Personality and individual differences in responses to aggression triggering events among prisoners and non-prisoners

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ABSTRACT

This paper examines the relationships between individual differences in situational triggers of aggressive behaviors (STAR) and the FFM personality traits. The investigation, conducted among Polish male and female offenders and students, revealed different relationships across samples. Among students, higher sensitivity to frustration and provocation was related to higher Neuroticism and lower Agreeableness and sensitivity to provoking situations to lower Openness to Experience. Among prisoners, however, lower Agreeableness was negatively linked to being more sensitive to provocation. Furthermore, the study found sex differences in STAR scales in the student sample but not the prisoners' sample.

1. Introduction

1.1. Person and situation influences of aggression

Many theoretical models, including the General Model of Aggression, stress the importance of both individual and situational factors in aggression (Anderson & Bushman, 2002). Anderson, Benjamin, Wood, and Bonacci (2006) have highlighted four main ways in which situational and individual factors can influence aggression and those factors may interact. First, both factors may interact (e.g. trait aggressive individuals may become more aggressive under provocation). Second, repeated experience of a situation can lead to changes in personality (e.g. watching repeated violence can lead to stable increases in aggressive personality). Third, personality can influence the situations one is exposed to (e.g. aggressive individuals frequent more violent places). Finally, personality can alter the situation to make it more aggressive (e.g. aggressive individuals act negatively towards others – which make others more hostile to them). However, Lawrence (2006) has pointed out that little attention has been paid to individual differences in responses to situational triggering factors. Lawrence (2006) argued that people may vary in their sensitivity to certain

situational aggressive triggers – in particular provocations and frustrations. In order to measure individual differences in responding to various situations, Lawrence (2006) developed the Situational Triggers of Aggressive Response (STAR) scale, consisting of two factors – sensitivity to frustrations (SF) and sensitivity to provocations (SP). SF reflects proneness to feel particularly aggressive in response to having one's goals blocked and to uncontrollable negative events. SP measures predisposition to feel aggressive in reaction to goading and provocation from others. While SP and SF are typically related (Lawrence, 2006), they offer differential prediction of relevant different cognitions and behaviors. For example, SP, but not SF scores predict individuals' susceptibility to perceive the provoking behavior of others as more aggressive (Lawrence & Hodgkins, 2009), and aggressive behavior towards a provoking individual (Lawrence & Hutchinson, 2013). Indeed, when SF is controlled for in these analyses, the effect of SP remains (Lawrence & Hutchinson, 2013).

1.2. Aggression and the Five Factor Model of personality

Models explaining aggression emphasize the role of broad-based personality in aggressive behavior (Anderson & Bushman, 2002; Berkowitz, 1993). The most commonly used model of personality: the Five Factor Model of personality (FFM: Costa & McCrae, 1992), has been shown to explain 30–60% of the variance in anger and hostility (Ruiz, Smith, & Rhodewalt, 2001; Sharpe &

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Desai, 2001), with anger and hostility being particularly related to greater Neuroticism (N) and lower Agreeableness (A). Consequently, N has been argued to be most associated with anger experience, while low A has been associated with behavioral components of aggression (Bettencourt, Talley, Benjamin, & Valentine, 2006; Martin, Watson, & Wan, 2000). Those high in N are particularly sensitive to stimuli evoking negative affect and to develop psychological distress, as they perceive events as more stressful, and are more emotionally reactive to stressors (Schneider, 2004). In a meta-analytic review, Bettencourt et al. (2006) concluded that high N and low A are related to aggression, but conditionally dependent on whether the situation is neutral or provoking. Finally, along with A and N, Conscientiousness (C) has been linked to aggression and antisocial behaviors (Jones, Miller, & Lynam, 2011). Specifically, those low in C typically exhibit higher levels of antisocial behaviors, including aggression.

Investigations examining aggression and personality usually differentiate between offender and non-offender samples. Aggression and antisocial behaviors have been reported more frequently in offender, as compared to normal population (Ohlsson & Ireland, 2011). Regarding FFM dimensions, a number of differences between prisoners and non-prisoners have been found. For example, incarcerated psychopaths score lower on C, A and Openness to Experience (O) compared with non-psychopaths and non-prisoners (Ghaderi, Borjali, Bahrami, & Sohrabi, 2011). Further, a large body of research has found higher levels of N amongst offender groups as compared to non-offenders (e.g. Laak et al., 2003). Consequently, different patterns of personality-aggression relationships are possible in prisoners and non-prisoners. What is not clear in the literature to date, is whether offenders are higher in SP and SF, when compared to non-offenders, and secondly whether SP and SF are associated with the FFM domains differentially in these groups.

1.3. Current study

The study aims to test relationships between FFM and SF and SP in non-prisoners and prisoners. Moreover controlled analyses for participant sex, as sex effects have been found in both aggression measures (Archer & Haigh, 1997; Lawrence, 2006), with males being typically shown to be higher in behavioral aggressive measures and five-factor personality dimensions (Costa & McCrae, 1992), with females being typically higher in A and N (Chapman, Duberstein, Sorenson, & Lynas, 2007).

Particularly, we expect the following relationships:

(1) We expect low agreeableness related to greater sensitivity to provocation, since people with high Agreeableness value getting along with others; are friendly, cooperative and willing to compromise (Costa & McCrae, 1992) and sensitivity to provocations results from interactions with others.
(2) Those high in N are sensitive to stimuli that cause in them negative affect and are more prone to feel psychological distress (Matthews, Deary, & Whiteman, 2009), thus we expect neuroticism to be linked to SP and SF – as both types of situations evoke negative emotions (Lawrence, 2006).
(3) As this trait has been found negatively related to aggression and antisocial behaviors, we expect individuals high in C to be lower in both SP and SF.
(4) A recent meta-analysis (Jones et al., 2011) has shown that on the lower-order analysis, the facet of Extraversion (E) – warmth was among the strongest correlates of antisocial and aggressive behaviors. As warmth reflects the manner in social contacts, we expect high E related to low SP.

As we noticed above, the prisoners may be expected to differ substantially from a general population in some personality

dimensions and aggression (Ohlsson & Ireland, 2011), and consequently the studied relationships could be attenuated.

2. Method

2.1. Materials and procedure

2.1.1. The NEO-FFI
(Costa & McCrae, 1992) in Polish adaptation (Zawadzki et al., 1998) was used to measure five personality traits. The questionnaire consists of 60 items assessing Neuroticism, Extraversion, Openness to experience, Agreeableness, and Conscientiousness. Thus, each dimension contained twelve items. The internal consistency for each scale in the Polish adaptation was as follows: $\alpha = .80$ (N), $\alpha = .77$ (E), $\alpha = .68$ (O), $\alpha = .68$ (A), and $\alpha = .82$ (C) (Zawadzki, Strelau, Szczepaniak, & Śliwińska, 1998). Cronbach's alphas in the present research (see Table 1) were close to those cited above, although those for E and O scales were slightly lower in the offending group.

2.1.2. The STAR scale
(Lawrence, 2006) was used to measure aggression-related sensitivities. The questionnaire consists of 22 items (10 reflect Sensitivity to Frustrations, and 12 Sensitivity to Provocations). Participants are presented with 22 situations, and are asked to rate how aggressive each makes them feel typically on a 5-point scale. The instrument has high internal consistency ($\alpha = .82$ for Provocations and $\alpha = .80$ for Frustrations) and its validity has been examined previously (Lawrence, 2006). The questionnaire was translated for the current study into Polish, then by two experts into English and then back-translated by a bilingual person, and approved by the author of the original scale. The internal consistency of the STAR dimensions in the present research was high in both students and prisoners (Table 1).

Groups of students were tested in classrooms or in dormitories. In the inmates questionnaires were administered during time when prisoners are in their cells on their own. All participants were informed of the nature, purpose and anonymity of the study. The study meets the ethical standards of the Academy of Special Education in Warsaw. The data collection from inmates was approved by the local head of prisons in Warsaw.

2.2. Participants

2.2.1. Students
In the student sample there were 300 participants (189 female, 111 male). All were undergraduate students from three Warsaw universities. The mean age was 21.86 ($SD = 2.12$) ranging from 19 to 34 and males (21.58 ± 1.06) were older than females (22.36 ± 2.15) ($t_{(298)} = 3.093$, $p < .01$). There were no missing data.

Table 1
Internal consistency, means and standard deviations of NEO-FFI and STAR scales among students and prisoners.

Scale	Cronbach's alpha		Means (SD)	
	Students	Prisoners	Students	Prisoners
N	.86	.83	23.02 (8.95)	20.75 (8.69)
E	.78	.57	28.36 (6.95)	28.15 (5.31)
O	.62	.56	28.25 (6.31)	26.68 (5.47)
A	.67	.63	27.87 (7.01)	28.06 (5.70)
C	.85	.77	28.42 (8.15)	36.06 (5.81)
Provocations	.78	.87	40.85 (7.94)	39.21 (10.66)
Frustrations	.77	.88	29.29 (7.35)	26.27 (9.22)

2.2.2. Prisoners

120 questionnaires were distributed among inmates from the three adult prisons in Warsaw (2 male prisons, 1 female prison). 101 questionnaires were returned (return rate 84%). Among these who returned questionnaires 45 were male and 56 female. The mean age was 34.83 (SD = 10.24) ranging from 19 to 62 and no sex differences occurred regarding age ($t_{(84)}$ = .946, p = .347). Fifty-six participants had no previous convictions, 18 had one, 11 had two and 16 had more than two previous convictions. Thirty-three of the inmates finished primary school, 48 finished high school, 14 graduated college, and 6 did not specify their level of education. In the prisoners' sample missing items appeared in 22 subjects for the Provocations subscale, 15 for the Frustrations subscale, 10 for N and E, 11 for O, 13 for A, and 12 for C. Only complete scales were included in the statistical analyses, and thus, number of participants varied across analyses ranging from 73 to 84.

In order to generalize the results, FFM data from both samples were compared to the normative data (Zawadzki et al., 1998) to determine whether the samples (see Table 1 for their means and standard deviations) differed significantly from the means in the population.

Students had slightly higher E ($t_{(299)}$ = 2.47, p < .05, d = .15) than the average score in the population of young adults (age 20–30). Prisoners had lower A ($t_{(86)}$ = 3.386, p < .001, d = .40) and higher C ($t_{(88)}$ = 7.72, p < .001, d = .76) in comparison to population means. Moreover, comparison between prisoners and students controlling for age (using ANCOVA) revealed that prisoners, as compared to students, did not differ in SP ($F_{(1,376)}$ = .410, p = .522) or SF ($F_{(1,376)}$ = .766, p = .382).

3. Results

Compared to males, females scored higher in SP, SF, N, A, and C in students (Table 3), whereas in prisoners, females only scored higher in N (Table 2).

Furthermore, higher SP was related to lower A in prisoners (Table 4), whereas in students SP was related to lower A and O and to greater N (Table 5). Higher scores on SF, on the other hand, was linked to lower A and to greater N only in the student sample.

To examine the predictors of SP and SF, two hierarchical multiple regression analyses were carried out with SF and SP acting as

the DVs for offenders and students separately. Sex and age were entered as predictors in step 1, and N or O or A entered in step 2. Only three FFM traits (N, O and A) were tested since they were significantly correlated with SP or SF scores (Tables 4 and 5). Although previous investigations have suggested that C is associated with aggression-related behaviors, the current data showed no associations between C and the two STAR scales, and consequently C was not included in the analyses.

Regression analyses revealed (Table 6) that after controlling for sex and age, greater SF was related to higher N and lower A only in students, while greater SP was linked to lower A in both prisoners and students and to higher N and to lower O only in students.

4. Discussion

The study focused on examining individual differences in situational triggers of aggressive behaviors and their relation to FFM personality traits. The investigation was conducted among offenders and students, which gave a wider perspective on the concept of

Table 2
STAR and NEO-FFI scales means (SD) in females and males compared using Student's t tests (Cohen's d) in prisoners (N = 101).

	N	E	O	A	C	Provocation	Frustration
Female	22.70[*]	27.82	26.71	28.87	35.57	40.22	27.79
	(8.08)	(5.13)	(6.08)	(5.50)	(6.21)	(11.37)	(9.92)
Male	17.50	28.52	27.55	27.72	37.75	36.68	24.04
	(9.46)	(5.18)	(5.00)	(5.51)	(4.68)	(9.65)	(7.48)
d	0.60	0.14	0.15	0.21	0.39	0.34	0.42

[*] p < .01 (two-tailed).

Table 3
STAR and NEO-FFI scales means (SD) in females and males compared using Student's t tests (Cohen's d) in students (N = 300).

	N	E	O	A	C	Provocation	Frustration
Female	25.53[**]	28.35	28.58	28.44[*]	29.11[*]	41.74[*]	30.48[**]
	(8.41)	(7.08)	(6.33)	(6.53)	(8.79)	(7.69)	(7.01)
Male	18.75	28.39	27.70	26.54	27.24	39.34	27.26
	(8.23)	(6.77)	(6.26)	(6.69)	(6.81)	(8.17)	(7.50)
d	0.82	0.01	0.14	0.29	0.23	0.31	0.45

[*] p < .05 (two-tailed).
[**] p < .001.

Table 4
Pearson's correlations between NEO-FFI scales and STAR scales in prisoners.

	N	E	O	A	C	Provocation	Frustration
E	−.502[***]						
O	−.308[**]	.221					
A	−.027	.048	.140				
C	−.220[*]	.363[***]	.035	.316[**]			
Provocation	.056	.090	−.022	−.305[*]	.084		
Frustration	.125	.079	−.158	.−163	.099	.797[***]	
Age	−.069	−.234*	.160	.188	−.057	.001	−.086

[*] p < .05 (two-tailed).
[**] p < .001 (two-tailed).
[***] p < .001 (two-tailed).

Table 5
Pearson's correlations between NEO-FFI scales and STAR scales in students (N = 300).

	N	E	O	A	C	Provocation	Frustration
E	−.318[***]						
O	.093	.027					
A	−.026	.163[**]	−.031				
C	−.202[***]	.197[***]	−.070	.173[**]			
Provocation	.262[***]	−.057	−.131[*]	−.181[**]	−.020		
Frustration	.357[***]	−.058	−.046	.−201[***]	−.089	.630[***]	
Age	−.052	−.071	.116[*]	−.046	.055	−.113	−.127[*]

[*] p < .05 (two-tailed).
[**] p < .01 (two-tailed).
[***] p < .001 (two-tailed).

Table 6
Hierarchical regressions with each STAR scale as a dependent variable, sex and age as predictors entered in the first block, followed by the N or O or A entered in the second block.

Block		Frustration				Provocation			
		Prisoners		Students		Prisoners		Students	
		ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
1	Gender	.032	−.140	.053[***]	−.196[***]	.021	−.137	.029[*]	−.130[*]
	Age		−.115		−.093		−.052		−.090
2	N	.006	.078	.091[***]	.324[***]	.001	.033	.051[***]	.242[***]
2	O	.015	−.124	.002	−.050	.001	−.029	.017[*]	−.132[*]
2	A	.030	−.176	.055[***]	−.237[***]	.102[*]	−.321[*]	.042[***]	−.208[***]

Note: Sex: 0 = female, 1 = male.
[*] p < .05.
[***] p < .001.

frustration and provocation sensitivity beyond existing published data collected from undergraduates in the UK (Lawrence, 2006).

The present study has demonstrated that among students, higher sensitivity to both frustration and provocation was related to higher N and lower A. This is consistent with the assertion that N and A are related to aggression (Bettencourt et al., 2006). However, these findings were inconsistent with our expectation that N should be more related to Frustrations and A to Provocations. Additionally the present study found that students who were sensitive to provoking situations were lower on O. Among prisoners only A was negatively linked to the sensitivity to provocation. There was no relation with C or E and any of the STAR subscales as may be expected basing on previous findings (Jones et al., 2011).

The association between sensitivity to provocation and frustration amongst those high in N is understandable, as those high in neuroticism are typically sensitive to stimuli that generate negative affect and are prone to feel psychological distress. Being frustrated and provoked generates negative affect. Similarly, being high in N increases the likelihood that events will be perceived more negatively. For example, individuals high in N perceive events to be more stressful, and are more emotionally reactive to stressors (Schneider, 2004).

Furthermore, individuals low on A could be described as hostile and irritable (Bettencourt et al., 2006). Such people usually care less about interpersonal relationships. However, as situations characterized by provocation typically involve interactions with others, whereas those characterized by frustrations not necessarily, it was expected that sensitivity to provocations would be more associated with lower A. This was the case for prisoners, but not undergraduates. In the student sample, both sensitivity to provocations and frustrations were associated with lower A, which indicates that those lower in A, respond by feeling aggressive to any trigger of aggression. Because, those scoring higher in Frustrations have a less stable and coherent self-image (Lawrence, 2006), it is possible that these individuals may be more likely to attribute the cause of frustrations to others that are not involved in the frustrating situations. That would suggest a reciprocal relation between A and sensitivity to frustration and future research could examine the extent to which those low in A engage in more internal attributions of blame for frustrations to other people than those high in A, when also controlling for self concept-clarity.

The negative association between O and SP may be due to the dual aspect of O. Firstly, highly open individuals are characterized as open to different cultures and lifestyles and being tolerant of diversity (McCrae, 1996). It could be speculated that this helps them cope better with provoking situations, since they can understand others' reactions, and take others' perspectives.

Offenders in the present study sample were significantly higher on C than the normative data, while on A they obtained lower scores than the population mean. While direction of difference in A are compatible with the previous studies, higher scores on C are contradictory to results previously obtained (Ghaderi et al., 2011). When considering this somewhat surprising result, it is important to acknowledge that offenders create in prisons a very specific and distinct culture with a set of rules and norms (Clemmer, 1940). Cross-cultural studies suggest that differences in C may be a consequence of different response styles relating to cultural norms (Schmitt et al., 2007). It is possible that C levels in the prisons included in our study are not very high, and compared with these standards, offenders may perceive themselves as more conscientious.

While sex differences in STAR have not been found in previous studies involving undergraduate samples in the UK, in the present investigation sex differences in both STAR scales were found in the student sample. The lack of sex differences previously has been explained by the general lack of sex differences in the experience of anger (Archer, 2004). Indeed, in the current sample, no sex differences were found among prisoners. However, the sex differences in sensitivities to aggressive triggers found here may be culturally specific, in the same way that some sex differences in aggression have been demonstrated (Eagly, 1987). Consedine, Magai, Horton, and Brown (2012) showed that there are cultural differences in experiencing anger among females, with Eastern European women, in comparison to other ethnic minorities in US, reporting greater anger. Further research in wider samples outside the UK is needed.

It needs to be acknowledged that there are limitations of the current study. Most important, two quite different groups of participants were tested. Undergraduate students are used as a comparison to the offender group, but are in no way a 'control' group against which to examine the responses of offenders. One of our findings is that all prisoners scored lower on SP and F than students. Because STAR scales assess people's aggressive feelings, not behavior this somewhat counterintuitive finding can be explained. As the prevailing culture amongst students, the social elite, requires non-aggression. Therefore inhibiting aggression may make students more aware of their aggressive feelings than inmates, for whom aggressive feelings may be more commonplace and less salient. Further work needs to establish the role of aggression inhibition and social norms in the experience of sensitivity to provocation and frustration.

Furthermore, internal consistency of A and O found in our samples was in the range between 0.6 and 0.7 which is regarded as "sub optimal". However, similar reliability was observed for the above scales both in the Polish adaptation (Zawadzki et al., 1998) and in studies conducted in other languages (Caruso, 2000). While removing items which contribute to the lower alpha was an option to increase internal reliability, this hinders results comparison between studies. In fact, poorer reliability coefficients lower correlation coefficients (Murphy & Davidshofer, 2004), thus our results for A and O scales shows lowered bounds of their relationships with aggressive feelings. It may not be the low quality of items, but rather the shortness of the NEO-FFI affecting reliability (Caruso, 2000), using longer scales, like the NEO-PI-R would provide higher estimates of correlations between big five and aggressive feelings.

It is believed that understanding why some aggressive tendencies are expressed, should start at the individual level, by examining for example motives (Ireland, Brown, & Ballarini, 2006). Our study adds to understanding how personality is linked to perceiving situations as provoking or frustrating, therefore making an individual feel aggressive. While those who feel aggressive do not necessarily go on to act aggressively, the experience of feeling aggressive does increase the likelihood of aggressive behavior. For example, individuals high in SP do have an increased tendency to act aggressively towards those who provoke them (but not to those who do not provoke them) (Lawrence & Hutchinson, 2013). However, Lawrence & Hutchinson's (2013) study was conducted using undergraduate students and it would be important to examine the predictive validity of these sensitivities using measures of inhibitory control, direct aggression and form of aggression in forensic samples.

Knowledge related to understanding individual differences in reacting aggressively to triggers could be used in psycho-educational activities for people diagnosed with aggression or anger control issues. Moreover, understanding of individual sensitivities to triggers could help not only to work with individuals involved in aggression and conflict as perpetrators but also victims, in regard to which talking about their own aggression is not socially desirable. Therefore concentrating on the triggers of their aggressive feelings and understanding them could be helpful.

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