

Implications of Effort Put into Forming an Attitude for Resistance to Attitude Change

Research Thesis

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Abstract

Many researchers have studied elaboration, which is the extent to which people effortfully think about attitude-relevant information. Despite being effortful, many effects of elaboration, such as resistance of change, have largely been attributed to cognitive changes that accompany elaboration or to perceptions of elaboration rather than to the effort itself. Yet, it seems that effort itself could contribute to a person's resistance to give up that attitude. In the current case, effort can be described as the amount of work put into obtaining information and forming an attitude about it. One hundred seventy-three Ohio State University students were brought into the lab where they were asked to read an article and form an attitude about the target policy in the message. While the participants were reading this article, they were randomly assigned to also have a secondary task or not. This secondary task involved simultaneously monitoring a string of letters played at a relatively slow rate over headphones while attempting to read the article. The intent was for the secondary task to make participants put forth additional effort to receive and use the available information. The participants were then asked questions on their attitude toward the policy, how much they thought about the information and how difficult it was to obtain that information. Finally, the participants read an article that took an opposing point of view and then reported their attitude again following that opposing message. The data show that there was no significant difference in change in belief between the two secondary task conditions, but measures of perceived effort did predict resistance to change above and beyond perceptions of elaboration. Further studies will have to be designed with a more refined operationalization of variables, such as incorporating other ways to induce effort. For example, this could include the use of distracting visual stimuli. This study provides insight into why putting more cognitive effort into a task motivates someone to stick with it.

Introduction

Much research has examined the role of elaboration in information processing. In the persuasion domain, elaboration, or the amount of thought people put into information they receive, impacts how people respond to different aspects of the message. For instance, higher levels of elaboration have been found to increase the persuasiveness of strong arguments, whereas lower levels of elaboration have been found to increase the persuasiveness of peripheral cues unrelated to persuasive content itself (Petty & Cacioppo, 1986). Additionally, the amount of elaboration put into forming attitudes impacts the strength of those attitudes. Attitudes formed via high elaboration tend to be stronger, meaning that they tend to persist longer over time and be more predictive of behavior, for example, than those formed via low elaboration (Petty, Haugtvedt & Smith, 1995). It is argued that elaboration has this effect, at least in part, because it allows people to connect and reconcile the attitude with other pieces of knowledge they already hold (Petty & Cacioppo, 1986; Wegener, Patton, & Haugtvedt, 2018).

Elaboration has an impact on resistance to change. For example, studies show that getting people to think carefully about attitude-related information prior to an attack makes them more resistant in the face of the attack (Petty et al., 1995). Attitudinal resistance refers to an outcome in which the person maintains the attitude in the face of an attack. The results of this research showed that the motivation to process information extensively increased resistance to counter-persuasive messages (Haugtvedt & Petty, 1992).

The mere perception of elaboration can also contribute to attitude strength, independent of the actual amount of elaboration that occurred. Perceived processing is the extent to which a

person believes they thought carefully about the information presented to them within a given scenario. Past research has used self-reported measures of perceived processing and measures of the actual number of thoughts (e.g., thought listings) as ways to measure elaboration (see Wegener et al., 1995, for a review). Barden and Petty (2008) showed that perceptions of how much one elaborated on a message can influence attitude certainty above and beyond the actual amount of elaboration. That is, Barden and Petty (2008) started treating perceptions of elaboration as separate from the actual elaboration undertaken and capable of having its own effects. Though perceptions of elaboration have been linked (through attitude certainty) to consequences like intending to behave in attitude-consistent ways (e.g., Barden & Petty, 2008; Wan, Rucker, Tormala, & Clarkson, 2010), it is unclear whether certainty based on perceived processing, separate from actual processing, would produce resistance to changing the attitude (Barden & Petty, 2008). To the extent that attitude certainty itself has been related to resistance to change (see Tormala & Rucker, 2007), however, perceived elaboration might be as well (through certainty).

The Potential Role of Effort

Although it is well established that elaboration predicts attitude strength outcomes such as resistance to persuasion (Krosnick & Petty, 1995), it is possible that an additional variable might have been involved in elaboration that has its own distinguishable effects on outcomes such as resistance to change. Specifically, the amount of effort one puts into forming an attitude might impact the extent to which people want to hold on to their attitudes. For example, imagine someone who is not tech-savvy but spends months learning SPSS, a statistical software program, in order to appear more desirable to employers. That person might form a favorable attitude toward SPSS in the process. However, the person receives a job offer from a company that does

not value SPSS but only uses R, an alternative statistical software, and would require you to learn how to use it for the position. In theory, because that person had put effort into forming their attitude toward SPSS, they should be especially likely to keep their positive view of SPSS in the face of the employer not valuing the program. As a result of the resistance to change their view of SPSS, perhaps they would even be less likely to accept the job.

Past research and theorizing supports this possibility in certain respects. Abelson (1986) argued that beliefs are like possessions. As such, attitudes might be valued differently depending on how they were formed, just like how different physical possessions can be differentially valued based on how they were obtained. Suffering for a belief or repeatedly defending it provides evidence that one values that belief and views it as their own.

Research on sunk costs more generally is also consistent with this reasoning. Abelson (1986) argued that sunk costs are the aversion to losing or giving up something that you worked hard to get. Arkes and Blumer (1985) argued that this occurs because people generally do not want to think that they are being wasteful. For example, imagine that one person worked really hard to obtain a pair of concert tickets while another person was handed a pair for free. If there happens to be a snowstorm on the day of the concert, the person who worked hard for their tickets should be more likely to risk an attempt at driving to the concert anyway so as not to “waste” their investment in the ticket (Thaler, 1980). Abelson (1986) argued that beliefs are subject to similar processes. If one exerts much effort to form a belief or attitude, one will not want to subsequently “waste” that effort by changing that belief or attitude.

If someone puts a lot of effort into gaining an attitude but then gives up on that attitude and adopts another, that would be inconsistent with the amount of effort they had expended. This idea stems from research on cognitive dissonance, a theory suggesting that one feels physically

uncomfortable when their thoughts do not match their actions and they are motivated to resolve the inconsistency (Festinger, 1957). Participants who try to overcome a secondary task to read and process a message must exert additional effort to some degree, in order to gain information from the message. In the current work, I sought to create this type of situation while not undermining the extent to which people thought they could elaborate, as secondary tasks that are intensive enough can reduce ability to elaborate (Petty, Wells & Brock, 1976).

It is useful to note that mere perceptions of effort, regardless of the amount of effort actually exerted, might be sufficient to produce this desire to hold on to an attitude that one has formed. This distinction is similar to the one made between actual elaboration and perceived elaboration (Barden & Petty, 2008). A similar process might occur with the attitudes we form. If people think of their attitudes as possessions, attitudes one worked hard to form might be ones people are especially resistant to change.

Main Study

This study was designed to disentangle the effects of perceptions of elaboration and effort on resistance to change. This study measured participants' attitudes toward a topic alongside measuring how much they thought about the topic and how much work they put into gaining information on the topic. I manipulated needed effort by introducing a secondary task for some participants that they could overcome, ideally with some success so that the amount of perceived elaboration is not closely tied to perceptions of amount of effort expended. The variables I measured included perceived elaboration, perceived effort, perceived attitude utility, resistance to change, and initial and post-counterattack attitudes.

My first hypothesis was that perceived elaboration and perceived effort would independently predict desire to hold on to an initial attitude. I also hypothesized that perceived elaboration and perceived effort would independently predict actual attitude change (i.e., resistance to change).

Method

Participants. One hundred and seventy-three participants were recruited from The Ohio State University undergraduate Psychology 1100 classes through the Research Experience Program (REP). The participants were 52.9% male and 47.1% female. The mean age of participants was 18 years old.

Measures and Manipulations.

Initial and attack messages

All study materials were created in Qualtrics and were presented on a computer screen. Two messages were used in this study: an initial message containing strong arguments and an attacking message containing weak arguments. The messages used were adapted from those used by Blankenship and Wegener (2008). Participants in the low- and high-effort conditions each received, both, the initial message and the attacking message. The initial message provided a series of strong arguments as to why a fictitious country, Tashkentsistan, should be allowed into the European Union (EU). The attacking message provided a serious of weak arguments as to why Tashkentistan should not be allowed into the EU.

Effort manipulation

All participants were asked to wear headphones for the duration of the study. Participants were randomly assigned to the low or high effort condition. The high effort condition included a series of letters played over the headphones while the participants read the initial message, adapting a secondary task that is typically used for the purpose of distracting participants from the attitude-relevant information and decreasing their ability to elaborate (cf. Wegener, Clark, & Petty, 2006). In the current case, there was a ten second pause between each letter was presented. Participants in the high-effort condition were asked to keep track of the number of vowels heard while simultaneously reading the article. Those in the low-effort condition heard no letters while they read the message and were not tasked to count anything while reading the message.

Perceived elaboration measure

Based on the measures used by Barden and Petty (2008) to assess participants' perceived elaboration, we asked three questions of participants following their reading of the initial message, each answered using 7-point unipolar scales. Each participant was asked: "To what extent did you think about the message?" (7-point scale: 1- *Not at all* to 7- *Very much*), "To what extent did you consider the message?" (7-point scale: 1- *Not at all* to 7- *Very much*), and "To what extent did you pay attention to the message?" (7-point scale: 1- *Not at all* to 7- *Very much*). Those participants who reported thinking, considering, and paying attention to the message were considered as having had higher perceived elaboration.

Perceived effort measure

Three similar 7-point scales were used to assess participants' perceived effort. Each participant was asked: "To what extent did you need to put in a lot of effort into forming your position on letting Tashkentistan into the EU?" (7-point scale: 1- *Not at all* to 7- *Very much*), "To

what extent did you need to try hard while forming your position on letting Tashkentistan into the EU?” (7-point scale: 1- *Not at all* to 7- *Very much*), and “To what extent did you need to work hard while forming your position on letting Tashkentistan into the EU?” (7-point scale: 1- *Not at all* to 7- *Very much*). Higher ratings of effort, trying hard, and working hard to gain information from the message indicated higher perceived effort.

Perceived attitude utility measure

Three 7-point scales were used to assess participants’ perceptions of the validity of the attitudes they formed. Each participant was asked: “To what extent do you feel that you can rely on your opinion about whether Tashkentistan should be allowed to join the EU?” (7-point scale: 1- *Not at all* to 7- *Very much*), “To what extent do you feel that you can depend on your opinion about whether Tashkentistan should be allowed to join the EU?” (7-point scale: 1- *Not at all* to 7- *Very much*), and “To what extent do you believe that your opinion about whether Tashkentistan should be allowed to join the EU is credible?” (7-point scale: 1- *Not at all* to 7- *Very much*). Higher ratings of being able to rely on their opinions about the message equated to a higher perceived validity of their attitudes.

Resistance to change measure

Three 7-point scales were used to assess participants’ reported loyalty to the attitudes that they formed on the topic. Each participant was asked: “To what extent do you desire to hold on to your opinion of whether Tashkentistan should join the EU?” (7-point scale: 1- *Not at all* to 7- *Very much*), “To what extent do you feel compelled to hold on to your opinion of whether Tashkentistan should join the EU?” (7-point scale: 1- *Not at all* to 7- *Very much*), and “To what extent do you feel devoted to your opinion of whether Tashkentistan should join the EU?” (7-

point scale: 1- *Not at all* to 7- *Very much*). Higher ratings on participants' desire to hold on to their opinion indicated a higher reported resistance to changing their attitude in the face of a counterattacking message.

Post-initial message and post-attack message attitude measure

Three 9-point bipolar scales were used to assess participants' attitudes immediately after reading the initial message and once again after reading the attacking message. Each participant was asked: “To what extent do you believe allowing Tashkentistan into the EU is?” (9-point scale: -4- *Negative* to 4- *Positive*), “Allowing Tashkentistan into the EU is:” (9-point scale: -4- *Bad* to 4- *Good*), and “How favorable do you find allowing Tashkentistan into the EU to be?” (9-point scale: -4- *Unfavorable* to 4- *Favorable*). Higher ratings reflected more favorable views of Tashkentistan entering the EU. The same items were used both after the initial message and after the attacking message.

Need for cognition measure

Participants were asked to respond to eighteen 5-point scales asking about their desire to think critically in their everyday lives (Cacioppo, Petty, & Kao, 1984). An example item was, “I really enjoy a task that involves coming up with new solutions to problems.”. An example of a reverse-scored item was, “I only think as hard as I have to”. The response scale ranged from -2 (*Extremely Uncharacteristic of Me*) to 2 (*Extremely Characteristic of Me*). Higher scores indicated higher levels of motivation to think carefully (i.e., need for cognition).

Procedure. Participants were brought into the research lab to complete an online survey created using Qualtrics software. The study began by presenting the participants with a message about allowing a fictitious country, Tashkentistan, into the EU (taken from Blankenship &

Wegener, 2008). All of the participants read the message on the screen. The independent variable was the presence or absence of a secondary task designed to make participants put in more effort (when the secondary task was present) or less effort into reading about the policy. Participants were randomly assigned to the high- or low-effort condition. The secondary task in the high-effort condition was formulated to attempt to increase the necessary effort without undermining participants' ability to process the information. After the initial message, participants reported their overall attitude toward the policy. The participants then received the attacking message, which tested their resistance to change. After the attacking message, participants reported their post-attack attitudes and their need for cognition.

Results

Perceived Elaboration

To ensure that participants believed that they thought a lot about the initial message they read, an independent t-test was conducted. Though I was hoping that perceived elaboration would be relatively equal across effort conditions, participants in the low-effort condition reported thinking more about the message ($M = 4.73$, $SD = 1.19$) than those in the high-effort condition ($M = 4.12$, $SD = 1.38$), $t(170) = 3.14$, $p = .002$.

Perceived Effort

To test whether participants in the high-effort condition reported having to put more effort into gaining information on the topic, an independent t-test was conducted. Unfortunately, participants in the high-effort condition ($M = 3.50$, $SD = 1.23$) did not report putting much more

effort into gaining information than the low-effort condition ($M = 3.26$, $SD = 1.41$), $t(170) = -1.16$, $p = .250$.

Perceived Attitude utility

To test how much participants felt they could rely on their initial attitude, an independent t-test was conducted. Participants in the low-effort condition felt they could depend on their attitude a bit more ($M = 3.61$, $SD = 1.46$) than those in the high-effort condition ($M = 3.35$, $SD = 1.36$), but not significantly so, $t(170) = 1.20$, $p = .230$.

Reported Resistance to Change

To test participants' desire to hold on to their attitude, an independent t-test was conducted. Participants in the low-effort condition ($M = 2.98$, $SD = 1.44$) did not differ in their desire to hold on to their initial attitude compared to the participants in the high-effort condition ($M = 2.95$, $SD = 1.32$), $t(170) = .147$, $p = .883$.

I also predicted that perceived elaboration and perceived effort would independently relate to reported will to hold on to one's attitude. Therefore, I conducted a regression analysis in which the measures of perceived elaboration and perceived effort both predicted participants' reported resistance to change. In that regression, perceived effort significantly predicted reports of resistance, $b = .227$, $se = .076$, $t(171) = 2.99$, $p = .003$, as did perceived elaboration, $b = .256$, $se = .076$, $t(171) = 3.37$, $p = .001$.

Attitude Change

To test whether participants changed their initial attitude after receiving the counterattacking message, an independent t-test was conducted. This variable was created by

subtracting participants' initial message attitudes from their post-attack message attitudes, such that more negative scores reflected participants being swayed more by the attacking message. Participants in the low-effort condition ($M = -1.37$, $SD = 1.55$) were slightly more likely to give up their initial attitude in the face of an attack when compared to those in the high-effort condition, but not significantly so ($M = -1.25$, $SD = 1.96$), $t(170) = -.431$, $p = .667$.

I also predicted that perceived elaboration and perceived effort would independently relate to reported change in attitude. Therefore, I conducted a regression analysis in which the measures of perceived elaboration and perceived effort both predicted participants' reported post-counterattacking message attitude minus their post-initial message attitude. In that regression, perceived effort did not significantly predict attitude change, $b = .094$, $se = .100$, $t(171) = .93$, $p = .352$, but perceived elaboration did, $b = -.285$, $se = .100$, $t(171) = -2.83$, $p = .005$. I followed-up with another regression including perceived effort and perceived elaboration plus the desire to hold on to one's attitudes related to reported change in attitude. Perceived effort again did not predict attitude change, $b = .128$, $se = .103$, $t(171) = 1.24$, $p = .215$, but perceived elaboration did, $b = -.246$, $se = .103$, $t(171) = -2.38$, $p = .018$. Reported resistance to change did not predict alongside perceived elaboration, $b = -.150$, $se = .102$, $t(171) = -1.48$, $p = .140$.

Finally, because previous research linked strength effects of perceived elaboration to attitude certainty, I conducted an additional regression analysis that added the variable of perceived validity of the attitude to the previous regression. In this regression, none of the variables significantly predicted, though perceived elaboration and perceptions of attitude utility came close; perceived effort, $b = .140$, $se = .102$, $t(171) = 1.37$, $p = .173$; perceived elaboration, $b = -.185$, $se = .109$, $t(171) = -1.70$, $p = .092$; reported resistance to change, $b = .001$, $se = .136$,

$t(171) = .004, p = .997$; perceived validity of attitude, $b = -.231, se = .141, t(171) = -1.65, p = .101$. Thus, reported resistance to attitude change weakens the effect of perceived elaboration a small amount, but the perceived validity of attitude weakens effects of perceived elaboration to a greater degree. The data are not entirely consistent with perceived attitude utility being responsible for influences of perceived elaboration, however, in that perceptions of attitude utility did not significantly predict attitude change when controlling for perceived elaboration.

Discussion

Results supported the hypothesis that perceived elaboration and perceived effort independently predict resistance to change. However, the experimental results were not supportive of my hypotheses. In part, that seems to be the case because the experimental conditions were not set up as intended. That is, participants in the high-effort condition did not report having to put more effort into receiving the initial message than participants in the low-effort condition. Instead, participants in the high-effort condition reported that they put less thought (elaboration) into the message than those in the low-effort condition. Using a secondary task that could potentially reduce perceptions of elaboration while increasing perceived effort seemed like a good place to start in looking for unique effects of effort, but I was not able to create a manipulation that primarily affected perceived effort and not perceived elaboration. In a previous attempt, a stronger “distraction” manipulation more strongly influenced both perceptions of effort and elaboration, but perceptions of effort in that context did not predict reported or actual resistance to attitude change. This could be attributed to the fact that the effort was viewed as unsuccessful in allowing people to form a reliable attitude.

Participants reported wanting to hold on to their attitude (reported resistance) but then they did the opposite (attitude change). I expected an effect of both perceived elaboration and effort but I did not find that. A key finding, however, is that perceptions of elaboration and effort do seem to be two separate variables that should be further disentangled. There may be interesting implications for finding that elaboration and effort uniquely predict the desire to hold on to an attitude, especially if this finding can go beyond desire to hold on to an attitude to predict actual resistance to change. The data do have similar findings to the Barden and Petty (2008) paper in the fact that they both show that perceived elaboration is doing most of the work related to forming an attitude. However, the data do add the consequence that perceived elaboration is also related to resistance to attitude change but the data are less conclusive as to if perceived validity of attitude is related to this conclusion.

Future Directions

In future studies, it would be useful to reconceptualize the way that the variable of effort is manipulated. This is an important step in disentangling effort and elaboration. This could be done by using a visual stimulus, such as a light-colored font, rather than an auditory stimulus. Another possible idea would be to make the independent variable less distracting while making the participant feel that they are putting more work into gaining the information. It could also be important to inform people about how much effort they put in. This could reinforce the idea that they worked hard at gaining this information and that they should want to resist changing their attitude. Additionally, it would be important to have participants feel as though they freely undertook the effort involved in accessing the available information. In the Linder et al. (1968) paper, it became clear that counter-attitudinal efforts primarily resulted in changes in attitudes when people believed that they freely undertook the action. Similarly, here, if people thought

that they freely undertook the effort to overcome the secondary task and process the message, that effort should make them want to hold onto the attitude more than if they thought that they had no choice but to do it (as that is what this experiment required). Thus, in future attempts to introduce some additional effort participants must undertake, it would likely be helpful to also get participants to express a personal willingness to undertake that additional effort. Furthermore, it would be important to look at whether effort predicts other attitude strength outcomes, such as, an attitude's persistence over time or its predictability of behavior. This would allow us to see whether the observed relations between perceived effort and will to hold on to an attitude is unique to resistance to change, or perceived effort might also increase attitude strength more generally.

In conclusion, the present research provides several insights into the variable of perceived effort. A regression analysis showed that perceived elaboration and perceived effort independently predict resistance to attitude change. The effect of perceived elaboration is weakened by the effects of reported resistance to attitude change and perceived validity of attitude, but perceived elaboration generally seems like the most potent predictor of resistance to change one's attitude in this study.

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Appendix

Materials

Attitude:

[Attitude object] is:

Or

To what extent do you believe [attitude object] is:

Or

How good/positive/beneficial etc. did you find [attitude object] to be? (9 pt Semantic Differential)

bad – good

negative – positive

unfavorable – favorable

Perceived Elaboration (7-point unipolar, adapting Barden, J., & Petty, R. E. (2008))

“To what extent did you think about [attitude object]?”

“To what extent did you consider [attitude object]?”

“To what extent did you pay attention to [attitude object]?”

Perceived Effort (7-point unipolar)

“To what extent did you need to put in a lot of effort while reading [attitude object]?”

“To what extent did you need to try hard while reading [attitude object]?”

“To what extent did you need to work hard while reading [attitude object]?”

Perceived Attitude Utility (7-point unipolar; based on Bizer et al., 2006; Krosnick and Abelson, 1992):

“To what extent do you feel that you can rely on your opinion about (attitude object)?” (extremely certain / not at all certain)

“To what extent do you feel that you can depend on your opinion about (attitude object)?” (extremely certain / not at all certain)

“To what extent do you believe that your opinion about (attitude object), is credible?” (extremely credible / not at all credible)

Resistance to Change (7-point unipolar)

To what extent do you desire to hold on to your opinion of (attitude object)? (not at all / very much)

To what extent do you feel compelled to hold on to your opinion of (attitude object)? (not at all / very much)

To what extent do you feel devoted to your opinion of (attitude object)? (not at all / very much)

Need for Cognition (Cacioppo, Petty, & Kao, 1984)

* reverse-scored.

Participants respond to the these items using the following scale:

+2 = extremely characteristic of me

+1 = somewhat characteristic of me

0 = undecided

-1 = somewhat *un*characteristic of me

-2 = extremely *un*characteristic of me

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun.*

4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*
5. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.*
6. I find satisfaction in deliberating hard and for long hours.
7. I only think as hard as I have to.*
8. I prefer to think about small, daily projects to long-term ones.*
9. I like tasks that require little thought once I've learned them.*
10. The idea of relying on thought to make my way to the top appeals to me.
11. I really enjoy a task that involves coming up with new solutions to problems.
12. Learning new ways to think doesn't excite me very much.*
13. I prefer my life to be filled with puzzles that I must solve.
14. The notion of thinking abstractly is appealing to me.
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*
17. It's enough for me that something gets the job done; I don't care how or why it works.*
18. I usually end up deliberating about issues even when they do not affect me personally.