

COGNITIVE DISSONANCE REDUCTION IN RELATION TO GRADE POINT AVERAGE, BUT NOT TO INTELLIGENCE

Tyler RICHTER, F. Richard FERRARO

Dept. Psychology, University of North Dakota
Corwin-Larimore Rm. 215
319 Harvard St., Stop 8380, Grand Forks, ND 58202-8380
E-mail: f.richard.ferraro@email.und.edu

Abstract: Cognitive dissonance (CD) is the discomfort that occurs when two opposing beliefs are held simultaneously. When this conflict arises, one of the opposing beliefs must be altered or dropped in order to reduce the discomfort. The current study examined the relationship between cognitive dissonance and intelligence (using vocabulary subtest scores of the Wechsler Adult Intelligence Scale-Revised IV; WAIS-R IV) and grade point average (GPA) in 103 college undergraduates. The ratings occurred before and after the exam. In order to induce the cognitive dissonance participants were given low fictitious scores and shown a comparatively greater average. Cognitive dissonance was measured by taking the difference of the participants' fairness ratings of the vocabulary subtest. No relationship existed between WAIS-R IV performance and CD scores ($r = .01$, ns). However, GPA and CD scores were negatively associated ($r = -.29$, $p < .01$).

Key words: dissonance, intelligence, GPA, college students

People tend to develop a feeling of discomfort when they possess two beliefs that are in opposition (Elliot & Devine, 1994). This internal conflict is referred to as cognitive dissonance (CD; Festinger, 1957). CD is a common occurrence for people and it arises in a multitude of situations. For example, a man and a woman are dating and they have decided they would like to get married and have kids. During their discussion of future plans the man says he was raised religiously and believes the kids should be brought up with the beliefs he was taught. The woman says she was raised without religion and she turned out fine so she thinks the kids should be brought up without any religious beliefs. The man and the woman are both experiencing a cognitive dissonance in which the desires and conflicts are:

The Man:

1. Wants to marry and have children with the woman he is dating.
2. Wants to raise his children with the religious beliefs he was taught.

The Woman:

1. Wants to marry and have children with the man she is dating.
2. Wants to raise her children without any religious beliefs.

Cognitive dissonance must be resolved in some way and in this situation the man and woman must either end the relationship or greatly decrease their personal importance of how their children will be raised. CD is more commonly observed among smaller situations that conflict with the idea that people

believe they are intelligent (Kneer, Glock, & Rieger, 2012). For example, consider the addiction of smoking. It is common knowledge that smoking results in negative and undesirable health consequences, yet the behavior still continues. Each time a person chooses to smoke they encounter the cognitive dissonance of inflicting self-harm, or not receiving the satisfaction or relieve the craving (Kneer, Glock, & Rieger, 2012).

A student who studies for an exam but receives a poor grade may encounter a cognitive dissonance between believing he or she underestimated the exam and actually needed to study more (their own fault), or believing the exam was purposely made to be extremely difficult so students would not have good results (someone else's/the professor's fault). The first choice admits fault and leaves the student having made an unintelligent decision. The second choice places blame on the professor and leaves the student with no fault and therefore having not made an unintelligent decision.

Current research has shown that CD affects a variety of experiences including personal responsibility (Cheng & Hsu, 2012), justification (Bendersky & Curhan, 2009), eating disorder prevention (McMillan, Stice, & Rohde, 2011), normative standards (Voisin & Fointiat, 2013), criminal evidence (Ask, Reinhard, Marksteiner, & Granhag, 2011), motive (Gawronski, 2012), perceptions of natural environments (Balcetis & Dunning, 2007), normative standards (Stone & Cooper, 2001), white lies (Argo & Shiv, 2012), and ethics (Barkan, Ayal, Gino, & Ariely, 2012).

Reducing cognitive dissonance reduces the discomfort, thus it is advantageous in most situations to do so. Given that CD is evident in numerous settings it can be ques-

tioned if the ability to reduce cognitive dissonance appropriately is a form of intellect. To our knowledge, no such experiment has investigated the relationship between CD and intelligence. In the current study CD was measured in a similar format as an experiment performed by Brehm (1956) on post decisions desirability. The purpose of this study was to determine if CD and intelligence were related. Specifically, we predicted that CD scores would be significantly and negatively correlated with vocabulary intelligence subtest scores and GPA. Alternatively, one could also predict a positive correlation between CD and intelligence. That is, if reducing CD is advantageous in most situations then those subjects that reduce CD by rating the WAIS-R vocabulary test less fair in the 2nd rating would possess a higher level of intelligence.

Method

Participants

A total of 103 students (89 female, 14 male) enrolled in a psychology course at a large Midwestern University participated for course credit or extra course credit. Participants were recruited through the online Research Participation System called SONA.

Materials

Wechsler Adult Intelligence Scale-Revised IV (WAIS-R IV) is an intelligence test for individuals between the ages of 16 and 90. The consistency is high and the test-retest reliabilities are between 0.70 (7 subscales) and 0.90 (2 subscales). The Inter-scorer coefficients are also high, all greater than 0.90 (Wechsler, 2008). The test is structured

into 4 scales, which consist of multiple subsets: Verbal Comprehension (similarities, vocabulary, information, comprehension), Perceptual Reasoning (block design, matrix reasoning, visual puzzles, picture completion, figure weights), Working Memory (digit span, arithmetic, letter-number sequencing), and Processing Speed (symbol search, coding, cancellation). We used only the Vocabulary subtest as it is often used as a proxy measure of intelligence (Krull, Scott, & Sherer, 1995).

In the current experiment only the Vocabulary subtest of Verbal Comprehension scale was administered. This exam consisted of 35 words that request a definition. Points are awarded based on how close the participant's definition is to the definition that is predetermined on a scale of 0-2 (Wechsler, 2008). 0 being obviously incorrect, 1 being incorrect but showing some knowledge of content, and 2 showing the understanding of proper synonym and use. Scores on this test range from 0 to 70.

A demographic questionnaire was distributed to assess gender, date of birth, ethnic identity, high school graduation year, college graduation year, major/degree, cumulative GPA, current college class/year, current fitness level, and reason for participation in the study.

Procedure

This study was approved by the Institutional Review Board and conducted in a small research laboratory. Each participant was told they were going to take a vocabulary intelligence test assessment but first they were to rate it on a scale of 0-10 based on how fair they thought it was as an intelligence assessment with (0) being the most unfair and

(10) being the most fair. Once they rated the exam they were to put that sheet into a folder so the experimenter would not see it. They were then told that they would take the exam, the experimenter would grade it, show them the score they earned and the average score of all the participants who have taken it so far, and then they were to rate the exam again and put it in the folder so the experimenter did not see that rating either. After the explanation each participant was given 20 seconds to view and rate the vocabulary subtest without the ability to answer any questions.

The experimenter then administered the WAIS-R IV Vocabulary Subscale and the participant took the exam. The experimenter then left the room to fictitiously grade the participant's exam. The experimenter waited a few minutes and then returned with the participants score (fictitious) circled and the average written next to and labeled "Average." The experimenter then presented the participant with the second rating form and asked the participant to rate the exam again and when finished put it in the folder so the experimenter did not see it. After that the experimenter gave the participant a debriefing form and explained whom to contact if they had any questions or concerns. All participants received a Low Score (LS) condition, which ranged from 60% - 64%. The average ranged from 75% - 77%.

Results and Discussion

The difference in the participant's ratings (calculated using the formula $R1-R2$) was our measure of cognitive dissonance ($M = 2.11$, $SD = 1.46$). A Pearson r correlation was calculated to compare the CD difference scores and participants' actual WAIS-R IV Vocabulary subtest score ($M = 47.85$, $SD = 10.81$)

and to compare the CD difference scores with students' GPA ($M = 3.55$, $SD = .38$). The predicted relationship of the CD difference score negatively correlating to the actual WAIS-R IV vocabulary subtest score was not supported ($r = .01$, ns). However, the predicted relationship between the CD score and GPA was observed ($r = -.29$, $p < .01$).

The results from the present study support a relationship between cognitive dissonance and GPA, but not CD and intelligence. Although the predicted significant negative correlation between CD scores and GPA was observed, the predicted significant negative correlation between CD scores and the WAIS-R vocabulary subtest was not observed. One possible explanation for the WAIS subtest and CD scores not showing the predicted relationship could be a lack of incentive on the part of the participants. Participants were in the study to get credit for class and by simply participating they fulfilled that objective. Their performance on the WAIS-R had no effect on their grade or credit for the class. Thus, students may have not taken the experiment seriously. The WAIS-R subtest score was also not significantly correlated with GPA ($r = .05$) supporting the possibility that participants may have not been concerned with performing well on the WAIS subtest. With regard to GPA, most students relate their GPA to future success in obtaining a job. Therefore GPA may have been a larger incentive for high performance.

There are also some possible shortcomings to our study. First, participants could have told their friends about the study before they participated. Although we did debrief all participants at the end of the experiment, we are unsure how many of them told their friends about the study. Second, we did not have an equal number of male and fe-

male participants. Although gender did not differ across any of our demographic variables, more equal numbers of males and females would have been preferred.

Despite these shortcomings, the current study demonstrates that cognitive dissonance relates to GPA but not to intelligence. Future studies should be conducted that examine cognitive dissonance, self-esteem, and self-monitoring. It could be that the self-esteem preservation or levels of self-monitoring may affect the differences in exam ratings given by the participants and thus the participants' cognitive dissonance levels.

Received July 2, 2014

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REDUKCIA KOGNITÍVNEJ DISONANCIE VO VZŤAHU K PROSPECHOVÉMU PRIEMERU, ALE NIE K INTELIGENCIÍ

T. Richter, F. R. Ferraro

Súhrn: Kognitívna disonancia (KD) je nepríjemný pocit, ktorý sa objaví, ak človek zastáva dva protichodné názory. Keď sa tento pocit objaví, jeden z protichodných názorov je nutné zmeniť alebo úplne vypustiť, aby sa nepríjemný pocit stratil. Predkladaná štúdia skúma vzťah medzi kognitívnou disonanciou a inteligenciou (použitím skóre subtestu slovnej zásoby Wechslerovej Inteligenčnej Škály - Revidovanej IV.; WAIS-R IV) a prospechovým priemerom (GPA) u 103 vysokoškolských študentov. Hodnotenie sme vykonávali pred a po skúške. Kognitívnu disonanciu sme u participantov vyvolávali tak, že sme im dali nízke fiktívne skóre a ukázali im porovnateľne vyšší priemer. Kognitívnu disonanciu sme merali pomocou rozdielu v hodnotení férovosti subtestu slovnej zásoby u participantov. Medzi výkonom vo WAIS-R IV a skóre KD sme nenašli žiadny vzťah ($r = .01$, ns), avšak skóre KD a prospechového priemeru boli v negatívnom vzťahu ($r = -.29$, $p < .01$).