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Rock, Rap, and Rage: Which genre elicits negative emotional contagion

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ROCK, RAP, AND RAGE: WHICH GENRE ELICITS NEGATIVE EMOTIONAL CONTAGION

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Abstract

Previous studies have analyzed the effects of the heavy metal and rap music genres, both together and separately, to study the music's influence on aggressive behavior. A lack of studies analyzing the effect of one group against the other are available to assess which group it is that elicits higher negative emotional contagion. The current study is a follow-up to a pilot study conducted to assess whether it was heavy metal or rap music that elicited higher negative emotional contagion. Personality type using the *10-Item Big Five Inventory* and the *Trait Anger Scale* allowed the researcher to compare several personality dimensions with their reactions to the music they were assigned to. There was no significant findings in the current research which is contradictory to the pilot study conducted in 2019.

Keywords: Rock, rap, aggression, emotional contagion, music genre, personality traits

Rock, Rap, and Rage:

Which Genre Elicits Negative Emotional Contagion

"It is always fatal to have music or poetry interrupted." – George Eliot

"I'm never enough. You bled me dry, using me up. Dissatisfied, and used. Another key to the empty spot in you." - Slipknot

"I got a song filled with shit for the strong willed. When the world gives you a raw deal. Set you off 'til you scream, "piss off, screw you." – Eminem

Music is one of the most used forms of media among young people in America (Pieschl & Fegers, 2015). According to SoundMaximum.com, in 2018, the *Music Genre Song Consumption Shares in U.S. 2018* showed that among adolescents, Hip-Hop/Rap was the most listened to form of music at 24.70%. Pop came in second at 19.00%. Rock came in third at 11.70% (soundmaximum.com) in music consumption throughout the United States. In music, artists pour their emotions about everyday life, experiences, dreams, hopes, and fears. Music is the one area of life that can be experienced at any time and can have a broad range of influence on psychological functions and is thought to be the way humans regulate those emotions (Chamorro-Premuzic, T. and Furnham, A., 2007. pg. 175-176). Throughout the history of Heavy Metal and Rap, a sense of anger has been a powerful emotion that runs through the lyrics they sing. Heavy metal music is known for its loudness and typically has a fast tempo with powerful vocals. Most heavy metal is played with drums, electric guitars, and screaming. Rap music is known for its fast-paced speech, often rhyming lyrics, and predominately focuses on those lyrics. Throughout the lifetime of heavy metal and rap, there have been multiple attempts to ban the

genres for their overall aggressive nature (Shafron & Karno, 2013) and raised reactions among legislation calling on changes (Hunnicutt & Andrews, 2009).

The NCAC presents a brief outline of the history of music censorship (NCAC.org). In 1934, Congress created the Federal Communications Commission (FCC) to help monitor different media outlets. After establishing the FCC, police and local governments started to censor and ban music that they found obscene. From seizing records at the border to radio stations burning them, performers found themselves more and more censored and banned from performances as the years progressed. In 1955, Elvis received threats of arrest from Florida police if he did not stand still while on stage. It was thought that his dancing was 'obscene,' meanwhile, an Alabama radio station rejected R&B music and would not play any on their channel. Just a year later in Alabama, Nat King Cole was assaulted for bringing out "animalistic behavior" in people through his music. Not until 1973 did court cases start to appear, analyzing the First Amendment and obscenities (ncac.org). Even as late as October 2019, there were successful removal of rappers from music festivals for concerns on safety. While these court cases paved the way for artists to release the music they wanted, it still meets criticisms to this day. Some of the intentions to ban music has to do with lyric content with drugs, sex, and violence, while other bans focused on the dancing affiliated with the music.

The aggression in the lyrics of heavy metal and rap music, while allowing the artist to get out their feelings, can also cause negative emotional contagion. Emotional contagion is an unconscious and automatic response to the emotional feelings of others. These feelings often leave the person feeling the same as their companion (Hatfield, Cacioppo & Rapson, 1993). Negative emotional contagion refers to aggression, anger, and other negative thoughts, feelings, and actions that a person is hearing or witnessing become their own. One study found that when

college students hear violent music, it raised aggressive thoughts/feelings (Anderson, Carnagey, & Eubanks, 2003). The researchers also found that trait hostility positively correlated with state hostility with violent music in general, not one specific genre of music. While many researchers study the effects of one genre (heavy metal or rap) against a control group, or both genres against a control group, the current study will look at each individually against a control group to see which genre has higher negative emotional contagion. The present study seeks to understand whether heavy metal or rap elicits higher levels of negative emotional contagion. These emotions will be analyzed while listening to a representative from the heavy metal or rap music genres. There is also a control group in which the song is not supposed to elicit negative emotional contagion. Measuring the feelings of merging emotional contagion with the music assigned will allow for the study of each genre and the possible effects brought on to the participants. Lyrics will not be a factor in this study; but rather the overall nature of the instrumental music itself. This study explored the range of differences (if there are differences) between the groups.

A secondary look at the research will test if personality traits correlate with the emotions felt during their listening experience. Studies by Thompson, W.F., Geeves, A.M., and Olsen, K.N. (2019) and Sharman, L., and Dingle, G.A. (2015) found that negative emotional contagion does not increase within naturally angry person. The research showed correlations between extreme music and the positive effect on an angry person's ability to process healthy ways of coping with anger. Thompson and colleagues found that individuals who preferred music such as heavy metal (rebellious and intense) were "found to be more open to new experiences, considered themselves to be intelligent and athletic, and showed no signs of neuroticism or disagreeableness" (Thompson, Geeves, & Olsen, 2018; pg. 219). The researchers also found a correlation between interactions with violent music and emotional and behavioral problems.

In *The Musical Temperament* (Kemp, 1996), the author cites many research studies involving personality and the kind of music preferred. For example, studies have shown that extroverts will gravitate towards classical music that is solid and has weight; it is bright, predictable, and balanced. Introverts, however, will favor music that is deep in meaning for them. They feel that they can become one with the music and the feelings the music releases (p.123). Kemp also mentioned the connection to past experiences that draw people to specific music (125). While the book focuses on classical music, the ideology can apply to any form of music. The feelings can remind you of happy times, sad times, the best day of your life or the worst day of your life. Either way, the music allows you to feel those emotions and give the listener a chance to process those feelings.

Music aids in the regulation of emotions and developing coping strategies (Chamorro-Premuzic, T., and Furnham, A. (2007). The psychological benefits of music range from expressing emotion, to dealing with death, to patients with Dementia and Alzheimer's. In fact, music has been an important part of life since Ancient Greece (Liljeström, S., Juslin, P.N., and Västfjäll, D., 2012). Researchers have also found that self-chosen music can show favoring elements when dealing with the emotions expressed. While the current study does not allow participants to choose the song they are assigned, it will be interesting to note whether their usual choices in music will show differences in how they elicit emotions.

A pilot study was conducted in 2019 to assess negative emotional contagion with the music selected for the current study. The pilot study also used the same testing as the current study, but additional testing was added for assessing personality. The current study also added a wider participation pool which included men and other age brackets. The goal was to assess the

differences between men and women, however, there was not enough male participants to complete those tests.

The following hypothesis was analyzed using multiple tests: the Subjective Happiness Scale (SHS), Word Fragment Completion Task, Subjective Anger Scale (SAS), Trait Anger Scale (TAS). The Word Fragment Completion Task and the Subjective Anger Scale assessed any increase in negative emotional contagion immediately after listening to the assigned song. We predict that there will be an overall difference in negative emotional contagion as measured by the number of aggressive words in the Word Fragment Completion Task and the Subjective Anger Scale between the heavy metal, rap, and control groups.

Hypothesis 1: There will be a difference in the levels of negative emotional contagion with rap showing greater levels of anger than heavy metal.

Hypothesis 2: Personality traits will be significantly correlated with emotions experienced during listening.

Hypothesis 3: People who score lower on trait anger (greater dispositional happiness) will show less anger than people who report higher trait anger scores.

Method

Participants

A sample size of $N = 79$ was obtained from a small southern women's college, and throughout various outside areas from business flyers, social media outlets, family, and friends. All participants participated on a voluntary basis and had to be at least 18 years of age. A total of 18 participants were removed because they did not complete the survey or did not consent to the

study. This left us with a sample size of *N*= 61. Everyone is eligible to participate in the study so long as they were at least 18. There were 42 Hollins University students ranging from First Years to Horizon students (9 First Years, 14 sophomores, 10 juniors, 8 seniors, and 1 Horizon Student). There were 18 participants that were not students of Hollins University. Age ranges of the participants were as follows: 34 (18-24 years old), 10 (25-34 years old), 9 (35-44 years old), 4 (45-54) years old, 2 (55-64 years old), and 2 (65+ years old).

The consent form informed the participants that they could stop at any time with no repercussions because they withdrew. They were given a vague idea of what the study was to analyze without giving away the true nature as to not elicit what the research wants to find, but rather what they actually felt while participating. Participants were also informed of the potential violent themes and strong content of the songs. There were other demographic questions, however, they were just to see the broad ranges of participants gathered. For their participation, extra credit in psychology classes were offered and both non-students and students were entered into a drawing for one of two $25 Amazon gift cards. The Debriefing form at the conclusion of the study informed the participants of the true nature of the study and give information for any resources they may need in the unlikely event that the participant needs to speak with someone.

Design

The study was conducted by a between-subjects experimental design. Three groups (heavy metal, rap, and control groups) completed the Subjective Happiness Scale (SHS), Word Fragment Completion Task, Subjective Anger Scale (SAS), Trait Anger Scale (TAS), 10-item Big Five Inventory, and Mood Questionnaire. We examined the differences between their assigned song and increases in the participants overall negative emotions as well as their general happiness and anger traits. The Subjective Happiness Scale was to measure the participant's

general state of happiness and how they see their happiness as compared to others around them. The 10-item Big Five Inventory was given to assess the participants' personality type before testing to assess if there was a correlation between their emotion levels and their personality type. The Anger Scales observed their general tendency for anger and then their current anger when they listened to their assigned song. With both the happiness and anger scales, the higher the participant scores, the greater the happiness and anger.

Materials and Measures

Classical Control Music - Classical music for this study was defined as the song *Canon in D Major* by Johann Pachelbel (composed in 1680 to 1706). The song is 6:16 in length, however, the participant listened to 1:00 minute of the song to, in theory, obtain a calmer mood state (Krahne & Bieneck, 2012). Participants were instructed to play music at a comfortable volume level with noise cancelling headphones. If noise cancelling headphones were not available, then the participant was instructed to move to a quiet area. The Classical music was played for one minute at the beginning of the study and again at the end of the study to start participants at a calmer mood state and to return them to a calmer mood state after listening to the assigned material.

Heavy Metal - Heavy metal music was defined in the current research as the song *Nero Forte* by the band *Slipknot* (*We are not your Kind*, 2019 by Roadrunner Records). The song is 5:16 long and the length was to allow more response time to emotional contagion within the song. Participants were instructed to play the music at a comfortable volume level with noise cancelling headphones. If noise cancelling headphones were not available, then the participant was instructed to move to a quiet area.

Rap Music - Rap music for this study was defined as the song *Venom* by Eminem (*Kamikaze*, 2018 by Aftermath Entertainment). The song is 4:34 long and the length was to allow more response time to the emotional contagion within the song. Participants were instructed to play music at a comfortable volume level with noise cancelling headphones. If noise cancelling headphones were not available, then the participant was instructed to move to a quiet location.

Control Music – The control group was defined in the current research as the song *Africa* by the band Toto (*Toto IV*, 1982 by producer Toto). The song is 4:35 in length and, while not supposed to elicit negative feelings, allowed for more response time for emotional contagion within the song. Participants were instructed to play music at a comfortable level with noise cancelling headphones. If noise cancelling headphones were not available, then the participant was instructed to move to a quiet area.

Aggression - For the purpose of the current study, aggression will be defined as an increase in agitated/aggressive feelings brought on solely by listening to the music given to the participant.

These thoughts/feelings will be evaluated using the following tests:

Mood Questionnaire (Wilhelm & Schoebi, 2007) – The current study used the Mood Questionnaire (See Appendix F) to assess the participants overall mood before and after the survey. The questionnaire consists of three questions concerning how they felt at the time the questions were asked, using a 7-point Likert scale. “At this moment, I feel:” and ranged from 1 (*very contented; agitated; tired*) to 7 (*very discontented; calm; awake*).

Subjective Happiness Scale (SHS) (Lyubomirsky, Sonja & Lepper, 1997) - The current study assessed the general overall happiness of the participant by completing the Subjective Happiness Scale which consists of a 4 question 7-point Likert scale ranging from 1 (*least happy*) to 7 (*generally happy*). The exact label on each question varied. The SHS scale was completed at the beginning of the study to rate the participants overall happiness assess that testing was not influence by negative choices. A sample question is "In general, I consider myself:" Total scores range from 4-28 in which higher scores mean higher general happiness. The Cronbach's Alpha is good to excellent in internal consistency. Alpha range is between 0.79-0.94. Test-retest reliability is also good to excellent, ranging from 0.55-0.90 (Lyubomirsky, Sonja & Lepper, Heidi S, 1997).

The 10-item Big Five Inventory (Rammstedt, B., & John, O.P.,2006) is an inventory of 10 questions ranked on a 5-point Likert scale (Disagree Strongly to Agree Strongly) and assesses how the participant sees themselves with questions like, "I see myself as someone who…is reserved." This inventory is a shortened version of the original Big Five Inventory and has a test-retest reliability of .75. Rammstedt & John make an important note that this inventory is not and should not replace a large-scale personality testing, but if time is extremely limited, it will allow for a general idea of the personality traits of the participant. In the current study, personality is not the focus, but rather a secondary testing means and therefore, the test should suffice go gain a general knowledge of the participant for the purpose of the study.

Word Fragment Completion Task (Khazon, 2011) – The current study assessed the tendency for aggression by using a 16-item word fragment completion task. This task was completed as fast as possible, by completing the words with the first letter that came to mind. The goal was to see if participants thought of a negative or a positive word. Examples of an item is "A_use". Filling in with a negative response would appear as "Abuse" where a positive answer

would be "Amuse." A higher negative word count will indicate that the participant has more negative thought processing.

Subjective Anger Scale (SAS) (Spielberger & London, 1983) – The current study assessed how the participant was feeling after the completion of the music. This test is a 15-item inventory that has a 4-point scale rated from 1 (*not at all*) to 4 (*very much so*). Scores ranged from 15-60 with higher scores representing higher levels of anger. This allowed for a better accuracy of the way they felt after the song. The reliability coefficient ranges from .84-.93 depending on the various sample types given and is based on a Cronbach's alpha.

Trait Anger Scale (TAS) (Spielberger & London, 1983)- The current study assessed whether the participant was a naturally angry person. The test is composed of 15 questions to which the participant rates each question from 1 (*Almost never*) to 4 (*Almost always*). Scores range from 15-60 with higher scores meaning more generalized anger. This allowed the current study to look for extreme anger scores. The reliability coefficient ranges from .84-.93 depending on the various sample types given and is based on a Cronbach's alpha.

Procedures

The participants went online to complete the survey. The participants read and signed an informed consent form that told briefly what the study was about and that they may stop at any time without repercussions. Upon agreeing to the consent, the participant completed a Demographics Questionnaire that asked things like how they heard about the study, age range, if they were students, class rank, ethnicity, race, and music preference. Participants were then given the Mood Questionnaire and the 10-item Big Five Inventory. After, they were instructed to put on

headphones at a comfortable level that allowed for minimal outside noise and listened to the classical control music. This was to achieve a baseline mood for all participants.

The participants were then randomly assigned one of three songs (Slipknot, Eminem, or Toto). They then listened to the song in its entirety. The survey site was advised to randomly assign the song. After the completion of the song, the participant was assigned two tests: The Word Fragment Completion Task and the Subjective Anger Scale (SAS). The survey site was informed to randomly assign the order of the test to give validation that it was not the test itself that was causing any negative feelings. Next, Participants were given the Mood Questionnaire again to assess any changes that may have occurred. After this, participants were given the TAS, which allowed for us to know the participants normal state of anger. This helped to understand any extreme cases. Once all the tests were completed, the participant was given the classical control music again with a calming waterfall scene photo. The music and picture were to return the participants to the same state or better than when the study started. Finally, to check for extremely lower levels of aggression, the participants were asked if they had ever heard of their assigned song before and if they liked it. The Debriefing Form ended the survey, explaining the true meaning of the study and gave information on resources participants could contact if they should need them for any emotional upset. The participant was then taken to the extra credit and/or gift card survey to fill out the information, if they wished to do so.

Results

A one-way ANOVA was used to analyze the effects of music on negative emotional contagion. There was no significant result found, F (2, 58) = .62, p > .05. A one-way ANOVA was then conducted to analyze the Subjective Anger scores with each band to test for negative emotional

contagion. There was no significant results found, F (2, 58) = 1.059, p. 354. Hypothesis 1 was not supported for this study.

A Pearson r correlation was done to assess participant's happiness and the number of aggressive words they completed. A significant correlation was found, r (59) = -.35, $p < .01$. This data shows that happier people were produced fewer aggressive word counts during the study. A Person r correlation was computed to analyze if Trait Anger Scores correlated with aggressive word count to determine if naturally angry people produced more negative words which was also produced a significant finding, r (59) = .40, $p < .001$. These two tests together helped to ensure the accuracy of the research.

Happiness was also tested with personality type and there were significant findings. Happiness and extraversion was significant, r (59) = .36, $p < .005$. Happiness and Agreeableness was significant, r (59) = .51, $p < .001$. A marginally significant finding between Happiness and Conscientiousness was found r (59) = .20, $p = .10$. Happiness and Neuroticism was significant r (59) = -.54, $p < .001$. With these findings, it can be concluded that Hypothesis 2 was supported.

A Pearson r correlational study was used to also analyze whether participants' happiness scores were related to their SAS scores. The correlation was in the predicted direction, however, it failed to reach statistical significance, r (59) = -.20, $p = .13$.

I also wanted to analyze the difference between males and females in connection with the negative emotional contagion expressed, however, the study have a sufficient number of male participants to analyze this data. Race/Ethnicity analysis was also unable to be obtained because there was an overwhelming majority of Caucasian/White participants.

Discussion

The present study investigated the relationship between aggressive negative emotional contagion with heavy metal, rap, and control music genres. It was hypothesized that there would be an overall difference in aggression levels through the Word Fragment Completion Task and the Subjective Anger Scale. A difference was predicted between the heavy metal and rap, however, there was no suspected knowledge of which genre would elicit more negative emotional contagion of anger. A previous pilot study that was conducted in 2019 showed there was a support of this hypothesis and there was a difference in the overall negative emotional contagion in each music group. In the current study, however, there was no support for Hypothesis 1. The hypothesis was also not supported (as it was in the pilot study) for the differences in the target groups; the heavy metal and rap genres. The hypothesis that was shown to be supported in the previous study was shown to not have support in the current study. The opposite, in fact, occurred; while not significant, the control group showed to have higher levels of negative emotional contagion. Unsure of why this happened, I inspected the data for anomalies that might explain the failed test of this hypotheses. Results of these tests suggested there was nothing peculiar about this sample that would have thwarted tests of the hypothesis.

The study was able to find differences within the personalities of the participants and their responses to various questions. Hypothesis 2 set out to correlate the participants happiness scores and the number of aggressive words they completed. The hypothesis stated that happier participants would complete fewer negative words, which was statistically supported in this study.

Another aspect for Hypothesis 2 that was tested was personality types and happiness scores. Happiness was significantly correlated with Extraversion, Agreeableness, and Neuroticism. It was marginally significant with Conscientiousness. These traits are naturally

correlated with happiness, so these aspects of happiness help to ensure the accuracy of the study and we can conclude that the hypothesis was supported.

Limitations and Future Research

The current study was conducted during the COVID-19 pandemic and hindered the research efforts. While looking at a broad range of participants through Hollins University and recruited participants from outside of the University through flyers, social media, and friends/family, the number of possible participants was inhibited because of restrictions. While the study did gain a broad range of participants, it was not able to get a true representation of the overall population around the United States and the world.

I also relied on self-reported testing. The information gathered from the participants could have been gathered under circumstances that researchers could not control. The participants could have deduced what the study was assessing and provided biased responses on the basis of what they surmised the study to be about. The participants also could have not been giving their full effort and completing other tasks at the time. There is also the possibility that participants' prior exposure to the songs included in this study biased their responses. It is unclear from the data collected whether this was the case but it remains a possibility.

Despite the possible limitations that were beyond our control for this study, all data was used at the values they gave to the study. For future studies, research could be conducted on a larger scale (post COVID-19), being able to encompass a wider range of students, faculty, staff, and possible surrounding communities. While it will still be a small sample size, it will allow for a better overall representation. The study would also be conducted in a lab setting to ensure that all materials, procedures, and the environment are the same for all participants. It will also help

to assess any abnormal behavior before testing has begun that may give extreme results. A future study could also include analysis of the participants' physiological state by measuring heart rate and blood pressure. This was to be conducted in the current study; however, pandemic guidelines prohibited this from happening. Documenting the participant's physiological state would allow for the researchers to see if actual changes in the body occur when listening to the music.

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Appendix A

Demographic Questions

1. What gender do you identify as?
    a. Male
    b. Female
    c. Other (please specify) _____
2. What race best describes you? (please choose only one)
    a. White/Caucasian
    b. Black or African American
    c. Hispanic American
    d. American Indian or Alaskan Native
    e. Asian/Pacific Islander
    f. Multiple ethnicity/other (please specify) _____
3. What is your class ranking?
    a. First Year
    b. Sophomore
    c. Junior
    d. Senior
    e. Horizon
4. Do you live in the United States permanently?
    a. Yes (list state) _____
    b. No (what country) _____
5. What type of music do you generally listen?

Appendix B

Subjective Happiness Scale

For each of the following statements and/or questions, please indicate the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1	2	3	4	5	6	7
not a very happy person						a very happy person

2. Compared with most of my peers, I consider myself:

1	2	3	4	5	6	7
less happy						more happy

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

Appendix C

Subjective Anger Scale (SAS)

A number of statements that people have used to describe how they feel are given below. Read each statement below and indicate how you feel *at the moment* by placing the appropriate number next to each item.

1 = Not at all
2 = Somewhat
3 = Moderately so
4 = Very much so

____ 1. I am mad.

____ 2. I feel angry.

____ 3. I am burned up.

____ 4. I feel irritated.

____ 5. I feel frustrated.

____ 6. I feel aggravated.

____ 7. I feel like I'm about to explode.

____ 8. I feel like banging on the table.

____ 9. I feel like yelling at somebody.

____ 10. I feel like swearing.

____ 11. I am furious.

____ 12. I feel like hitting someone.

____ 13. I feel like breaking things.

____ 14. I am annoyed.

____ 15. I am resentful.

Appendix D

Word Fragment Completion Task

Instructions: Complete the following word fragments as quickly as possible. If you are unable to think of a word immediately, please skip the question and move on to the next one.

1. A _ use
2. Ange _
3. T _ m _ er
4. _ age
5. _ ude
6. _ asty
7. _ arm
8. _ ain
9. H _ t
10. Sl _ _
11. _ ight
12. C _ rse
13. _ ell
14. Beh _ _ d
15. B _ rn
16. P _ _ son

Appendix E

Trait Anger Scale (TAS)

A number of statements that people have used to describe themselves are given below. Read the statements below and indicate how you *generally* feel by placing the appropriate number next to each item.

1=Almost never
2= Sometimes
3= Often
4= Almost always

___ 1. I have a fiery temper.

___ 2. I am quick tempered.

___ 3. I am a hotheaded person.

___ 4. I get annoyed when I am singled out for correction.

___ 5. It makes me furious when I am criticized in front of others.

___ 6. I get angry when I'm slowed down by others' mistakes.

___ 7. I feel infuriated when I do a good job and get a poor evaluation.

___ 8. I fly off the handle.

___9. I feel annoyed when I am not given recognition for doing good work.

___ 10. People who think they are always right irritate me.

___ 11. When I get mad, I say nasty things.

___ 12. I feel irritated.

___ 13. I feel angry.

___ 14. When I get frustrated, I feel like hitting someone.

___15. It makes my blood boil when I am pressured.

Appendix F
Mood Questionnaire

Please answer the following questions to indicate how you ***currently*** feel.

1. At this moment, I feel:
    a. Very contented
    b. Contented
    c. Somewhat Contented
    d. Neither contented nor discontented
    e. Somewhat discontented
    f. Discontented
    g. Very discontented

2. At this moment, I feel:
    a. Very agitated
    b. Agitated
    c. Somewhat Agitated
    d. Neither agitated nor calm
    e. Calm
    f. Very calm

3. At this moment, I feel:
    a. Very tired
    b. Tired
    c. Somewhat tired
    d. Neither tired nor awake
    e. Awake
    f. Very awake

Appendix G

10- item Big Five Inventory (BFI-10)

I see myself as someone who…	Disagree Strongly	Disagree a little	Neither agree or disagree	Agree a little	Agree Strongly
… is reserved	O	O	O	O	O
… is generally trusting	O	O	O	O	O
… tends to be lazy	O	O	O	O	O
… is relaxed, handles stress well.	O	O	O	O	O
… has few artistic interests	O	O	O	O	O
… is outgoing, sociable	O	O	O	O	O
… tends to find fault with others	O	O	O	O	O
… does a thorough job	O	O	O	O	O
… gets nervous easily	O	O	O	O	O
… has an active imagination	O	O	O	O	O

Source: Rammstedt, B., & John, O.P., (2006). *Measuring personality in one minute or less: A 10- item short version of the Big Five Inventory in English and German.* Journal of Research in Personality 41 (2007) 203-212.