PSYCHOPATHY, EMOTIONAL CONTAGION, AND EMPATHY

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Abstract

In an effort to discover quality evidence about the emotional experience of individuals who report psychopathic tendencies, the relationship between psychopathy, emotional contagion (EC), and empathy were explored. The study posits one basic question: Do people who self-report psychopathy exhibit normal tendencies for EC and empathy? Three psychological measures were selected and formatted into an online survey. These measures are: the SRP III, which measures psychopathic tendencies, the EC scale, and the TEQ which measures empathy. Participants were solicited from the University of Alaska, Fairbanks campus in an effort to replicate a similar study conducted by Dr. Cherie Luckhurst at the University of Hawaii at Manoa. The following hypotheses were proposed: there will be a negative correlation between individuals’ scores on the psychopathic tendencies measures, and their scores on the EC and TEQ (empathy) measures. The study used a Pearson Product Moment Correlation Coefficient (PPMCC) method for data analysis and correlation indicators. Also, a multiple regression analysis was utilized to investigate predictor variables.
Psychopathy, Emotional Contagion, and Empathy

The word "psychopath" normally invokes the mental image of a deranged person, possibly violent, who wreaks havoc on the human population around him. The stereotype of a psychopath has a historical origin and specific, antisocial, personality traits are normally expected (Cavadino, 1998). Input the word "psychopath" into an internet search engine, and multiple images of Hannibal Lector, from the 1991 thriller, *Silence of the Lambs*, will appear. The general impression of a psychopathic individual is rooted in an assumption that the psychopath is a cold and dispassionate person with no regard for basic humanity, a potential killer (Abbott, 2007). However, recent evidence suggests that some individuals with psychopathic tendencies might lead successful lives and represent a small portion of the general public, in an apparent contradiction to the common brutal stereotype (Hall & Benning, 2007). Most recently, the clinical term Antisocial Personality Disorder, has begun to be used to describe those who exhibit psychopathic tendencies (APA, 2013). In an effort to remain consistent, the remainder of this discussion will use the terms psychopath and/or psychopathy.

A key suggestion from literature, in regard to psychopathy, illustrates a potential difference in the *emotional experience* of a psychopath versus that of someone without psychopathic tendencies (Damm, 2010). In an effort to delineate pertinent emotional variables of emotional experience, two stand-out emotional processes emerge: *emotional contagion* (EC) and *empathy* (Luckhurst, 2013).

Generally, most individuals have the ability to experience empathy and EC in varying degrees (Hatfield, Cacioppo & Rapson, 1993; Staub, 1987). Individuals in the general population who exhibit tendencies for psychopathy might predictably indicate a
different experience of EC and empathy (Luckhurst, 2013) than do their normal peers. The dissimilarities in persons with psychopathic tendencies versus those who do not possess such tendencies, might be evident in the general population and might be detectable with the administration of self-report questionnaires. Theorists such as Luckhurst (2013), and Paulhus (2011), for example, argue that we need not separate people into distinct groups of psychopathology versus normal. The scales, they argue, provide a continuous measure of the degree of psychopathy.

In the following discussion, the potential connections between psychopathy, emotional contagion (EC), and empathy are to be introduced. The study aims to assist in the clarification of the emotional human experience, especially in regard to an understanding of the individual who may self-report psychopathic tendencies and yet function within the general public. The study asks one basic question: Do people who self-report psychopathy exhibit normal tendencies for EC and empathy? Specifically, is there a negative correlation between individuals’ scores on the psychopathic tendencies measure, and their scores on the EC and empathy measures? The proposed study will sample students from the University of Alaska, Fairbanks. The demographic of psychology students who attend the University of Alaska, Fairbanks (UAF) are utilized in an effort to partially replicate a similar study conducted at the University of Hawaii at Manoa by Dr. Cherie Luckhurst (2013). Measures for the proposed UAF study include the Toronto Empathy Questionnaire (Spreng, McKinnon, Mar, & Levine, 2009), the Doherty Emotional Contagion Scale (Doherty, 1997), and the Self Report Psychopathy Scale III (SRPIII) (Paulhaus, 2011).
Literature Review

To appropriately discuss the connection between psychopathy, EC, and empathy, further explanation is necessary. Three relevant variables of the proposed study are: 1) psychopathy, 2) EC, and 3) empathy. Each is to be introduced and discussed in reference to each other, respectively. Psychopathy, however, is unique in relation to both EC and empathy. For this study, self-reports of EC and empathy are predicted to also reflect the level of self-reported psychopathy (Luckhurst, 2013).

Psychopathy

Literature suggests that individuals with psychopathic tendencies could make up as much as 3.6% of the population (Coid & Yang, 2008). In reality, this statistic reveals that approximately one in every 25 people might exhibit a degree of psychopathic tendencies. The psychopath is often thought to be unique in his emotional and behavioral tendencies (Widiger, & Lynam, 1998). Often, psychopathy is viewed as a cluster of particular traits, specifically:

- Basically unsocialized – often in conflict with society
- Incapable of loyalty to groups, individuals, or social values
- Selfish
- Callous
- Irresponsible
- Impulsive
- Unable to feel guilt
- Unable to learn from experience or punishment
- Intolerant of frustration
- Blame others or offer plausible rationalizations for their behavior (APA, 1968).
In the 2013 revision of the *Diagnostic and Statistical Manual of Mental Disorders*, 5th Edition (DSM-5), psychopathy has been parceled as a personality disorder (PD), explicitly Antisocial Personality Disorder (APA, 2013). According to this latest publication of the DSM, Antisocial PD is characterized with failure to conform to social norms with respect to lawful behaviors, repeated acts that are grounds for arrest, deceitfulness, impulsivity, aggressiveness that may result in arrest, reckless disregard for safety, consistent irresponsibility, and lack of remorse (APA, 2013). Further, the specifications for personality aspects of Antisocial PD include manipulativeness, deceitfulness, callousness, hostility, irresponsibility, impulsivity and risk taking (Nussbaum, 2013). While psychopathy is no longer a specific disorder as characterized by DSM-5 diagnostic criteria, the similarities between the original 1968 diagnostic criterion and current Antisocial PD description are striking.

The inability to feel guilt, as characterized in the 1968 APA criteria, aligns with the current descriptor "callousness". "Hostility" is another characterization that loosely aligns with the 1968 description of the psychopath as "unsocialized.” To exhibit unsocialized behavior, one must have difficulty in the establishment of group loyalty (APA, 1968). Callousness, hostility, unsocialized behavior, and difficulty with establishment of person-to-person loyalty, are all possible antitheses to the experience of EC and empathy (Luckhurst, 2013). With the historical 1968 APA psychopathic descriptors in mind, the individual who reports possible psychopathic tendencies today, also indicates alignment with the DSM-5 criteria for Antisocial PD (APA, 2013). According to the DSM-5, Antisocial PD is often characterized by:
"A pervasive pattern of disregard for the rights of other people that often manifests as hostility and/or aggression. Deceit and manipulation are also central features. In many cases hostile-aggressive and deceitful behaviors may first appear during childhood" (APA, 2013, p. 659).

In addition to general traits of personality which align with hostility, aggression and deceitful behavior, according to the DSM-5, a clinical diagnosis of Antisocial PD must include evidence of:

"Impairments in interpersonal functioning (a or b):

a. Empathy: lack of concern for feelings, needs, or suffering of others; lack of remorse after hurting or mistreating another.

b. Intimacy: incapacity for mutually intimate relationships, as exploitation is a primary means of relating to others, including by deceit and coercion; use of dominance or intimidation to control others" (APA, 2013, p. 660-661).

Both descriptions above clearly define that the psychopath, or individual with Antisocial PD, exhibits a disregard for rights, feelings, and safety of others. EC and empathy are key in the process of understanding the rights another person, the feelings of another person, and in expressing a regard for their safety (Luckhurst, 2013).

**Emotional Contagion (EC)**

In their book on the subject, Hatfield, Cacioppo, and Rapson (1994) describe the process of emotional contagion in this way: “the tendency to automatically mimic and synchronize facial expression, vocalizations, postures, and movements with those of another person, and consequently, to converge emotionally” (p. 5). They identify it as a
primitive response that leads to sharing emotions. The three steps that lead to emotional contagion are:

1. Mimicry
2. Feedback
3. Convergence

Mimicry. Mimicry can be seen and expressed in a variety of ways. These include posture, gestures, speech, and facial expression. Mimicry is common between similar or desirable others. In 1981, La France and Ickes suggested that mimicry of physical stance equates to a declaration of shared psychological stance. In 1988, Bavelas, Black, Chovil, Lemery, and Mullet recognized that mimicked posture indicates solidarity, thereby substantiating observations by Charney (1966), LaFrance (1979), LaFrance and Broadbent (1976), and Trout and Rosenfeld (1980). In 2003, Lakin, Jefferis, Cheng, and Chartrand reported that mimicry indicates the desire for affiliation and rapport. Their findings have been multiply confirmed, including by Yabar, Johnston, Miles, and Peace in 2006 and Guèguen, Jacob, and Martin in 2009. In addition, Lakin and Chartrand (2003) have recently reported reduced mimicry of out-group members.

Feedback. The second step of emotional contagion is feedback. We know that humans use their bodies to mimic posture, speech, gestures, and face, as well as a multitude of other expressions. Converging evidence for the process of feedback has come from neurophysiological research that originated in Parma, Italy. The specialized brain cells called mirror neurons were identified there in 1982 by a team of scientists led by Giacomo Rizzolatti. Mirror neurons fire when we view an action by others—whether it is a tennis serve, a scowl, or the cracking of an egg on the edge of a ceramic bowl—and
the firing triggers our own emotions. “Mirror neurons provide an inner imitation … of the observed facial expression,” says Iacoboni (1982, p. 119). Named “mirror neurons” because they allow us to internally reflect the expressions and actions of others, these unique cells did not come to public attention until near the turn of this century. After years of experimentation, the Italian scientists determined that mirror neurons not only fire when we observe an action, they also fire “merely at the perception of somebody else’s actions” (Iacoboni, 2009, p. 11). Iacoboni suspected that the firing mirror neurons send signals to the emotional centers in the limbic system, causing us to feel what others feel.

Convergence. The final step in the model of emotional contagion is convergence: the sharing of emotions between the observed and the observer. Hatfield puts it this way: “As a consequence of mimicry and feedback, people tend, from moment-to-moment, to ‘catch’ others’ emotions” (Hatfield, Rapson, & Le, 2009, p. 24). If we pay attention to one another, we experience the process of emotional contagion: we observe and mimic, we feel the feelings associated with those mimicked expressions, and we identify with the object of our observations. Hence, we feel the feelings of others. We may not feel them as strongly, or as precisely, as the source feels them, but we “catch” the feelings of the source to some degree. Hatfield and her colleagues (2009) note that these feelings may be just a “pale reflection” of the original emotions (p. 26). Nonetheless, by the automatic process of mimicry, feedback, and convergence, we may feel what others are feeling.

Empathy

Empathy is an important construct. It helps us to intellectually understand others. It allows us to resonate with others’ feelings, and it leads us to help our fellows via
compassion and altruism. Findings about empathy may ultimately be applied to social interaction between people, whether in the community or across the globe; it allows us to embrace our shared humanity. Children develop empathy as they grow up. Piaget (1932/1997) described the primarily cognitive process of de-centering. As a child matures, she begins to understand that others are separate from her. This realization begins her imagining how the world appears to others. The imagining is a step in the cognitive portion of the empathy pathway.

Scholars continue to diversely define empathy. For example:

- The “attempt by one self-aware self to comprehend un-judgmentally the … experiences of another self” (Wispé, 1986, p. 318).
- “The other-focused, congruent emotion produced by witnessing another person's suffering, involve[ing] such feelings as sympathy, compassion, soft-heartedness, and tenderness” (Batson, 1987, p. 20).
- “A sense of similarity in feelings experienced by the self and the other….” (Decety, 2009, p. 199).
- “An affective response that stems from the comprehension or apprehension of another’s emotional state or condition….” (Eisenberg, 2006, p. 647).

These definitions reveal a few different concepts of empathy. Some scholars describe empathy as a feeling; others describe it as a thought process. Some draw a distinction between actively accepting the perspective of others versus becoming passively enveloped in their feelings. Some scientists describe empathy as a process, while others see it as a result. Empathy might be an outcome of interaction or an antecedent to interaction. It might lead to kindness and altruism. It might result from shared hardship.
It might come from an understanding, or thoughtful consideration, of another’s perspective. Or, empathy might be facilitated by an unconscious, automatic response.

**Study**

The fundamental question of the study is: Do people who self-report psychopathy exhibit normal tendencies for EC and empathy? Specifically, is there a negative correlation between individuals’ SRP III scores, and their scores on the EC and empathy measures? We also ask the question: How tightly linked are EC and empathy? Does a self-report for psychopathy correlate more strongly with one than with another?

In an effort to expand knowledge on the emotional experience of individuals who self-report psychopathy, this study uses three specific measures to shed light on the question. In addition, the study posits two hypotheses:

1. The higher an individual scores on the SRP III measure, the less capacity for empathy (as measured by the Toronto Empathy Questionnaire) they will possess.

2. The higher an individual scores on the SRP III measure, the less capacity for overall emotional contagion (as identified by the Doherty EC scale) they will possess.

Considering the hypotheses, the prediction for the study is that the higher participants’ self-report on the psychopathic tendencies measure, the less they will report EC and empathetic tendencies.

**Methods**

**Measures**

Three questionnaires and a survey of demographics were administered in the study.
Each questionnaire measured a separate variable. These measured variables are psychopathy, EC, and empathy.

**Psychopathy.** To measure psychopathic tendencies, the Self-Report Psychopathy Scale (SRP III) was utilized (Paulhus, Neumann, & Hare, in press). The SRP III has been used in several recently-published studies (see Jones & Paulhus, 2010, and Williams, Nathanson, & Paulhus, 2009, for example). Williams, Paulhus, and Hare (2007) used a student sample to determine that the new version loads on four factors. They also found good convergent and discriminant validity for the SRP III. In 2011, Mahmut, Menictas, Stevenson, and Homewood used a community sample and confirmed the four-factor structure of the SRP III. In a study with a large sample of students (N=602), Neal and Sellbom (2012) found that the data generated by the SRP III showed “superior fit” to a four-factor model relative to other models (p. 244). In addition, the SRP III instrument showed good internal reliability and “promising criterion-related, convergent…validity” (p. 248) when predicting scores on conceptually-relevant criteria (such as thrill-seeking, irresponsibility, and aggression) and on conceptually-opposed traits (such as honesty and dependability). It showed weak or non-significant correlation with measures of social avoidance, fearfulness, and shyness, thus indicating discriminant validity.

**Emotional Contagion.** The emotional contagion (EC) scale (Doherty, 1997) measures one’s propensity to experience the primitive response of emotional contagion. It is a self-report, Likert-style instrument, consisting of 15 items. Responders with high overall scores have been shown to possess a high susceptibility to EC. In addition, the EC scale contains five nested sub-scales that assess specific emotions conveyed through contagion: love, anger, fear, happiness, and sadness. These subscales reveal the
vulnerabilities or resistances of an individual to the contagion of a specific basic emotion.

The EC scale is the only current measure of primary contagion. It was developed at the University of Hawai‘i, Mānoa, and was based on the scholarship of Elaine Hatfield and her colleagues (see, for example Doherty, Orimoto, Singelis, Hatfield, & Hebb, 1995; Hatfield, Cacioppo, & Rapson, 1994; or Hsee, Hatfield, Carlson, & Chemtob, 1990). Since its release in 1997, the EC scale has been translated into many languages, including Finnish, French, German, Greek, Indian (Telugu), Japanese, Portuguese, and Swedish. Scholars in many countries have used the scale to test a variety of psychological events. (See, for example: Hietanen, Surakka, & Linnankowski [1998] “Facial Electromyographic Responses to Vocal Affect Expressions,” which used the EC Finnish version.)

Several researchers have assessed the reliability and validity of the scale. Originally, R. William Doherty tested the EC scale in a three-part study with a large sample of U.S. participants (1997). He established its reliability and explored its factor structure. (Doherty intended a unidimensional structure that would reflect parsimony, but later research established that five factors were the best fit for the data [Lundqvist & Kevrekidis, 2008].) He compared the results of the EC scale to the outcomes of a variety of psychological measures to confirm the validity of the EC scale’s construct. These included measures of reactivity, emotionality, sensitivity to others, social functioning, and self-esteem, which were all found to be positively related to susceptibility to emotional contagion. Negatively related constructs were alienation, self-assertiveness, and emotional stability. Doherty found no relationship between EC and measures of masculinity or approval motivation. In addition, Doherty found that EC scale results
were strongly correlated to self-report experiences in response to emotional expressions, thereby reinforcing the validity of the measure. Soon thereafter (1998) Doherty used the scale in an experiment to determine the effects of the contagion of emotional expressions on social judgment.

**Empathy.** The Toronto Empathy Questionnaire (TEQ) was developed by Spreng and his colleagues (2009) to capture many types of empathic responding. The result is a 16-item instrument that uses Likert-style scales to indicate frequency of empathic behaviors (using never, rarely, sometimes, often, and always). The 16 items were extracted from existing self-report measures, including the IRI (Davis, 1983), the QMEE (Mehrabian & Epstein, 1972), the BEES (Mehrabian, 2000), the Hogan Empathy Scale (1969), as well as a few less-known scales, such as the Nursing Empathy Scale (Reynolds, 2000), the Scale of Ethnocultural Empathy (Wang et al., 2003), and the Measure of Emotional Intelligence (Schutte et al., 1998). Using Exploratory Factor Analysis (EFA), the designers explored inter-correlations among items. They eliminated items that had item-remainder coefficients below .30. Questions that worsened internal consistency or that showed low factor loadings (below .40) also were excluded.

The resulting 16 questions capture many characteristics that are traditionally associated with empathy, as well as a few newer concepts known to be related to or predictive of empathy. These include emotional contagion, emotion comprehension, sympathetic physiological arousal, and con-specific altruism. In short, the TEQ captures the variety of behaviors that are described in the current empathy literature. It shows good test-retest reliability, strong construct validity, and high internal consistency. State
the authors: “in developing the TEQ, we created a parsimonious scale that is short, clear, and homogenous and has strong psychometric properties…” (Spreng, et al., 2009, p. 69).

Procedure

Participants

Participants were students at the University of Alaska, Fairbanks (UAF) at the time of the study. Most participants were students of psychology, in the college of education, or counseling department at UAF. With the participation of UAF instructors and professors, potential participants were recruited via email/web-based methods, or face-to-face introduction and discussion during in-class sessions. In total, 86 surveys were completed and interpreted for results.

Dr. Cherie Luckhurst ran a similar study at the University of Hawaii at Manoa (UH) in 2013. In an effort replicate her findings, the student demographic at UAF were selected as a good fit and complimentary to the surveyed student demographic at UH. Regarding the ethnic and cultural groups that reside in Alaska and Hawaii, student enrollment at each university is reflective of an anthology of diverse indigenous cultures. The student enrollment at UH of ethnic groups (other than Caucasian) is approximately 75% (UH, 2012). In 2014, non-Caucasian student enrollment of indigenous and ethnic groups was approximately 55% (UAF, 2014). Both institutions of higher learning implement specific educational outreach needs unique to their respective locations and share a state history of ethnic indigenous culture and colonialism within the last 100 years (PBS.org, 2013). In consideration of these demographic factors, research conducted in Hawaii and Alaska may provide distinctive evidence of merit for state-to-state, collaborative studies.
Subjects

86 participants were interviewed. See Appendix B for a description of the demographic questions administered to determine participant gender, age, culture identification, cultural group alignment, duration of U.S. residency, religious or spiritual affiliation, degree of religiosity, highest level of education, and family of origin educational level. Participants provided evidence of UAF enrollment with alaska.edu email address, attendance of academic courses, or self-identification as a student. Participants were aged 18 or older, as required to self-report in the demographics survey, and presented as a requirement in the informed consent.

Format

The three measures, SRP III, the EC scale and the TEQ, were formatted into a survey accessed through an online server. SurveyMonkey ( surveymonkey.com ) was selected for ease of use and straightforwardness of access. In addition, SurveyMonkey automatically enables survey encryption to ensure security of information and confidentiality for each participant (SurveyMonkey, 2014). Recent studies suggest that online surveys are as reliable and provide as much validity as traditional paper-pencil format surveys ( Vosylis, Žukauskienė, & Malinauskienė, 2012 ). Also, one must take into consideration the specific demographic to be surveyed. Distance education and rural Alaska students were given the opportunity to participate in the study with the online format. Informed consent is sent via email with a survey link included, distributed in paper format to student participants with a printed link source to the online survey, or presented before the demographics survey in the web-based format.

Analysis
The proposed study implemented a Pearson Product Moment Correlation Coefficient (PPMCC) analysis to calculate the relationship of psychopathy, EC, and empathy. The purpose of the analysis is to find how closely psychopathy, EC and empathy are related. The predicted findings should distribute in the realm of a strong relationship, ie: .5 to 1.0 or -.5 to -1.0. In addition, a multiple regression analysis was conducted to investigate the strength of predictor variables (empathy, EC, and gender) to psychopathy.

**IRB Approval.** The University of Alaska, Fairbanks (UAF) graciously provided IRB approval of the study, in addition to IRB approval from the University of Hawaii at Manoa (UH). UAF approved an expedited review of the proposed study on April 8th, 2014. UH approval code 21454 was provided in regard to the proposed study effective April 29th, 2014.

**Procedural Implementation**

Each UAF student participated using the online forum as formatted in SurveyMonkey. Each participant was presented with an electronic version of the informed consent form with descriptive information regarding their rights as participants, project description, benefits and risks, confidentiality and privacy, voluntary participation, a sample question from a questionnaire, possible compensation and contact information if they have questions about the study. See Appendix A for full description of informed consent. If the student chose to participate in the study, the participant selected the survey link provided. When the informed consent was distributed in paper format, the participants were able to manually enter the link from the paper informed
consent into a computer browser. Following this, each participant was introduced to a demographics questionnaire on surveymonkey.com website.

The questionnaires were streamlined into one survey, with the three psychological measures combined as a master survey but presented individually. Each measure was labeled Questionnaire #1, #2, or #3. The first set of questions, the demographics survey, and was not labeled as "questionnaire", but rather, "A few questions about you and your background." Following the completion of the demographics survey, the participant completes "questionnaire #1" which is either the Empathy (TEQ) measure or the EC scale measure. The EC and TEQ measures are counterbalanced, the EC measure is before TEQ ½ the time, and after TEQ ½ the time. Depending on which survey is administered, "questionnaire #1" and "questionnaire #2" are either the TEQ or EC scale. The TEQ is questionnaire #1 in 50% of the surveys administered, and the EC scale is questionnaire #1 in 50% of the surveys administered. The TEQ and EC interchange is an effort to serve as a functional counterbalance, in all instances, "questionnaire #3" is the Self-Report Psychopathy Scale (SRP III) measure, which is the last measure to complete for the entire online survey. Only questions regarding age and gender are mandatory survey questions. All other survey questions can be changed or skipped entirely at each participants’ discretion. The opportunity to opt-out of survey questions satisfies IRB stipulations regarding the potential for emotional distress. The final page of the survey offers a "thank you" to each student for their participation and provides resources for the participant in the case of emotional distress while or after answering the survey questions. Contacts provided include suicide hotlines and local counseling resources located locally in Fairbanks, and on the UAF campus.
Results

Eighty six surveys were collected. Descriptive statistics of the 86 completed surveys are listed below:

**Male/Female Ratio:**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>20%</td>
</tr>
<tr>
<td>Female</td>
<td>80%</td>
</tr>
</tbody>
</table>

**Cultural group identification:**

- Alaskan Native: 12%
- Other Polynesian: 2%
- Vietnamese, Thai, other Southeast Asian: 3%
- European: 23%
- African: 3%
- Mexican, Central American, South American, Hispanic, Latino: 3%
- North American: 52%

**Open-ended option, cultural identification:**

- Alaskan: 6
- Pacific NW American: 1
- White: 16
- Thai: 1
- Western American: 1
- Athabaskan: 1
- Southern: 1
- European: 3
- Mexican American: 1
- Native American: 1
- American: 10
- Latino and African American: 1
- Alaskan Native: 2
- North American: 7
- Inupiaq, Eskimo: 3
- Spanish: 1
- Tongan: 1
- Hispanic: 1
- Filipino: 1
- Jewish: 1
- Other Polynesian: 1
Total 61
71% reported

Reported religious affiliation:

Agnostic 8
Non Denom. Christian 2
Science 1
Christian 10
None 11
Atheist 5
Presbyterian 1
Baptist 2
Russian Orthodox 1
Methodist 1
Moravian 1
Quaker 1
Mormon 1

Total 45
52% reported

Individual achievement priority versus group/family achievement priority:

Individual Achievement 76%
Group Achievement 24%

Male to Female Ratio

Female participants outnumbered male participants 69 to 17. At 80%, the female sample may be overrepresented in the study. Also, this representation may speak to the number of female student in attendance at UAF, female interest in a psychological study, and/or female use of web-based surveys.

Cultural Identification

The greatest number of participants identified culturally as North American, at 52%. Following this, participants identified as European at 23%, and Alaska Native at 12%. In the open-ended cultural identification question, cultural identification indicated
consistency with the initial cultural identification option. Of the 71% of participants who responded to the open-ended question, 16 reported identifying culturally as White, 10 identified as American, 7 as North American, and 6 as Alaskan. In this open-ended question, may other cultural identities were offered as personal descriptor. These descriptors ranged from Athabaskan, to Southern, Western American, Filipino, Jewish, other Polynesian, Tongan, Latino and African American, Inupiaq, Eskimo, Thai and Native American. It can be noted that the cultural makeup of the 71% who reported a specific cultural identity, described in better detail the 52% of participants who self-indicated North American in the first multiple choice cultural identity question.

**Religious Affiliation**

Of the 52% who reported on the open-ended question of religious affiliation, most indicated no religious affiliation with an answer of “none.” Second popular was the self-report of Christian affiliation. Following this, self-indication of Agnosticism and Atheism were also common.

**Individual Achievement versus Group/Family Achievement**

Indicative of American cultural values, 76% of the participants reported that they prioritized individual achievement over group achievement.

**Correlations**

A Pearson Product Moment Correlation (PPMCC) was conducted to analyze the data and measure the relationships of empathy and psychopathy, emotional contagion and psychopathy, and emotional contagion and empathy.

**Hypotheses:**
1. The higher an individual scores on the SRP III measure, the less capacity for empathy (as measured by the Toronto Empathy Questionnaire) they will possess.

2. The higher an individual scores on the SRP III measure, the less capacity for overall emotional contagion (as identified by the Doherty EC scale) they will possess.

Figure 1. illustrates the correlations of emotional contagion (ECS), psychopathy (SRPIII), and empathy (TEQ). There are three significant relationships: ECS and SRPIII, $r = -.300$; SRPIII and TEQ, $r = -.287$; and ECS and TEQ, $r = .675$. The following figures illustrate distribution of scores for the correlation coefficient in scatterplot representation.
Relative to Hypothesis 1, the results of the study indicate there is a significant negative correlation between TEQ and SRPIII, $r = -.287, p = .008$. The higher an individual’s scores on the SRPIII measure, the lower an individual’s scores on the TEQ measure, which means, the first hypothesis is supported. Figure 2. below illustrates a negative correlation of psychopathy and empathy.

**Figure 2. SRPIII and TEQ**
Relative to Hypothesis 2, the results also indicate a significant negative correlation between ECS and SRPIII, $r = -.300, p = .005$. The higher an individual’s scores on the SRPIII measure, the lower an individual’s scores on the Doherty EC scale (ECS), which means, the second hypothesis is supported. Figure 3. below illustrates a negative correlation of emotional contagion and psychopathy.

**Figure 3: ECS and SRPIII**
In addition, there is a significant positive correlation between ECS and TEQ, \( r = .675, p < .001 \), the more capacity for empathy, the more capacity for overall emotional contagion. Figure 4. below illustrates a positive correlation of emotional contagion and empathy.

Figure 4. ECS and TEQ
Multiple Regression

A multiple regression was also conducted to analyze the importance of emotional contagion and empathy in predicting psychopathy. Gender was considered as a demographic independent variable and was included in the analysis with psychopathy. The table below presents these results. The three predictors combined accounted for 11.7% of psychopathy variance, $F = 3.563, p = .018$. Gender, emotional contagion, and empathy were not significantly associated with psychopathy, $t = 1.115, p = .268$, $t = -1.325, p = .189$, and $t = -.793, p = .430$.

**Figure 5.**

*Prediction of Psychopathy by Gender, Emotional Contagion, and Empathy*

<table>
<thead>
<tr>
<th>Model</th>
<th>$B$</th>
<th>$SE B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
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<tbody>
<tr>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>3.676</td>
<td>.125</td>
<td>1.115</td>
<td>.268</td>
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<td>.223</td>
<td>-.188</td>
<td>-1.325</td>
<td>.189</td>
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<tr>
<td>Empathy</td>
<td>-.203</td>
<td>.256</td>
<td>-.116</td>
<td>-.793</td>
<td>.430</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>$F = 3.563$</td>
<td>$p = .018$</td>
</tr>
</tbody>
</table>

*Note.$^a$1 = Female, 2 = Male.*

The beta weights indicated the relative importance of the predictor variables in predicting the criterion variable. The value of the beta weights indicate that gender is the most important variable in predicting psychopathy. Based on results, the higher gender score (code 2 = male), the more psychopathic.

**Discussion**

A multiple regression analysis expressed empathy, EC, and gender as not statistically significant when combined as a predictor for psychopathy, however, correlation coefficient analysis expressed a statistically significant relationship of the
three variables. It should be noted, though, that being male was a greater predictor variable for psychopathy than either emotional contagion, or empathy.

According to the PPMCC analysis, the higher an individual scores on the SRPIII measure, the lower an individual scores on the TEQ measure, which supports the first hypothesis (higher empathy, lower psychopathy). In addition, the higher an individual’s scores on the SRPIII measure, the lower an individual’s scores on the Doherty EC scale (ECS), which means, the second hypothesis is also supported. These findings are significant relative to the relationship and function of empathy and emotional contagion to the human experience.

**Conclusion**

Participation of 86 participants indicated significant findings regarding psychopathy, EC and empathy. The method of survey dissemination proved easy to access for students. The ability of this researcher to generate enough interest in the study proved somewhat difficult, as evidenced by the fewer than 100 participants proposed for the target sample. There are potential confounds which could pose issues for a study of this nature. These confounds are specific to sample size, problems affiliated with measuring psychopathy and self-report surveys, and the low-incidence of individuals with psychopathic tendencies in the general public.

**Sample Size**

When IRB approval was obtained from the University of Alaska Fairbanks (UAF) and the University of Hawaii at Manoa (UH), the study had the opportunity to pilot with UAF students. Student interest and participation proved to be difficult, as incentive to participate was low without the initial promise of monetary compensation or extra credit from instructors. To amend the issue, Dr. David Webster at the UAF graciously provided
counsel and suggestion of faculty members who might be interested in facilitating student participation. Following this, instructors were contacted. A select few instructors agreed to cooperate and allowed their students to be solicited, and provided an opportunity for the study to be presented during in-class sessions. In the future, an entirely web-based platform with paid advertisement might prove to be more effective and yield better participation.

**Problems with Measuring Psychopathy and Self-Report Surveys**

Some participants could exhibit socially desirable responding. However, one must consider the participants in which this proposed study is most interested: individuals who self-report above average psychopathic tendencies. To the question of socially desirable responding, Lilienfeld and Fowler (2006) describe this problem as a “common misconception” of the self-report assessment (p. 111). They suggest: “psychopaths possess a different conception of what is socially undesirable” compared to average people (p. 112). Therefore, if those with psychopathic personalities engaged in positive impression management, they would not recognize which behaviors others perceive as socially undesirable and not know which responses to “manage.” They would perceive as normal—and perhaps emphasize—characteristics that they admire in themselves.

Research conducted in 1982 found support for this: self-report measures of psychopathy showed negative correlations with socially desirable behaviors (Ray & Ray, 1982). Later research by Lilienfeld (1994) showed the same outcome: psychopaths self-reported accurately on such antisocial behaviors as recklessness, hostility, and poor impulse control.
In regard to the EC and TEQ self-report measures, all efforts were made to ensure each sample is a reliable measure. Study participation offers minimal reward: possible extra credit or experience as a participant, so most likely there is low incentive to fabricate answers on the self-report surveys.

**Low Incidence of Psychopathy in the General Public**

As previously discussed, the incidence of individuals with psychopathic tendencies in the general public may be only one in 25 (Coid & Min, 2008). In an effort to find a correlatory relationship with psychopathy, EC and empathy, this study analyzes psychopathy as a continuous variable. To improve the research of psychopathy, EC and empathy, a large sample size might yield better results.

**Future Research**

Social psychology should continue the discussion about psychopathy, empathy, and emotional contagion with questions to be investigated in future research. Research queries to consider might be: How might a deficit in capacity for emotional contagion and empathy influence the development of psychopathic traits? Does the capacity for emotional contagion serve as a precursor to empathy? How might a study of this nature impact methods of the judicial system, social justice, psychological assessments, and psychological treatment? What populations might be investigated in a similar study with a larger sample size? What is the role of empathy and emotional contagion for the development or expression of psychopathic traits over time? How might gender affect the development of psychopathic tendencies over time, relative to empathy and emotional contagion? Each query could yield fascinating discoveries on empathy, emotional contagion and psychopathy.
Appendix A: Informed Consent
University of Hawai‘i

Consent to Participate in Research

Project: Situational Emotions

My name is Claire Gelvin-Smith. I am a graduate student at the University of Hawaii (UH). As part of my degree program, I am conducting a research project. The purpose of my project is to gain information about emotional responses to various situations. I am asking you to participate in this project because you are at least 18 years old and you are enrolled as a student at the University of Alaska Fairbanks.

Project Description – Activities and Time Commitment: If you decide to take part in this project, you will be asked to fill out a survey. The survey questions are mainly multiple choice. However, there will be a few questions where you may add an open-ended response. The survey is accessed online, and I will provide you with the link. Completing the survey will take approximately 25 to 40 minutes. I expect around 50 people will take part in this project.

Benefits and Risks: There will be no direct benefit to you for taking part in this project. The findings from this project may help create a better understanding of situational emotions and will contribute to psychology's understanding of emotions. There is little risk to you in participating in this project. Risk may be the experience of emotional distress or psychological pain, similar in degree to remembering a memory.

Confidentiality and Privacy: I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses.

Voluntary Participation: You can freely choose to take part or to not take part in this survey. There will be no penalty or loss of benefits for either decision. If you do agree to participate, you can stop at any time. Some questions or statements may ask questions about your past or your feelings. You may choose how much you disagree or agree with
each question or statement, and mark it accordingly in the box or the circle. Each question or statement has a ranking scale to choose from, some range from strongly disagree to agree strongly. For example, one question states:

"Being with a happy person picks me up when I'm feeling down.

o-Never
o-Rarely
o-Usually
o-Often
o-Always
o-I feel some other emotion (name your feeling)____________"

At any time, if you feel particular questions are sensitive in nature, or make you uncomfortable, you may omit answers or quit the survey entirely. If you experience emotional distress, please do not hesitate to contact the UAF Student Health Center at (907) 474-7043, located at 612 N. Chandalar Drive, Fairbanks, AK 99775-5580. Additional information and professional resources are offered after completing this survey.

**Compensation:** Please consult with your instructor about any possible extra credit that may be available for participating in this project. If your instructor has agreed to award extra credit, please print the final survey page titled "Thank you for participating". You may choose to end the survey at any time, and withdraw from the research at any time and still qualify for extra credit. If you would like to withdraw and still qualify for extra credit, click the "next" button on the survey page until you reach the page titled "Thank you for participating". This is the final page of the survey, you may print this for your instructor for possible extra credit. You may stop answering questions anytime and withdraw from the survey entirely by leaving the browser.
Questions: If you have any questions about this study, please email me at claireva@hawaii.edu. You may also contact my adviser, Dr. Elaine Hatfield, at elainehatfield582@gmail.com, or 808.956.6276. If you have questions or concerns about your rights as a research participant, you can contact the UAF Office of Research Integrity at 474-7800 (Fairbanks area) or 1-866-876-7800 (toll-free outside the Fairbanks area) or uaf-irb@alaska.edu, or you may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu.

To Access the Survey: Please go to the following link:

https://www.surveymonkey.com/s/UH_for_UAF

Completing the survey will be considered as your consent to participate in this study.

Please print a copy of this page for your reference.
Appendix B: Demographics Questionnaire

A few questions about you and your background.

*Your information is anonymous. Please don’t include your name or other identifiers.*

1. What gender do you consider yourself to be?
   - Female
   - Male

2. What is your age?

3. How do you see yourself culturally? Please mark all ethnic or cultural groups that you feel a part of.
   - Alaskan Native
   - Canadian First Native
   - Hawai‘ian
   - Other Polynesian (Samoan, Tongan, New Zealander, etc.)
   - Vietnamese, Thai, other Southeast Asian
   - Indian, Pakistani, and other South Asian
   - Chinese
   - Japanese
   - Korean
   - Middle Eastern/Western Asian (Iranian, Saudi Arabian, etc.)
   - European
   - African
   - Mexican, Central American, South American, Hispanic, Latino
   - North American
   - Other (please specify)

4. Please indicate the one cultural group you identify with most.

5. In your primary culture, is individual achievement or group/family achievement more important?
   - Individual
6. How long have you lived in the US?
0-4 years
5-9 years
10-14 years
15-19 years
20-24 years
25-29 years
>30 years

7. What is your religious or spiritual affiliation?
Buddhist
Hindu
Catholic
Protestant
Jewish
Muslim
Spiritual
Other (please specify)

8. How religious or spiritual do you consider yourself? Please select one
Not at all
A little bit
Somewhat
Quite a bit
Very

9. Please mark your highest level of education (check one)
Grade School
High School or equivalent
Some college
Military training
Technical or Vocational School
BS, BA or other four-year degree
MS, MBA, PhD, or other graduate or professional degree
10. Considering the adults in your household when you were growing up, please mark the highest level of education that was completed.
Grade School
High School
Some College
Military training
Technical or Vocational School
BS, BA or other four-year degree
MS, MBA, PhD, or other graduate or professional degree
Other (please specify)
Appendix C: Self Report Psychopathy Scale III

SRP III – R13

Please rate the degree to which you agree with the following statements about you. You can be honest because your name will be detached from the answers as soon as they are submitted.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td>Strongly</td>
<td>Strongly</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I’m a rebellious person.
2. I’m more tough-minded than other people.
3. I think I could "beat" a lie detector.
4. I have taken illegal drugs (e.g., marijuana, ecstasy).
5. I have never been involved in delinquent gang activity.
6. I have never stolen a truck, car or motorcycle.
7. Most people are wimps.
8. I purposely flatter people to get them on my side.
9. I’ve often done something dangerous just for the thrill of it.
10. I have tricked someone into giving me money.
11. It tortures me to see an injured animal.
12. I have assaulted a law enforcement official or social worker.
13. I have pretended to be someone else in order to get something.
14. I always plan out my weekly activities.
15. I like to see fist-fights.
16. I’m not tricky or sly.
17. I’d be good at a dangerous job because I make fast decisions.
18. I have never tried to force someone to have sex.
19. My friends would say that I am a warm person.
20. I would get a kick out of ‘scamming’ someone.
21. I have never attacked someone with the idea of injuring them.
22. I never miss appointments.
23. I avoid horror movies.
24. I trust other people to be honest.
25. I hate high speed driving.
26. I feel so sorry when I see a homeless person.
27. It's fun to see how far you can push people before they get upset.
28. I enjoy doing wild things.
29. I have broken into a building or vehicle in order to steal something or vandalize.
30. I don’t bother to keep in touch with my family any more.
31. I find it difficult to manipulate people.
32. I rarely follow the rules.
33. I never cry at movies.
34. I have never been arrested.
35. You should take advantage of other people before they do it to you.
36. I don’t enjoy gambling for real money.
37. People sometimes say that I’m cold-hearted.
38. People can usually tell if I am lying.
39. I like to have sex with people I barely know.
40. I love violent sports and movies.
41. Sometimes you have to pretend you like people to get something out of them.
42. I am an impulsive person.
43. I have taken hard drugs (e.g., heroin, cocaine).
44. I'm a soft-hearted person.
45. I can talk people into anything.
46. I never shoplifted from a store.
47. I don’t enjoy taking risks.
48. People are too sensitive when I tell them the truth about themselves.
49. I was convicted of a serious crime.
50. Most people tell lies everyday.
51. I keep getting in trouble for the same things over and over.
52. Every now and then I carry a weapon (knife or gun) for protection.
53. People cry way too much at funerals.
54. You can get what you want by telling people what they want to hear.
55. I easily get bored.
56. I never feel guilty over hurting others.
57. I have threatened people into giving me money, clothes, or makeup.
58. A lot of people are “suckers” and can easily be fooled.
59. I admit that I often “mouth off” without thinking.
60. I sometimes dump friends that I don’t need any more.
61. I would never step on others to get what I want.
62. I have close friends who served time in prison.
63. I purposely tried to hit someone with the vehicle I was driving.
64. I have violated my parole from prison.
KEY TO SRP-III.13 SUBSCALES

Interpersonal Manipulation (IPM)

Callous Affect (CA)

Erratic Life Style (ELS)

Anti-Social Behavior (ASB)
5R, 6R, 10, 12, 18R, 21R, 29, 34R, 43, 46R, 49, 52, 57, 62, 63, 64

SCORING

Reverse the scoring on the items marked ‘R’ above (1=5)(2=4)(3=3)(4=2)(5=1).

Average the 16 items in each subscale to get their means.

The overall SRP-III score is simply the mean of the four subscales on a 5-point scale.

Norms for offender, student, and community samples

<table>
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<tr>
<th></th>
<th>IPM</th>
<th>CA</th>
<th>ELS</th>
<th>ASB</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offenders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Wisconsin</td>
<td>2.80</td>
<td>2.75</td>
<td>3.31</td>
<td>3.00</td>
<td>2.97</td>
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<tr>
<td>College students</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texas &amp; UBC</td>
<td>2.38</td>
<td>2.31</td>
<td>2.56</td>
<td>1.56</td>
<td>2.20</td>
</tr>
<tr>
<td>Community</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eugene-Springfield</td>
<td>1.94</td>
<td>1.88</td>
<td>1.94</td>
<td>1.25</td>
<td>1.75</td>
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</tbody>
</table>

*Note.* Entries are item means on 5-point scales. Student and community samples have equal number of male and female respondents. Offenders are all male. Sample sizes range from 300 to 1500.

Overall alpha reliabilities from the student sample were:

<p>| | | | | | |</p>
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<tr>
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<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>IPM</td>
<td>(.81)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>(.79)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELS</td>
<td>(.74)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASB</td>
<td>(.82)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall SRP (.81).
### SRP-SF means by males, females (Texas Sample)

#### Report

<table>
<thead>
<tr>
<th>Gender</th>
<th>srp_int</th>
<th>srp_aff</th>
<th>srp_lif</th>
<th>srp_ant</th>
<th>SRP_29</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 male</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16.0980</td>
<td>16.0539</td>
<td>17.4216</td>
<td>12.5196</td>
<td>62.0931</td>
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<td>204</td>
<td>204</td>
<td>204</td>
<td>204</td>
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<tr>
<td></td>
<td>Std. Deviation</td>
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<td>4.69798</td>
<td>5.24463</td>
<td>4.48145</td>
</tr>
<tr>
<td>2 female</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13.6718</td>
<td>12.7752</td>
<td>14.9793</td>
<td>10.4574</td>
<td>51.8837</td>
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<td>387</td>
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<tr>
<td>Total</td>
<td>Mean</td>
<td></td>
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<tr>
<td></td>
<td>14.5093</td>
<td>13.9069</td>
<td>15.8223</td>
<td>11.1692</td>
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<td>591</td>
<td>591</td>
<td>591</td>
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<tr>
<td></td>
<td>Std. Deviation</td>
<td>5.09198</td>
<td>4.68533</td>
<td>5.01056</td>
<td>3.89373</td>
</tr>
</tbody>
</table>

Paulhus (2011), used with permission.
Appendix D: Emotional Contagion (EC) Scale

Please read each statement and circle how often you feel or act in the way described.

If you feel some other emotion in that situation, please also check the box and write in the name of the other emotion.

1. If someone I'm talking with begins to cry, I get teary-eyed.

0  1  2  3  4
Never  Rarely  Usually  Often  Always

☐ I feel some other emotion ________________________(name your feeling)

2. Being with a happy person picks me up when I'm feeling down.

0  1  2  3  4
Never  Rarely  Usually  Often  Always

☐ I feel some other emotion ________________________(name your feeling)

3. When someone smiles warmly at me, I smile back and feel warm inside.

0  1  2  3  4
Never  Rarely  Usually  Often  Always

☐ I feel some other emotion ________________________(name your feeling)

4. I get filled with sorrow when people talk about the death of their loved ones.

0  1  2  3  4
Never  Rarely  Usually  Often  Always

☐ I feel some other emotion ________________________(name your feeling)
5. I clench my jaws and my shoulders get tight when I see the angry faces on the news.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
</tbody>
</table>

☐ I feel some other emotion ______________________(name your feeling)

6. When I look into the eyes of the one I love, my mind is filled with thoughts of romance.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
</tbody>
</table>

☐ I feel some other emotion ______________________(name your feeling)

7. It irritates me to be around angry people.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
</tbody>
</table>

☐ I feel some other emotion ______________________(name your feeling)

8. Watching the fearful faces of victims on the news makes me imagine how they might be feeling.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
</tbody>
</table>

☐ I feel some other emotion ______________________(name your feeling)

9. I am happy and content when the one I love holds me close.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
<tr>
<td>10. I get tense when overhearing an angry quarrel.</td>
<td></td>
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<tr>
<td>-----------------------------------------------</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
<tr>
<td>11. Being around happy people fills my mind with happy thoughts.</td>
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<td>0</td>
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<td>2</td>
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</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
<tr>
<td>12. I sense my body responding when the one I love touches me.</td>
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<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
<tr>
<td>13. I notice myself getting tense when I'm around people who are stressed out.</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Usually</td>
<td>Often</td>
<td>Always</td>
</tr>
</tbody>
</table>

0 1 2 3 4
Never Rarely Usually Often Always

15. Listening to the shrill screams of a terrified child in a dentist's waiting room makes me feel nervous.

0 1 2 3 4
Never Rarely Usually Often Always

Note: The higher the score, the more susceptible to emotional contagion a person would be said to be. Happiness items = 2, 3, & 11. Love items = 6, 9, & 12. Fear items = 8, 13, & 15. Anger items = 5, 7, & 10. Sadness items = 1, 4, & 14. Total score = all items.

Appendix E: The Toronto Empathy Questionnaire (TEQ)

Please read each statement carefully and consider how frequently you feel or act in the manner described. Circle your answer on the scale.

There are no right or wrong answers or trick questions. Please answer each question as honestly as you can.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>When someone else is feeling excited, I tend to get excited, too.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Other people’s misfortunes do not disturb me a great deal</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>It upsets me to see someone being treated disrespectfully</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>I remain unaffected when someone close to me is happy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>I enjoy making other people feel better</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>I have tender, concerned feelings for people less fortunate than me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>When a friend starts to talk about his/her problems, I try to steer the conversation towards something else</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>I can tell when others are sad even when they do not say anything</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>I find that I am “in tune” with other people’s moods</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10.</td>
<td>I do not feel sympathy for people who cause their own serious illnesses</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11.</td>
<td>I become irritated when someone cries</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12.</td>
<td>I am not really interested in how other people feel</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13.</td>
<td>I get a strong urge to help when I see</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
someone who is upset

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. When I see someone being treated unfairly, I do not feel very much pity for them</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I find it silly for people to cry out of happiness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. When I see someone being taken advantage of, I feel kind of protective towards him/her</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Scoring: Item responses are scored according to the following scale for positively worded Items 1, 3, 5, 6, 8, 9, 13, 16. Never = 0; Rarely = 1; Sometimes = 2; Often = 3; Always = 4. The following negatively worded items are reverse scored: 2, 4, 7, 10, 11, 12, 14, 15. Scores are summed to derive total for the Toronto Empathy Questionnaire.

Spreng, McKinnon, Mar, & Levine (2009), p 70-71.
References


http://www.dsm5.org/proposedrevision/Pages/proposedrevision.aspx?rid=16

American Psychological Association (2012). *DSM-4 and DSM-5 Criterion for Personality Disorders*. PDF. Retrieved from


Mehrabian & Epstein, 1972, the BEES (Mehrabian, 2000), the Hogan Empathy Scale (1969), as well as a few less-known scales, such as the Nursing Empathy Scale (Reynolds, 2000), the Scale of Ethnocultural Empathy (Wang et al., 2003), and the Measure of Emotional Intelligence (Schutte et al., 1998).


UAF Student Demographics retrieved from http://www.uaf.edu/facts/

UH Student Demographics retrieved from https://www.hawaii.edu/institutionalresearch


http://www.sevencounties.org/poc/view_doc.php?id=564