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Dual routes or a one-way to persuasion? The elaboration likelihood model versus the unimodel

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ABSTRACT

The E*laboration Likelihood Model* (*ELM*), as a dual-process approach to theorizing attitude formation and persuasion phenomena, has garnered popularity and praise since its inception by Petty and Cacioppo in 1979. Nevertheless, several accounts pointing to some deficiencies of the *ELM* have ultimately emerged. Particularly, the *ELM* limitations paved the way for the introduction of an alternative model of persuasion, namely the *unimodel*. In this paper, by confronting these two competing persuasion models, we endeavor to bring about an answer to the ubiquitous question of whether the attitude change phenomenon is better explained by a single- or dual-process. The main outcomes of this confrontation are: (1) the *unimodel* cannot rectify the alleged conceptual limitations of the *ELM*, (2) the *unimodel* does not explain aspects of persuasion that cannot be allowed by the *ELM*, (3) the qualitative distinction between persuasion processes is very instrumental in understanding when and how attitude change occurs, (4) a single-process view cannot actually advance our understanding the persuasion phenomenon, and (5) the so-called conceptual limitations of the *ELM* are invalid. Accordingly, the article concludes in favor of the *ELM* as a major contribution to explaining attitude change and persuasion phenomena.

1. Introduction

Marketing communications is inherently about persuasion[1] (Kerr and Richards 2021). No wonder that investigating the mechanisms that underlie persuasion was and remains a fundamental research theme in the marketing communications field. In this vein, several persuasion theories sought to articulate the underlying mechanism(s) of attitude formation and/or change in the face of persuasive attempts. Originally, attitudes, beliefs, and judgments were long thought to be formed through a single mechanism. In fact, several prominent single-process theories were born between the 1950s through the late 1970s. Despite the bold contributions single-process theories had made in bringing about answers to diverse questions pertaining to attitude change and social judgment

phenomena, the state of the persuasion field was quite ambiguous. In fact, inconsistency in relation to the effects of a set of persuasive variables was not uncommon (Briñol, Petty, and Guyer 2019; Luttrell 2018). In the early 1980s, the puzzle of the mixed findings in the persuasion literature ushered in new approaches to thinking about attitude change. Particularly, two key dual-process models have emerged, namely the *Elaboration Likelihood Model* (*ELM*) and the *Heuristic-Systematic Model* (*HSM*).

Dual-process theories have become solid theoretical backbones for much contemporary research on attitude change and persuasion (Briñol, Petty, and Guyer 2019; Luttrell 2018; Evans; Stanovich 2013; Samson and Voyer 2012; Petty and Briñol 2008; Deutsch and Strack 2006). Notably, throughout the last several decades, the *ELM* has become an influential theory and highly contributed to the understanding of the persuasion phenomenon in various disciplines spanning social psychology, political sciences, communication science, advertising, and marketing communications. In the realm of advertising and marketing communications, 'it would be hard to find a marketing or advertising text which does not include it. Nor is there a journal which does not publish articles adopting it as the theory platform. ELM is considered advertising gospel' (Schultz, Kerr, and Kitchen 2019, 13). As the popularity of the *ELM* has increased, so too have the voices of criticism (Kerr et al. 2015). Chief of these criticisms, Kruglanski and Thompson (1999) question the *ELM*'s core tenet: The qualitative distinction between the central and peripheral routes. Ironically, they went on to advocate for a return to the single-process tradition embraced in early persuasion research. Particularly, they have proposed the *unimodel* as an alternative persuasion theory to the *ELM*.

The ongoing debate between the single-process view and the dual-process perspective traced back to several decades (e.g., Deutsch and Strack 2006; Kruglanski et al. 2006; Sherman 2006; Ajzen 1999; Kruglanski and Thompson 1999; Wheeler and Bizer 1999) and persists in the recent years (e.g., Evans and Stanovich 2013; Kruglanski and Gigerenzer 2011). In the attitude change domain, the *unimodel* and the *ELM* are contemporary exemplifiers of the heated debate between the single- and dual-process schools. By confronting these two contemporary competing theories,[2] the current paper attempts to bring about an answer to the ubiquitous question of whether the attitude change phenomenon is better explained by a single- or dual-process. In doing so, we proceed with a brief review of the *ELM* limitations and conceptually investigate to what extent the *unimodel* could overcome these limitations and present, as such, a serious alternative persuasion framework to the *ELM*.

In addressing our focal research question, we contribute to the literature in several ways. First, we offer an integrative synthesis of the persuasion literature on prominent competing persuasion models. Particularly, in Appendix 1, we provide a summary of key papers reflecting the debate between the *ELM* and the *unimodel*. Second, our paper extends previous reviews and critiques of the *ELM* (e.g., Kitchen et al. 2014), by contrasting the *ELM* with the *unimodel* and addressing the question of whether attitude change is better explained by a single mechanism or dual processes.[3] This is all important insofar as research in consumer behaviour and marketing communications is overwhelmingly grounded in the *ELM* despite the ascribed limitations to it. In the same vein, by replicating the original *ELM* study, recent advertising research shows that the *ELM* did not work in the US, UK, and Australia (Kerr et al. 2015). In spite of this, the *ELM* continues to be the mainstream theory in advertising and marketing communication research (Schultz, Kerr,

and Kitchen 2019). At the same time, the *unimodel*, germinated presumably as a 'superior' alternative to *ELM*, is still, though, overlooked in the marketing communications literature. Is it wise that marketing communications researchers continue relying on a 'faulty' model (the *ELM*) while a presumed 'corrective' alternative (the *unimodel*) exists? Third, in relation to the debate between the single- and the dual- process views (summarized in Appendix 1), we tackle the debate from a novel perspective. In fact, to the best of our knowledge, there is no research that addressed the question of to which extent the *unimodel* can overcome the *ELM* limitations. It is worthwhile to address such a question inasmuch this will help in determining whether (or not) the *unimodel* presents a superior alternative to the *ELM*. Fourth, through this confrontation exercise, we have ultimately contributed new insights. The main outcomes of this confrontation are: (1) the *unimodel* cannot accommodate the alleged conceptual limitations of the *ELM*, (2) the *unimodel* does not explain aspects of persuasion that cannot be allowed by the *ELM*, (3) the qualitative distinction between persuasion processes is very instrumental in understanding when and how attitude change occurs, (4) a single-process view cannot actually advance our understanding the persuasion phenomenon, (5) the so-called conceptual limitations of the *ELM* are, in our eyes, invalid, and (6) from an advertising practice standpoint, the *ELM* could offer a guiding framework in crafting fine-tuned messages or appeals.

The article is organized as follows. First, we briefly present the *ELM*. We dedicate the next section to swiftly describe the *unimodel*. In the third section, we provide a brief review of the *ELM* limitations. Then, throughout the remaining of the paper, we will try to bring together some elements of answer to the article's focal question of whether the attitude change phenomenon is better explained by a single- or dual-process.

2. The ELM: two routes to persuasion

The *ELM* is a dual-process model of attitude formation and/or change based on seven fundamental postulates. Starting from the assumption that individuals are motivated to form and maintain correct attitudes (postulate 1), the *ELM* assumes that when a recipient is attending to a given persuasive message, s/he is likely to undertake either a central or a peripheral route (postulate 6). The chosen route is contingent upon the recipient's motivation and/or cognitive ability to process the information included in the message (postulate 2), both of which are influenced by individual and situational factors. Indeed, as advanced by the fourth postulate, certain factors (e.g., personal relevance of the focus of the message, need for cognition, distraction, mood, prior knowledge, repetition of the message, etc.) can play the role of moderators in the persuasion process by influencing the motivation and/or cognitive capacity of a receiver during message processing.

Notably, the *ELM* advances that when the recipient is concomitantly motivated and cognitively able to process the information, s/he exerts effortful information processing and inherently pursues the central route.[4] That is, when a recipient has the motivation (e.g., involvement, personal relevance) and ability (e.g., absence of distraction, prior knowledge) to think about the information contained in a message, s/he is likely to closely scrutinize issue-relevant arguments. Hence, in such a condition of high elaboration, attitude formation or change is more likely be the outcome of a thoughtful examination of the message's arguments (Petty and Cacioppo 1979). For example, in an advertising context, when a consumer is highly involved with the advertised product, s/

he is likely to develop attitudes toward the advertised product based on the merits of the arguments presented in the ad (Petty, Cacioppo, and Schumann 1983). Otherwise, in the absence or lack of motivation and/or cognitive ability, the peripheral route will be instead followed. For example, under a low elaboration condition (e.g, a low product involvement), a celebrity endorser has a greater impact on consumers' attitudes toward the advertised product than the arguments presented in the ad (Petty, Cacioppo, and Schumann 1983). In a braoder sense, the peripheral route mirrors the processing of a set of heterogeneous elements or cues such as elements of the message itself (e.g., number of arguments, execution of the message, etc.), as well as elements related to the source of the message (e.g., credibility, attractiveness, likability, similarity or identification with the recipient, etc.).

Notwithstanding this distinction between the variables of the central and the peripheral routes, the *ELM* postulates that the same variable can play multiple roles by serving as an argument, or acting as a peripheral element and/or influencing the magnitude and the direction of the elaboration (postulate 3). Regardless of the undertaken path, the *ELM* assumes that the processing of a message yields cognitive responses that serve as catalysts or mediators in generating persuasive outcomes. Of particular note, it postulates (postulate 5) that the very same conditional variables of the adopted route (i.e., prior knowledge, repetition of the message, distraction, mood, etc.) can bias message processing by influencing the valence of the generated cognitive responses (positive or negative). Regarding the persuasion outcomes, the *ELM* predicts that attitudes formed or changed as a result of central information processing will be more persistent over time, more resistant to dissuasion, and more predictive of behavioural responses than those resulting from peripheral processing of information (postulate 7).

3. The Unimodel: one single route to persuasion

Kruglanski and Thompson (1999) propose an alternative model to the *ELM*. This alternative model has been labeled as the *unimodel*, bluntly suggesting that there is only a single route to persuasion. As such, the major difference between the *ELM* and the *unimodel* resides in the fact that the latter absolutely rejects the *ELM*'s fundamental tenet of the qualitative distinction (i.e., central route vs. peripheral route) in the process of persuasion. The central contention of the *unimodel* is that individuals, in a persuasion context, seek to reach conclusions based on pieces of information within the persuasive message. Therefore, the arguments and peripheral cues of the *ELM* are simply 'evidence' used by the receiver to draw message-related conclusions. Driven by a connectionist logic, the *unimodel* suggests that the persuasion process is then uniform, in the sense that there is a functional equivalence between the message arguments and peripheral cues – both of them are 'evidence' used by a recipient in a persuasive setting to reach conclusions. The *unimodel* also points out that a given bit of information, in conjunction with specific beliefs or prior knowledge[5] ('major premise'), can be used as 'evidence' in the form of an 'if … then' subjective syllogism by which an individual draws a conclusion ('minor premise'). In summary, the *unimodel* suggests that there is a single route to persuasion whereby individuals use various (functionally equivalent) bits of information, coupled with relevant prior knowledge, according to 'if … then' reasoning in order to

make judgments or reach conclusions.[6] Of particular note, the *unimodel*, in the process by which evidence lead to conclusions, does not preclude the roles of motivation and cognitive ability, which are critical parameters in the *ELM* too.

4. ELM critical overview

A thorough review of the *ELM* limitations is beyond the scope of this article since this has already been accomplished in several other publications (e.g., Kitchen et al. 2014; Corneille 1993; Stiff and Boster 1987; Bitner and Obermiller 1985). For the sake of categorization, these limitations can be essentially classified into two broad categories: (a) conceptual limitations and (b) empirical limitations.[7] In the present article, we deliberately focus only on the conceptual ones because we feel that they are relevant to our main research question. In a nutshell, the conceptual limitations ascribed to *ELM* concern the following issues[8]:

Parallel information processing. Stiff (1986) casts doubt on the ability of the *ELM* to accurately reflect people's information processing abilities.

Variables' ambiguity. The *ELM*'s inability to clearly indicate as to why some variables serve as peripheral cues and others as central elements (Corneille 1993).

Conceptual flexibility. The *ELM*'s multiple roles postulate implies that any observed finding of a given persuasion study might be able to support the *ELM* (Bitner and Obermiller 1985).

Lack of a priori conditions and the ELM's un-deterministic nature. The *ELM* failed to specify a priori the conditions under which a given persuasive element can be treated as central or peripheral by the receiver (Mongeau and Stiff 1993).

Unclear underlying mechanisms. The *ELM* is criticized for its predictive inability, in that it explains the findings a posteriori (Mongeau and Stiff 1993).

ELM's descriptive nature. The abovementioned conceptual limitations stemming essentially from the *ELM*'s conceptual flexibility make it essentially a descriptive model (Eagly and Chaiken 1993).

Artificiality of the qualitative distinction. The *ELM* does not describe qualitatively different processes but depicts only more or less complex variants of the very same underlying mechanism of the persuasion phenomenon (Kruglanski and Thompson 1999).

5. To what extent does the Unimodel accommodate the ELM limitations?

If we consider only the semantic aspect relative to the very term 'unimodel', we might believe that the *unimodel* would be able to solve all the alleged conceptual issues of the *ELM*. Indeed, by proposing a single route in which there won't be a possibility of distinguishing between central and peripheral information, (a) the problem of information parallel processing would not obviously arise, (b) there would be no need to specify which variables can serve as central elements and which others might function as peripheral cues, (c) there would be no need to specify a priori the conditions under which a given variable can be treated as central or peripheral by the receiver, and (d) the model would not be condemned for its conceptual flexibility, poor predictive performance, and descriptive nature.

However, as we will subsequently demonstrate, the *unimodel* is far away from being able to fix the alleged conceptual flaws of the *ELM*. Indeed, if we assume that the *unimodel* is superior to dual-process persuasion models such as the *ELM*, we should be able at least to: (a) Identify the conceptual differences between the two models (see Lavine 1999), (b) determine the extent to which these conceptual differences, if any, actually demonstrate the superiority of the alternative model (the *unimodel*) over the *ELM*, and (c) determine whether the predictions of the *unimodel* are fundamentally different from those of the *ELM*. Close scrutiny of the two models reveals that they share many commonalities explicitly recognized by the authors of the *unimodel* (see Stroebe 1999). Essentially, both models highlight the following parameters: (a) The quantitative (e.g., deep, moderate, superficial, etc.) nature of information processing included in a persuasive message, (b) the nature of information processing is greatly influenced by the motivational involvement and the cognitive resources of the receiver, (c) motivational factors may bias the magnitude and the nature of elaboration, and (d) the nature of information processing determines the strength of attitude formation and/or change (e.g., persistence, resistance to dissuasion and predictability of behaviour).

In addition to these four common characteristics, the *unimodel* and the *ELM* share other aspects that are not recognized by the *unimodel*'s authors. In fact, the *unimodel* authors argue that the *ELM* takes as a postulate the Laswell (1948) to distinguish between source-related and message-related variables. Yet, since the *ELM* postulates and demonstrates that the very same persuasive variable can exert multiple roles, such partition should be dismissed (Wegener and Claypool 1999). Although several *ELM* studies have manipulated source- versus message-related factors to operationalize the central versus peripheral routes to persuasion (i.e., Petty, Ostrom, and Brock 1981), other studies aiming to replicate the *ELM*'s findings have manipulated only message-related factors (i.e., arguments), supposed to be central elements, in order to eventually demonstrate their peripheral role in a situation of low elaboration (e.g., Petty and Cacioppo 1984). In the same vein, different other studies have manipulated only source-related factors (e.g., credibility) to emphasize their central role in situations of high elaboration (i.e., Petty et al. 1993). Consequently, according to the *ELM*, an informational element related to the message source or the message issue/arguments can serve in either case as evidence likely to lead to a conclusion. Hence, the *ELM*, so far, does not even contradict the central premise of the *unimodel* suggesting that the informational elements of a persuasive message are evidence leading to conclusions. In a related vein, the Sherman's (2006), as a more generalized judgment model, highlights that the *ELM* and the *unimodel* share many important fundamental assumptions about the nature of controlled or reflective processing.

The foregoing discussion goes so far as to suggest that the *unimodel* and the *ELM* are actually two different designations of almost the same framework, thereby abnegating the *unimodel*'s ability to remedy the 'so-called' *ELM* conceptual limitations. Yet, the only bold conceptual difference lies in the fact that the *unimodel* precludes the qualitative distinction[9] (central versus peripheral route), which questions the merit of such a dual-process distinction in explaining the persuasion process. One can argue that maybe the connectionist particularity of the *unimodel* can explain what the *ELM* cannot, empirically speaking. We will try to examine this possibility in the following section.

6. Does the Unimodel explain things unexplained by the ELM?

Kruglanski and Thompson (1999) argue that in most studies using the *ELM* as a theoretical framework, the distinction between cues (peripheral elements) and arguments (central elements) is confounded with key parameters of persuasion such as the length, the complexity, or the ordinal position of the informational elements presented in the message. Based on these observations, Kruglanski and Thompson (1999) carried out four experimental studies. To sum it up, these experiments showed that, by controlling variables such as the length of information, source expertise functions in the same way as an argument in a persuasion setting. Kruglanski and Thompson (1999) claim that such results contradict the *ELM* premises because, according to them, the *ELM* presents source expertise only as a peripheral cue (expertise has an impact on persuasion when the level of involvement is relatively low). However, the variables' multiple roles postulate of the *ELM* and a plethora of *ELM* studies corroborate the *unimodel* results and do not contradict in any case what the *unimodel* claims to be new findings and insights.

Furthermore, Kruglanski and Thompson (1999) showed that arguments briefly presented at the upfront of the message have more impact on attitudes when the participant's involvement is low in comparison to a high-involvement condition. In contrast, long arguments presented at the end of the message have more impact on attitudes when the level of involvement is high. As such, the authors showed that an argument can function either as a peripheral cue or as a central element depending on its length and/or its ordinal position in the message. Again, these results are under no circumstances in conflict with the *ELM*, which explicitly suggests that under low elaboration people try to adopt a strategy that does not require a cognitive effort such as processing the information delivered at the beginning of the message and not at its end.[10]

In summary, the results of the four experiments presented by Kruglanski and Thompson (1999) go hand in hand with the findings of *ELM* studies. Ironically, the reported experiments provided evidence that source information and arguments play either a central or a peripheral role depending on the receiver's involvement. This per se contradicts the *unimodel*'s core tenet. Furthermore, the *unimodel* data lend strong support to the *ELM*'s multiple-roles hypothesis.

On another note, by proposing the *unimodel*, Kruglanski and Thompson (1999) strongly emphasize the quantitative nature of information processing in a persuasive setting. Although the *ELM* recognizes and considers the quantitative aspect of information processing, the question remains whether all the findings regarding persuasion can be merely explained quantitatively? This issue will be addressed in the next section.

7. Is the ELM's qualitative distinction between the central route and the peripheral route instrumental in accounting for persuasion outcomes?[11]

To answer this question, we consider two experimental studies conducted by Petty and Cacioppo (1984). In the first study, two groups of students, having different levels of involvement, were exposed to a persuasive message containing either nine or three weak arguments. Interestingly, opposite persuasive outcomes have been produced depending on the students' involvement level. More precisely, in the high-involvement condition, the message containing nine weak arguments produced more negative

attitudes in comparison to the one containing only three weak arguments. In the low involvement condition, the students had more positive attitudes toward the message containing nine (weak) arguments in comparison to the one containing three (weak) arguments. These results imply that in the high-involvement condition, the students have scrutinized the message arguments. Because weak arguments are likely to generate unfavorable cognitive responses, the students showed unfavorable attitudes toward the message when the message contained nine weak (and not three) arguments. However, in the low-involvement condition, the students did not engage in effortful information processing; they instead relied on the number of arguments in judging the outcome of the message. As a result, in the low involvement condition, the students had accepted the message proposal when the message contained nine (and not three) arguments. In the second study, Petty and Cacioppo (1984) showed that adding three weak arguments to a message containing three strong ones increased persuasion only when the message was low in personal relevance. In contrast, in a high-personal relevance condition, adding the three weak arguments to the three strong ones reduced persuasion. This implies that the arguments were carefully assessed for their merits under the high-relevance condition, whereas the sheer number of arguments was merely considered in the low-relevance situation.

Does counting the number of arguments or engaging in a cognitive effort of processing the arguments correspond to two different processes? The answer is definitely yes; clearly, the two ways of processing the same information led to different outcomes. Such results show the existence of something different in the processes that led to the conclusions, which could be well explained by the qualitative distinction between the central and the peripheral routes in the *ELM* framework, but cannot be explained by the *unimodel* theorizing (Petty and Wegener 1999).

Up to this point, we have mainly shown that (a) the *unimodel* cannot bring about remedies to the so-called conceptual limitations of the *ELM*, (b) the *unimodel* does not explain aspects of persuasion that cannot be explained by the *ELM*, and (c) the qualitative distinction between persuasion processes (the *ELM*'s main feature which has been vehemently put into question by the *unimodel*'s advocates) is very instrumental in understanding when and how attitude change occurs. The remaining question here is whether the *unimodel*'s ontological inquiry about the existence of only a single process underlying persuasion advances our understanding of attitude change and social judgment phenomena. We endeavor to address this question in the next section.

8. Can a single-process perspective advance our understanding of attitude change and persuasion phenomena?

8.1. A theoretical perspective

The attitude change phenomenon was initially tackled from a single process perspective (Briñol, Petty, and Guyer 2019; Briñol and Petty 2012). Particularly, in the 1940s until the late 1960s, there was a consensus among social psychology researchers that attitude change occurs as a result of a simple process of inference making. Then, from the late 1960s through the 1980s, a prominent cognitive response approach, focusing on a single underlying process but emphasizing the role of effortful or complex thinking

and ultimately self-generated thoughts in persuasion attempts, took preponderance over the inference-based theories (Greenwald 1968; Wright 1980). Notably, these persuasion models are considered as main-effect (e.g., source expertise should always increase persuasion) and single-process models (e.g., a thinking-based mechanism is responsible for persuasion effects; Petty and Briñol 2008); they are somehow akin to the *unimodel*'s premise that there is only one-way to persuasion regardless of the circumstances.

Regardless of the adopted approach (inferential vs. thoughts generation), the perspective of a single-process underlying attitude change has not been proven to be a solid theoretical backbone for explicating persuasion phenomena (Petty and Briñol 2008). Both accounts (inference making and thoughts generation) in isolation cannot sufficiently account for attitude change and social judgment; this ultimately suggests that maybe an underlying duality reconciling inferences and thoughts is, in fact, into play. For this very reason, persuasion scholars have eventually altered cognitive-response models by supplementing them with less cognitively taxing processes emphasizing the role of 'cues' and 'heuristics'. And in the quest to resolving the puzzle of the dizzying findings in relation to a host of persuasive variables, the focus shifted away from the investigation of persuasive variables' main effects to interactive effects. Consequently, dual-process models such as the *ELM* and the *HSM* have emerged as alternatives to theorizing persuasion phenomena.[12] Particularly, this integrative approach, considering concomitantly cues or heuristics and systematic generated thoughts, underscores that any one persuasive variable (e.g., source expertise), depending on certain conditions (e.g., high thinking, low thinking), is likely to influence attitudes by different processes (e.g., an argument, a cue) and can reasonably yield different and even opposite effects (e.g., persuasion vs. dissuasion; permanent vs. transient effects).[13]

As an inherent consequence of the methodological deviation from main effects to interactive effects, boundary and process conditions as to when and how or why any one persuasive variable affects attitudes have become the quintessential ingredients of contemporary dual-process persuasion models. These methodological approaches have been proven to be useful in reconciling the then seemingly inconsistent findings in the realm of persuasion. Notwithstanding, the 'if . . . then' syllogism in and of itself confers to the *unimodel* the fundamental characteristic of being free of any constraints or boundary conditions. In other words, the *unimodel* has unlimited degrees of freedom, which implies that there will always be empirical evidence that meshes the theory well. It will thus be difficult to find an instance that cannot corroborate the *unimodel*. In fact, the 'if . . . then' reasoning grants to the *unimodel* a sort of malleability in that it can always accommodate any empirical finding quite well. Ultimately, this means that any one persuasive element can yield persuasive outcomes regardless of the conditions and circumstances. This is, on the surface, somewhat akin to the multiple-role postulate in the *ELM*; the very same variable may play, among others, a central or a peripheral role. Nevertheless, the *ELM* offers a more nuanced understanding as to when and how a specific persuasive variable is likely (or not) to yield persuasive outcomes. In fact, quite contrary to the variables' ambiguity and unclear mechanisms flaws ascribed to the *ELM*, the *ELM* proposes key moderators and specifies a finite set of mechanisms, identifying the conditions under which as well as the ways by which certain variables would and would not elicit attitude change. The advantage of the *ELM* over the

unimodel resides thus in its clear predictions for when and how numerous persuasive variables can induce (or inhibit) attitude change. So condemning the *ELM* for its conceptual flexibility would be a pure exaggeration.

In another vein, as elegantly illustrated by the Quad model (Sherman 2006), the *unimodel* accounts for only controlled/reflective processing and is unable to account for automatic/impulsive processing, whereas the *ELM* account for both modes of processing, controlled as well as automatic. Relatedly, the persuasion literature distinguishes between implicit and explicit attitudes. Implicit attitudes are automatic, whereas explicit attitudes require cognitive ability and motivation (Wilson, Lindsey, and Schooler 2000). Research shows that the peripheral and central duality compellingly accounts for the distinction between implicit and explicit attitudes (Albarracín et al. 2008).

In sum, conceptually speaking, there is much to be gained from a dual-process perspective rather than a single-process view in theorizing attitude change and persuasion phenomena. The literature is also replete with a discussion on the advantages of dual-process models about attitude and judgment formation (see Deutsch and Strack 2006, for a discussion).

8.2. An applied perspective

From an applied standpoint, considerable empirical evidence garnered from various domains in marketing communications and consumer behaviour attests to the usefulness of the *ELM* over the *unimodel*. In the marketing communications and advertising domains, source effects models – the source credibility model (Hovland, Janis, and Kelley 1953), the source attractiveness model (McGuire 1985), and the match-up hypothesis (Kamins 1990) – can better be explained by the *ELM* rather than the *unimodel*. In fact, the *unimodel* implies that source credibility, source attractiveness as well as the match between the endorser (e.g., celebrity) and the endorsed object or brand are likely to always exert persuasive effects independent of any situational and/or individual factors. Nevertheless, the existing advertising literature (see Briñol and Petty 2009) suggests otherwise and emphasizes that source effects are indeed contingent upon certain situational variables (i.e., personal relevance of the message issue, personal accountability, message repetition, message complexity, distraction) and dispositional tendencies or socio-psychological factors (e.g., need for cognition, need for closure, in need to evaluate, emotional state). The thrust of the accumulated evidence is that source characteristics are often considered as peripheral cues exerting persuasive effects predominately in low thinking conditions. Nevertheless, the same source characteristics can also be processed through the central route, thereby scrutinized for their evidentiary value in high elaboration situations. In addition to the traditional peripheral and central roles, source characteristics are found to play other roles depending on the recipient's place on the elaboration continuum. When elaboration is not constrained to be high or low, source factors are likely to trigger elaboration by affecting the extent or amount of thinking. Source characteristics could also bias information processing by influencing the direction of thinking (i.e., the valence of thoughts) when motivation and ability to think are relatively high. Furthermore, a fifth newly discovered mechanism that these variables can invoke, when thinking is high, is affecting what people think about their thoughts (i.e., metacognition leading to thought confidence that mediates persuasion; see Briñol and Petty (2009), for a good review for

the multiple roles of source factors and see Teeny, Briñol, and Petty (2017), for other persuasive variables). It goes without saying that the key moderators specified in the *ELM* theorizing are deemed critical magnifiers or buffers of source effects and can virtually account for all identified multiple roles of source factors in persuasive contexts. That is, contrary to the accusations that the *ELM* is un-deterministic and descriptive in nature, the *ELM* can predict when and how a source characteristic (e.g., expertise, attractiveness, likeability, similarity, familiarity, status, power) may or may not yield attitude change. This is not the case with the *unimodel* inasmuch as it allows to predict that a source characteristic can always have and uniformly a persuasive effect without specifying under what conditions or circumstances and how such effects may occur, however.

In addition to the message arguments effects on recipients' attitudes, message factors – how the message is organized and structured – had also proven to influence persuasion significantly. The advertising literature lends support to the view that message factors interact with a host of situational and individual factors to influence persuasive outcomes. The message format or modality (stories vs. narratives), style (e.g., informative vs. transformative), complexity, concreteness, imagery level, sidedness (one-sided vs. two-sided), advocated position (pro- or counter-attitudinal) are all message features found to interact with the product type (e.g., high- vs. low-involvement; informational vs. transformational) as well as a myriad of situational and consumer-related variables to induce attitudes change (see Teeny, Briñol, and Petty 2017). The accumulated evidence on the effects of message factors can reasonably be interpreted based on the *ELM*'s duality lens and not the *unimodel*. For example, the informative message style is found to better fit high-involvement products, whereas the transformative message style fits better low-involvement products (Huhmann, Franke, and Mothersbaugh 2012). That is, in the *ELM* dialect, the informative message style plays a central role in high thinking conditions, whereas the transformative message style serves as a peripheral cue in low thinking situations. This very same instance cannot however be interpreted through a *unimodel* lens. Although the *ELM* is overlooked in advertising practice (e.g., ad copy, ad appeals, endorser selection), the preceding discussion suggests that the *ELM* could offer a worthwhile guiding framework in crafting fine-tuned messages or appeals depending on the product type, message context, and recipient characteristics. The *unimodel* however cannot help in determining when it is appropriate for an advertiser to opt for a particular message given specific circumstances and audience characteristics.

As a result of the proliferation of digital and social platforms, targeted advertising is currently a widespread practice in the advertising industry. It consists of messages or appeals that are highly personalized to specifically match the demographic and/or psychographic characteristics of the targeted individual. Matching the message to the consumer's self has proven to influence attitudes through the very same *ELM*'s ways mentioned previously (i.e., an argument, a cue, a facilitator of thoughts generation, an information bias, thought confidence enhancer; Teeny, Briñol, and Petty 2017). That is, the *ELM* is a valuable canvas in appreciating when and how personalized or tailored massages grounded in matching (or mismatching) principles can work or backfire.

ELM's subtle applications are also apparent in other substantial marketing domains such as branding and retailing. For example, in a branding context, brand names have been shown to influence attitudes in different ways. The *ELM* has been used as

a theoretical framework to account for the brand name's roles such as the brand name plays a peripheral role when the recipient involvement is low (e.g., Maheswaran, Mackie, and Chaiken 1992), whereas it serves as a cogent argument under high involvement conditions (e.g., Haugtvedt and Rucker 2007). This brand name's dual persuasive effect cannot however be accounted for by the *unimodel*. In the same vein, several branding and brand management issues, such as building brand equity and nurturing brand resonance, have been theoretically tackled from, among others, an *ELM* perspective (e.g., Keller 2009). In the retailing domain, research findings on the effects of retail atmospherics on shoppers' responses across various retailing settings (e.g., Richard and Chebat 2016) have been interpreted based on the *ELM* perspective rather than the *unimodel* logic. Retailing research has also served of the *ELM* theorizing to investigate how functional congruity and self-congruity interact with situational and individual factors to differentially influence shoppers' attitudes, intentions, and behaviours (see Sirgy, Grewal, and Mangleburg 2000, for a good review).

9. Concluding remarks

While prior research in marketing communications presents comprehensive reviews and critiques of the *ELM*, this article extends these reviews by contrasting the *ELM* with the *unimodel* to tentatively answer the ubiquitous question of whether the attitude change phenomenon is better explained by a single- or dual-process. Our task in this article was to confront these two competing persuasion models. Particularly, we endeavored to figure out to what extent the *unimodel*, as a single-process persuasion model, could be considered as a superior alternative to dual-process models such as the *ELM* in explaining attitude formation and persuasion phenomena.

   We conclude that the perspective of a single route to persuasion does not better explain persuasion. We believe that there is much to be gained by considering dual (or even multiple) routes to persuasion as opposed to a one-way model of persuasion. The *ELM* offers an overreaching integrative framework by articulating the different processes by which persuasive variables influence attitudes and judgment as well as by specifying the boundary conditions under which these processes operate. The *ELM* was proven instrumental in accounting for the complicated and often inconsistent findings in the persuasion realm as well as in generating new predictions within the domain of attitudes (Briñol and Petty 2012). The *ELM* has provided and is still providing a sound theoretical foundation for researchers addressing relevant research questions and proposing new testable predictions in the realm of attitude change and persuasion across different disciplines. From a practical standpoint, the *ELM* undoubtedly represents a proper guiding tool for marketing communications practitioners and advertisers.

Notes

1. Broadly speaking, persuasion is a process through which a persuasive communication prompts or causes a change in an individual or group's perceptions, beliefs, attitudes, intentions, or behaviors.

2. It is beyond the scope of the current article to present and provide an overview of all dual-process models. We focus only on the *ELM*. The focus on the *ELM* rather than on the *HSM* is a deliberate choice. First, the *unimodel*, as a single-process alternative theory, attacks predominantly the *ELM*. Second, the *ELM* is more prevalent than the *HSM* in the persuasion literature (Kerr et al. 2015; Samson and Voyer 2012). Third, conceptually speaking, the *ELM* and the *HSM* have more in common than differences (see Luttrell 2018, for a discussion contrasting the *ELM* and the *HSM*). The straight difference, though, between them lies in the nature of the variable that determines which route will be adopted. In the *ELM* theorizing, the extent of elaboration determines which route (central or peripheral) will be followed. Whereas in the *HSM* theorizing the degree of the desired judgmental confidence determines which processing mode (systematic or heuristic) will be adopted.

3. We also note that the debate on single- vs. dual-process persuasion models is almost inexistent in advertising and marketing communications journals. In fact, this can be explained by the fact that dual-process models such as the *ELM* are predominantly the default use in advertising and marketing communications research. We believe such a debate should not be solely the domain of cognitive psychologists. As deciphering the mechanisms that underlie the effects of advertising and marketing communications is a fundamental theme in these disciplines, having debates in relation to competing theoretical models of persuasion should be also part of marketing communications scholarship and discourse.

4. Basically, the central route in a persuasive message corresponds to the processing of the message arguments.

5. This prior knowledge can be manifested in several forms such as stereotypes, attitudes and individual metacognitive notions.

6. In subsequent sections, we will briefly describe the experimental work conducted for the *unimodel* testing.

7. Upon request, a supplementary including a review of the *ELM* empirical limitations can be provided to the interested reader.

8. Because of space constraint we only enumerate these issues, but we elaborate on them in Appendix 2.

9. Nevertheless, cognitive scientists question at all whether the *unimodel* truly represents a single-process alternative (see Wyer 2006, for a discussion).

10. Pointedly, Petty (1997) states that 'if a message had four weak arguments followed by four strong ones, then the low-elaboration processor would have a less favorable opinion than the high elaboration processor who considered all of the arguments objectively.'

11. This section is based on the work of Petty, Wheeler, and Bizer (1999), in which they elegantly and eloquently answered this very question.

12. As previously stated, the *ELM* and the *HSM* have more in common than differences. Nevertheless, in some writings, it is indicated that the *HSM* takes into account the co-occurrence of heuristic and systematic processing and the *ELM* does not. This is not true. In fact, in one of the earliest treatments of the *ELM*, Petty, Cacioppo, and Schumann (1983) provide evidence of highly-involved recipients who have concomitantly relied on information related to the source and the message arguments. The *ELM* does not fundamentally exclude the notion that the central and peripheral processes can co-occur (Petty et al. 1987). Contrary to Stiff's contention (1986), by systematically proposing a dichotomous probabilistic approach for people's information processing, the *ELM* does not necessarily preclude the possibility of parallel processing of central and peripheral elements included in a persuasive message. It rather emphasizes that the central and peripheral processes are likely to influence recipients' attitudes at different probabilities along the elaboration continuum. In this sense, the central and peripheral routes of persuasion are not exhaustive and mutually exclusive categories; instead, they present the opposite endpoints on the probability of elaboration continuum (O'Keefe 1990).

13. The *ELM*'s dual processes had proven to be instrumental in explaining when attitude change is permanent and when it is temporary. In fact, according to the *ELM*, when thinking is high, persuasive variables produce attitude change that is persistent over time, resistant to further changes, and more predictive of behavior. The reverse is true for attitude change that occurs under low thinking conditions.

14. As a remedy, thoughts' listing has been used in conjunction with attitudes' scales. Nevertheless, this method is not without its own limits such as demand characteristic and social desirability.

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Appendix 1: Summary of key papers on the unimodel versus dual-process models

Author(s)	Embraced School (single- vs. dual- process)	Main focus/contribution	Main ideas/issues identified in the paper
Ajzen (1999)	Dual	The usefulness of the qualitative distinction between processing modes.	-The experiments reported by Kruglanski and Thompson do not conclusively prove that variations in information complexity, length, and ordinal position are responsible for the observed effects of peripheral versus central information. -The unimodel's findings regarding the significant effects of source expertise in low- and high-involvement situations are not inconsistent with the findings of dual-process models. -Processing peripheral cues and message arguments in the same manner does not necessarily invalidate the distinction between different modes of processing. -The qualitative distinction between processing modes is critical for understating the attitude change phenomenon.
Bohner and Siebler (1999)	Dual	The usefulness of distinguishing between different classes of information and different modes of processing.	-Dual-process models revolve around cognitive effort rather than the mere 'argument–cue' distinction. -Whereas the unimodel's data suggest only a single class of information (i.e., 'persuasive evidence'), dual-process theories can accommodate the same data as supporting the distinction of different information classes (e.g., easy to process vs. difficult to process; general vs. specific; controlled vs. automatic). -The unimodel's notion of 'persuasive evidence' does not reduce the number of information classes and thus does not contribute to its purported parsimony. -The unimodel accounts for only one cognitive operation (syllogistic reasoning) and ignores serval other cognitive operations.
Chaiken, Duckworth, and Darke (1999)	Dual	Major aspects of the unimodel's analysis of dual-process theories and their theoretical assumptions are incorrect.	-From an ecological view, contrary to the unimodel's assertion, heuristics and message arguments differ systematically in length or complexity. -Information type and processing style should not be confounded: The unimodel's assertion that the 'heuristic–systematic' distinction boils down to a distinction between types of information is mistaken. -Independency of information types and processing modes: A heuristic cue can be processed systematically and systematic information can be processed heuristically. -Kruglanski and Thompson fail to consider fundamental differences in the nature of heuristic and systematic processing (e.g., automaticity, consciousness, consequences). -The unimodel perspective obscures many fundamental and important differences between two modes of processing that are clearly distinct from one another.

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Author(s)	Embraced School (single- vs. dual- process)	Main focus/contribution	Main ideas/issues identified in the paper
Eagly (1999)	Dual	Nested persuasive messages should not be confounded with confounding informational parameters (e.g., length, complexity).	-In their long version of the information about source expertise, Kruglanski and Thompson did not provide a cue at all, but instead conveyed expertise through a set of arguments. -Combining lengthy source information (e.g., expertise) with message-issue arguments represents the case of a nested persuasive argument (rather than a way to control for a length or complexity confound). - Dual-process models offer a sound theoretical framework for understanding the persuasive effects of nested messages.
Kerkhof (1999)	Single	Comparing the predictions of the ELM versus the unimoldel in a political context.	-In political persuasion, cue information, delivered to the citizens, is more lengthy and complex than message arguments. -The unimodel accounts for the 'mainstream effect' in political persuasion (i.e., cue information influence the attitudes of politically aware citizens).
Lavine (1999)	No particular position has been taken	Proposing experiments and ideas that could provide more powerful tests of the propositions of single- versus dual-process models.	-A stronger test of the unimodel would involve manipulating distinct information parameters (e.g., length, complexity, and relevance) and motivation to process along with both a cue and a message quality manipulation. -The most critical area in which to test the unimodel's functional equivalence hypothesis is to evaluate the extent to which attitude persistence, resistance, and consistency with behavior are driven by elaboration per se (as the unimodel proposes) or the elaboration of message arguments (as the dual-process models would seem to suggest).
Manstead and van der Pligt (1999)	Dual	Conceptual and methodological flaws in the unimodel framework.	-Contrary to the unimodel's assertions, it is not appropriate to conclude that there is no systematic difference in the length, complexity, and ordinal positions between peripheral/heuristic cues and message arguments. -The depiction of source information as short, simple, and early in dual-process models reflect natural confounds in real-world situations rather than experimenter-created confounds that generate artifactual findings as it was the case in the experimental work testing the unimodel. -The experimental work adopted for the unimodel testing is flawed in that it seems to favor the impact of source information (sheer extensiveness of the source information). -Demonstrating that source information can be too processed thoroughly, similar to a message argument, does not necessarily mean that there is no need to distinguish between different modes of information processing.

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Author(s)	Embraced School (single- vs. dual- process)	Main focus/contribution	Main ideas/issues identified in the paper
Miller and Pedersen (1999)	No particular position has been taken	Methodological approaches to testing process uniformity or distinctiveness.	-The experimental work and statistical analyses used in testing the unimodel preclude assessment of the discriminant validity of the processes alleged by dual-process models. -From an ecological validity view, the unimodel's assertion that peripheral cues and argument need not to be different is incorrect.
Romero (1999)	No particular position has been taken	Offering a caveat to the argument of the unimodel's functional equivalence by demonstrating one factor (i.e., logical structure) on which source information and message arguments differ.	-Making conclusions based on the logical forms of message arguments and source information are both two-step processes. -Source information and message arguments do not share the same logical structure. -The distinction between the logical structures of source information and message arguments represents a fundamental difference between the two forms of information. -Contrary to the unmiodel's claim, both types of information are not mediated by an 'if–then' syllogistic reasoning.
Strahan and Zanna (1999)	No particular position has been taken	Proposing experimental designs to distinguish information content from processes.	-For further unimodel testing, there is a need to rely on more refined experiments in which source information, message argument, length, complexity, and ordinal position should be all manipulated simultaneously. -The unimodel's experimental work does not allow one to unequivocally state that content (i.e., source and message variables) per se is irrelevant in a persuasive communication.
Stroebe (1999)	Single	Theoretical contributions and practical relevance of the unimodel.	-The unimodel is more parsimonious than dual-process theories. -The central and peripheral information in dual-process models are special cases (rather than different species) because both types of evidence can be evaluated in terms of the same syllogistic reasoning. -Although drawing on more general theoretical principles, the unimodel's predictions are not dramatically different from those derived by dual-process models. -Dual-process models have more practical relevance than the unimodel: The operationalization of 'peripheral' or 'cue' information is more realistic in dual-process studies in comparison to the unimodel's experiments.
Wegener and Claypool (1999)	Dual	The unimodel's misconception about the ELM	-Associating the Laswellian partition (i.e, the distinction between source and message variables) with the ELM is not appropriate. -All the unimodel's findings are actually quite compatible with the ELM.

Appendix 2: The ELM Conceptual limitations

Parallel Information Processing. In Stiff's eyes, the schematic diagram depicting the *ELM*'s sequential logic (as described by Petty and Cacioppo 1986) perfectly illustrates this unidimensional conceptualization of individual's information processing ability. Indeed, as Stiff and Boster (1987, 250) point out, '[a]t each point of view, they are depicted as channeling their efforts to either central or peripheral processing, but not both'.. Put it differently, according to Stiff, the *ELM* does not take into account the human ability to conduct parallel processing of information.

Variables' Ambiguity. Another recurrent conceptual limitation concerns the *ELM*'s inability to clearly indicate as to why some variables serve as peripheral cues and others as central elements (Corneille 1993). The *ELM* authors initially linked specific elements to each route. They originally argued that the message's arguments correspond to elements of the central route, whereas the source-related variables (e.g., credibility, attractiveness) are related to the peripheral route. However, in a refined version of the *ELM*, the postulate of the multiple roles of the same variable has been emphasized to address the criticisms concerning the ambiguity associated with the distinction between the *ELM* central and peripheral variables.

Conceptual Flexibility. The ascribed multiple roles to a given variable led to another conceptual limitation, however. In fact, a serious consideration of the multiple roles postulate implies that any observed finding of a given persuasion study might be able to support the *ELM*. In other words, by embracing this postulate, the authors afford a sort of conceptual flexibility that puts into question the falsifiability of the model and consequently its theoretical value (Stiff 1994) as well as its practical worthiness (Bitner and Obermiller 1985).

Lack of a Priori Conditions and the ELM's Un-deterministic Nature. From the *ELM*'s conceptual flexibility stems another conceptual limitation manifested in the failure of the *ELM* to specify a priori the conditions under which a given persuasive element can be treated as central or peripheral by the receiver (Mongeau and Stiff 1993). By proposing a qualitative distinction between the central and peripheral routes, Petty and Cacioppo suggest that the recipient's level of elaboration is the key determinant of the persuasion route to be taken. However, the *ELM* was unable to explain how elaboration (e.g., the cognitive effort) is operationalized and measured. Does elaboration refer to the amount of information in the working memory or the cognitive patterns activated in the long-term memory? From which threshold can one consider that the level of elaboration is high or low? All of these issues question the *ELM*'s predictive performance in terms of determining which route will be undertaken by the recipient in a persuasive setting (Mongeau and Stiff 1993).

Unclear Underlying Mechanisms. The *ELM* has been also criticized for the fact that attitude change measures are made a posteriori (i.e., after the very exposure to the persuasive message) using Likert or semantic differential scales of attitudes. As such, this method of attitude change measurement is questionable from the perspective that it does not allow to authentically infer the underlying processes inherent to the triggered cognitive responses, which are the key drivers of the attitude change.[14] Accordingly, the *ELM* fails to explain the psycho-cognitive mechanisms underlying the processes of persuasion (Mongeau and Stiff 1993). The *ELM* is then criticized for its predictive inability, in that it explains the findings a posteriori (Mongeau and Stiff 1993).

ELM's Descriptive Nature. The abovementioned conceptual limitations stemming essentially from the *ELM*'s conceptual flexibility make it essentially a descriptive model. Indeed, Eagly and Chaiken 1993, 321) criticize this descriptive nature of the *ELM* by suggesting that

[t]hese inferences are descriptive . . . because the model does not specify on an a priori basis why exposure to many (vs. few) arguments ought to motivate or enable objective processing,

why prior knowledge ought to motivate or enable biased processing, or why source variables ought to motivate objective processing when the elaboration likelihood is moderate.

Artificiality of the Qualitative Distinction. Chief among the stream of the conceptual limitations of the *ELM*, Kruglanski and Thompson (1999) argue that the *ELM*'s qualitative distinction between the central and the peripheral routes is artificial. In particular, they point out that there are not two routes to persuasion but rather one. According to the *unimodel*, dual-process models, such as the *ELM*, do not describe qualitatively different processes but depict only more or less complex variants of the very same underlying mechanism of the persuasion phenomenon.