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Personality traits and coping styles in UK police officers. Do negotiators differ from their non-negotiator colleagues?

Abstract

In this piece of research the traits and characteristics held by police hostage (crisis) negotiators in the United Kingdom are explored, with specific reference to Personality, Coping Style and Cognitive Emotion Regulation. One hundred and seventeen hostage negotiators from 21 UK police forces took part in the research and their data were compared with 118 non-negotiator police officers and 203 university students. Participants completed the Big Five Inventory (BFI), the Coping Skills Test-Revised (CST-R) and the Cognitive Emotion Regulation Questionnaire (CERQ) and their data were compared using Multivariate Analysis of Variance and Discriminant Function Analysis. Findings confirmed the existence of a 'police personality/profile' with significant differences obtained between both police samples and the student sample on all three constructs; however, the findings demonstrated little support for the concept of a unique 'hostage negotiator personality/profile'. Gender differences were also explored, with significant differences observed across male and female participants for all three dependent variables. No significant interaction effects were observed, however, suggesting that the effect of gender on personality, coping style and cognitive emotion regulation was independent of group membership. The findings are discussed with relevance to hostage negotiator and police officer selection and training practices.

Keywords: Hostage Negotiation; Crisis Negotiation; Police Personality; Coping Style; Cognitive Emotion Regulation.

1.0 Introduction

1.1 Hostage (Crisis) Negotiation within the United Kingdom (UK)

UK hostage crisis negotiators are police officers who have been trained to perform this specialist function. The negotiator role differs from other specialist roles, such as dog handling, criminal investigation and firearms, as it does not constitute an officer's main operational function; rather, the role operates on an on-call basis, performed alongside day-to-day duties. Entry requirements for the role differ across police forces but generally officers must be of sergeant rank or higher (or inspector rank or higher in some metropolitan forces). Officers who successfully apply for the role complete a one-week regional training course followed by a two-week national course to equip them with the skills to respond to both crisis and hostage situations. Negotiators are considered to be beneficial within the following incidents: suicide intervention; missing persons; political protest; people in crisis; supporting incident commanders in firearms operations; offences of kidnap and/or extortion; criminal sieges and terrorist hostage incidents (ACPO, 2011). This helps to exemplify the diverse nature of situations that hostage crisis negotiators are likely to encounter within the UK. However, it is worth noting that anecdotal evidence proffered by negotiators themselves (Grubb, Brown & Hall, *In Process*), suggests that the majority of incidents that they respond to relate to individuals experiencing some form of personal, emotional or psychological crisis, as opposed to the latter, more sensationalist categories above. This suggestion is also reinforced by individual territorial force policies which reaffirm the fact that "not all types of incidents involve the taking of hostages but all are life threatening or display the potential for significant harm/damage to the community, a person or commercial enterprise" (West Mercia Police, 2009, p. 2).

It is difficult to provide a clear and accurate picture of the nature and prevalence of hostage (crisis) negotiation in the UK due to the territorial nature of police forces and the lack of a centralised database which collates national data in relation to hostage negotiator deployments. Whilst individual forces will record negotiator deployments, the exact nature of this recording will

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vary from force to force in terms of detail and content, making it difficult to directly compare such data. Similarly, the number and frequency of deployments will vary from force to force and will be dependent on factors such as size of geographical force area and whether the force is metropolitan or rural. To provide some context, data provided by one metropolitan police force in the United Kingdom indicates that negotiators were deployed/utilised on 93 occasions in 2013. The most common incident type involved suicide intervention (74%), followed by 'other' incidents (9%), criminal incidents (9%) and domestic incidents (8%) (Source Anonymised at Request of Force, 2013). Scottish data provided by Alexander (2011) provides an insight into the prevalence of hostage (crisis) negotiation in Scotland, with Alexander reporting 315 deployments across all Scottish police forces over a three year period between 2005 and 2008. Official police recorded data can also provide an indication in terms of the number of kidnapping incidents that occur per annum within the UK on a national level (i.e. there were 1727 offences of kidnapping recorded by the police in 2013/2014) (Office for National Statistics, 2014), however, negotiators may not have been involved in responding to all of these incidents and as such, it is difficult to ascertain a clear and coherent picture of the exact nature and prevalence of hostage (crisis) negotiation in the UK.

The selection processes for police officers have been subject to research that has informed the selection criteria utilised by law enforcement agencies internationally. The measurement of personality traits has typically dominated the research and the existence of the 'police personality' is well established empirically (Abrahamsen & Strype, 2010; Lefkowitz, 1975; Twersky-Glasner, 2005). However, there is a lack of research relating to the competencies and characteristics that are important for performance within specialist roles, including that of hostage negotiation. The identification of which could be used to inform recruitment and selection processes, and *ergo* facilitate selection of appropriate candidates for these roles. It remains to be established, for example, whether certain personality traits in police officers result in them being more effective as negotiators. In many instances, negotiators can play a significant role in whether an individual lives

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or dies and as such, there is a need for a better understanding of the competencies and characteristics that are inherent in effective negotiation.

1.2 The Police Personality

Research within police populations has demonstrated the importance of personality traits as significant predictors of police performance (Black, 2000; Chibnall & Detrick, 2003; Detrick & Chibnall, 2002; Detrick & Chibnall, 2006; Lau, Hem, Berg, Ekeberg & Torgensen, 2006; Varela, Boccaccini, Scogin, Stump & Caputo, 2004), with higher levels of Conscientiousness and lower levels of Neuroticism being identified as the most significant predictors of police population membership and performance (Abrahamsen & Strype, 2010; Barrick & Mount, 1991; Barrick, Mount & Judge, 2001; Cortina, Doherty, Schmitt, Kaufman & Smith, 1992; Detrick & Chibnall, 2006; Mount & Barrick, 1995). Conscientiousness is thought to reflect dependability, whereby individuals tend to be careful, thorough, responsible, organised and planful (Botwin & Buss, 1989; John, 1989). When extrapolating these findings to the context of police work, individuals displaying such traits would logically appear to be well suited to a role which involves taking responsibility for protecting the public and goal-orientated tasks in relation to enforcement of the law. Neuroticism tends to reflect negative emotionality and nervousness whereby individuals demonstrating lower N scores tend to be more emotionally stable, calm and not easily upset (John, Naumann & Soto, 2008) than those with higher N scores. When considering the interpersonal conflict that inevitably arises as a result of police work, it is likely that those who are able to react calmly in the 'heat of the moment' and respond in a more emotionally stable way after experiencing a potentially traumatic event are more likely to cope with the pressure associated with police work and perform more effectively within their role. Abrahamsen and Strype (2010) confirmed the importance of both Conscientiousness and Emotional Stability within a Norwegian police sample, and also identified the role of Agreeableness. Agreeableness characteristics such as being good-natured, cooperative and trustful may be linked to conflict resolution skills within policing (John et al., 2008) and therefore beneficial in de-escalating crisis situations.

1.3 The role of Personality and Socio-Psychological Constructs in Hostage Negotiation

Researchers investigating negotiator characteristics have tended to take one of two stances: identifying the characteristics of operational negotiators; or asking negotiators to describe the characteristics that they perceive are important for effective negotiators. The studies that have been conducted are outlined in Table 1. Much of the research has been conducted in the USA with a potential lack of cross-cultural validity or applicability to other contexts. The studies are varied in terms of the variables measured, type of measurement tools/methods and samples utilised, such that it is difficult to compare findings or attempt to synthesise a single list of qualities/characteristics that hostage negotiators possess. In three studies (e.g. Allen, Fraser & Inwald, 1991; Gelbart, 1979; Gettys & Elam, 1988), psychometric profiles of negotiators were produced using the Minnesota Multiphasic Personality Inventory (MMPI) and/or the California Personality Inventory (CPI), but comparison or control samples of non-negotiator officers were not included, so it cannot be determined whether the characteristics are unique to negotiators. Other researchers (e.g. McMains & Mullins, 2010; Regini, 2002; Slatkin, 2010) relied upon discussions with, or observations of, the crisis negotiation teams. However, the lists of characteristics generated do not appear to have been empirically validated and it is unclear exactly how these attributes were measured. Self-report studies in which negotiators were asked to identify the characteristics of effective negotiators by selecting characteristics from a standardised list of adjectives (e.g. San Jose, 1995; 2004) lack credibility due to the fact that they only provide insight into the *perceived* characteristics of effective negotiators and do not necessarily depict the *actual* characteristics. The findings from the studies are far from generalisable as a result of sampling limitations, including limited sample sizes and differences in the levels and lengths of operational experience of negotiators in different studies.

[Insert Table 1 here]

1.4 The role of Coping Style in Police Settings

Coping is referred to as the conscious use of cognitive or behavioural strategies to reduce perceived stress (Lazarus & Folkman, 1991). The way in which individuals cope with stressful events

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can broadly be dichotomised into *adaptive* and *maladaptive* coping styles. The most commonly discussed conceptualisation of these styles describes coping strategies as either *problem-focused* or *emotion-focused* (Folkman, 1984). Problem-focused coping refers to responses that are geared toward directly altering or resolving the stressful situation, while emotion-focused coping refers to efforts to manage and regulate one's emotional reactions to the stressful situation (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986). In general, problem-focused coping strategies are considered to be more functional than emotion-focused coping strategies (Billings & Moos, 1984; Hart, Wearing & Headey, 1995; Thoits, 1995), because they focus on actively addressing the problem (Masel, Terry & Gribble, 1996), as opposed to dealing with the emotions associated with the problem.

The ability to cope with stress has been highlighted as a significant factor within police settings, with poor coping skills significantly predicting stress experienced in police work (Anshel, 2000; Beehr, Johnson, & Nieva, 1995). Law enforcement has been recognised as one of the most stressful occupations worldwide (Dantzer, 1987; Loo, 1984) and the use of maladaptive coping strategies in police work has been found to lead to chronic, long term stress (Hurrell, 1995; Nordlicht, 1979); increased rates of heart disease, stomach disorders, divorce, alcohol/drug abuse, suicide (Lord, Gray & Pond, 1991; Rogers, 1976); job burnout and leaving the profession (Burke & Deszca, 1986; Malloy & Mays, 1984). The use of coping strategies by police officers has been empirically investigated by a number of researchers (Anshel, 2000; Anshel, Robertson & Caputi, 1997; Biggam, Power & MacDonald, 1997; Bishop et al., 2001; Burke, 1994; Fain & McCormick, 1988; Haarr & Morash, 1999; Kirkcaldy, Cooper & Ruffalo, 1995; Leonard & Alison, 1999) showing that police officers utilise maladaptive coping strategies (Burke, 1993; Dietrich & Smith, 1984; Evans, Coman, Stanley & Burrows, 1993; Graf, 1986; McCafferty, McCafferty & McCafferty, 1992; Richmond, Wodak, Kehoe & Heather, 1998; Violanti, Marshall & Howe, 1985) to deal with occupational stress. Strategies include aloofness, alcoholism, authoritarianism, cynicism, depersonalisation, emotional detachment and suspiciousness (Bonifacio, 1991; Davidson & Veno, 1980; Kroes, 1985; Niederhoffer,

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1967; Violanti & Marshall, 1983); with one of the most consistently reported maladaptive coping strategies being the use of alcohol and/or drugs (Burke, 1993; Dietrich & Smith, 1984; Richmond et al., 1998). The findings from these studies conducted across different cultures are inconsistent. The reasons behind this are unclear but suggest that cultural components play a role. It may be the case, for example, that some strategies are less acceptable within certain cultures (i.e., the use of alcohol) and therefore are used less. The implications of maladaptive coping are far from benign, with those who utilise such coping mechanisms being far more likely to suffer from health problems than those utilising more adaptive forms of coping (Burke, 1993).

Research focused on direct comparisons of problem and emotion-focused coping has identified more frequent use of problem-focused coping within police samples (Bishop et al., 2001; Evans et al., 1993). Other research indicates that both strategies are used (Alexander & Walker, 1994; Beehr et al., 1995; Fain & McCormick, 1988; Larsson, Kempe & Starrin, 1988), with Larsson et al., (1988) revealing problem-focused coping in 100% of the situations and emotion-focused coping in 97% of the scenarios officers were asked to evaluate. Whilst these findings provide an insight into police officer coping, they have often been identified using police samples in isolation so it is difficult to assess whether these strategies are unique to police officers. Moreover, there is no published research to date that investigates coping strategies utilised by specific divisions within the police (i.e. hostage crisis negotiators) who may be exposed to intense and potentially emotionally traumatic incidents that may extend over fairly protracted periods of time. Identification of the cognitive and behavioural coping mechanisms utilised by negotiators would have a number of implications for police selection processes, probationary officer training and on-going operational policing. Identification of applicants who have a tendency to utilise less adaptive strategies could be used to inform selection of probationary officers, or provide an opportunity for additional resilience training to be implemented prior to completing their probationary period. Equally, operational officers frequently exposed to traumatic or emotionally challenging scenarios (as a result of a specific police role for example) could be provided with bespoke dedicated training packages designed to enhance

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their utilisation of adaptive cognitive and behavioural coping strategies in an attempt to prevent potential problems associated with maladaptive coping in police settings.

1.5 Gender, Personality and Coping Style

Limited research has focused on direct comparisons of personality attributes of male and female police officers; however, research that has been conducted outside of police settings has found that gender impacts upon personality (Costa, Terracciano & McCrae, 2001; Feingold, 1994). Amongst other trait differences, women tend to possess higher levels of neuroticism and agreeableness, whereas men tend to score more highly on assertiveness and openness (Costa et al., 2001). With reference to coping style and stress responses, generic occupational empirical studies indicate that there are significant differences in the coping skills of male and female employees (Barnett, Biener & Baruch, 1987), with females tending to utilise more emotion-focused coping strategies and males more problem-focused strategies (Billings & Moos, 1981; Stone & Neale, 1984). This finding also extrapolates to police settings, with female officers coping with stress differently to male officers (Brown & Campbell, 1990; Haarr & Morash, 1999; Pendergrass & Ostrove, 1984). There is, however, a paucity of research in which direct gender comparisons of coping styles and strategies are made, and gender in relation to hostage negotiation has not been examined.

2.0 Rationale, Aims and Hypotheses

To date, there is limited literature which examines negotiator characteristics when placed in a comparative context of the wider police population. In addition to this, research which analyses the potential impact of gender on hostage negotiator characteristics is also lacking. The aim of the current study, therefore, was to compare UK police hostage negotiators with police officers and students on three constructs (personality, coping style and cognitive emotion regulation) that may influence the way individuals negotiate and/or cope with high levels of stress, whilst also taking account of gender. It was proposed that police negotiators would display a unique and consistent 'hostage negotiator profile', distinct from the profiles of officers and non-officers, that enables them to perform and cope under highly stressful situations, and that there would be gender differences

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observed across the sample. The constructs were selected on the basis of empirical evidence linking them to occupational performance within police settings, or commonsensical application of the constructs to performance within highly stressful occupations and roles (Grubb & Brown, 2012). A student comparison group was employed to establish differences between police and non-police populations. Whilst the authors acknowledge that a sample of students may not fully represent the general population, this type of sample is frequently utilised within social science research. Comparisons with norm group data (where available) for the tests employed were also made.

Despite this not being a focus of the current research, the authors acknowledge the interactive play between personality and coping style and the notion that certain personality traits are more conducive to the utilisation of adaptive and functional coping styles. For a full discussion of the literature relating to the relationship between personality and coping style and a theoretical analysis of how this may play a role within hostage negotiation environments, please refer to (Grubb & Brown, 2012).

The following hypotheses were generated on the basis of the extant literature: 1a) Hostage negotiators will score significantly more highly on *Extraversion and Conscientiousness* than police officers and students, 1b) Hostage negotiators will score significantly lower on *Neuroticism* than police officers and students, 1c) There will be a statistically significant difference between the *Agreeableness* and *Openness* scale scores exhibited by hostage negotiators, police officers and students, 1d) Female participants will score significantly more highly on the *Neuroticism* and *Agreeableness* scales than male participants, 1e) Male participants will score significantly more highly on the *Openness* subscale than female participants, 2a) Hostage negotiators will display significantly more *problem-focused coping* and less *emotion-focused coping* than police officers and students, 2b) Hostage negotiators will use *maladaptive coping strategies* (i.e. 'Hang Ups') significantly less frequently than police officers and students, 2c) Female participants will score significantly more highly on *emotion-focused coping strategies* than male participants, 3a) Hostage negotiators will use *adaptive cognitive emotion regulation strategies* significantly more than police

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officers and students, 3b) Hostage negotiators will use *maladaptive cognitive emotion regulation strategies* less frequently than police officers and students, 3c) Female participants will score significantly more highly on the use of *maladaptive cognitive emotion regulation strategies* than male participants.

3.0 Method

Design

A cross sectional survey design was utilised, whereby data were collected in the form of a psychometric test battery. The independent variables consisted of group membership with three levels (Hostage Negotiator; Police Officer and Student) and gender with two levels (Male; Female). The battery consisted of four pre-validated scales measuring the following dependent variables: *a) Personality, b) Coping Style, c) Cognitive Emotion Regulation and d) Social Desirability.*

Participants

The *Hostage Negotiator Sample* consisted of 117 (77% Male; 23% Female) police hostage negotiators from 21 UK based police forces with a mean age of 43 years (SD = 6.1) and an age range of 29 - 61. Most of the participants were White British ($n = 115$; 98%), one participant (1%) was Other White and one participant (1%) was Pakistani. Participants lengths of service within the police ranged from 30 to 400 months, with a mean of 244 months (SD = 76.7) and their lengths of service as negotiators ranged from 0 to 192 months, with a mean of 64 months (SD = 45.5). The number of incidents dealt with as a negotiator ranged from 0 to 300 incidents, with a mean of 43 incidents (SD = 52.0).

The *Police Officer Sample* consisted of 118 (63% Male; 37% Female) police officers from 21 UK police forces with a mean age of 41 years (SD = 7.5) and an age range of 21 – 57 years. All 118 (100%) of the participants were White British. Participants lengths of service within the police ranged from 28 to 480 months, with a mean of 182 months (SD = 92.6).

The *Student Sample* consisted of 203 (45% Male; 55% Female) undergraduate and postgraduate students from Coventry University with a mean age of 22 years (SD = 5.9) and an age

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range of 18 – 50 years. The majority of the participants were White British ($n = 124$; 61%) and the remainder of the sample consisted of students from a variety of different ethnicities: Other White ($n = 18$; 9%); Indian ($n = 19$; 9%); Pakistani ($n = 12$; 6%); Bangladeshi ($n = 1$; 1%); Other Asian ($n = 1$; 1%); Black African ($n = 14$; 7%), Other Black ($n = 3$; 2%), Chinese ($n = 1$; 1%); and Other Ethnicity ($n = 10$; 5%). The majority of students were studying psychology at undergraduate level ($n = 107$; 53%) or postgraduate level ($n = 18$; 9%), with the remainder studying a variety of courses across the Health and Life Sciences, Engineering and Business Faculties.

Measures

The Demographic Questionnaire contained questions relating to personal characteristics and work history within the police force, including: *age, gender, nationality, ethnicity, force, rank, length of service as an officer, length of service as a negotiator and number of incidents dealt with as a negotiator.*

The Big Five Inventory (BFI; John, Donahue & Kentle, 1991) was used to measure personality and consists of 44 items measuring each of the big five personality dimensions. Personality theory stipulates that personality can be defined on the basis of five broad factors: *Extraversion* (talkative, assertive, active, energetic, outgoing), *Agreeableness* (sympathetic, kind, appreciative, affectionate, soft-hearted), *Conscientiousness* (organised, thorough, planful, efficient, responsible), *Openness* (wide interests, imaginative, intelligent, original, insightful) and *Neuroticism* (tense, anxious, nervous, moody, worrying) (John, 1990). The items on the BFI consist of short phrases or statements that describe certain ways of behaving (e.g. *I am someone who is talkative*). Respondents are required to assess the degree to which they agree with each statement with the items being scored on a 5 point likert scale where 1 = *disagree strongly* and 5 = *agree strongly*. The BFI scales have excellent psychometric properties, demonstrating substantial internal consistency, retest reliability, clear factor structure, and impressive convergent and discriminant validity with other longer Big Five measures (Benet-Martinez & John, 1998; John & Srivastava, 1999). The cronbach alpha scores for

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each of the subscales using the current dataset also demonstrated good levels of internal consistency (please refer to Table 2 for subscale alpha coefficients).

The Coping Skills Test - Revised (CST-R; Jerabek, 2001) was used to measure coping style and consists of a 45 item questionnaire that is answered on a likert-based scale ranging from *Almost Never* to *Most of the Time*. The questionnaire consists of an overall coping scale and three subscales: *Problem-Focused Coping*, *Emotion-Focused Coping* and *Hang-Ups*. High scores on the overall coping scale indicate an ability to cope well with problems and utilisation of more effective coping strategies rather than ineffective ones. A high score on each of the three subscales indicate that participants tend to utilise problem-focused strategies (*Problem Solving*, *Information Seeking* and *Negotiation*), emotion-focused strategies (*Social Support*, *Positive Cognitive Restructuring*, *Emotional Regulation* and *Distraction*) or hang-ups/maladaptive strategies (*Rumination*, *Avoidance*, *Helplessness*, *Social Withdrawal* and *Opposition*), respectively, when coping with stress. The CST-R has high internal consistency with a cronbach alpha score of .94 (PsychTests AIM Inc., 2009) (please refer to Table 3 for subscale alpha coefficients for the current dataset).

The Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij & Spinhoven, 2002) was used to measure cognitive coping style and emotion regulation. The CERQ is a 36 item multidimensional questionnaire constructed in order to identify the cognitive coping strategies someone uses after having experienced negative events or situations. The CERQ specifically differentiates between behavioural and cognitive forms of emotion regulation and refers exclusively to an individual's thoughts after having experienced a negative event as opposed to their actions. The nine subscales demonstrate good internal consistency with cronbach alpha scores ranging from .68 to .86 (Garnefski et al., 2002). Items are scored on a likert based scale ranging from 1 = *Almost Never* to 5 = *Almost Always* and a score is obtained for each of the nine subscales (*self-blame*, *acceptance*, *rumination*, *positive refocusing*, *refocus on planning*, *positive reappraisal*, *putting into perspective*, *catastrophising* and *other blame*) indicating the degree to which an individual engages in each specific cognitive emotion regulation strategy. For the purposes of this research, in addition

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to the nine subscales, the cognitive emotion regulation strategies have been combined into two larger subscales indicating the use of Adaptive (*acceptance, rumination, positive refocusing, positive reappraisal and putting into perspective*) and Maladaptive (*self-blame, rumination, catastrophising and other blame*) Cognitive Emotion Regulation Styles. The cronbach alpha score for the sample utilised within this research was 0.84, thereby demonstrating good internal consistency (please refer to Table 4 for subscale alpha coefficients).

The Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1988) consists of 40 items that are scored on a likert scale of 1 = *Not True* to 7 = *Very True*. Respondents are asked to rate the items according to their level of agreement with the item and one point is added for each extreme response of 6 or 7. The BIDR is used to measure two constructs: *Self-Deceptive Positivity* (the tendency to give self-reports that are believed but have a positivity bias) and *Impression Management* (deliberate self-presentation to an audience). The scores from items 1 - 20 (with even items reversed) are summed to create a Self-Deceptive Positivity scale score; the scores from items 21 - 40 (with odd items reversed) are summed to create an Impression Management scale score and all items are summed (with appropriate scores reversed) to create an overall social desirability score. The BIDR has good levels of internal consistency: .83 for the total measure; .68 - .80 for the Self-Deceptive Positivity scale and .75 - .86 for the Impression Management scale (Paulhus, 1988) and the cronbach's alpha obtained for the current sample was .81 (.71 for the Self-Deceptive Positivity subscale; .79 for the Impression Management subscale), so the scale was deemed to be reliable. The BIDR was used to screen for socially desirable responding whereby a cut off point of greater than thirty ($n = 2$) was used to exclude responses from the analysis.

Procedure

Ethical approval for the research was obtained from the University Research Ethics Committee prior to data collection. Permission to take part in the research was provided by the Assistant Chief Constable or lead Hostage Negotiation Coordinator (HNC) for each police force. HNCs for each force were provided with a set of questionnaires that were disseminated to

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negotiators to complete either at one of their quarterly meetings or within their own time. Each negotiator was provided with a second questionnaire to disseminate to a non-negotiator police officer colleague to complete. Student participants were recruited mainly via a research participation scheme whereby they were allocated research credits for completing the psychometric test battery. All participants were provided with a participant information sheet detailing the nature and aims of the research and were asked to provide written consent prior to completing the test battery. Participants were provided with a debrief sheet at the end of the questionnaire that included the researchers' details should they require any further information or wish to withdraw their data from the study. Scales were completed in paper format and returned to the researcher in a freepost envelope.

4.0 Results

Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) software. Cronbach alpha coefficients were used to assess the internal consistency of the scales utilised (Clark & Watson, 1995). Descriptive statistics, Multivariate Analysis of Variance (MANOVA), Discriminant Function Analysis (DFA) and *T*-Tests were used to analyse the data and effect sizes were calculated using the guidelines proposed by Cohen (1988).

4.1 Personality

A three (group: hostage negotiator, police officer and student) by two (gender: male and female) way between groups MANOVA was performed to investigate the influence of group membership and gender on the big five personality trait scores. Five dependent variables were used: Extraversion (E), Agreeableness (A), Conscientiousness (C), Openness (O) and Neuroticism (N). There was a statistically significant difference between the three groups on the combined dependent variables ($F(10, 858) = 15.43, p < .001; V = 0.31, \text{partial } \eta^2 = .15$). This effect was large and accounts for 15% of the variance observed. Univariate analyses of each dependent variable, using a Bonferroni adjusted alpha level of .01, revealed significant differences for four of the five variables (E, A, C and N). Post hoc comparisons using the Tukey HSD test indicated that both

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hostage negotiators and police officers scored significantly higher than students on E, A and C and significantly lower than students on N, however there were no statistically significant differences observed between any of the mean subscale scores for negotiators and police officers (please refer to Table 2 for means, standard deviations, F values and effect sizes). On this basis, the first three hypotheses have been rejected. Fifteen triangulation t -tests were conducted to compare the norm data mean subscale scores with those of the three samples. The findings revealed that the mean scale scores obtained for hostage negotiators and police officers on all five constructs (E, A, C, N and O) were significantly different ($p < .01$) to the norm data mean scores providing further evidence for the differences observed above. In addition to this, only one of the five subscale scores (N) was found to be significantly different when comparing the norm data and student sample means, suggesting that the student sample provides a fairly representative comparison sample (please refer to Table 2 for t -test values).

[Insert Table 2 here]

The MANOVA was followed up with DFA that revealed a significant discriminant function variate utilising E, A, C, N and O as predictor variables (canonical $R^2 = 0.31$; $\lambda = 0.68$, $\chi^2(10) = 162.00$, $p < .001$). The discriminant function plot depicted in Figure 1 demonstrates that the function successfully discriminates the student sample from the two police samples (combined) with N ($r = 0.63$) and C ($r = -0.60$) contributing most significantly to group separation/discrimination. In this case, relatively higher levels of N and relatively lower levels of C predict membership of the student sample as opposed to the police samples. Overall, the discriminant function successfully predicted outcome in 55% of cases, with accurate predictions being made for 48% of hostage negotiators, 20% of police officers and 79% of students. These prediction rates demonstrate a higher 'hit-ratio' than would be predicted by chance alone (i.e. 33%) in all but one of the predicted groups (the police officer sample).

[Insert Figure 1 here]

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Gender also had a significant impact on the combined dependent variable of personality ($F(5, 428) = 9.33, p < .001; V = 0.10, \text{partial } \eta^2 = .10$). This effect was large and accounts for 10% of the variance observed. Univariate analysis of each dependent variable, using a Bonferroni adjusted alpha level of .01 revealed significant differences for three of the five variables (E, C and N). Post hoc comparisons using the Tukey HSD test indicated that females scored significantly higher on E, C and N than males (please refer to Table 2 for means, standard deviations, F values and effect sizes), thereby providing some support for hypothesis 1d but leading to rejection of hypothesis 1e. Follow up DFA revealed a significant discriminant function utilising E, A, C, N and O as predictor variables ($\Lambda = 0.85, \chi^2(5) = 69.55, p < .001$) and revealed that N ($r = 1.10$) and E ($r = 0.50$) were the best predictors of gender in this case, with female participants more likely to possess higher levels of both traits than male participants. Overall the discriminant function successfully predicted outcome for 66% of cases, representing a hit rate higher than would be predicted by chance alone (33%). There was no statistically significant interaction between group membership and gender ($F(10, 858) = 1.75, p = .066, V = 0.04; \text{partial } \eta^2 = .02$) suggesting that the effect of group membership on personality traits is independent of gender and vice versa.

4.2 General Coping Style

A three (group: hostage negotiator, police officer and student) by two (gender: male and female) way between groups MANOVA was performed to investigate the influence of group membership and gender on Coping Style. Dependent variables used within the analysis and descriptive statistics can be seen in Table 3. There was a statistically significant difference between the three groups on the combined dependent variable of coping style ($F(32, 836) = 5.93, p < .001; V = 0.37, \text{partial } \eta^2 = .19$). This effect was large and accounts for 19% of the variance observed. Univariate analysis of each dependent variable, using a Bonferroni adjusted alpha level of .003, showed significant differences for 15 of the variables. Post hoc comparisons using the Tukey HSD test indicated that both hostage negotiators and police officers scored significantly lower than students on: Rumination, Avoidance, Helplessness, Social Withdrawal, Opposition, Hang-Ups and

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Maladaptive Coping Strategies; and significantly higher than students on: Overall Coping Skills, Problem Solving, Negotiation, Positive Cognitive Restructuring, Emotional Regulation, Problem-Focused Coping, Emotion-Focused Coping, and Adaptive Coping Strategies. For the Distraction subscale, Police Officers alone scored significantly lower than students. There were no statistically significant differences observed between any of the mean subscale scores for negotiators and police officers (please refer to Table 3 for means, standard deviations, F values and effect sizes). On this basis hypotheses 2a and 2b have been rejected. Triangulation t -tests were conducted to compare the norm data mean subscale scores with those of the three samples. The findings revealed that the mean scale scores obtained for hostage negotiators and police officers on the majority of the constructs (12 out of 16 for negotiators; 14 out of 16 for police officers) were significantly different ($p < .001$) to the norm data mean scores providing further evidence for the differences observed above. Only one of the 16 student subscale mean scores (Helplessness) was significantly different from the norm data means, suggesting that the student sample provides a fairly representative comparison sample (please refer to Table 3 for t -test values).

[Insert Table 3 here]

The MANOVA was followed up with DFA and revealed a significant discriminant function variate utilising the variables identified in italicised text in Table 3 (canonical $R^2 = 0.61$; $\lambda = 0.62$, $\chi^2(26) = 207.21$, $p < .001$). The discriminant function plot depicted in Figure 2 demonstrates that the function successfully discriminates the student sample from the two police samples (combined) with Problem-Focused Coping ($r = -1.26$), Information Seeking ($r = 0.75$), Rumination ($r = 0.59$) and Avoidance ($r = 0.54$) contributing most significantly to group separation/discrimination. In this case, relatively higher levels of Information Seeking, Rumination and Avoidance and relatively lower levels of Problem-Focused Coping predict membership of the student sample as opposed to the police samples. Overall, the discriminant function successfully predicted outcome in 60% of cases, with accurate predictions being made for 54% of hostage negotiators, 46% of police officers and 71% of

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students. These prediction rates therefore demonstrate a higher 'hit-ratio' than would be predicted by chance alone (i.e. 33%).

[Insert Figure 2 here]

Gender also had a significant impact on the combined dependent variable of coping style ($F(16, 417) = 2.67, p = .001; V = 0.09, \text{partial } \eta^2 = .09$). This effect was moderate and accounts for 9% of the variance observed. Univariate analysis of each dependent variable, using a Bonferroni adjusted alpha level of .003 revealed only significant differences for the Information Seeking and Social Support variables ($F(1, 438) = 9.66, p = .002, \text{partial } \eta^2 = .02; F(1, 438) = 27.72, p < .001, \text{partial } \eta^2 = .06$). Inspection of the mean scores indicated that females scored significantly higher than males on measures of Information Seeking and Social Support, however, no significant differences were observed for emotion-focused strategies thereby leading to rejection of hypothesis 2c (please refer to Table 3 for means, standard deviations, F values and effect sizes). Follow up DFA revealed a significant discriminant function utilising the italicised variables in Table 3 ($\lambda = 0.85, \chi^2(12) = 71.42, p < .001$) and revealed that Problem-Focused Coping ($r = -1.59$), Overall Coping Skills ($r = 0.97$), Problem Solving ($r = 0.77$) and Social Support ($r = 0.75$) were the best predictors of gender in this case, with male participants more likely to display higher levels Overall Coping Skills and female participants more likely to display higher levels of Problem-Focused Coping, Problem Solving and Social Support. Overall the discriminant function successfully predicted outcome for 67% of cases, representing a 'hit ratio' higher than would be predicted by chance alone (i.e. 50%). There was no statistically significant interaction between group membership and gender ($F(32, 836) = 0.95, p = .549, V = 0.07; \text{partial } \eta^2 = .04$) suggesting that the effect of group membership on coping style is independent of gender and vice versa.

4.3 Cognitive Emotion Regulation Style

A three (group: hostage negotiator, police officer and student) by two (gender: male and female) way between groups MANOVA was performed to investigate the influence of group membership and gender on Cognitive Emotion Regulation Style. Dependent variables used within

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the analysis and descriptive statistics can be seen in Table 4. There was a statistically significant difference between the three groups on the combined dependent variable of cognitive emotion regulation style ($F(18, 840) = 8.21, p < .001; V = 0.30, \text{partial } \eta^2 = .15$). This effect was large, accounting for 15% of the variance observed. Univariate analysis of each dependent variable, using a Bonferroni adjusted alpha level of .005, found significant differences for six of the variables. Post hoc comparisons using the Tukey HSD test indicated that both hostage negotiators and police officers scored significantly lower than students on: Self-Blame, Acceptance, Rumination, Catastrophising and Maladaptive Cognitive Emotion Regulation Strategies; whereas hostage negotiators alone scored significantly higher than students on the Positive Reappraisal subscale. There were no statistically significant differences observed between any of the mean subscale scores for negotiators and police officers (please refer to Table 4 for means, standard deviations, F values and effect sizes). On this basis, hypotheses 3a and 3b have been rejected. Triangulation t -tests were conducted to compare the norm data mean subscale scores with those of the three samples. The findings revealed that the mean scale scores obtained for hostage negotiators and police officers on the majority of the constructs (five out of nine) were significantly different ($p < .002$) to the norm data mean scores providing further evidence for the differences observed above. However, eight out of nine of the student subscale mean scores were also significantly different from the norm data means, suggesting that the students also utilise cognitive emotion regulation strategies differently to those participants on which the norm data is based ($N = 611$) (please refer to Table 4 for t -test values).

[Insert Table 4 here]

Follow up DFA revealed a significant discriminant function variate utilising all variables apart from those marked with a ~ in Table 4 (Canonical $R^2 = 0.54; \lambda = 0.67, \chi^2(8) = 24.52, p = .002$). The discriminant function plot depicted in Figure 3 demonstrates that the function successfully discriminates the student sample from the two police samples (combined) with Rumination ($r = 0.42$), Catastrophising ($r = 0.37$) and Self-Blame ($r = 0.35$) contributing most significantly to group

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separation/discrimination. These variables were positively correlated with the discriminant function value, therefore relatively higher scores on each of these variables predict membership of the student sample, as opposed to the police samples. Overall, the discriminant function successfully predicted outcome in 58% of cases, with accurate predictions being made for 54% of hostage negotiators, 55% of police officers and 62% of students. These prediction rates therefore demonstrate a higher 'hit-ratio' than would be predicted by chance alone (i.e. 33%).

[Insert Figure 3 here]

Gender also had a significant impact on the combined dependent variable of cognitive emotion regulation style ($F(9, 419) = 2.21, p = .02; V = 0.05, \text{partial } \eta^2 = .05$). This effect was moderate and accounts for 5% of the variance observed. Univariate analysis of each dependent variable, using a Bonferroni adjusted alpha level of .005, only revealed a significant difference for the Other Blame variable ($F(1, 427) = 9.09, p = .003, \text{partial } \eta^2 = .02$). Inspection of the mean scores indicated that females scored significantly lower on measures of Other Blame than males, thereby leading to rejection of Hypothesis 3c (please refer to Table 4 for means, standard deviations, F values and effect sizes). Follow up DFA revealed a significant discriminant function ($\lambda = 0.97, \chi^2(9) = 37.56, p < .001$) and revealed that Other Blame ($r = -0.64$), and Rumination ($r = 0.50$) were the best predictors of gender in this case, with male participants more likely to display higher levels Other Blame and female participants more likely to display higher levels of Rumination. Overall the discriminant function successfully predicted outcome for 58% of cases, representing only a slightly higher 'hit ratio' than would be predicted by chance alone (i.e. 50%). There was no statistically significant interaction between group membership and gender ($F(18, 840) = 1.45, p = .101, V = 0.06; \text{partial } \eta^2 = .03$) suggesting that the effect of group membership on cognitive emotion regulation style is independent of gender and vice versa.

5.0 Discussion

The findings of this study provide evidence for the existence of a 'police profile' by revealing statistically significant differences between both of the police samples (hostage negotiators and

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police officers) and the student sample. The study revealed a relatively greater level of extraversion, agreeableness and conscientiousness and a relatively lower level of neuroticism within both police samples compared to the student sample. The empirical literature relating to police personality, whereby police officers have typically demonstrated higher levels of conscientiousness and agreeableness and lower levels of neuroticism than the general population (Abrahamsen & Strype, 2010) has therefore been supported. Discriminant function analysis revealed that higher levels of extraversion and lower levels of neuroticism were in fact the best predictors of police sample membership, further reinforcing the importance of such traits within law enforcement settings.

The data, however, fail to support the predicted existence of a unique 'hostage negotiator profile' as negotiators did not demonstrate significantly different personality traits or cognitive/behavioural coping styles when compared to their non-negotiator counterparts. Although it could be hypothesised that hostage negotiators would be a more extraverted and gregarious group of individuals due to their role as 'professional persuaders' and their requirement to interact with people for sometimes prolonged and protracted periods of time, the findings from this study suggest that this is not necessarily the case.

The results are reassuring with regards to police selection within the UK, when considered in line with the research indicating that higher levels of conscientiousness and extraversion and lower levels of neuroticism are the most significant predictors of police population membership and performance (Barrick & Mount, 1991; Barrick et al., 2001; Black, 2000; Cortina et al., 1992; Detrick & Chibnall, 2006). It can also be argued that police officers (as a generic group) possess the appropriate personality characteristics to perform specialist roles, such as hostage/crisis negotiation, and that the 'police personality profile' serves as an appropriate grounding on which to develop specific skills for officers to become trained as negotiators. Many of the day-to-day situations that are encountered by operational police officers involve basic conflict management and resolution skills and it is therefore likely that the police personality characteristics in combination with police training equip the majority of officers to deal with such situations.

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With reference to coping style, the findings provide a reassuring and positive outlook. Despite much of the existing research literature suggesting that police officers are frequent users of dysfunctional or maladaptive coping strategies, the current findings indicate that this is not representative of UK based police officers (or at least those sampled within the current research). In line with the findings relating to personality, although no significant differences were observed between hostage negotiators and police officers, both police samples demonstrated significant differences in their use of both adaptive and maladaptive coping strategies when compared with the student sample. Police samples used adaptive coping strategies significantly more and maladaptive coping strategies significantly less than students. Police officers and negotiators also used all of the individual maladaptive cognitive and behavioural coping strategies far less than students. Such strategies included cognitive coping strategies such as Rumination, and Helplessness, and behavioural strategies such as Avoidance, Social Withdrawal and Opposition. With regards to the adaptive strategies, the police samples used Problem Solving, Negotiation, Positive Cognitive Restructuring and Emotional Regulation to a far greater extent than students. Interestingly, both hostage negotiators and police officers scored more highly on Problem-Focused and Emotion-Focused coping than the students; however, the discriminant function analysis indicated that the use of Problem-Focused Coping was in fact the best predictor of the police sample membership, thereby highlighting the importance of this style of coping within police work. Despite the fact that this finding is in contrast to that which was predicted, it is worth noting that emotion focused coping can also be considered to be adaptive, and that both styles of coping have in fact been observed within police populations (Alexander & Walker, 1994; Beehr et al., 1995; Fain & McCormick, 1988; Larsson, et al., 1988). These findings suggest that UK police officers are employing appropriate coping strategies to deal with the stresses associated with their role, which is vital when considered in the context of the pre-established positive correlational relationships between poor coping skills and stress, burnout and physical/psychological problems (Hurrell, 1995; Lord et al., 1991; Nordlicht, 1979; Rogers, 1976).

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The CST-Revised is designed to explore Coping Style from both a cognitive and behavioural context, whereas the CERQ includes a number of cognitive coping strategies used to regulate emotions when experiencing a stressful event. The current findings indicate that UK police officers use fewer maladaptive cognitive strategies to regulate their emotions and cope with stress, suggesting that they are adept at avoiding those strategies that are negative and dysfunctional. However, the data failed to demonstrate uniqueness with regards to hostage negotiators specifically. Interestingly, despite the difference observed with reference to maladaptive cognitive coping strategies, there is limited indication that police officers use adaptive cognitive emotion regulation strategies to a greater extent than students. Specifically, police officers employed Self-Blame, Acceptance, Rumination and Catastrophising significantly less than students and hostage negotiators alone utilised Positive Reappraisal significantly more than students. While these findings are suggestive of appropriate non-utilisation of the more dysfunctional coping strategies, they also highlight a potential training need for officers to utilise more adaptive and functional methods of cognitive coping when trying to regulate emotions in response to stressful events. The only strategy that appeared to discriminate the hostage negotiators from the other two samples was Positive Reappraisal, which negotiators appear to use far more frequently. This variable was also the most discriminating variable when differentiating between group membership, indicating the importance of Positive Reappraisal as a cognitive coping tool within the negotiator repertoire. Therefore, it would appear that the ability to positively reappraise or reframe a situation is a beneficial tool for negotiators to help the person in crisis/hostage taker see the situation in a different light and also for negotiators to deal with the stress that is often associated with negotiation by focusing on the positive aspects of the situation as opposed to the negative. This finding is particularly relevant to negotiator stress when considered in line with the research that indicates that Positive Reappraisal has been demonstrated to act as a protective factor against psychopathology (Garnefski et al., 2002). The results are also reassuring regarding the potential for police officers generally to experience different forms of psychopathology, as research demonstrates that maladaptive forms of

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cognitive coping (particularly Rumination, Catastrophising and Self-Blame) are positively correlated with certain forms of psychopathology (particularly depression, anxiety and suicidality). Research demonstrates that the use of adaptive cognitive coping strategies can act as a protective factor against such symptomology (Garnefski et al., 2002) and therefore, there is obvious scope to enhance the use of adaptive cognitive coping strategies within both hostage negotiators and police officers as a result of dedicated training packages. Research indicates that such strategies can in fact be learned and unlearned (Garnefski et al., 2002), suggesting potential for the development of bespoke cognitive coping strategy training within UK based police forces in order to reduce the potential likelihood of negative psychological impact within their staff.

The findings relating to gender were fairly limited in scope in terms of application to police settings, and hostage negotiation selection and practices specifically. Gender differences were observed for personality, with females demonstrating higher levels of extraversion, conscientiousness and neuroticism than males, a finding which is supportive of previous research (Schmitt, Realo, Voracek & Allik, 2008). This finding is interesting, when considered in line with the police personality literature, and suggests that females may in fact possess higher quantities of two of the personality traits that are correlated with performance in police settings (E and C) and therefore, provides ratifying evidence for the increased number of female officers who are now working within law enforcement, compared to a decade ago. Women, however, still, only constitute 27% of the total police strength/workforce within England and Wales (Home Office, 2012), and these findings implicate the potential for this percentage to increase. Women also reported higher levels of social support and information seeking indicating more frequent utilisation of certain adaptive general coping strategies than males. They also demonstrated lower levels of blaming others, suggesting that they utilise certain maladaptive cognitive emotion regulation strategies less frequently than men. Although significant differences were observed for male and female participants across the whole sample, there were no significant interactions observed between gender and group membership. This indicates that male and female participants from within each of

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the three groups were similar in terms of personality, coping style and cognitive emotion regulation and suggests that gender is not necessarily a variable that mediates the effect of group membership on the dependent variables in this study.

The current study has provided an insight into the traits and characteristics possessed by UK police hostage negotiators; however, it is not without limitations. While the sample size ($N = 438$) is fairly acceptable for a study of this kind, its main limitation relates to the use of the student sample as a control/comparison sample. This resulted in comparison between three groups with a considerable difference in mean age, which is likely to have reduced the validity of the findings to some extent. The student population is also considered to be a fairly homogeneous group which is likely to have a higher level of intelligence and socio-economic status than the general population and therefore may not provide a perfect sample to act as a comparison group for police officers who generally recruit without degree level education. In order to try and account for this limitation, the mean scores for both the hostage negotiator and police officer samples on each of the variables tested was compared with norm group data (where available) using *t*-tests. The majority of the findings indicated that the police officer (combined) sample subscale means were significantly different to the norm group data means, thereby reinforcing the uniqueness of the 'police profile' observed. In addition, the majority of the student subscale means (with the exception of the CERQ subscales) were also statistically similar to the norm data means, thereby reinforcing the validity of the student sample as a comparison/control sample in this study. Nevertheless, in order to fully account for this limitation, future research could draw upon a general population sample that is more comparable in terms of age, level of education and socio-economic status to the police samples in order to further validate the current findings.

A further sampling limitation includes different proportions of rank representation across the two samples, with the negotiator sample demonstrating a relatively higher rank profile than the police officer sample. However, even when controlling for the effect of rank using MANCOVA, no significant differences were observed between the hostage negotiator and police officer samples on

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any of the dependent variables, thereby suggesting that rank is not confounding the current findings. Nevertheless, this limitation could be avoided in future research by ensuring that participants are matched in terms of rank across the two police samples, thereby reducing the potential impact of rank as a confounding variable. It is also worth noting that while a fairly large sample of hostage negotiators ($n = 117$) from approximately 50% of the territorial forces in the UK were included in the current study, this figure represents only a proportion of the total hostage negotiator population (~800) and the findings would therefore be validated further by replicating the study with a larger number of negotiators and police officers from more forces within the UK and internationally. Work in this domain has already begun, with Young (*In Process*) having completed a partial replication of the current study using a sample of hostage (crisis) negotiators from the USA.

This research provides one of the first insights into the traits and characteristics of police hostage negotiators within the UK. While the findings fail to provide evidence to support the notion of a unique hostage negotiator personality or profile, they add weight to the pre-established concept of a police personality. They suggest that police officers possess personality traits and coping styles that are unique and distinct from the general population and it is proposed that these characteristics serve to help them perform effectively within their police roles. The study also highlights potential individual police officer training needs that could be identified and developed in order to reduce possible negative impact on the psychological wellbeing and functioning of operational police officers. The findings, therefore, provide support for the development of a bespoke cognitive coping style training package which is designed to enhance effective utilisation of adaptive cognitive coping strategies and minimise the use of maladaptive coping strategies within police officers in the UK.

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7.1 Appendix A: Tables

Table 1

Table Synopsis Research Conducted to Identify the Personality and Socio-Psychological Characteristics of Police Hostage (Crisis) Negotiators

<i>Research Study</i>	<i>Variables Measured</i>	<i>Measures</i>	<i>Findings</i>	<i>Study Limitations*</i>
Gelbart (1979)	Psychological & Personality Characteristics	CPI (Taylor Manifest Anxiety Scale) & MMPI (Psychopathic Deviate Scale)	Highly adequate social skills; communications ability; self-assurance; social presence; intelligence; ability to manipulate others; ambitious; active; forceful; insightful; resourceful; versatile.	Lack of comparison/control group Small sample size (N = 44)
Gettys and Elam (1988)	Psychological & Personality Characteristics	CPI & MMPI	Good verbal skills; positive self image; good reasoning abilities; high sensitivity to others; ability to cope well with stressful situations.	Lack of comparison/control group
Allen, Fraser and Inwald (1991)	Psychological & Personality Characteristics	CPI & MMPI	Insightful; intelligent; rational; clear-thinking; logical; self-controlled; self-confident; decisive; able to make concessions; assertive; determined; persistent; trustful; tolerant of ambiguity; values success; expresses frustration appropriately; has the ability to empathise and use insight to either help or hurt others.	Lack of comparison/control group Small sample size (N = 12)
Tatar (1982)	Personality & Motivation	Unknown	Emotional stability; extraversion; instinctual gratification; liberal orientation.	Exact method of data collection unknown
Regini (2002)	Desirable negotiator competencies/characteristics	Self-report/qualitative data identified through discussions with crisis negotiation team members	Adept criminal investigator; non-confrontational; non-judgemental; exceptional interview & interrogation skills; good self-control; ability to maintain voice control.	Lack of empirically robust methodology Limitations associated with self-report data
Slatkin (201)	Desirable negotiator competencies/characteristics	Unknown	Patience; sincerity; down-to-earth manner; non-judgemental/tolerant of others; flexibility; aplomb; verbal expressiveness.	Lack of empirically robust methodology
McMains and Mullins (2010)	Desirable negotiator competencies/characteristics	Unknown	Ability to remain calm, cool and collected in the most stressful environments (primary negotiator); ability to control emotions; ability to control voice; ability to multi-task (secondary negotiator).	Lack of empirically robust methodology
San Jose (1995, 2004)	Desirable negotiator competencies/characteristics	Self-reported perceived characteristics of effective negotiators (using a modified version of the 300-item Adjective Check List)	<i>Demographic/occupational variables:</i> Male/Female aged 35 – 50; Variety of law enforcement assignments; at least 5 years experience as an police officer; good ability to relate to people; training in suicide prevention; a good listener. <i>Specific personality characteristics:</i> Adaptable; alert; calm; capable; clear thinking; mature; patient; sociable; tactful (90% agreement); clever; confident; conscientious; intelligent; wide interests; logical; persistent; practical; reasonable; reliable; understanding (75-89% agreement)	Limitations associated with self-report data (i.e. measured <i>perceived</i> as opposed to <i>actual</i> characteristics)
Fuselier (1981)	Desirable negotiator competencies/characteristics	Unknown	Emotional maturity; credibility; good listening ability; good verbal ability; practical intelligence; ability to think clearly under stress.	Lack of empirically robust methodology
Birge and Birge (1994, 2011)	Behavioural responses likely to predict effective negotiators	Self reported operational behavioural responses	Use of non-physical response (i.e. talking/listening) to resolve past incidents involving conflict as opposed to the use of force.	Lack of empirically robust methodology Limitations associated with self-report data

Note. *All studies are subject to the limitation that they are specific to a USA context and cannot necessarily be applied to international law enforcement settings. MMPI refers to the Minnesota Multiphasic Personality Inventory; CPI refers to the California Personality Inventory

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Table 2

Summary of the Means, Standard Deviations, Univariate ANOVA and T-Test Results for Scores on the BFI across the Groups and Genders

Dependent Variable	Cronbach Alpha	Norm Group (N = 132,515) [^]	Hostage Negotiators (n = 117)		T-Test (Norm*HN)		Police Officers (n = 118)		T-Test (Norm*PO)		Students (n = 203)		T-Test (Norm*Student)		Univariate ANOVA (Group)		Males (n = 255)		Females (n = 183)		Univariate ANOVA (Gender)	
			<i>M</i>	<i>SD</i>	<i>t</i> (116)	<i>M</i>	<i>SD</i>	<i>t</i> (117)	<i>M</i>	<i>SD</i>	<i>t</i> (202)	<i>F</i> (2, 432)	η^2	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i> (1, 432)	η^2			
Extraversion	.84	3.18	3.69	0.70	7.95**	3.68	0.75	7.40**	3.37	0.76	3.58	12.79*	0.06 ^M	3.50	0.75	3.60	0.77	7.85*	0.02 ^S			
Agreeableness	.76	3.65	4.07	0.54	8.45**	4.06	0.62	7.76**	3.74	0.60	2.16	17.07*	0.07 ^M	3.90	0.62	3.93	0.58	2.45	0.01 ^S			
<i>Conscientiousness</i>	.84	3.55	4.25	0.55	13.59**	4.16	0.68	12.30**	3.55	0.69	-0.06	64.81*	0.23 ^L	3.89	0.68	3.90	0.72	9.88*	0.02 ^S			
Neuroticism	.86	3.04	2.00	0.63	-17.93**	2.20	0.76	-12.15**	2.90	0.81	-2.47**	52.51*	0.20 ^L	2.27	0.76	2.79	0.89	7.71*	0.02 ^S			
Openness	.73	3.98	3.63	0.52	-7.27**	3.55	0.57	-7.85**	3.47	0.58	-12.38	1.16	0.01 ^S	3.60	0.57	3.44	0.56	4.07	0.01 ^S			

Note. Possible scores for each subscale ranged from a minimum of 1 to a maximum of 5. Italicised font = Most significant predictors of group membership as specified by DFA. Bold Font = Most significant predictors of gender as specified by DFA. Superscript text = Effect Size (S = Small; M = Medium; L = Large). Adjusted probability level (Bonferroni) for ANOVA = .05 / 5 = .01. Adjusted probability level (Bonferroni) for T-Test = .05 / 15 = .003.

η^2 = Partial eta Squared

*Statistically significant at the $p < .01$ level

**Statistically significant at the $p < .003$ level

[^]Norm data obtained from Srivastava, John, Gosling and Potter (2003)

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Table 3

Summary of Means, Standard Deviations, Univariate ANOVA and T-Test Results for Scores on the CST-Revised across the Groups and Genders

Dependent Variable	Cronbach Alpha	Norm Group (N = 8998) [^]	Hostage Negotiators (n = 117)		T-Test (Norm*HN) t (116)	Police Officers (n = 118)		T-Test (Norm*PO) t (117)	Students (n = 203)		T-Test (Norm*S) t (202)	Univariate ANOVA (Group)		Males (n = 255)		Females (n = 183)		Univariate ANOVA (Gender)	
			M	SD		M	SD		M	SD		M	SD	F (2, 432)	η^2	M	SD	M	SD
Problem Solving	.85	62.96	74.92	14.29	9.05**	73.81	15.30	7.71**	67.04	17.32	3.36	12.95*	0.06 ^M	70.55	15.72	71.55	17.34	4.90	0.01 ^S
<i>Information Seeking</i>	.74	56.84	52.70	17.20	-2.60	55.25	18.32	-.941	56.68	18.20	-.125	0.93	0.00 ^S	52.45	18.05	59.11	17.26	9.66*	0.02 ^S
Negotiation~	.64	62.48	76.14	10.67	13.85**	74.37	11.40	11.34**	64.09	14.98	1.53	36.68*	0.15 ^L	71.82	12.22	67.65	16.19	0.04	0.00 ^S
Social Support	.74	49.58	47.90	15.52	-1.17	48.73	16.92	-0.55	50.76	16.01	1.04	0.02	0.00 ^S	45.77	16.16	54.57	14.82	27.72*	0.06 ^M
PC Restructuring~	.86	63.00	76.21	13.10	10.90**	75.25	14.38	9.25**	65.96	17.75	2.38	20.42*	0.09 ^M	71.87	15.60	70.27	17.55	0.92	0.00 ^S
Emotional Regulation	.65	56.85	60.84	15.80	2.73	62.69	15.85	4.01**	53.95	16.01	-2.58	13.79*	0.06 ^M	59.01	16.38	56.94	16.38	0.12	0.00 ^S
Distraction~	.67	58.76	62.57	13.04	3.16	63.95	15.12	3.73**	58.14	15.93	-0.55	7.19*	0.03 ^S	61.72	15.01	59.73	15.38	0.17	0.00 ^S
<i>Rumination</i>	.87	50.78	30.16	16.19	-13.78**	31.88	16.49	-12.45**	52.75	19.08	1.47	70.59*	0.25 ^L	37.19	19.41	46.54	21.27	2.50	0.01 ^S
<i>Avoidance</i>	.73	33.93	18.03	9.91	-17.34**	19.15	11.33	-14.16**	36.97	18.97	2.28	71.71*	0.25 ^L	24.57	15.88	30.65	19.32	0.23	0.00 ^S
Helplessness	.72	36.59	15.15	12.32	-18.83**	16.49	11.92	-18.32**	31.45	16.69	-3.92**	46.83*	0.18 ^L	19.99	15.20	27.35	19.19	2.57	0.01 ^S
Social Withdrawal	.76	39.97	27.18	12.12	-11.42**	27.43	12.79	-10.65**	36.30	18.35	-2.85	19.53*	0.08 ^M	31.84	14.89	30.96	17.64	4.17	0.01 ^S
Opposition~	.86	38.98	25.50	13.77	-10.59**	25.08	14.95	-10.10**	38.84	18.67	-0.11	32.35*	0.13 ^L	29.33	17.03	34.70	18.43	0.60	0.00 ^S
Problem Focused Coping	.89	60.77	67.90	11.29	6.83**	67.85	12.28	6.26**	62.60	13.55	1.92	11.32*	0.05 ^M	64.94	12.48	66.10	13.43	5.39	0.01 ^S
Emotion Focused Coping	.88	57.08	61.83	10.19	5.04**	62.62	11.55	5.21**	57.15	10.95	0.09	14.84*	0.06 ^M	59.54	11.18	60.34	11.21	6.40	0.02 ^S
Hang Ups	.93	39.83	23.15	9.88	-18.27**	24.00	10.07	-17.07**	39.24	14.89	-0.57	75.53	0.08 ^M	28.53	13.07	34.05	16.25	0.49	0.00 ^S
Adaptive Coping Skills~	.80 ^S	N/A	64.47	9.59	N/A	64.87	11.08	N/A	59.52	10.95	N/A	15.73*	0.07 ^M	61.88	10.78	62.83	11.13	7.15	0.02 ^S
Maladaptive Coping Skills~	.88 ^S	N/A	23.21	9.85	N/A	24.01	10.13	N/A	39.26	14.90	N/A	75.44*	0.26 ^L	28.58	13.09	34.04	16.26	0.43	0.00 ^S
Overall Coping Skills	.94	59.20	69.58	8.17	13.75**	69.52	9.52	11.78**	60.01	10.98	1.06	49.86*	0.19 ^L	65.85	10.21	64.13	11.90	1.77	0.00 ^S

Note. Italicised type = Most significant predictors of group membership as specified by DFA. Boldface type = Most significant predictors of gender as specified by DFA. ~ = variables that were not included within the DFA. Superscript text = Effect Size (S = Small; M = Medium; L = Large). Adjusted probability level (Bonferroni) for ANOVAs = .05/18 = .003. Adjusted probability level (Bonferroni) for T-Tests = .05/48 = .001. η^2 = Partial eta Squared. N/A = Norm data not available for these subscales as they were created by the researcher. ~ = Positive Cognitive Restructuring. Cronbach alpha data provided by PsychTests who retained the raw data, apart from those marked with a ^S which are based on the current dataset. [^]Norm group data taken from PsychTests AIM Inc. (2009)

* Statistically significant at the $p < .003$ level

**Statistically significant at the $p < .001$ level

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Table 4

Summary of Means, Standard Deviations, Univariate ANOVA and T-Test Results for Scores on the CERQ across the Groups and Genders

Dependent Variables	Cronbach Alpha	Norm Group (N = 611) [^]	Hostage Negotiators (n = 117)		T-Test (norm*HN)		Police Officers (n = 118)		T-Test (norm*PO)		Students (n = 203)		T-Test (norm*S)		Univariate ANOVA (Group)		Males (n = 255)		Females (n = 183)		Univariate ANOVA (Gender)	
			α	M	M	SD	t (116)	M	SD	t (117)	M	SD	t (202)	F (2, 427)	η^2	M	SD	M	SD	F (1, 427)	η^2	
<i>Self-Blame</i>	.73	8.29	8.17	2.01	-0.64	8.29	1.97	-0.01	10.53	3.20	10.05**	35.28*	0.14 ^L	8.86	2.65	9.87	3.02	1.55	0.00 ^S			
Acceptance	.71	10.66	11.83	3.37	3.75**	11.11	3.11	1.57	13.10	3.21	10.72**	15.52*	0.07 ^M	12.21	3.27	12.22	3.42	1.26	0.00 ^S			
Rumination	.75	10.15	9.44	3.14	-2.46	9.27	2.91	-3.28**	12.46	3.49	9.09**	42.07*	0.17 ^L	10.19	3.31	11.59	3.83	2.62	0.01 ^S			
Positive Refocusing	.82	9.75	9.45	3.38	-0.95	10.39	3.57	1.95	10.29	3.42	2.08	1.12	0.01 ^S	9.95	3.38	10.29	3.57	0.65	0.00 ^S			
Refocus on Planning	.77	12.84	14.18	3.02	4.80**	14.14	3.14	4.51**	13.70	3.41	3.64**	1.73	0.01 ^S	14.01	3.12	13.87	3.40	0.44	0.00 ^S			
Positive Reappraisal	.79	12.16	15.52	3.01	12.07**	14.31	3.38	6.91**	13.87	3.54	6.84**	6.40*	0.03 ^S	14.60	3.42	14.21	3.43	0.12	0.00 ^S			
Putting into Perspective	.79	11.46	14.06	3.64	7.72**	14.12	3.37	8.58**	13.44	3.63	7.77**	1.19	0.01 ^S	14.05	3.48	13.43	3.67	1.46	0.00 ^S			
<i>Catastrophising</i>	.74 [§]	6.15	5.92	2.03	-1.21	6.29	2.27	0.66	8.64	3.32	10.60**	42.15*	0.17 ^L	6.95	2.72	7.71	3.36	0.01	0.00 ^S			
Other-Blame	.79	6.37	8.03	2.45	7.31**	8.06	2.19	8.40**	8.54	2.99	10.38**	3.76	0.02 ^S	8.53	2.65	7.91	2.63	9.09*	0.02 ^S			
Adaptive CER Strategies~	.70	N/A	13.01	2.16	N/A	12.81	2.26	N/A	12.88	2.41	N/A	0.18	0.00 ^S	12.96	2.26	12.81	2.36	0.03	0.00 ^S			
Maladaptive CER Strategies~	.70	N/A	7.89	1.65	N/A	7.98	1.53	N/A	10.04	2.30	N/A	57.47*	0.21 ^L	8.63	2.03	9.27	2.39	0.00	0.00 ^S			

Note. Possible scores on each subscale ranged from a minimum of 4 to a maximum of 20. Italicised type = Most significant predictors of group membership as specified by DFA. Boldface type = Most significant predictors of gender as specified by DFA. ~ Variables not included within the DFA. Superscript text = Effect Size (S = Small; M = Medium; L = Large). Adjusted probability level (Bonferroni) for ANOVA = .05/11 = .005. Adjusted probability level (Bonferroni) for T-Test = .05/27 = .002. [§] The original cronbach's alpha coefficient for the Catastrophising Subscale was .69. In order to enhance the reliability of this scale, item 8 on the questionnaire was removed and the internal consistency of the subscale increased to a satisfactory level of .74. η^2 = Partial eta Squared

*Statistically significant at the $p < .005$ level

**Statistically significant at the $p < .002$ level

[^]Norm data taken from Garnefski et al. (2002)

7.2 Appendix B: Figures

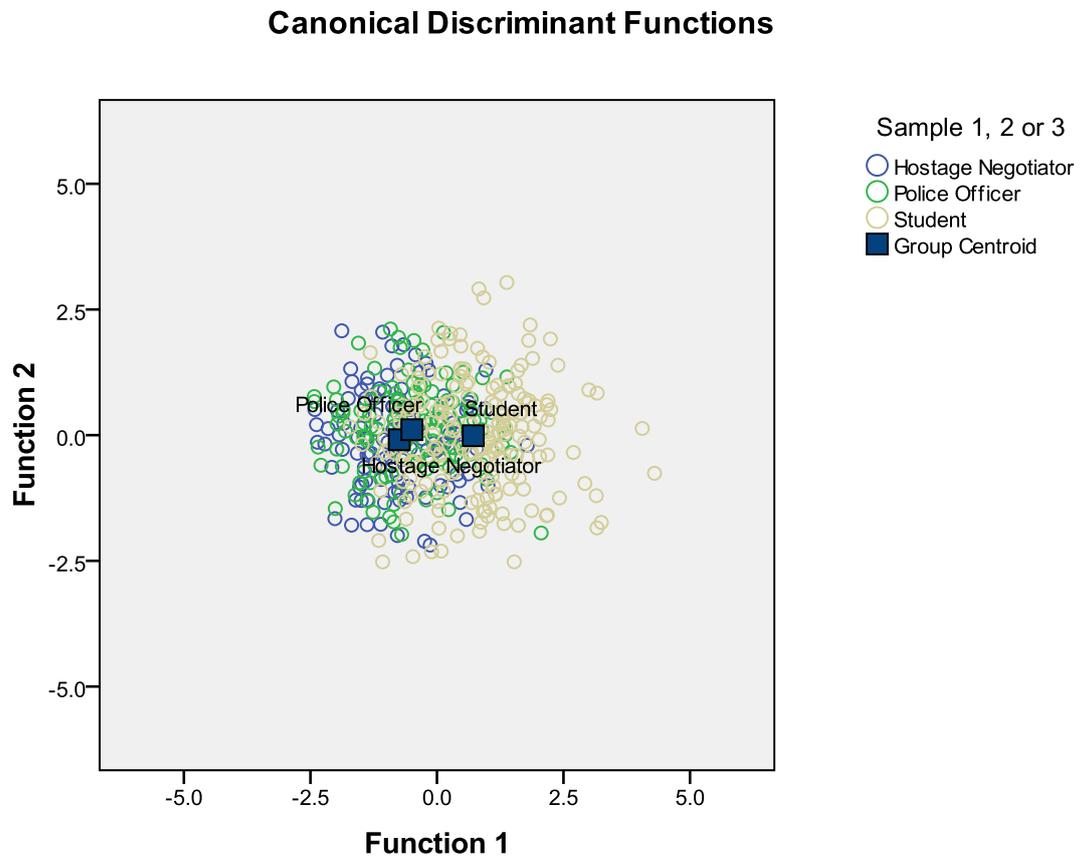


Figure 1. Discriminant function plot depicting group centroids on the two discriminant functions utilising the BFI subscales as predictor variables.

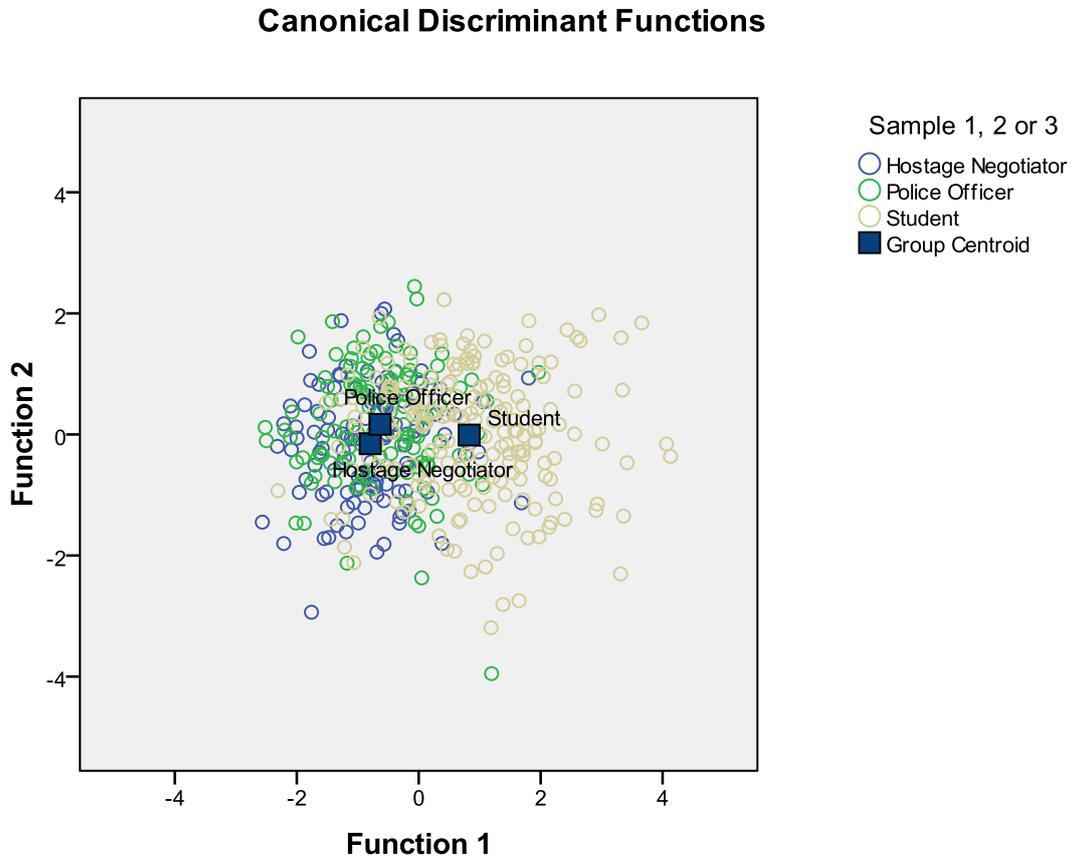


Figure 2. Discriminant function plot depicting group centroids on the two discriminant functions utilising the CST-Revised subscales as predictor variables.

Canonical Discriminant Functions

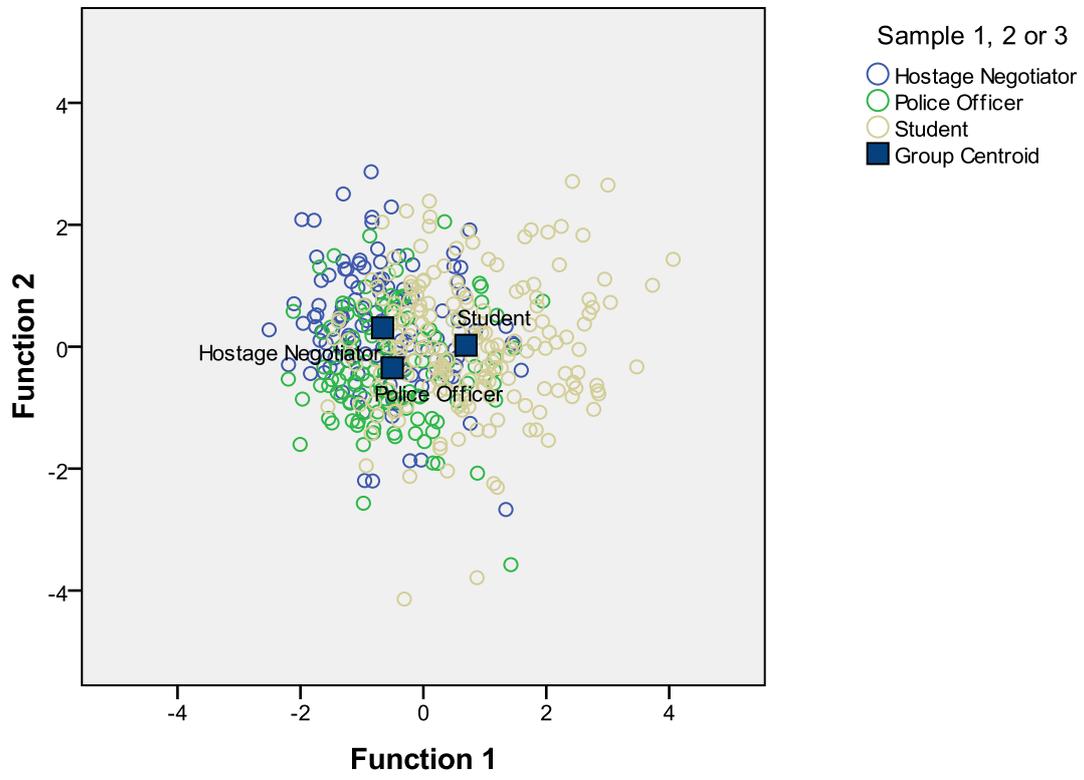


Figure 3. Discriminant function plot depicting group centroids on the two discriminant functions utilising the CERQ subscales as predictor variables.