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Date \textit{Aug. 26, 2002}
Some researchers have argued that narcissism, Machiavellianism, and psychopathy (i.e. 'the Dark Triad') may be identical personality traits, especially in normal populations. Three studies were conducted to assess the similarities and differences between the three traits in normal (i.e. university) populations. Study 1 (N = 114) found that (1) the three constructs can be differentiated on the basis of Big Five correlations, (2) narcissists can be distinguished by their self-enhancing tendencies, and (3) Machiavellians and psychopaths possess a higher nonverbal (compared to verbal) intelligence ratio. In Study 2 (N = 130), all three of the Dark Triad constructs correlated positively with interest in casual sex. Finally, Study 3 (N = 356) illustrated that psychopaths have a high penchant for antisocial entertainment activities and delinquent behaviour. Intercorrelations among the Triad constructs ranged from .21 to .57. Overall, these findings suggest that narcissism, Machiavellianism, and psychopathy are in fact three separate personality traits.
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INTRODUCTION

Dark and dangerous individuals have been studied extensively in clinical and forensic populations, though not much research has been conducted on those in normal settings. The idea that dark personalities can be found in normal populations became startlingly apparent during several recently well-publicized events involving violence, such as the Columbine High School murders of 1999, and workplace shootings like that of Michael McDermott, who in December of 2000 killed seven of his coworkers.

Several situational factors have been hypothesized as the cause of these acts, such as being the victim of bullying or being fired from one’s job. However, these are acts that, unfortunately, occur countless times every year, yet the victims do not always turn to violence as a means of revenge or retribution. This fact suggests that some underlying factor that is present in the individuals themselves is having some influence.

One obvious area of examination is that of individual differences in personality. In incarcerated samples, personality variables have been used as a means of identifying more dangerous individuals from the rest of the population for decades. It seems reasonable to suggest that such a system be used to identify such individuals in normal populations as well, hopefully before they commit serious harm to others. The problem of identifying just what personality constructs would be possible for inclusion into such a taxonomy is not a simple one. In our early attempts to identify such people, one criterion that we used was that the personality trait be one that is extremely aversive, and potentially dangerous, to others. Following a thorough review of the literature, three personality traits met our criteria for inclusion; narcissism, Machiavellianism, and psychopathy.
Narcissism

The term narcissism arises from the Greek mythological figure Narcissus, who became so enchanted by his own reflection in a pool of water that it eventually caused his death. Some of the terms that describe the narcissist include egotistical, vain, self-centered, self-absorbed, and grandiose. Narcissists rely on others to fulfill their constant need for admiration and attention. They possess a sense of entitlement, that is, a perception that they deserve more than the ‘average’ person. Taken together, these descriptors paint an obviously negative portrait of the narcissist. Although they are impressed with themselves, narcissists are quite interpersonally aversive (Paulhus, 1998).

Research involving narcissism in normal populations began with Raskin and Hall’s (1979) attempt to delineate a subclinical version of the DSM-defined personality disorder. Their development of the NPI (1979) initiated a flood of research on normal populations. One particularly attractive feature of this scale is its two-alternative forced-choice format, which helps reduce socially desirable responding (Paulhus, 1991).

Several studies have illustrated the successful adaptation of the subclinical construct from its clinical underpinnings (e.g. Morf & Rhodewalt, 2001). Specifically, research has found narcissism to be related to self-enhancement, grandiosity, low empathy, sense of entitlement, social dominance, and an inability to take the perspective of others (McHoskey, 1995; Rhodewalt & Morf, 1995).

John and Robins (1994) conducted one study that vividly illustrates the self-enhancing tendencies of narcissists. Participants were separated into groups and asked to perform a discussion task. Each participant’s overall performance was rated by (a)
the participant themselves, (b) the rest of their group peers, and (c) 11 trained psychologists. When compared to both peer-ratings and psychologist ratings, a participant’s tendency to overestimate their performance was strongly correlated with their narcissism scores ($r = .48$). These results demonstrate the narcissists’ tendency to perceive their own performance as superior even when it is not the case.

Overall, the pattern of research paints a dark portrait of the subclinical narcissist. Their interpersonal aversiveness and cold disposition is well-documented. The wealth of research with the NPI makes it the overwhelming choice for measuring subclinical narcissism in the present research.

**Machiavellianism**

Machiavellianism is a set of traits and behaviours that was named after Niccolo Machiavelli, a 16th-century Italian author and diplomat. Machiavelli wrote two books (The Prince, 1513/1966; The Discourses, 1513/1970) that described strategies for obtaining and retaining political power. In his books, he describes people as untrustworthy, malevolent, fickle, and simple, who should be deceived and exploited in order to achieve political power.

In the 1960s and 1970s, Christie and Geis (1970) began to study Machiavellianism as an everyday personality variable based on the tendency to endorse the attitudes and behaviours described by Machiavelli. Key components of Machiavellianism include deceit, exploitation, cynicism, and a sense of entitlement. To measure the construct, Christie and Geis developed a series of scales and tested them in an extensive program of research.
The research showed that high scores on these measures predicted the tendency to manipulates others for personal gain and ignore the other person’s well being. Although they rely heavily on other people for personal rewards, they also have a strong mistrust of others. Machiavellians are the prototypical con artist, skilled at portraying various social appearances depending on what the circumstances require (e.g., McHoskey, 2001). The common motivation behind all of these social appearances is that they ultimately serve the Machiavellian’s personal goals.

In one example, Christie and Geis (1970) conducted the famous study entitled “The Ten Dollar Game”, which clearly demonstrates the manipulative nature of the Machiavellian. Participants were separated into groups of three. Based on their Mach scale scores, one member of the group was designated as a high-Mach, one as a middle-Mach, and one as a low-Mach. For the game, the three participants were assigned the task of dividing ten dollars amongst themselves, one stipulation being that one of the three would not be allowed to receive any money at all. Once the loser of the game was decided, the other two were allowed to divide the ten dollars any way they wished (i.e., it did not have to be evenly). Results showed that, on average, the high-Mach won $5.57, with the low-Machs winning only an average of $1.29. This study demonstrates the Machiavellian’s ability to not only win in situations such as these, but also to con their partner into giving them more than an even share of the winnings.

Across the thirty years of subsequent research, it was apparent that some scales worked better than others. A review by Fehr, Samsom, and Paulhus (1992) suggested that the Mach-IV is the method of choice. Therefore, we chose to use this instrument as our measure of Machiavellianism in the present research.
Psychopathy

Psychopathy has a long history in both clinical and forensic psychology (Cleckley, 1941; Hare, 1985). Cleckley (1941) was one of the first to clarify the key components of psychopathy, including impulsivity, superficial charm, and emotional coldness (i.e. low guilt, low anxiety, low empathy). Other important features include arrogance, egocentricity, and antisocial behaviour. Before addressing current psychopathy measures, it is necessary to mention several predecessor measures.

Early clinical approaches. The first attempts to address psychopathy were in the clinical domain in the 1940's. One is Antisocial Personality Disorder (APD), a diagnosis originating in the American Psychiatric Association’s Diagnostic and Statistical Manual (e.g. DSM-II; APA, 1970). APD is typically diagnosed in a clinical setting using a structured interview method. In order to obtain an APD diagnosis, an individual must meet DSM criteria such as “impulsivity or failure to plan ahead”, “reckless disregard for safety of self or others”, and “lack of remorse, as indicated by being indifferent to or rationalizing having hurt, mistreated, or stolen from another” (DSM-IV; APA, 1994, p. 650). Although APD is supposedly the DSM equivalent of psychopathy, it is largely defined by antisocial and criminal behaviours and ignores the personality traits associated with psychopathy (APA, 1994). Hare (1985) illustrated this asymmetric relationship between psychopathy and APD; 90% of psychopaths can be categorized with APD, though only 25% of individuals with APD can be classified as psychopaths.

Another clinical attempt to operationalize psychopathy was the MMPI Psychopathic Deviate (Pd) scale (McKinley & Hathaway, 1944). This scale was
designed to diagnose individuals with a “psychopathic personality, asocial or amoral type” (Graham, 2000, p. 70). Although these individuals may share some of the Cleckley features of psychopathy, such as antisocial behaviour, high Pd scores can also reflect tendencies and traits unrelated to psychopathy, such as dissatisfaction with life and sexual problems (Lilienfeld, 1999). High Pd scorers are also typically more emotional than psychopaths, experiencing feelings such as fear, sadness, and depression. Current measures of psychopathy do not correlate with Pd scores. This has led some researchers to conclude that, much like APD, the Pd scale may tap the behavioural aspects of psychopathy, but not the personality factors involved (Lilienfeld, 2000).

*Eysenck’s Psychoticism* (P-scale). Eysenck’s development of the P-scale was the first attempt to move psychopathy into the realm of normal personality (Eysenck & Eysenck, 1985). Among the traits associated with P are aggressiveness, egocentricity, low empathy, impulsivity, and antisocial tendencies (Eysenck, 1998). One major critique of Eysenck’s P is that it is too inclusive (Costa & McCrae, 1995). According to Eysenck, P is one of the three fundamental traits of personality (along with Neuroticism and Extraversion), and could be viewed as a measure of one’s socialization. Criminal activity is only one potential outcome of high P-scores, with others ranging from creativity to psychosis.

*Hare’s Psychopathy Check List (PCL-R).* The most influential psychometric approach to psychopathy is the work of Hare (e.g. Hare 1985, 1998). Instead of being completely behaviourally based as in the APD, Hare’s (1985) two-factor conception describes psychopathy as containing one personality factor (low emotional affect,
interpersonal coldness) and one behavioural factor (impulsivity, antisocial behaviour). For a variety of reasons, Hare argued that psychopathy was best measured via structured interview methods. Accordingly, his ten years of research resulted in the widely used Hare Psychopathy Checklist-Revised (PCL-R; Hare, 1991).

A large number of studies have supported the construct validity of PCL-R, especially in forensic populations. For example, the importance of the behavioural factor is apparent in the high scores obtained by incarcerated individuals (Coid, 1998). Also, the emotional coldness of psychopaths is evident in studies using self-report, interview, and physiological measures (Siever, 1998). Heilbrun and his colleagues (Heilbrun, Hart, Hare, Gustafson, Nunez, & White, 1998) found that, in a hospitalized sample, PCL scores correlated with both nonphysical and physical acts of aggression during institutionalization, as well as with post-discharge arrests for offenses against persons. In a recent review of the criminal recidivism literature, PCL was found to be the strongest and most consistent predictor of general recidivism \( r = .27 \), violent recidivism \( r = .27 \) and sexual recidivism \( r = .23 \) (Hemphill, Hare, & Wong, 1998).

Using the PCL-R, Williamson, Hare, and Wong (1987) examined the nature of the crimes that psychopaths commit. They reported that psychopaths are more likely to commit crimes for instrumental rather than emotional reasons and their victims are often strangers. In sum, the PCL-R has proven successful as a measure of psychopathy in forensic settings.

**Self-report psychopathy measures.** Such findings raise another important aspect of the current research: the examination of psychopathy in normal populations. Research involving psychopathy in non-forensic or subclinical populations is relatively
recent. To collect such data, the availability of a self-report measure is critical. Such a measure was provided by the Self-Report Psychopathy Scale (SRP-II; Hare, 1985), a self-report version of the PCL-R. Several studies have demonstrated the convergent and discriminant validity of the SRP (e.g. Salekin, Trobst, & Krioukova, 2001). Zagon and Jackson (1994) reported that SRP scores correlated with low empathy, low anxiety, and higher lying behaviour. SRP scores also correlate with measures of social nonconformity (Rogers, Vitacco, Jackson, Martin, Collins, & Sewell, 2002). Twenty years of research has now accumulated to support the use of the SRP as a valid measure of subclinical psychopathy.

There are now several self-report instruments that compete with the SRP. Two in particular are the Levenson Self-Report Psychopathy Scale (Levenson, Kiehl, & Fitzpatrick, 1995) and the Psychopathic Personality Index (Lilienfeld & Andrews, 1996). Levenson’s operationalization of psychopathy is based on the work of Karpman (1948). In this system, it is believed that there are two types of psychopaths: primary and secondary. The primary psychopath is described as callous, manipulative, and pathologically untruthful, and the secondary psychopath is defined by antisocial behaviour and emotional difficulties such as high anxiety. With perhaps the exception of Pd, no other definition of psychopathy involves as high a level of emotionality as does Levenson’s secondary psychopath. Levenson’s system allows for an antisocial yet highly anxious individual to be classified as a psychopath, which is in stark contrast to Hare’s (1985) approach. Levenson’s types of psychopathy have been correlated with disinhibition, boredom susceptibility, substance abuse, and criminal versatility (Brinkley, Schmitt, Smith, & Newman, 2001; Levenson, Kiehl, & Fitzpatrick, 1995).
Although Levenson's primary psychopath is similar to Cleckley's, the concept of the secondary psychopath is too much at odds to include in our research.

Lilienfeld's (Lilienfeld & Andrews, 1996) definition of psychopathy has a more complex factor structure than that of Hare's (1985). These researchers made an attempt to be overly inclusive in selecting certain constructs supposedly related to psychopathy. Items were then created based on these constructs. A factor analysis proposed eight factors: Machiavellian Egocentricity, Social Potency, Coldheartedness, Carefree Nonplanfulness, Fearlessness, Blame Externalization, Impulsive Nonconformity, and Stress Immunity. Convergent validity of the PPI has been demonstrated via correlations with both the PCL-R (Poythress, Edens, & Lilienfeld, 1998) and the SRP (Lilienfeld & Andrews, 1996). PPI scores have also been correlated with aggressive behaviour (Edens, Poythress, & Lilienfeld, 1999) and family history of substance abuse (Lilienfeld & Andrews, 1996).

The PPI is a promising measure but, to this point, is not as well validated as the SRP. Subsequent research in our laboratory has indicated that the PPI is over-inclusive — not surprising, given the researchers' original test construction strategy. This over-inclusiveness is reflected in the fact that 187 items are required to fully represent the construct. One obvious example is the fact that one of factors — Machiavellian Egocentricity — directly measures Machiavellianism. This over-inclusiveness makes the PPI inappropriate in our search to distinguish the three dark constructs.

In sum, research interest in subclinical psychopathy continues to be highly active (e.g. Rogers et al., 2002; Skilling, Harris, Rice, & Quinsey, 2002). Our goal is to add to and compliment these studies, thus continuing the efforts to successfully migrate
the concept of forensic and clinical psychopathy into normal populations. The degree to which forensic and clinical research findings can be replicated in normal populations is of utmost importance.

**Summary.** Overall, this literature review suggests that narcissism, Machiavellianism, and psychopathy are worthwhile candidates for examining dark personalities in normal populations. To capture the essence of these three constructs in an easy reference, we dubbed them the *Dark Triad*.

**The Triad as a one construct?**

Several researchers have argued that narcissism, Machiavellianism, and psychopathy are in fact one and the same construct (e.g. McHoskey, 1995), especially in nonclinical populations. These claims have been made on both conceptual and empirical grounds. The constructs do share some qualities, such as grandiosity, entitlement, shallow affect, superficial charm, manipulativeness, and a parasitic lifestyle. Empirically, correlations among measures of the Triad have been reported as high as .65 (Gustafson & Ritzer, 1995).

More specifically, McHoskey’s (1995) argument that narcissism and Machiavellianism are identical is based on the fact that the two constructs share some common features, such as interpersonal manipulation. McHoskey found that Mach-IV scores correlated strongly with scores on certain NPI subscales. Namely, Machiavellianism correlated with scores on the Entitlement and Exploitativeness subscales of the NPI across two samples.
Similarly, McHoskey, Worzel, and Szyarto (1998) argued that Machiavellianism and psychopathy were indistinguishable based on shared characteristics such as dominance and low affect. Mach-IV scores correlated with LSRP primary psychopathy scores at .64, and a principal-components analysis revealed that the two loaded on the same factor.

Gustafson and Ritzer (1995) outlined the link between narcissism and psychopathy. These researchers argued that narcissism is in fact a less extreme manifestation of psychopathy. Results demonstrated that NPI and SRP scores correlated at .65. Furthermore, cluster analyses led the researchers to suggest that psychopathy and narcissism were identical.

These contentions represent a substantial threat to over thirty years of personality research, and have considerable implications for current psychological assessment and research practices. Our primary goal was to address these arguments by examining ways in which the Dark Triad can be differentiated. Based on the above literature review, we chose the NPI, SRP, and Mach-TV scales as our primary measures of narcissism, psychopathy, and Machiavellianism, respectively. A second research goal was to explore each of the three constructs in a subclinical domain. Information regarding the validity of each construct in a normal population would be of great value. Three studies were conducted to reach these goals.

Study 1 addressed the similarities and differences among the Dark Triad on personality, self-enhancement, and cognitive criteria. In this way, the constructs could be examined with respect to important intrapsychic domains, including the fundamental aspects of personality. Study 2 examined the Dark Triad with respect to sexual activity.
In addition to assessing the frequency of such activity, Study 2 examined the nature of such activity in the dark personalities. Finally, Study 3 addressed the Dark Triad with respect to two areas that draw a large degree of attention in both psychological and mainstream society: entertainment preferences and delinquent behaviour.

**STUDY 1: PRELIMINARY DISTINCTIONS**

Previous research involving each of the Triad provides clues as to the criteria upon which the three constructs can be distinguished. One trademark behaviour of narcissists is their chronic tendency to self-enhance or overclaim (John & Robins, 1994; Paulhus, 1998). That is, narcissists tend to overestimate their own abilities and traits. Previous research has found that narcissists overrate their intelligence and physical attractiveness (Gabriel, Critelli, & Ee, 1994) and their predicted academic grades (Farwell & Wohlwend-Lloyd, 1998). The degree to which Machiavellianism and psychopathy correlate with self-enhancement is largely unknown. To the extent that grandiosity is one of the features of psychopathy, a positive correlation with overclaiming measures could be predicted.

The intelligence levels of the Dark Triad constructs could be another criterion for distinguishing them. One could argue that a narcissistic sense of one's intelligence could develop from actual intelligence and the successes it offers (Felson, 1993). Thus, a positive relationship between narcissism and intelligence scores could be found. Machiavellianism is involved with the mastery of social interactions, a task that some have argued played a significant role in the development of human intelligence (Wilson, Near, & Miller, 1996). Wilson, Near, and Miller (1996) describe Machiavellianism as
"a kind of master strategy, that includes both cooperative and defecting strategies, plus a system of rules for when to use them" (p. 287). Based on that argument, Machiavellianism should correlate with intelligence. Nonetheless, Wilson, Near, and Miller (1996) also cite several previous studies that failed to find such a link. Based on that research, I predict no association of Machiavellianism and a standard IQ test.

A hypothesis involving psychopathy and intelligence is less obvious. In an examination of criminally violent inpatients, O'Kane, Fawcett, and Blackburn (1996) found a negative correlation between PCL-R scores and IQ ($r = -.42$), as assessed by the National Adult Reading Test (NART; Nelson, 1982). The scarcity of research directly involving psychopathy and intelligence, especially in normal populations, makes it difficult to predict a correlation.

Some studies have reported an interesting relationship between verbal and nonverbal intelligence in psychopaths. In particular, psychopaths have been shown to have higher nonverbal relative to verbal IQ scores (Gretton, 1998). This finding has also been found in delinquents (Lynam, Moffitt, & Stouthamer-Loeber, 1993). The tendency to which this IQ ratio occurs in narcissists and Machiavellians would also be of interest.

A comparison of the Dark Triad on Big Five traits could also be useful. The Big Five are widely considered the fundamental components of personality, and could be a relatively easy way of communicating differences between the triad. In as much as all three are described as emotionally cold and antisocial, positive correlations with emotional stability and negative correlations with agreeableness, respectively, should be found for each of the Dark Triad. The narcissist's need for admiration and attention
could translate into a positive correlation with extraversion. The impulsive nature of the psychopath would also likely result in a similar correlation with extraversion, as well as negatively with conscientiousness. Hypotheses involving openness are not as obvious.

Finally, the simplest way of determining the similarity of the members of the Dark Triad would be to examine the correlations among the scores on the three standard measures. Extremely high intercorrelations would support the claim by McHoskey and others that the three are, in fact, the same construct.

Method

Participants

One hundred fourteen students (73 female, 41 male) attending a major Canadian university participated in the study. Each was enrolled in a second-year undergraduate course in psychology, and participated for one bonus credit toward their final grade. In terms of ethnic background, 70 (60%) of the students were East Asian and 37 (32%) were European non-Hispanic.

Measures

*Personality.* The Narcissistic Personality Inventory (NPI) (Raskin & Hall, 1979) was used to measure narcissism. The NPI is a 40 item forced choice questionnaire that has been shown to have impressive reliability and validity. Items reflect the grandiose and self-absorbed characteristics of narcissists. Participants are asked to choose from a pair of statements the one that they agreed with the most. One
example item asks participants to select between the options “I am going to be a great person” and “I hope I am going to be successful”.

An abbreviated 20-item version of the Mach-IV Scale (Christie & Geis, 1970) was used to measure Machiavellianism. Participants respond to a set of belief statements on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). This is the most widely used measurement of Machiavellianism and it has proven reliability and validity. Items tap the manipulative and cynical nature of Machiavellians. Example items include “Anyone who completely trusts anyone else is asking for trouble” and “Never tell anyone the real reason you did something unless it is useful to do so”.

To measure psychopathy we used the Self Report Psychopathy Scale II (SRP-II) (Hare, 1985). For our purposes we included the 31 items from SF1, SF2 (intended to measure the PCL-R Factor 1 and Factor 2 respectively) and SB (intended to measure PCL-R total scores). Participants rate the 31 statements on a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree). This scale assesses the emotional coldness and impulsive, antisocial behaviour of psychopaths. Example items include “Rules are made to be broken” and “It's sometimes fun to see how far you can push someone before they catch on”.

The Big Five inventory (BFI) (John & Srivastava, 1999) is a 44-item questionnaire intended to measure the Big Five personality traits. Participants are asked to rate on a scale from 1 (disagree strongly) to 5 (agree strongly) the extent to which each descriptive statement applies to themselves.
To assess the participant’s self-rated intelligence, four items were created by the researchers and added to the BFI. These items read: “I see myself as someone who (1) Is considered unusually gifted or talented at academic things, (2) Is considered exceptionally or unusually intelligent, (3) Usually has grades at the top of every class, and (4) Is considered a very “brainy”, scholarly person.”

With the exception of the NPI, composite scores for each measure are obtained by averaging across each participant’s item responses, resulting in a range of scores from 1.0 to 5.0 (where 5.0 = high Machiavellianism, high openness, etc.). For the NPI, overall scores are calculated by assigning a score of 1 for each time a participant selects the non-narcissistic option, and a 2 for each narcissistic option. In the example item given previously, a participant would obtain a 1 for selecting the latter option and a 2 for selecting the former option. These scores are then averaged across all items to give each participant a score ranging from 1.0 to 2.0.

Intelligence and self-enhancement. The Wonderlic Personnel Test Form IV (Wonderlic, 1979) was used to measure overall intelligence. This is a speeded 50-item test that assesses both verbal and nonverbal IQ. Participants are asked to answer several problems involving word association, geometry, and so on. The test is a paper-and-pencil format, with respondents providing their answers in spaces provided directly on the test.

The Over Claiming Questionnaire (OCQ) (Paulhus, Harms, Bruce, & Lysy, in press) was designed as an unobtrusive measure of both intelligence and self-enhancement bias. Participants are presented with 90 names of persons, events, and things in various academic fields such as literature and physical science. Twenty
percent of the items do not exist in reality and were created by the researchers. Non-existent items are called *foils* and existent items are called *reals*. Participants are asked to rate their familiarity with each item on a 1 (never heard of it) to 5 (completely familiar) Likert scale.

**Procedure**

Data were collected in two stages. In the first stage, each student was given a questionnaire package that contained all of the personality measures, and asked to return it to class at a later date. To reduce any potential contamination due to social desirability, participants were asked to put no personal information on the package, with the exception of their student I.D. number. The I.D. number was necessary so that their data could be matched with the lab data that was to be gathered in the second stage of data collection. Once matched, the I.D. number was removed from the data and replaced with a generic participant number.

The second stage involved the collection of Wonderlic and OCQ data in the lab. Participants were required to have completed the questionnaire package before participating in the second stage of the study. Though this may introduce some concerns regarding the counterbalancing of measurement, this concern is dwarfed by the problems that would arise from having a participant estimate their intelligence (in the take-home package) after completing the Wonderlic in the lab.

Participants were tested in small groups. The Wonderlic is a speeded test with each participant given only 12 minutes to finish as many of the 50 questions as possible. As per the manual's instructions, participants were asked not to skip any questions. The
test is sufficiently challenging that it was impossible for any participant to complete the test in the given time.

Upon completion of the Wonderlic, the OCQ was administered. A research assistant gave the participants brief instructions regarding responding, and did not notify the participants that some of the items did not exist. Participants were informed that the items would be read aloud, and that they were not allowed to stop the research assistant to ask them for repetition or clarification. The assistant informed the participants that if they did not respond to the item within the given time frame, they were to skip the item and move on to the next one. The assistant then read each OCQ item aloud to the participants, who rated its familiarity on a bubble sheet immediately after each item. Participants were given approximately 5 seconds between each item for responding. Items are arranged in sections by topic (e.g. literature, physical sciences), which was read aloud before each section. Topics are read aloud in order to give the participant the proper context in which to rate their familiarity.

Upon completion of the OCQ, participants were given their experimental credit forms. Participants were not debriefed immediately, in order to avoid any possible contamination of other potential participants. Because the participants were classmates, this possibility was highly likely. Knowledge about the potential testing of intelligence would likely have affected participant’s self-ratings of intelligence, and knowledge of the existence of foils on the OCQ may have also had an effect on responding. Participants were debriefed en masse during class time once the study was completed.
Results

Descriptive statistics. Mean scores, standard deviations, and alphas for all scales are reported in Table 1. For the Wonderlic IQ test, an odd-even alpha reliability was computed instead. Other alternatives, such as a test-retest, split-half, or alternate-forms reliability were either inappropriate or impossible to calculate. The alpha reliability for the OCQ bias measure was calculated by averaging the correlations between the bias scores for the six content scales within the OCQ, then applying a Spearman-Brown adjustment.

Triad intercorrelations. Correlations among the three Triad measures are displayed in Figure 1. Each scale correlated significantly with the other two scales. Note that the correlation of NPI scores with SRP-II scores \( r = .50, p < .001 \) was substantially higher than the other two correlations. When disattenuated, this correlation reaches .61.

Big Five Traits. The following results are displayed in detail in Table 2. All correlations reported are significant at \( p < .01 \). Analysis of BFI ratings with NPI, Mach-IV, and SRP-II scores revealed significantly negative correlations between each of the three groups and agreeableness (-.36, -.47, and -.25, respectively). Narcissists and psychopaths tended to have higher extraversion (.42 and .34, respectively) and openness scores (.38 and .24, respectively). Machiavellians and psychopaths typically showed low scores on conscientiousness (-.34 and -.24, respectively). SRP-II scores and emotional stability scores correlated at .35. No other correlations were significant.
Cognitive ability. Detailed results are displayed in Table 2. Due to the suspect reliability of the Wonderlic scale in our sample, disattenuated correlations are also reported. Of the three correlations with the Dark Triad, the only significant correlation was a small positive one with NPI scores \( r = .14, p < .05 \)\(^1\). An IQ ratio was calculated by subtracting verbal IQ z-scores from nonverbal IQ z-scores. Correlational analysis revealed positive relationships between these nonverbal to verbal IQ ratios for Machiavellians \( r = .20, p < .01 \) and psychopaths \( r = .13, p < .03 \), but not narcissists \( r = .05, n.s. \). These correlations illustrate a tendency for Machiavellians and psychopaths to have higher nonverbal IQ scores relative to their verbal IQ scores.

Self-enhancement. Results involving overclaiming are displayed in Table 2. Familiarity was defined as any score other than one for any item. Signal detection theory formulas were then used to create two indices: accuracy and bias. Accuracy is defined as the participant's ability to distinguish reals from foils whereas bias is the participant's tendency to claim familiarity with each item, regardless of whether it exists or not. A participant's accuracy score has been found to be an acceptable estimate of intelligence, with bias score being an indicator of overclaiming one's knowledge (Paulhus & Harms, in press).

NPI scores correlated significantly with OCQ bias \( r = .29, p < .01 \), as did SRP-II scores \( r = .19, p < .05 \). Mach-IV scores did not correlate significantly with OCQ bias scores. Overclaiming of intelligence was calculated by comparing self-rated intelligence scores with Wonderlic IQ scores, using regression analysis. This demonstrates an effective technique for comparing self-reported intelligence ratings.

\(^1\) Even disattenuated, IQ correlations with Mach-IV and SRP-II scores were only .05 and .07 (n.s.), respectively.
with objectively measured IQ scores. NPI scores correlated significantly with this measure \( r = .22, p < .02 \), whereas Mach-IV scores and SRP-II scores did not. Overall, these results illustrate that narcissists overclaimed both their knowledge and intelligence, psychopaths overclaimed their knowledge only (but not as strongly as narcissists), and Machiavellians did not overclaim either one.

**Discussion**

As expected, the moderate correlations among the Dark Triad scales illustrate that there is some overlap among the constructs. The overlap may derive from the shared tendencies described earlier, such as grandiosity and general lack of empathy. However, these correlations are by no means large enough to suggest that they represent identical personalities in the normal range. Instead, they signify justifiable overlap among the three constructs.

*Self-enhancement.* Our measures of self-enhancement proved to discriminate the Dark Triad. As in previous studies, self-enhancement continues to be a consistent indicator of narcissism. Psychopaths self-enhanced to a lesser degree and Machiavellians, not at all.

Specifically, narcissism correlated significantly with measures assessing overestimation of both knowledge (OCQ bias) and intelligence (IQ discrepancy). As with previous research, these findings confirm the tendency of narcissists to engage in self-aggrandizement with regard to cognitive competence.

Our more limited finding that psychopaths overclaim knowledge is consistent with previous research involving incarcerated samples. Siever (1998) reported several studies showing that psychopaths use and process emotional words without
understanding their underlying meaning. The current finding seems parallel to those interview-based results: In a conversational situation, it may be to psychopath's advantage to claim familiarity with more information than they actually possess. Nevertheless, it is worth reiterating that psychopaths do not self-enhance as much as do narcissists.

The fact that Machiavellians do not overestimate either their knowledge or their intelligence may seem like an uninteresting null result at first, but may also provide valuable information regarding this personality. Interpersonal manipulation is perhaps the defining feature of the psychopath, and in order to be a successful manipulator one must be aware of their cognitive limits. Overclaiming of intelligence or knowledge would hinder Machiavellians' efforts at manipulation, in that they would unaware of instances in which they had 'met their match'. Another possible explanation is that Machiavellians understand that they need to be flexible in their self-presentational style. Although it may be advantageous to overclaim knowledge and intelligence in some situations, it may be more beneficial to underestimate these qualities in other circumstances. In some cases, feigning ignorance could be a useful strategy for soliciting assistance or sandbagging others.

In sum, the self-enhancement observed in narcissists and psychopaths suggests that neither is as grounded in reality as the Machiavellian, whose manipulative success has been well-established.

*Intelligence.* As predicted, narcissism correlated significantly with actual overall intelligence, although the correlation was small. This finding lends some support to the idea that narcissists may in some way be justified in inflating self-ratings
because they can 'back it up'. Another possibility is that actual superiority in a certain area breeds narcissistic exaggeration, such as with intelligence.

As predicted, Machiavellianism did not correlate with overall intelligence, consistent with previous research findings (see Wilson, Near, & Miller, 1996). The pattern of correlations with psychopathy was identical to that of Machiavellianism. The null correlation with intelligence stands in contrast to the findings of O’Kane et al. (1996). Of course, our entire sample is composed of university students who have a restricted range of intelligence compared to O’Kane’s sample of criminally violent inpatients.

Note that the notion of the psychopaths and Machiavellians as being a 'smooth talker' was not supported in our data. Both showed null correlations with verbal intelligence. Interestingly, both showed a small positive correlation with nonverbal intelligence, even when analyzed within gender.

Even more complex was the pattern of associations with nonverbal-verbal ratios. As in previous research, psychopaths showed the positive ratios. Though not predicted, Machiavellians also showed the same pattern. It is also important to note that the positive correlation with nonverbal-to-verbal IQ ratio does not derive from a deficiency in verbal intelligence. It derives from a superiority in non-verbal intelligence. At this point, an explanation for this pattern is not obvious. This trend may be evidence for some unknown cognitive link between psychopathy and Machiavellianism.

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2 Louth and her colleagues (Louth, Williamson, Alpert, Pouget, & Hare, 1998) examined the speech style of psychopaths in an attempt to explore the psychopath’s ability to manipulate others. They showed that psychopaths tend to speak more quietly and that they do not differentiate (in terms of emphasis) between neutral and affective words.
**Big Five.** Only one of the Big Five—Agreeableness—shows a consistent pattern across the Dark Triad. All three show the cold and aggressive characteristics defined by low Agreeableness. This defining feature may explain the interpersonal aversiveness of all three characters.

Otherwise, Narcissism, Machiavellianism, and psychopathy are each represented by unique patterns of Big Five traits. Among these findings is the interesting correlation between stability and psychopathy. In the forensic research, this finding is invariable. Note that emotional stability is traditionally used as the criterion for psychological health (e.g. Hills & Argyle, 2001; Vitterso, 2001); yet here, it is associated with a highly undesirable personality. Two points should be mentioned when interpreting this finding. First, the definition of ‘low anxiety’ may need to be refined depending on whether one is speaking of psychopathic or non-psychopathic individuals. Usually, being low in anxiety refers to being calm, well-adjusted, easy-going, resilient, carefree individuals. In the case of the psychopath, however, the low anxiety may represent coldness and insensitivity.

Second, this low anxiety should not be interpreted in isolation. Low anxiety by itself may not capture the psychopath’s emotional makeup, but when combined with factors such as disagreeableness, the cold disagreeableness engenders interpersonal antagonism.

**Summary.** Overall, these results aid in explaining the pattern of correlations among the Dark Triad constructs. Psychopathy and narcissism have the most in common, sharing three Big Five traits (low A, high E and high O) and a tendency to
overclaim knowledge. Psychopaths and Machiavellians are low in both Agreeableness and Conscientiousness, and also show a verbal to nonverbal IQ discrepancy. Narcissism and Machiavellianism are the least similar, sharing only disagreeableness.

Despite these commonalities, the overall pattern indicates more differences than similarities among the triad members. Studies 2 and 3 address other areas that could potentially discriminate the Triad. In particular, the realm of behaviours has yet to be tapped.

**STUDY 2 – SEX AND ROMANCE INTERESTS**

Study 1 provided insight into the personality and cognitive correlates of the Dark Triad. Study 2 was our first attempt at distinguishing the Triad in terms of behaviour. One potential behavior that might distinguish dark personalities is their attitude toward casual sex\(^3\). Previous research has found that promiscuous sexual activity is a consistent correlate of psychopathy (Bogaert & Fisher, 1995; Hare, 1991; Widiger & Lynam, 1998). This research also showed that the psychopath’s motives for their sexual promiscuity are often manipulative, exploitative, deceptive, or egocentric.

There are also links between promiscuous sexuality and narcissism. For example, Bard et al. (1987) reported that rapists score highly on measures of narcissism. More recently, Dean and Malamuth (1997) linked narcissism to past sexual aggressiveness and fantasies of sexual aggressiveness. Finally, there are also links between promiscuous sexuality and Machiavellianism. McHoskey (2001) reported that Machiavellianism is associated with open, promiscuous, and hostile sexual attitudes.

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\(^3\) The term *casual sex* is commonly used to describe sexual activity without commitment or deep emotional involvement.
Finally, recall from Study 1 that low agreeableness was a common feature of each of the Triad. Research has established a link between disagreeableness and high sexual activity (Trapnell, 1997). This link was demonstrated for both male and female students. Trapnell’s finding suggests that, because of their common link with disagreeableness, narcissism, Machiavellianism, and psychopathy should all correlate positively with amount of sexual activity.⁴

In short, there is ample theoretical and research evidence to suggest that all three of the Dark Triad -- narcissism, Machiavellianism, and psychopathy -- should correlate positively with interest in casual sex.

One way of clarifying this issue would be to compare interest in casual sex with interest in romantic relationships. This comparison would help distinguish the triad’s superficial, short-term, polygamous sexual activity from more meaningful, long-term, monogamous relationships. So far, my portrait of the Dark Triad suggests traits that are at odds with the notion of a loving, romantic individual. Instead, features such as low empathy, disagreeableness, and callousness seem to describe a person uninterested in romance. For this reason, negative correlations with romance interest would be predicted for each of the Dark Triad.

**Method**

*Participants.* One hundred thirty students (92 female, 38 male) attending a major Canadian university participated in the study. Each was enrolled in a second-year undergraduate course in psychology, and participated for one bonus credit toward their

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⁴ Unfortunately, all research on sexual activity rates are based on self-report. As far as I know, no reliable objective measure is yet available.
final grade. 71 (55%) of the participants were of East Asian ethnicity, and 43 (33%) were of European non-Hispanic background.

Materials. Triad scales and measures of intelligence and knowledge used in this study were identical to the ones used in Study 1. The BFI was not included. A modified version of Simpson and Gangestad’s (1991) Socio-Sexuality Scale was used to assess sexual behaviours and attitudes (see Bailey, Kirk, Zhu, Dunne, & Martin, 2000). Participants respond to items such as “Sex without love is okay” and “I can imagine myself being comfortable and enjoying “casual” sex with different partners” on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Other items assessed degree of sexual activity, such as “With how many partners have you had sexual intercourse on one and only one occasion?”. Participants were given five options ranging from ‘none’ to ‘more than 10’.

A two item Romance scale was also included: (“How many people have you fallen in love with over the last year?” and “How many times a year do you fall in love “at first sight”?”). Participants responded to the items on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Procedure. All measures were collected in the same fashion as in Study 1. The sociosexuality and romance scales were included in the take-home package.

Results

Descriptive statistics. The descriptive statistics for the triad scales and the sociosexuality and romance scales are displayed in Table 3.

Triad intercorrelations. Figure 1 illustrates the correlations among the three Triad measures. These correlations did not deviate strongly from those found in Study
1. More important, the order of the strength of correlations did not change. That is, the correlation between NPI and SRP-II scores remained the strongest, and the correlation between NPI and Mach-IV scores remained the weakest.

**Sexuality and romance interest.** Table 5 displays the correlations between each of the triad and the Romance and Sexuality scales. As predicted, all three triad members correlated significantly with the Sociosexuality Scale: SRP-II scores \( r = .46, p < .001 \), followed by NPI scores \( r = .32, p < .001 \) and Mach-IV scores \( r = .22, p < .02 \).

Contrary to my predictions, Romance Scale scores did not correlate significantly with any of the triad scales, even when disattenuated to account for the Romance Scale’s weak reliability\(^5\).

To control for any possible confounding due to gender effects, these correlations were repeated within gender. These results are included in Table 5. Comparable results were found: Sociosexuality Scale correlated most strongly with SRP-II scores and least strongly with Mach-IV scores for each gender. Although the size of the correlations were comparable, many of the correlations within males did not reach significance due to the sample size of only 38.

**Discussion**

Even though the results of Study 2 illustrate that narcissists, Machiavellians, and psychopaths all have high levels of sexual interest, these correlations may be interpreted differently for each construct. Narcissists may use sex as a way of flaunting their assets. In addition to satisfying their own sexual needs, the narcissist may be using sex
as a way of ‘doing the other person a favor’ and gracing them with his or her participation. For Machiavellians, sex may be the reward they reap after manipulating another person. Alternatively, Machiavellians may have an ulterior motive for participating in sexual behaviours, using it as a method of obtaining other future rewards. For psychopaths, the high level of sexual behaviour may be due to their impulsivity and poor behavioural controls.

Still, the possibility remains that these findings derive from a common element among the Dark Triad. Several hypotheses could be made as to the identity of this common thread. Disagreeableness was demonstrated to be the only common Big Five trait. Therefore, it may be the link to interest in casual sex (Trapnell, 1997). The fact that disagreeable males have more casual sex is consistent with the notion that some men selfishly disregard their female partners’ feelings. However, the same pattern held for women: Disagreeable women also reported more casual sex. This finding seems to contradict the stereotype that agreeable women would be more likely to acquiesce -- even to unwanted sexual activity. Therefore the explanation must go beyond traditional sex roles to some underlying link between sex and personality. Some possibilities are dominance, hypermasculinity, and sensation-seeking (Bogaert & Fisher, 1995).

STUDY 3 – ENTERTAINMENT PREFERENCES AND DELINQUENCY

Two more important areas of behaviour that could be linked to the Dark Triad are entertainment preferences and delinquency. Each is an area that attracts a large

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5 Disattenuated Romance Scale correlations for NPI, Mach-IV, and SRP-II, respectively: both genders = -.04, .07, .00. Males = -.14, .03, -.20. Females = .00, .06, .06. None of these correlations were significant at \( p < .05 \).
amount of attention in mainstream media. There is a large amount of interest in terms of whether or not certain types of entertainment, such as aggressive music or violent video games, have any influence on the behaviour of the individuals who enjoy such entertainment.

Researchers have also attempted to address this issue by correlating entertainment preferences with dangerous or delinquent behaviours (Singer, Levine, & Jou, 1993). Singer, Levine, and Jou (1993) found that listening to heavy metal music can have an influence on the delinquency of high school students. Anderson and Bushman (2001) conducted a meta-analysis of research that attempted to link violent video games to aggressive behaviour. They concluded that both experimental and nonexperimental studies alike have demonstrated that the use of violent video games does in fact increase the aggressive behaviour of children and young adults, and also decreases prosocial behaviour. Furthermore, the researchers found that exposure to violent video games also increases physiological arousal, aggressive cognitions, and aggressive affect. On the other hand, Lacourse, Claes, and Villeneuve (2001) found that a preference for heavy metal music was not a risk factor for suicide in adolescents after controlling for factors such as drug use and quality of family relationships.

Some researchers have addressed the role of personality in entertainment preferences (Dollinger, 1993; McCown, Keiser, Mulhearn, & Williamson, 1997; Rawlings & Ciancarelli, 1997; Robinson, Weaver, & Zillman, 1996; Weaver, Brosius, & Mundorf, 1992). Svebak and Kerr (1989) reported that individuals high in impulsivity participate in more “explosive” and “paratelic” sports, such as baseball,

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6 McHoskey (2001) provided support for this theory, reporting that Machiavellians employ several self-serving and deceptive tactics when attempting to obtain sex.
hockey, and surfing. Weaver (2000) reports research that has found positive correlations between Eysenck's (e.g. Eysenck & Eysenck, 1976) measure of Psychoticism and preferences for graphically violent horror films and rock music videos, along with a dislike for comedy films and pop music. Machiavellianism has also been correlated with a preference for heavy metal music (Hansen & Hansen, 1991).

The role of personality in delinquency has also been examined extensively (Calhoun, Glazer, Stefurak, & Bradshaw, 2000; Ruchkin, Koposov, Eisemann, & Haeggloef, 2002). Research in criminal populations has found that psychopaths have higher rates of criminal activity, violent offending, substance abuse, and recidivism than non-psychopathic offenders (e.g. Hemphill, Hart, & Hare, 1994; see also Hare 1998). Machiavellianism has been correlated with non-drug-related delinquency (Krampen & von Eye, 1984). Studies such as these suggest that delinquency is an avenue particularly suited to Dark Triad research.

In Study 3, we examined the role of personality in both entertainment preferences and delinquency. Though the connection between psychopathy and delinquency has been well established (e.g. Hemphill, Hart, & Hare, 1994), this research has been confined to criminal populations. Information regarding the role of psychopathy in normal populations would be of great value. Entertainment preferences and delinquency may prove to be other criteria upon which the Dark Triad can be discriminated.
Method

Participants. Three hundred fifty-six students (133 male, 218 female, 5 no response) attending a second-year undergraduate psychology course at a major Canadian university participated in the study. 132 (38%) of the participants were of East Asian background, 113 (32%) were of European non-Hispanic background. Ethnicity information was not provided by 51 (15%) of the participants.

Entertainment preferences. The NPI, Mach-IV, and SRP-II were again included as our Triad scales. To assess entertainment preferences, we developed a questionnaire asking participants to describe their preferences for a broad variety of media and entertainment. In the first section, students were presented with several types of musical genres (e.g. rock, country, jazz, etc.) accompanied by various artists who exemplified the genre. An “other” option was also available. Participants were asked “What type(s) of music do you enjoy?”, and allowed to respond to more than one option. Similar sections followed, involving movies, sports-playing, sports-watching, internet activities, and video games. For internet activities, participants were asked to write how many hours per week they engaged in each activity (e.g. instant messaging, research/information). The video games section consisted of an open-ended item in which participants were asked to list their favourite video games.

Delinquency. The anti-social behavior inventory used in this study contained 43 items based on the work of Elliott and Ageton (1980), who reported significant validity of their scale against behavioural measures. Participants were asked to estimate how many times in the past five years they had committed each of the anti-social acts. Items
ranged from “Beeped in anger at other drivers”, “Bought alcohol for a minor”, and "Cheated on a school test" to “Stolen a motor vehicle”, “Attacked someone with the intent of seriously hurting or killing them”, “Forced someone to have sex against their will”, and “Been arrested”. There were 9 additional items involving various types of drug use (e.g., alcohol, ecstasy, marijuana, etc.). Where necessary, each item distribution was then normalized. We named this measure the Misbehaviour Inventory (MI).

Procedure. The study was advertised as a “Personality and Entertainment Study”, with participation being rewarded by one bonus credit towards their final class grade. Students were given the opportunity to take the questionnaire package to complete on their own time and return it to a later class or to a designated drop-off location at the school. Due to the delicate nature of the information being assessed by the questionnaires, the potential for desirable responding was of great concern. Once again, ensuring anonymity was the strategy used to decrease the tendency to respond desirably. To achieve this, participants were instructed to not put their name, student number, or any other personal information anywhere on the questionnaire sheets or on the outside envelope. After handing in the questionnaire, students put their name and student number on a separate sheet of paper to receive their bonus credit.

Results

Descriptive statistics. Mean scores and standard deviations for the three inventories were 1.36 (.18), 2.53 (.40), and 2.85 (.41), respectively. The alpha
reliabilities for the NPI, SRP-II, and the Mach-IV were .85, .81, and .74, respectively. These results are displayed in detail in Table 8.

**Triad intercorrelations.** Figure 1 illustrates the correlations among the three Triad measures. Once again, these values do not differ greatly from those found in Studies 1 and 2, and the order of strength of correlations remained identical. Because of the vastly larger sample size compared to Studies 1 and 2, these values may be the best estimates of the actual correlations between the three scales.

**Scoring of entertainment preferences.** Participants were assigned a score of 1 for each item that they endorsed, and a 0 for no endorsement. Recall that in the case of internet activities, participants were asked to state how many hours a week they spent engaged in each activity. These scores were divided over the number of hours they spent on the internet in total to obtain relative scores. Recall that for video game preferences, participants were asked to list their favorite video games in an open-ended fashion. With the assistance of a video game website (http://www.7thzone.com), three research assistants designed a comprehensive classification system and categorized the games into their appropriate genre.

**Factors of entertainment.** Principal components analyses were conducted on the entertainment and misbehaviour data separately in an attempt to reduce it to a more manageable and interpretable form. A direct oblimin (i.e. oblique) rotation was used for all factor analyses. The number of factors for each solution was decided on the basis of scree plots, eigenvalues, and ease of interpretability.

Note that several music categories appearing in Table 6 (techno, punk, folk, Asian, jazz, gospel, and Christian music) are not on the entertainment questionnaire.
These categories arose from the “other” option in each section of the entertainment questionnaire and were added because of a high enough endorsement frequency, or because they were of specific interest to the researchers.

A two-factor solution was suggested for each of the entertainment types. Factor loadings are displayed in Tables 6 through 10. For each entertainment type, the two factors could be interpreted as Prosocial and Antisocial. Prosocial media included entertainment that generally included positive, nonviolent messages, with Antisocial media tending to be aggressive and violent in nature.

The two music factors explained 25% of the variance in the system and had eigenvalues of 2.6 (Antisocial) and 1.7 (Prosocial). Within music, items loading on the Antisocial factor included rock, alternative, and heavy metal. Examples of items loading on the Prosocial factor included pop and adult contemporary. The two film factors explained 30% of the variance in the system and had eigenvalues of 2.2 (Antisocial) and 1.7 (Prosocial). Antisocial films included action, adult, and horror. Prosocial film genres included romance, family and drama. The two sports factors accounted for 35% of the variance in the system, and had eigenvalues of 2.1 (Antisocial) and 1.4 (Prosocial). Antisocial sports-watching included contact sports (e.g. hockey, football), car racing, and pugilistic sports (e.g. boxing, wrestling) and Prosocial sports included finesse sports (e.g. figure skating), winter sports, and track and field. Because it was apparent that the sports-playing and sports-watching items were relaying highly similar information (i.e. based on item correlations), this factor solution was forced for the sports-playing items as well. The two internet factors explained 29% of the variance in the system and had eigenvalues of 1.7 (Prosocial) and
1.2 (Antisocial). Prosocial internet activities included instant messaging and chat rooms, and examples of Antisocial internet activities included hacking and visiting pornographic websites. Finally, the two video games factors accounted for 28% of the variance and had eigenvalues of 1.5 (Antisocial) and 1.3 (Prosocial). War simulation, first-person shooter and action games loaded on the Antisocial video games factor. Card games, puzzle games, and adventure games constituted the Prosocial video games factor. Within each media type, correlations between the Antisocial and Prosocial factors ranged in absolute value from .05 (video games) to .16 (films), suggesting that the factors were largely uncorrelated.

Factors of delinquency. A five-factor solution proved to be most interpretable for the Misbehaviour Inventory data. Factor loadings are displayed in Table 11. Due to the large number of items in the Misbehaviour Inventory, only items that loaded at least .50 on any factor are included in the table. The first factor consisted of items that described bullying, harassing, and ridiculing behaviour, and was therefore named Bullying. The second factor consisted of relatively serious crimes, including stealing a motor vehicle, violent assault, and sexual assault, and was therefore named Serious Crime. Items loading on the third factor consisted of behaviours involving drug and alcohol use and was consequently named Drugs and Alcohol. The fourth factor consisted of items that involved relatively minor instances of cheating and stealing, such as shoplifting and plagiarizing, and was therefore named Minor Crime. The fifth factor consisted of misbehaviours that were blatant attempts at defying authority, such as parking in an illegal parking spot or yelling at parents or other authority figures, and was therefore named Anti-Authority. This solution explained 42% of the variance in
the system and the five factors had eigenvalues of 11.0 (Bullying), 4.8 (Serious Crime), 2.4 (Drugs and Alcohol), 1.9 (Minor Crime) and 1.7 (Anti-Authority).

Correlations between the five MI factors are displayed in Table 12. These correlations ranged in absolute value from .01 (between Serious Crime and Anti-Authority) to .29 (between Bullying and Minor Crime) with a mean intercorrelation of .21. This illustrates that the MI factors are mildly correlated at best. Standardized factor scores were created by regression, which were then summed to create a total anti-social behavior score for each participant.

**Personality and Entertainment.** Correlations discussed in this section are displayed in Table 13. Significant positive correlations (i.e., at the $p < .01$ level) were found between SRP-II scores and all of the anti-social entertainment factors ($r$'s ranging from .15 to .32), except for antisocial music ($r = .09, p > .05$). SRP-II scores also showed significant negative correlations with several of the Prosocial media factors, specifically Music ($r = -.17, p < .01$), Films ($r = -.14, p < .01$), and Sports Watching ($r = -.14, p < .01$). There was also a mild positive correlation between SRP-II scores and Prosocial Internet Activities ($r = .13, p < .05$).

The pattern of results was less consistent for Mach-IV and NPI scores. Mach-IV scores were significantly positively correlated with Antisocial Internet Activity ($r = .20, p < .01$), Prosocial Internet Activity ($r = .19, p < .01$), and Antisocial Films ($r = .18, p < .01$), and negatively correlated with Prosocial Sports Playing ($r = -.15, p < .01$), Prosocial Sports Watching ($r = -.15, p < .01$), and Prosocial Films ($r = -.14, p < .01$). NPI scores correlated positively with Antisocial Sports Playing ($r = .20, p < .01$) and Antisocial Sports Watching ($r = .12, p < .05$). A composite antisocial behaviour score
was created by summing the factor scores of each of the Antisocial entertainment factors (i.e. Antisocial Music, Antisocial Films, etc.). This composite score correlated strongly with SRP-II scores ($r = .39, p < .001$), and mildly with NPI ($r = .15, p < .01$) and Mach-IV scores ($r = .13, p < .02$).

**Personality and delinquency.** For the following analyses, four items from the SRP-II (11, 15, 20, and 30) were removed to control any artifactual inflation of correlation scores. Results are displayed in Table 14. Of the three personality types, total antisocial behavior correlated most strongly with SRP-II scores ($r = .47$), followed by NPI scores ($r = .32$) and Mach-IV scores ($r = .26$). All of these correlations were significant at the $p < .01$ level.

Regarding the five factors of misbehaviour, SRP-II scores correlated significantly with all five, ranging from $r = .19$ for Serious Crime ($p < .01$) to $r = .35$ for both Bullying and Drugs and Alcohol ($p < .01$). NPI scores also correlated with all five factors but not as strongly, ranging from $.12$ ($p < .05$) for Serious Crime to $.28$ ($p < .01$) for Drugs and Alcohol. Significant correlations for the Mach-IV were found only with the Minor Crime ($r = .38, p < .01$) and Bullying ($r = .24, p < .01$) factors.

ANOVA analyses were conducted to explore the possibility of an interaction between any of these entertainment preferences and the three personality types in predicting total delinquency scores. Median splits were performed to create the necessary groups. Results showed that watching antisocial sports resulted in an increase in general delinquency for individuals with higher psychopathy scores only ($F(1, 286) = 5.38, p < .05$). A similar interaction occurred for playing antisocial sports, but only for Factor 2 of psychopathy ($F(1, 286) = 6.89, p < .01$). These findings are
illustrated in Figures 4 and 5, respectively. Another interesting point that can be drawn from these two figures illustrates the dramatic impact of psychopathy: even high-psychopathy individuals who do not participate in antisocial sports have higher delinquency levels than low-psychopathy individuals who do participate in antisocial sports.

**Discussion**

These results suggest further criteria upon which the Triad can be differentiated. Based on their preference for antisocial media of several types, as well as their penchant for delinquent behaviour, psychopaths appear to be the most dangerous of the Triad. These trends were not nearly as strong or consistent for narcissists and Machiavellians. With the exception of sports, narcissists did not report participating in any antisocial activities. Narcissism also correlated with each of the five types of antisocial behaviour, as well as with overall antisocial behaviour, but for the most part these correlations were weaker than those found for psychopathy. The one exception was the anti-authority factor of misbehaviour, which is not entirely surprising. Narcissistic grandiosity may be the reason they are attracted to this type of misbehaviour, as it gives narcissists an opportunity to practice their perceived ‘above the law’ status. At the same time, this grandiosity is not enough for narcissists to misbehave to the same degree as psychopaths in an overall sense.

The trend among Machiavellians is somewhat more difficult to interpret. Among entertainment preferences, the general tendency seems to be more of a dislike for prosocial media than a preference for antisocial media. One interesting finding is Machiavellians’ engagement in both prosocial and antisocial internet activities,
suggesting that Machiavellians rely heavily on the internet for various reasons. Machiavellians also engage in the least amount of delinquent activity, based on overall misbehaviour as well as the five factors of misbehaviour. Several of the correlations (or lack thereof) between Machiavellianism and the misbehaviour factors make sense. For example, one feature of Machiavellianism is sycophantic behaviour and a tendency to flatter authority figures, which likely explains the lack of anti-authority misbehaviour found in this study.

Overall, these results illustrate that entertainment preferences and misbehaviour are indeed valid criteria for discriminating the Dark Triad personalities. Based on their relative enjoyment of antisocial entertainment and participation in delinquent activity, psychopaths appear to be the most dangerous of the three, with Machiavellians being the least dangerous. The importance of personality, and not entertainment preferences, as a predictor of delinquency is most obvious in the ANOVA analyses. These results demonstrated that individuals who were high in psychopathy and also participated in violent sports had by far the highest levels of delinquency. It is obvious that the dark behaviours of psychopaths, Machiavellians, and narcissists can be discriminated, both in nature and degree.

**GENERAL DISCUSSION**

The Dark Triad of personality -- narcissism, psychopathy, and Machiavellianism -- appear to share a variety of common tendencies. They include (1) a disagreeable personality, (2) a promiscuous sexuality, (3) a preference for anti-social entertainment,
and (4) a penchant for delinquent behavior. Thus is some support for the claim that
they are identical personalities.

The results from the present studies, however, more strongly suggest that, in
normal populations, the triad members are distinct entities. Correlations among the
three standard measures are not high enough to suggest that the three are identical.
Instead, these moderate correlations should be interpreted as representing justifiable,
expected overlap among the Dark Triad. There are personality features that are
common among the three, such as grandiosity, low empathy, and a sense of entitlement.
Their common core of disagreeableness is particularly evident.

More precise examination reveals that the differences among the triad far
outweigh the similarities. Big Five correlations demonstrate a compelling, easily
understandable method of distinguishing the three personality constructs. In terms of
personality traits, only narcissism and psychopathy correlated with extraversion and
openness, placing them in the circumplex quadrant labeled “unmitigated agency”
(Helgeson & Fritz, 1999; Paulhus & John, 1998; Salekin et al., 2001). Psychopathy and
Machiavellianism were both negatively correlated with conscientiousness, a communal
trait. Despite the fact that all three personalities have been described as emotionally
cold, correlations with emotional stability supported this claim for psychopaths only.

In terms of self-enhancement, narcissists can be distinguished from
Machiavellians and psychopaths by their tendency to overclaim. Narcissists can also be
distinguished by their cognitive abilities: They have some basis for their overly-inflated
sense of intelligence (see more below). It is the Machiavellians and psychopaths, who
are distinctive with regard to their pattern of verbal to nonverbal intelligence (see more
below). Results regarding entertainment preferences and delinquency indicate that psychopaths can be considered the darkest of the three personalities. Psychopaths seem to possess a need for violent and aggressive stimulation, as evidenced in their penchant for dark entertainment media of various kinds. More disturbingly, psychopaths also report the highest rates of delinquent behaviour of the three. Even in non-forensic settings, psychopaths pose the greatest danger to others. Ironically, the root of their social aversiveness and destructiveness now seems to represent an extension of normal personality.

LIMITATIONS AND FUTURE DIRECTIONS

Improving upon self-report measures of behaviour

There are some limitations to the studies performed here, and some suggestions as to how future research can address these limitations. Perhaps the most obvious concern involves the validity of self-report measures of behaviour. Many researchers are untrustworthy of using such a method to collect such delicate information as delinquency and sexual activity. Derlega, Winstead, and Jones (1999) summarized some of the research community’s concerns:

“People cannot be expected to report honestly, accurately, or objectively upon their own rule-breaking. Quite apart from the natural tendency to conceal one’s sins, ... there will be serious distortions arising from the sheer fallibility of human memory, distortions quite possibly confounded by defensive needs.” (p. 390).

These concerns were addressed in the current study by ensuring anonymity of the students. In this way, we were able to elicit responses to each of the items in the Misbehaviour Inventory, including ones involving serious, arrestable offenses such as
carrying weapons, selling drugs, and physical and sexual assault. The benefits of anonymous data collection have been outlined in several studies and review papers (e.g. Paulhus, 1991)

Even still, some would argue that there is no replacement for concrete, objective measures of delinquency. Future studies should make use of such objective measures, such as criminal records or school records. Experiments in which the participant would be given the opportunity to behave in a delinquent manner could be conducted. I suspect that the results of such studies would be comparable to the ones we conducted, though the results would be no less fascinating.

A related concern involves the validity of self-reported sexual activity (see Meston, Heiman, Trapnell, & Paulhus, 1998). However, it may be impossible to obtain actual behavioural measures of sexual activity. One strategy would be to compare self-reports to ratings given by spouses or significant others in an attempt to validate the responses. However, as some of the results have just indicated, narcissists, Machiavellians, and psychopaths all prefer short-term sexual partners, who may be difficult to contact. Second, such research would also require the researcher to place more faith in the responses of the significant other than of the target individual, an idea that seems impractical. Such obstacles indicate that a study involving the significant others of narcissists, Machiavellians and psychopaths might yield even less accurate results than most sex surveys, which already endure much skepticism.

Potential underlying variables

Yet to be clarified is what underlying factor could explain the overlap among the Dark Triad members. A number of candidate variables may be responsible.
Agreeableness. We have already argued that low agreeableness is the culprit behind the current findings. To address this hypothesis, analyses in which agreeableness is partialed out of correlations (i.e. regression analyses) could be conducted. At least two arguments suggest that this low agreeableness hypothesis would not be supported. First, Study 1 showed that Machiavellianism correlated the most strongly with agreeableness; yet Study 2 demonstrated that Machiavellians engaged in the least amount of casual sex. Second, in a similar vein, it would be expected that Machiavellians would engage in the most amount of antisocial entertainment and delinquent activity if the low agreeableness hypothesis were true, yet Study 3 demonstrated that this was not the case. However, future studies involving regression analyses of this nature would provide valuable detailed information involving the unique contributions of different personality variables.

Testosterone. It is also possible that the factor underlying common tendencies of the Dark Triad could be some biological marker, such as testosterone. Testosterone has been linked with several of the variables examined in our studies, such as sexual promiscuity (Bogaert & Fisher, 1995; Halpern, Udry, Campbell, & Suchindran, 1994) and delinquency (see Eysenck, 1998). In a recent meta-analysis, a positive relationship was found between testosterone and aggression (Book, Starzyk, & Quinsey, 2001).

Neurological deficiency? The verbal to nonverbal IQ discrepancy reported in Study 2 could also be an indicator of some neurological deficiency. Various indicators of brain damage at birth have been documented, including various deficiencies in intelligence. More specifically, verbal-nonverbal IQ discrepancies such as the one found in our study have also been found in children with early emotional frustration.
syndrome (EEF). EEF is an indicator of the likely development of psychopathy in adulthood, and is linked to organic dysfunctions caused by stresses during pregnancy and birth (Rygaard, 1998). All of these facts suggest that studies involving brain activity and physiology could prove useful.

Other distinctive criteria

Social behavior. The social behavior of the triad is likely to differ with respect to dominance, popularity, and cooperativeness. The long-term discussion group paradigm (Paulhus, 1998) would provide a variety of social situations to produce cooperation as well as conflict. Machiavellians would cooperate when such behavior is of instrumental benefit. Narcissists are likely to assume leadership roles although there is no guarantee that they will sustain support from group members. Psychopaths should be least popular because of the impulsive, antagonistic style.

Manipulative success. The triad might be contrasted with respect to their success in manipulating others. Both Machiavellians and psychopaths typically engage in manipulating others. Evidence abounds that Machiavellians are successful. There is no corresponding evidence that psychopaths succeed. Laboratory studies similar to the $10 game might be employed to compare success rates.

Other cognitive abilities. For the most part, there was no connection between any of the Triad measures and intelligence. It may be that different areas of intelligence must be explored. The IQ test used in our study was a measure of academic intelligence. Machiavellianism, for example, has been defined as a subtype of social intelligence (Wilson, Near, & Miller, 1996). This fact suggests that Machiavellianism
may correlate more strongly with other non-academic areas of intelligence such as emotional intelligence (Mayer, Salovey, & Caruso, 2000).

**Seeking a full taxonomy**

This research represents only the early stages of an attempt to categorize all dark personalities. It may be that other personalities and behaviours warrant the attention given to narcissism, Machiavellianism, and psychopathy. One strategy for assessing the multitude of aversive personalities could be to simply ask individuals what they feel are negative aspects of interpersonal situations. This type of strategy has already been attempted by some researchers (e.g. Kowalski, 1997), and could be further complimented. By discovering what tendencies truly annoy, intimidate, or frighten people, a more comprehensive taxonomy of dark personalities could be created 'from scratch'. Such an endeavor would not only identify individuals who are interpersonal irritants, but also those who pose serious threats to society.

**CONCLUSION**

In sum, each of the Triad can be described in very distinct ways, even in normal populations. Differences among the three were found in several areas, including personality traits, cognitive ability, self-enhancement, entertainment preferences, and delinquency. The separate measurement of narcissism, Machiavellianism, and psychopathy is assuredly warranted.
References


Psychopathy Scale measure the same constructs as Hare’s Psychopathy Checklist-Revised? Personality and Individual Differences, 31, 1021-1038.


Vitterso, J. (2001). Personality traits and participative well-being: Emotional stability, not extraversion, is probably the most important predictor. Personality and Individual Differences, 31, 903-914.


Table 1. Descriptive statistics of Study 1 measures.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Alpha (standardized)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dark Triad</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPI</td>
<td>1.37</td>
<td>.17</td>
<td>.84</td>
</tr>
<tr>
<td>Mach-IV</td>
<td>2.77</td>
<td>.42</td>
<td>.74</td>
</tr>
<tr>
<td>SRP-II</td>
<td>3.15</td>
<td>.35</td>
<td>.79</td>
</tr>
<tr>
<td><strong>Big Five</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>3.12</td>
<td>.76</td>
<td>.87</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3.68</td>
<td>.59</td>
<td>.80</td>
</tr>
<tr>
<td>Conscientiousness</td>
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<td>.81</td>
</tr>
<tr>
<td>Emotional Stability</td>
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<td>.86</td>
</tr>
<tr>
<td>Openness</td>
<td>3.42</td>
<td>.60</td>
<td>.80</td>
</tr>
<tr>
<td><strong>Cognitive ability and self-ratings.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wonderlic</td>
<td>25.21</td>
<td>5.16</td>
<td>.53</td>
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<td>self-report scale</td>
<td>2.90</td>
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<td>.87</td>
</tr>
<tr>
<td>OCQ accuracy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCQ bias</td>
<td>.92</td>
<td>.26</td>
<td>.84</td>
</tr>
</tbody>
</table>

N = 114. NPI = Narcissistic Personality Inventory, SRP-II = Self-Report Psychopathy Scale II, OCQ = Overclaiming Questionnaire.
Table 2. Correlations of the Dark Triad with Big Five Inventory, cognitive ability, and self-enhancement.

<table>
<thead>
<tr>
<th></th>
<th>NPI</th>
<th>Mach-IV</th>
<th>SRP-II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Big Five</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>.42**</td>
<td>-.05</td>
<td>.34**</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.36**</td>
<td>-.47**</td>
<td>-.25**</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.06</td>
<td>-.34**</td>
<td>-.24**</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>-.02</td>
<td>-.12</td>
<td>.34**</td>
</tr>
<tr>
<td>Openness</td>
<td>.38**</td>
<td>-.03</td>
<td>.24**</td>
</tr>
<tr>
<td><strong>Cognitive Ability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IQ</td>
<td>.17*</td>
<td>.04</td>
<td>.05</td>
</tr>
<tr>
<td>verbal</td>
<td>.11</td>
<td>-.06</td>
<td>.09</td>
</tr>
<tr>
<td>nonverbal</td>
<td>.17*</td>
<td>.18*</td>
<td>.22**</td>
</tr>
<tr>
<td>Nonverbal-verbal IQ discrepancy</td>
<td>.05</td>
<td>.20**</td>
<td>.13*</td>
</tr>
<tr>
<td>OCQ accuracy</td>
<td>.25*</td>
<td>.07</td>
<td>-.03</td>
</tr>
<tr>
<td><strong>Self-enhancement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-rated intelligence vs. IQ scores</td>
<td>.24**</td>
<td>-.02</td>
<td>.14*</td>
</tr>
<tr>
<td>OCQ bias</td>
<td>.17**</td>
<td>.08</td>
<td>.09</td>
</tr>
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N = 114. * = sig. at p < .05, ** = sig. at p < .01, two-tailed.
Table 3. Descriptive statistics of Study 2 measures.

<table>
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<th>Standard deviation</th>
<th>Alpha (corrected)</th>
</tr>
</thead>
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<td><strong>Dark Triad</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPI</td>
<td>1.36</td>
<td>.18</td>
<td>.85</td>
</tr>
<tr>
<td>Mach-IV</td>
<td>2.86</td>
<td>.39</td>
<td>.73</td>
</tr>
<tr>
<td>SRP-II</td>
<td>3.18</td>
<td>.38</td>
<td>.81</td>
</tr>
<tr>
<td><strong>UBC-RQ</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociosexuality Scale</td>
<td>2.08</td>
<td>.79</td>
<td>.85</td>
</tr>
<tr>
<td>Romance Scale</td>
<td>1.73</td>
<td>.69</td>
<td>.50</td>
</tr>
</tbody>
</table>

N = 130. Sociosexuality Scale = Sociosexuality Scale, Romance Scale = Romantic Interest Scale.
Table 4. Correlations of the Dark Triad with Sociosexuality and Romance Interest scores.

<table>
<thead>
<tr>
<th></th>
<th>NPI</th>
<th>Mach-IV</th>
<th>SRP-II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociosexuality</td>
<td>.32**</td>
<td>.22*</td>
<td>.46**</td>
</tr>
<tr>
<td>Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romance Scale</td>
<td>-.03</td>
<td>.05</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociosexuality</td>
<td>.19</td>
<td>.11</td>
<td>.32*</td>
</tr>
<tr>
<td>Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romance Scale</td>
<td>-.10</td>
<td>.02</td>
<td>-.14</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociosexuality</td>
<td>.36**</td>
<td>.21*</td>
<td>.45**</td>
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<tr>
<td>Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romance Scale</td>
<td>.00</td>
<td>.04</td>
<td>.04</td>
</tr>
</tbody>
</table>

N = 130 (38 males, 92 females). * = sig. at p < .05, ** = sig. at p < .01, two-tailed.
Table 5. Descriptive statistics of Study 3 measures.

<table>
<thead>
<tr>
<th></th>
<th>NPI</th>
<th>Mach-IV</th>
<th>SRP-II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.36</td>
<td>2.53</td>
<td>2.85</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>.18</td>
<td>.40</td>
<td>.41</td>
</tr>
<tr>
<td>Alpha</td>
<td>.84</td>
<td>.81</td>
<td>.74</td>
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N = 356.
Table 6. Principal components analysis pattern matrix loadings for EPS music preferences.

<table>
<thead>
<tr>
<th></th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1 (Antisocial)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative</td>
<td>.76</td>
<td>.03</td>
</tr>
<tr>
<td>Rock</td>
<td>.72</td>
<td>-.03</td>
</tr>
<tr>
<td>Oldies (i.e. pre-1980s)</td>
<td>.68</td>
<td>.16</td>
</tr>
<tr>
<td>Heavy Metal</td>
<td>.44</td>
<td>.04</td>
</tr>
<tr>
<td>Classical</td>
<td>.43</td>
<td>-.02</td>
</tr>
<tr>
<td>Gothic/Industrial</td>
<td>.36</td>
<td>-.02</td>
</tr>
<tr>
<td>Folk/Jam Bands</td>
<td>.36</td>
<td>-.14</td>
</tr>
<tr>
<td>Jazz</td>
<td>.30</td>
<td>-.25</td>
</tr>
<tr>
<td>Punk</td>
<td>.28</td>
<td>-.15</td>
</tr>
<tr>
<td><strong>Factor 2 (Prosocial)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy Listening</td>
<td>.20</td>
<td>.69</td>
</tr>
<tr>
<td>Pop</td>
<td>-.12</td>
<td>.68</td>
</tr>
<tr>
<td>Country</td>
<td>.41</td>
<td>.55</td>
</tr>
<tr>
<td>Rap/Rhythm and Blues</td>
<td>-.04</td>
<td>.18</td>
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<tr>
<td>Asian</td>
<td>.01</td>
<td>.03</td>
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<tr>
<td>Christian</td>
<td>-.02</td>
<td>-.24</td>
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<tr>
<td>Gospel</td>
<td>-.02</td>
<td>-.34</td>
</tr>
<tr>
<td>Techno/Dance/Electronic</td>
<td>.21</td>
<td>-.38</td>
</tr>
</tbody>
</table>

Note: Factors extracted using direct oblimin rotation. Factors correlate at $r = .16$. 
Table 7. Principal components analysis pattern matrix loadings for EPS movie preferences.

<table>
<thead>
<tr>
<th></th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1 (Antisocial)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science Fiction</td>
<td>.66</td>
<td>.06</td>
</tr>
<tr>
<td>Action</td>
<td>.58</td>
<td>.04</td>
</tr>
<tr>
<td>War</td>
<td>.56</td>
<td>-.17</td>
</tr>
<tr>
<td>Horror</td>
<td>.55</td>
<td>.09</td>
</tr>
<tr>
<td>Adult</td>
<td>.51</td>
<td>-.17</td>
</tr>
<tr>
<td>Anime</td>
<td>.42</td>
<td>.17</td>
</tr>
<tr>
<td>Mystery/Suspense</td>
<td>.35</td>
<td>.35</td>
</tr>
<tr>
<td><strong>Factor 2 (Prosocial)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romance</td>
<td>-.35</td>
<td>.73</td>
</tr>
<tr>
<td>Family/Animated</td>
<td>-.09</td>
<td>.64</td>
</tr>
<tr>
<td>Foreign</td>
<td>.06</td>
<td>.53</td>
</tr>
<tr>
<td>Drama</td>
<td>-.02</td>
<td>.50</td>
</tr>
<tr>
<td>Comedy</td>
<td>.11</td>
<td>.30</td>
</tr>
<tr>
<td>History/Documentary</td>
<td>.09</td>
<td>.13</td>
</tr>
</tbody>
</table>

Note: Factors extracted using direct oblimin rotation. Factors correlate at $r = .16$. 
Table 8. Principal components analysis pattern matrix loadings for EPS sports activities.

<table>
<thead>
<tr>
<th>Factor 1 (Antisocial)</th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td>.66</td>
<td>-.07</td>
</tr>
<tr>
<td>Non-contact</td>
<td>.65</td>
<td>.02</td>
</tr>
<tr>
<td>Pugilistic</td>
<td>.61</td>
<td>-.38</td>
</tr>
<tr>
<td>Auto racing</td>
<td>.61</td>
<td>-.07</td>
</tr>
<tr>
<td>Recreational</td>
<td>.42</td>
<td>.21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 (Prosocial)</th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finesse</td>
<td>-.14</td>
<td>.75</td>
</tr>
<tr>
<td>Winter sports</td>
<td>.29</td>
<td>.63</td>
</tr>
<tr>
<td>Track and field</td>
<td>.40</td>
<td>.53</td>
</tr>
<tr>
<td>Extreme sports</td>
<td>-.09</td>
<td>.17</td>
</tr>
<tr>
<td>Skateboarding/</td>
<td>.03</td>
<td>.03</td>
</tr>
<tr>
<td>Rollerblading</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Factors extracted using direct oblimin rotation. Factors correlate at $r = .08$. 


Table 9. Principal components analysis pattern matrix loadings for EPS internet activities.

<table>
<thead>
<tr>
<th>Factor 1 (Prosocial)</th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICQ/Instant messaging</td>
<td>.78</td>
<td>-.21</td>
</tr>
<tr>
<td>Games</td>
<td>.38</td>
<td>.02</td>
</tr>
<tr>
<td>Educational</td>
<td>-.56</td>
<td>-.04</td>
</tr>
<tr>
<td>E-mail</td>
<td>-.71</td>
<td>.01</td>
</tr>
<tr>
<td>Shopping</td>
<td>-.05</td>
<td>-.03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 (Antisocial)</th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downloading (i.e. music)</td>
<td>.27</td>
<td>.67</td>
</tr>
<tr>
<td>Adult websites</td>
<td>.01</td>
<td>.45</td>
</tr>
<tr>
<td>Hacking</td>
<td>-.03</td>
<td>.36</td>
</tr>
<tr>
<td>Finances</td>
<td>-.02</td>
<td>-.21</td>
</tr>
<tr>
<td>News/Information</td>
<td>.18</td>
<td>-.60</td>
</tr>
</tbody>
</table>

Note: Factors extracted using direct oblimin rotation. Factors correlate at $r = .12$. 
Table 10. Principal components analysis pattern matrix loadings for EPS video game preferences.

<table>
<thead>
<tr>
<th>Factor 1 (Antisocial)</th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>.65</td>
<td>.07</td>
</tr>
<tr>
<td>First-person shooter</td>
<td>.62</td>
<td>-.32</td>
</tr>
<tr>
<td>War/Combat simulation</td>
<td>.51</td>
<td>.13</td>
</tr>
<tr>
<td>Role-playing games</td>
<td>.47</td>
<td>.07</td>
</tr>
<tr>
<td>One-on-one fighting style</td>
<td>.27</td>
<td>-.24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 (Prosocial)</th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puzzle/Card games</td>
<td>.19</td>
<td>.74</td>
</tr>
<tr>
<td>Adventure</td>
<td>.10</td>
<td>.54</td>
</tr>
<tr>
<td>Non-violent simulation</td>
<td>.17</td>
<td>.44</td>
</tr>
<tr>
<td>Sports</td>
<td>.04</td>
<td>-.11</td>
</tr>
<tr>
<td>Karaoke</td>
<td>.11</td>
<td>-.31</td>
</tr>
</tbody>
</table>

Note: Factors extracted using direct oblimin rotation. Factors correlate at $r = -.05$. 
Table 11. Principal components analysis pattern matrix loadings for Misbehaviour Inventory (MI).

<table>
<thead>
<tr>
<th>MI Item</th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
<th>Factor 3 Loading</th>
<th>Factor 4 Loading</th>
<th>Factor 5 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1 (Bullying)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hit (or threatened to hit) someone</td>
<td>.66</td>
<td>.13</td>
<td>-.05</td>
<td>.04</td>
<td>.19</td>
</tr>
<tr>
<td>Bullying someone for no good reason</td>
<td>.63</td>
<td>-.15</td>
<td>-.10</td>
<td>-.07</td>
<td>.04</td>
</tr>
<tr>
<td>Purposely harassed someone on the telephone or email</td>
<td>.57</td>
<td>-.11</td>
<td>.03</td>
<td>.09</td>
<td>.04</td>
</tr>
<tr>
<td>Used prescription drugs to the level of abuse</td>
<td>.53</td>
<td>-.29</td>
<td>-.17</td>
<td>-.25</td>
<td>-.10</td>
</tr>
<tr>
<td>Sold marijuana or hashish</td>
<td>.50</td>
<td>-.11</td>
<td>-.30</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td><strong>Factor 2 (Serious Crime)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used physical force to get money or other things from other students</td>
<td>.05</td>
<td>-.91</td>
<td>.08</td>
<td>.09</td>
<td>-.09</td>
</tr>
<tr>
<td>Had sexual relations with someone against their will</td>
<td>.03</td>
<td>-.85</td>
<td>.12</td>
<td>.06</td>
<td>-.07</td>
</tr>
<tr>
<td>Stolen a motor vehicle</td>
<td>.10</td>
<td>-.80</td>
<td>.06</td>
<td>.07</td>
<td>-.13</td>
</tr>
<tr>
<td>Used barbiturates</td>
<td>.18</td>
<td>-.74</td>
<td>.03</td>
<td>-.07</td>
<td>.02</td>
</tr>
<tr>
<td>Used heroine</td>
<td>.06</td>
<td>-.73</td>
<td>.02</td>
<td>.03</td>
<td>-.06</td>
</tr>
<tr>
<td>Sold hard drugs (e.g. heroine, cocaine, LSD)</td>
<td>-.05</td>
<td>-.73</td>
<td>-.18</td>
<td>-.02</td>
<td>-.10</td>
</tr>
<tr>
<td>Been suspended from school</td>
<td>-.08</td>
<td>-.62</td>
<td>-.02</td>
<td>-.01</td>
<td>.16</td>
</tr>
<tr>
<td>Paid for sexual relations with someone</td>
<td>-.12</td>
<td>-.61</td>
<td>-.08</td>
<td>.14</td>
<td>.04</td>
</tr>
<tr>
<td>Used cocaine</td>
<td>-.01</td>
<td>-.53</td>
<td>-.23</td>
<td>-.12</td>
<td>-.16</td>
</tr>
</tbody>
</table>
Table 11 (cont.). Principal components analysis pattern matrix loadings for Misbehaviour Inventory (MI).

<table>
<thead>
<tr>
<th>Factor 3 (Drugs and Alcohol)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Used marijuana</td>
<td>.04</td>
<td>.06</td>
<td>-.77</td>
<td>.03</td>
<td>.10</td>
</tr>
<tr>
<td>Been drunk in public places</td>
<td>.02</td>
<td>.08</td>
<td>-.72</td>
<td>.02</td>
<td>.17</td>
</tr>
<tr>
<td>Used alcohol</td>
<td>.08</td>
<td>.18</td>
<td>-.70</td>
<td>-.01</td>
<td>.20</td>
</tr>
<tr>
<td>Bought or sold liquor for a minor</td>
<td>.18</td>
<td>.06</td>
<td>-.55</td>
<td>.01</td>
<td>.21</td>
</tr>
<tr>
<td>Broken into a building or vehicle to steal something or just to look around</td>
<td>.17</td>
<td>-.06</td>
<td>-.54</td>
<td>.12</td>
<td>-.24</td>
</tr>
<tr>
<td>Used hallucinogens</td>
<td>.08</td>
<td>-.22</td>
<td>-.54</td>
<td>-.04</td>
<td>-.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 4 (Minor Crime)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stolen (or tried to steal) things worth between $5 and $50</td>
<td>.04</td>
<td>-.02</td>
<td>-.07</td>
<td>.78</td>
<td>-.12</td>
</tr>
<tr>
<td>Shoplifted</td>
<td>-.02</td>
<td>.06</td>
<td>-.16</td>
<td>.75</td>
<td>-.19</td>
</tr>
<tr>
<td>Knowingly bought, sold, or held stolen goods</td>
<td>.25</td>
<td>-.01</td>
<td>-.01</td>
<td>.53</td>
<td>-.03</td>
</tr>
<tr>
<td>Cheated on school tests</td>
<td>.01</td>
<td>.05</td>
<td>-.01</td>
<td>.50</td>
<td>.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 5 (Anti-Authority)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beeped in anger at other drivers</td>
<td>.03</td>
<td>-.04</td>
<td>.03</td>
<td>-.03</td>
<td>.69</td>
</tr>
<tr>
<td>Parked in an illegal parking spot</td>
<td>-.15</td>
<td>-.10</td>
<td>-.20</td>
<td>.10</td>
<td>.53</td>
</tr>
<tr>
<td>Swear at adults</td>
<td>.25</td>
<td>-.03</td>
<td>-.08</td>
<td>-.08</td>
<td>.50</td>
</tr>
</tbody>
</table>

Note: Factors extracted using direct oblimin rotation.
Table 12. Correlations between Misbehaviour Inventory factors.

<table>
<thead>
<tr>
<th></th>
<th>Bullying</th>
<th>Serious Crime</th>
<th>Drugs and Alcohol</th>
<th>Minor Crime</th>
<th>Anti-Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullying</td>
<td>--</td>
<td>-.26</td>
<td>-.22</td>
<td>.29</td>
<td>.15</td>
</tr>
<tr>
<td>Serious Crime</td>
<td>--</td>
<td>-.22</td>
<td>.25</td>
<td>-.22</td>
<td>.01</td>
</tr>
<tr>
<td>Drugs and Alcohol</td>
<td>--</td>
<td>-.25</td>
<td>-.25</td>
<td>-.19</td>
<td></td>
</tr>
<tr>
<td>Minor Crime</td>
<td>--</td>
<td>.24</td>
<td>--</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>Anti-Authority</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 13. Correlations between the Dark Triad and entertainment preferences.

<table>
<thead>
<tr>
<th></th>
<th>NPI</th>
<th>Mach-IV</th>
<th>SRP-II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antisocial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>.03</td>
<td>-.09</td>
<td>.09</td>
</tr>
<tr>
<td>Films</td>
<td>.10*</td>
<td>.18**</td>
<td>.32**</td>
</tr>
<tr>
<td>Sports Watching</td>
<td>.12*</td>
<td>.03</td>
<td>.30**</td>
</tr>
<tr>
<td>Sports Playing</td>
<td>.20**</td>
<td>.02</td>
<td>.32**</td>
</tr>
<tr>
<td>Internet Activities</td>
<td>.04</td>
<td>.20**</td>
<td>.15**</td>
</tr>
<tr>
<td>Video Games</td>
<td>.03</td>
<td>.10*</td>
<td>.18**</td>
</tr>
<tr>
<td>Total</td>
<td>.15**</td>
<td>.13*</td>
<td>.39**</td>
</tr>
<tr>
<td><strong>Prosocial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>-.09</td>
<td>-.01</td>
<td>-.17**</td>
</tr>
<tr>
<td>Films</td>
<td>-.03</td>
<td>-.14**</td>
<td>-.14**</td>
</tr>
<tr>
<td>Sports Watching</td>
<td>.00</td>
<td>-.15**</td>
<td>-.14**</td>
</tr>
<tr>
<td>Sports Playing</td>
<td>.07</td>
<td>-.15**</td>
<td>.06</td>
</tr>
<tr>
<td>Internet Activities</td>
<td>.10*</td>
<td>.19**</td>
<td>.13*</td>
</tr>
<tr>
<td>Video Games</td>
<td>-.03</td>
<td>-.04</td>
<td>-.05</td>
</tr>
<tr>
<td>Total</td>
<td>.00</td>
<td>-.10*</td>
<td>-.10*</td>
</tr>
</tbody>
</table>

N = 356. ** = sig. at p < .01, * = sig. at p < .05, two-tailed.
Table 14. Correlations between the Dark Triad, Misbehaviour Inventory factors, and total anti-social behaviour.

<table>
<thead>
<tr>
<th></th>
<th>NPI</th>
<th>Mach-IV</th>
<th>SRP-II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullying</td>
<td>.19**</td>
<td>.24**</td>
<td>.35**</td>
</tr>
<tr>
<td>Serious Crime</td>
<td>.12*</td>
<td>.05</td>
<td>.19**</td>
</tr>
<tr>
<td>Drugs and Alcohol</td>
<td>.28**</td>
<td>.08</td>
<td>.35**</td>
</tr>
<tr>
<td>Minor Crime</td>
<td>.18**</td>
<td>.38**</td>
<td>.43**</td>
</tr>
<tr>
<td>Anti-Authority</td>
<td>.21**</td>
<td>.08</td>
<td>.20**</td>
</tr>
<tr>
<td>Total Anti-Social Behaviour</td>
<td>.32**</td>
<td>.26**</td>
<td>.47**</td>
</tr>
</tbody>
</table>

N = 356. NPI = Narcissistic Personality Inventory, SRP-II = Self-Report Psychopathy Scale II. ** = sig. at $p < .01$, * = sig. at $p < .05$, two-tailed.
Figures

Figure 1. Correlations among measures of narcissism, Machiavellianism, and psychopathy in Study 1, Study 2, and Study 3.

\[ \begin{align*}
\text{Psychopathy} & \quad 0.50 / 0.57 / 0.51 \\
\text{Narcissism} & \quad 0.25 / 0.27 / 0.21 \\
\text{Machiavellianism} & \quad 0.31 / 0.30 / 0.35 \\
\end{align*} \]

N = 114 (Study 1) / 130 (Study 2) / 356 (Study 3).
All correlations significant at \( p < 0.01 \).
Fig. 2
Interaction Between Psychopathy and Playing Violent Sports in Predicting Delinquency

[Graph showing the interaction between psychopathy and playing violent sports on delinquency. The graph indicates that high psychopathy is associated with higher delinquency regardless of playing violent sports, while low psychopathy is associated with lower delinquency regardless of playing violent sports.]
Fig. 3
Interaction Between Psychopathy and Watching Violent Sports in Predicting Delinquency
Appendix: Measures
Appendix: Measures

Narcissistic Personality Inventory (NPI)

Read each pair of statements and then choose the one that is closer to your own feelings. Indicate your answer by circling the letter "A" or "B" to the left of the item. Please do not skip any items.

1. A I have a natural talent for influencing people.
   B I am not good at influencing people.

2. A Modesty doesn't become me.
   B I am essentially a modest person.

3. A I would do almost anything on a dare.
   B I tend to be a fairly cautious person.

4. A When people compliment me I sometimes get embarrassed.
   B I know that I am good because everybody keeps telling me so.

5. A The thought of ruling the world frightens the hell out of me.
   B If I ruled the world it would be a much better place.

6. A I can usually talk my way out of anything.
   B I try to accept the consequences of my behavior.

7. A I prefer to blend in with the crowd.
   B I like to be the center of attention.

8. A I will be a success.
   B I am not too concerned about success.

9. A I am no better or no worse than most people.
   B I think I am a special person.

10. A I am not sure if I would make a good leader.
    B I see myself as a good leader.

11. A I am assertive.
    B I wish I were more assertive.

12. A I like having authority over people.
    B I don't mind following orders.

13. A I find it easy to manipulate people.
    B I don't like it when I find myself manipulating people.

14. A I insist upon getting the respect that is due me.
B I usually get the respect that I deserve.

15. A I don't particularly like to show off my body.
   B I like to display my body.

16. A I can read people like a book.
   B People are sometimes hard to understand.

17. A If I feel competent I am willing to take responsibility for making decisions.
   B I like to take responsibility for making decisions.

18. A I just want to be reasonably happy.
   B I want to amount to something in the eyes of the world.

19. A My body is nothing special.
   B I like to look at my body.

20. A I try not to be a show off.
    B I am apt to show off if I get the chance.

21. A I always know what I am doing.
    B Sometimes I am not sure of what I am doing.

22. A I sometimes depend on people to get things done.
    B I rarely depend on anyone else to get things done.

23. A Sometimes I tell good stories.
    B Everybody likes to hear my stories.

24. A I expect a great deal from other people.
    B I like to do things for other people.

25. A I will never be satisfied until I get all that I deserve.
    B I take my satisfactions as they come.

26. A Compliments embarrass me.
    B I like to be complimented.

27. A I have a strong will to power.
    B Power for its own sake doesn't interest me.

28. A I don't very much care about new fads and fashions.
    B I like to start new fads and fashions.

29. A I like to look at myself in the mirror.
    B I am not particularly interested in looking at myself in the mirror.
30. A I really like to be the center of attention.
   B It makes me uncomfortable to be the center of attention.

31. A I can live my life in any way I want to.
   B People can't always live their lives in terms of what they want.

32. A Being an authority doesn't mean that much to me.
   B People always seem to recognize my authority.

33. A I would prefer to be a leader.
   B It makes little difference to me whether I am a leader or not.

34. A I am going to be a great person.
   B I hope I am going to be successful.

35. A People sometimes believe what I tell them.
   B I can make anybody believe anything I want them to.

36. A I am a born leader.
   B Leadership is a quality that takes a long time to develop.

37. A I wish somebody would someday write my biography.
   B I don't like people to pry into my life for any reason.

38. A I get upset when people don't notice how I look when I go out in public.
   B I don't mind blending into the crowd when I go out in public.

39. A I am more capable than other people.
   B There is a lot that I can learn from other people.

40. A I am much like everybody else.
   B I am an extraordinary person.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Mach-IV</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>strongly disagree</td>
<td>disagree</td>
<td>neutral</td>
<td>agree</td>
</tr>
<tr>
<td>1.</td>
<td>Anyone who completely trusts anyone else is asking for trouble.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Most people who get ahead in the world lead clean moral lives.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.</td>
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<td>4.</td>
<td>One should take action only when sure it is morally right.</td>
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<td>5.</td>
<td>Generally speaking, people won't work hard unless they're forced to do so.</td>
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<td>6.</td>
<td>It is wise to flatter important people.</td>
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<td>7.</td>
<td>It is hard to get ahead without cutting corners here and there.</td>
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<td>8.</td>
<td>People suffering from incurable diseases should have the choice of being put painlessly to death.</td>
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<td>9.</td>
<td>Most people are brave.</td>
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<td>10.</td>
<td>The best way to handle people is to tell them what they want to hear.</td>
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<td>11.</td>
<td>The biggest difference between most criminals and other people is that criminals are stupid enough to get caught.</td>
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<td>12.</td>
<td>Honesty is the best policy in all cases.</td>
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<td>13.</td>
<td>Barnum was very wrong when he said there's a sucker born every minute.</td>
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<td>14.</td>
<td>Most people are basically good and kind.</td>
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<td>15.</td>
<td>When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which might carry more weight.</td>
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<td>16.</td>
<td>It is possible to be good in all respects.</td>
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<td>17.</td>
<td>Most people forget more easily the death of a parent than the loss of their property.</td>
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<tr>
<td>18.</td>
<td>Never tell anyone the real reason you did something unless it is useful to do so.</td>
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<tr>
<td>19.</td>
<td>There is no excuse for lying to someone else.</td>
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<tr>
<td>20.</td>
<td>All in all, it is better to be humble and honest than to be important and dishonest.</td>
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</tbody>
</table>
1. I enjoy driving at high speed.

2. I enjoy giving "bossy" people a hard time.

3. I think I could "beat" a lie detector.

4. I worry a lot about possible misfortunes.

5. I like to change jobs fairly often.

6. I am usually very careful about what I say to people.

7. I have often done something dangerous just for the thrill of it.

8. I get a kick out of "conning" someone.

9. I get in trouble for the same things time after time.

10. I am very good at most things I try to do.

11. I was never in trouble with the police when I was a kid.

12. Being unemployed would depress me.

13. I enjoy taking chances.


15. I got in a lot of trouble at school.

16. Rules are made to be broken.

17. I usually feel quite confident when meeting new people.

18. Not hurting others' feelings is important to me.

19. I would be good at a dangerous job because I like making fast decisions.

20. I have used most of the hallucinogenic drugs.
21. I have sometimes broken an appointment because something more interesting came along.

22. I enjoy gambling for large stakes.

23. I prefer having many sexual partners rather than just one.

24. Sometimes at night I get so worried about something that my heart pounds and I can't fall asleep.

25. I almost never feel guilty over something I've done.

26. It's sometimes fun to see how far you can push someone before they catch on.

27. People can usually tell if I am lying.

28. Conning people gives me the "shakes."

29. When I do something wrong, I feel guilty even though nobody else knows it.

30. I enjoy drinking and doing wild things.

31. I am the most important person in this world and nobody else matters.
## BFI-44

<table>
<thead>
<tr>
<th>Disagree strongly</th>
<th>Disagree a little</th>
<th>Neither agree nor disagree</th>
<th>Agree a little</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td><strong>B</strong></td>
<td><strong>C</strong></td>
<td><strong>D</strong></td>
<td><strong>E</strong></td>
</tr>
</tbody>
</table>

**I See Myself as Someone Who . . .**

- 1. Is talkative
- 2. Tends to find fault with others
- 3. Does a thorough job
- 4. Is depressed, blue
- 5. Is original, comes up with new ideas
- 6. Is reserved
- 7. Is helpful and unselfish with others
- 8. Can be somewhat careless
- 9. Is relaxed, handles stress well
- 10. Is curious about many different things
- 11. Is full of energy
- 12. Starts quarrels with others
- 13. Is a reliable worker
- 14. Can be tense
- 15. Is ingenious, a deep thinker
- 16. Generates a lot of enthusiasm
- 17. Has a forgiving nature
- 18. Tends to be disorganized
- 19. Worries a lot
- 20. Has an active imagination
- 21. Tends to be quiet
- 22. Is generally trusting
- 23. Tends to be lazy
- 24. Is emotionally stable, not easily upset
- 25. Is inventive
- 26. Has an assertive personality
- 27. Can be cold and aloof
- 28. Perseveres until the task is finished
- 29. Can be moody
- 30. Values artistic, aesthetic experiences
- 31. Is sometimes shy, inhibited
- 32. Is considerate and kind to almost everyone
- 33. Does things efficiently
- 34. Remains calm in tense situations
- 35. Prefers work that is routine
- 36. Is outgoing, sociable
- 37. Is sometimes rude to others
- 38. Makes plans and follows through with them
- 39. Gets nervous easily
- 40. Likes to reflect, play with ideas
- 41. Has few artistic interests
- 42. Likes to cooperate with others
- 43. Is easily distracted
- 44. Is sophisticated in art, music, or literature
### Self-report Intelligence Scale

<table>
<thead>
<tr>
<th>Disagree strongly</th>
<th>Disagree a little</th>
<th>Neither agree nor disagree</th>
<th>Agree a little</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
</tbody>
</table>

**I See Myself as Someone Who...**

1. Considered unusually gifted or talented at academic things
2. Considered exceptionally or unusually intelligent
3. Usually has grades at the top of every class
4. Is considered a very “brainy”, scholarly person
READ THIS PAGE CAREFULLY. DO NOT TURN THE PAGE UNTIL YOU ARE TOLD TO DO SO.

This inventory contains several types of questions. Here is a sample question already completed.

_____ REAP is the opposite of: 1 obtain 2 cheer 3 continue 4 exist 5 sow

The correct answer is "sow" (it is helpful to underline your choice). Put a number in the blank line (on the left) to indicate your choice. In this case, write a '5'.

Try another question.

_____ Paper sells for 23 cents a sheet. What will four sheets cost?

The correct answer is 92 cents. There is nothing to underline here so just write the number 92 in the blank.

Here is another type of question.

_____ MINER MINOR Do these words have:
     1 similar meaning  2 contradictory  3 neither similar nor contradictory

The test contains 50 questions. It is unlikely that you will finish all of them, but do your best. After the examiner tells you to begin, you will be given exactly 12 minutes to solve as many as you can. Do not go so fast that you make mistakes because the idea is to get as many right as possible. The questions become increasingly difficult, so do not skip around. The examiner will not answer any question after the test begins.

Now lay down your pencil until the examiner tells you to begin.

DO NOT TURN THE PAGE UNTIL YOU ARE TOLD TO DO SO.
1. BITTER is the opposite of
   1 acid 2 cutting 3 sharp 4 sweet 5 tart

2. The Sixth month of the year is:
   1 October 2 August 3 May 4 June

3. In the following list, which word is different from the others?
   1 cinnamon 2 ginger 3 clove 4 tobacco 5 mint

4. MEDIEVAL MEDICAL Are the meanings of these two words
   1 similar 2 contradictory 3 neither similar nor contradictory?

5. Look at the row of numbers below. What number should come next?
   49 42 35 28 21 14 ?

6. In the following set of words, which word is different from the others?
   1 slight 2 vast 3 massive 4 bulky 5 immense

7. FAITHFUL is the opposite of
   1 true 2 loyal 3 firm 4 fickle 5 sure

8. Sugar sells at 8 1/2 cents per pound. How much will you save by buying a 100 pound sack at 8.25 cents?

9. IGNITE IGNORANT Are the meanings of these two words
   1 similar 2 contradictory 3 neither similar nor contradictory?

10. Are the meanings of the following sentences:
    1 similar 2 contradictory 3 neither similar nor contradictory?
        Love me, love my dog.
        People that strike my dog would strike me if they dared.

11. CLEAN is the opposite of
    1 disinfect 2 scour 3 scrub 4 debase 5 sponge

12. Assume the first two statements are true. Is the final one:
    1 true 2 false 3 can't tell
        The voice is in tune with the piano.
        The piano is in tune with the cello.
        The cello is in tune with the voice.

13. In the following set of words, which word is different from the others?
    1 ill-matched 2 unsuitable 3 inconsistent 4 accordant 5 contrary

14. Assume the first two statements are true. Is the final one:
    1 true 2 false 3 can't tell
        These girls are normal children.
        All normal children are active.
        These girls are active.

15. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.
    MISANTHROPE: PEOPLE
    1 patriot: country 2 reactionary: government
    3 curmudgeon: children 4 xenophobe: stranger
    5 miscreant: dogma
16. CONQUER is the opposite of:
   1 overpower  2 submit  3 subject  4 vanquish  5 master

17. Suppose you arranged the following words so that they made a true statement. Then print the last letter of the last word as the answer to this problem.
   than fortunate rich be Better

18. ATTACK is the opposite of:
   1 aid  2 assail  3 combat  4 besiege  5 storm

19. ILLICIT ILLITERATE - Are the meanings of these two words
   1 similar  2 contradictory  3 neither similar nor contradictory?

20. Are the meanings of the following sentences:
   1 similar  2 contradictory  3 neither similar nor contradictory?
   No wonder can last more than three days.
   All good things are three.

21. IDEA IDEAL - Are the meanings of these two words
   1 similar  2 contradictory  3 neither similar nor contradictory?

22. A boy is 15 years old and his sister is twice as old. When the boy is 25 years old, what will be the age of his sister?

23. Are the meanings of the following sentences:
   1 similar  2 contradictory  3 neither similar nor contradictory?
   Elbow-grease is the best polish.
   The work proves the worker.

24. This geometric figure can be divided by a straight line into two parts which will fit together to make a perfect square. Draw such a line by joining two of the numbers. Then write these numbers as the answer.

25. CHASTEN CHASTISE Are the meanings of these two words
   1 similar  2 contradictory  3 neither similar nor contradictory?
26. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

OFFENSE: PECCADILLO
1 envy: resentment  2 quarrel: tiff  3 affinity: wish
4 depression: regret  5 homesickness: nostalgia

27. Assume the first 2 statements are true. Is the final one: (1) true, (2) false, (3) can't tell.

Great men are important.
John is important.
John is a great man.

28. PRIDE is the opposite of:

29. In 66 days a boy saved one dollar and ninety-eight cents. What was his average daily saving?

30. PITEOUS  PITIABLE—Are the meanings of these two words
1. similar  2. contradictory.  3. neither similar nor contradictory?

31. How many of the five items listed below are exact duplicates of each other?

| Waterhouse, H. I. | Waterous, H. I. |
| Lindquist, W. C. | Lundquist, W. C. |
| Pollauf, A. S. | Pollauf, A. S. |
| Rosenfield, F. E. | Rosenfield, F. E. |
| Sivertsen, P. B. | Sivertsen, B. P. |

32. Are the meanings of the following sentences:
1. similar  2. contradictory  3. neither similar nor contradictory?

Nothing is so bad as not to be good for something.
The person that hopes not for good fears not evil.

33. APPEAL is the opposite of
1. beseech  2. entreat  3. request  4. deny  5. invoke.

34. Which number in the following group of numbers represents the smallest amount?
10  3  2 .8 .888 .96

35. Assume the first 2 statements are true. Is the final one: (1) true, (2) false, (3) can't tell.

Great men are applauded.  John is applauded.  John is a great man.

36. A clock was exactly on time at noon on Monday. At 8 P.M. on Tuesday, it was 128 seconds slow. At that same rate, how much did it lose per 1/2 hour?

37. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

EQUIVOCATION: AMBIGUOUS
1 mitigation: severe  2 contradiction: preemptory
3 platitude: banal  4 precept: obedient
5 explanation: unintelligible

38. A train travels 70 feet in 1/10 second. At this same speed, how many feet will it travel in 3 1/2 seconds?
39. Suppose you arrange the following words so that they make a complete sentence. If it is a true statement, mark (T) in the blank: if false, put an (F) in the blank.
   of the Envy enemy is honor

40. Assume the first 2 statements are true. Is the final one: (1) true, (2) false, (3) can't tell
   Marion called Glen.  Glen called Jean.  Marion did not call Jean.

41. One number in the following series does not fit in with the pattern set by the others. Which one?
   1/16  1/6  1/4  1/2  1  2

42. ASK is the opposite of
   1 entreat  2 crave  3 demand  4 appeal  5 deny

43. When potatoes are selling at $.0125 a pound, how many pounds can you buy for a dollar?

44. This figure can be divided by a straight line into two parts which will fit together to make a perfect square. Draw such a line by joining two of the numbers. Then write the numbers as the answer.

45. In printing an article of 21,000 words, a printer decides to use two sizes of type. Using the larger type, a printed page contains 1200 words. Using the smaller type, a page contains 1500 words. The article is allotted 16 full pages in a magazine. How many pages must be in the larger type?

46. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.
   STRAY: GROUP
   1 miscalculate: solution  2 improvise: suggestion
   3 slur: pronunciation  4 delete: change
   5 digress: subject

47. For $4.50 a grocer buys a case of oranges which contains 14 dozen. He knows that four dozen will spoil before he sells them. At what price per dozen must he sell the good ones to make a net profit of 1/3 of the whole cost?

48. Assume the first 2 statements are true. Is the final one: (1) true, (2) false, (3) can't tell
   All Irish are active persons.
   Some of the people in this room are active.
   Some of the people in this room are Irish.

49. What is the next number in this series? 2  1  .5  .25  .125

50. Three women form a partnership and agree to divide the profits equally. X invests $4,500; Y invests $4,500; and Z invests $1,000. If the profits are $1500, how much less does X receive than if the profits were divided in proportion to the amount invested?
**OCQ**

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td><strong>A</strong></td>
<td>Never heard of it</td>
<td>Somewhat familiar</td>
<td>Very familiar</td>
<td></td>
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<tr>
<td><strong>B</strong></td>
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<thead>
<tr>
<th>Historical Names and Events</th>
<th>Fine Arts</th>
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<tr>
<td>1. Napoleon</td>
<td>16. Mozart</td>
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<td>2. Robespierre</td>
<td>17. a cappella</td>
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<tr>
<td>3. El Puente</td>
<td>18. Pullman paintings</td>
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<td>4. My Lai</td>
<td>19. art deco</td>
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<td>5. The Lusitania</td>
<td>20. Paul Gauguin</td>
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<td>7. Prince Lorenzo</td>
<td>22. broglio</td>
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<td>8. The Luddites</td>
<td>23. Mario Lanza</td>
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<td>12. Bay of Pigs</td>
<td>27. Pooh Bah</td>
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<td>14. Wounded Knee</td>
<td>29. harpsichord</td>
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<td>15. Clara Barton</td>
<td>30. dramatis personae</td>
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<td>Language</td>
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<td>31. subjunctive</td>
<td>46. Manhattan Project</td>
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<td>32. hyperbole</td>
<td>47. planets</td>
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<td>33. alliteration</td>
<td>48. nuclear fusion</td>
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<td>34. sentence stigma</td>
<td>49. cholarine</td>
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<td>35. euphemism</td>
<td>50. atomic number</td>
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<td>36. double entendre</td>
<td>51. hydroponics</td>
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<td>37. blank verse</td>
<td>52. alloy</td>
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<td>38. pseudo-verb</td>
<td>53. plate tectonics</td>
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<td>39. ampersand</td>
<td>54. photon</td>
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<td>40. myth</td>
<td>55. ultra-lipid</td>
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<td>41. aphorism</td>
<td>56. centripetal force</td>
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<td>42. shunt-word</td>
<td>57. plates of parallax</td>
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<td>43. simile</td>
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<td>44. acronym</td>
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<td>45. synonym</td>
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<td>Authors and Characters</td>
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<td>Very familiar</td>
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<td>62.</td>
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<td>65.</td>
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<td>66.</td>
<td>Venus</td>
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<td>67.</td>
<td>Romeo and Juliet</td>
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<td>Norman Mailer</td>
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<td>70.</td>
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<td>Artemis</td>
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<td>73.</td>
<td>Lewis Carroll</td>
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<td>74.</td>
<td>Admiral Broughton</td>
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<tr>
<td>75.</td>
<td>Mrs. Malaprop</td>
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</table>
Socio-Sexuality Scale

Please answer all of the following questions honestly.

1. How many people have you had sexual intercourse with during the past year?
   A. none    B. one    C. 2-4    D. 5-10    E. more than 10

2. With how many partners of the opposite sex do you foresee having sexual intercourse during the next five years? (be realistic)
   A. none    B. one    C. 2-4    D. 5-10    E. more than 10

3. With how many partners have you had sexual intercourse on one and only one occasion?
   A. none    B. one    C. 2-4    D. 5-10    E. more than 10

4. How many times per day do you fantasize about having sex with someone? (other than your current partner if you have one)
   A. none    B. one    C. 2-4    D. 5-10    E. more than 10

5. Sex without love is okay.
   A    B    C    D    E
   I strongly disagree

6. I can imagine myself being comfortable and enjoying “casual” sex with different partners.
   A    B    C    D    E
   I strongly disagree

7. I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex.
   A    B    C    D    E
   I strongly disagree
Romance Scale

1. How many people have you fallen in love with over the last year?
   A. none      B. one      C. 2-4      D. 5-10      E. more than 10

2. How many times a year do you fall in love “at first sight”?
   A. none      B. one      C. 2-4      D. 5-10      E. more than 10
Entertainment Preferences Survey (EPS)

MUSIC

1a) What type(s) of music do you enjoy? (check all that apply)

[ ] Rock (Our Lady Peace, 3 Doors Down, Pearl Jam)
[ ] Alternative (Rage Against the Machine, Korn, Smashing Pumpkins)
[ ] Heavy Metal (Pantera, Slipknot, Black Sabbath, Ozzy Osbourne)
[ ] Easy Listening (Celine Dion, Phil Collins, Elton John)
[ ] Country (Garth Brooks, Shania Twain, Faith Hill)
[ ] Pop (N*SYNC, Britney Spears)
[ ] Rap (Wu-Tang Clan, Rascalz, Dr. Dre)
[ ] Classical (Mozart, Beethoven)
[ ] Gothic (Marilyn Manson)
[ ] Oldies/Pre-80's (The Doors, The Beatles, The Rolling Stones)
[ ] Other kinds (please specify)

1b) Please list some of your favorite musical artists:

[ ]
[ ]
[ ]

MOVIES

2a) What type(s) of movies do you enjoy? (check all that apply)

[ ] Romance [ ] Foreign
[ ] Comedy [ ] Adult (XXX)
[ ] Action [ ] Mystery/Suspense
[ ] Science-Fiction [ ] Anime
[ ] Drama [ ] War
[ ] Horror/Thriller [ ] Family
[ ] Other

2b) What are your favorite movies?

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

SPORTS

3) What sports do you like to watch? (check all that apply)

[ ] None
[ ] Contact Sports (Hockey, Football, Rugby)
[ ] Non-Contact Sports (Baseball, Basketball, Soccer)
[ ] Racing (F-1, NASCAR)
[ ] Finesse Sports (Figure Skating, Gymnastics)
[ ] Recreational Sports (Bowling, Darts, Golf)
4) What sports do you like to play? (check all that apply)

_____ Winter Sports (Skiing, Snowboarding)

_____ Pugilistic Sports (Wrestling, UFC, Boxing)

_____ Track and Field (Sprinting, High Jump, Javelin)

_____ Other ____________________________

5) What do you like to do in your spare time?

__________________________

__________________________
INTERNET

6) On average, how many hours a week do you spend on the internet doing each of the following?

_____ Games  _____ Shopping  _____ Hacking

_____ E-mail  _____ ICQ/Chat rooms  _____ Finances

_____ Pornography  _____ Downloading music  _____ Information/News

_____ Educational/Research  _____ Making/Sending Viruses

_____ Other: _____________________________________________

VIDEO GAMES

7a) On average, how many hours a week do you spend playing the following?

_____ Game Consoles (Playstation, N64)  _____ Arcade Games

_____ PC games (non-Internet)  _____ Internet Games

7b) What are your favorite video games?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Misbehavior Inventory

How many times in the last five years have you:

____ 1) purposely damaged or destroyed other property that did not belong to you.
____ 2) stolen (or tried to steal) a motor vehicle, such as a car or motorcycle
____ 3) shoplifted something.
____ 4) knowingly bought, sold, or held stolen goods (or tried to do any of these things).
____ 5) thrown objects (such as rocks, snowballs, or bottles) at cars or people.
____ 6) run away from home.
____ 7) lied about your age to gain entrance or to purchase something; for example, lying about your age to buy liquor or get into a movie.
____ 8) carried a hidden weapon other than a plain pocket knife.
____ 9) attacked someone with the idea of seriously hurting or killing him/her.
____ 10) have paid for having sexual relations with someone.
____ 11) parked in an illegal parking spot.
____ 12) been involved in a gang activity.
____ 13) sold marijuana or hashish ("pot", "grass", "hash").
____ 14) cheated on school tests.
____ 15) hitchhiked where it was illegal to do so.
____ 16) stolen money or other things from your parents or other members of your family.
____ 17) hit (or threatened to hit) someone.
____ 18) been loud, rowdy, or unruly in a public place (disorderly conduct).
____ 19) sold hard drugs, such as heroin, cocaine, and LSD.
____ 20) taken a vehicle for a ride (drive) without the owner's permission.
____ 21) bought or sold liquor for a minor.
____ 22) had (or tried to have) sexual relations with someone against their will.
____ 23) used physical force to get money or things from other students.
____ 24) avoided paying for things as movies, bus, or subway rides, and food.
____ 25) been drunk in public places.
____ 26) stolen (or tried to steal) things worth between $5 and $50.
____ 27) stolen (or tried to steal) something at school, such as someone's coat from a classroom, locker, or cafeteria, or a book from the library.
28) broken into a building or vehicle (or tried to break in) to steal something or just to look around.

29) begged for money or things from strangers.

30) failed to return extra change that a cashier gave you by mistake.

31) been suspended from school.

32) made obscene telephone calls, such as calling someone and saying dirty things.

33) swear at adults (e.g. parents, salesperson, telephone solicitors).

34) purposely harassed someone on the telephone or on email.

35) beeped in anger at other drivers.

36) yelled at other drivers so they could hear you.

37) tried to hurt someone’s feelings.

38) failed to report items at Customs.

39) ridiculing someone you dislike.

40) ridiculing someone who is helpless.

41) bullying someone for no good reason.

42) number of times you have been arrested.

43) handed in a school essay that you had copied from someone else.

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How often in the last five years have you used:

44) alcoholic beverages (beer, wine, and hard liquor).

45) marijuana-hashish ("pot", "grass", "hash").

46) hallucinogens ("LSD", "Mescaline", "Peyote", "Acid").

47) amphetamines ("Uppers", "Speed", "Whites").

48) barbiturates ("Downers", "Reds").

49) heroin ("Horse", "Smack").

50) cocaine ("coke")

51) ecstasy ("X")

52) prescription drugs (valium, codeine) to the level of abuse.