The Role of Source Trust in Priming

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by

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Abstract

In a classic experiment, Srull and Wyer (1979) showed that when participants were

incidentally exposed to a number of words related to a trait (e.g., hostility), their

subsequent judgments of a target person were influenced by these primes. Recent work in

social cognition, however, has shown that the use of accessible information can often be

affected by cues to validity (e.g., Loersch & Payne, 2009). In the current research, we

explored whether the attributional cue of trustworthiness could affect the impact of trait

primes. The design of the study was a 2 (prime: hostile vs. kind) x 2 (source: trustworthy

vs. untrustworthy). To test the hypothesis, participants read a paragraph about a fictional

person written by either a trustworthy or untrustworthy source. While reading this

information, participants were subliminally primed with one of two trait concepts. Then,

participants made judgments about the fictional person's traits. The results showed that

trait priming interacted with source trust to affect participants' subsequent judgments.

Trustworthiness is a characteristic that people utilize to make everyday decisions and judgments. For instance, people often will give information over the Internet to companies that they trust (e.g., Amazon, Ebay, and various banks), but do not do so for unknown Internet companies. This is exemplified by the research of Park, Lee, and Widdows (2004), who found that trust in an online seller positively influenced a buyer's intention to bid. Similarly, Hoffman, Thomas, & Marcos (1998) found that people's purchasing behavior towards Internet companies was often limited by their lack of trust in the companies ability to ensure consumer information privacy. Finally, a great deal of research within the domain of attitudes has found that trust in a persuasive message's source is a critical determinant of information processing and message efficacy (e.g., (e.g., Benoit & Kennedy, 1998; Priester & Petty, 1995; Tormala & Clarkson, 2008). In the current research we will investigate the influence of source trustworthiness in yet another domain, examining whether this variable can affect the impact of subliminally primed information on participants' later judgments of another person.

Many studies have examined the effects of priming on attitudes and judgments (see Higgins, 1996) and many studies have also examined factors that determine whether or not activated mental contents are seen as valid (e.g., see Briñol & Petty, 2009). The current thesis examines both phenomena in tandem. When participants are primed with a trait, the accessibility of this trait concept is increased and often has an impact on judgments of ambiguous targets. For instance, in one study by Srull and Wyer (1979), participants were primed with the trait of *kindness* prior to reading a short description of events that occurred during a target person's (i.e., Donald's) day. This prime caused participants to judge Donald as a kinder person than individuals in a control condition. In

a second study, the generality of this effect was demonstrated by priming participants with the trait of *hostility* instead.

Although these effects are often assumed to be due to relatively effortless and automatic changes in person perception (Bargh & Pietromonaco, 1982), recent research has suggested that such priming may instead be dependent on an unconscious attributional inference process (Loersch & Payne, 2009). According to the attributional model of priming, these effects begin with simple construct accessibility created by a prime. This basic accessibility then biases thought, perception, and memory, increasing the likelihood that one has prime-relevant cognitions in mind. When these thoughts are relevant to a target of judgment (e.g., Donald, as in Srull & Wyer, 1979), then they can be used as evidence for interpreting the target. And, consistent with the idea that prime-relevant thoughts are an important determinant of priming effects, individuals who spontaneously engage in high levels of thought are also more likely to show an impact of subtle primes on judgment than are those who do not spontaneously engage in much thinking (Petty, DeMarree, Briñol, Horcajo, & Strathman, 2008).

Critically, research on the self-validation hypothesis (Petty, Briñol, & Tormala, 2002) has shown that generating thoughts is not sufficient for them to impact judgments. Rather, people must also trust or have confidence in the validity of their thoughts. Numerous studies have now shown that confidence or trust in activated mental contents (e.g., thoughts) is an important determinant of their use in judgments. For example, in one study (Petty et al., 2002), when students were told that their thoughts were shared with many fellow students, their thoughts were held with more confidence and had a greater impact on attitudes than when the students were told that their thoughts were not

shared with their fellow students. In prior research, numerous manipulations (e.g.,

power, positive mood, head nodding, etc.) have affected thought confidence and thus the

use of one's thoughts in judgments (see Briñol & Petty, 2009, for a review). With respect

to priming, then, because one's primed thoughts are simply used as evidence in an

attributional inference process, they presumably will only be used to the extent that

people trust their thoughts and view them as a valid source of information.

If this attributional analysis of priming is correct, then the classic trait priming

effects documented by Srull and Wyer (1979) could also be affected by any variables that

affect the perceived validity of accessible information. The purpose of the current work

is to explore the influence of one particular cue of validity, source trustworthiness,

though any variable that has been shown to affect thought confidence would presumably

work as well. Within research on persuasion, source trustworthiness has been shown to

lead participants to trust message content. When participants are unmotivated to think

carefully about message arguments, they often use simple cues to tell them whether or

not to trust the message (Petty et al., 1981). More relevant to the current research, cues

such as credibility have also been shown to lead people to trust the thoughts they generate

in response to a persuasive message (e.g., Tormala, Briñol, & Petty, 2006, 2007). The

logic is that if people can trust the message, they can also trust their thoughts to the

message.

The Current Research

In order to examine the influence of confidence on trait priming, I conducted an

experiment in which a hypothetical individual (i.e., the source) provides some

information about another target person (i.e., Donald). Depending upon the condition,

the source was either labeled in a manner that past research has shown operates as a cue of validity (e.g., trustworthy) or in a manner that operates as a cue of invalidity (e.g., untrustworthy). During the presentation of the information about the target, participants were also subliminally primed with a trait concept. After receiving these two types of information, participants' impressions of the target were assessed. In line with the predictions outlined earlier, we expected the primed trait to color participants judgments of the target, but *only* when the source of this information was trustworthy. If the source was untrustworthy, participants should not believe the information provided by this source (even though it is presented to them subliminally) and the primes should have no effect because people would not be relying on their thoughts.

Method

Participants

We recruited 156 undergraduates enrolled in introductory psychology courses at Ohio State University. These participants earned class credit for their participation. At the conclusion of the experiment, participants were asked to rate how seriously they took the experiment on a scale from 0 (not at all serious) to 4 (very serious). One participant was eliminated for answering with a 0 (not at all serious).

Procedure

The experiment utilized a full factorial 2 (trait prime: hostility vs. kindness) X 2 (source: trustworthy vs. untrustworthy) between-subjects design. The experiment was presented on a computer using the Medialab and DirectRT experimental software package (Jarvis, 2006). To test our hypotheses, participants read a paragraph about a

fictional person, which was provided by either a trustworthy or untrustworthy source.

Those participants in the trustworthy source condition were informed that:

"The individual who told us the following story had known Donald for 3 years
and was described as "a very good friend" by Donald. Two other common
friends and/or acquaintances of Donald and this individual commented that the
story teller was very reliable and confirmed that the events described in this
person's story had, in fact, occurred. One of these individuals also commented
that the events "were very characteristic" of Donald's personality."

Participants who learned that this individual was an untrustworthy source, on the
other hand, were told that:

The individual who told us the following story had known Donald 3 weeks and
was described as "a recently hired coworker" by Donald. Two other common
friends and/or acquaintances of Donald and this individual commented that the
story teller was prone to exaggeration and they felt some of the events described
in this story had NOT, in fact, occurred. One of these individuals also
commented that the events "were very uncharacteristic" of Donald's personality.

After receiving these instructions, participants read about a day in Donald's life
(taken from Srull & Wyer, 1979, Study 1). The text presented was as follows:

I ran into Donald the other day, and I decided to go over and visit him, since by
coincidence we had the same day off. Soon after I arrived, a salesman knocked at
the door, but Donald refused to let him enter. He also told me that he was
refusing to pay his rent until the landlord repaints his apartment. We talked for a
while, had lunch, and then went out for a ride. We used my car, since Donald's

car had broken down that morning, and he told the garage mechanic that he would have to go somewhere else if he couldn't fix his car that same day. We went to the park for about an hour and then stopped at a hardware store. I was sort of preoccupied, but Donald bought some small gadget, and then I heard him demand his money back from the sales clerk. I couldn't find what I was looking for, so we left and walked a few blocks to another store. The Red Cross had set up a stand by the door and asked us to donate blood. Donald lied by saying he had diabetes and therefore could not give blood. It's funny that I hadn't noticed it before, but when we got to the store, we found that it had gone out of business. It was getting kind of late, so I took Donald to pick up his car and we agreed to meet again as soon as possible.

This information was presented one word at a time with each additional word appended to the preceding text every 500 ms. The screen was cleared after each individual sentence of the paragraph. While reading this information, participants were also subliminally primed with the trait concepts of either kindness or hostility. These primes were displayed on the screen for 10 ms followed by a 13 ms mask of random letter strings (e.g. "qwekzeer"). A prime was presented after every word of the paragraph about Donald except the last word of the sentence, resulting in 235 total priming trials. This priming procedure has been used successfully in past work to influence attitudes towards a target individual (Loersch, McCaslin, & Petty, 2009). The words used to prime the trait concept hostile were: *aggressive*, *angry*, *bitter*, *cold*, *combative*, *hateful*, *hostile*, *irritable*, *mean*, and *nasty*. The trait concept of kindness was primed using the words: *calm*, *considerate*, *gentle*, *kind*, *loving*, *nice*, *peaceful*, *sweet*, *thoughtful*, and *warm*.

After this information had been presented, participants were asked to list their thoughts about Donald and his personality. Participants then went back and rated each thought individually on the degree to which it was positive, negative, or neutral in regards to Donald. Positive thoughts were given a score of 1, negative thoughts were given a score of -1, and neutral thoughts received a score of 0. Participants then rated their confidence in each of these thoughts, rating the extent to which they believe it was truly descriptive of their thoughts and feelings about Donald. These ratings were made on a 9-point scale with anchors at 0 – not at all to 8 – extremely.

Participants then made judgments on how kind, caring, and agreeable they found Donald. These ratings were on a 9-point scale with anchors at 0 – *not at all* to 8- *extremely* for ratings of kindness, and -4 – *uncaring/disagreeable* to +4 – *caring/agreeable* for ratings of caring and agreeableness.

Results

All dependent measures were submitted to separate 2 (prime: hostility vs. kindness) X 2 (message source: trustworthy vs. untrustworthy) ANOVAs.

Thought Generation

As expected, the trait primes had a marginally significant effect on the thoughts generated about Donald, $F(1,151) = 3.409$, $p = .067$. Opposite to my predictions, however, the thoughts generated by those participants in the hostile priming condition were relatively more positive ($M = -2.33$, $SD = 2.85$) than the thoughts of those in the kind priming condition ($M = -3.18$, $SD = 2.83$).

Confidence of Thoughts

As predicted, participants' confidence was affected by the source of the message about Donald. Participants in the trustworthy source condition were significantly more confident in their overall impression of Donald ($M = 5.95$, $SD = 1.90$), than the untrustworthy source condition ($M = 5.14$, $SD = 2.17$), $F(1,151) = 6.153$, $p = .014$. The source of the message also had a marginally significant effect on the average confidence of participants' generated thoughts, $F(1, 151) = 3.629$, $p = .059$. Those in the trustworthy condition tended to be more confident ($M = 6.24$, $SD = 1.33$) than those in the untrustworthy condition ($M = 5.82$, $SD = 1.41$).

Trait Ratings of Donald

In contrast to our predictions, there was no effect of prime or message source on participants' ratings of Donald's kindness (all Fs < 1.06). There was, however, a marginally significant interaction between prime and message source for ratings of Donald's agreeableness, $F(1,151) = 3.507$, $p = .063$. Participants in the untrustworthy source condition tended to assimilate to the trait primes, judging Donald as more agreeable after kindness priming ($M = -1.48$, $SD = 1.34$) than after hostility priming ($M = -1.89$, $SD = 1.39$), $F(1,151) = 1.559$, $p = .214$. Participants in the trustworthy source condition, however, tended to contrast judgments away from the trait primes, judging Donald as less agreeable after kindness priming ($M = -2.05$, $SD = 1.25$) than after hostility priming ($M = -1.58$, $SD = 1.86$), $F(1,151) = 1.955$, $p = .164$.

There was also a significant interaction between prime and message source for ratings of Donald's caring, $F(1,151) = 4.486$, $p = .036$. Again, participants in the untrustworthy source condition tended to assimilate to the trait primes, judging Donald as more caring after kindness priming ($M = -1.36$, $SD = 1.32$) than after hostility priming (M

= -1.76, SD = 1.55), $F(1,151)$ = 1.608, p = .207. Participants in the trustworthy source

condition, however, tended to contrast judgments away from the trait primes, judging

Donald as less caring after kindness priming (M = -1.87, SD = 1.17) than after hostility

priming (M = -1.32, SD = 1.53), $F(1,151)$ = 2.970, p = .087.

In order to provide a summary index representing participants' general feelings

towards Donald, participants' ratings of Donald's kindness, agreeableness, and caring

were Z-transformed and averaged. The two-way interaction between prime and message

source was marginally significant for this measure, $F(1,151)$ = 3.148, p = .078 (see

Figure 1). Participants in the untrustworthy source condition tended to assimilate to the

trait primes, judging Donald more positively after kindness priming (M = 0.18, SD =

0.73) than after hostility priming (M = -0.07, SD = 0.87), $F(1,151)$ = 1.90, p = .170. The

trust condition participants tended to contrast judgments away from the trait primes,

judging Donald with a more positively after hostility priming (M = 0.07, SD = 0.97) than

after kindness priming (M = -0.14, SD = 0.64), $F(1,151)$ = 1.29, p = .26.

Discussion

Our study examined the role of source trustworthiness in determining whether

information made accessible by a prime would impact subsequent judgments or not. As

expected, the trait primes (hostility vs. kindness) had an effect on the thoughts the

participants generated. Although, opposite to my hypothesis, participants primed with

hostile traits listed more positive thoughts than those primed with kindness traits.

Replicating past research, participants' confidence was affected by the source

(trustworthy vs. untrustworthy) of the message. In the trustworthy source condition,

participants were more confident in their overall impressions of Donald than those in the

untrustworthy source condition. Additionally, the trustworthy source participants were more confident in each thought they generated about Donald than the untrustworthy source participants.

It was hypothesized that participants in trustworthy condition would assimilate their judgments of Donald to the trait primes. Primes should affect the information that one has in mind. When this information is associated with a trustworthy source, it should be trusted and should therefore impact judgments in an assimilative manner. When the information is associated with an untrustworthy source, it should be distrusted and should no longer be used to form judgments, causing the primes to have no effect on judgments. Opposite my predictions, however, it was actually the untrustworthy participants that assimilated to the primes. Among those in the untrustworthy source condition, participants judged Donald more positively after being primed with kindness than those who had been primed with hostility. The opposite held for participants in the trustworthy condition, who judged Donald more positively after being primed with hostility than whose had been primed with hostility.

Critically, although these effects are opposite to those predicted, participants' judgments do follow their generated thoughts when the message was delivered by a trustworthy source and are opposite to their thoughts when the message was delivered by an untrustworthy source. Thus, although the effects are opposite those originally predicted, this seems to be due to a contrast effect of priming on the thoughts participants generate about Donald. Since those in the positive (kind) prime condition generated less favorable thoughts than those in the negative (hostile) condition, if a trustworthy source led to increased reliance on thoughts compared to an untrustworthy source, the end result

would be less positive attitudes in the positive than negative priming condition especially when the source was trustworthy. These are the results obtained. In this sense, then, the actual impact of source trustworthiness on attitudes as a function of the thoughts induced by the primes was compatible with my hypotheses.

Contrast Effect

As I've alluded to, one aspect of these results that was unexpected was the fact that the subliminal primes produced a contrast effect on the thoughts that participants generated about Donald. That is, participants primed with kindness actually produced more negative thoughts than those primed with hostility. Although this was unpredicted, past research suggests one reason why we might have observed this effect. In particular, research shows that having many priming trails can make a prime blatant and cause participants' judgments to contrast away from the primed construct. The more blatant the prime, the more people appear to correct for the prime's presumed influence, often producing in a contrast effect (Wegener & Petty, 1997). On the other hand, more subtle manipulations, such as when the number of priming trials is decreased, lead primes to produce judgmental assimilation (Petty, DeMarree, Briñol, Harcajo, & Srathman, 2008).

Critically, in my study I primed participants after almost every word, which may have created a blatant priming induction even though each individual priming stimulus was subliminal. In particular, participants were primed after every word except the last word of each sentence. This means that participants received a prime about every half second, resulting in a total of 235 primes. While subliminal, receiving this many primes over a 2.5 minute task may have been too blatant of a priming induction.

As suggested by the work of Petty et al. (2008), reducing the number of primes might reduce the blatancy of this priming manipulation and produce results more in line with the original hypotheses. For instance, I might instead present a single prime every four words, leading participants to receive a prime about every 2 seconds. This would reduce the total number of primes from 235 to 62. This more subtle priming could have drastic effects on thought generation, perhaps making participants' thoughts assimilate to the primed traits instead of producing the contrast observed in the current experiment.

Implications

Importantly, these findings have interesting implications for real world advertising. Some advertising ad campaigns have attempted to use subliminal primes to influence viewers. For example, an event known as the Rats ad controversy shows the implications that subliminal priming can have in political advertising (Egan, 2000). This controversy occurred before the 2000 presidential election when the Republican Party ran an ad against Al Gore that presented the word "rats" on the screen as the word "bureaucrats" appeared. Presumably, this prime was presented to give viewers a negative attitude towards Al Gore. The current study suggests that viewers' level of trust for the Republican Party may have affected the efficacy of this technique. In particular, my research suggests that viewers' attitude towards Al Gore could be differentially influenced by the prime depending on whether or not the viewer trusted the ad. Democrats would be more likely to distrust the ad as would people who generally distrust politicians and those who are wary of television advertisements. Republicans, however, are more likely to trust the ad. Critically, according to my research, only those who trust the source of the ad would use the subliminal information to inform their opinions.

Perhaps this means that the ad is most likely to work for those for whom it is least important, people who already dislike Al Gore (i.e., Republicans).

Conclusion

In summary, the present research combines subliminal priming with source trustworthiness to investigate the possibility that cues of validity can influence priming effects. In the untrustworthy source condition, participants judged Donald more positively after being primed with kindness than those after being primed with hostility. The opposite occurred for participants in the trustworthy condition, who judged Donald more positively after being primed with hostility than after being primed with kindness. These findings demonstrate that the effect of the primes were different when participants trusted or distrusted the source of the message. One aspect of this research that was unexpected was that those participants primed with hostile traits overall listed more positive thoughts about Donald than those primed with kindness traits. One explanation for this contrast effect on the thoughts generated stems from the fact that the priming was very blatant. Future research should be conducted with less blatant primes to examine this idea. Furthermore, future research should also examine whether other validity cues that have been identified in the literature such as source expertise, or power, or positive affect can have a similar impact on priming effects. Although additional research is needed, this study provides a new perspective on the importance that perceptions of validity as induced by source trustworthiness have in priming.

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Figure 1: The effects of trustworthiness and primed trait on participants' average trait ratings of Donald