
AUTHORS' RESPONSE

The Illusory Second Mode or, the Cue Is the Message

Arie W. Kruglanski

*Department of Psychology
University of Maryland, College Park*

Erik P. Thompson

*Department of Psychology
Washington University, St. Louis*

We were delighted at the magnitude of response to our target article. No less than 15 author teams obviously put in considerable time and effort in preparing thoughtful commentaries on this work. Participants in the debate included some of the most distinguished and productive theorists and researchers in the attitudes and persuasion domain. Evidently, our article hit a spot where discussion was badly needed. Indeed, we could not have asked for a fuller, more thorough, creative, and multifaceted discussion than what we have here.

Our theoretical framework has been described in turn as “radical” and a “major theoretical contribution” (Stroebe), “provocative” and “a fundamental challenge” (Lavine), a “theoretical and empirical challenge,” “daring” (Kerkhof), a “serious challenge” (Ajzen), a “bold enterprise” (Manstead & van der Pligt), and “provocative and cleverly insightful” (Miller & Pedersen). If these epithets are even somewhat accurate we were pleasantly surprised by the amount of agreement our position elicited. Historians and philosophers of science (Kuhn, 1962; Popper, 1959; Sulloway, 1996) highlight the considerable resistance new scientific notions typically encounter. By contrast, the gist of our innovation has been accepted by most of our commentators, albeit in different forms and degrees. We first characterize those differences, and then discuss the major themes that emerge from this set of articles. Unavoidably, space constraints prevent us from discussing all of our commentators' points in the detail they merit. Hopefully, there will be other avenues to continue our conversation.

Reactions to the Unimodel: Agreements, Ambivalences, and Resistances

Agreements

Some commentators were generally persuaded by our position and voiced only slight (if any) reserva-

tions about its merits and implications. That is how we interpret the remarks of Stroebe, Miller and Pedersen, Strack, Insko, Lavine, and Kerkhof. For instance, Stroebe states that he

found [our] arguments very convincing. They persuaded [him] that on a theoretical level [our] rejection of the central assumption of dual-process frameworks is justified ... by freeing information processing theories of persuasion from a number of apparently superfluous assumptions, [our] theoretical analysis is likely to stimulate new areas of persuasion research.

Miller and Pedersen note that they “applaud [our work] for [its] insightful theoretical contribution ... [and] think it an advancement worthy of continued exploration.” Strack asks (rhetorically) whether “after ... a remarkable success story, have the dual-processing models of persuasion had their heyday?” noting in response that he “tend[s] to agree [that indeed they have].” Insko states that he is “basically sympathetic with much of what [we] have to say” and concurs “that logic is applicable to processing involving varying degrees of time and effort.” Lavine also accepts our basic point that “in the dual-process literature there is an implied relation between the amount of thinking the recipient engages in and the object(s) on which the thought is projected” and that according to the dual-mode theories “‘Deeper,’ more effortful thinking occurs when considering the cogency of the message arguments, whereas ‘shallow’ or less effortful thinking occurs in relation to nonmessage features of the persuasion situation,” and Kerkhof states that the “unimodel should lead scholars of political persuasion to take another look at the assumptions they hold concerning the structure of political information and the way the politically aware and the politically unaware use this information to come to a judgment.”

Ambivalences

A number of responses reflected the authors' considerable ambivalence combining agreement with our basic premises with unwillingness to follow them through to our conclusions, portraying our analysis as useful yet misleading, stimulating yet concomitantly superfluous, and admirable yet fundamentally flawed. That is how we interpret the comments by Ajzen, Bohner and Siebler, Manstead and van der Pligt, Romero, and Eagly.

Ajzen, for example, writes that our work constitutes a "valid methodological critique" that he greatly admires and that "[our] incisive analysis helps to uncover some very important problems in past tests." He also states that we "provide a valuable service by bringing to light the essential equivalence of peripheral cues and message arguments," and notes that "the theory of lay epistemics offers a useful way of describing the ways in which the two types of information are processed" and that "based on these considerations, [we] argue convincingly that claims to the effect that the ELM and HSM deal with two qualitatively different processes lack much substance."

However, these "bouquets" are intermingled with considerable "brickbats," for Ajzen also writes, somewhat strongly, "If the analysis and conclusions offered by Kruglanski and Thompson were accepted, they would profoundly alter our hard-gained understanding of the persuasion process and force us to reexamine much of the work that has been performed in the past 25 or 30 years," a suggestion he views as "ill advised" and one that "would lead us in the wrong direction and jeopardize progress in the field."

Bohner and Siebler write on the agreeing side that "[our] conceptual analysis and empirical studies point to some of the 'blind spots' [in the] established experimental paradigm ... [that they regard as] a useful contribution to conceptual clarity." They further regard the reduction of "the qualitative difference between low- and high-effort syllogistic reasoning ... to a merely quantitative one ... as highly interesting" and judge it "quite possible that, ultimately, both modes of processing may be traced to rule application." Yet the proverbial dropping of the "other shoe" is not long in coming when these authors assert that they: "are [nonetheless] not convinced ... that a strong theoretical case against dualistic notions has been made" as "Kruglanski and Thompson provide evidence against one particular version of a dual-process model, but leave other versions undiscussed ... that are less susceptible to [their] criticism," for "the unimodel does not actually eliminate the distinction of cues versus arguments ... [but rather] replaces one dichotomy (cue vs. argument) by another (easy-to-process vs. difficult-to-process information) ... shared by the unimodel and the generic HSM."

Manstead and van der Pligt, on the one hand, agree that "it is difficult to maintain that ... peripheral information processing ... is qualitatively different from central information processing" and agree that "the two processes specified by the ELM and the HSM ... differ mainly with respect to the amount of cognitive effort invested ... [hence] it seems unlikely that [one is] dealing with qualitatively different cognitive operations" and that "In terms of cognitive operations there may be a good deal of overlap between central and peripheral information processing. Conceptually, then, this distinction seems to have some serious shortcomings." Yet the same authors also assert that "It is not appropriate to conclude that there is no systematic difference simply on the grounds that the difference does not in principle have to exist. ... To abandon this distinction ... would in our view be a pity," and "Kruglanski and Thompson have not convinced us of the need for a unimodel. Rather ... their article seems ... to reveal the need for a greater degree of precision in the ELM."

Eagly explicitly notes her agreement with major aspects of our position. For instance, she states that:

It is of course true that both forms of information provide evidence relevant to judging the validity of the position advocated in a persuasive message. Furthermore, as they point out, the relevance of any information ... to a conclusion can be stated syllogistically. ... Their claim that there is an association between informational parameters and the cue versus message distinction surely is valid.

And

Because the long source information should produce relatively enduring cognitions about the source, recalling this information may produce some protection against subsequent attacks on recipients' attitudes on the message topic ... and some guidance for subsequent behavior relevant to this topic.

Yet, she also concludes "On the fundamental point of whether the Kruglanski and Thompson experiments challenge the dual-mode theories of persuasion, I must reject their claim." Similarly, "they do not challenge the claim that, for its persuasive impact to be exerted, complex argumentation is systematically processed ... [whereas] information that is simply presented ... does not require systematic processing and needs only heuristic processing."

Finally, Romero states that "Kruglanski and Thompson offer a compelling account of persuasion via a single processing route." Yet she also claims that "The distinction between the logical structures of message arguments and source information represents a fundamental difference between the two types of information" and hence, "Contrary to Kruglanski and

Thompson's claim, both types of information are not mediated by "if-then, or syllogistic reasoning leading from evidence to conclusion" although "If the apodictic-ampliative distinction could be unconfounded with information type, then the case for the unimodel is strengthened." In a following section, we demonstrate that indeed it readily can be so unconfounded. Before doing so, however, let us consider some less ambivalent reactions to the unimodel, which predominantly embody resistance to its major tenets.

Resistances

Petty, Wheeler, and Bizer call our article "thought provoking" and one that raises "interesting and important issues." They also "actually concur with much of what [we] have to say." But this is because they feel the Elaboration Likelihood Model (ELM) has said much of it before and because the differences in our positions can be traced to "fundamental misunderstandings of the theory" that led "Kruglanski and Thompson [to] believe that the unimodel offers new insights into persuasion processes that are not allowed by the ELM." Furthermore, there seems to have been little benefit in conducting our unimodel studies because their results are "very compatible with the ELM." Nonetheless they graciously note "that all four [of our] studies are valuable contributions to the persuasion literature," and kindly concede that the unimodel did "generate some novel predictions and findings that might not have been generated from a preoccupation with qualitatively different persuasion processes." On the theoretical front too, they agree that "both processes also have some things in common ... and both could reasonably [include] some type of if-then reasoning ... [furthermore] just because the outcome is different does not mean that the process is qualitatively different." Finally, but not least important, they also admit that "past ELM studies have sometimes confounded the extent of cognitive effort with persuasion by qualitatively different central and peripheral processes" though they do not deem this confound "necessary to produce the effects."

Wegener and Claypool offer a spirited resistance to our ideas and invoke an olfactory metaphor to claim that our model "does not smell as sweet" as the original ELM it seeks to replace and that which benefits it obscures it because of "a characterization of the ELM that is in error." Like Petty et al., Wegener and Claypool consider our data as perfectly compatible with the ELM as "from an ELM perspective, a specific source manipulation and a specific message-based manipulation ... could certainly have the same effects." They do seem to admit a confounding in prior ELM research (of centrality of merits with the argument-cue distinction) yet they view it "a matter of operationalization more

than theory." (Manstead and van der Pligt make a similar point.) Finally, they do concede that "many simplified analyses (e.g., counting the number of arguments) ... could be conceptualized in a single if-then syllogism" but they proclaim it "a problem in the level of analysis if this simple activity is conceptualized as being the same process as scrutinizing the merits of attitude-relevant information." Hence they "find very little evidence of the utility of the unimodel's abstract analysis ... [and end by concluding that] each of the other supposed benefits of the unimodel is already present in the ELM."

Finally, Chaiken, Duckworth, and Darke state their belief that "major aspects of [our] analysis of the HSM and its theoretical assumptions are incorrect and ... [our] unimodel theory does not represent a 'more parsimonious' model of persuasion processes." However, they do appear to agree with some rather fundamental aspects of our analysis. Thus, they "agree with some of Kruglanski and Thompson's observations about typical dual-process research designs, the abstract characterization of heuristic and systematic processing as if-then reasoning, and the motivational and capacity requirements of detailed information processing." They agree that "empirical research has often confounded type of information and processing style," although they claim the Heuristic Systematic Model (HSM) "is quite specific in not limiting the definition or distinction between the two processing styles to a difference between types of information." And in the concluding paragraph they ask whether the parsimony inherent in the unimodel "represent[s] a positive change" and they answer "it does not." They add, "the unimodel obscures many fundamental and important differences between two modes of processing that are clearly distinct from one another."

Summary of the Responses

Although we categorized the commentaries into agreeing, ambivalent, and resistant, the foregoing review indicates that they merely differed in the relative emphasis on agreement versus disagreement with our position. Overall, we were struck by the amount of support our perspective received. According to some commentators (Petty, Wheeler, & Bizer; Wegener & Claypool) that was because most of our ideas represented "old wine in a new bottle," contained already in the dual-mode theories of yore. Other distinguished experts, however, viewed our analysis as an important innovation. Thus, if we fundamentally misunderstood the dual-mode position, others might have been similarly misled. As we argue in what follows, however, misunderstanding is not really the issue. Rather, commentators' agreement with our analysis could signify that it explicitly articulated what many have tacitly felt.

As Stroebe notes, it was often difficult to explain to students (or understand by oneself) why dual modes of information processing are needed “if both are used at the same time and often have the same consequences.” Be that however it may, we turn now to examine specifically the major remaining points of contention between the unimodel and the dual-mode formulations.

Would the Two Distinct Modes of Persuasion Please Stand Up?

In response to our target article, dual-mode theorists (e.g., Bohner & Siebler; Chaiken et al.; Petty et al.; Wegener & Claypool) drew a sharp distinction between research practice and theoretical postulates. Whereas they agreed that in actual research extent of persuasive information processing was often confounded with information type, they claimed that the dual-mode theories explicitly disavowed any such confounding. In response to this argument, note first that extensive confounding in prior dual-mode work (what Bohner and Siebler call the “dominant research paradigm”) is not exactly trivial, for it removes much of the empirical base from under the dual-mode theories.

But the more important questions are, what, then, is the quintessential theoretical distinction between cues and heuristics and message arguments, what precisely is the difference between a cue function versus an argument function that the same bit of information might perform, and what is the difference between heuristic and systematic processing? The dual-mode theorists offer a broad variety of answers to these questions, but when the dust settles on this plethora of proposals, one is left with a quantitative rather than a qualitative distinction in the extent to which different contents of arguments may be processed.

Easy- or Difficult-to-Process Information?

Bohner and Siebler, for example, suggest that the critical distinction is one of two information classes (easy-to-process vs. difficult-to-process). In their view then, “the unimodel replaces one dichotomy (cue vs. argument) by another (easy-to process vs. difficult-to-process information) ... shared by the unimodel and the generic HSM.” But it is doubtful whether the distinction between easy-to-process and difficult-to-process information represents a qualitative difference in mode of processing. After all, isn't ease or difficulty of processing a continuum similar in nature to such continua as height, weight, wealth, and so forth? Of course, one could artificially dichotomize a continuum (talking about short and tall persons, fat or

thin persons, or smart and dumb persons), but one could with equal ease trichotomize it, quintize it, or cut it into any number of segments without these becoming qualitatively distinct.

Nor would such a qualitative distinction be indicated if the “segmentalized” categories statistically interacted with another variable! Take the distinction between the “wealthy” and the “poor” and a hypothetical interaction whereby the poor tend to choose a Volkswagen over a Mercedes Benz whereas the wealthy tend to make the opposite choice. Does that hypothetical finding betoken a qualitative distinction between the poor and the wealthy? Hardly so, because it is readily accountable by a quantitative hypothesis whereby the amount of money one tends to spend on consumer products such as cars varies monotonically with one's wealth. Quite similarly, Bohner and Siebler's dichotomy of easy-to-process and difficult-to-process information in relation to processing resources could simply be restated in continuous (and nearly definitional) terms whereby the more difficult to process a given bit of information is the more processing resources it requires.

Distinct Cue Versus Argument Functions?

Petty et al. note the essential agreement between the ELM and the unimodel, again in respect to the “quantitative variation in the extent to which persuasion variables (both message and nonmessage) are processed” and with respect to the fact that “both motivation and ability factors have an impact on the extent of processing and persuasion.” Yet, they view as a misconception our notion that the ELM retains the Laswellian partition between source and message factors, identifying the former with peripheral and the latter with central processing. Rather, they point out that the ELM studies explicitly argued and showed that source factors could function both as a cue (or a simple decision rule) and as an argument and that message factors could serve in both functions as well.

Indeed, dual-mode research has shown that some (nonsubstantive) message factors (e.g., the number of arguments) can have a great impact under low resource conditions (Petty & Cacioppo, 1984), and the dual-mode theorists (Petty & Cacioppo, 1986) are clearly on record that some source factors (e.g., the source's physical attractiveness) can function as message arguments in appropriate contexts (e.g., where the message concerns cosmetic products). The reason we commented on a continuity between dual-mode research and the Laswellian partition was that in a preponderance of such research peripheral cues involved traditional source factors (e.g., expertise or trustwor-

thiness) and were explicitly juxtaposed to message arguments, a point that all our commentators concede.

But if such juxtaposition was merely an incidental feature of operationalization (Petty et al.), the issue arises of what then is the true qualitative difference between a cue and an argument? Precisely how do the two function differently in the persuasion process? What is the fundamental difference in kind between peripheral versus central information processing? Petty et al. are quick in noting the quantitative distinction between the modes, and they chastise us (gently, to be sure) for focusing “on the qualitative distinction drawn by the ELM and [ignoring the fact that] ... the ELM also incorporates a quantitative dimension (the elaboration continuum).” They further comment that we

At times ... write as if the ELM would be incorrect if some research result can be explained by a quantitative variation in elaboration ... rather than a qualitative one. ... However, ... a fundamental ELM postulate is that elaboration can range from high to low.

But here precisely is our point: If all there was to ELM was the quantitative variation, there would be very little disagreement in our positions but the ELM would cease, thereby, being a dual-mode formulation! This is because what makes it so is the qualitative distinction between processing modes to which the quantitative dimension (the continuum) is simply irrelevant, or orthogonal.

In the same connection, Ajzen agrees that the distinction between the heuristic and systematic modes of processing is quantitative rather than qualitative. As he put it “It may be true that these two processing modes do not differ in kind, and that they may better be viewed as endpoints on a continuum of processing depth, from shallow or heuristic on one end to deep or systematic on the other.” He then goes on to state, however, that “Whether the distinction should be considered one of kind or degree would seem to be of only secondary concern.” But the issue is, concern in regard to what? Everyone agrees that processing can vary in degree. It is only a difference in kind, however, that warrants the partition between two separate modes of processing. Take it away, and the dual-mode framework collapses. Indeed, the dual-mode theorists recognize this well and they never abandon their insistence on a qualitative distinction, although they seem to have trouble explaining just what this distinction consists of.

Toward the very end of their commentary, Petty et al. attempt to offer such an explanation, and they do so not via a conceptual definition, but rather via an example. Specifically, they invoke a study by Petty and Cacioppo (1984) in which counting the number of arguments had persuasive impact under low-elaboration conditions and their substance had such impact under

high-elaboration conditions. Are the two processes qualitatively different? Petty et al. themselves note that “both processes ... have some things in common ... and both could reasonably end with some type of ‘if-then’ reasoning. With counting, the reasoning ... could be ‘if there are so many arguments, it must be good’.” One still expects to hear where the difference might lie, and indeed Petty et al. state that “the fact that both evaluated the same information but reached different conclusions suggests that there is plausibly something different about the process leading to the conclusion.” But in the very next sentence they deny this is necessarily the case by adding “Of course, just because the outcome is different does not mean that the process is qualitatively different.” Indeed it does not, for attending differentially to different contents of arguments (rather than using qualitatively different processes) could also quite easily lead to different conclusions.

Indeed, the difference between the premise “If there are so many arguments, the conclusion is warranted,” and other if-then premises contained in the substance of the message is one of argument contents that, again, should not be confused with a qualitative difference in processes. We discuss this issue more fully in the very next section. Nor should a quantitative distinction (in extent of processing) be confused with such a qualitative distinction as everyone agrees. At the end of the day then, one still lacks a compelling qualitative distinction between two types of processing, absent which the ELM (or HSM) status as a dual-mode framework is rather undermined.

Contents or Processes?

Despite agreeing that “these two processing modes do not differ in kind,” Ajzen felt nonetheless that this “does not necessarily imply that there are no meaningful qualitative distinctions to be drawn.” And he continued, “Qualitative distinctions of importance relate precisely to the domain that Kruglanski and Thompson dismiss as of no theoretical significance, namely the contents of the information provided. ... These ... can have profoundly different effects on persuasion and its consequences.” The example he gives is that people whose positive attitude toward “giving money to help the poor” is based on one type of evidence “a message from God” are likely to abandon it based on a related type of evidence “another message from God contradicting the first.” By contrast, people whose belief is based on another evidence “a set of supportive arguments” would only change their opinion by “new arguments contrary to their favorable attitudes” rather than a message from God.

But note that this sidetracks the discussion to a concern of little relevance to the debate between single

versus dual modes of processing. The issue is not whether contents of beliefs determine what evidence will be relevant thereto. Of course they do! This point is hardly in contention between us and the dual-mode theorists. The issue is whether one could a priori specify how contents (e.g., associated with the source or the message) relate to the degree or depth of processing; to processing resources like motivation and cognitive capacity; and to such consequences of persuasion as attitude change, its persistence over time, resistance to counterpersuasion, and the link to behavior. The answer is one could not! Different recipients of persuasive messages may vary in the degree of relevance they assign to specific contents, all contents can be presented to recipients at different degrees of complexity, they may occupy early or late positions in the persuasive sequence, and so forth. It is these latter informational parameters (i.e., perceived relevance, complexity, ordinal position), thoroughly orthogonal to contents, that critically matter to the kind of phenomena about which the dual-mode theories and the unimodel are in dispute.

Besides, as Ajzen is quick to agree, "distinction between source and message is no more significant than various distinctions that can be drawn within each of these categories." Although Ajzen suggests that "such distinctions are in fact legitimate," it should be clear that such potentially open-ended pluralism of content partitions is a far cry from the essential dichotomy to which the dual-mode frameworks are committed. Hence, it does little to help their case in the debate.

A Matter of Centrality?

Whereas Ajzen views the fundamental qualitative distinction in dual-mode frameworks as one of informational contents, Wegener and Claypool view it in terms of centrality of features contained in the information. In their words, the critical distinction is "between features of an attitude object that constitute its perceived central merits, ... and all aspects of a persuasive setting that do not refer to such features." They clarify what they mean by an example given by Petty and Cacioppo (1986, p. 223) wherein "In judging a person's prospects for graduate school, intelligence is central but attractiveness is peripheral. In judging a person for a modeling career, the opposite may hold."

The notion of *centrality* in Wegener and Claypool's analysis seems synonymous with our notion of *relevance*, defined as the degree of belief in a major premise linking in an if-then fashion the evidence and the conclusion. Accordingly, we can imagine that someone might have strong belief in the premise that "if someone is intelligent, she or he will do well in graduate school," but believe much less strongly, or not at all, that "if someone is attractive

she or he will do well." Yet, identifying the critical distinction in the ELM with feature centrality or relevance does not, unfortunately, work as a legitimizing argument for a dual-mode framework. That is the case for several reasons.

First, centrality or relevance does not represent a qualitative dichotomy any more than Bohner and Siebler's notion of processing ease. In all these cases one deals with continua. In other words, centrality or relevance are a matter of degree as persons may vary in their degree of belief that a given feature (intelligence, attractiveness) is connected in an if-then fashion to a given consequence (e.g., success in graduate school). Second, the centrality idea does not really map onto the distinction between arguments and cues in much dual-mode research. For some individuals a cue such as source expertise (e.g., God's authority) may have greater centrality or relevance to the attitude issue (e.g., stealing may be strongly believed to be bad just because of a divine prohibition against it) than many substantive arguments.

Third, there seems little reason to assume that central (vs. less central) arguments will be processed more extensively under high motivation or capacity conditions. Rather, under high-capacity or high-motivation conditions the recipient may be capable or willing to invest the effort necessary for differentiating between difficult-to-process *central*, or high-quality, arguments and *less central*, or low-quality arguments. There seems even less reason to assume that the less central (or relevant) arguments would be processed more extensively under the low-motivation or low-capacity condition than the more central (or relevant) arguments, an assumption that follows directly from equating cues with less central features or persuasive information. By contrast, it is quite plausible to assume (as the unimodel does) that easier (vs. more difficult) to process information will have an advantage under limited cognitive resource conditions. In short, the centrality notion in Wegener and Claypool's analysis does little to extricate the dual-mode assumption in persuasion research from its manifold conceptual difficulties. Despite their arguments, the distinctive qualitative identity of the two putative modes remains as elusive as ever.

A Matter of Length and Complexity?

Chaiken et al. offer yet other conception of the way in which the dual-processing modes differ from each other. Somewhat like Bohner and Siebler, Chaiken et al. also assert that the two differ quantitatively in terms of their ease of processing, as determined by their length and complexity. Accordingly, they comment on "the mistaken assertion that heuristics and message arguments do not differ systematically in

length or complexity.” Again, however, defining the distinction between heuristics and arguments solely in terms of length and complexity suggests a difference in extent rather than in kind, undermining the dual-mode claim.

The idea that heuristics by definition differ from message arguments in length and complexity is central to Eagly’s analysis of the number of modes (one vs. two) issue. She readily admits the “association [in prior research] between informational length and the cue versus message distinction” yet argues that “because heuristic and peripheral cues, by definition, exist only with informational parameters set at certain levels, this correlation is not appropriately regarded as confounding in the sense of an artificial, accidental, or mistaken association.” Hence, the “unconfounding” accomplished by our experiments “violates the defining properties of heuristic cues.”

But note, one more time, that if the difference between heuristics or cues and message arguments is exclusively one of values on the continuous parameters of length and complexity, what we have is a quantitative, not a qualitative distinction. In this regard it remains unclear what precise parameter values should qualify as heuristic cues versus arguments and why. Moreover, it is unclear why certain values of length or complexity (defined as heuristics and cues or as message arguments) should discretely determine the amount of processing resources (motivation or capacity) they require (heuristic values requiring “little” processing resources and message arguments requiring “much” processing resources) rather than assuming a continuous function between informational length complexity and the amount of processing resources required.

Eagly also offers a nested analysis of our experiments wherein “a two-step process should be assumed: systematic processing to derive the source’s expertise, followed by the use of a heuristic decision rule about trusting experts’ statements.” However, she does not offer a precise definition of the difference between processing systematically and following a heuristic rule. The commonalities between the two seem clearer by comparison. Thus, Eagly agrees that “heuristic [or peripheral] cues and message arguments can both be considered persuasive evidence” and that “the relevance of any information [or premise] to a conclusion can be stated syllogistically.”

As for a difference, Eagly does state that “a heuristic [(or peripheral) cue conveys a quality to be immediately and holistically perceived.” It is unclear, however, what, then, constitutes an argument, and whether the difference between it and a heuristic does not boil down, after all, to a quantitative difference in complexity and length that would account for the degree of immediacy (or rapidity) with which the former versus the latter may yield a conclusion.

Number of If–Then Linkages?

Chaiken et al. suggest that although both heuristic and systematic reasoning involve if–then linkages, the former includes but one such linkage, whereas the latter involves a greater number of linkages that, in turn, require their integration. In that particular definition, the integrative step could be regarded as the one qualitative difference between the two modes of processing. Does that solution work? There are two senses in which it does not. One is that the integration itself is most probably based on some general if–then rule; for example, “If Object A has more positive features than Object B (as determined by various specific if–then arguments about positivity of each feature) then A warrants a more positive attitude than B.” In that sense, the multilinkage integrative process simply adds one more if–then linkage to be processed; hence its distinction from the single linkage case boils down, once again, to a difference in the extent of processing.

Moreover, it is not even clear that the number of if–then linkages and their integration invariably require more processing resources than a single if–then linkage. One could have a single if–then argument presented in a lengthy and elaborate manner or enmeshed in a great deal of irrelevant detail, hence requiring more processing resources than several if–then linkages presented succinctly and simply.

Automaticity?

Finally, Chaiken et al. imply that a difference between the modes is one of automaticity, the heuristic mode being automatic and the systematic mode being controlled. Accordingly, Chaiken et al. argue that the heuristic mode is more efficient, or less capacity demanding than the systematic mode, and that heuristic processing requires less conscious awareness than systematic processing. But note that even though automatic processing is conceptualized as efficient (Bargh, 1989), this does not mean that any (somewhat) efficient processing is automatic. Efficiency can be determined by several different factors, only one of which is automaticity. Processing can be efficient also because it is based on simple, or briefly presented, information that fails all other “tests” of automaticity (Bargh, 1989). Moreover, processing efficiency, or reduced capacity requirements, are clearly a matter of degree, in contrast to the dichotomous emphasis of the dual-mode formulations.

Nor do remaining automaticity criteria (cf. Bargh, 1989) map any better on the distinction between heuristic and systematic processing. Thus, it does not seem plausible to assume that all or most reasoning based on simple reasoning rules (“experts are right,” “majorities know best”) occurs outside of awareness, another pre-

requisite of automaticity. Note also that automatic processing is said to be unintentional (cf. Bargh, 1989) and it seems unlikely that the recipients of heuristic information in persuasive settings did not intend to form an opinion on the attitude issue. Thus, we agree with Chaiken, Liberman, and Eagly's (1989) prior cautious statements that: "heuristic processing can be controlled and intentional" and "a strict automatic controlled dichotomy is too restrictive to capture ... heuristic processing" (p. 213); that is, the way it differs from systematic processing.

Conclusion

Our commentators' attempts to capture the conceptual distinction between the two types of persuasive information (cues and heuristics vs. message arguments) alleged to be processed in a qualitatively different manner were quite heterogeneous. Some commentators (Bohner & Siebler, Chaiken et al., Eagly) implied that the distinction is one of length, complexity, or ease of processing. Such a proposal, however, essentially embodies a quantitative distinction losing the qualitative gist of the dual-mode notion. Others (Ajzen, Petty et al.) implied that the distinction lies in the informational contents of the inferential rules employed. The problems here, however, are (a) the wide variety of possible contents that render arbitrary the dichotomous essence of the dual-mode formulations and (b) implausibility of the idea that different contents will be processed more or less extensively.

Other commentators (Wegener and Claypool) suggested that what truly matters is centrality or relevance of the information to the attitude issue (or the persuasive conclusion). This idea, in turn, runs afoul of the problems that (a) relevance or centrality also are a matter of degree rather than a dichotomy, and (b) a compelling rationale is lacking for why the less central or relevant information should have a processing advantage under low cognitive resource conditions (of motivation and cognitive capacity) and why the more relevant information should enjoy such an advantage under high resource conditions. Finally, some commentators (Chaiken et al.) implied that the qualitative distinction between the two types of processing is one of automaticity. However, though the processing of brief information may be less demanding on capacity, and hence more "efficient" than the processing of lengthy information, this does not suffice to render the former automatic. Besides, the processing of brief rules can readily be represented in awareness and can be intentional, hence falling short on two of the central criteria for the automaticity status.

It seems fair to conclude that despite varied interpretative attempts, a convincing case for a qualitative distinction between processing modes has yet to be

made. Instead, everybody seems to agree that persuasion is generally accomplished via if-then reasoning leading from evidence to conclusion, that the contents of evidence can vary widely depending on the recipients' premises, that processing difficulty can vary in degree, and that processing extent can vary depending on one's motivation and cognitive capacity.

Ecological Validity to the Rescue?

Several commentators argued that even though the dual-mode conception is invalid—and even though prior dual-mode research did confound informational contents with critical informational parameters such as length and complexity—in practice such "confounding" is prototypical of real-world situations and hence is useful and instructive nonetheless. In this vein, Manstead and van der Pligt comment in the following terms on our suggestion that cues and heuristics need not differ from message arguments on difficulty of processing:

No doubt this is true. ... However, the point is surely that this is to ignore the ecology of peripheral and heuristic cues and of message arguments. Although we cannot cite hard evidence to support the point, we feel ... there is a systematic difference in the length and complexity of peripheral and heuristic cues, on the one hand, and message arguments, on the other. ... The fundamental question to be asked of the authors here is whether or not this "confound" is one that reflects natural confounds in the world around us, or [are these] experimenter-created confounds that generate artifactual findings.

Similarly, Stroebe, although noting an absence of evidence on this point and regarding it "an empirical issue to be clarified by further research" is, nonetheless, "fairly confident that such research would demonstrate (a) that source information nearly always precedes message arguments and (b) that source information is typically less complex than these arguments."

In response to these remarks note first that in so far as no agreed-on qualitative distinction between cues and heuristics and message arguments appears to exist, it seems moot to even pose the question whether in the real world one informational category is generally lengthier, more complex, or earlier appearing than the other. One could still ask, however, whether one type of informational content, say source information, is not typically conveyed in a simpler, more compact manner than other informational contents; for example, about the attitude object. As Manstead and van der Pligt, and Stroebe correctly point out, there is no present evidence pertinent to this point. We do not share these authors' optimism, however, that such meaningful evidence could ever be collected.

At issue here is the difficulty of establishing the real-world typicality of any psychological phenomenon. How often in the real world are people dominant versus submissive, rebellious versus conciliatory, or intelligent versus dull? These are not questions that can be readily researched or answered in general terms. The same seems true of the question whether different types of persuasive information typically appear in a lengthy or a brief format in real-world settings. To answer such a question empirically it should be necessary to (a) define a universe or population of real-world persuasive situations and (b) sample representatively from such population. The former task seems daunting in light of the seemingly limitless diversity of possible real-world situations. Consider what such universe of situations would have to include. It should include instances of persuasion in all the possible fields of human endeavor where persuasion is attempted (i.e., in all the possible fields period). These may include, among others, advertising (its different subtypes), education (across different levels and domains), politics (in the different nations), the health professions (in their various categories), business (in its various sectors), and so forth. To sample representatively from such a universe verges on the impossible, if for no other reason than it should include an endless number of past situations (including the remote historical past!) for which no evidence may exist. Thus, the question of how often in the real world is source information briefer or lengthier than message information cannot be empirically answered with any degree of precision.

Does source information in real-world contexts ever come in lengthy and complex forms? The answer is a definite yes, at least in some cases. Eagly saw this clearly when she wrote "Although I suspect that, especially in venues such as advertising, contextual information is more often presented briefly and simply than extensively and complexly, in other venues (e.g., courts of law) contextual information is more likely to be complexly presented." Another domain in which the latter seems to be the case is that of political communication, as Kerkhof convincingly demonstrated. In his words, "In mass media messages about politics, relatively more attention is devoted to information about the political sources and their relations with each other than to information about the issues." This conclusion is supported by systematic content analyses of news media conducted by Kleinnijenhuis et al. (1995) and Klandermas and Goslinga (1996), leading Kerkhof to conclude "in political news, cue information prevails" and to emphasize "the value of the unimodel in explaining political persuasion."

Conclusion

In sum, the ecological validity argument whereby in the real world at large some informational contents

(e.g., about the source) are presented more briefly and simply than other informational contents (e.g., about the attitude objects) seems less than wholly convincing. The length or complexity with which any information is presented seems to thoroughly depend on the context. Furthermore, it does not seem feasible to empirically assess the overall frequency across naturalistic contexts (or real-world situations) with which given information types are presented briefly or extensively.

Finally, because the qualitative distinction between cues and heuristics and message arguments falters on conceptual grounds, as we have seen, the entire issue seems irrelevant to the dual- versus single-mode debate. If no qualitative distinction between cues and arguments can be sustained, it seems meaningless to ask whether one is typically briefer or lengthier than the other. On the other hand, if the distinction between the two is a quantitative one of length or complexity, then cues and heuristics are briefer than message arguments by definition both in real-world and artificial settings, but this denies the dual-mode nature of persuasion and argues in favor of the single-mode, extent of processing hypothesis.

But Is It Logical?

Some commentators have questioned our assertion that, irrespective of contents, all evidence exerts its persuasive effects through the same syllogistic logic. In this vein, Manstead and van der Pligt wrote:

For voters who know precisely who Forbes is and that he lacks political experience, the mere mention ... of Forbes ... may ... lead the voter to reject the assertion that he would make a good president. ... But for voters who know little or nothing about Forbes, much more information may need to be processed before the same conclusion is reached. These two ways of arriving at the same ... conclusion seem ... quite different. In the one case ... the major premise is already present, in the mind of the voter; and the mere sight or mention of Forbes constitutes the minor premise. In the other case the major premise may also be already present in the mind of the voter, but establishing the minor premise may require a lot of information processing.

But note that our logical analysis pertains solely to the structure of reasoning whereby reaching a conclusion requires the prior affirmation of the relevant major and minor premises. It does not pertain to the difficulty or laboriousness of affirming such premises. Such difficulty or laboriousness may differ widely depending on the specific topic and on the recipient's background knowledge (i.e., his or her beliefs) in that domain. For some recipients, given major or minor premises may be relatively self-evident, hence requiring little cognitive work for their affirmation; for other recipients, the

same premises may seem far from obvious, hence necessitating careful and resource-consuming scrutiny. To reiterate, however, none of this relates to the if-then logical structure of reasoning, shared by most cases of persuasion (whether by so-called cues or message arguments) wherein the drawing of conclusions follows from prior affirmation of the premises.

Consider, furthermore, Romero's comment whereby "The distinction between the logical structures of message arguments and source information represents a fundamental difference between the two types of information" because "Unlike major premises [of message arguments] these heuristics, or rules of thumb, are generally false ... *we know* that ... some experts' opinions may be true some of the time, but not all experts' opinions are true all of the time" (italics added).

Recall, however, that there seems to exist no sustainable qualitative distinction between cues and heuristics and message arguments; hence, it makes little sense to differentiate between the truth value of premises pertaining to either. More important still, our claims are not about premises that "we know" to be true or that objectively are true but rather about ones that a given recipient believes to be true. Different recipients may believe in (or affirm) different premises, or vary in their degrees of belief vested in these premises. Yet the transfer of confidence from premises to conclusions is the same regardless of informational contents. McGuire's (1960) and Wyer's (1974) seminal work on probabilistic reasoning combines logical principles and subjective beliefs and provides a way of understanding the role of evidence in persuasion. We also agree with Insko's suggestion that the tetrahedron model (Wellens & Thistlethwaite, 1971a, 1971b; Wiest, 1965) provides another way of combining logic with psychology in correspondence with the "many-valued distinctions of human thought." But however one chooses to model the "psychologic" of belief formation, there seems little reason to assume that it will differ for cues and heuristics versus message arguments.

Does It Have "Heuristic Value"?

According to major philosophers of science (cf. Popper, 1959), an important criterion for evaluating a new theory is its novel empirical contents; that is, its research-generating potential or heuristic value. This issue was touched on in several of the commentaries in this issue. On the skeptical side, Stroebe suggested that even though the unimodel offers "a theory that is more parsimonious than dual-process theory ... the predictions themselves turn out to be surprisingly similar." Yet at a later juncture Stroebe himself suggested a relevant "further study in which type of evidence (heuristic

cue, message arguments), ordinal position, ... and length and complexity ... [is] manipulated in a factorial design." Presumably such a study pits the unimodel against the dual-mode frameworks, hence it pertains to the unimodel's novel predictions that it does not share with its dual-mode alternatives. Intriguing proposals for additional studies were also made by Strahan and Zanna, Lavine, Kerkhof, Miller and Pedersen, and Insko. On the conceptual front Strack was inspired to go on "beyond the suggested alternative of a unimodel" and to develop a proposal for a "more flexible regulation system ... [that takes] ... people's processing goals and their self-knowledge into account." We are delighted by such creative proposals on both empirical and conceptual levels that demonstrate the stimulus value and generative potential of our analysis. Further research inspired by the unimodel is being currently carried out in our labs (see Kruglanski, Thompson, & Spiegel, in press) and we hope that other investigators too would see this framework and our discussion as a launching pad for insightful new forays into the persuasion domain that would significantly advance our understanding of this fundamentally important aspect of human social behavior.

On Parsimony and Validity

Finally, an important aspect of the present debate revolves about the fundamental scientific values of *parsimony* and *validity*. Miller and Pedersen stress the importance of parsimony and the impediment to "scientific progress in contemporary social psychology" occasioned by its absence. This applies to cases where the same, potentially valid concept is reintroduced under a new name, hence "'rediscovering the wheel,' examining something well-studied in the past, and then attaching an idiosyncratic label ... so as to give it a more distinctive ... quality." They conclude accordingly that "scientific parsimony ... clearly should be the default position—to be abandoned only when forced to by convincing data." We agree with Miller and Pedersen's emphasis on parsimony, and on the futility of "inventing new names for old concepts" even if the (new or old) concept in question was fundamentally valid. We also agree with their characterization of our unimodel as parsimonious and in this sense advantageous as a conceptual model of persuasion.

Not all the commentators believed this to be the case, however. In fact, some have turned the argument around by implying that parsimony considerations undermine the need for the unimodel because a "rose by [another] name" does not "smell as sweet" (Wegener & Claywood). Hence, it is we who reinvent the wheel or serve the same old wine in a new bottle (see Petty et al.). Of course we disagree that all of our message constitutes a mere rehash of old ELM (or

HSM) contentions: Whereas we deny a meaningful qualitative distinction between persuasive modes, the dual-mode theorists fundamentally rest their case on such a distinction.

It is in this sense that parsimony, however important, is probably not the unimodel's most significant feature. Rather, such a feature lies in calling attention to the fact that the dual-mode distinction in prior formulations is invalid, and that much of its prior empirical support derives from accidental (albeit rather typical) confoundings in the empirical literature.

Albert Einstein is reputed to have remarked once that "things should be as simple as possible but no simpler." To twist his expression, a theory should be as parsimonious as possible, but no more parsimonious, meaning that parsimony should not come at the expense of validity. Should our analysis be invalid it would indeed represent a case of "failed parsimony," as Chaiken et al.'s title implies. Yet as arguments in the preceding sections indicate, we do believe that for all relevant concerns the proposed dual modes of persuasion do not significantly differ, and hence that the unimodel is validly rather than merely "failingly" parsimonious.

The "relevant-concerns" notion is critical because, as Petty et al. note, any two entities or activities can be claimed to lie on some continuum, even ones as seemingly disparate as "tying one's shoe" and "engaging in an ax murder," reflecting a "dimension going from effortless to effortful physical action." Petty et al. go on to note that most state legislators have viewed these activities as qualitatively dissimilar in that one does not break the law and the other does. Note, however, that this particular analogy does not really fit the present case very well. The phenomenon it alludes to (punishment dispensed by legislators) has nothing to do with the effortful dimension and everything to do with the qualitative difference in lawfulness of the activities involved. By contrast, the persuasion phenomena pervasively addressed by research in the area (i.e., the processing of persuasive information under different cognitive resource and motivational conditions, the resulting attitude change, its persistence over time and resistance to persuasion, etc.) have little to do with the qualitative difference in contents of persuasive information types and everything to do with extent of processing. Hence, our "lumping" of information types and ordering them on a quantitative dimension is hardly arbitrary; instead, it gets at the heart of the phenomena persuasion research to date has aimed to explicate.

The Dual-Mode Frameworks: An Appreciation

Our emphasis on differences between the unimodel and the dual-mode frameworks should not obscure our

deep appreciation for their considerable contributions over the last two decades to understanding persuasion. To us, the gist of their contribution consisted of highlighting the information processing aspect of persuasion and the role of cognitive capacity and motivation in this enterprise. The emphasis in the dual-mode frameworks on the quantitative continuum from shallow to deep processing highlighted the relatedness of persuasion phenomena to alternative domains of social judgment (for reviews, see Chaiken & Trope, *in press*) as well as to more general cognitive processes (Craig & Lockhart, 1972). The dual-mode frameworks drew attention to the active and dynamic role the recipient's mind plays in persuasion and to the need to consider recipient variables (his or her background knowledge, the situation he or she is in and the psychological state it evokes, his or her personality characteristics, etc.) in understanding how a given persuasive message will be reacted to. They inspired varied and creative research efforts and restored persuasion work to its rightful centrality on the social-psychological research agenda. For all this they deserve considerable credit.

Along with the dual-mode focus on the quantitative dimension of processing, however, came their neglect of the reasoning process itself and of the way persons draw conclusions from subjectively pertinent evidence (e.g., McGuire, 1960; Wyer, 1974). It is such neglect of the role of evidence (common to the way all information is used in persuasion) that may have allowed the "dichomitization" of the processing continuum, prompting the problematic distinction between cues and heuristics and message arguments and between two qualitatively distinct modes of persuasion that our analysis has questioned.

It is also of historical interest that, just as contemporary persuasion models neglected the role of evidence, prior probabilistic work largely neglected the information processing aspects of persuasion and the central role in this venture of cognitive resources and epistemic motivations, precisely the aspects highlighted by the dual-mode frameworks. The advantage of the unimodel is that it puts it all together: It reintroduces the concept of evidence as a central feature of persuasion, even as it builds on the ELM and HSM important insights into the role of motivation and cognitive resources. In so doing, the unimodel integrates heretofore sequestered bodies of social-psychological knowledge about conceptually distinct yet psychologically indispensable aspects of persuasion underlying most of its manifold instances.

Note

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Arie W. Kruglanski, Department of Psychology, University of Maryland, College Park, MD 20742-4411. E-mail: arie@bss3.umd.edu. Erik P. Thompson, Department of Psychology, Washington University, One Brookings Drive/Box 1125, St. Louis, MO 63130-4899.

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