

# RELATIONSHIP BETWEEN DOWNWARD COUNTERFACTUAL THINKING AND GRATITUDE AMONG YOUNG ADULT FEMALES

*An Interface between Positive and Social Psychology*

\*ANMOL BANSAL\* and \*\* Dr. VIJAYSEN PANDEY\*\*

Student, Research Guide

AMITY INSTITUTE OF PSYCHOLOGY AND ALLIED SCIENCES

Amity University Uttar Pradesh ( Noida campus ), India.

## ABSTRACT

Counterfactual thinking as a phenomenon has intrigued psychologists, researchers and philosophers alike, in view of the fact that it reveals significant information about the nature, reason, limits and the ways of logic of human appraisal of the social world. Counterfactual thinking in social psychology, comes to refer to the tendency of an individual to imagine other, novel outcomes or alternatives in a given situation than the outcomes which originally transpired. This research paper attempts to examine in greater depth, the nature, as well as the principles underlying counterfactual thinking. It also endeavors to inquire about the nature of the relationships that counterfactual thinking shares with a multitude of positive psychological constructs, particularly gratitude, extending its focus to the implications that originate as a result of such associations.

**Index Terms:** Counterfactual thinking, gratitude, human well-being, positive affectivity.

## I. INTRODUCTION

The human brain is a complex organ. While it assists human beings in their journey of meaning-making and deriving sense out of their social world, in a manner deemed to be as logical and error-free as possible, believe it or not, it falls short of this very goal, i.e. total rationality, more often than we may think. In our tireless pursuits to perceive and appropriate our social world, we are inevitably subject to a huge array of tendencies, which when accumulated, may lead to serious errors in social cognition. These errors in social cognition, although undoubtedly erroneous in nature, nevertheless have an important role to play in terms of their functional utility i.e. adaptation. These 'tilts' in reality of sorts, enable us to divert and subsequently sustain our attention and focus only on that information which is pertinent to us, thereby reducing the effort and energy invested for making sense out of our social world. Thus, like two sides of the same coin, errors in social cognition also have opposing roles to play. Opposing roles come to be understood in the sense, that although these 'tilts' of sorts provide us with tangible benefits, these benefits often come with a price. There exist a plethora of ways in which our perception of the social world takes a departure from reality.

We shall now get acquainted with one such basic tendency leading to potential errors in social cognition, known as Counterfactual Thinking ( C. F. T. ).

Gratitude has been well-researched to document its positive and wide-ranging implications on human affectivity, perception, health and relationships as credible.

Grateful people do not feel a sense of deprivation in their lives, rather they experience a deep sense of abundance. They acknowledge the valuable contribution that others have made towards their health, success, accomplishments and well-being, appreciate the simple pleasures that life has to offer, and acknowledge the significance of not only experiencing, also expressing gratitude. Elaborate research work carried out in this arena have established positive relations between gratitude and measures of subjective well-being and positive affect.

## RESEARCH METHODOLOGY

### Sample / Participants

A total of 100 healthy participants (females) of the young-adult age group (18 - 35 years) would be chosen as the sample for the present study. Participants would be purposively selected from the various colleges and institutions of Delhi University and Amity University, Uttar Pradesh as well as diverse professional institutions. Age and gender of the participants would be controlled up to an extent so that the sample is homogeneous in the aforementioned respects. Special caution and care would be taken to select only those participants who do not have a psychopathological condition and who are not using prescription medication. It shall be ensured that informed consent is obtained from the respondents prior to the research project.

### Research Design / Variables

A Correlative Research Design.

### Independent variable

- Downward Counterfactual Thinking

### Dependent variable

- Gratitude

### Control variables

- Age
- Gender

### Tools /Instrumentation

1. *Counterfactual Thinking*: A 16-item Counterfactual Thinking for Negative Events Scale (non-referent downward counterfactual thinking subscale), (CTNES; Rye, Cahoon, Ali, & Daftary, 2008) is utilized to for the assessment of counterfactual thinking. The CTNES includes four distinct and separate measures to assess counterfactual thinking, which include (a) non-referent downward counterfactuals, (b) other-referent upward counterfactuals, (c) self-referent upward counterfactuals, and (d) non-referent upward counterfactuals. Respondents are instructed to indicate their degree of agreement with all the statements using a 5-point Likert response scale, with 'never' (1) and 'very often' (5) as the anchors of the response range. Cronbach's  $\alpha$  for the four subscales ranged from .72 to .85.

2. *Gratitude*: The GRAT-R is utilized for the assessment of gratitude in this research study. This scale was initially developed by Watkins et al. (2003). There also exists a short version ( GRAT-S) that appeared to be as reliable and valid as the initial GRAT. Diessner and Lewis (2007) confirmed the original three-factor structure with factors (a) Lack of a Sense of Deprivation (LOSD), (b) Simple Appreciation (SA), and (c) Appreciation for Others (AO). Respondents indicate their response on a 9-point Likert scale, ranging from strongly disagree (1) to strongly agree (9). The revised version ( GRAT - R ) has been demonstrated to

possess a good level of internal consistency along with factorial validity, construct validity as well as temporal stability (Watkins et al., 2003).

S. No.	Variable	Tool	Author	Year	Reliability	Validity	No. Of Items
1.	Downward Counterfactual Thinking	Counterfactual Thinking for Negative Events Scale (CTNES) (Downward CFT Sub-scale)	Mark S Rye, Melissa B Cahoon, Rahan S Ali, Tarika Daftary	2008	.72 to .85 (test-retest)	Factorial & Construct	16
2.	Gratitude	The GRAT-S (short form)	M. Thomas & P. Watkins	2003	.92 (Cronbach's Alpha)	Factorial & Construct	16

**TABLE 1**

A Tabular Representation of Pertinent Psychometric Properties of the Psychometric Assessment Tools being utilized.

The data collected from respondents on each of the aforementioned instruments shall be subject to the Karl Pearson's Coefficient of Correlation (  $r$  ) statistical technique.

## RESULTS AND DISCUSSION

The present study aimed to elicit a meaningful correlation among the social psychological variable of downward counterfactual thinking and the positive psychological variable of gratitude among 100 young adult females.

Following represented are the scores obtained on the psychometric assessment tools of each of the aforementioned variable.

**Table 1** Average score obtained on the variable of Downward Counterfactual Thinking.

**TABLE 1**

S. No.	Variable	Mean
1.	Downward Counterfactual Thinking ( CTNES )	12.24

**Table 1** Average score obtained on the variable of Downward Counterfactual Thinking.

Table 1 depicts the average score obtained on the variable of downward counterfactual thinking from a sample of 100 young adult females. The mean score on this construct has been computed to be 12.24.

**Table 2** Standard deviation of the scores obtained on the variable of downward counterfactual thinking.

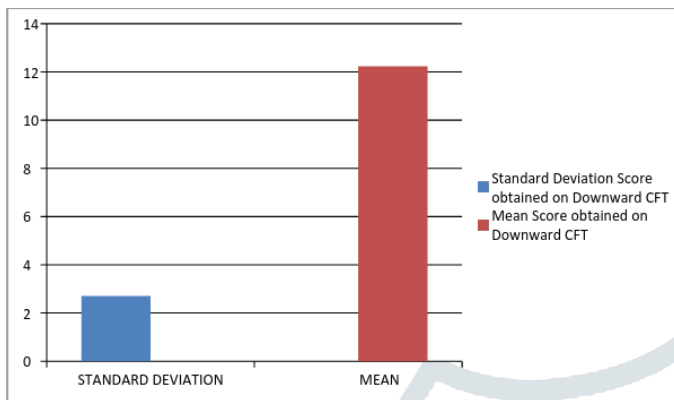
**TABLE 2**

S. No.	Variable	Standard Deviation
1.	Downward Counterfactual Thinking ( CTNES )	2.70846

**Table 2** Standard deviation of the scores obtained on the variable of downward counterfactual thinking.

The above tabular representation depicts the standard deviation score obtained on the variable of downward counterfactual thinking from a sample of 100 young adult females. The variance on this construct has been computed to be 2.70846.

**DIAGRAM 1** Standard Deviation & Mean Scores obtained on the variable of Downward CFT



The above tabular representation depicts a graphical representation of the mean and standard deviation scores obtained on the social psychological construct of downward counterfactual thinking . The mean score on this variable is computed to be 12.24 , while the standard deviation has been computed to be 2.70846.

It may be inferred that from a sample of 100 young adult females, the average score obtained on the variable of gratitude, may be quantified as 12.24. Similarly, it may be inferred that the variance of the scores from the average score may be quantified as 2.70846.

**TABLE 3**

S. No.	Variable	Mean
1.	Gratitude ( GRAT-R)	278.94

**Table 3** Average score obtained on the variable of Gratitude.

The above tabular representation depicts the average score obtained on the variable of gratitude from a sample of 100 young adult females. The mean score on this construct has been computed to be 278.94.

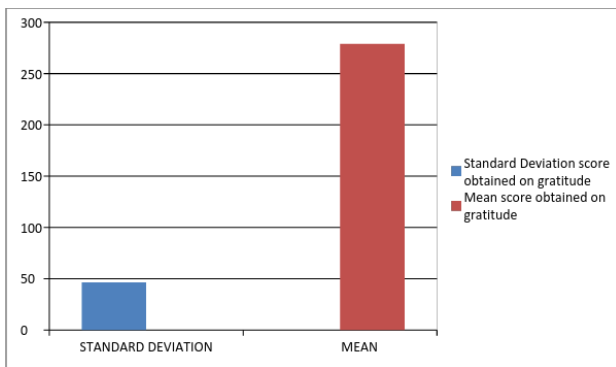
**TABLE 4**

S. No.	Variable	Standard Deviation
1.	Gratitude ( GRAT-R)	46.4662

Table 4 depicts the standard deviation of the scores obtained on the variable of gratitude.

The above tabular representation depicts the standard deviation score obtained on the variable of gratitude from a sample of 100 young adult females. The variance on this construct has been computed to be 46.4662.

**DIAGRAM 2** Standard Deviation & Mean Scores obtained on the variable Gratitude

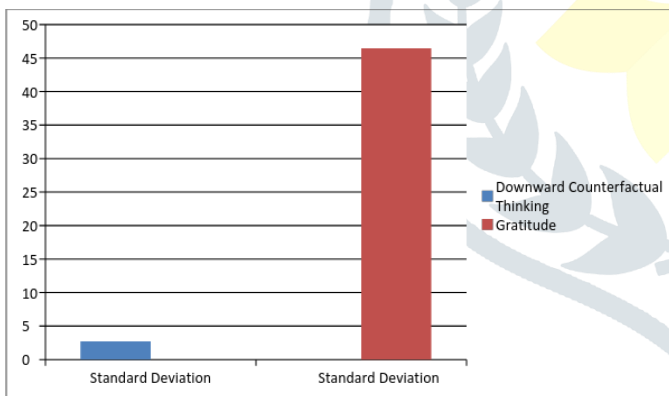


The above graphical representation depicts the mean and standard deviation scores obtained on the positive psychological construct of gratitude .

The mean score on this variable is computed to be 278.94 , while the standard deviation has been computed to be 46.4662.

It may be inferred that from a sample of 100 young adult females, the average score obtained on the variable of gratitude, may be quantified as 278.94. Similarly, it may be inferred that the variance of the scores from the average score may be quantified as 46.4662.

**DIAGRAM 3** Standard Deviation Scores of Related Variables

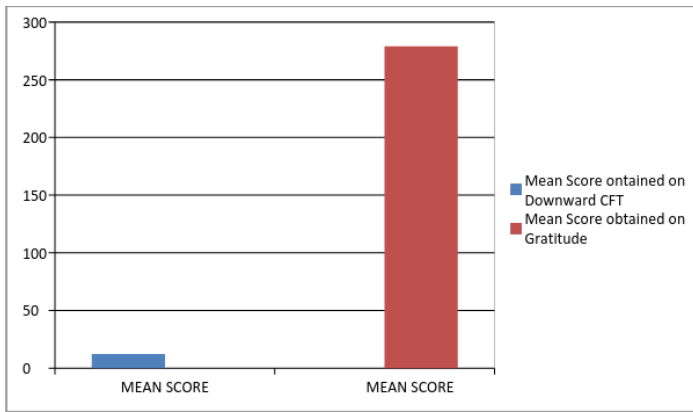


The aforementioned graphical representation depicts the standard deviation scores obtained on the social psychological construct of downward counterfactual thinking and the positive psychological construct of gratitude.

The standard deviation for downward CFT has been computed to be 2.70846, while for gratitude the computed value is 46.4662.

It may be inferred that the variance of the scores from the average score may be quantified as 2.70846 in the case of downward counterfactual thinking and as 46.4662 for the variable of gratitude.

**DIAGRAM 4** Mean Scores of Related Variables



The above graphical representation depicts the mean scores obtained on the social psychological construct of downward counterfactual thinking and the positive psychological construct of gratitude.

The mean score for downward CFT has been computed to be 12.24, while for gratitude the computed value is 278.94.

It may be inferred that from a sample of 100 young adult females, the average score obtained on the variable of downward counterfactual thinking may be quantified as 12.24 and as 278.94 for the variable of gratitude.

**TABLE 5** Coefficient of Correlation

Related Variables	Pearson's Coefficient of Correlation ( <i>r</i> )
1. Downward Counterfactual Thinking	0.2248
2. Gratitude	

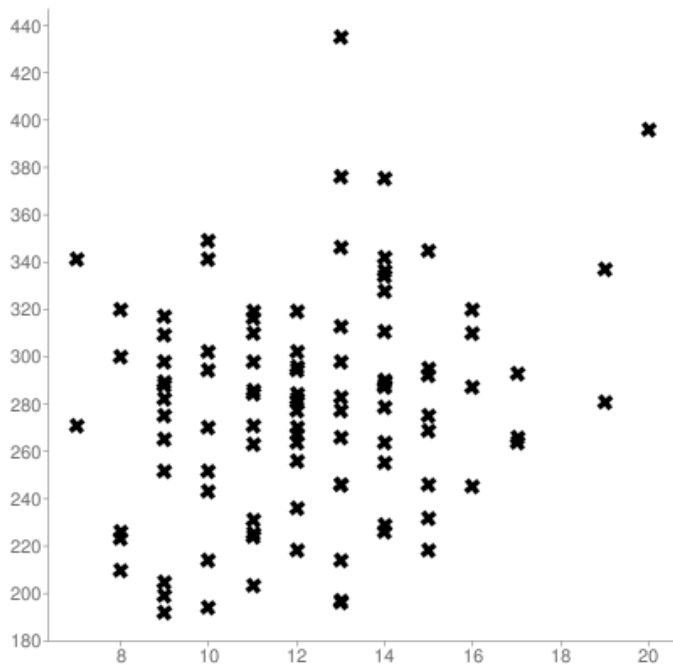
The above tabular representation depicts the Pearson's coefficient of correlation obtained between the scores of social psychological construct of downward counterfactual thinking and the positive psychological construct of gratitude.

The value of *r* is computed to be 0.2248. This value of *r* (at *df* = 98) is inferred to be significant at (  $\alpha = 0.05$  ). Thus, it may be inferred that a value of  $r = 0.2248$  occurs five times in 100 by chance. Since, the value of *r* obtained (  $r = 0.2248$  ) is greater than the critical value at  $df = 98, \alpha = 0.05, ( r > 0.195 ), r$  is significant.

Thus, as substantiated above, there is enough evidence to conclude that there is significant linear relationship between Downward counterfactual thinking ( *X* ) and Gratitude ( *Y* ) because the correlation coefficient is significantly different from 0.

Logically a positive correlation, the relationship between both the variables is weak ( as nearer the value to zero, weaker is the relationship between the related variables). So, the obtained coefficient of correlation indicates a weak degree of relationship between the aforementioned variables. Thus, there exists a positive, albeit very weak correlation between downward counterfactual thinking and gratitude.

**FIGURE 1** A Scatter Plot diagrammatically representing scores obtained on the bivariate distribution.



**FIG. 1**

**A Scatter Plot interpretation of the bivariate distribution of scores obtained on constructs of downward counterfactual thinking & gratitude on 100 young adult females.**

Figure 3 depicts a pattern of correlation among scores of downward counterfactual thinking and gratitude wherein increasing values of Y ( Gratitude )generally correspond to increasing values of X( Downward Counterfactual Thinking ), while decreasing values of Y ( Gratitude )generally correspond to decreasing values of X( Downward Counterfactual Thinking ).

The scatter diagram ( FIG. 1 ) validates the belief that when the association between two variables is less than perfect ( $< 1.00$  ). the data points show some degree of scatter around the straight line which summates the relation being elicited between the two variables.

Thus, it may be inferred, that the weaker is the relation between the two concerned variables greater shall be the scatter and lesser shall be the absolute measure or value of the coefficient of correlation.

The essential usefulness of computing correlation wholly depends upon its significance and direction. Since, the value of computed  $r$  reliably differs from 0.00, the  $r$  value so obtained is statistically significant, implying that the value so obtained is not a consequence of chance occurrence. Thus, the positive correlation elicited between the two variables is not the result of chance factor.

At this stage of analysis of the results, it becomes important to reiterate the fact that simply since changes in one variable are relatable to changes in the other variable, it definitely doesn't interpret as changes in variable is causing changes in the other variable. Thus, even though there exists a positive correlation between downward counterfactual thinking and gratitude, it is to be kept in mind that other variables may possess the potency to act on one or both of the aforementioned related variables and exert an influence on them in a similar direction.

It is important to remember, that perfect correlations ( $+1.00$  or  $-1.00$  ) exist in the real world only in trivial incidences. It is the values that lie between this range, that depict the degree of relation between variables that are related due to an *intuitive appeal*.

TABLE 6 SUMMARY OF RESULTS

S. No.	Variable	Sum	Average ( Mean )	Standard Deviation	Coefficient of Correlation ( $r$ )
1.	Downward Counterfactual Thinking ( CTNES )	1224	12.24	2.70846	0.2248
2.	Gratitude ( GRAT-R )	27894	278.94	46.4662	0.2248

Table 6 summarizes the results obtained on the related variables.

Thus, as substantiated above, a positive correlation has been elicited between thinking which is downward counterfactual in nature and a thankful acknowledgement and appreciation of past, present and future circumstances.

On the basis of the results obtained, it is hence inferred that there exists a positive, albeit correlation (  $r = 0.2248$  ) between counterfactual thinking ( downward variant ) and gratitude among young adult females. This research finding is in lieu with numerous other elaborate and well-documented researches in the region where the sub-disciplines of social and positive psychology interface, have time and again elicited, a consistently strong and enduring impact of the aforementioned variables on the diverse correlates of the human state of well-being, such as levels of happiness (Medvec and Gilovich , 1995 ), satisfaction (Sherman, 1993), positive affectivity ( Markman , 1993 ), self-enhancement and self-improvement (Rim and Summerville, 2005).

## ACKNOWLEDGMENT

The author thanks the almighty God, and everyone else who contributed towards the successful completion of this work.

## REFERENCES

Alquist J., Ainsworth S., Baumeister R., Daly M., Stillman T. (2015). *The Making of Might-Have-Beens: Effects of Free Will Belief on Counterfactual Thinking*. Retrieved from *Personality and Social Psychology* : <https://www.ncbi.nlm.nih.gov/pubmed/25511569>.

Baron. A, Branscombe ., Byrne D., Bhardwaj G. ( 2013 ). *Social Psychology*. India : Dorling Kindersley Press.

Baron R.(2000). *Counterfactual thinking and venture formation: The potential effects of thinking about "what might have been"*. Retrieved from *Journal Of Business Venturing* : <https://www.researchgate.net/.../55dcc26f08ae3ab722b1a5f5>.

Buffone A. ,Gabriel S., Poulin M. (2016). *There But for the Grace of God: Counterfactuals Influence Religious Belief and Images of the Divine*. Retrieved from *Social, Psychological and Personality Science* : <http://spp.sagepub.com/content/7/3/256.abstract>.



Emmons, R. A., & Crumpler, C. A. (2000). *Gratitude as a human strength: Appraising the evidence*. Retrieved from Journal of Social and Clinical Psychology : <http://guilfordjournals.com/doi/abs/10.1521/jscp.2000.19.1.56>.

Emmons, R. A., & McCullough, M. E. (2003). *Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life*. Retrieved from Journal of Personality and Social Psychology : <https://www.ncbi.nlm.nih.gov/pubmed/12585811>.

Epstude K., Jonas K.Regret (2012). *Counterfactual Thinking in the Face of Inevitability*. Retrieved from Social Psychological and Personality Science : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2717727/>.

Rim S. and Summerville A. (2014). *How Far to the Road Not Taken? The Effect of Psychological Distance on Counterfactual Direction*. Retrieved from *Personality and Social Psychology Bulletin* : <https://www.ncbi.nlm.nih.gov/pubmed/21734163>.

