait to drive a judge’s disliking of other individuals who displayed more overt psychopathic personality traits. As Meanness was generally ‘invisible’ to the sample overall, and is a trait with important social consequences, it is crucial to investigate those who can detect this trait and how they form their judgments. Overall this study highlights the influence of undergraduate students’ psychopathic personality traits on early perceptions of their peers and suggests that aspects of sub-clinical psychopathy might be quite socially salient.

**Conflict of Interest:**

On behalf of all authors, the corresponding author states that there is no conflict of interest.

**Compliance with Ethical Standards**:

This work received no grants or assistance from a funding body.

**Ethical Approval:**

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional Science Faculty Ethics Committee and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent:**

Informed consent was obtained from all individual participants included in the study.

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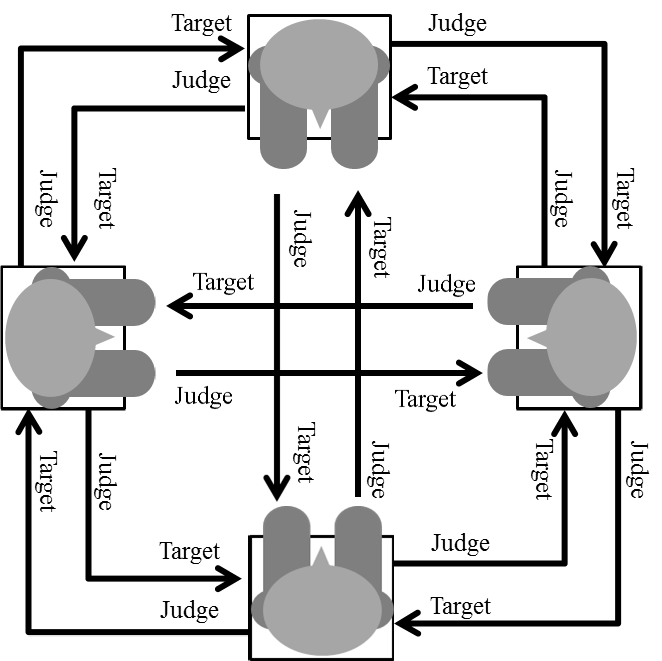
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*Figure 1.* A representation of a round robin procedure. All participants act as a judge and a target in each judgment dyad. All judges judge all targets. All targets are judged by all judges.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 1.  *The Distribution of Targets’ Psychopathic Personality Traits and the Differences Between Male and Female Targets’ Traits* | | | | | | | | |
|  | All Targets1  (*N*=108) | | Female Targets  (*N*=80) | | Male Targets  (*N*=27) | | Difference between Male and Female Targets | |
| Trait2 | *M* | *SD* | *M* | *SD* | *M* | *SD* | *t* | *d* |
| Boldness | 1.55 | .44 | 1.51 | .46 | 1.67 | .38 | 1.63 | .38 |
| Meanness | 0.82 | .44 | 0.73 | .41 | 1.10 | .43 | 3.62 | .88 |
| Disinhibition | 1.12 | .41 | 1.04 | .38 | 1.35 | .41 | 3.57 | .78 |
| Psychopathy | 1.17 | .33 | 1.10 | .31 | 1.36 | .30 | 3.72 | .85 |
| 1One target did not report gender information so the column ‘All Targets’ contains an additional participant.  2All participant mean scores are from a possible distribution of 0 (not like that trait) to 3 (like that trait). | | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Table 2.  *The Strength of Judges’ Accuracy at Detecting Targets’ Traits Through Outgoingness and Niceness Ratings (in a one sample t test against random accuracy, r=0)* | | | | | | |
|  | Mean Outgoingness accuracy correlation | | Difference from random | Mean Niceness accuracy correlation | | Difference from random |
| Target Trait | *Mean r* | 95% CI | *d* | *Mean r* | 95% CI | *d* |
| Boldness | .26 | [ .15, .38] | .95 | .01 | [-.13, .14] | .01 |
| Meanness | .03 | [-.10, .16] | .09 | -.10 | [-.23, .03] | .32 |
| Disinhibition | .22 | [ .12, .33] | .86 | -.14 | [-.25, -.03] | .49 |
| Psychopathy | .19 | [ .08, .31] | .67 | -.12 | [-.24, -.01] | .40 |

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2. Typically, in interpersonal perception research the person being rated is referred to as a ‘target’ and the person rating the target is referred to as a ‘judge’. [↑](#footnote-ref-2)
3. Undergraduate students in the UK generally live in University owned accommodation (halls) or privately rented (shared) housing. [↑](#footnote-ref-3)
4. 46.10% had spoken to each-other for the first time that week; 1.80% reported living with their target; and 2.00% reported speaking to the other person before university. 5.90% did not report. [↑](#footnote-ref-4)
5. The number of targets being judged did not change the value of accuracy by itself (all correlations between the eight accuracy values and number of targets judged were all smaller than *r*< .15). We do accept that varying numbers of judges affects variation in the r value calculations. To retain as much data as possible for analysis we keep all judges in this analysis. [↑](#footnote-ref-5)