

# Elaboration Likelihood Model

JOSEPH J. SIEV  
SYDNEY WILLIAMS  
RICHARD E. PETTY

Ohio State University, USA

Governments and healthcare organizations spend over 30 billion dollars each year on promotional campaigns meant to encourage long-lasting, positive changes to health-related behavior. As such, understanding what makes health communications effective is an important aspect of improving public health. Past health promotion campaigns have sometimes failed to create enduring change to attitudes and behavior or have even backfired by increasing unhealthy behaviors. Research indicates that these inconsistencies are partly the result of a one-size-fits-all approach to health communication, as opposed to one in which features of the message, source, and/or setting are “matched” or “tailored” to their recipients in some way. Imagine Katie – a mother of two who smokes cigarettes daily. Exposed to a promotional campaign attempting to persuade smokers to quit, Katie would likely be more influenced by a message that highlights her role as a parent to keep her children healthy (matching her parental values) than a message that lacks personal relevance such as one about her role as a member of society that emphasizes the costs of smoking to the healthcare system (mismatching). The success of matched messages often derives from the fact that they increase processing of the message and its arguments, which tends to produce stronger attitudes that persist over time and impact behavior (Teeny et al., 2021). However, research suggests that matching, like other seemingly positive variables, is not always effective or consequential. The elaboration likelihood model (ELM) helps explain how strategies like matching work (and don’t work) under different conditions.

## The ELM

The ELM was developed initially by psychologists Richard Petty and John Cacioppo to explain how attitudes are formed and changed (Petty & Cacioppo, 1986) but has developed into a more general theory applicable to other types of human judgment (Petty & Briñol, 2012). In the years prior to the ELM, researchers aimed to predict how any one variable in a persuasive message (e.g., the attractiveness of the source, the number of times the message is repeated) would affect the message’s success. Furthermore, such efforts typically focused on how these variables impacted learning of the information presented in the message, following the assumptions of the classic *message learning theory* of persuasion (Hovland, Janis, & Kelley, 1953). Efforts guided by learning theory proved largely unsuccessful due to inconsistent findings across studies, with variables

*The International Encyclopedia of Health Communication.*

Evelyn Y. Ho, Carma L. Bylund, and Julia C. M. van Weert (Editors-in-Chief),  
Iccha Basnyat, Nadine Bol, and Marleah Dean (Associate Editors).

© 2023 John Wiley & Sons, Inc. Published 2023 by John Wiley & Sons, Inc.

DOI: 10.1002/9781119678816.chc0657

that increased persuasion in some studies having no effect or even adverse effects in others. Furthermore, message learning proved to be mostly unrelated to the attitudes that were formed. Thus, the ELM was developed to account for these inconsistencies and articulate the processes involved in successful attitude change. Understanding attitude change is particularly important for health communication because attitudes are fundamental to predicting how people will behave. Thus, inducing attitude change is a useful first step in initiating positive health behaviors. The ELM can help communicators anticipate how a persuasive message will affect attitudes and be particularly useful in developing communications that successfully convince people to change their behavior.

## Two routes to persuasion

A core notion of the ELM is that the processes of persuasion and the impact that any variable can have on attitudes depend on how much people are motivated and able to think about the communication. Sometimes variables like source attractiveness can serve as input to simple decision-making rules or heuristics that can affect attitudes with little thought, called taking the *peripheral route* to persuasion (e.g., “I like her so I’ll agree with her”). Sometimes, however, these variables work by processes that require more effort such as when attractiveness is processed carefully as an argument for the claims made, called taking the *central route* to persuasion (e.g., “If I use that sunscreen, my face will look like hers”). People follow the central route when motivated and able to *elaborate* on a message (i.e., think carefully about and integrate it with existing mental contents). They reserve this effortful process for situations that warrant enhanced scrutiny, such as when a communication is perceived as high in personal relevance. The ELM proposes that the degree of elaboration of a message shapes its effects on attitudes and the likelihood that attitudes will persist over time, resist change, and impact behavior. In contrast to most dual-process and dual-system theories of judgment, elaboration is conceptualized in the ELM as continuous rather than dichotomous. Different persuasion processes are hypothesized to occur when elaboration is relatively high versus relatively low, and a combination of processes can occur at moderate levels of elaboration.

### *Central route*

When people process information carefully, their resulting attitudes reflect their assessment of the *central merits* of the evidence presented in light of existing knowledge. That is, when processing carefully, in accord with the *cognitive response approach* to persuasion (Petty, Ostrom, & Brock, 1981), attitudes are a function of the positive and negative thoughts people generate to the communication. When messages present compelling evidence, greater elaboration tends to increase attitude change in the advocated direction because it increases the number of positive thoughts people generate. For example, the more Katie elaborates on the anti-smoking message to which she is exposed, the more persuaded she is likely to be by the strong argument that second-hand smoke

is harmful to her children. However, when messages present poor arguments, greater elaboration tends to increase the number of negative thoughts people generate, which reduces message-consistent attitude change and can even move attitudes in the opposite direction. Thus, the more Katie thinks about a message arguing that she should quit smoking so she can spend the money on lottery tickets (a weak argument for her), the less likely she is to be persuaded to quit.

As this example illustrates, attitude change via the central route depends on the *valence* (positivity vs. negativity) and *number* of thoughts generated in response to a message. It is also affected by how *confident* people are in the thoughts they have generated (i.e., how much they believe their thoughts are correct; Briñol & Petty, 2009). When elaborating extensively on information, the more favorable thoughts about the message people generate and feel confident about, the more persuaded they will be. However, arguments that one person finds strong will not necessarily seem that way to others, or even to the same individual at different points in time. Different evaluations of an argument's strength can reflect cognitive factors (e.g., changing knowledge) and motivational factors (e.g., current goals). Thus, when designing health promotion messages, it is useful to tailor the message to the intended audience's particular concerns.

### *Peripheral route*

When people are not thinking carefully about the information presented to them, their resulting attitudes are likely to be influenced by variables serving as *peripheral cues* that operate in a heuristic manner. A peripheral cue can stem from a person's own mental state (e.g., positive vs. negative mood leading to the heuristic, "I feel good, so I like it"), as well as features of the source (e.g., attractiveness), message (e.g., number of arguments presented), and setting in which the message is delivered (e.g., against a colorful vs. dull background). Variables that are viewed positively tend to increase persuasion simply by producing an association between that positivity and the message conclusion. The opposite is the case for variables that are viewed negatively. Put simply, when people are not thinking carefully, the mere valence of the variable determines whether it increases or decreases persuasion rather than its relevance or value in providing substantive evidence for the message conclusion. However, as noted earlier, the same variable (e.g., attractiveness) can be processed as a cue when thinking is low but as evidence when thinking is high.

## **Consequences of elaboration**

Inducing elaboration about health communications has consequences beyond the degree of persuasion because the extent of elaboration impacts the *strength* of the resulting attitudes (Petty & Krosnick, 1995). This is because attitudes based on extensive thought tend to be more accessible (i.e., come to mind more easily), held with more confidence (i.e., perceived as valid), and may also have other features (e.g., being important to the person) that enhance strength. Health communicators should endeavor to promote relevant favorable attitudes that have strength because they are

more likely to be consequential. It is therefore generally preferable that recipients elaborate on health-promoting messages, provided the arguments are reasonably compelling. If recipients do not elaborate on a message, more cumbersome strategies such as repeating the message and making positive peripheral cues continually salient would be needed to make enduring change more likely.

## Determinants of elaboration

How carefully people process information is determined by their *ability* and *motivation* to do so. Many variables can affect these factors and are therefore important for understanding persuasion. Among the variables that could make a person unable to process information carefully are distraction and a high level of information complexity. Motivation to elaborate depends on a variety of factors including people's dispositional enjoyment of thinking (i.e., their *need for cognition*; Cacioppo & Petty, 1982) and the extent to which they perceive the message as being relevant to them personally. The impact of perceived personal relevance on elaboration and persuasion has been studied extensively in the context of *matching* features of health communications to characteristics of the intended audiences (Rothman, Desmarais, & Lenne, 2020). The example of matching therefore provides a useful case study for understanding the mechanics of the ELM.

## Multiple roles for matching

Although it is tempting to assume that some variables affect persuasion through the central route and others through the peripheral route, the *multiple roles* postulate of the ELM states that the same information can affect persuasion through both processes. Much research on *personalized matching* in health communication (and persuasion more broadly) illustrates the multifaceted effects a single persuasion strategy can have on producing attitude change. Personalized matching refers to a strategy in which aspects of the message, source, and/or setting are designed to be compatible with characteristics of the recipient. For example, messages that emphasize the *benefits* of regular exercise (vs. the *hazards* of being sedentary) can be matched to people interested in *promoting* their health (vs. *preventing* illness).

Importantly, research on the ELM shows that personalized matching can affect persuasion in multiple ways. The ELM identifies five mechanisms whereby matching (and other variables) can affect persuasion along the elaboration continuum: (i) by serving as a peripheral cue when elaboration is low, (ii) by serving as a substantive argument when elaboration is high, (iii) by biasing thoughts in a more positive or negative direction when elaboration is high, (iv) by affecting the confidence people have in their thoughts when elaboration is high, and (v) by affecting how much people elaborate when elaboration is not constrained by other factors.

Consider how the anti-smoking message that was matched to Katie's parental values in the earlier example could operate through each mechanism. If Katie is unable

or unmotivated to elaborate, she may simply feel good about being addressed as a parent, encouraging her to form a positive association with the message (matching as a peripheral cue). When thinking carefully, the message focus on parenting may be seen as implying that the source is knowledgeable about her situation and providing relevant evidence (matching as an argument). Alternatively, being reminded of her responsibilities as a parent could cause Katie to generate especially favorable thoughts about the prospect of quitting smoking (matching biasing thoughts) or increase her perception that her thoughts about the message are correct (matching affecting thought confidence). Matching is most likely to affect thought confidence when the match is revealed after thoughts are already generated. Finally, when the extent to which Katie elaborates is unconstrained, the match could make the message seem more relevant to her and increase how carefully she processes it (matching affecting the extent of elaboration). Research shows that increasing elaboration is a common effect of matching because matches often signal relevance, making it a useful tool for encouraging thoughtful consideration of health issues.

## Positive vs. negative effects of matching

Whatever mechanism produces the effect of matching, whether it is likely to increase or decrease persuasion or information processing depends on what the variable means to the recipient. Most matching effects in the literature have *increased* persuasion by one of the mechanisms just reviewed, but some studies show that matching can sometimes backfire and *decrease* persuasion. This can occur even if the match is interpreted positively (e.g., as being relevant) if the arguments are weak and matching increases elaboration. Sometimes, however, the match itself is interpreted negatively (Derricks & Earl, 2019). For example, if Katie sees the anti-smoking message's focus on parenting as unfairly judgmental or manipulative (e.g., an attempt to guilt-trip her), this could negatively impact persuasion by serving as a negative cue, biasing thoughts in a negative direction, decreasing confidence in her positive thoughts, or decreasing thinking about the strong arguments presented. Negative interpretations of matching are most likely when the match threatens recipients in some way (e.g., by seeming judgmental, manipulative, invasive). When this occurs, it can lead to defensive reactions that are counterproductive to message effectiveness. It is therefore important to consider both the mechanism through which a given variable affects persuasion and the meanings it can take on in the context of each mechanism.

## Conclusion

The ELM has long played a role in understanding what makes health communications successful. Recent advances using the ELM framework, such as explanations of personalized matching effects, can help guide the strategies adopted by health promotion campaigns. When people elaborate the information presented, persuasion occurs through the central route, involving a careful consideration of the arguments' central

merits. Attitudes resulting from careful thought are more impactful than those resulting from little thought. For peripheral route changes to persist, cues must remain salient and messages continually repeated.

SEE ALSO: Appeals: Social; Health Campaigns: Targeting; Inoculation Theory; Media Psychology; Message Tailoring; Narrative Appeals; Normative Aspects of Persuasion; Reactance Theory; Resistance; Science Communication; Social Marketing; Source Credibility.

## References

- Briñol, P., & Petty, R. E. (2009). Persuasion: Insights from the self-validation hypothesis. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 41, pp. 69–118). New York, NY: Elsevier.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, *42*, 116–131. <https://doi.org/10.1037/0022-3514.42.1.116>
- Derricks, V., & Earl, A. (2019). Information targeting increases the weight of stigma: Leveraging relevance backfires when people feel judged. *Journal of Experimental Social Psychology*, *82*, 277–293. <https://doi.org/10.1016/j.jesp.2018.12.003>
- Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion*. New Haven, CT: Yale University Press.
- Petty, R. E., & Briñol, P. (2012). The elaboration likelihood model. In P. A. M. Van Lange, A. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 224–245). London: Sage.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 125–205). New York, NY: Elsevier.
- Petty, R. E., & Krosnick, J. A. (Eds.). (1995). *Attitude strength: Antecedents and consequences*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Petty, R. E., Ostrom, T. M., & Brock, T. C. (Eds.). (1981). *Cognitive responses in persuasion*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Rothman, A. J., Desmarais, K. J., & Lenne, R. L. (2020). Moving from research on message framing to principles of message matching: The use of gain- and loss-framed messages to promote healthy behavior. In A. J. Elliot (Ed.), *Advances in motivation science* (Vol. 7, pp. 44–73). New York, NY: Elsevier.
- Teeny, J. D., Siev, J. J., Briñol, P., & Petty, R. E. (2021). A review and conceptual framework for understanding personalized matching effects in persuasion. *Journal of Consumer Psychology*, *31*(2), 382–414. <https://doi.org/10.1002/jcpy.1198>

## Further reading

- Petty, R. E., Barden, J., & Wheeler, S. C. (2009). The elaboration likelihood model of persuasion: Developing health promotions to produce sustained behavior change. In R. J. DiClemente, R. A. Crosby, & M. Kegler (Eds.), *Emerging theories in health promotion practice and research* (2nd ed., pp. 185–214). San Francisco, CA: Jossey-Bass.