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Reviving the Sleeper Effect

Tehreem Riffat
Claremont Graduate University

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By Tehreem Riffat

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We certify that we have read this document and approve it as adequate in scope and quality for the degree of Master of Arts in Psychology.

Faculty Advisor:
William D. Crano
Claremont Graduate University
Oskamp Professor of Social Psychology and Director
Health Psychology and Prevention Science Institute
Division of Behavioral and Organizational Sciences
Department of Psychology

Second Reader:
Eusebio Alvaro
Claremont Graduate University
Associate Provost, Research
Research Full Professor,
Co-Director, Health Psychology and Prevention Science Institute
Division of Behavioral and Organizational Sciences
School of Social Science, Policy, & Evaluation

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Abstract

The present study was conducted to delve into the cognitive dynamics of the sleeper effect. The study investigated the role of persuasive message repetition (once, twice), the position of a discounting cue, which challenged the stated position of a communication, the cue's credibility (high/low) and the timing of the cue (presented before or after the persuasive communication) on the outcome of a sleeper effect experiment. Analytically, the study was conceptualized as a 2 (Cue Credibility: high/low) x 2 (Cue presentation: before/after the persuasive message), (Elaboration: Communication was read once or twice) x 3 Test (pretest, posttest 1, posttest 2) design. It was hypothesized that participants presented with the discounting cue after a persuasive message, receiving the persuasive message twice, and from a low credibility source, would be more likely to demonstrate an increase in positivity of attitudes in posttest (i.e., a sleeper effect), consistent with the thrust of the persuasion message after a delay of one week (an attenuation of the communication effect from posttest 1 to posttest 2) compared to other study conditions, thus demonstrating a sleeper effect. To clarify this effect, a theory-relevant variable (i.e., vested interest) was entered as a moderator. For this purpose, a sample of 200 Mturk participants was assembled A mixed factorial between-within groups ANOVA was used to analyze the data. Results suggested no within-group time effects, owing to the standardization of the attitude measure. Only message repetition yielded a significant main between-effect, such that participants who received the persuasive message once demonstrated a more pronounced attitude change in favor of the persuasive message across all time points, as compared to participants who received the persuasive message twice. The discussion section critically examines the underlying reasons for the discrepancy between hypothesized outcomes and yielded results.

Keywords. Psychology, Persuasion, Attitudes, Sleeper Effect, Attitude Change

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Reviving the Sleeper Effect

Years of research on attitudes and persuasion have enhanced and deepened our understanding of human behavior and how it can be changed. The resulting theories, informed by sound empirical research, explain various ways of successfully influencing human beliefs, attitudes, and behavior. However, it is not as straightforward as it may seem. Each theory comes with its own set of conditions that must be fulfilled for attitude change to occur. This does not imply that attitude change is only possible in a highly controlled environment. Instead, it shows that careful consideration must occur before attitude change can be expected. Only by having an in-depth understanding of these conditions and how they can be applied to influence human behavior can we master the science of persuasion.

When considering persuasive communication, these very conditions inform us of factors that may facilitate or hinder persuasion, the latter including any accompanying information that may raise doubts about its validity. For example, Lariscy and Tinkham (1999) found that people were more likely to reject a persuasive message about a political candidate if it was relayed by a representative of the opposing party. The source of the persuasive communication (i.e., the opponent party member conveying the message) casts doubt on the trustworthiness of the message and decreases its credibility (Hovland et al., 1953). The opposing source serves as a "discounting cue," reducing the impact of the message temporarily. As a result, there will be no immediate persuasive effect of the message on the audience. However, as time goes by, individuals might forget the source but remember the message, and therefore, might exhibit a delayed persuasion effect in the direction of the message. This is known as the "sleeper effect." It signifies a delayed increase in persuasion, evidenced when a discounting cue associated with a

persuasive message becomes inaccessible or dissociated from the memory of message receivers over time (Hovland et al., 1949).

The sleeper effect garnered considerable attention in early research owing to its showing an increased persuasion effect over time, with several studies being carried out to understand the phenomenon. However, there were mixed accounts about the existence and reliability of the effect. Several researchers found the sleeper effect to be an unreliable mechanism and therefore concluded that social psychology would be better off accepting the null hypothesis than continuing to study it (Capon & Hulbert, 1973; Gillig & Greenwald, 1974). On the contrary, several other researchers advised against accepting the null hypothesis and urged researchers to study prior research on the phenomenon cautiously and test it to put the controversy to rest (Cook & Flay, 1978; Cook et al., 1979; Eagly & Chaiken, 1993; Gruder et al., 1978).

These empirical accounts of the sleeper effect are inarguably old. Due to the conflicting accounts, research surrounding the phenomenon died down until Kumkale and Albarracin (2004) performed a meta-analysis, carefully reviewing the conditions under which the sleeper effect existed and outlining its possible moderators and mediators. From the past literature, their research identified the specific conditions under which the sleeper effect is likely to occur. These conditions, supported by their theoretical underpinnings, are the basis of the current research.

Forgetting and Dissociation Hypothesis

Understanding the sleeper effect requires understanding how the discounting cue becomes less accessible to individuals over time. Previously, this was explained by the forgetting hypothesis (Hovland et al., 1949) and later by the dissociation hypothesis (Hovland & Weiss, 1951).

The forgetting hypothesis suggested that while the discounting cue initially decreases the persuasive power of the message, over time the message receivers might forget about it. They would recall only the merits of the message, resulting in a delayed increase in persuasion. A series of experiments were conducted to test the validity of this hypothesis (Hovland & Weiss, 1951; Kelman & Hovland, 1953; Weiss, 1953). While these experiments suggested that messages with a discounting cue led to a delayed increase in persuasion, recall measures indicated that message receivers did remember the non-credible sources. As a result, the forgetting hypothesis was replaced with the dissociation hypothesis. The dissociation hypothesis (Hovland & Weiss, 1951) suggested that the sleeper effect was not necessarily evidenced because the discounting cue is forgotten from memory. It is simply that the association between the message and the discounting cue is weakened over time, making the cue less accessible compared to the persuasive message.

Differential Decay Hypothesis and Cue Position

The dissociation hypothesis begs an important question: what underlying phenomenon makes discounting inaccessible if not forgotten regarding the message? Pratkanis et al., (1988) attempted to resolve this issue this question by carrying out 17 experiments focused on identifying the conditions in which the sleeper effect does and does not occur. They did so by manipulating the position of the discounting cue in the persuasive communication, such that it was presented either before or after the message. Findings suggested that the sleeper effect more commonly occurred when the discounting cue was presented at the end of the persuasive message, not before it. They explained this effect using the differential decay hypothesis, purporting that the cue and the persuasive communication decay in the message receiver's memory at different rates. Initially, both the cue and message have an equal impact; however,

later, the cue decays quicker than the message. It is important to note that the position of the discounting cue is crucial to this effect. Owing to the primacy effect (Miller & Campbell, 1959), the information presented at the beginning of communication tends to have a longer-lasting impact relative to the information presented later, which dissipates more quickly. All in all, the sleeper effect should occur when the discounting cue follows the messages, creating a primacy effect. The communication and the cue decay at different rates in the message receiver's memory, eventually increasing persuasion over time.

The differential decay hypothesis focuses on the discounting cue, and by focusing on its position in persuasive communication, it enables us to understand to some extent how the sleeper effect works. However, the present research also focuses on the message arguments and their role in facilitating or hindering the sleeper effect. Does the extent of message elaboration have anything to do with creating the sleeper effect? More specifically, whether differences in the ability and motivation of the message receiver impact the phenomenon. For this purpose, we consider the Elaboration Likelihood Model in relation to the sleeper effect.

Elaboration Likelihood Model (ELM)

The Elaboration Likelihood Model (Petty & Cacioppo, 1986) holds that there are two ways of information processing: a central route and a peripheral route. The central route to processing takes place when the target's ability and motivation to cognitively process information is elevated. In such circumstances, targets focus on the merits and quality of the argument. The peripheral route to processing takes place when this very ability and motivation are compromised. In such circumstances, targets focus on subtle cues within and surrounding the message, such as characteristics of the message source, etc. The ELM has implications for the

sleeper effect, and several studies have been carried out to review these implications (e.g., Petty & Cacioppo, 1986; Petty et al., 1993).

If we consider the sleeper effect through the overarching lens of the ELM, it does not explain it effectively. For the sleeper effect to occur, the target must centrally process the message and peripherally process the discounting cue. For the successful processing of the persuasive message, the target should have high ability and motivation. On the contrary, for the processing of the discounting cue, the ability and motivation should be low. It is only then that the target would rely on peripheral cues such as the source of the message and eventually disregard it. These processes are unlikely to occur simultaneously unless under specific conditions as specified by Petty and Cacioppo (1986) required to create the sleeper effect.

Cue Position and Elaboration Likelihood Model (ELM)

Two situations may arise when persuasive communication follows the discounting cue (Eagly & Chaiken, 1993; Priester et al., 1999). First, focusing on the discounting cue before the message may raise doubts about the message. As a result, the message may be ignored. Second, despite the discounting cue and the associated credibility concerns, targets might still be influenced by the merits of the message. In both situations, targets will either be influenced by the cue or the message, but not both, and therefore, the sleeper effect may not be evidenced. When cue follows persuasive communication, different outcomes may arise. Petty and Cacioppo (1986) suggested that when persuasive communication precedes the discounting cue, it is likely that the cue might be ignored entirely as deemed irrelevant. On the contrary, a cue might completely suppress the impact of the message when presented at the end – at least initially, but not long-term.

As discussed, the ELM purports that persuasive communication is the most effective when the targets have high motivation and the ability to process them cognitively. Empirical evidence suggests the discounting cue is most effective when presented at the end of persuasive communication. Considering these findings, Petty and Cacioppo (1986) predicted that for the sleeper effect to occur, the target's motivation and ability should be high, and a discounting cue should be presented at the end of the persuasive message. This prediction was partially supported by Priester et al., (1999), who found the sleeper effect when participants with high motivation to think about the message were presented with a message that preceded the discounting cue.

This prediction was further tested by Kumkale and Albarracin (2004). They reviewed 24 eligible reports on the sleeper effect, comprising 72 data sets, focusing on the facilitating conditions. Moderator analyses suggested the sleeper effect was more likely to occur when the discounting cue followed rather than preceded the persuasive communication. In addition, the magnitude of the sleeper effect was higher when participants' ability and motivation were high, such that they had been presented with persuasive communication more than once during the experiment, had prior knowledge about the issue, and the issue under discussion had high outcome relevance.

Vested Interest and Source Characteristics

While the findings from this meta-analysis support Petty and Cacioppo's (1986) predictions, they also highlight the supposed role of outcome-relevance of an issue in facilitating the sleeper effect. Prior literature shows that outcome relevance has not been given sufficient importance when it comes to understanding the sleeper effect. Most prior studies on the sleeper effect used messages of low outcome relevance (Albarracin & Kumkale, 2004). The present

study aims to rectify this problem and will begin by operationally redefining the construct of outcome relevance as Vested Interest.

Throughout the years, scholars have employed various constructs such as involvement, outcome relevance, self-relevance, or personal relevance to elucidate this phenomenon within the field of social psychology. These terms carry a similar meaning: if an attitude object is personally relevant, of high-involvement, or highly outcome relevant, it is believed to be consequential on our immediate goals. As a result, individuals are more likely to elaborate on such persuasive communication. Such issues also have consequences for behavioral intentions. In our study, we opt to embrace the notion of vested interest, recognizing its comprehensiveness in capturing the entirety of meaning.

Vested Interest is defined as the extent to which an attitude object is considered personally relevant by an individual, which has implications for attitude change. If the object is considered important and has high perceived personal consequences, it will be deemed an attitude of high vested interest (Crano, 1983). These highly vested attitudes are functionally associated with behavior (Crano & Prislin, 1995). In other words, when a certain law or policy is perceived as both important and personally consequential to people, they will have more at stake in them. As a result, they will act either in support or defiance of that law or policy, depending on their vested interest.

The question is, does having a vested interest in the attitude object under discussion facilitate or hinder the sleeper effect? To answer this question, we must consider the interaction between source credibility, elaboration, cue position, and vested interest. Homer and Kahle (1990) found that when individuals were less personally involved (low vested interest) with an issue, a message presented from an expert source was persuasive if presented after the persuasive

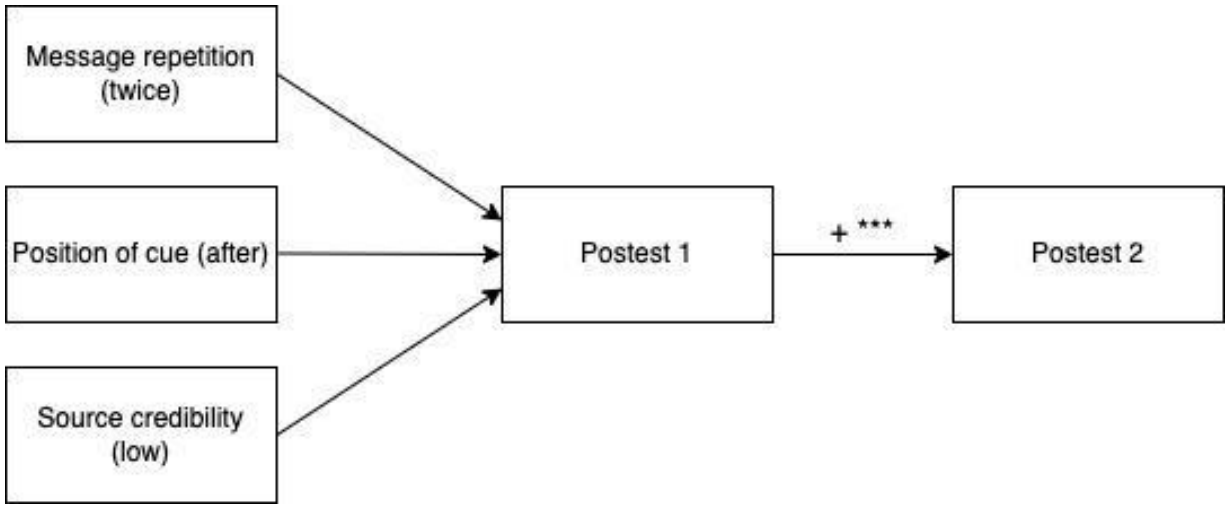
communication as opposed to before it. On the contrary, when an issue was highly vested, the message presented from an expert source was influential when presented at the beginning of the persuasive communication, as compared to when it is presented at the end. Priester and Petty (1995) also shed light on the interaction between source characteristics and message elaboration. They found that perceiving a source as untrustworthy might lead to higher message elaboration. On that note, a discounting cue from an untrustworthy source might increase the message's elaborative processing, enhancing the sleeper effect. This interaction can have interesting implications for the sleeper effect.

The present study is designed to fully encompass the impact of discounting cue position, source credibility of the discounting cue, message elaboration, and vested interest in understanding the sleeper effect. There is a dearth of literature that tests the sleeper effect under the conditions mentioned, and there is no single experimental study to holistically support these predictions. For this purpose, the present study is proposed with the goal of creating conditions that will elicit the sleeper effect. This research will help revive interest in the sleeper effect and its cognitive underpinnings. Based on the literature reviewed, the following hypothesis is proposed (See Figure).

H1: Participants presented with the discounting cue after the persuasive message, in the high elaboration condition, and from a low credibility source, are more likely to demonstrate an increase in ratings on the attitude object in the direction of the message on the delayed posttest, compared to other conditions (See Figure 1).

Figure 1

Hypothesized Model Illustrating Relationships between Discounting Cue Position, Elaboration, Source Credibility of Discounting Cue, and Sleeper Effect



Methods

Participants

Participants included in this study were required to be at least 18 years old, citizens of the United States, and fluent in both speaking and reading English. Data were collected through Amazon's Mechanical Turk (MTurk). An a priori power analysis conducted using G*Power version 3.1.9.7 (Faul et al., 2007) suggested that a sample of 25 participants per group was required to detect a small effect size at a significance criterion of $\alpha = .05$, power (1-β err prob) = 0.95, using a repeated measures (within/between subjects) ANOVA. A sample of 370 participants was collected for Phase 1, and each participant was compensated $2. Subjects with missing data were removed from the sample. Participants who failed either one of the attention checks, gave incomplete responses, spent less than 15 seconds reading the persuasive message and discounting cue, or failed the timing check on the persuasive message and the cue were also removed. As such, approximately 7% of the sample was removed.

The resulting sample of 344 participants were invited to participate in Phase 2. The survey link was sent on eight days after participating in Phase 1. Participants who did not complete Phase 2 on the 8th day were sent reminders to participate the following two days via MTurk. A sample of 228 participants participated in Phase 2, an attrition rate of 34%. Three participants were removed from Phase 2 for failing the timing check, reducing the sample to 225. Each participant was compensated $1 for their participation in Phase 2.

The data spanned various age groups: 19.4% (n = 43) were between 21 and 30 years, 32.9% (n = 73) fell within the 31 to 40 age range, 26.1% (n = 58) were aged 41 to 50, 14% (n = 31) were between 51-60 years of age, and 7.6% (n=17) were between the age of 61 and over. The sample age range was 21 to 76, with a mean age of 41. The sample consisted of 54% participants (n = 121) who identified as female, 45% participants (n = 100) who identified as male, 0.9% (n = 2) who identified as non-binary, and 0.9% (n = 2) who chose not to identify their gender.

Research Design

The present study was a 2(position of cue: before/after the message) x 2(source credibility of the discounting cue: high credibility, low credibility) x 2(message repetition: once, twice) x 2(time) mixed factorial between-within ANOVA.

Procedure

IRB approval was acquired for Phases I and II of the present study. The survey was designed using Qualtrics and distributed through MTurk. For Phase I, the survey began by asking participants to read and accept or decline the informed consent (See Appendix A). Those who declined to participate were thanked for their participation and dismissed. Participants who accepted the informed consent were directed to the pretest attitude measure, which gauged their

attitudinal responses toward the four-day work week using a Likert scale. They were also presented with a vested interest measure as part of the pretest.

Once both measures were completed, participants were randomly assigned to one of the eight experimental conditions or an off-set control condition. Each experimental condition entailed participants engaging with a persuasive message advocating a four-day work week (See Appendix B), accompanied by the discounting cue (See Appendix C). The two reading passages were systematically manipulated across different combinations of the levels of the three predictor variables: discounting cue position (before the message, after the message), source credibility of the discounting cue (high credibility, low credibility), and message repetition (once, twice). Participants who received the persuasive message twice were exposed to the discounting cue only once, after reading the persuasive message for the second time.

Participants in the off-set control condition received only the persuasive message and did not receive the discounting cue or any treatment manipulations. After completing the tasks in the assigned condition, participants were measured on their immediate posttest attitudes toward the four-day work week using a semantic differential scale. They then filled out demographic information regarding their age and identified gender (See Appendix D). Finally, participants were debriefed about the study purpose (See Appendix E), informed about Phase II, and compensated for their participation.

After 7 days, participants were sent an invitation to participate in Phase II. They were presented with an informed consent (See Appendix F). If participants declined, they were thanked for their participation. Those who accepted the informed consent were directed to an attitudes measure that gauged their attitudes toward the four-day week using a Likert scale. After completing the questionnaire, participants were completely debriefed about the purpose of the study (See Appendix G). Given the use of deceptive elements in the study, they were given the

option to opt out of including their responses in the survey data. Participants who chose to opt out were still compensated, although their data were excluded from the study analysis.

Measures and Variables

Phase I-Pretest Attitude Measure. The pretest attitude measure was designed to gauge participant attitudes before receiving treatment. The measure comprised 10 items (e.g., "A four-day work week will increase work productivity"), measured on 5-point Likert scales with 1 indicating "Strongly Disagree" and 5 indicating "Strongly Agree." Internal consistency for this measure was $\alpha = .81$ (see Appendix H).

Vested Interest Scale. The vested interest measure was designed to gauge the extent to which participants had a vested interest in the four-day workweek. This measurement included 20 items (e.g., "I have a close friend and/or relative who has a four-day work week at their company") that were measured on a 7-point Likert scale, with 1 indicating "Strongly Disagree" and 7 indicating "Strongly Agree." The measure also included 4 items (e.g., "How often do you need an extra day off during a work week?") using a 5-point Likert scale, with 1 indicating "Never" and 7 indicating "All the time." Internal consistency for this measure was $\alpha = .92$ (see Appendix I)

Message Repetition. Message repetition was an independent variable in the present study, with two levels (i.e., once or twice) aimed at manipulating participant elaboration of the persuasive message. Participants were presented the persuasive message advocating for the four-day work week either once or twice, depending on the condition they were randomly assigned to (see Appendix J).

Position of the Cue. Position of the Cue had two levels (i.e., before the message, after the message), aimed at manipulating whether participants read the persuasive message before or after the discounting cue depending on the condition they were randomly assigned to.

Source Credibility of the Discounting Cue. Source credibility of the discounting cue also had two levels (i.e., high credibility, low credibility). Participants were presented a discounting cue either from a high credibility source or a low credibility source, depending on the condition they were randomly assigned to (see Appendix C).

Phase 1-Posttest Attitude Measure. The posttest attitude measure at Time 2 was designed to gauge participant attitudes immediately after receiving treatment. The measure includes eight semantic differential items consisting of a range of bipolar adjectives (e.g., bad/good, productive/unproductive, effective/ineffective) measured on a scale from 1 to 7. Internal consistency for this measure was $\alpha = .96$ (see Appendix K).

Phase II-Posttest Attitude Measure. Attitude measure at time 3 was a dependent variable in the present study, measured by the posttest 2 attitude measure, designed to gauge participant attitudes toward the four day work week after 1 week of completing Phase I, and to measure if the sleeper effect had indeed occurred. The measure used for Phase I-pretest attitudes was re-administered in Phase II. Internal consistency for this measure was $\alpha = .85$ (see Appendix H).

Credibility manipulation check. Participants who received the discounting cue through a high or low credibility source were also presented with a credibility manipulation check. This comprised a single Likert-scale item, inquiring about the extent to which they perceived the source of the discounting cue to be “credible”. Response was rated on a 5-point scale with 1 indicating “not at all credible” and 5 indicating “extremely credible” (see Appendix L).

Thought listing. After completing tasks in their assigned conditions, participants were asked to list the thoughts that came to their mind while they were reading the persuasive message. They were given instructions to record as many thoughts as they wanted to list, with 10 text fields provided. They then rated their thoughts as positive, negative, and neutral. Thought listing exercise was used as an outcome measure for message elaboration (Priester & Petty, 1995) (see Appendix M).

Results

Before delving into the core findings, key assumptions underpinning the statistical analysis for the present study were examined. Data were examined for the assumption of normality. A look at the descriptive analysis showed skew and kurtosis estimates for all measures to be under 2 and 10 respectively, which suggests that data are normal (Hair et al., 2010). A correlational analysis also was conducted to assess relationships among variables. Variables had a moderate to strong relationship. Additionally, scatterplots for all continuous variables were examined to check for the assumption of linearity. Plotted distributions showed that data points were loosely fitted to the regression line. Some variability in the data points was evident, particularly at the extremes. However, there was no clear evidence of a systematic non-linear pattern. Therefore, it was deduced that the assumption of linearity is reasonable for this study.

A Breusch-Pagan test of non-constant variance was also conducted, which showed that data did not violate the assumption of homoscedasticity ($\chi 2 = 6.62$, $p = .09$). The Mauchly's test of sphericity indicated a violation of the sphericity assumption ($\chi 2 = 8.08$, $p = .02$) for the within-subjects effect of time. Consequently, the Greenhouse-Geisser correction was applied to the degrees of freedom in the ANOVA analysis to adjust for this violation.

In preparation for regression analysis, the data were evaluated for multicollinearity to ensure the validity of the results. All continuous variables exhibited VIF values below 3 and tolerance levels above 0.3, indicating an absence of multicollinearity concerns within the dataset (Kim, 2019).

Source Credibility Manipulation Check

In assessing the effectiveness of the discounting cue source credibility manipulation, an independent sample *t*-test revealed a significant difference in perceived source credibility between the high credibility source (M = 3.23, SD = .94) and the low credibility source (M = 2.87, SD = 1.02), $t(198) = 2.58$, $p = .01$, with a Cohen's d of 0.36. This indicates that participants perceived the high credibility source as significantly more credible than the low credibility source, validating that the manipulation was effective.

Thought Listing

In assessing the effectiveness of message repetition manipulation, a thought listing analysis was conducted. Analysis of the mean scores suggested that on average, participants exposed to the message repetition "twice" condition elicited more message-related thoughts (M = 7.11, SD = 3.08) than those in the "once" condition (M = 6.77, SD = 3.27), indicating that message repetition did enhance elaboration on the message content. However, the average number of positive thoughts did not differ between groups (M = 3.80, SD = 3.10), suggesting that the repetition of the message did not influence the generation of positive thoughts specifically.

Conversely, for negative thoughts, participants in the “twice” condition reported a higher mean (M = 1.64, SD = 1.91) compared to participants in the “once” condition (M = 1.55, SD = 1.95). Finally, for neutral thoughts, the "twice" condition yielded a higher mean (M = 1.70, SD = 2.02) than the "once" condition (M = 1.40, SD = 1.86). These findings suggest that while

participants generated a high number of message-related thoughts in both groups, message repetition "twice" increased the overall generation of thoughts.

To estimate which group engaged in higher counter-argumentation, the total number of positive thoughts were divided by the total number of positive and negative thoughts for participants who received persuasive messages once or twice. Results suggested that participants who read the persuasive message twice engaged in slightly higher counter-argumentation (M = 0.37, SD = 0.35), as compared to participants who read the persuasive message once (M = 0.30, SD = 0.34). An independent sample *t*-test showed that the difference in counter argumentation between the message repetition group "once" and "twice" was not statistically significant $t(193) = -1.04$, $p = .30$.

Repeated measure ANOVA

It was hypothesized participants presented with the discounting cue after the persuasive message, in the high elaboration condition, and from a low credibility source, will be more likely to demonstrate an increase in ratings on the attitude object in the direction of the message on the delayed posttest, compared to other conditions. To this end, a mixed factorial ANOVA with repeated measures was performed to examine the temporal change of attitudes toward the four-day workweek, measured at three distinct intervals: pre-treatment, immediate post-treatment, and one-week post-treatment. Also, the analysis included between-group comparisons to determine the impact of source credibility, position of the cue, and message repetition, as well as their interaction effects with attitude change over time points. The data was transformed into z-scores to standardize and make the score comparable for the different semantic differential and Likert scale measures used to gauge participant attitudes.

Table 1

Descriptive Statistics for Study Variables

		High Credibility				Low Credibility			
		Before		After		Before		After	
Time	Message repetition	*M (SD)*	*N*	*M (SD)*	*N*	*M (SD)*	*N*	*M (SD)*	*N*
Time 1	Once	.08 (.86)	24	-.01 (1.00)	29	.09 (.69)	16	.36 (.90)	25
	Twice	-.10 (1.02)	25	-.15 (1.25)	24	-.18 (1.01)	24	-.15 (1.06)	33
Time 2	Once	.14 (.88)	24	-.15 (1.06)	29	-.22 (1.12)	16	.21 (.72)	25
	Twice	-.13 (.93)	25	-.40 (1.27)	24	-.05 (.85)	24	0.40 (1.12)	33
Time 3	Once	.16 (.99)	24	-.11 (.98)	29	-.23 (1.06)	16	.38 (1.05)	25
	Twice	-.16 (.92)	25	-.31 (1.13)	24	-.17 (.88)	24	-.23 (1.01)	33

Note. M = Mean, SD = Standard Deviation.

Analysis of the within-subject effects revealed that there was no significant main effect of time, F (1,917) = .02, p = .89, owing to the standardization of measures. Additionally, there was no significant interaction between time and any of the study conditions (See Table 2).

Table 2

ANOVA Statistics of Within-Subject Effects for Study Variables

Source	Type III sum of squares	*df*	Mean square	*F*	*p*	Non-centered parameter	Observed power
Time	.01	1.917	0.006	0.016	0.984	0.031	0.052
Time * Repetition	0.030	1.917	0.016	0.035	0.953	0.084	0.056
Time * Position	0.754	1.917	0.393	1.094	0.334	2.098	0.237
Time * Source Credibility	0.092	1.917	0.048	0.134	0.867	0.257	0.070
Time * Repetition * Position	0.479	1.917	0.250	0.695	0.494	1.332	0.164
Time * Repetition * Credibility	0.527	1.917	0.275	0.765	0.461	1.466	0.175

Time * Position * Credibility	0.426	1.917	0.222	0.618	0.533	1.185	0.151
Time * Repetition * Position * Credibility	0.492	1.917	0.257	0.714	0.485	1.369	0.168
Error	132.253	368.159	0.359				

Note. Repetition = Message repetition, Position = Position of the cue, Credibility = Source credibility. Observed power was computed using alpha = .05. Results were obtained using Greenhouse-Geisser estimates.

The test of between-subjects effects showed a significant main effect of Message Repetition on the average transformed attitudes $F(1,192) = 4.23$, $p < .05$ (See Table 3). Graphical representation of the main effect of message repetition showed that participants who read the persuasive message "once" had higher means across all three time points, in comparison to participants who read the message "twice." None of the other between-subject effects were significant and there were no significant interactions among message repetition, source credibility, and position of the cue. These findings suggested that the hypothesis was not supported.

Table 3

ANOVA Statistics of Between-Subject Effects for Study Variables

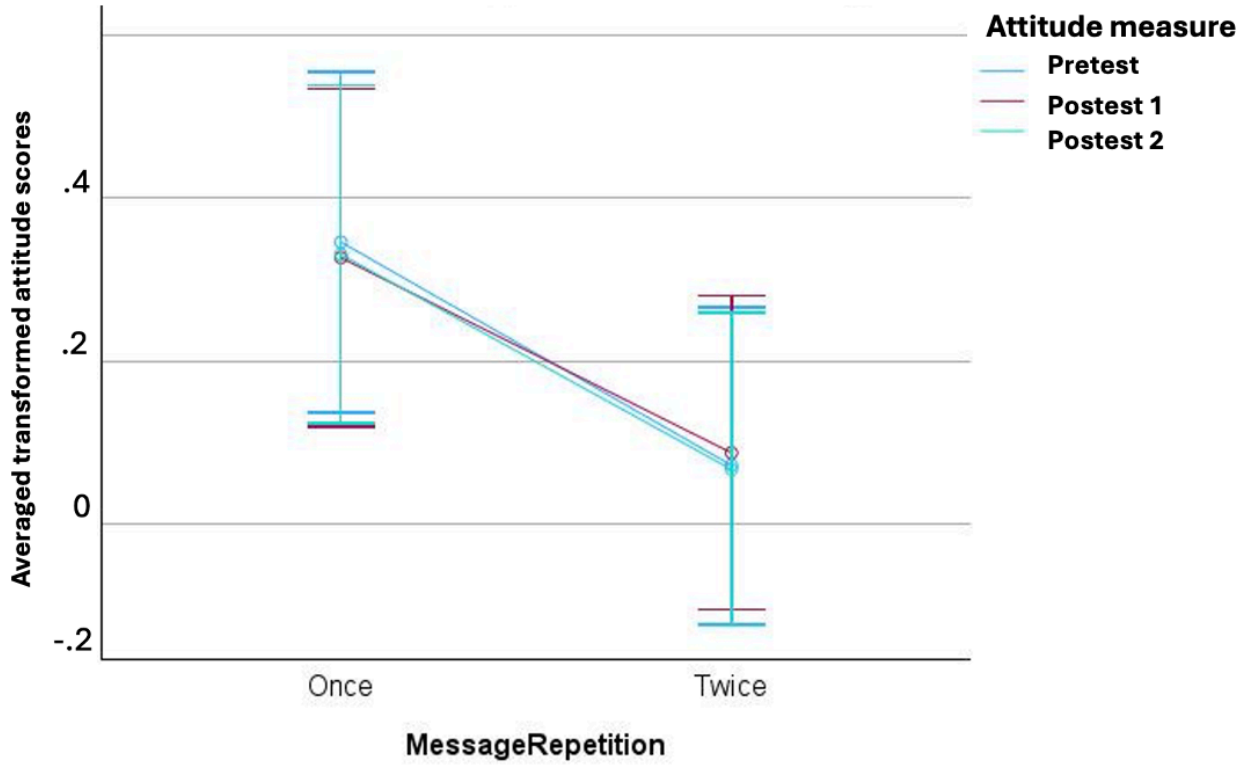
Source	Type III sum of squares	*df*	Mean square	*F*	*p*	Non-centered parameter	Observed power
Intercept	0.017	1	0.017	0.007	0.932	0.007	0.051
Repetition	9.698	1	9.698	4.226	0.041	4.226	0.534
Position	0.033	1	0.033	0.014	0.904	0.014	0.052
Credibility	0.317	1	0.317	0.138	0.710	0.138	0.066

Repetition * Position	2.223	1	2.223	0.968	0.326	0.968	0.166
Repetition * Credibility	0.174	1	0.174	0.076	0.783	0.076	0.059
Position * Credibility	4.295	1	4.195	1.828	0.1778	1.828	0.270
Repetition * Position * Credibility	3.589	1	3.589	1.564	0.213	1.564	0.238
Error	440.627	192	2.295				

Note. Repetition = Message repetition, Position = Position of cue, Credibility = Source credibility. Observed power was computed using alpha = .05.

Figure 2

Main Effect of Message Repetition across Average Transformed Attitude Scores



Note. This figure demonstrates the main effect of message repetition levels once and twice across average transformed attitude scores.

Exploratory Moderation analysis

Regression analysis was conducted to assess how vested interest moderated the impact of message repetition (once, twice) on attitude change from Time 1 to Time 2. The resultant analysis was interpreted while being cognizant of the outcome variable (i.e., mean difference Time 1-Time 2). Descriptive analysis showed a downward trend, indicating that immediate posttest 1 attitudes were lower than participant pretest attitudes.

Results revealed that while message repetition (once, twice) was not a significant predictor of attitude change from time 1 to time 2, vested interest indeed was a significant negative predictor of attitude change (β = -.32, p < .001). This suggests that the higher the vested

interest, the lower the attitude change, and vice versa. The moderation effect of vested interest in predicting attitude change by message repetition was not significant ($\beta = .27$, $p = .06$) (See Table 4).

Table 4

Regression Model Comparisons Predicting the Relationship between Message Repetition and Attitude Change as Moderated by Vested Interest

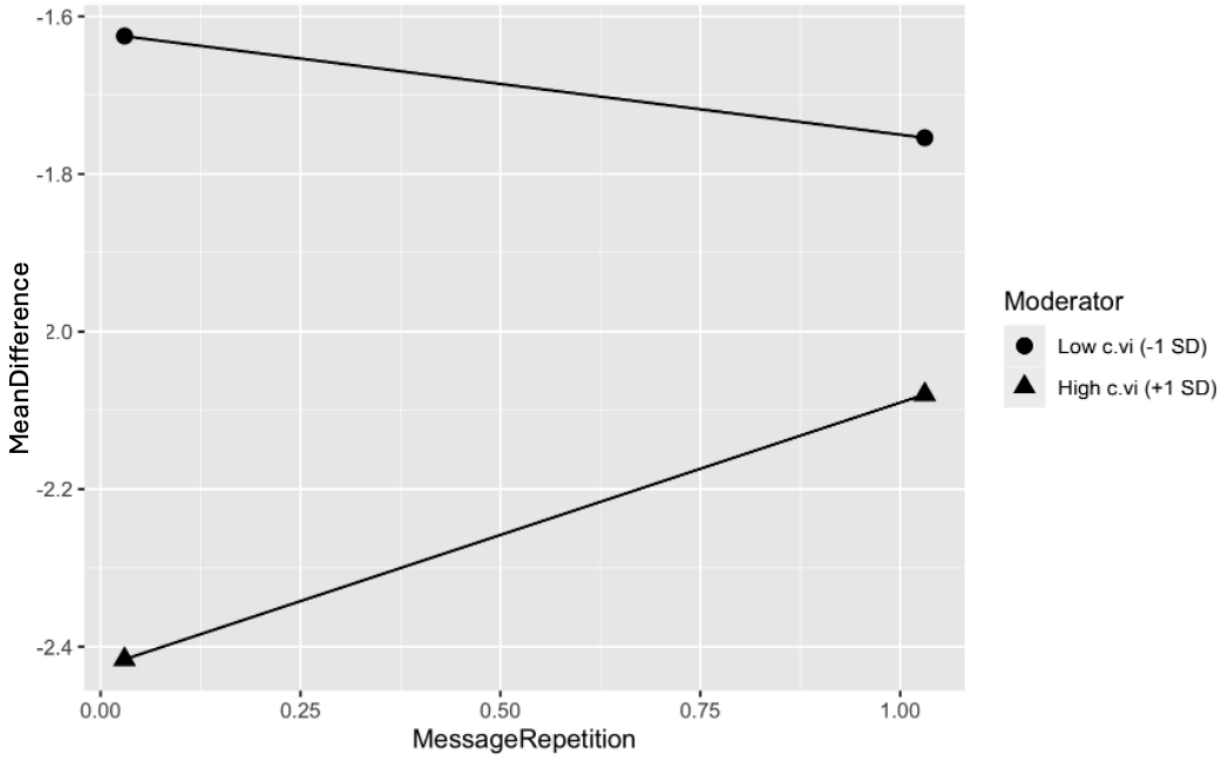
	B	SE	t	β	R^2	F	df	ΔR^2
Model 1					.01	1.05	196	
Intercept	-2.05	.09	-21.61					
MR	.13	.13	1.02	.08****				
Model 2					.09	9.73	195	.001
Intercept	-2.03	.09	-22.37					
MR	.11	.13	.85	.06				
VI	-.32	.08	-4.28	-.29***				
Model 3								
Intercept	-2.02	.09	-22.41		.11	7.71	194	.001
MR	.10	.12	.83	.06				
VI	-.48	.12	-4.20	-.44***				
MRxVI	.28	.15	1.84	.19				

Note. MR=message repetition, VI=vested interest, MRxVI=moderator term, * $p < .05$, ** $p < .01$, *** $p < .001$, **** $p > .05$

Given that the p-value for the moderation effect was approaching significance, a simple slope analysis was conducted to understand how the relationship between message repetition and attitude change varied at different levels of vested interest. At low levels of vested interest, no effect was observed in the relationship between message repetition and attitude change (β = -.13, p = .47). However, a graphical representation of the simple slopes indicated that at high levels of vested interest, participants who received the message twice exhibited more attitude change, as compared to the change of those who received the persuasive message only once. This effect also approached statistical significance (β = .33, p = .06) (See Figure 3).

Figure 3

Simple Slope Moderation Analysis of Relationship between Message Repetition and Attitude Change at Varied Levels of Vested Interest



Note. MeanDifference=pretest attitude scores-postest1 attitude scores. c.vi=vested interest.

A regression analysis was also conducted to assess the role of vested interest in predicting time 3 attitudes. As expected, regression analysis showed that time 2 attitudes were a significant positive predictor of time 3 attitudes ($\beta = .31$, $p < .001$). Vested interest was also a significant positive predictor of time 3 attitudes ($\beta = .24$, $p < .001$), suggesting that participants who had a higher vested interest in the four-day work week at time 1 continued to exhibit higher attitude ratings at time 3 (See Table 5).

Table 5

Regression Model Comparisons Predicting the Relationship between Time 2 and Time 3 Attitudes and Vested Interest

	B	SE	t	β	R^2	F	df	ΔR^2
Model 1					.51	205.15	196	
Intercept	1.08	.17	6.35					
Time 2	.42	.03	14.32	.72***				
Model 2								
Intercept	1.69	.20	8.66		.58	131.94	195	.001
Time 2	.31	.04	9.31	.53***				
VI	.25	.05	5.40	.31***				

Note. Time2=attitude scores at immediate posttest, VI=vested interest, * $p < .05$, ** $p < .01$, *** $p < .001$, **** $p > .05$

Discussion

The present study examined how discounting cue position (before, after), source credibility of the discounting cue (high credibility, low credibility), and message repetition (once, twice) interacted in eliciting the sleeper effect. It was hypothesized participants presented with the discounting cue after the persuasive message, in the high elaboration condition, and from a low credibility source, will be more likely to demonstrate an increase in ratings on the attitude object in the direction of the message on the delayed posttest, compared to other conditions. The hypothesis was not supported.

As mentioned in the results section, there was only a significant main effect of the message repetition condition across the mean transformed attitudes. Specifically, participants who were in the message repetition "once" condition had higher attitude scores as compared to those in the message repetition "twice" condition. The purpose of message repetition manipulation was to ensure that participants pay more attention to the persuasive message, elaborate on it, and therefore, eventually, be influenced by it, as elaboration has implications for attitude change (Crano & Seyrenian, 2009).

Contrary to prior literature, the present study yielded the opposite effects: attitude change was more pronounced when participants read the message only once. Aligning these results with thought-listing outcomes, it is evident that even though participants in the "twice" condition generated more overall thoughts, both groups generated the same number of positive thoughts related to the message. This suggests that participants in both groups equally favored the four-day work week. However, participants in the twice condition generated a higher number of negative thoughts toward the message, suggesting counter-argumentation. After computing the counterargumentation scores, it became clear that the group exposed to message repetition

"twice" engaged slightly more in counterargumentation than the group exposed to message repetition "once."

It is likely as participants read the persuasive message twice, they were able to generate counterarguments against the message, which can negatively impact their ability to be persuaded by the message. Indeed, counterarguing is an effective strategy for resisting persuasion (Zuwerink Jacks & Cameron, 2003).

In addition, generating counterarguments for a strong persuasive message and resisting it can strengthen participants' attitudes (Tormala & Petty, 2002). Hence, even though the message repetition manipulation worked, the attitude change was more pronounced for participants who read the message "once". As they generated fewer counterarguments, they did not resist the message, leading to an attitude change in the direction of the persuasive message.

The present study hypothesized an effect of time, such that regardless of participants' pretest attitudes, those who were assigned to source credibility 'low', message repetition 'twice', and position of cue 'after' condition would demonstrate a delayed increase in their attitudes toward the four-day work week (i.e., the sleeper effect). Unfortunately, results demonstrated no such effect. Additionally, no interactions were observed between time and any of the predictor variables.

Vested interest was a significant negative predictor of attitude change from time 1 to time 2, such that the higher the vested interest, the lower the attitude change. These findings support prior findings purporting that vested attitudes are more resistant to persuasion. Since vested issues are more personally relevant to an individual, they are highly consequential to attitudes and behavior (Crano & Prislin, 2006). These attitudes are stronger, more predictive of behavioral intentions, and more resistant to change, as they are developed after thorough elaborative

processing (Krosnick & Petty, 1995; Petty & Cacioppo, 1986). Individuals with a high vested interest in an attitude object are more likely to engage in motivated reasoning, actively seeking out information that confirms their already held attitudes and counter-arguing against information that is not in line with them. With such meticulous cognitive work, resulting vested attitudes are stronger and more resistant to persuasion (Zuwerink Jacks & Cameron, 2003). Therefore, any attempts to sway vested attitudes in a different direction are likely to be rejected and will not yield an attitude change. Hence, in the present study, higher vested interest predicted lower attitude change in participants.

Vested interest did not moderate the relationship between message repetition and attitude change from time 1 to time 2. However, the estimates seem to be approaching significance. This effect can be attributed to the categorical nature of the predictor message repetition, as it might have impacted the variable's range and diminished its variance. Additionally, given a p-value of .06, expanding the sample size could enhance the likelihood of identifying a statistically significant moderation effect.

In terms of delayed attitude change at posttest 2, even though the effect of time or any of the grouping variables was not significant, time 2 attitudes were a significant positive predictor of time 3 attitudes. Since both measures were tapping the same attitude object at different time points, their attitude scores were moderately correlated with each other. It is only reasonable for this positive predictive relationship to occur. Vested interest at time 1 was also a significant positive predictor of time 3 attitudes. Vested interest was added to the model to assess its moderating role in predicting time 3 attitudes from time 2. However, the moderating role was not significant. As informed by prior literature, having a high vested interest in an issue may have implications for attitudes and attitude change (Crano & Prislin, 1995).

In conclusion, the study examined the interplay of cue position, source credibility, and message repetition in inducing the sleeper effect. Contrary to expectations, attitude change was more pronounced with a single message exposure, possibly due to less counterargumentation. Vested interest negatively predicted attitude change, aligning with prior research on resistance to persuasion. While no sleeper effect was observed, attitudes remained stable over time, with vested interest showing a positive association with attitude persistence. Further research with expanded samples could clarify the moderating role of vested interest in message repetition effects.

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Appendix A

Phase I-Informed Consent

Agreement To Participate in Attitudes toward Four-day work week Survey

You are invited to participate in "Attitudes toward four-day work week" A research project. Volunteering will probably not benefit you directly, but you will be helping us/the investigators better understand your attitudes toward four-day work week. We will not be asking for your name, nor any key identifying information, nor will we be storing IP addresses, so we will not be able to trace your responses back to you and all information you provide will be completely confidential.

This will take about 12-15 minutes of your time. Volunteering for this study involves no more risk than what a typical person experiences on a regular day. Your involvement is entirely up to you. You may withdraw at any time for any reason. Please continue reading for more information about the study.

Study Leadership: This research project is led by Tehreem Riffat, MS, PhD candidate at Claremont Graduate University, who is being supervised by Prof. Dr. William Crano, of Claremont Graduate University.

Purpose: Today we are asking you to provide information about your attitudes toward four-day work week. After completion of the study, you will be provided a code to enter to affirm your completion of the study and receive your compensation of $1.

Eligibility: Respondents must be at least 18 years of age, be located within the US, and speak English.

Participation: During the study, you will be asked to provide information about your attitudes toward four-day work week.

Risks of Participation: There are minimal risks associated with this study. There should be no lasting effects to you from responding to these questions and reading these passages. We assure you that we are just looking for honest answers and there are no manipulations or trick questions in this survey.

Benefits of Participation: The benefits of the study include a better understanding of attitudes toward four-day work week, as well as the potential to generate a pool of eligible participants for a future study. We do not expect the study to benefit you personally. This study will benefit the researchers by helping us understand attitudes toward four-day work week.

Compensation: Participants who complete the survey and provide the CORRECT redemption code will receive $2 for their time. Participants do not have to participate in a follow-up study, but all participants who complete this survey are eligible.

Voluntary Participation: Your participation in this study is completely voluntary. You may stop or withdraw from the study at any time without it being held against you. Your decision whether to participate will have no effect on your current or future connection with anyone at CGU or with any other relevant entity/agency. If at any time you wish to discontinue with the survey, you may do so, but you will not receive compensation unless the correct code is provided on the hosting site.

Confidentiality: Your individual privacy will be protected in all papers, books, talks, posts, or stories resulting from this study. We may use the data we collect for future research or share it with other researchers, but we will not reveal your identity. To protect the confidentiality of your responses, we will not collect any key identifying data and all data will be stored on a password protected, encrypted computer only accessible by members of this research team.

Please note: CloudResearch/Cloudbase will use your IP address to verify your location is within the United States, but that information is collected separately from the survey information and the researchers will not be able to access it.

Further Information: If you have any questions or would like additional information about this study, please contact Tehreem Riffat at tehreem.riffat@cgu.edu or at (909) 893-9823. You may also contact William Crano at william.crano@cgu.edu. The CGU Institutional Review Board (IRB) has certified this project as exempt. If you have any ethical concerns about this project or about your rights as a human subject in research, you may contact the CGU IRB at (909) 607-9406 or at irb@cgu.edu. A copy of this form will be given to you if you wish to keep it.

Consent: Selecting "I understand and agree to participate" below means that you understand the information on this form, that someone has answered any and all questions you may have about this study, and you voluntarily agree to participate in it.

Agreement to Participate in Attitudes towards a Four-Day Work Week Survey

a. I understand and agree to participate
b. I do not agree to participate

Appendix B

Persuasive Message

"Work Smarter, Not Harder: The Benefits of Transitioning to a Four-Day Work Week"

The four-day work week is a popular topic on the news and media. It involves compressing the regular work week into four weekdays, giving employees an extra day off. Shortened work weeks are said to have several benefits. Supporters believe it could improve work-life balance and increase productivity. So far, several big companies from all over the world have tried out the four-day work week. Are the results promising? We will let you decide for yourself.

Data shows that the four-day work week is delivering the promised benefits and more. In 2019, Microsoft Japan tried out the four-day work week, and productivity increased by 40%! Not only that, but employees were happier and work meetings were more efficient. These numbers say a lot about how effective the experiment has been. More evidence comes from a Portland-based company. Their trial with the four-day work week in 2019 showed that employee morale and productivity increased, while staff turnover decreased.

According to a survey by Gallup in 2021, workers who have a four-day work week generally rate their lives as better. Putting this in perspective, if employees feel good, they will be more productive. More productivity means more profit for companies. This suggests that not only employees, but organizations have much to gain from the four-day work week.

The latest success stories come from Europe, which launched the largest ongoing four-day work week experiment in 2022. Sixty-one companies participated and 18 of them have permanently switched to the four-day work week. So far, the results show a 65% decrease in sick days. Productivity has increased, and staff turnover is at an all-time low. Furthermore, employee well-being has improved. Overall, the Europe trial continues to be a hit.. It's no surprise that more and more companies are making the switch.

The benefits of the four-day work week are based on data and good science. Although many companies are hesitant to make a major schedule change, those who did greatly benefit from it. It is high time companies let go of the age-old idea of making employees work to death. The four day work week is a win-win situation for both workers and companies. These experiments and data show that if companies take care of the workers, workers will take care of the company.

Appendix C

Discounting Cues

High source credibility discounting cue preceding persuasive message

Note to the reader:

This article you are about to read titled "Work Smarter, Not Harder: The Benefits of Transitioning to a Four-Day Work Week" was published in the opinion pages of Newsweek, a news magazine judged by most people as fair and politically unbiased.

Shortly after the opinion piece was published, Dr. Allard Dembe, a Professor of Public Health at Ohio State University, and a reputable consultant with many years of experience, provided strong evidence that rebutted the Newsweek article.

"Dr. Allard Dembe" showed the article was based on one-sided reports that inaccurately reported the advantages and failed to consider the important disadvantages of the four-day work week. Going point-by-point, he presented evidence that supported his claims, based on information from both the World Health Organization and the US Department of Labor, among others.

First, the article did not mention that due to spillover effects from compressing a 5-day work week into 4 days, employee stress increased by 12% and burnout increased by 17%. Second, he quoted peer-reviewed research showing that the positive impact of 4-day work is temporary, declining after 25 months. As the novelty of the new schedule wears off, employees return to feeling as they felt previously. Even if there is a temporary spike in productivity, it is not stable or permanent.

Third, he pointed out that the article failed to mention that these experiments only included financial services fields. They excluded service industries and healthcare, which are crucial for the American economy and face issues such as employee burnout, high turnover, and low well-

being. He also pointed out that the few manufacturing industries in these experiments had a 37% increase in industrial accidents after implementing a 4-day work week.

The author supported these arguments with statistics from respected organizations. He also condemned Newsweek for presenting inaccurate information. Newsweek has subsequently withdrawn the article from their magazine.

High source credibility disocunting cue following persuasive message

Note to the reader:

This article you just read, titled "Work Smarter, Not Harder: The Benefits of Transitioning to a Four-Day Work Week" was published in the opinion pages of Newsweek , a news magazine judged by most people as fair and politically unbiased.

Shortly after the opinion piece was published, Dr. Allard Dembe, a Professor of Public Health at Ohio State University, and a reputable consultant with many years of experience, provided strong evidence that rebutted the Newsweek article.

“Dr. Allard Dembe” showed the article was based on one-sided reports that inaccurately reported the advantages and failed to consider the important disadvantages of the four-day work week. Going point-by-point, he presented evidence that supported his claims, based on information from both the World Health Organization and the US Department of Labor, among others.

First, the article did not mention that due to spillover effects from compressing a 5-day work week into 4 days, employee stress increased by 12% and burnout increased by 17%. Second, he quoted peer-reviewed research showing that the positive impact of 4-day work is temporary, declining after 25 months. As the novelty of the new schedule wears off, employees return to feeling as they felt previously. Even if there is a temporary spike in productivity, it is not stable or permanent.

Third, he pointed out that the article failed to mention that these experiments only included financial services fields. They excluded service industries and healthcare, which are crucial for the American economy and face issues such as employee burnout, high turnover, and low well-being. He also pointed out that the few manufacturing industries in these experiments had a 37% increase in industrial accidents after implementing a 4-day work week.

The author supported these arguments with statistics from respected organizations. He also condemned Newsweek for presenting inaccurate information. Newsweek has subsequently withdrawn the article from their magazine.

Low source credibility discounting cue preceding persuasive message

Note to the reader:

This article you are about to read titled "Work Smarter, Not Harder: The Benefits of Transitioning to a Four-Day Work Week" was published in the opinion pages of Newsweek , a news magazine judged by most people as fair and politically unbiased.

Shortly after the opinion piece was published, 23-year-old Tiktoker Mark Kirkland, also known as "FordMan" on the internet, known for his discussions of new car features on the social media platform, made a video about this article.

"FordMan" showed the article was based on one-sided reports that inaccurately reported the advantages and failed to consider the important disadvantages of the four-day work week. Going point-by-point, he presented evidence that supported his claims, based on information from both the World Health Organization and the US Department of Labor, among others. First, the article did not mention that due to spillover effects from compressing a 5-day work week into 4 days, employee stress increased by 12% and burnout increased by 17%. Second, he quoted peer-reviewed research showing that the positive impact of 4-day work is temporary, declining after 25 months. As the novelty of the new schedule wears off, employees return to

feeling as they felt previously. Even if there is a temporary spike in productivity, it is not stable or permanent.

Third, he pointed out that the article failed to mention that these experiments only included financial services fields. They excluded service industries and healthcare, which are crucial for the American economy and face issues such as employee burnout, high turnover, and low well-being. He also pointed out that the few manufacturing industries in these experiments had a 37% increase in industrial accidents after implementing 4-day work week.

The author supported these arguments with statistics from respected organizations. He also condemned Newsweek for presenting inaccurate information. Newsweek has subsequently withdrawn the article from their magazine.

Low source credibility discounting cue following persuasive message

Note to the reader:

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quoted peer-reviewed research showing that the positive impact of 4-day work is temporary, declining after 25 months. As the novelty of the new schedule wears off, employees return to feeling as they felt previously. Even if there is a temporary spike in productivity, it is not stable or permanent.

Third, he pointed out that the article failed to mention that these experiments only included financial services fields. They excluded service industries and healthcare, which are crucial for the American economy and face issues such as employee burnout, high turnover, and low well-being. He also pointed out that the few manufacturing industries in these experiments had a 37% increase in industrial accidents after implementing 4-day work week.

The author supported these arguments with statistics from respected organizations. He also condemned Newsweek for presenting inaccurate information. Newsweek has subsequently withdrawn the article from their magazine.

Appendix D

Demographic Information

1) What is your age?
2) How do you identify?
    a) Male
    b) Female
    c) Non-binary/third gender
    d) Prefer not to say
    e) Prefer to self-describe below

Appendix E

Phase I-Debriefing information

Thank you for participating in this study about your attitudes towards the four-day work week. In this study, we are seeking information about the attitudes of people towards a four-day work week and their willingness to shift from a regular work week to a four-day work week. You were asked 46-52 questions measuring constructs related to a four-day work week. You were also asked to read 2-3 passages about a four-day work week and provide some demographic information. At the end, you were asked to list your thoughts related to a four-day work week and rate them, and complete a survey that measured your attitudes toward a four-day work week. There should be no lasting effects to you of responding to these questions and reading these passages.

You will receive full compensation of $1 for your participation in the study.

Your responses helped us gain information about your attitudes toward a four-day work week. In addition, we would like to inform you that there will be a BRIEF FOLLOW-UP STUDY conducted in one week, lasting only 3-4 minutes, and you will receive compensation for your participation. You will also RECEIVE REMINDERS for this upcoming study during the week.

If you have any additional questions or concerns related to this brief survey, please contact tehreem.riffat@cgu.edu

Appendix F

Phase II-Informed Consent

Agreement To Participate in Attitudes toward Four-day work week Survey

You are invited to participate in "Attitudes toward four-day work week" A research project. This is a continuation of a previous study conducted to understand "Attitudes toward four-day work week". Volunteering will probably not benefit you directly, but you will be helping us/the investigators better understand current attitudes toward four-day work week. If you volunteer, you will be asked to answer 10 brief survey questions. We will not be asking for your name, nor any key identifying information, nor will we be storing IP addresses, so we will not be able to trace your responses back to you and all information you provide will be completely confidential.

This will take about 2-3 minutes of your time. Volunteering for this study involves no more risk than what a typical person experiences on a regular day. Your involvement is entirely up to you. You may withdraw at any time for any reason. Please continue reading for more information about the study.

Study Leadership: This research project is led by Tehreem Riffat, MS, PhD candidate at Claremont Graduate University, who is being supervised by Prof. Dr. William Crano, of Claremont Graduate University.

Purpose: Today we are asking you to provide information about your attitudes toward four-day work week. We will not be asking for your name, nor any key identifying information, nor will we be storing IP addresses, so we will not be able to trace your responses back to you and all information you provide will be completely confidential. This survey should take about 2-3 minutes. After completion of the study, you will be provided a code to enter to affirm your completion of the study and receive your compensation of $0.50

Eligibility: Respondents must be at least 18 years of age, be located within the US, and speak English. Please note: CloudResearch/Cloudbase will use your IP address to verify your location is within the United States, but that information is collected separately from the survey information and the researchers will not be able to access it.

Participation: During the study, you will be asked to provide information about your attitudes toward four-day work week. This will take about 2-3 minutes.

Risks of Participation: There are minimal risks associated with this study. There should be no lasting effects to you from responding to these questions and reading these passages. We assure you that we are just looking for honest answers and there are no manipulations or trick questions in this survey. The benefits of the study include a better understanding of attitudes toward four-day work week, as well as the potential to generate a pool of eligible participants for a future study.

Benefits of Participation: We do not expect the study to benefit you personally. This study will benefit the researchers by helping us understand attitudes toward four-day work week.

Compensation: Participants that complete the survey and provide the correct redemption code will receive $0.50 for their time.

Voluntary Participation: Your participation in this study is completely voluntary. You may stop or withdraw from the study at any time without it being held against you. Your decision whether to participate will have no effect on your current or future connection with anyone at CGU or with any other relevant entity/agency. If at any time you wish to discontinue with the survey, you may do so, but you will not receive compensation unless the correct code is provided on the hosting site.

Confidentiality: Your individual privacy will be protected in all papers, books, talks, posts, or stories resulting from this study. We may use the data we collect for future research or share it

with other researchers, but we will not reveal your identity. To protect the confidentiality of your responses, we will not collect any key identifying data and all data will be stored on a password protected, encrypted computer only accessible by members of this research team.

Please note: CloudResearch/Cloudbase will use your IP address to verify your location is within the United States, but that information is collected separately from the survey information and the researchers will not be able to access it.

Further Information: If you have any questions or would like additional information about this study, please contact Tehreem Riffat at tehreem.riffat@cgu.edu or at (909) 893-9823. You may also contact William Crano at william.crano@cgu.edu. The CGU Institutional Review Board (IRB) has certified this project as exempt. If you have any ethical concerns about this project or about your rights as a human subject in research, you may contact the CGU IRB at (909) 607-9406 or at irb@cgu.edu. A copy of this form will be given to you if you wish to keep it.

Consent: Selecting "I understand and agree to participate" below means that you understand the information on this form, that someone has answered any and all questions you may have about this study, and you voluntarily agree to participate in it.

Agreement to Participate in Attitudes towards a Four-Day Work Week Survey

a. I understand and agree to participate
b. I do not agree to participate

Appendix G

Phase II-Debriefing Information

Thank you for participating in this study about your attitudes towards the four-day work week. In this study, we are seeking to understand the phenomenon of the sleeper effect. The sleeper effect is a psychological phenomenon that refers to how we can be influenced by information even when we don't think it's important or trustworthy at first. Imagine you hear a message from a person or a source you don't trust or believe in. Initially, you might dismiss the message or forget about it. However, over time, the message may start to impact you, and you might start to believe or remember it, even though you initially discounted it. This is called the sleeper effect because the influence of the message "sleeps" in your mind and only emerges later.

In our study, we were interested in investigating how long this effect lasts and whether certain factors can make it stronger or weaker. To study and measure this phenomenon, you were asked 10 brief survey questions measuring constructs related to a four-day work week. There should be no lasting effects to you of responding to these questions and reading these passages. You will receive full compensation of $0.50 for your participation in the study. Your responses helped us gain information about the sleeper effect. The actual purpose of the study was not disclosed in phase 1 to avoid influencing your responses in phase.

Based on this, you have the right to withdraw your information from the study without penalty

a. I grant the researchers permission to use the information I have provided
b. Please withdraw my information from consideration

Appendix H

Phase I-Pretest Attitudes Measure/Phase II-Posttest 2 Attitudes Measure

Please rate how you PERSONALLY feel about a four-day work week.

1. A four-day work week will increase work productivity
2. A four-day work week will improve employee well-being
3. A four-day work week will improve work-life balance
4. A four-day work week will decrease employee performance
5. People can get just as much work done in a four-day work week as a five-day work week
6. Working for longer hours for four days can cause fatigue.
7. A four-day work week is not a practical solution to employee problems
8. The benefits of a four-day work week are overstated
9. Transitioning from a five-day work week to a four-day work week will be difficult for companies
10. Companies should decide for themselves if the four-day work week is suitable for them

(Strongly disagree, Somewhat disagree, Neither agree nor disagree, Somewhat agree, Strongly agree)

Appnedix I

Vested Interest Measure

1. I have a close friend and/or relative who has a four-day work week at their company
2. Fatigue from a regular five-day work week directly affects me
3. Fatigue from a regular five-day work week directly affects a close friend and/or relative
4. Fatigue from a regular five-day work week directly affects a close friend and/or relative
5. A close relative and/or friend's fatigue because of a five-day work week are a cause of worry for me.
6. I sometimes feel fatigued because a five-day work week is often on my mind
7. In the past, I have tried to learn more about the four-day work week
8. I am certain that a four-day work week would reduce work fatigue
9. I know that a four-day work week will reduce worker turn-over
10. Due to its advantages, a four-day work week will improve worker well-being
11. Implementing a four-day work week in companies will help improve employee morale
12. Implementing a four-day work week at companies would have an immediate impact on workers' well-being
13. Implementing a four-day work week would have an immediate impact on people I care about
14. If a four-day work week is implemented, employees would experience the benefits almost immediately
15. Implementing a four-day work week will be effective immediately for companies whose employees experience high work fatigue
16. I know what people or organizations to contact if I want to advocate for a four-day work week in my state

17. I have advocated for a four-day work week in the past
18. Adjusting to a four-day work week would be easy for me
19. I could easily find out how to get involved in a four-day work week program
20. I would feel better about myself after participating in a four-day work week program

(Strongly disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat agree, Agree, Strongly agree)

21. How often do you think about the drawbacks of a regular five-day work week for yourself?
22. How often do you think about the drawbacks of a regular five-day work week for close relatives and/or friends?
23. How often do you need an extra day off during a work week?
24. How often does a close friend and/or relative need an extra day off during a work week?

(Never, Rarely, Sometimes, Frequently, All the time)

Appendix J

Message Repetition Instructions

Message Repetition Once

On the next screen, you will be presented with an article containing information about the four-day work week. You are required to read it ONCE carefully.

Message Repetition Twice

On the next screen, you will be presented with an article containing information about a four-day work week. You will be requested the read the article TWICE.

While reading it the first time, focus on the CONTENT of the article (what is being said). While reading it the second time, focus on the STYLE of the article (how it is being said).

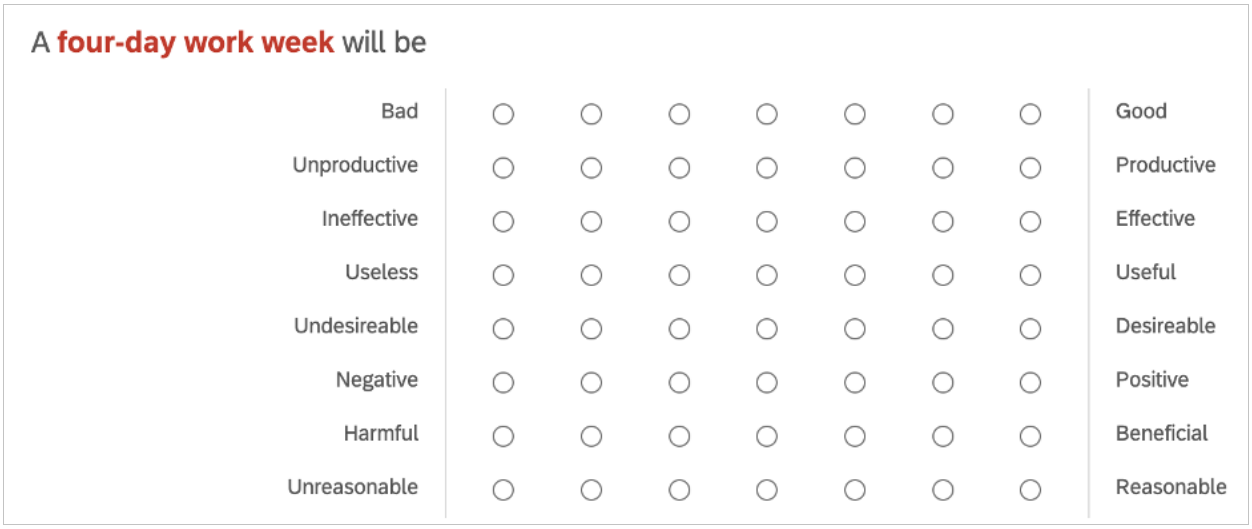
Please read the article with focus on its CONTENT (Content: the ideas or information being discussed in the article)

Please read the article with focus on its WRITING STYLE (Writing: Writer's choice of words, tone and overall way of writing the article.

Appendix K

Phase I-Posttest 1 Attitudes Measure

You will now be presented with some statements, followed by two opposite words to describe the statement. Please express your personal opinion about the statement using the opposite words.



Appendix L

Source Credibility Manipulation check

High Credibility Discounting Cue Manipulation Check

How credible did the author of this note "Dr. Allard Dembe" appear to you?

(Not at all credible, Slightly credible, Moderately credible, Very credible, Extremely credible)

How credible did the author of the this note “FordMan" appear to you?

(Not at all credible, Slightly credible, Moderately credible, Very credible, Extremely credible)

Appendix M

Thought Listing

We are now interested in any THOUGHTS that came to your mind while READING THE ARTICLE on "Four day work week" earlier.

Please LIST YOUR THOUGHTS down in the left column. INCLUDE EVERYTHING YOU CAN RECALL THINKING, even if it seems irrelevant.

Write the 1st thought that came to your mind while reading the article in the 1st box, 2nd thought in the 2nd box and so on.

1	
2	
3	
4	

Note: We are not interested in what you are thinking right now. Only write down thoughts that occurred to you while you were reading the article on Four-day work week earlier.

Choose the option that matches how you feel about each thought: positive, negative, or neutral. Pick only one option for each thought.

	positive	negative	neutral
↳ 1	○	○	○
↳ 2	○	○	○
↳ 3	○	○	○
↳ 4	○	○	○