A Case–Control Study of Alcohol-Related Violent Offending among Irish Probation Clients

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Summary: A case–control study examined whether aggressive offenders who had consumed alcohol before offending differed from aggressive offenders who had not consumed alcohol prior to their index offence or non-aggressive control offenders on measures of aggression, criminal cognitions, mating effort and personality. We examined whether alcohol-related aggressive offenders could be postdicted by individual difference measures. All 72 participants were on probation and completed the Buss–Perry Aggression Questionnaire; the Psychological Inventory of Criminal Thinking Styles; the Alcohol-Related Aggression Questionnaire; the NEO–Five Factor Inventory–Revised; and the Mating Effort Scale. The study found alcohol-related aggression expectancies predicted by low agreeableness and high neuroticism. Aggressive offenders who had consumed alcohol prior to their index offence were more likely to have higher levels of alcohol-related aggressive expectancies, aggression, callousness, and lower levels of neuroticism and thoughtfulness than non-aggressive offenders.

Keywords: Personality, aggression, five-factor model, alcohol, alcohol-aggression expectancies, assessment, probation, supervision, offenders.

Introduction

Violent offenders have commonly been drinking alcohol immediately prior to their index offence. Shaw *et al.* (2006) found that 45% of homicides committed in England and Wales over a three-year period were alcohol-related. A meta-analysis of laboratory studies examining the relationship between alcohol consumption and aggression by Exum

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(2006) found that even in non-field conditions and with a selected population, alcohol exerts a medium effect on aggression. As most persons do not become aggressive after consuming alcohol, pharmacological effects do not fully explain the alcohol–aggression relationship – even if alcohol indirectly influences aggressive propensity by virtue of the disruption of cognitive, physiological and emotional systems (Exum, 2006). Alcohol is believed to affect cognitive functioning by limiting the number of cues a person can perceive and attend to; this is referred to as 'alcohol myopia', and may result in a person being less likely to generate alternative ways of interpreting and responding to aggressive situations (McMurran *et al.*, 2006). Though persons sometimes attribute their misconduct to the abuse of alcohol, there is not always objective evidence of it causing the mental impairment that can potentially lead to criminal misjudgements (Egan & Cordan, 2009).

Alcohol-related aggression is more likely to occur in certain environments; for example, bars that are crowded, noisy, uncomfortable, poorly ventilated, that have aggressive and over-controlling staff and that have higher numbers of intoxicated patrons (Leonard *et al.*, 2003). These bars are commonly also social settings where individuals may compete to acquire a partner. Egan and Hamilton (2008) used the Mating Effort Scale (MES; Rowe *et al.*, 1997), which measures intra-sexual competition in young drinkers, seeking to determine the level of effort an individual puts into attaining and keeping a partner. It was found that young people who displayed higher levels of sexual competitiveness and lower levels of agreeableness were more likely to describe themselves as being aggressive when consuming alcohol. Mating effort was found to have a greater influence on various aspects of alcohol–aggression expectancies than personality, age or gender. Aggressive behaviour may be a behavioural strategy that is helpful when competing for mates, and alcohol may disrupt normal inhibitory mechanisms controlling competitive aggression (Egan and Hamilton, 2008).

In delinquent peer groups, violence and alcohol consumption often occur together, thus strengthening alcohol–violence-related expectancies (McMurran, 2007). Alcohol-related expectancies develop from an early age and are influenced by the behaviour of family and friends, reports in the media, cultural contexts and by the individual's drinking experience. Environmental contexts have been found to influence alcohol–violence-related expectancies and the speed at which these expectancies are accessed (Wall *et al.*, 2001). This could result in an increased probability

that other social cues in the environment are processed as hostile (Quigley and Leonard, 2006).

The social information-processing model suggests that individuals selectively focus on certain pieces of information from the environment, with aggressive individuals more likely to focus on and remember aggressive social cues (Sestir and Bartholow, 2007). 'Alcohol myopia' may make it more difficult for a person to establish a non-aggressive intention behind another person's behaviour (McMurran *et al.*, 2006). According to the social information-processing model, individuals assess social information and consider possible ways to respond to the situation. Those who have high levels of trait aggression are more likely to respond in an aggressive manner and generally produce fewer alternative responses to the event (Sestir and Bartholow, 2007). As alcohol may impact on evaluation of responses, an intoxicated person may not consider the consequences of aggression; so if aggression is witnessed while consuming alcohol, it may increase alcohol-related aggressive expectancies and allow the belief to develop that aggression is permissible when in that state.

Highly emotional stimuli provoke pre-emptive processing of social cues whereby the processing of events is based on schemata rather than in-depth analyses of cues (Crick and Dodge, 1994). While schemata assist people to function by reducing the information they need to process, the reliance on particular heuristics or schemata may also result in an individual misinterpreting social cues. Pre-emptive processing is particularly likely to occur when negative arousal exists or when the social cue has been interpreted as hostile (Ireland, 2009). Due to alcohol's effect on cognitive functioning, acute alcohol use may produce an increased probability that pre-emptive processing of social cues will occur. Individuals with hostile attribution biases are more likely to respond to interactions that provoke hostility and aggression from others. This may provoke further hostile attribution biases, and suggests that information-processing deficits lead to aggressive behaviour (Sestir and Bartholow, 2007). Thus, pharmacological effects of alcohol on the cognitive system, alcohol-related expectancies, and the setting in which alcohol is consumed may all exacerbate these information-processing deficits in individuals with high trait aggression.

Aggressive offenders usually commit other non-aggressive offences and often show general criminal cognitions (Collie *et al.*, 2007). Zhang *et al.* (1997) found that hostility, aggression, deviant attitudes and impulsivity had a direct causal influence on the probability of committing an assault,

but found no direct association between the usual pattern of drinking prior to a violent crime and the probability of committing an assault. However, males who consumed more alcohol and had pro-criminal attitudes were more likely to commit a violent crime. This suggests that high levels of alcohol consumption play a facilitative role in aggressive males who have antisocial attitudes when committing a violent offence. Zhang *et al.* (1997) found that once a person committed a violent offence, alcohol consumption prior to the offence and usual drinking behaviour predicted future alcohol-related violence. This may be due to alcohol-related violent expectancies. Such research shows that criminal attitudes influence aggressive offending irrespective of alcohol use.

Many offenders have self-serving cognitive distortions and anti-social values that allow them to maintain their offending (Walters, 1995). These criminal distortions may result in an offender believing they are entitled to behave criminally, due to their strong emphasis on self-centred beliefs and thoughts. Primary cognitive distortions are supported by secondary distortions, which result in the offender rationalising or justifying their behaviour, which means that after committing the offence the person experiences less cognitive dissonance. These deviant attitudes may remain even when an offender is abstaining from criminal behaviour (Egan *et al.*, 2000).

Antisocial attitudes are often normative in criminal subcultures, and offenders often have more extreme general personality traits. The five-factor model of personality refers to the five dimensions of personality – Neuroticism, Extraversion, Agreeableness, Conscientiousness and Openness – repeatedly found to emerge from the analysis of large multivariate analyses of personality scales conducted on broad samples, and has been found an effective way of structuring other psychological findings (Costa and McCrae, 1995). Generally, personality traits such as high Neuroticism, low Agreeableness and low Conscientiousness underlie greater aggression and violence, substance misuse, and general antisocial behaviour (Egan, 2009, 2011; Lynam *et al.*, 2003). Thus persons with greater levels of criminal cognitions have higher levels of sensation seeking and Neuroticism, and lower Agreeableness (Egan *et al.*, 2000). The relationship between alcohol use and aggression is also mediated by personality (Holcomb & Adams, 1985).

The current case–control study examined the role of individual factors in alcohol-related aggressive offending in offenders on probation in Ireland. It investigated whether aggressive offenders who had or had not

consumed alcohol prior to their violent offence reflected two different populations, as indicated by significantly different scores on measures of aggression, antisocial attitudes and personality traits, and in comparison to non-aggressive offenders (many of whom also abuse alcohol). Lastly, it explored the relationship between alcohol-related aggression expectancies and the measures of mating effort, personality, aggression and criminal cognitions within an offender population, and whether these measures could differentiate offender populations.

Method

Participants

Eighty-one Probation clients participated in this research. Criminal records were not available for nine participants and these were excluded from analysis; consequently the final sample consisted of 72 participants aged between 18 and 55 years (M = 27.9, SD = 8.42). Participants were divided according to whether they had committed a non-aggressive offence (n = 25, 34.7%), an aggressive offence after consuming alcohol (n = 36, 50%), or an aggressive offence without consuming alcohol (n = 11, 15.3%). The mean number of convictions for non-aggressive offenders was 4.3; for aggressive offenders who had consumed alcohol 11.1; and for aggressive offenders who had had not consumed alcohol at the index offence 11.2.

Materials

Participants completed the following questionnaires.

1. A demographic questionnaire, which sought information on gender; ethnicity; age; occupation; if they had been convicted of an aggressive offence; and if they had consumed alcohol prior to the offence.
2. *Buss–Perry Aggression Questionnaire* (BPAQ; Buss and Perry, 1992). This scale measures aggression. It is a self-report questionnaire in which individuals respond to statements such as 'Some of my friends think I am a hothead' on a five-point Likert scale. Responses range from 'strongly agree' to 'strongly disagree'. The scale consists of four subscales that measure physical aggression, verbal aggression, anger and hostility. Cronbach's alpha was reported to be 0.85, 0.72, 0.83 and 0.77 for the respective component scales and 0.89 for the total score. The BPAQ had good test–retest reliability, with the total score showing a reliability of 0.80 (Buss and Perry, 1992).

3. *Alcohol Related Aggression Questionnaire* (ARAQ; McMurran *et al.*, 2006). The scale measures proneness to alcohol-related aggression expectancies and measures items that may play a role in it. Statements such as 'I get aggressive if I drink too much' are answered on a four-point Likert scale. The responses range from 'always false for me' to 'always true for me'. The ARAQ consists of 28 items. There are four subscales: trait aggression, alcohol aggression outcome expectancies, sensitivity to pain and anxiety, and high alcohol/low cost beverage lifestyle. The total score was demonstrated to be psychometrically superior to its component scales (McMurran, 2002). On these grounds this research study only utilised the total ARAQ score. The ARAQ has good reliability, with McMurran *et al.* (2006) reporting a Cronbach's alpha value for the total scale of 0.96 and test–retest reliability of 0.79.
4. *Psychological Inventory of Criminal Thinking Styles* (PICTS; Walters, 1995). This is an 80-item scale which measures criminal cognitions and thinking styles that are related to offending. The questionnaire consists of statements such as 'I tend to push problems to the side rather than dealing with them'. It consists of 80 items, which are measured on a four-point Likert scale with responses ranging from 'strongly agree' to 'disagree'. There are eight subscales: mollification; cut off; entitlement; power orientation; sentimentality; super-optimism; cognitive indolence; and discontinuity. Egan *et al.* (2000) found that the PICTS consisted of two broader factors; 'Lack of thoughtfulness', which comprised the scales mollification, cut off, sentimentality, super-optimism, cognitive indolence and discontinuity, and 'Wilful hostility', which comprised the scales entitlement, power orientation and mollification.
5. *NEO–Five Factor Inventory–Revised* (NEO-FFI-R, McCrae and Costa, 2004). The NEO-FFI-R utilises the five-factor model to measure personality traits. It measures the personality traits of Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness by providing the participant with statements that they rate on a five-point Likert scale. The responses range from 'strongly agree' to 'strongly disagree'. The questionnaire consists of statements such as 'I am not a worrier', and has 60 items. Costa and McCrae report that the scale has been proved to have good validity and reliability in a variety of cultures and contexts.
6. *The Mating Effort Scale* (MES; Rowe *et al.*, 1997). This is a 10-item scale. The questionnaire is answered on a five-point Likert scale

ranging from 'strongly disagree' to 'strongly agree'. The MES was originally developed for adolescent males, but has been used in various research studies among adult males and females (see Weiss *et al.* (2004) and Egan and Hamilton (2008)). Weiss *et al.* (2004) adjusted this scale for gender and sexual orientation. Both the adjusted scale and the original scale have good reliability: Weiss *et al.* (2004) reported a reliability of 0.76 and Rowe *et al.* (1997) a reliability of 0.7.

Procedure

Prior to commencement of the project, a research ethics proposal was approved by the University of Leicester School of Psychology's Ethics Committee. Individuals were invited to participate in this research by their Probation Officer. If they wished to partake, the researcher met with them and they were asked to sign a consent form and to fill out the abovementioned questionnaires truthfully, answering all questions. Due to literacy difficulties some participants had the questionnaires read to them and they ticked the answers independently. It was felt that it was important not to exclude participants with literacy difficulties, as this could potentially be a source of bias. While it is acknowledged that reading the questions to the participants may potentially increase interviewer effects or social desirability response biases, this was minimised by allowing the participants to tick the answers independently.

Statistical analysis

This research tested whether aggressive offenders who used alcohol at the time of their offence (alcohol) differ from aggressive offenders who did not use alcohol at the time of their offence (no alcohol) and non-aggressive offenders in terms of criminal cognitions, aggression levels and personality characteristics, using analyses of variance (ANOVAs) and Kruskal-Wallis and Mann-Whitney *U*-tests. Lastly, logistic and linear regression analyses examined whether proneness to alcohol-related aggression is predicted by criminal cognitions, aggression levels and personality, and whether these constructs can predict criminal group classification.

Results

Descriptive statistics

Means, standard deviations and alpha reliabilities were calculated for all variables. The internal consistency of the scales was measured using

Cronbach's alpha. The scales that measured Extraversion, Openness and Verbal Aggression had alpha reliabilities of less then 0.7, so were excluded from further statistical analysis (Table 1). The normality of distribution of the variables was tested utilising Kolmogorov-Smirnov tests, which found that BPAQ Physical Aggression and PICTS Lack of Thoughtfulness were significant, suggesting that the distribution of these variables was not normal.

Table 1. Means, SDs and reliability of all measured variables

	Mean	*Standard deviation*	*Alpha reliability*
ARAQ	56.3	17.9	0.94
(BPAQ) Total aggression	94.4	19.2	0.93
Physical aggression	30.2	8.1	0.83
Verbal aggression	17.3	3.4	0.55
Anger	21.8	6.2	0.81
Hostility	25.1	6.4	0.76
PICTS total scale	130.6	29.5	0.93
PICTS Lack of Thoughtfulness	76.5	17.0	0.87
PICTS Wilful Hostility	54.0	14.2	0.84
N	38.2	8.9	0.81
A	41.4	6.8	0.72
O	38.5	6.0	0.38
C	41.7	6.4	0.71
E	39.9	5.1	0.39
MES	26.3	7.1	0.74

Correlational analyses

Correlations were calculated between and within the scales of ARAQ, BPAQ, NEO-FFI-R and PICTS, to establish the relationship between the various measures used in this research (Table 2). The table of correlations shows that almost all measures were significantly correlated with each other. Significant positive relationships were found between the ARAQ and the BPAQ total measure of aggression and its subscales of Physical aggression and Anger. This supports previous research (McMurran *et al.*, 2006). The correlations also revealed that a person who scored high in the ARAQ tended to score high in Neuroticism and low in Agreeableness. There was no significant relationship between the ARAQ and Conscientiousness. There was a significant positive correlation between the ARAQ and measures of criminal cognitions, Wilful Hostility, Lack of

Table 2. Correlations between measures

	BPAQ	*Physical aggression*	*Hostility*	*Anger*	*N*	*C*	*A*	*Lack of Thought-fulness*	*Wilful Hostility*	*PICTS*	*MES*
ARAQ	0.39**	0.43**[1]	0.22	0.37**	0.40**	–0.17	–0.39**	0.36**[1]	0.35**	0.38**	0.20
BPAQ		0.86**[1]	0.73**	0.85	0.58**	–0.27*	–0.49**	0.71**[1]	0.56**	0.65**	
0.30**											
Physical aggression			0.34**[1]	0.6**[1]	0.37**[1]	–0.24**[1]	–0.54**[1]	0.61**[1]	0.53**[1]	0.62**[1]	
0.51**[1]											
Hostility				0.49**	0.58**	–0.17	–0.09	0.46**[1]	0.41**	0.46**	–0.08
Anger					0.53**	–0.18	–0.5**	0.55**[1]	0.43**	0.51**	
0.26**											
Neuroticism						–0.31**	–0.15	0.44**[1]	0.51**	0.49**	–0.04
Conscientiousness							0.13	–0.23[1]	–0.49**	–0.37**	–0.19
Agreeableness								–0.39**[1]	–0.23	–0.34**	
–0.51**											
Lack of Thoughtfulness									0.76**	0.93**[1]	0.24[1]
Wilful Hostility										0.94**	0.22
PICTS											0.23*
MES											

[1] Non-parametric test (Spearman's rank order correlation) was used. * Correlation is significant at the 0.05 level (two-tailed); ** correlation is significant at the 0.01 level (two-tailed).

Thoughtfulness and the PICTS (a combination of wilful hostility and Lack of Thoughtfulness). The BPAQ and its subscales also had significant positive relationships with Neuroticism. The total score for the BPAQ, along with its component scale Anger, had a significant negative relationship with Agreeableness, while only the BPAQ had a significant negative relationship with Conscientiousness. This is supportive of the view that high Neuroticism, low Agreeableness and low Conscientiousness are particularly associated with aggression (Egan, 2009).

Comparison between groups

To establish whether aggressive offenders who had consumed alcohol differed from aggressive offenders who had not consumed alcohol, and in turn differed from non-aggressive offenders, ANOVAs and Kruskal-Wallis tests were conducted (Table 3). A one-way ANOVA indicated that there was a statistically significant difference between the groups on the measure of Anger, $F(2, 69) = 3.59$, $p < 0.05$ (Table 3). Post-hoc comparisons did not show statistically significant differences between any two groups of offenders. For measures that were not normally distributed, the Kruskal-Wallis test was used for differences in scores across groups. Offender groups were significantly different on the total score of the BPAQ, $H(2, n = 72) = 8.5$; $p < 0.05$. Mann-Whitney tests were used to perform post-hoc comparisons on non-normally distributed data. Overall, this analysis revealed that aggressive offenders (alcohol) and aggressive offenders (no alcohol) did not differ significantly on the BPAQ, Anger, Hostility, Neuroticism, Agreeableness, Conscientiousness and PICTS 'Wilful Hostility' measures, although there was a small but statistically significant difference between them for PICTS 'Lack of Thoughtfulness'.

Regression analyses of the data

Logistic regression was conducted to ascertain whether the individual differences measures could be combined to predict whether or not persons who would be convicted for aggressive offences would have consumed alcohol. The full model with the predictor variables was not statistically significant, $\chi^2(7, n = 72) = 12.34$, $p > 0.05$. Violent participants could not be differentiated psychometrically for the criminological function of predicting whether an offender would be drunk or sober at the time of an index violence offence. By contrast, regression analyses found that this criminological differentiation was possible for

Table 3. Mean scores on variables by group with one-way ANOVA/ Kruskal-Wallis test (K-W given if data not normally distributed)

	Non-aggressive offenders	*Aggressive offenders (alcohol)*	*Aggressive offenders (no alcohol)*	*F-ratio/ H value (all with x, y d.f.)*	*p <*
n	25	36	11		
ARAQ	46.0	61.4	63.4	$F(2, 69) = 7.7$	0.01
Total BPAQ Aggression	84.6 *	98.8	103.1	$H(2) = 8.5$	0.05
Physical Aggression	25.1 *	32.5	34.2	$H(2) = 14.2$	0.01
Anger	19.2	23.0	23.8	$F(2, 69) = 3.6$	0.05
Hostility	23.6	25.6	26.6	$F(2, 69) = 1.0$	N.S.
PICTS total	123.7	130.5	146.5	$F(2, 69) = 2.8$	N.S.
Lack of Thoughtfulness	73.2 **	75.2	88.3	$H(2) = 6.6$	0.05
Wilful Hostility	50.5	55.3	58.3	$F(2, 69) = 1.4$	N.S.
Neuroticism	37.2	38.3	40	$F(2, 69) = 0.40$	N.S.
Agreeableness	43.5	40.0	38.4	$F(2, 69) = 2.8$	N.S.
Conscientiousness	41.9	41.8	41.0	$F(2, 69) = 0.1$	N.S.
Mating effort	23.2	27.4	29.6	$F(2, 69) = 4.2$	0.05

N.S. = non-significant. * Non-aggressive offenders significantly different to aggressive alcohol offenders. ** Non-aggressive offenders significantly different to non-alcohol-abusing aggressive offenders.

psychometric measures obtained for alcohol-abusing violent offenders compared to non-violent offenders, $\chi^2(7, n = 58) = 43.49, p < 0.01$ (Table 4). As shown in Table 4, Neuroticism, ARAQ, BPAQ, PICTS 'Wilful Hostility' and PICTS 'Lack of Thoughtfulness' variables contributed significantly and independently to the predictive ability of the model. Aggressive offenders (alcohol) were more likely to have higher scores on the ARAQ, BPAQ and the PICTS 'Wilful Hostility' scale and lower scores in Neuroticism and the PICTS scale of 'Lack of Thoughtfulness' than non-aggressive offenders.

Given the general associations between personality, aggression and personality measures, a regression model was constructed to predict total ARAQ scores from PICTS 'Lack of Thoughtfulness' and PICTS 'Wilful Hostility', Neuroticism and Agreeableness. As PICTS 'Lack of Thoughtfulness' did not meet the assumptions of multiple regression, but the two PICTS dimensions were highly correlated, the two summary scales were added to make a total PICTS measure. In this model, only Neuroticism and Agreeableness were significant independent

Table 4. Logistical regression predicting likelihood of offender belonging to the aggressive offence (alcohol) group as opposed to the non-aggressive offender group

	B	S.E.	Wald	Sig.	Exp(*B*) (odds ratio)	95% C.I. for odds ratio	
Lack of Thoughtfulness	–0.23	0.08	7.36	0.01	0.80	0.67	0.94
Wilful Hostility	0.18	0.08	4.99	0.03	1.20	1.02	1.4
BPAQ	0.24	0.08	8.15	0.04	1.27	1.07	1.5
ARAQ	0.12	0.04	7.95	0.01	1.13	1.04	1.23
N	–0.25	0.10	6.74	0.01	0.78	0.65	0.94
A	0.10	0.10	0.95	0.33	1.10	0.90	1.36
C	0.18	0.10	3.13	0.08	1.19	0.98	1.45
Constant	–22.46	9.2	5.96	0.02	0.00		

BPAQ = Buss-Perry Aggression Questionnaire; ARAQ = Alcohol Related Aggression Questionnaire; N = Neuroticism; A = Agreeableness; C = Conscientiousness.

predictors of alcohol-related aggression expectancies ($R^2 = 0.28, p < .05$); Neuroticism demonstrated a positive relationship with the ARAQ, while Agreeableness was negative. The squared semi-partial correlation between the ARAQ total and Neuroticism was $sr_1^2 = 0.14$, and that between the ARAQ total and Agreeableness was $sr_1^2 = 0.13$, showing that Neuroticism explained 14% and Agreeableness 13% of the total ARAQ variance (Tabachnick and Fidell, 2007).

Discussion

This study found no difference between aggressive offenders who had consumed alcohol prior to their index offence and those who had not for measures of aggression, the criminal cognition of callousness, or personality. The only statistically significant difference between the two populations of violent offenders was on a 'lack of thoughtfulness' dimension, where aggressive offenders (alcohol) had lower levels than aggressive offenders (no alcohol). Although this difference was statistically significant, it was in real terms slight and of little genuine effect. This would suggest that there is very little difference between aggressive offenders who have consumed alcohol and those who have not. Logistic regression was not able to differentiate the two aggression groups psychometrically on any of the measured variables despite their relevance to predicting aggression in the first place. However, alcohol-consuming

aggressive offenders were different to non-aggressive offenders on the individual difference measures, with this being medium in effect. These results indicate that whether they have consumed alcohol or not, aggressive offenders have higher levels of criminal cognitions and aggression than non-aggressive offenders,

This study also examined the general psychometric relationship between alcohol-related aggression expectancies and broad individual differences. It found that high levels of dispositional aggression, high levels of criminal cognitions, higher Neuroticism and low levels of Agreeableness correlated with a greater level of alcohol-related aggression, whereas higher Conscientiousness and higher scores on the MES were not associated with expectancies about alcohol-related aggression. Multiple regression, which was used to ascertain how these measures predicted aggression when considered simultaneously, found only Neuroticism and Agreeableness to be significant independent predictors of alcohol-related aggression expectancies. This suggests that hostility and emotionality are fundamental influences on aggression, whether alcohol-driven or not (Egan and Lewis, 2012). Some offenders who commit aggressive offences after the consumption of alcohol do not believe that alcohol is related to their aggressive offending, and these persons report a low level of alcohol-related aggressive expectancies. This study found that alcohol-related aggression expectancies were predicted by high Neuroticism and low Agreeableness. Aggression related to high Neuroticism is generally defensive, impulsive and emotional (Egan, 2009). It is possible that behaviours associated with lower levels of Agreeableness could result in a person becoming embroiled in a conflict situation due to their reacting in a defensive, impulsive and emotional manner driven by concurrent high Neuroticism, without Neuroticism actually driving the behaviour (Egan and Lewis, 2012).

The current findings differ from research conducted by Egan and Hamilton (2008), who found that higher scores on the ARAQ were related to low Agreeableness and Conscientiousness and that MES scores predicted total scores on the ARAQ. In the current study, MES and ARAQ total scores did not correlate significantly. It is possible that the differences in the results of the studies reflect differences in the samples used. Egan and Hamilton's (2008) sample consisted of student union recruits, whereas the current sample was a population of offenders on probation. It is conceivable that individuals in the two clinical groups, who both reported high scores on the ARAQ, act aggressively for different

reasons following the consumption of alcohol. Egan and Hamilton's (2008) research sample suggested that aggression-alcohol expectancies were greater in persons who were also higher in intra-sexual competition, implying that violent status display may be in operation. The current sample presented a positive but non-significant correlation between these measures, whereas high Neuroticism and low Agreeableness again predicted greater scores on the ARAQ, and high MES was associated with lower Agreeableness.

Our results have implications for the treatment for aggressive offenders generally, as they suggest that violent offenders are demonstrably different to non-violent offenders, even if they both abuse alcohol. Aggressive offenders who had consumed alcohol prior to their offence had an average of 11.1 previous convictions; non-aggressive offenders had only four previous convictions. This also suggests that the population of aggressive offenders who had consumed alcohol contained a large number of recidivists. It is probable, therefore, that this particular group can be identified as having more chronic problems requiring greater intervention compared to non-violent offenders, and that resources and treatments should be allocated more selectively to violent offenders. Violent offenders may benefit from a multimodal intervention that targets their aggression. Offenders who have committed violent offences after consuming alcohol may benefit from an additional component that addresses the facilitative role of alcohol use in aggressive behaviour such, as the Control of Violence for Angry Impulsive Drinkers (COVAID) programme (McMurran & Cusens, 2003).

Personality remains an issue for management of offenders. In our study those who report high levels of alcohol-related aggression expectancies were more likely to exhibit low Agreeableness and high Neuroticism. Listwan *et al.* (2007) found that those who possess traits associated with Neuroticism are more likely to reoffend. Van Voorhis *et al.* (2002) found that offenders with high levels of Neuroticism, who had completed cognitive behavioural treatment programmes, still had higher levels of recidivism than other participants. It is possible that offenders with high levels of Neuroticism and the concomitant low self-esteem, anxiety and depression may find it difficult to engage in treatment in a group setting, so this type of programme may not be the most beneficial for this type of offender. Equally, Neuroticism is associated with impulsivity, and impulsivity is a cardinal behavioural marker for reoffending (Gordon and Egan, 2011). Individual treatment may be more beneficial for this group.

Further research is needed to establish effective treatment for emotionally unstable offenders who report high levels of alcohol-related aggression expectancies.

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References

Buss, A. H. and Perry, M. (1992), 'The Aggression Questionnaire', *Journal of Personality and Social Psychology*, vol. 63, pp. 452–459

Collie, R. M., Vess, J. and Murdoch, S. (2007), 'Violence-Related Cognition: Current Research', in T. A. Gannon, T. Ward, A. R. Beech and D. Fisher (eds.), *Aggressive Offenders' Cognition: Theory, Research and Practice* (pp. 199–215), Chichester, UK: Wiley

Costa, P. T., Jr and McCrae, R. R. (1995), 'Solid Ground on the Wetlands of Personality – A Reply to Block', *Psychological Bulletin*, vol. 117, pp. 216–220

Crick, N. R. and Dodge, K. A. (1994), 'A Review and Reformulation of Social Information-Processing Mechanisms in Children's Social Adjustment', *Psychological Bulletin*, vol. 115, pp. 74–101

Egan, V. (2009), 'The "Big Five": Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness as an Organisational Scheme for Thinking about Aggression and Violence', in M. McMurran and R. Howard (eds.), *Personality, Personality Disorder, and Risk of Violence: An Evidence-Based Approach* (pp. 63–84), Chichester, UK: Wiley

Egan, V. (2011), 'Individual Differences in Antisocial Behaviour', in T. Chamorro-Premuzic, S. von Stumm and A. Furnham (eds.), *The Wiley-Blackwell Handbook of Individual Differences*, Oxford: Wiley-Blackwell

Egan, V. and Cordan, G. (2009), 'Barely Legal: Perceptions of Attraction and Age as a Function of Make-Up, Sex, Age of Participant and Alcohol Use', *British Journal of Psychology*, vol. 100, pp. 415–427

Egan, V. and Hamilton, E. (2008), 'Personality, Mating Effort and Alcohol-Related Violence Expectancies', *Addiction Research & Theory*, vol. 16, pp. 369–381

Egan, V. and Lewis, M. (2011). 'Neuroticism and Agreeableness Differentiate Emotional and Narcissistic Expressions of Aggression', *Personality and Individual Differences*, vol. 50, pp. 845–850

Egan, V., McMurran, M., Richardson, C. and Blair, M. (2000), 'Criminal Cognitions and Personality: What Does the PICTS Really Measure?', *Criminal Behaviour and Mental Health*, vol. 10, pp. 170–184

Exum, M. L. (2006), 'Alcohol and Aggression: An Integration of Findings from Experimental Studies', *Journal of Criminal Justice*, vol. 34, pp. 131–145

Gordon, V. and Egan, V. (2011), 'What Self-Report Impulsivity Measure Best Postdicts Criminal Convictions and Prison Breaches of Discipline?', *Psychology, Crime & Law*, vol. 17, no. 4, pp. 305–318

Holcomb, W. R. and Adams, N. A. (1985). 'Personality Mechanisms of Alcohol Related Violence', *Journal of Clinical Psychology*, vol. 41, pp. 714–722

Ireland, J. L. (2009), 'Treatment Approaches for Violence and Aggression: Essential Content Components', in J. L. Ireland, C. A. Ireland and P. Birch (eds.), *Violent and Sexual Offenders: Assessment, Treatment and Management* (pp. 153–178), Cullompton, UK: Willan

Leonard, K. E., Quigley, B. M. and Collins, R. L. (2003), 'Drinking, Personality, and Bar Environmental Characteristics as Predictors of Involvement in Barroom Aggression', *Addictive Behaviors*, vol. 28, pp. 1681–1700

Listwan, S. J., Van Voorhis, P. and Ritchey, P. N. (2007), 'Personality, Criminal Behavior and Risk Assessment: Implications for Theory and Practice', *Criminal Justice and Behavior*, vol. 34, pp. 60–75

Lynam, D. R., Leukefeld, C. and Clayton, R. R. (2003), 'The Contribution of Personality to the Overlap between Antisocial Behavior and Substance Use/Misuse', *Aggressive Behavior*, vol. 29, pp. 316–331

McCrae, R. R. and Costa, P. T. J. (2004), 'A Contemplated Revision of the NEO Five-Factor Inventory', *Personality and Individual Differences*, vol. 36, pp. 587–596

McMurran, M. (2002), 'Alcohol, Aggression and Violence', in J. McGuire (ed.), *Offender Rehabilitation and Treatment: Effective Programmes and Policies to Reduce Re-offending* (pp. 221–243), Chicester, UK: Wiley

McMurran, M. (2007), 'Alcohol and Aggressive Cognition', in T. A. Gannon, T. Ward, A. R. Beech and D. Fisher (eds.), *Aggressive Offenders' Cognition: Theory, Research and Practice* (pp. 231–246), Chichester, UK: Wiley

McMurran, M. and Cusens, B. (2003), 'Controlling Alcohol-Related Violence: A Treatment Programme', *Criminal Behaviour and Mental Health*, vol. 13, pp. 59–76

McMurran, M., Egan, V., Cusens, B., Van Den Bree, M., Austin, E. and Charlesworth, P. (2006), 'The Alcohol-Related Aggression Questionnaire', *Addiction Research and Theory*, vol. 14, pp. 323–343

Quigley, B. M. and Leonard, K. E. (2006), 'Alcohol Expectancies and Intoxicated Aggression', *Aggression and Violent Behavior*, vol. 11, pp. 484–496

Rowe, D. C., Vazsonyi, A. T. and Figueredo, A. J. (1997), 'Mating-effort in adolescence: A conditional or alternative strategy?', *Personality and Individual Differences*, vol. 23, pp. 105–115

Sestir, M. A. and Bartholow, B. (2007), 'Theoretical Explanations of Aggression and Violence', in T. A. Gannon, T. Ward, A. R. Beech and D. Fisher (eds.), *Aggressive Offenders' Cognition: Theory, Research and Practice* (pp. 179–199), New York: Wiley

Shaw, J., Hunt, I. M. and Flynn, S. (2006), 'The Role of Alcohol and Drugs in Homicides in England and Wales', *Addiction*, vol. 101, pp. 1117–1124

Tabachnick, B. G. and Fidell, L. S. (2007), *Using Multivariate Statistics* (4th ed.), Needham Heights, MA: Allyn and Bacon

Van Voorhis, P., Spruance, L. M., Ritchie, P. N., Johnson-Listwan, S., Seabrook, R., and Pealer, J. (2002). *The Georgia Cognitive Skills Experiment: Outcome Evaluation Phase II*, Atlanta, GA: Georgia Board of Pardons and Paroles and National Institute of Justice

Wall, A., McKee, S. A., Hinson, R. E. and Goldstein, A. (2001), 'Examining Alcohol Outcome Expectancies in Laboratory and Naturalistic Bar Settings: A Within-Subject Experimental Analysis', *Psychology of Addictive Behaviors*, vol. 15, pp. 219–226

Walters, G. D. (1995), 'The Psychological Inventory of Criminal Thinking Styles: I. Reliability and Preliminary Validity', *Criminal Justice and Behavior*, vol. 22, pp. 307–325

Weiss, A., Egan, V. and Figueredo, A. J. (2004), 'Sensational Interests as a Form of Intrasexual Competition', *Personality and Individual Differences*, vol. 36, pp. 563–573

Zhang, L., Wieczorek, W. F. and Welte, J. W. (1997), 'The Nexus between Alcohol and Violent Crime', *Alcoholism: Clinical and Experimental Research*, vol. 21, pp. 1264–1271