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Persuasion Knowledge in the Marketplace: A Meta-Analysis

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Since the introduction of the persuasion knowledge model more than 25 years ago, many research studies have investigated how consumers' persuasion knowledge affects their reactions to persuasion attempts. While most results have shown that persuasion knowledge increases coping responses and leads to less favorable evaluations of marketer actions, the findings vary considerably, leaving researchers with a limited understanding of the substance and structure of persuasion knowledge effects and the conditions that explain their variability. To develop a better understanding of persuasion knowledge effects in the marketplace, this study builds on the concept of persuasion to predict responses to marketers' attempts to persuade consumers with different levels of persuasion knowledge. The study presents a meta-analysis of the findings in 148 papers and 171 distinct data sets. Persuasion knowledge effects can be viewed as substantial compared with persuasion attempts, but persuasion knowledge cannot suppress or eliminate persuasion effects in the marketplace, as it only reaches around 50% of the explanatory power of persuasion. Persuasion knowledge effects on evaluations and coping depend on the characteristics of the persuasion process. All persuasion elements that help consumers identify and better understand benefits not just for themselves, but also for marketers and how marketers realize their benefits—such as the use of personal communication, communication about unfamiliar products or products with experience attributes, and receiver experience—lead to less favorable effects for marketers. This paper's insights provide a new framework for persuasion knowledge effects in the marketplace, ideas for future research, and implications for researchers, consumers, policymakers, and marketers.

Keywords Persuasion knowledge; Persuasion; Consumer; Meta-analysis

Since the introduction of the persuasion knowledge model more than 25 years ago (Friestad & Wright, 1994), plenty of research studies have investigated how consumers develop persuasion knowledge (e.g., Nelson, 2016; Wright, Friestad, & Boush, 2005), when and how consumers use their persuasion knowledge (e.g., Boerman, Van Reijmersdaal, & Neijens, 2012; Campbell & Kirmani, 2000; Friestad & Wright, 1995), and how their persuasion knowledge affects their reactions to persuasion attempts (e.g., Isaac & Grayson, 2017; Panic, Cauberghe, & Pelsmacker, 2013). Insights about persuasion knowledge effects are of interest to researchers, marketers, consumers, and public policymakers because they carry major implications for marketing actions' effectiveness and consumers' susceptibility to these actions. However, most findings concerning persuasion knowledge effects vary considerably, leaving both researchers and practitioners with a

limited understanding of persuasion knowledge effects' substance and structure, as well as the conditions that explain their variability.

As for persuasion knowledge effects' substance and structure, research provides the general insight that persuasion knowledge increases consumers' coping responses and leads to less favorable evaluations (Campbell & Kirmani, 2008), but it does not tell us how strong these effects are compared with the effects from persuasion in the marketplace: Are persuasion knowledge effects strong enough to reduce or even eliminate the influence from marketers' persuasion attempts? Unfortunately, prior research provides mixed findings on the direction, strength, and hierarchy of persuasion knowledge effects on different consumer responses. For example, the direction of persuasion knowledge effects on memory remains unknown (Cowley & Barron, 2008; Matthes, Schemer, & Wirth, 2007). Prior research also has found considerable variation in persuasion knowledge effects and indicates that under certain circumstances, persuasion knowledge

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can even lead to positive evaluations of persuasion agents (Isaac & Grayson, 2017; Kirmani & Campbell, 2004). How can the variation in persuasion knowledge effects on either coping or evaluation be explained, and under which conditions does persuasion knowledge lead to favorable or unfavorable results for marketers and consumers?

In this study, we refer to the concept of persuasion to systematize consumer responses triggered by persuasion knowledge and to identify relevant moderators of persuasion knowledge effects. In doing so, we answered the above questions, which are important for a better and more comprehensive understanding of the concept of persuasion knowledge and its effects and, thus, its role and impact in the marketplace—insights that provide implications concerning persuasion knowledge for future research, as well as for consumers, public policymakers, and marketers. To this end, we meta-analyzed data provided in 148 prior research papers with 171 distinct data sets. Specifically, we compared persuasion knowledge effects' strength to the strength of persuasion effects in the marketplace and decided to what extent persuasion knowledge effects can reduce or even eliminate persuasion effects. We further resolved the ambiguities of effects in prior research and identified the direction, strength, and structure of the effects related to coping responses, evaluations, intentions and behavior, and memory and learning. Finally, we demonstrated that persuasion elements that help consumers identify and better understand persuasion attempts' benefits, not just for themselves, but also for marketers and how marketers realize their benefits—such as the use of personal communication, messages about unfamiliar products or products with experience and credence attributes, and receivers' experience—lead to less favorable effects for marketers. These findings inform marketers about conditions that jeopardize their investments' effectiveness, and they inform consumers about conditions when they are more susceptible to marketers' persuasion attempts. They further provide a basis for future research ideas on persuasion knowledge.

Theoretical Background

Persuasion and Persuasion Knowledge

Persuasion knowledge refers to consumers' knowledge and beliefs regarding marketers' persuasion goals and attempts, as well as their underlying motives and tactics, and how persuasion works (Friestad & Wright, 1994). At the core of persuasion

knowledge lies the concept of persuasion, and defining persuasion knowledge necessitates understanding what persuasion entails. Despite a multitude of definitions, conceptualizations, and persuasion models, the common idea of persuasion is that it is an intentional effort through communication to influence a receiver who has some degree of freedom of choice (e.g., O'Keefe, 2002; Perloff, 2017). This view is broader than equating persuasion with attitude change, which is a common approach by attitude researchers and focuses on a smaller set of consumer response variables than the present meta-analysis (Bohner & Dickel, 2011).

Persuasion in the marketplace benefits not only the receiver, but also the sender and influencer, which is a common assumption in persuasion models, with the persuasion knowledge model suggesting that the influencer harbors ulterior and self-serving motives (Campbell & Kirmani, 2008; Friestad & Wright, 1994). With increasing persuasion knowledge, receivers' ability to recognize, reflect upon, understand, and evaluate influencers' intentions and efforts increases. Receivers with more persuasion knowledge can understand not only benefits for themselves, but also benefits for influencers and how influencers pursue their benefits. They compare these benefits, which influence persuasion attempts' outcomes. The definition of persuasion indicates that knowledge of persuasion can refer to and affect outcomes that are either intended or unintended by the influencer.

Influencers' intended outcomes in a marketing context refer to brand-, channel-, and company-related evaluations, intentions, behavior, and memories of consumers. If consumers gain insights into persuasion that benefit not only the consumer, but also the marketer, and if they see that marketers use potentially manipulative techniques, and might even intend to reduce consumers' choices (e.g., through building brand loyalty), they develop coping responses, as suggested by reactance theory (Brehm, 1966). These coping responses are outcomes that are not intended by the marketer. The conceptual framework in Figure 1 depicts both types of outcomes, which are described and explained in more in Table 1.

Persuasion knowledge effects on outcome variables vary. Prior research has shown that increasing persuasion knowledge not only makes consumers more critical of persuasion and develops reactance, but also may improve consumers' skills in identifying benefits for themselves from marketers' persuasion attempts. Thus, they might even develop more favorable evaluations with increasing persuasion

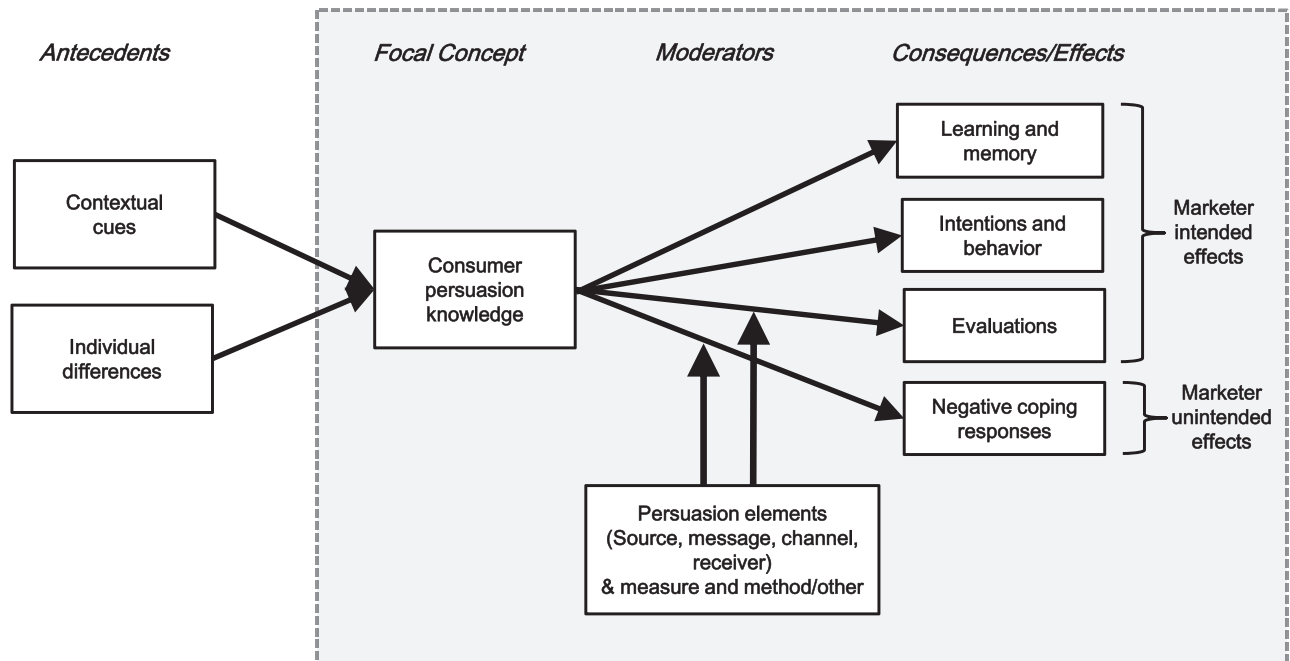


Figure 1. Research on persuasion knowledge: overview and conceptual framework.

knowledge (Isaac & Grayson, 2017). Whether and how consumers activate and apply their persuasion knowledge and how it affects their reactions depend on the cues that persuasion attempts provide to consumers. Because persuasion is a communication phenomenon, we can systematize the cues in line with the major elements of the communication or persuasion process (Lasswell, 1948): source; message; channel; and receiver. For instance, if a source lacks transparency, consumers with more persuasion knowledge are more likely to assume a hidden and ulterior motive that reduces the perception of their benefits compared with the marketer’s benefits, leading to more source-unfavorable outcomes than with a transparent source. Figure 1 depicts persuasion process moderators besides methodological and other moderators that we consider in our meta-analysis. Note that the different types of knowledge, such as agent or topic knowledge, that have been suggested by Friestad and Wright (1994) correspond to communication elements, but do not include channel or receiver characteristics as potential moderators of persuasion knowledge effects.

To provide a complete picture of persuasion knowledge research, Figure 1 further depicts the main antecedents of persuasion knowledge as investigated in prior research, although they are not empirically addressed in this meta-analysis. Most research has focused either on individual factors

that influence persuasion knowledge development or on contextual triggers that make marketers’ ulterior motives accessible, such as sponsorship disclosures. Individual factors refer to variations in expertise and cognitive resources, and as a variable related to both factors, age is the most-often-investigated individual variable. The findings indicate that persuasion knowledge starts developing in childhood, starting at age 5; increases with age; and reaches a saturation level at senior age (Nelson, 2016; Rozendaal, Buijzen, & Valkenburg, 2011; Van Reijmersdal, Rozendaal, & Buijzen, 2012). Contextual triggers also can induce cognitive resources’ availability (e.g., by distracting consumers; Campbell & Kirmani, 2000) and ulterior motives’ accessibility. While many different triggers exist that provide information about marketers’ motives, such as information about a firm’s business status or tactics (e.g., Brown & Krishna, 2004; Campbell & Kirmani, 2000; Morales, 2005), sponsorship disclosures that are relevant from both a managerial and public policy perspective have been investigated most intensively (e.g., Boerman & Van Reijmersdal, 2016; Eisend, Reijmersdal, Boerman, & Tarrahi, 2020). Sponsorship disclosures can activate and increase consumers’ persuasion knowledge. Figure 1 provides an overview of prior persuasion knowledge research and depicts the conceptual framework for this meta-analysis that pertains to research in the gray area.

Table 1
Persuasion Knowledge Effects on Consumer Response Variables

Consumer response variable	Definition	Expected effect
Marketer intended effects		
Evaluations		
Attitude toward the ad	Evaluation of the ad and the advertised message	Negative
Attitude toward the brand	Evaluation of the sponsored brand	
Company evaluation	Evaluation of the sponsoring company and its representatives	
Media evaluation	Evaluation of the media or platform that transmits the sponsored content	
Satisfaction	Evaluation of purchasing outcomes compared with expectations	
Intentions and behavior		
Behavioral intention	Consumers' likelihood of engaging in brand-favoring behavior or in the behavior advised in the ad message	Negative
Choice and behavior	Consumers' brand-favoring choice and behavior or their actual choice and behavior in line with advice given in the ad message	
Memory and learning		
Brand recall	Consumers' ability to retrieve a brand (name) from memory correctly when prompted by a product category	?
Brand recognition	Consumers' ability to correct their discernment of a brand as having been seen or heard before	
Learning	Consumers' elaboration and knowledge acquisition	
Other positive responses		
Credibility	The extent to which the source or message can be believed or trusted	Negative
Positive cognitions	Cognitive responses of positive valence	
Positive feelings	Emotional reactions of positive valence	
Marketer unintended effects		
Negative coping responses		
Avoidance	Actions taken to avoid and reduce persuasive influences	Positive
Disapproval	Disapproving evaluations and views of persuasion attempts	
Negative cognitions	Cognitive responses of negative valence	
Negative feelings	Emotional reactions of negative valence	
Suspicion	Consumers' critical stance toward and processing of persuasion attempts and sources, expressed by suspicion and skepticism	
Other		
Price estimate	Estimate of consumers' accepted price and/or sellers' price advantage	?
Third-person perceptions	Perceived influence on self (compared with others)	

The Substance and Structure of Persuasion Knowledge Effects

Persuasion knowledge leads to outcomes intended by the influencer (herein, marketer-intended outcomes) that are investigated in most marketing communication and persuasion studies, as well as unintended outcomes, which are usually not investigated in this research stream. Similarly, Campbell and Kirmani (2008) distinguished between coping responses that occur during a persuasion episode and terminal outcomes related to evaluations, intentions, and behaviors. Coping responses comprise all cognitive, emotional, or behavioral efforts by consumers in dealing with

and managing persuasion attempts, including cognitions, feelings, suspicions, or avoidance. Evaluations relate to the assessment of a persuasion object's value, merit, or benefit, including variables such as brand attitudes, ad attitudes, or company evaluations. Table 1 depicts the outcomes that have been investigated commonly in prior persuasion knowledge research and, thus, are selected for and included in the meta-analysis. While some authors have included credibility, trustworthiness, or dislike measures as indicators of persuasion knowledge activation or as evaluative dimensions of persuasion knowledge (e.g., Boerman et al., 2012; Rozendaal, Slot, Van Reijmersdal, & Buijzen, 2013), most prior studies have emphasized the cognitive view

suggested by Friestad and Wright's (1994) definition and have viewed evaluative constructs and coping responses as persuasion knowledge outcomes (Ham, Nelson, & Das, 2015) besides learning and memory and intentions and behavior. In this study, we follow the majority view of empirical studies.

The outcomes in Table 1 are organized as evaluations, intentions and behavior, memory and learning, other positive responses, negative coping responses, and other variables, following the classifications from other meta-analyses dealing with persuasion effects (e.g., Eisend & Tarrahi, 2016). Although the outcomes are assumed to be related (e.g., strongly negative coping responses lead to less positive evaluations), the present meta-analysis—similar to other meta-analyses—investigates persuasion knowledge's effects on each of the outcomes separately and independently.

Considering that marketers are assumed to have self-serving ulterior motives that they often hide—and persuasion knowledge increases the likelihood that consumers not only understand the benefits for themselves, but also recognize and understand marketers' motives—persuasion knowledge increases the likelihood of negative coping responses to allow consumers to control unwanted persuasive influences, leading to negative evaluations, intentions, and behaviors (e.g., Fransen, Verlegh, Kirmani, & Smit, 2015). While these effects have been well established in the literature, we do not know how these effects are manifested compared with marketer-intended and successful persuasion effects, such as positive brand attitudes. In particular, we do not know to what extent persuasion knowledge can reduce or even eliminate marketers' intended persuasive influence. If persuasion knowledge, indeed, can reduce persuasion effects by a considerable amount or even eliminate them, then persuasion knowledge effects will be viewed as substantial and important.

Aside from this major question regarding the substance of persuasion knowledge effects, several other open questions about the hierarchy and direction of responses triggered by persuasion knowledge can be answered through our meta-analysis. First, although the persuasion knowledge model is about knowledge, rather than emotions (Friestad & Wright, 1994), the coping responses can refer to consumers' cognitive, emotional, or behavioral efforts in dealing with and managing persuasion attempts. Although it is important for marketers, consumers, and public policymakers to understand what kind of responses they are dealing with to

optimize their efforts to channel these responses in meaningful ways, we do not know whether the responses to persuasion knowledge are primarily emotional, cognitive, or behavioral. Regarding this, we do not know whether persuasion knowledge might sometimes lead to positive emotions, as it might be possible that people feel elation after successfully activating persuasion knowledge (Campbell & Kirmani, 2008).

Second, persuasion knowledge mostly leads to negative evaluations, but it is unclear whether it affects all evaluation objects (e.g., company, brand, ads) in the same way. Conceptually, persuasion knowledge includes knowledge related to the persuasion process, including source and message elements; thus, the evaluation can affect various evaluation objects (Friestad & Wright, 1994). An intriguing question is whether consumers who activate persuasion knowledge evaluate the source as the party responsible for the persuasion attempt more negatively than other communication objects. The answer can provide insights to help marketers respond better to negative consumer responses due to persuasion knowledge.

Third, researchers have begun to ask whether persuasion knowledge can exert positive effects (e.g., Campbell & Kirmani, 2008; Isaac & Grayson, 2017). An interesting outcome in this regard is consumers' memory and learning persuasion-related cues, which have led to ambiguous findings in prior research (e.g., Cowley & Barron, 2008; Matthes et al., 2007). Similar to other responses, any brand-favoring outcomes should be reduced; thus, persuasion knowledge should affect memory and learning negatively. However, knowledge and memory are not necessarily correlated (DeMarie-Dreblow, 1991), which also could imply a non-existent relationship between persuasion knowledge and memory and learning.

Explaining Variations in Persuasion Knowledge Effects

Whether and how consumers apply their persuasion knowledge and how it affects their responses depend on cues that the persuasion attempt and situation provide to consumers, who, based on these cues, can identify the persuasion attempt's benefits for themselves and for the marketers, compare and interpret these benefits, then react accordingly. The general idea is that with little or no persuasion knowledge, consumers mainly will identify benefits for themselves, as they are salient and easy to process and understand in the context of a persuasion attempt. For instance, most brand ads clearly

communicate brands' main benefits to consumers (e.g., a comfortable car, a healthy drink) (Bruce, Becker, & Reinartz, 2020). Even if benefits are subjective, persuasion in the marketplace commonly provides some benefits for the consumer, leading to positive evaluations by the consumer. However, with increasing persuasion knowledge, consumers can see beyond the persuasion attempt's salient elements and recognize, process, and interpret other information about the persuasion process, marketers, and the persuasion context to reveal information about the benefits for the marketer and how marketers try to achieve these benefits through, for instance, manipulative tactics (Friestad & Wright, 1994). By better understanding the benefits for both consumers and marketers, consumers can compare their benefits to marketers' benefits and put their benefits into perspective, which can lead to more coping and less positive evaluations. By understanding that marketers tend to hide their intentions or sometimes use manipulative tactics, consumers take a more critical stance.

Specific cues can help consumers with more persuasion knowledge better understand the benefits for both themselves and marketers, as well as how marketers try to realize their benefits. We systematize the cues in line with major elements of the communication or persuasion process (e.g., Lasswell, 1948): source; message; channel; and receiver. The persuasion process elements are moderators of persuasion knowledge effects. Next to these persuasion process elements, persuasion knowledge measures are also important moderators, as several items from these measures are related to the perception of marketers' persuasive intentions (Williams, Fitzsimons, & Block, 2004). Note that the variables that we ultimately have used to test persuasion process elements' moderating effects also are driven by methodological considerations and the availability of information provided in the primary studies included in the meta-analysis. As is common with a meta-analysis, all hypotheses are predictions using an "all else equal" approach and cannot consider conditional effects and moderators that are not provided in the primary studies included in the meta-analysis.

Source

A source characteristic that is likely to moderate persuasion knowledge effects is source transparency. Covert marketing (e.g., product placements in movies, blogger sponsoring, and native advertising) is not transparent concerning the

source and its intentions, and the commercial source cannot be identified easily (Campbell, Mohr, & Verlegh, 2013; Wei, Fischer, & Main, 2008). With less persuasion knowledge, consumers are less likely to recognize covert marketing sources' ulterior motives. Instead, consumers focus on the benefits for themselves provided in the persuasive message, while with more persuasion knowledge, consumers can identify the source, its intentions, and applied tactics. Consumers can recognize marketers' benefits and put their own benefits into perspective, thereby developing more coping responses and less favorable evaluations.

Note that our hypotheses are tested through a meta-analysis by assessing effect sizes. A stronger effect indicates a larger absolute value of an effect size, thereby indicating more positive effects on negative coping, but more negative effects on evaluations, and vice versa for weaker effects that are assessed by smaller effect sizes:

H1: The effect of persuasion knowledge on evaluations and coping is stronger for covert sources vs. noncovert sources.

Similar arguments have referred to personalized persuasive communication in the marketplace. With increasing persuasion knowledge, consumers are more likely to identify the marketer's aims and benefits, as well as the underlying tactics in using personalized communication over nonpersonalized communication. Understanding marketers' application of personalized communication can increase privacy concerns and reactance, which can lead to negative effects from personalized marketing communication (Aguirre, Mahr, Grewal, Ruyter, & Wetzels, 2015; Bleier & Eisenbeiss, 2015). As a result, greater persuasion knowledge leads to more coping and less favorable evaluations when personalization is high.

H2: The effect of persuasion knowledge on evaluations and coping is stronger for personal sources vs. nonpersonal sources.

Message

The marketing communication message is created around a product. Messages for low-involvement products apply basic persuasion techniques, such as the application of sex appeals or humor; provide basic information about benefits for consumers; and lead to shallower processing (Rossiter, Percy, & Donovan, 1991). While consumers

with less persuasion knowledge mainly will focus on salient benefits for themselves, consumers with greater persuasion knowledge are more likely to identify marketers' ulterior motives and see beyond basic persuasion techniques applied in messages for low-involvement products. Messages for high-involvement products provide more detailed information and are processed more intensively. Thus, persuasion knowledge effects should be weaker, as all consumers are more likely to identify both benefits for themselves and benefits for marketers in messages for high-involvement products that are processed more thoroughly.

H3: The effect of persuasion knowledge on evaluations and coping is stronger for low-involvement products vs. high-involvement products.

Similar arguments refer to unfamiliar products in which consumers with less persuasion knowledge lack knowledge and information, and focus on the benefits for themselves, while consumers with more persuasion knowledge are better able to identify marketers' ulterior motives concerning unfamiliar products' persuasion attempts. As a result, they dismiss questionable or exaggerated information from unfamiliar products (Lee, 2014). In contrast, familiar products often are associated with high credibility regarding both the brand and the message (Hann & Berkey, 2002) and, thus, are less likely to trigger suspicion and ulterior motives among consumers, which should lead to an attenuation of persuasion knowledge effects:

H4: The effect of persuasion knowledge on evaluations and coping is stronger for unfamiliar products vs. familiar products.

Similar to messages for unfamiliar products, messages about intangible products, such as services (compared with goods) or products with primarily experience and credence attributes (e.g., organic fruits), rather than search attributes, are more difficult to evaluate (Weathers, Sharma, & Wood, 2007). Consumers with less persuasion knowledge lack knowledge and information, and focus on the benefits for themselves that are salient in the message, while consumers with more persuasion knowledge are more likely to identify marketers' ulterior motives and manipulative efforts with persuasion attempts. Products with search attributes, as well as goods and their benefits for both consumers and marketers, are easier to evaluate and, thus, the difference in persuasion knowledge effects should be lower.

H5: The effect of persuasion knowledge on evaluations and coping is stronger for services vs. goods.

H6: The effect of persuasion knowledge on evaluations and coping is stronger for products with experience or credence attributes vs. products with search attributes.

Channel

Consumers also make judgments about persuasive communication and media types based on their persuasion knowledge; they show more skepticism toward new media channels and perceive them as less credible compared with traditional ones (Moore & Rodgers, 2005). Persuasive communication in digital media, such as digital advertising, allows for many variations, is less regulated than traditional advertising, and is, therefore, more likely to lead to more suspicion and negative evaluations, such as the perception of privacy intrusion (Tucker, 2014). With increasing persuasion knowledge, consumers should be more aware of the differences between the use of online and offline channels in persuasion attempts; therefore, the difference in responses between both channels should increase.

H7: The effect of persuasion knowledge on evaluations and coping is stronger for online channels vs. offline channels.

Receiver

Persuasion knowledge gradually develops throughout life, evolving from simple to more sophisticated knowledge and beliefs about persuasion (Friestad & Wright, 1994; Wright et al., 2005), that is, children and adolescents' persuasion knowledge is less developed than that of adults (Hudders et al., 2017). Therefore, children and adolescents are less likely to understand marketers' ulterior motives and manipulative actions, as their reactions are weaker, they show fewer coping responses, and their evaluations are more favorable:

H8: The effect of persuasion knowledge on evaluations and coping is stronger for adult samples vs. samples with children and/or adolescents.

Beyond the gradual development of persuasion knowledge throughout life, persuasion knowledge can increase significantly through education (Nelson, 2016; Wright, 2002). The more educated

someone is, the higher their media and advertising literacy and, thus, the higher their persuasion knowledge. Thus, in our meta-analysis, we distinguished between studies with student samples and nonstudent samples. Student samples comprised better-educated individuals than nonstudent samples. Therefore, they were more likely to have more persuasion knowledge, which leads to more negative coping responses and evaluations.

H9: The effect of persuasion knowledge on evaluations and coping is stronger for samples with students vs. nonstudent samples.

The development of persuasion knowledge also is influenced by how much practice consumers get during persuasion episodes and how much experience they gain from encountering persuasion situations (Friestad & Wright, 1994). The prevalent and intensive use of marketing in society provides several information sources, such as mass media commentary on marketing activities and advertising and sales expertise shared by marketing professionals in the media, which can increase consumers' persuasion knowledge and lead to corresponding outcomes (Friestad & Wright, 1994). However, there are two reasons why high-intensity marketing does not necessarily increase persuasion knowledge effects. First, persuasion knowledge might reach a ceiling in high-intensity marketing contexts. Second, research on competitive interference has provided strong evidence that increasing advertising clutter can even reduce memory and learning (Keller, 1991; Kent & Allen, 1994). Therefore, contexts with intensive marketer actions that create more clutter can even reduce persuasion knowledge's effectiveness because consumers are less likely to identify marketers' ulterior motives and manipulative actions and, thus, simply focus on their own benefits. The U.S. has the highest marketing spending per capita (and, thus, the highest probability of advertising clutter) among the sample of countries in this meta-analysis, which includes several European countries and others with comparatively low marketing spending per capita, such as India, China, Iran, and Thailand.

H10: The effect of persuasion knowledge on evaluations and coping is stronger in non-US samples vs. US samples.

Measures

In prior studies, persuasion knowledge has been measured by either dispositional/chronic or

situational measures (Briñol, Rucker, & Petty, 2015; Ham et al., 2015). Chronic measures include knowledge of persuasion tactics (Boush, Friestad, & Rose, 1994), laypeople's persuasion knowledge (Friestad & Wright, 1995), self-confidence in relation to persuasion knowledge (Bearden, Hardesty, & Rose, 2001), and pricing tactic persuasion knowledge (Hardesty, Bearden, & Carlson, 2007). Situational measures include ratings of persuasion-related beliefs (Campbell & Kirmani, 2008), encompassing scales that measure the inference of manipulative content (e.g., Campbell, 1995) or the understanding of persuasive intent and motives (e.g., Tutai & Van Reijmersdal, 2012). A chronic measure indicates general persuasion knowledge, but does not refer to a specific persuasion attempt or situation, while a situational measure refers to the particular persuasive communication attempt or situation. Other than a chronic measure, a situational measure captures persuasion knowledge that allows consumers to use cues concerning persuasion from the specific persuasion context. Thus, a situational measure is more specific and likely to better explain the variance in responses (both negative coping responses and evaluations), that is, it leads to stronger responses compared with a chronic measure. Situational measures, but not chronic ones, often are used in studies with experimental manipulations, and because experimental manipulations lead to stronger effects (e.g., Crosno & Dahlstrom, 2008; Geyskens, Steenkamp, & Kumar, 1998), this further underlines the assumption that effects should be stronger for situational, compared with chronic, persuasion knowledge.

H11: The effect of persuasion knowledge on evaluations and coping is stronger for situational measures vs. chronic measures.

Research on the development of persuasion knowledge in children distinguishes further between measures that reflect the different stages of persuasion knowledge development (Hudders et al., 2017; Nelson, 2016; Rozendaal et al., 2013; Wright et al., 2005). These measures refer to the recognition of persuasive communication and the recognition of the persuasion source, as well as the understanding of persuasive intent, both of which are commonly used measures in the persuasion knowledge literature. They will be considered in this meta-analysis, along with general persuasion knowledge measures that encompass both recognition and understanding of intent. The recognition of advertising is the first stage of persuasion knowledge development. Even if consumers recognize

advertising or marketing communication, they do not necessarily understand its persuasive intent and, therefore, are less likely to elicit strong reactions (Eisend et al., 2020). Thus, while recognition is a prerequisite for understanding, recognition alone should trigger weaker coping responses and more positive evaluations than the understanding of persuasive intent or a general persuasion knowledge measure that includes both recognition and understanding:

H12: The effect of persuasion knowledge on evaluations and coping is stronger for measures of understanding persuasive intent or general persuasion knowledge measures vs. recognition measures.

Method and others (controls)

To control for common variations between studies and effect sizes, as well as potential biases, we considered the time, study design, publication status, and publication outlet as control variables, like other meta-analyses (e.g., Carlson, Vincent, Hardesty, & Bearden, 2008; Neumann, Böckenholt, & Sinha, 2016; Scheibehenne, Greifeneder, & Todd, 2010). The progression of knowledge in a research area suggests that effect sizes can change over time because scientific progress can be continuous, discontinuous, or static (Eisend, 2015). Furthermore, each research topic has a life cycle. How long and how intensively researchers have dealt with a specific topic can influence the explanatory power that any additional study provides. Therefore, time (as assessed by the year of the collected data) can influence the size of the effects reported in a study.

Experimental studies can control the levels of the factor to which a participant is exposed and can offer the control necessary to eliminate potential confounds (e.g., Field & Hole, 2003). Similar to other meta-analyses (e.g., Crosno & Dahlstrom, 2008; Geyskens et al., 1998), experimental settings are expected to lead to larger effect sizes than other study designs.

Furthermore, significant findings are more likely to be submitted to peer-reviewed journals, and they are more likely to be published than insignificant findings, leading to publication bias (Sutton, 2009). Therefore, the effect size estimates in unpublished papers are expected to be lower than those in published papers, in case the literature included in the meta-analysis suffers from publication bias.

Censorship due to authors, editors, or reviewers is related to the size of effects reported in studies (Rust, Lehman, & Farley, 1990). Leading journals' editors and reviewers are more likely to select studies with strong effect sizes, signaling a theory's usefulness and the rigorous application of methods (Aguinis, Dalton, Bosco, Pierce, & Dalton, 2011). Additionally, authors are more likely to select strong findings for submission to a leading journal. If the meta-analysis suffers from a selection bias, the effect sizes in leading journals would be larger than the effect sizes in other publication outlets.

Method

Study Retrieval

The meta-analysis compiled papers that provided statistical information regarding persuasion knowledge effects on consumer response variables. To this end, we conducted an exhaustive search of published and unpublished papers that empirically measured and/or tested persuasion knowledge effects. First, we performed keyword searches of electronic databases (such as *Business Source Complete*, *JSTOR*, *PsycINFO*, *ProQuest Dissertations & Theses Global*, and *Google Scholar*) and relevant conference proceedings (the conferences by the *American Advertising Academy*, *Association for Consumer Research*, and *European Academy of Advertising*) using the following keywords: "persuasion knowledge"; "persuasion tactic*" + "knowledge"; "manipulative intent*"; "persuasive intent*"; "persuasive motive"; "selling motive"; "inference" + "manipulat*"; "suspicion" + "motive"; "identification"/ "recognition" + "commercial source"; "understanding" + "advertising process"; and "advertising tactic*"/"advertis*" + "truth"/"advertis*" + "bias." Second, we searched review articles (Campbell & Kirmani, 2008; Ham et al., 2015; Wright et al., 2005), examining their reference lists and applying an ancestry tree search in the *Web of Science* database and on *Google Scholar* for all papers referring to the review papers and the seminal paper by Friestad and Wright (1994). Third, we performed a manual search of the journal outlets that turned out to be major sources for articles dealing with persuasion knowledge. Fourth, we reviewed the reference lists in all the obtained papers. The compilation procedure aligned to that of prior consumer research meta-analyses (e.g., van Laer, de Ruyter, Visconti, & Wetzels, 2014; Motyka et al., 2014; Neumann

et al., 2016) and recommendations in the literature (Grewal, Puccinelli, & Monroe, 2018; Hunter & Schmidt, 2004), and it included all papers that were available by July 2019.

After identifying papers for potential inclusion in the meta-analytic database, we applied inclusion and exclusion criteria to determine which papers to retain. We included all papers that reported on empirical studies based on samples of consumers and that quantitatively investigated persuasion knowledge effects, as defined above, on any consumer response variables. We excluded any paper that lied beyond this scope. We also excluded papers that did not provide enough data for the purposes of our meta-analysis, such as those that lacked sufficient statistical information to calculate an effect size and for which the necessary information could not be retrieved from the authors. Apart from these exclusions, we considered any papers written in English that provided the appropriate empirical data.

To avoid duplicates in our database and to address data dependencies, we proceeded in the following manner. A document with original analyses and findings by the authors (e.g., journal article, working paper, conference paper) was called a "paper." Some papers analyzed more than one distinct data set (e.g., a paper with several experiments), while other data sets are analyzed in more than one paper (e.g., an empirical study published as a conference paper and a journal paper). We considered data sets to be nested within a paper. If results were spread across papers based on the same data set, they were coded as results from a single data set nested within a paper. We coded the paper characteristics (publication status, publication outlet) based on the most recent publication. Papers with changes in author teams that used the same data set were identified by identical sample sizes and overlapping results. Each data set can provide single or multiple effects. Our final database included 148 unique papers that used 171 distinct data sets (see the Web Appendix S1 for a detailed list). The database for this meta-analysis included journal articles, book chapters, working papers, unpublished theses, and conference proceedings, thereby reducing the risk of a biased representation of the state of research due to the publication source. Overall, 19 data sets came from unpublished sources, including 11% of the effect sizes ($n = 80$), comprising a sample size of 3,071 consumers.

Effect Size Computation and Coding

We retrieved and computed an effect size that describes the relationship between persuasion knowledge and any of the consumer response variables. The effect size metric selected was the correlation coefficient, which was an easily interpretable effect size. A positive sign in the correlation coefficient indicated that persuasion knowledge increased the consumer response variable, and vice versa for a negative sign in the correlation coefficient. Higher absolute values of the correlation coefficient indicated a stronger influence from persuasion knowledge on a consumer response variable. For studies that reported other measures (e.g., Student's t , mean differences, other effect size measures), these measures were converted to correlation coefficients. The correlations were adjusted for measurement error following the procedure proposed by Hunter and Schmidt (2004). When a study did not report on reliability, we used the mean reliability for that variable across all studies. Out of 726 effect sizes, 32.1% were based on single item scales, and 75% of the remaining scales reported a reliability coefficient. Overall, 726 relevant effect sizes were retrieved from 171 data sets provided in 148 papers. The combined sample size for these effect sizes included 28,944 consumers. The consumer response variables were categorized according to the variable definitions in Table 1. Two researchers independently assigned all the consumer response variables in the data sets to these categories. The agreement rate was 94.2% (Krippendorff's $\alpha = .937$), and inconsistencies were resolved through discussion. In addition, a student coder who was external to the research coded the consumer response variables. In 4% of the cases, the student assistant provided different coding that was reconciled through discussion.

Integration of Correlation-Based Effect Sizes

To capture persuasion knowledge's overall effects on consumer response variables, the correlation-based effect sizes were integrated, that is, an average estimate was computed. We first transformed the reliability-corrected correlations using Fisher's z transformation to benefit from its variance-stabilizing property. We performed the analysis using this index, then converted the summary values back to correlations for presentation.

We dealt with integrating dependencies between effect sizes as follows. When a data set provided findings for different consumer response variables,

we treated the findings as independent, because we integrated and analyzed the estimates for each consumer response variable separately. Some data sets reported multiple relevant tests for the same consumer response variable. We accounted for the dependencies of the effects sizes and our data's nested nature (first level: effect sizes; second level: data set; third level: paper) by using multilevel (i.e., three-level) models (Raudenbush & Bryk, 2002). Following the procedure from other multilevel meta-analyses (e.g., Chernev, Böckenholt, & Goodman, 2015; Kranzbühler, Zerres, Kleijnen, & Verlegh, 2020), we used the following equation:

$$z_i = \gamma_i + e_i + u_i + a_i \quad (1)$$

In this equation, observed effect sizes (z_i) are predicted from the average population effect (γ_i), as well as the sampling variance component (e_i), a between-data-set (within-paper) error (u_i), and a between-paper error (a_i). The equation is an "intercept-only" model in that no moderator is included as a predictor. We integrated the effect sizes and estimated the model in HLM (using the HLM 8.0 software) and performed analyses for all consumer response variables separately and for combined response categories. Furthermore, we calculated the statistical power for the significant summary effect size of each consumer response variable (Valentine, Pigott, & Rothstein, 2010).

Meta-Regression

We assessed moderator variables' influence on Fisher's z transformed correlation-based effect sizes, which refer to either negative coping responses or evaluations. We applied a power analysis to ensure that we had a sufficient number of effect sizes for a desired power level of .8, a given number of predictors, and the anticipated effect size (Faul, Erdfelder, Buchner, & Lang, 2009). The number of correlations and data sets for both consumer response variables was sufficient to produce robust results.

A multilevel model that includes influencing variables is termed a conditional model, which is a mixed-effects model, as fixed effects for the influencing variables are considered in addition to random components. The moderator variables, as

expressed by our hypotheses, were measured on all three levels. Thus, the estimated model was expressed as follows:

$$\begin{aligned} z_{ijk} = & \gamma_{000} + \gamma_{001} * \text{PUBSTATUS}_k + \gamma_{002} * \text{TOPJOUR}_k \\ & + \gamma_{010} * \text{COVERT}_{jk} + \gamma_{020} * \text{PERSONAL}_{jk} \\ & + \gamma_{030} * \text{INVOLVEMENT}_{jk} + \gamma_{040} * \text{FAMILIAR}_{jk} \\ & + \gamma_{050} * \text{SERVICE}_{jk} + \gamma_{060} * \text{EXPERIENCE}_{jk} \\ & + \gamma_{070} * \text{ONLINE}_{jk} + \gamma_{080} * \text{AGE}_{jk} \\ & + \gamma_{090} * \text{STUDENT}_{jk} + \gamma_{0100} * \text{US}_{jk} \\ & + \gamma_{0110} * \text{YEAR}_{jk} + \gamma_{0120} * \text{STUDYDESIGN}_{jk} \\ & + \gamma_{100} * \text{CHRONIC}_{ijk} + \gamma_{200} * \text{RECOGNITION}_{ijk} \\ & + e_{ijk} + u_{0jk} + a_{00k}, \end{aligned} \quad (2)$$

in which z_{ijk} denotes the i th Fisher's z transformed correlation reported within the j th data set reported within the k th paper. The equation describes the effects from the moderator variables such that:

$\text{PUBSTATUS}_k = 1$ if the paper was unpublished and 0 if it was published. $\text{TOPJOUR}_k = 1$ if the paper was published in a top journal (papers in the meta-analysis were published in the following top journals: *Journal of Consumer Research*; *Journal of Marketing Research*; and *Journal of Personality and Social Psychology*) and 0 if otherwise. $\text{COVERT}_{jk} = 1$ if the source was covert and 0 if it was noncovert. $\text{PERSONAL}_{jk} = 1$ if the communication was personal, and 0 if the communication was nonpersonal. $\text{INVOLVEMENT}_{jk} = 1$ if the message referred to a high-involvement product, and 0 if it referred to a low-involvement product. $\text{FAMILIAR}_{jk} = 1$ if the message referred to an unfamiliar product, and 0 if it referred to a familiar product. $\text{SERVICE}_{jk} = 1$ if the message referred to a service, and 0 if it referred to goods. $\text{EXPERIENCE}_{jk} = 1$ if the message referred to products with experience/credence attributes, and 0 if it referred to products with search attributes. $\text{ONLINE}_{jk} = 1$ if the channel was online, and 0 if the channel was offline. $\text{AGE}_{jk} = 1$ if respondents were children/adolescents and 0 if they were adults. $\text{STUDENT}_{jk} = 1$ if the respondents were students and 0 if they were non-students. $\text{US}_{jk} = 1$ if the respondents were from the U.S. and 0 if they were from other countries. YEAR_{jk} = data collection year (continuous variable). $\text{STUDYDESIGN}_{jk} = 1$ if the study was nonexperimental and 0 if it was experimental. $\text{CHRONIC}_{ijk} = 1$ if the measure referred to chronic persuasion

Table 2
Persuasion Knowledge Effects: Integration of Correlation-Based Effect Sizes

Consumer response variable	Expected effect	No. papers	No. data sets	No. effect sizes	Sample size	Corrected mean r	Lower 95% CI	Upper 95% CI	Power
Marketer intended effects									
Evaluations	Negative	96	119	296	20,460	-0.098	-0.152	-0.043	>.999
Attitude toward the ad		28	32	49	8,108	-0.041	-0.127	0.046	-
Attitude toward the brand		60	75	168	10,732	-0.100	-0.161	-0.037	.956
Company evaluation		11	13	31	2,927	-0.208	-0.464	0.079	-
Media evaluation		16	17	28	4,061	-0.057	-0.120	0.007	-
Satisfaction		6	9	20	971	-0.087	-0.202	0.030	-
Intentions and behavior	Negative	56	67	112	13,719	-0.123	-0.197	-0.048	.999
Behavioral intention		52	60	99	12,523	-0.133	-0.210	-0.054	.999
Choice and behavior		6	7	13	1,196	-0.015	-0.293	0.266	-
Memory and learning	?	23	25	49	3,666	0.206	-0.012	0.405	-
Brand recall		13	13	19	1,846	0.116	-0.257	0.459	-
Brand recognition		4	4	14	457	0.371	0.145	0.561	.800
Learning		8	10	16	1,736	0.271	0.093	0.432	.978
Other positive responses	Negative	26	36	81	5,021	-0.196	-0.311	-0.076	.999
Credibility		20	28	59	4,468	-0.183	-0.313	-0.047	.990
Positive cognitions		2	3	3	448	-0.503	-0.875	0.241	-
Positive feelings		6	7	19	499	-0.207	-0.358	-0.046	.631
Marketer unintended effects									
Negative coping responses	Positive	46	64	152	11,891	0.256	0.174	0.334	>.999
Avoidance		10	13	22	3,489	0.195	0.083	0.302	.982
Disapproval		10	10	23	2,068	0.041	-0.063	0.144	-
Negative cognitions		4	4	8	984	0.074	-0.074	0.219	-
Negative feelings		4	5	8	1,038	0.398	0.225	0.546	.994
Suspicion		25	39	91	6,264	0.327	0.213	0.432	>.999
Other									
Price estimate	?	4	7	17	574	-0.211	-0.290	-0.129	.715
Third-person perceptions		5	8	19	1,843	-0.003	-0.099	0.094	-

The corrected mean correlation coefficients (r) are variance-weighted and reliability-corrected estimates. Before integrating the correlations, they were transformed using Fisher's z transformation. After performing the analysis with this index, the summary values were converted back to correlations for presentation.

knowledge and 0 if otherwise. $RECOGNITION_{ijk} = 1$ if the measure referred to recognition and 0 if otherwise.

Before estimating a multilevel model with HLM software (HLM 8.0), we conducted several checks to ensure the model's robustness, particularly to reduce collinearity as a major issue in meta-regression. First, we examined the bivariate correlations among the potential covariates. Second, we computed the variance inflation factors (VIFs). Third, we performed sensitivity analyses by omitting each of the covariates with at least one correlation greater than .5, one at a time, as proposed in previous meta-analyses (Bijmolt, van Heerde, & Pieters, 2005). As a result, we omitted three variables from the moderator model related to evaluations (FAMILIAR, SERVICE, and STUDENT). Furthermore, we checked for outliers (outside three

standard deviations) for the models, but did not find any.

Results

Persuasion Knowledge Effects: Integration of Effect Sizes

Table 2 presents an overview of the integrated correlations. The confidence interval indicates significant findings, which show that, on average, persuasion knowledge increased negative coping responses, as well as memory and learning (at $p < .10$), while it decreased positive coping responses and led to less favorable evaluations, intentions, and behavior. Most of the mean effect sizes related to each consumer response variable were small to moderate, and some did not reach significance (i.e., attitude toward the ad, company evaluation, media

evaluation, satisfaction, choice and behavior, brand recall, third-person perceptions, disapproval, negative cognitions, positive cognitions). The power analysis indicated enough power for all significant mean correlations, except for positive feelings. The findings in Table 2 remain robust when estimating the figures without variance weights, thus ignoring the sample sizes (see Web Appendix S1). The bare-bone integration without reliability-correction and weighting (Web Appendix S1) shows smaller integrated effect sizes, which is expected when effect sizes are not corrected for artifacts; however, the significance of the effect sizes remains the same as indicated by the confidence intervals.

Concerning the three research questions related to persuasion knowledge effects' structure and hierarchy, we found the following. First, negative coping responses were primarily behavioral and emotional because we found no significant effect on cognition. As indicated by the confidence intervals around the mean correlation, the effect on negative feelings was significantly stronger than on negative cognitions and disapproval. The significant and negative effect on positive feelings, as indicated by the negative confidence interval, showed that persuasion knowledge did not lead to positive emotions. Second, the evaluations seemed to affect the brand primarily, while the effects related to the message and the agents were not significant. However, the confidence intervals indicated overlap; thus, it is not possible to state that evaluations of different objects differ. Third, memory and learning effects did not follow other terminal outcomes' negative effect patterns, but increased with persuasion knowledge. We will discuss persuasion knowledge effects' strength compared with persuasion effects in the marketplace in the discussion section below.

Persuasion Knowledge Effects' Moderators: Meta-Regression

Table 3 provides the meta-regression models' results. The unstandardized regression coefficients and standard errors are provided in parentheses, along with the predicted values for the results that were at least marginally significant. Although heterogeneity remained at all levels, the deviance statistic indicated that both models significantly explained the variation in effect sizes. While we found no effect from covert marketing, rejecting H1, we did find that coping responses increased and evaluations decreased for personal communication compared with nonpersonal communication, supporting H2. As for message-related moderators,

we identified that unfamiliar products and products with experience/credence attributes increased coping responses, while messages for high-involvement products led to fewer negative evaluations. These findings supported H3, H4, and H6, but rejected H5. We did not find any differences for channel characteristics, thereby rejecting H7. We elucidated that adults show more negative coping responses and less favorable evaluations than children or adolescents, supporting H8. Furthermore, negative coping responses were lower in the U.S., supporting H10. We found no differences in effect sizes for student samples compared with nonstudent samples, thereby rejecting H9. Furthermore, chronic measures led to less negative coping responses and more positive evaluations than situational measures, supporting H11. We noted no differences for recognition vs. other measures, rejecting H12. We tested further differences between measures and scales by adding variables that indicated specific scales (Bearden et al., 2001; Boush et al., 1994; Campbell, 1995; Hardesty et al., 2007). The main findings remained the same, and we found only one significant effect from the Boush et al., (1994) scale in the coping response model. As for the control variables, none exerted a significant effect on the findings.

Discussion

This meta-analysis summarizes, organizes, and extends prior research on persuasion knowledge and provides an updated and more comprehensive perspective on persuasion knowledge's role and importance in the marketplace. By referring to the concept of persuasion, the meta-analysis identifies marketer-intended and -unintended effects, and measures persuasion knowledge effects' strength in consumer responses. Therefore, a basis is provided for the interpretation of how strong persuasion knowledge effects are compared with persuasion effects in marketing (and as described below). Furthermore, the meta-analysis investigates several persuasion process variables' moderating influence on persuasion knowledge effects. The findings provide a better understanding of the concept of persuasion knowledge to interpret its effects and explain the variation in its effects on coping and evaluations. These insights provide several contributions for researchers, consumers, policymakers, and marketers. The meta-analysis further provides insights, ideas, and perspectives for future research on persuasion knowledge.

Table 3

Moderators of Persuasion Knowledge Effects: Meta-Regression Models

	Hypothesis	Negative coping responses		Evaluations	
		β (SE)	Predicted ^a	β (SE)	Predicted
Intercept		.111 (.132)		.025 (.101)	
Source					
Covert (0 = noncovert, 1 = covert)	H1 (+/-) ^b	-.031 (.145)		.044 (.064)	
Personal (0 = nonpersonal, 1 = personal)	H2 (+/-)	.191 (.089)*	.204 vs..379	-.322 (.120)**	-.076 vs. -.378
Message					
Involvement (0 = low, 1 = high-involvement product)	H3 (-/+)	.077 (.075)		.110 (.062)*	-.160 vs. -.050
Familiar (0 = familiar, 1 = unfamiliar product)	H4 (+/-)	.149 (.073)*	.209 vs..347	C ^c	
Service (0 = goods, 1 = service)	H5 (+/-)	-.192 (.104)		C	
Experience (0 = search, 1 = experience/credence)	H6 (+/-)	.182 (.092)*	.152 vs..323	-.073 (.054)	
Channel					
Online (0 = offline, 1 = online)	H7 (+/-)	.187 (.133)		.026 (.065)	
Receiver					
Age (0 = children/adolescents, 1 = adults)	H8 (+/-)	.210 (.107)*	.081 vs..282	-.169 (.085)*	.025 vs. -.144
Student (0 = non-students, 1 = students)	H9 (+/-)	-.041 (.080)		C	
U.S. (0 = other, 1 = U.S.)	H10 (-/+)	-.339 (.119)**	.452 vs..146	.059 (.064)	
Measures					
Chronic (0 = situational, 1 = chronic)	H11 (-/+)	-.152 (.048)***	.293 vs. 149	.280 (.059)***	-.148 vs..129
Recognition (0 = other, 1 = recognition)	H12 (-/+)	-.136 (.103)		-.151 (.096)	
Method/Other					
Year (continuous)	(?)	-.006 (.007)		.005 (.004)	
Study design (0 = experiment, 1 = other)	(-/+)	-.036 (.106)		-.051 (.075)	
Pub. status (0 = published, 1 = unpublished)	(-/+)	.103 (.122)		.103 (.084)	
Top journal (0 = other, 1 = top journal)	(+/-)	-.024 (.115)		-.012 (.105)	
Unexplained variance					
Level-1/-2 heterogeneity (χ^2/df)		71.538/6***		85.439/14***	
Level-3 heterogeneity (χ^2/df)		123.122/43***		366.467/93***	
Deviance/ <i>df</i>		28.055/16**		46.482/13***	

^aThe dependent variable is the Fisher-z-transformed correlation. Predicted values are retransformed into correlations.

^bThe first sign refers to the expected effect for the negative coping response model, and the second sign refers to the expected effect for the evaluation model.

^cC indicates that the moderator has been excluded due to collinearity.

* $p < .10$, ** $p < .05$, *** $p < .01$.

Interpreting Persuasion Knowledge Effects

Persuasion knowledge increases negative coping responses and leads to less favorable evaluations of persuasion attempts, as suggested in the literature (Campbell & Kirmani, 2008). The meta-analysis herein provides several new insights beyond these established findings. For instance, it showed that persuasion knowledge leads to primarily emotional and behavioral coping responses, rather than cognitive ones. We did not find significant differences in negative evaluations related to different communication objects, indicating that persuasion knowledge leads to similar evaluative responses for different objects. The findings further revealed a positive effect on memory and learning, such as that

increasing persuasion knowledge leads to stronger brand recognition and increases the likelihood of acquiring brand knowledge. This demonstrates that memory and learning effects do not follow the pattern of other marketing-intended effects that become more unfavorable with increasing persuasion knowledge. Persuasion knowledge lies in a particular domain and includes knowledge of brands and ads. The positive relationship between persuasion knowledge and memory and learning, as revealed by the meta-analysis, can be explained by associative knowledge networks: Knowledge about persuasion and brands is connected strongly, and this connection eases information retrieval from memory (Anderson & Reder, 1979). This finding questions the persuasion knowledge model's

premise that increasing persuasion knowledge leads to effects that are generally unfavorable for marketers.

Most of the effect sizes of persuasion knowledge's influence were small to moderate, but the question remains as to how strong they are when compared with persuasion in the marketplace. If persuasion knowledge, indeed, can reduce or even eliminate persuasion effects, it is considered substantial and important. To answer the question, we compared the effects in this meta-analysis to persuasion effects as provided by a meta-meta-analysis of the effect sizes in advertising (Eisend & Tarrahi, 2016). As a caveat, it should be noted that a comparison of persuasion knowledge effects with advertising effects and the suggested explanations assume that persuasion knowledge is exogenous. However, persuasion knowledge might be endogenous and related to advertising intensity, that is, more advertising might increase persuasion knowledge, as consumers can gain experience and practice from encountering persuasion situations (Friestad & Wright, 1994). The sizes of persuasion knowledge effects on evaluations ($-.098$) or intentions and behavior ($-.122$) were significantly smaller than advertising's general effects on attitudes ($.214$) or behavior ($.199$). Comparing persuasion knowledge effects' explanatory power with that of advertising effectiveness showed that persuasion knowledge effects reached around 50% of advertising's explanatory power over consumer responses. This implies that these effects can be viewed as substantial because they can counteract and reduce advertising influences on consumers' evaluations and behaviors considerably, by 50%. Additionally, the findings indicated that persuasion knowledge is a factor that can contribute to and partially explain lesser advertising effectiveness, which has attracted substantial attention in the literature (e.g., Dahlén & Rosengren, 2016). The literature has discussed several explanations as to why marketing communication efforts go awry and advertising fails, for example, inattention, miscomprehension, or ineffective actions on the part of advertisers (e.g., over-advertising or lack of field tests and tracking; Tellis, 2004). However, the literature has neglected persuasion knowledge as an explanation. Our findings show that the development of persuasion knowledge generally does not imply that consumers fully control (i.e., by 100%) advertising's influence, suggesting that despite developing persuasion knowledge, consumers cannot fully understand all the details of persuasion tactics and interpret how

exactly persuasion works in the marketplace. These insights should encourage public policymakers to act to further increase consumers' persuasion knowledge or focus on alternative measures that can restrict consumers' susceptibility to marketing actions, such as regulations. The 50% figure in this meta-analysis can provide a benchmark for assessing persuasion knowledge's capacity to handle persuasion in the marketplace.

Explaining Variations in Persuasion Knowledge Effects on Coping and Evaluations

While the literature suggests that persuasion knowledge positively affects coping and negatively affects evaluations, the variation in effects is considerable. Some studies even have shown that under certain conditions, consumers who cope successfully can better comprehend and carve out their benefits from a persuasion attempt, leading to positive evaluations via persuasion knowledge (Isaac & Grayson, 2017). Whether and how consumers apply their persuasion knowledge to identify persuasion benefits and their effects depend on the cues that persuasion process elements provide and that can help consumers identify marketers' ulterior motives and manipulative actions.

Except for channel characteristics, we found significant moderating effects in the source, message, receiver characteristics, and measures of persuasion knowledge. Every time these elements helped consumers understand the benefits for both themselves and for marketers, and helped identify hidden ulterior motives and persuasion tactics as manipulative, persuasion knowledge effects became unfavorable for marketers, weakening their intended effects (here: evaluations) and strengthening unintended effects (here: negative coping). Figure 2 provides an overview of persuasion elements that explained variations in persuasion knowledge effects. The figure summarizes which kinds of sources, messages, receivers, and measures moderated persuasion knowledge effects. Persuasion processes with sources not deemed transparent nor obtrusive, messages that make only consumer benefits salient, experienced recipients, and specific persuasion knowledge measures increase persuasion knowledge effects that were unfavorable for marketers. Some of the moderators even revealed conditions under which persuasion knowledge did not harm marketers, but might have led to outcomes that were favorable for marketers. We found that negative persuasion knowledge effects on evaluations disappeared for children

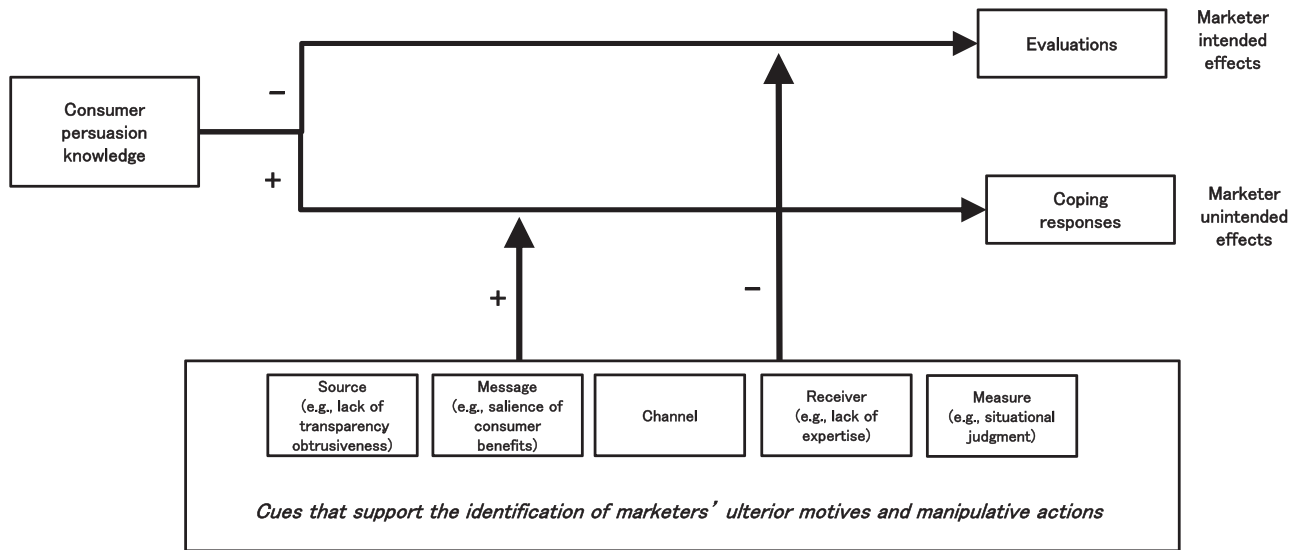


Figure 2. Explaining the variation in persuasion knowledge effects: a persuasion process perspective.

or adolescents, and even became positive when persuasion knowledge measures were chronic.

These findings carry several implications. Concerning consumers and public policy, persuasion knowledge effects can be activated or improved in such a way that they support consumers by increasing receiver expertise, providing information on sources' obtrusiveness or lack of transparency, or discounting messages as beneficial only for consumers. As for researchers, the results regarding persuasion knowledge measures show that persuasion knowledge research findings cannot be compared unless identical measures are used. Comparisons across studies with different measures are misleading. These insights also relate to marketers, who need to understand what kind of consumer persuasion knowledge they are dealing with to predict what kind of outcomes from their persuasion attempts they can expect. Because persuasion knowledge, on average, can decrease persuasion effects by 50%, conditions in which persuasion knowledge effects become even more unfavorable for marketers (e.g., messages for unfamiliar products or products with experience and credence attributes, as well as personalized communication) can jeopardize marketing investments in persuasion attempts considerably. A solution for marketers is to adopt their marketing communication practices to consumers with different degrees of persuasion knowledge. For instance, they should avoid personalization when communicating with consumers who possess much persuasion knowledge.

Future Research

While a meta-analysis should not be viewed as a substitute for new primary research (Cooper & Hedges, 1994), it can help ensure that the next wave of primary research is headed in the most illuminating research direction by identifying unsolved research problems and less-researched, but important, effects, and by suggesting factors that explain variations in effects. In this spirit, we suggest some areas that would benefit from further investigation.

First, by explaining variations in effects, this meta-analysis used communication process cues that could be retrieved from primary studies and from which sufficient and specific data were available. Further moderators relating to the communication process elements could be considered in future primary research. The idea is that some communication elements help consumers develop more or less critical reactions, which influence whether they can identify the persuasion attempt's benefits for both the consumer and marketer, as well as compare and evaluate these benefits. As for sources, endorsers and their fit with a product or endorser authenticity have not been investigated sufficiently as a cue that could increase or decrease critical thinking. Persuasion knowledge effects barely have been investigated, as they relate to message elements used commonly in advertising, such as humor, sex appeal, and creativity. These elements might be able to change the likelihood of critical thinking, for example, humor decreasing

critical thinking (Attardo, 1994). While the meta-analysis does not indicate differences between online and offline sources, comparisons of particular sources (e.g., TV vs. newspapers, banner ads vs. social media advertising) might be more informative, as they may trigger different degrees of critical thinking. As for receivers, the meta-analysis provides some intriguing differences that could be extended to consumers' other characteristics, such as gender or education, which can moderate the likelihood of critical thinking.

Second, the meta-analysis relied on a cognitive view of persuasion knowledge and distinguished between chronic and situational measures. The differences in effects between different persuasion knowledge measures indicate that researchers need to be careful and clearly distinguish between persuasion knowledge concepts in which they are interested. Distinguishing between chronic and situational persuasion knowledge at the operational level – as well as between recognition, the understanding of intent, and general persuasion knowledge – can provide the first steps in developing more general persuasion knowledge measures (Boerman, Van Reijmersdal, Rozendaal, & Dima, 2017). Considering that persuasion is a dynamic phenomenon and that persuasion applications and methods change over time, the concept and measures of persuasion knowledge should be understood as dynamic, too. More than 25 years of persuasion knowledge research have shown that it is difficult to develop a generalizable and stable measure of persuasion knowledge. We might better understand persuasion knowledge as a dynamic concept that requires continuous and systematic monitoring and development (see Bergkvist & Eisend, 2021).

Third, while the meta-analysis provided a framework encompassing antecedents and consequences of persuasion knowledge, it empirically summarized the consequences. A recent meta-analysis has examined disclosures' effects on persuasion knowledge (Eisend et al., 2020), but the effects from the second major antecedent variable, consumer age, have not been analyzed systematically. While we know that children have developed less persuasion knowledge than adults, we do not know whether the relationship between persuasion knowledge and age reaches a ceiling or follows a curvilinear relationship, and how the strength of this relationship depends on context factors, such as cultural differences in education or media consumption. Related to this, another important, but neglected, determinant is marketer actions and the question of

whether and how they can contribute to persuasion knowledge development. The prevalent and intensive use of marketing and advertising in society provides several information sources—such as mass media commentary on marketing activities, advertising, and sales expertise shared by marketing professionals in the media—that can increase consumers' persuasion knowledge (Friestad & Wright, 1994). Simultaneously, too many marketing actions can lead to situations (e.g., advertising clutter) in which consumers are inhibited in developing persuasion knowledge. As mentioned above, marketer actions are not fully exogenous and also can be influenced by persuasion knowledge, that is, marketer actions can be a consequence of persuasion knowledge development. Marketers have knowledge and beliefs regarding consumers' persuasion knowledge and about consumers' understanding of persuasion practices (Moreau, Krishna, & Harlam, 2001). They might change their marketing actions and investments, depending on their perception of how changes in persuasion knowledge relate to marketing or advertising effectiveness (Nyilasy & Reid, 2009). Further research is needed to investigate the relationship between marketer actions or investments on one hand and persuasion knowledge development on the other. Such findings can provide important insights for marketers, as they might need to account for the diminishing persuasion effect through increasing persuasion knowledge when planning for increased marketing and advertising budgets.

Finally, while the multilevel approach of the current meta-analysis accounts for the covariation among observations from the same data set, thereby following other recent meta-analytic applications, McShane and Böckenholt (2018) have suggested an approach that accounts for the differing levels of variation among multiple dependent variables and that captures the variation and covariation that is induced by the nested structure on all levels of the analysis. This approach is better able to account for the complexity of research data as often found in consumer psychology and should be considered in future meta-analyses applied to such data.

Conclusion

The current meta-analysis presented a persuasion (process) perspective to answer several open research questions in the persuasion knowledge literature, as well as broaden our understanding of

persuasion knowledge in the marketplace, including its substance and effects. All these insights provide opportunities for further research, which will help develop an up-to-date understanding of persuasion knowledge that truly benefits both consumers and marketers.

Conflict of Interest

The authors have no conflict of interest to declare.

References

- Aguinis, H., Dalton, D. R., Bosco, F. A., Pierce, C. A., & Dalton, C. M. (2011). Meta-analytic choices and judgment calls: Implications for theory building and testing, obtained effect sizes, and scholarly impact. *Journal of Management, 37*, 5–38.
- Aguirre, E., Mahr, D., Grewal, D., Ruyter, K. D., & Wetzel, M. (2015). Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness. *Journal of Retailing, 91*, 34–49.
- Anderson, J. R., & Reder, L. M. (1979). An elaborative processing explanation of depth of processing. In L. S. Cermak, & F. I. M. Craik (Eds.), *Levels of processing in human memory* (pp. 385–403). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Attardo, S. (1994). *Linguistic theories of humor*. New York: Mouton de Gruyter.
- Bearden, W. O., Hardesty, D. M., & Rose, R. L. (2001). Consumer self-confidence: Refinements in conceptualization and measurement. *Journal of Consumer Research, 28*, 121–134.
- Bergkvist, L., & Eisend, M. (2021). The dynamic nature of marketing constructs. *Journal of the Academy of Marketing Science, 49*, 521–541.
- Bijmolt, T., van Heerde, H. J., & Pieters, R. G. M. (2005). New empirical generalizations on the determinants of price elasticity. *Journal of Marketing Research, 42*, 141–156.
- Bleier, A., & Eisenbeiss, M. (2015). The importance of trust for personalized online advertising. *Journal of Retailing, 91*, 390–409.
- Boerman, S. C., Van Reijmersdal, E. A., & Neijens, P. C. (2012). Sponsorship disclosure: Effects of duration on persuasion knowledge and brand responses. *Journal of Communication, 62*, 1047–1064.
- Boerman, S. C., & Van Reijmersdal, E. A. (2016). Informing consumers about “hidden” advertising: A literature review of the effects of disclosing sponsored content. In P. D. Pelsmacker (Ed.), *Advertising in new formats and media* (pp. 115–146). Bingley, UK: Emerald.
- Boerman, S., Van Reijmersdal, E. A., Rozendaal, E., & Dima, A. (2017). *Development of the persuasion knowledge scale (pks): A measure of consumers’ knowledge of sponsored content*. Paper presented at the International Conference on Research in Advertising (ICORIA), Ghent, Belgium.
- Bohner, G., & Dickel, N. (2011). Attitudes and attitude change. *Annual Review of Psychology, 62*, 391–417.
- Boush, D. M., Friestad, M., & Rose, G. M. (1994). Adolescent skepticism toward tv advertising and knowledge of advertiser tactics. *Journal of Consumer Research, 31*, 165–175.
- Brehm, J. W. (1966). *A theory of psychological reactance*. New York: Academic Press.
- Briñol, P., Rucker, D. D., & Petty, R. E. (2015). Naïve theories about persuasion: Implications for information processing and consumer attitude change. *International Journal of Advertising, 34*, 85–106.
- Brown, C. L., & Krishna, A. (2004). The skeptical shopper: A metacognitive account for the effects of default options on choice. *Journal of Consumer Research, 31*, 529–539.
- Bruce, N. I., Becker, M., & Reinartz, W. (2020). Communicating brands in television advertising. *Journal of Marketing Research, 57*, 236–256.
- Campbell, M. C. (1995). When attention-getting advertising tactics elicit consumer inferences of manipulative intent: The importance of balancing benefits and investments. *Journal of Consumer Psychology, 4*, 225–254.
- Campbell, M. C., & Kirmani, A. (2000). Consumers’ use of persuasion knowledge: The effects of accessibility and cognitive capacity on perceptions of an influence agent. *Journal of Consumer Research, 27*, 69–83.
- Campbell, M. C., & Kirmani, A. (2008). I know what you’re doing and why you’re doing it. The use of persuasion knowledge model in consumer research. In C. P. Haugtvedt, P. M. Herr, & F. R. Kardes (Eds.), *Handbook of consumer psychology* (pp. 549–573). New York: Taylor and Francis.
- Campbell, M. C., Mohr, G. S., & Verlegh, P. W. J. (2013). Can disclosures lead consumers to resist covert persuasion? The important roles of disclosure timing and type of response. *Journal of Consumer Psychology, 23*, 438–495.
- Carlson, J. P., Vincent, L. H., Hardesty, D. M., & Bearden, W. O. (2008). Objective and subjective knowledge relationships: A quantitative analysis of consumer research findings. *Journal of Consumer Research, 35*, 864–876.
- Chernev, A., Böckenholt, U., & Goodman, J. (2015). Choice overload: A conceptual review and meta-analysis. *Journal of Consumer Psychology, 25*, 333–358.
- Cooper, H., & Hedges, L. V. (1994). Potentials and limitations of research synthesis. In H. Cooper, & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 521–529). New York: Russell Sage Foundation.
- Cowley, E., & Barron, C. (2008). When product placement goes wrong. The effects of program liking and placement prominence. *Journal of Advertising, 37*, 89–98.
- Crosno, J. L., & Dahlstrom, R. (2008). A meta-analytic review of opportunism in exchange relationships. *Journal of the Academy of Marketing Science, 36*, 191–201.
- Dahlén, M., & Rosengren, S. (2016). If advertising won’t die, what will it be? Towards a working definition of advertising. *Journal of Advertising, 45*, 334–345.

- DeMarie-Dreblow, D. (1991). Relation between knowledge and memory: A reminder that correlation does not imply causality. *Child Development, 62*, 484–498.
- Eisend, M. (2015). Have we progressed marketing knowledge? A meta-meta-analysis of effect sizes in marketing research. *Journal of Marketing, 79*, 23–40.
- Eisend, M., Reijmersdal, E. V., Boerman, S., & Tarrahi, F. (2020). A meta-analysis of the effects of disclosing sponsored content. *Journal of Advertising, 49*, 344–366.
- Eisend, M., & Tarrahi, F. (2016). The effectiveness of advertising: A meta-meta-analysis of advertising inputs and outcomes. *Journal of Advertising, 45*, 519–531.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analysis using g*power 3.1: Tests for correlation and regression analysis. *Behavior Research Methods, 41*, 1149–1160.
- Field, A., & Hole, G. (2003). *How to design and report experiments*. Los Angeles: Sage.
- Fransen, M. L., Verlegh, P. W. J., Kirmani, A., & Smit, E. G. (2015). A typology of consumer strategies for resisting advertising, and a review of mechanisms for countering them. *International Journal of Advertising, 34*, 6–16.
- Friestad, M., & Wright, P. (1994). The persuasion knowledge model: How people cope with persuasion attempts. *Journal of Consumer Research, 21*, 1–31.
- Friestad, M., & Wright, P. (1995). Persuasion knowledge: Lay people's and researchers' beliefs about the psychology of advertising. *Journal of Consumer Research, 22*, 62–74.
- Geyskens, I., Steenkamp, J. B. E. M., & Kumar, N. (1998). Generalizations about trust in marketing channel relationships using meta-analysis. *International Journal of Research in Marketing, 15*, 223–248.
- Grewal, D., Puccinelli, N., & Monroe, K. B. (2018). Meta-analysis: Integrating accumulated knowledge. *Journal of the Academy of Marketing Science, 46*, 9–30.
- Ham, C.-D., Nelson, M. R., & Das, S. (2015). How to measure persuasion knowledge. *International Journal of Advertising, 34*, 17–53.
- Hann, P., & Berkey, C. (2002). A study of the believability of the forms of puffery. *Journal of Marketing Communications, 8*, 243–256.
- Hardesty, D. M., Bearden, W. O., & Carlson, J. P. (2007). Persuasion knowledge and consumer reactions to pricing tactics. *Journal of Retailing, 83*, 199–210.
- Hudders, L., De Pauw, P., Cauberghe, V., Panic, K., Zarouali, B., & Rozendaal, E. (2017). Shedding new light on how advertising literacy can affect children's processing of embedded advertising formats: A future research agenda. *Journal of Advertising, 46*, 333–349.
- Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis. Correcting error and bias in research findings*, 2nd ed. Thousand Oaks, CA: Sage.
- Isaac, M., & Grayson, K. (2017). Beyond skepticism: Can accessing persuasion knowledge bolster credibility? *Journal of Consumer Research, 43*, 895–912.
- Keller, K. L. (1991). Memory and evaluation effects in competitive advertising environments. *Journal of Consumer Research, 17*, 463–476.
- Kent, R. J., & Allen, C. T. (1994). Competitive interference effects in consumer memory for advertising: The role of brand familiarity. *Journal of Marketing, 58*, 97–105.
- Kirmani, A., & Campbell, M. C. (2004). Goal seeker and persuasion sentry: How consumer targets respond to interpersonal marketing persuasion. *Journal of Consumer Research, 31*, 573–582.
- Kranzbühler, A.-M., Zerres, A., Kleijnen, M. H. P., & Verlegh, P. W. J. (2020). Beyond valence: A meta-analysis of discrete emotions in firm-customer encounters. *Journal of the Academy of Marketing Science, 48*, 478–498.
- Lasswell, H. D. (1948). The structure and function of communication in society. In W. Schramm, & D. F. Roberts (Eds.), *The process and effects of mass communication* (pp. 84–99). Urbana, IL: University of Illinois Press.
- Lee, S. Y. (2014). When do consumers believe puffery claims? The moderating role of brand familiarity and repetition. *Journal of Promotion Management, 20*, 219–239.
- Matthes, J., Schemer, C., & Wirth, W. (2007). More than meets the eye: Investigating the hidden impact of brand placements in television magazines. *International Journal of Advertising, 26*, 477–503.
- McShane, B. B., & Böckenholt, U. (2018). Multilevel multivariate meta-analysis with application to choice overload. *Psychometrika, 83*, 255–271.
- Moore, J. J., & Rodgers, S. L. (2005). *An examination of advertising credibility and skepticism in five different media using the persuasion knowledge model*. Paper presented at the Annual Conference of the American Advertising Academy, Houston, TX.
- Morales, A. C. (2005). Giving firms an 'e' for effort: Consumer responses to high-effort firms. *Journal of Consumer Research, 31*, 806–812.
- Moreau, P., Krishna, A., & Harlam, B. (2001). The manufacturer-retailer-consumer triad: Differing perceptions regarding price promotions. *Journal of Retailing, 77*, 547–569.
- Motyka, S., Grewal, D., Puccinelli, N. M., Roggeveen, A. L., Avnet, T., Daryanto, A., ... Wetzels, M. (2014). Regulatory fit: A meta-analytic synthesis. *Journal of Consumer Psychology, 24*, 394–410.
- Nelson, M. R. (2016). Developing persuasion knowledge by teaching advertising literacy in primary school. *Journal of Advertising, 45*, 169–182.
- Neumann, N., Böckenholt, U., & Sinha, A. (2016). A meta-analysis of extremeness aversion. *Journal of Consumer Psychology, 26*, 193–212.
- Nyilasy, G., & Reid, L. N. (2009). Agency practitioner theories of how advertising works. *Journal of Advertising, 38*, 81–96.
- O'Keefe, D. J. (2002). *Persuasion: Theory and research*, 2nd ed. Thousand Oaks, CA: Sage Publications.
- Panic, K., Cauberghe, V., & Pelsmacker, P. D. (2013). Comparing tv ads and advergames targeting children:

- The impact of persuasion knowledge on behavioral responses. *Journal of Advertising*, 42, 264–273.
- Perloff, R. M. (2017). *The dynamics of persuasion: Communication and attitudes in the twenty-first century*, 6th ed. Milton Park: Routledge.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models. Application and data analysis methods*, 2nd ed. Thousand Oaks, CA: Sage.
- Rossiter, J. R., Percy, L., & Donovan, R. J. (1991). A better advertising planning grid. *Journal of Advertising Research*, 31, 11–21.
- Rozendaal, E., Buijzen, M., & Valkenburg, P. (2011). Children's understanding of advertisers' persuasive tactics. *International Journal of Advertising*, 30, 329–350.
- Rozendaal, E., Slot, N., Van Reijmersdal, E. A., & Buijzen, M. (2013). Children's responses to advertising in social games. *Journal of Advertising*, 42, 142–154.
- Rust, R. T., Lehman, D. R., & Farley, J. U. (1990). Estimating publication bias in meta-analysis. *Journal of Marketing Research*, 27, 220–226.
- Scheibehenne, B., Greifeneder, R., & Todd, P. M. (2010). Can there be too many options? A meta-analytic review of choice overload. *Journal of Consumer Research*, 37, 409–425.
- Sutton, A. J. (2009). Publication bias. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *The handbook of research synthesis and meta-analysis*, 2nd ed. (pp. 435–452). New York: Russell Sage Foundation.
- Tellis, G. J. (2004). *Effective advertising: How, when, and why advertising works*. Thousand Oaks, CA: Sage Publications.
- Tucker, C. E. (2014). Social networks, personalized advertising, and privacy controls. *Journal of Marketing Research*, 51, 546–562.
- Tutai, K., & Van Reijmersdal, E. A. (2012). Effects of online advertising format and persuasion knowledge format on audience reactions. *Journal of Marketing Communications*, 18, 5–18.
- Valentine, J. C., Pigott, T. D., & Rothstein, H. H. (2010). How many studies do you need?: A primer on statistical power for meta-analysis. *Journal of Educational and Behavioral Statistics*, 35, 215–247.
- van Laer, T., de Ruyter, K., Visconti, L. M., & Wetzels, M. (2014). An extended transportation-imagery model: A meta-analysis of the antecedents and consequences of consumers' narrative transportation. *Journal of Consumer Research*, 40, 797–817.
- Van Reijmersdal, E. A., Rozendaal, E., & Buijzen, M. (2012). Effects of prominence, involvement, and persuasion knowledge on children's cognitive and affective responses to advergames. *Journal of Interactive Marketing*, 26, 33–42.
- Weathers, D., Sharma, S., & Wood, S. L. (2007). Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods. *Journal of Retailing*, 83, 393–401.
- Wei, M.-L., Fischer, E., & Main, K. J. (2008). An examination of the effects of activating persuasion knowledge on consumer response to brands engaging in covert marketing. *Journal of Public Policy & Marketing*, 27, 34–44.
- Williams, P., Fitzsimons, G. J., & Block, L. G. (2004). When consumers do not recognize "benign" intention questions as persuasion attempts. *Journal of Consumer Research*, 31, 540–550.
- Wright, P. (2002). Marketplace metacognition and social intelligence. *Journal of Consumer Research*, 28, 677–682.
- Wright, P., Friestad, M., & Boush, D. M. (2005). The development of marketplace persuasion knowledge in children, adolescents, and young adults. *Journal of Public Policy & Marketing*, 24, 222–233.

Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

Appendix S1. Persuasion knowledge in the marketplace: a meta-analysis.