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The Impact of Conscientiousness and Neuroticism on False Memory

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Abstract

The purpose of this study was to examine how individual differences alter rates of false memory, specifically neuroticism and conscientiousness personality facets from Costa and McRae’s (1996) big-five personality traits. Forty-eight University of Colorado Boulder students taking Psychology 1001 were recruited in exchange for class credit. Participants were tested using the International Personality Item Pool (IPIP), a free and comparable version of the NEO Personality Inventory-Revised (NEO PI-R) personality test. To measure false memory, six word lists that elicited the highest false memory rate from the Deese-Roediger-McDermott (DRM) paradigm were used. This study revealed that higher rates of neuroticism and conscientiousness were associated with higher rates of false memories. In addition, higher neuroticism was correlated positively with accurate memory for studied words while higher conscientiousness was related negatively to accuracy for studied words. However, none of these finding were statistically significant.
Introduction

The occurrence of false memories has been studied in great depth for many years. Recently however researchers have studied what factors affect false memory and how to avoid high rates of false memory (Sanford & Fisk, 2009). False memories are events that never happened or are remembered differently from how they actually happened (Roediger & McDermott, 1995). Previous experiments have tested false memories using methods such as implanting childhood memories, however this experiment looks at the rate of false memories when studying word lists. This study examines how neuroticism and conscientiousness personality traits are correlated with rates of elicited false recognition.

In previous research, false memory has been explained by reconstructive memory, which is highly prone to error, as originally tested by Bartlett (1932) using the construction of a story called “The War of the Ghosts”. Barlett (1932) asked participants to read and recall a folktale and found that while participants left out details of the story, they also added details to the story. His findings started the series of research that made a distinction between reproductive and reconstructive memory. Findings from subsequent research found that events are not stored in memory accurately and during recollection they are pieced together like a puzzle instead of being recollected as a whole story (Bartlett, 1932). Roediger and McDermott (1995) studied false memories seen in reproductive memory, which is often considered more accurate and observed when recalling lists due to rote repetition.

The purpose of false memory research is to understand the validity of recovered memories in therapy or eyewitness testimonials. Loftus and Kethcham (1994) argue that recovered memories during therapy are really just false memories that have been implanted by the clinician. Certain populations that have gone through traumatic events, for example those
who have PTSD after childhood sexual abuse (Bremner, Shobe, & Kihlstrom, 2000), are especially prone to creating false memories. In addition, those with a history of sexual assault report higher neuroticism (Borja & Callahan, 2009). Areh and Umek (2007) found that there was a negative correlation between neuroticism and confidence in memory recall as well as with accuracy of memory recall, most likely attributable to high anxiety and doubt. In general, patterns in current research indicate that neuroticism decreases the overall quality of memory recall.

Knowing more about how false memories occur can prevent clinicians from accidentally implanting memories that never happened. Suggesting wrong information is easily done and can increase false memory; this is done through repeatedly hearing fictitious information or stories and incorporating it into the memory known as the misinformation effect (Steffens & Mecklenbraker, 2007). Researchers Garry, Manning, Loftus, & Sherman (1996) measured the confidence that a childhood memory occurred by asking participants to rate how confident they were that a series of childhood events had happened and then to imagine them, and then the researchers re-collected confidence ratings after imagination. The results showed that after imagination, participants were more confident that the memory occurred in their childhood. As a more efficient method of studying false memories across many situations, Roediger and McDermott (1995) developed a learning paradigm know as the Deese, Roediger, and McDermott (DRM) paradigm where participants studied lists of words modeled after Deese’s experiment (1959).

In each study phase of the DRM paradigm, a list of 12 associated words is presented which are highly associated with one unseen word. For example, the associate list for the unseen word thief would include the words steal, robber, rob, cop, crime, etc. The study phase is
followed by an immediate recognition task, which includes the associated lure word that was unseen in the study phase. False memories in this case are extra-list intrusions, which are known as the critical lure or target word (Deese, 1959). The probability of falsely recognizing a critical lure is directly related to the associative strength of the context to the studied words as determined by Deese (1959).

Immediately following the study phase, participants are asked to recall the list during a free recall task. Results of the free recall task showed that participants falsely remembered the unseen lure 40% of the time (Roediger and McDermott, 1995). In Experiment 2, using 15 studied words related to one critical lure, participants were asked if words presented were old or new and remembered or known if they answered old. A remember judgment meant they had a vivid memory for when they learned the word and the know judgment was used if the subject knew they remembered the word but had no specific detail of remembering it. In this version of the experiment, Roediger and McDermott (1995) found that participants recognized the unseen lure word 55% of the time with the remember judgment. They found that individuals recognized the unseen word more than they recognized words that were presented in the middle of the task. In addition, false recognition for critical lures was almost the same as hit rates, recognizing an old word, despite serial positioning effects (Roediger and McDermott, 1995).

Quillian (1967) describes memory as a mass of nodes representing a word or concept that are interconnected by associative links. One concept requires the entire activation of a network of nodes, called spreading activation. As each node is reached, an activation tag is left behind so that a path can be traced from the first node activated to the second node and so on. When we think of a concept, nodes become activated in a path that tags the most contextually relevant node first in order to the least relevant, this is known as the spreading activation theory (Collins
& Loftus, 1975). For instance, if we are primed with a word such as “night”, the surrounding nodes that are closely related will become activated with words such as “sleep” and “dark” (Collins & Loftus, 1975). Therefore if we are primed with words such as “hill”, “valley”, and “climb”, we will be likely to recall “mountain” even though it was not present in the studied list.

Researchers have recently taken interest in how false memories are affected by individual differences. In context of the DRM paradigm, researchers have found that groups of individuals who have higher false alarm rates are women (Dewhurst, Anderson & Knott, 2012), adults (Sugrue & Hayne, 2006), those with induced negative affect (Knott, Threadgold & Howe, 2014), and extraverts (Sanford & Fisk, 2009). While all of these factors have been investigated, researchers have not yet looked at how the DRM paradigm is affected by the neuroticism and conscientiousness personality traits.

The five-factor model of personality, also known as the Big-Five is a set of personality traits that include extraversion, neuroticism, conscientiousness, openness, and agreeableness. For the first time in personality psychology, this model is highly replicable and most importantly comprehensive (McCrae & John, 1991). Comprehensiveness is crucial in order to prevent overlooking relevant personality traits when studying them in relation to what phenomenon is being studied. For this study in particular, neuroticism and conscientiousness have been studied exclusively.

Neuroticism is the most robust trait that elicits the least amount of skepticism from critics (McCrae & John, 1991). People who are high in neuroticism experience distress, chronic negative affect, irrational thinking, low self-esteem, poor impulse control, and are prone to the development of psychiatric disorders (McCrae & John, 1991). Those who are lower in neuroticism are calm, relaxed, and even-tempered (McCrae & John, 1991). Strong-willed
individuals who are thorough, neat, organized, diligent, and achievement oriented score high on conscientiousness (McCrae & John, 1991).

This experiment used the International Personality Item Pool (IPIP), a free personality test comparable in validity and reliability to the Revised Neo Personality Inventory (NEO PI-R) which is generally used to assess personality types in work and school settings. Research conducted by Maples, Guan, Carter, and Miller (2014) supported similarities between the IPIP and NEO PI-R, making it a reliable alternative. Due to time and funding restraints, the 20-Item IPIP questionnaire was used which correlates .90 with the NEO PI-R scale and measures similar constructs. Other research conducted by Donnellan, Oswald, Baird, and Lucas (2006) has shown that participants prefer this test because of the shorter length. The 20-item test is nearly as good as the 50-item test and is even more efficient.

Some of the questions that address neuroticism include often feel blue, dislike myself, panic easily, am filled with doubt about things, etc. Questions inquiring about conscientiousness include am always prepared, do things according to a plan, finish what I start, etc. Participants answer these questions on a scale ranging from one (strongly disagree) to five (strongly agree). Conversely, the questions are asked again but framed in the opposite manor, for example I seldom feel blue and I often feel blue, to ensure that participants are giving consistent answers. Scores are calculated based on how they are framed.

With all these factors considered, it was predicted that individuals scoring higher on the conscientious facet would have a higher hit rate (accuracy for remembering old words) and a lower false alarm rate (falsely recognizing the lure). This is presuming that individuals who score higher in conscientiousness are more dedicated to achieving highly on the task. Individuals scoring high on neuroticism were predicted to have a lower hit rate and a higher false alarm rate.
This is thought to be the case presuming that those individuals are too pre-occupied with other thoughts to focus on the task at hand.

The real life implications of this study could uncover how neuroticism and conscientiousness affect victims of traumatic experiences. Breslau, Davis, Andrewski, and Peterson (1995) found that neuroticism predicts traumatic events, which if neurotic individuals are experiencing more traumatic events that they have to recall then they should not be held as accountable for accurately recalling the event if the findings of this study are found true.

Borja and Callahan (2009) discuss how high conscientiousness is linked to positive outcomes and resilience to traumatic events and low scores are linked to distress. In addition, those who are high in neuroticism have very negative mental health outcomes after a traumatic experience. If the hypothesis is true, then individuals low in conscientiousness or high in neuroticism who have gone through a traumatic experience should not be expected to accurately recall the traumatic experience to authorities without omitting or adding details that never occurred.

**Method**

*Participants*

Subjects were forty-eight undergraduate students enrolled in general psychology attending the University of Colorado Boulder, participating in exchange for class credit. Six subjects were omitted due to a high level of irresponsiveness or confusion about instructions determined during data analysis. All participants signed a consent form approved by the International Review Board and were also asked to fill out a demographic survey prior to the study.
**Design**

This experiment was tested in a within-subjects design where each participant was presented with a study list of twelve words followed by an immediate recognition task of seven words. There were three types of unstudied words that were seen in the recognition task: (a) words that were random and unassociated to the list known as “unrelated” (b) words loosely associated to the study list known as “related” (c) the critical lure which is highly associated with the study list. In addition, there will be studied words known as “old”. Every list began with an old word and ended with the critical lure which was borrowed from Deese and Roediger’s (1995) design, along with test lists consisting of two old words, two related words, two unrelated words, and one critical lure.

The dependent variables measured the percent accuracy of the recognition judgments in each of the four conditions as the neuroticism and conscientiousness personality types. Personality types were measured using 20 questions for each trait, a total of 40 questions, from the International Personality Item Pool (IPIP).

**Materials**

Personality was measured using the IPIP, a corresponding version of the NEO-PI-R that is similar in construct and free to use for the general public. The test measured only conscientiousness and neuroticism using 40 questions, 20 per construct, 20 positively scored and 20 negatively scored. The negatively scored questions are scored as followed, 5=1, 4=2, 3=3 and vice versa. The answers ranged from 1-5, strongly disagree to strongly agree respectively. The questions were randomized so that not all questions for one facet were presented at once.

Six word lists were chosen based off the high number of false alarms they elicited during the original DRM task (Roediger and McDermott, 1995). The critical lures for the word lists
were chair, mountain, needle, rough, sleep, and sweet. For example the practice study list included words hard, light, pillow, plush, loud, cotton, fur, touch, fluffy, feather, furry, and downy. The four types of words seen in the practice recognition task included (a) old words fluffy and cotton (b) related words skin and kitten (c) unrelated words binder and monitor (d) The critical lure soft.

Procedure

After signing consent forms and demographics surveys, participants were sent to individual rooms where they independently took the survey on computers. Each survey began with the 40-item personality test. Both the personality test and the DRM task were conducted on Qualtrics.com.

Following the personality test, subjects were told to memorize the words in the study phase, as they would immediately be tested on them during the following test phase by indicating if the words were “old” or “new”. “Old” meant the word was presented during the study phase and “new” meant the word was not studied previously. There was one practice block so that subjects could familiarize themselves and ask any questions.

Each word on the study list was presented in the same order for all participants at a rate of 1.5 seconds per word. Each study list consisted of 12 words associated with one another and to the unseen critical lure. The test phase replicated that of Roediger and McDermott's (1995) and consisted of seven words. Each list was positioned with an old word first and ended with the critical lure in the last position with the other words spread randomly in-between. Words presented were old, related to the list but new, unrelated to the list and new, and the critical lure. Subjects had four seconds to provide their answer during the test phase.
Results

The proportions calculated were based on whether participants responded to words seen in the recognition task as being “old”. In other words, these scores are hit rates for old words and false alarms for unseen words. As seen in Table 1, the overall mean proportion of false recognition for the critical lure being “old” was 0.75 (SD=0.26). This was higher than Roediger and McDermott’s (1995) finding that the mean recall of the critical lure was 0.58 when participants were sure the word was old. The overall mean accuracy for studied words recognized as being old was 0.82 (SD=0.19). This mean hit rate for studied words was slightly higher than Roediger and McDermott’s (1995) findings that participants were sure a studied word was old, which they found to be .75.

The false alarm rate for unrelated words was 0.10 and the mean false alarm for related words was 0.07 which were very close, t(47)=-1.80, p>0.05. A reliable difference was seen between false recall of the critical lure and the related word, t(47)=11.54, p<0.001. In addition, participant’s false alarmed to the critical lure at a slightly lower rate than recognizing a studied word as old, t(47)=2.01, p<0.05. This indicates that participants were attending to the task and not simply guessing.

<table>
<thead>
<tr>
<th></th>
<th>Old</th>
<th>Lure</th>
<th>Related</th>
<th>Unrelated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>----</td>
<td>------</td>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>2</td>
<td>Mean</td>
<td>0.82</td>
<td>0.75</td>
<td>0.07</td>
</tr>
<tr>
<td>3</td>
<td>StDev</td>
<td>0.19</td>
<td>0.27</td>
<td>0.20</td>
</tr>
<tr>
<td>4</td>
<td>Min</td>
<td>0.08</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>Max</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Table 1. Recognition Test Results: The proportion of items remembered as old and the highest and lowest scores achieved.

Personality tests were scored on a scale of 1-5 with 1 being low on the scale and 5 being high. A score of 3 would make a person in-between, displaying neutral tendencies. As seen in Table 2, the mean score for neuroticism was 2.89 with a standard deviation of 0.31. The average score for conscientiousness was 2.90 with a standard deviation of 0.35. Neuroticism scores ranged from 2.1 to 3.65 and conscientiousness scores ranged from 1.85 to 3.6. On average individuals scored slightly lower than average on both facets.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Mean</th>
<th>StDev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>----------</td>
<td>------</td>
<td>-------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>2</td>
<td>----------</td>
<td>------</td>
<td>-------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>3</td>
<td>Neuroticism</td>
<td>2.89</td>
<td>0.31</td>
<td>2.1</td>
<td>3.65</td>
</tr>
<tr>
<td>4</td>
<td>Conscientiousness</td>
<td>2.90</td>
<td>0.35</td>
<td>1.85</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Table 2. Neuroticism and Conscientiousness Personality Test Results: The average amongst all participants and the highest and lowest scores achieved collectively.

With 48 subjects, correlations (Pearson’s r) between memory and personality are statistically significant when stronger than r=±/-.285 (p<0.05). As seen in Table 3 and Figure 1, neuroticism correlated r=.22 with the false recognition of the critical lure while conscientiousness correlated r=.07 with the critical lure. These were not statistically significant correlations. Neuroticism was significantly related to the accurate recognition of a related word as being new, r = -0.33. This was the only significant correlation observed; however, when an outlier with a false alarm rate of 1.00 was removed this data became not significant, as seen in Figure 2.
Table 1. Correlation Values (Pearson’s r): Interaction between personalities along with words that are (a) old (b) lures (c) related (d) unrelated

<table>
<thead>
<tr>
<th></th>
<th>Old</th>
<th>Lure</th>
<th>Related</th>
<th>Unrelated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>0.20</td>
<td>0.22</td>
<td>-0.33</td>
<td>-0.11</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.12</td>
<td>0.07</td>
<td>-0.07</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Figure 1. Correlation Between False alarms to Critical Lures and Neuroticism (left) and Conscientiousness (right)

Figure 2. Correlation Between Neuroticism and Related Words.
Despite what was predicted, high conscientiousness was negatively correlated with accurately recognizing an old word while high neuroticism was positively correlated, as seen in Figure 3. The correlation between conscientiousness and target hits was -0.12 while the correlation between neuroticism and target hits was 0.20.

![Figure 3](image)

Correlations Between Personality Facets and Old Words

Discussion

The purpose of this study was to uncover how conscientiousness and neuroticism personality traits correlate with false memories in the DRM task. Specifically, this study predicted that high neuroticism would elicit higher false memories and lower accurate memories while conscientiousness would elicit less false memories and higher accurate memories. To measure neuroticism and conscientious, participants were presented with a questionnaire consisting of 40 questions taken from the IPIP, a free version of the NEO PI-R. Six word lists that Roediger and McDermott (1995) found to elicit the highest number of false hits were presented to participants to test this hypothesis. This study replicated findings by Roediger and McDermott (1995) that participants will falsely recall the critical lure nearly as much as accurately recognizing an old word. After analyzing subject data, no significant correlation was
found between personality type and false recognition, however the correlation between neuroticism and false recall was positively correlated.

The hypothesis that higher neuroticism would lead to increased false memories and lower accuracy for old words and that higher conscientiousness would lead to decreased false memory and higher accuracy for old words was not supported with significant data. However, as neuroticism went up false memory for the critical lure did as well. In addition, there was a large difference observed in false memory rates between conscientious and neurotic individuals. Opposed to what was predicted, there was actually a positive correlation seen between high conscientiousness and false alarm rates for the critical lure. The direction of correlation between neuroticism and the critical lure seems promising for future research studies.

The results for accurately remembering old words went in the opposite direction as stated in the hypothesis. The data indicated that high conscientiousness was negatively correlated with accurately remembering old words and neuroticism was positively correlated with accurately remembering old words. Although this was unexpected and did not support the prediction, the correlations were very small and not significant.

One significant correlation that was not predicted was found between high neuroticism and lower rates of false recognition for the related word. During data analysis however, one outlier, who false alarmed to every related word, was removed which no longer made the correlation significant. After removing the outlier, the data moves closer in the direction of the prediction, which believes that neurotic individuals have less accurate memories.

There were several limitations to this study. This study only included 48 participants and could have benefited from many more. In addition, one subject reported after the task was completed that they had just learned about false memories in their psychology class. It was not
possible to control for individuals who had not taken any other psychology class before, therefore they may have been aware of the purpose of the study.

Another concern was that participants were giving socially desirable answers for the personality test, this is assumed because the averages in this study vary from what was found in previous research. Previous research by Donnellan et al. (2006) found that the mean score calculated amongst 2,663 participants for conscientiousness was 3.42, SD=0.78 and 2.54, SD=0.80 for neuroticism using the exact same construct. The standard deviation in the current study was less than half of what was found in the previous study, and thus this smaller variability may have limited the correlation seen between personality and false memory.

The questions asked in the personality test asked participants to divulge fairly personal information, which could have caused hesitation in truthfulness. To ensure a more accurate reflection of personality types, a follow up study should further verbalize to participants that all answers are completely confidential. Breaking up the questions into blocks so subjects do not feel overwhelmed seeing forty questions all at once may also be beneficial for acquiring more accurate test results. In addition, the sample size in this study was not large enough to replicate the averages found in the previous study.

Future research should focus on inducing a state of arousal to observe how participants perform on the DRM task. Bothwell, Brigham, and Pigott (1987) assigned participants to a highly arousing, moderately arousing, or non-arousing situation. They then looked at a description of the experimenter, then later asked the participants whether the experimenter was in a photo of a lineup or not and how confident the subject was in their answer. The researchers found that as arousal conditions increased, neurotic individuals were less accurate when
identifying the experimenter in the lineup while stable individuals were more accurate (Bothwell, Brigham, & Pigott, 1987).

The reason for this is that there is an optimal threshold for accurate memory recall in arousing situations known as the Yerkes-Dodson Law (Bothwell, Brigham, Pigott, 1987). Beyond this threshold, accuracy for memory falls, especially for individuals high in neuroticism. In addition, individuals higher in neuroticism have a lower optimal threshold for memory. When arousal was manipulated, performance for accuracy in neurotic individuals dropped drastically (Bothwell, Brigham, & Pigott, 1987). Based on previous research, this manipulation should increase false memory and lower accuracy.

The original hypothesis was not fully supported, however the positive correlation between neuroticism and false memory is promising for future studies. This pattern in the results supports previous findings that show neuroticism decreases memory quality. The findings for conscientiousness were highly unexpected based on personality traits described for the facet. The implications of the findings in future research in this field could help alleviate the pressure of those who are attempting to recall a traumatic experience and allow them some leniency.
### Appendix A

**DRM Study List and Critical Lures**

<table>
<thead>
<tr>
<th>Table</th>
<th>Seat</th>
<th>Recliner</th>
<th>Cushion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sit</td>
<td>Couch</td>
<td>Sofa</td>
<td>Swivel</td>
</tr>
<tr>
<td>Legs</td>
<td>Desk</td>
<td>Wood</td>
<td>Stool</td>
</tr>
</tbody>
</table>

Critical Lure-Chair

<table>
<thead>
<tr>
<th>Valley</th>
<th>Top</th>
<th>Peak</th>
<th>Goat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climb</td>
<td>Molehill</td>
<td>Hill</td>
<td>Bike</td>
</tr>
<tr>
<td>Summit</td>
<td>Plain</td>
<td>Glacier</td>
<td>Climber</td>
</tr>
</tbody>
</table>

Critical Lure-Mountain

<table>
<thead>
<tr>
<th>Thread</th>
<th>Pin</th>
<th>Eye</th>
<th>Sewing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharp</td>
<td>Point</td>
<td>Prick</td>
<td>Thimble</td>
</tr>
<tr>
<td>Haystack</td>
<td>Thorn</td>
<td>Hurt</td>
<td>Injection</td>
</tr>
</tbody>
</table>

Critical Lure-Needle

<table>
<thead>
<tr>
<th>Smooth</th>
<th>Bumpy</th>
<th>Road</th>
<th>Tough</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandpaper</td>
<td>Jagged</td>
<td>Ready</td>
<td>Coarse</td>
</tr>
<tr>
<td>Uneven</td>
<td>Riders</td>
<td>Rugged</td>
<td>Sand</td>
</tr>
<tr>
<td>Bed</td>
<td>Rest</td>
<td>Awake</td>
<td>Tired</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Dream</td>
<td>Wake</td>
<td>Snooze</td>
<td>Blanket</td>
</tr>
<tr>
<td>Doze</td>
<td>Slumber</td>
<td>Snore</td>
<td>Nap</td>
</tr>
</tbody>
</table>

Critical Lure-Sleep

--------

<table>
<thead>
<tr>
<th>Sour</th>
<th>Candy</th>
<th>Sugar</th>
<th>Bitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>Taste</td>
<td>Tooth</td>
<td>Nice</td>
</tr>
<tr>
<td>Honey</td>
<td>Soda</td>
<td>Chocolate</td>
<td>Heart</td>
</tr>
</tbody>
</table>

Critical Lure-Sweet
## Appendix B

**Conscientious Personality Test Questions**

**20-item scale (Alpha = .90)**

+ keyed
  - Am always prepared.
  - Pay attention to details.
  - Get chores done right away.
  - Carry out my plans.
  - Make plans and stick to them.
  - Complete tasks successfully.
  - Do things according to a plan.
  - Am exacting in my work.
  - Finish what I start.
  - Follow through with my plans.

– keyed
  - Waste my time.
  - Find it difficult to get down to work.
  - Do just enough work to get by.
  - Don't see things through.
  - Shirk my duties.
  - Mess things up.
  - Leave things unfinished.
  - Don't put my mind on the task at hand.
  - Make a mess of things.
  - Need a push to get started.

**Neuroticism Personality Test Questions**

**20-item scale (Alpha = .91)**

+ keyed
  - Often feel blue.
  - Dislike myself.
  - Am often down in the dumps.
  - Have frequent mood swings.
  - Panic easily.
  - Am filled with doubts about things.
  - Feel threatened easily.
  - Get stressed out easily.
  - Fear for the worst.
  - Worry about things.

– keyed
  - Seldom feel blue.
  - Feel comfortable with myself.
  - Rarely get irritated.
  - Am not easily bothered by things.
  - Am very pleased with myself.
  - Am relaxed most of the time.
  - Seldom get mad.
  - Am not easily frustrated.
  - Remain calm under pressure.
  - Rarely lose my composure.
Citations


Maples, J. L., Guan, L., Carter, N. T., & Miller, J. D. (2014). A test of the international personality item pool representation of the revised NEO personality inventory and development of a 120-item IPIP-based measure of the five-factor model. Psychological
