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## TARGET ARTICLE

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### Persuasion by a Single Route: A View From the Unimodel

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*Major current notions of persuasion depict it as attainable via 2 qualitatively distinct routes: (a) a central or a systematic route in which opinions and attitudes are based on carefully processed arguments in the persuasive message and (b) a peripheral or heuristic route in which they are based on briefly considered heuristics or cues, exogenous to the message. This article offers a single-route reconceptualization that treats these dual routes to persuasion as involving functionally equivalent types of evidence from which persuasive conclusions may be drawn. Previous findings in the dual-process literature are reconsidered in light of this "unimodel," and novel data are presented consistent with its assumptions. Beyond its parsimony and integrative potential, the unimodel offers conceptual, empirical, and practical advantages in the persuasion domain.*

From a social psychological perspective, the 20th century may well be dubbed the Age of Persuasion. Unprecedented technological developments within less than 100 years have multiplied a thousandfold communicators' reach of their audiences. The advent of air travel (as well as increased efficiency of the railroad systems) has swelled the volumes of mail delivered to addressees. Its preponderance is often dismissed as *junk*—a term connoting deliberate persuasive intent: Someone is trying to sell us something or get us to do something we did not originally intend. The telephone, radio, television, computers, and fax machines lend hand to the conspiracy and inundate us with a barrage of persuasive messages fired at an exponential pace. Like intensely flowing tributaries to the rising flood of information menacing to engulf us, they seem bent on sweeping away our old attitudes, opinions, habits, or intentions and implanting new ones in their place. Of course, persuasion has a major positive aspect, beside its darker side and the potential for abuse. It constitutes the mainstay of effective education, psychotherapy, or counseling as well as of successful negotiation without which good interpersonal, intergroup, and international relations are unthinkable.

Given the ubiquity and importance of persuasion in today's world it is hardly surprising that its explanation has had high priority on the research agenda of many

social psychologists. Over the last several decades, persuasion and attitude change have counted among the most thoroughly investigated topics of social psychological research, yielding exciting conceptual developments and a rich crop of intriguing findings (for a comprehensive review, see Eagly & Chaiken, 1993).

This hasn't always been so. *Persuasion* as a term did not even figure in the indexes of major early volumes introducing social psychology as a systematic field of study (e.g., Allport, 1924; McDougall, 1908; Ross, 1908), and influential midcentury texts (Asch, 1952; Newcomb, 1950) barely mention it in passing while discussing "propaganda." It was not until Hovland and his coworkers at Yale University (Hovland, 1957; Hovland & Janis, 1959; Hovland, Janis, & Kelley, 1953) launched their seminal Communication and Persuasion program that these issues began to receive their just desserts as major topics of social psychological inquiry.

The Yale research revolved about a classification system of persuasion variables growing out of Laswell's (1948) comprehensive question "Who says what in what channel to whom with what effect?" (p. 37). Initially, this led to a rather descriptive approach to persuasion research; for example, listing the variables within the *communicator* (i.e., the "who"), the *message* (i.e., the "what"), and the *audience* (the "to

whom") categories. Over the years, research has moved from the mere itemization and interrelation of variables in Laswell's scheme to exploring the basic cognitive and motivational processes underlying persuasion.

Significant milestones on this road have been McGuire's (1968, 1969, 1972) reception-yielding model and the cognitive response model of persuasion (Greenwald, 1968; Petty, Ostrom, & Brock, 1981; for discussion see Eagly & Chaiken, 1993). Yet, the lion's share of current persuasion work was inspired by two major theoretical frameworks: Petty and Cacioppo's Elaboration Likelihood Model (ELM; e.g., Petty & Cacioppo, 1986) and Chaiken and Eagly's Heuristic Systematic Model (HSM). Although they may significantly differ in some respects (for recent comparisons, see Eagly & Chaiken, 1993; Petty, 1994), the ELM and HSM share a fundamental commonality: They both posit that persuasion may be accomplished via two qualitatively dissimilar "routes" or "modes." In ELM these are the *central* and the *peripheral* routes, in HSM they are the *systematic* and *heuristic* modes. Both models also stress that conditions that promote the extensive elaboration of message arguments will produce opinion change via one of the modes (the central one in ELM, and the systematic one in HSM), whereas conditions that restrict the effortful elaboration of message arguments will bring opinion change via the remaining mode (the peripheral one in ELM, and the heuristic one in HSM).

It is difficult to overstate the dual-process models' contribution to understanding persuasion. Not only did they clarify why classical persuasion variables (e.g., source expertise) may yield different effects in different circumstances (Petty, 1994) but they also furnished invaluable insights into the complex ways whereby such variables may interact with factors in the persuasive context (e.g., recipients' involvement in the issue), and they fruitfully linked persuasion research to recent advances in social cognition (Chaiken, Liberman, & Eagly, 1989; Eagly & Chaiken, 1993). This analysis is much indebted to those insights; indeed, we deeply venerate this work and the progress it has made possible. Nonetheless, our conceptualization substantially differs from the dual-process paradigm: We suggest a way of integrating its two component processes into one, and in this sense feature a unimodel of persuasion. The unimodel (a) adopts a more abstract level of analysis in which the two persuasive modes (of either ELM or HSM) are viewed as special cases of the same underlying process and (b) deconstructs the "Laswellian" partition between persuasively relevant categories.

It is not that the Laswellian categories are not real. The issue is that they do not represent meaningful distinctions that matter to persuasion. Take the distinction between the categories who and what; that is, the dis-

tinction between *source* and *message*. Even though these two may appear to be patently different, there is a sense in which their differences, although real, are irrelevant to persuasion. They turn out to constitute surface differences that share the same deep structure. In other words, what you see is not necessarily what you get.

Moreover, even though contemporary dual-process models have gone far beyond the variable listing approach inspired by Laswell's classification, they remain at least somewhat constrained by his scheme in retaining, as a basic premise, the Laswellian partition between persuasion based on source factors (that function, at least much of the time, as peripheral cues in the ELM and as heuristic cues within the HSM) and persuasion based on the message as such (referred to the central route in the ELM, and to systematic processing in the HSM). The unimodel, by contrast, unequivocally parts ways with the Laswellian scheme.

As a preview of what is to come, we first briefly review the two dual-process models (ELM and HSM) and highlight their commonalities. Second, we describe our logical method, or "rules of the game" for assessing process uniformity versus separateness. We then describe the unimodel and compare it with the dual-process frameworks. Next, we review empirical evidence, both old and new, relevant to this comparison. Finally, we draw the implications of our reconceptualization for theoretical, empirical, and practical issues in the persuasion domain.

## Two Dual-Process Models

### ELM

The ELM assumes that "there are two routes to persuasion that operate in different circumstances, and there are different consequences of each route to persuasion ... (hence, the ELM) focuses on different persuasion processes that can operate in different situations" (Petty, 1994, p. 3). In fact, the model proposes a continuum of elaboration likelihood bounded at one end by the total absence of thought about issue-relevant information available in a persuasion situation and at the other end by complete elaboration of all the relevant information (Petty, 1994, p. 1). Extensive elaboration of the message information refers to persuasion via the central route, and reliance on message irrelevant cues refers to persuasion via the peripheral route. The ELM holds that "any variable that increases the likelihood of thinking increases the likelihood of engaging the central route" (Petty, 1994, p. 2). Prominent such variables are (a) personal relevance of the message, (b) whether the source is expert, (c) whether it is attractive, (d) whether it consists of multiple communicators versus a single one, or (e) whether

the message recipient is high (or low) on the need for cognition (Cacioppo & Petty, 1982).

Processing information via the central route can be objective or biased. According to Petty and Cacioppo (1986):

Relatively objective elaboration has much in common with “bottom up” processing since the elaboration is relatively impartial and data driven. Relatively biased elaboration has more in common with “top down” processing since the elaboration, for example, may be governed by a relevant attitude schema which guides processing in a manner leading to the maintenance or strengthening of the schema. (p. 136)

Although no explicit discussion of this point is offered, presumably peripheral processing is often “top down” as well, to the extent that it relies on “various persuasion rules or inferences” (p. 130) derived from prior beliefs and schemata stored in memory (e.g., “experts are right,” or “poorly dressed people aren’t smart”).

Although the notion of peripheral processing usually calls to mind brief and simple cues, this need not be necessarily the case. As Petty and Cacioppo (1986) put it,

In addition to the relatively simple acceptance/rejection rules, … attitude change may be affected by more complex reasoning processes, such as those based on balance theory … or certain attributional principles. Importantly, even reliance on more complex inferences obviates the need for careful scrutiny of the issue-relevant arguments in a message. In other words, each of those processes (e.g., self-perception, assimilation, balance) is postulated to be sufficient to account for attitude change without requiring a personal evaluation of issue-relevant arguments. (p. 130)

An important aspect of ELM is its attention to motivational factors. According to Petty (1994),

The ELM assumes that the default mode in persuasion settings is to understand the world and develop accurate views. Bias can be produced, however, when other motives are made salient. … For example, if people came to feel that their autonomy to hold a particular view was threatened, the reactance motive could lead to defensive processing of a persuasive message. (pp. 1-2)

Also, when personal interests are very intense “as when an issue is intimately associated with central values. … Processing will either terminate in the interest of self-protection or will become biased in service of one’s own ego” (Petty & Cacioppo, 1986, p. 148).

Although the central and peripheral “routes to persuasion” are assumed to qualitatively differ (cf. Eagly & Chaiken, 1993, p. 307) and be capable of operating in different circumstances, ELM affirms that they may occasionally co-occur. This would happen where a peripheral cue (like source expertise, or its minority-ma-

jority status) may help one decide whether the extent of processing issue-relevant information should be much or little (cf. Mackie, 1987). Furthermore, “at most points along the elaboration continuum there is likely to be some co-occurrence of processes and some joint impact. … That is the nature of a continuum” (Mackie, 1987, p. 4). Generally, the ELM proposes a “tradeoff between the impact of central and peripheral processes along the elaboration continuum … as the elaboration likelihood is increased central route processes have a greater impact on attitudes and peripheral route processes—a reduced impact on attitudes” (p. 4).

Petty (1994) advanced several hypotheses to explain why the impact of cues is reduced in conditions of high elaboration likelihood (Petty & Cacioppo, 1984; Petty, Cacioppo, & Goldman, 1981). The *cue-salience* hypothesis suggests that less attention may be paid to cues when participants are thinking about message content, although both high- and low-elaboration participants may have attended to the source (or another cue) when it was initially presented, it is “less *salient* (or spontaneously accessible) at time of attitude expression for the high elaboration participants presumably because of the extensive argument processing in which they engaged” (Petty, 1994, p. 5). A somewhat related notion, the *cue-loss* hypothesis, explains that

Peripheral cues (have) an initial impact on attitudes but under high argument processing conditions … consideration of the issue-relevant arguments reduces the impact of the cues. This could occur, for example, if the cue is drowned out by the arguments or is undermined by the implications of the argument. (Petty, 1994, p. 5)

The *cue-extremity* hypothesis derives from Tesser’s notion that increased thought about an issue may polarize one’s attitudes toward it (e.g., Tesser & Conlee, 1975; Tesser & Cowan, 1977; Tesser & Leone, 1977). Specifically, “if high elaboration conditions lead to less thought about a peripheral cue and less thought about the cue leads it to be evaluated less extremely the cue would be expected to have a reduced impact on attitudes” (Petty, 1994, p. 5). Finally, the *cue-weighting* hypothesis

assumes that the peripheral cues have relatively little impact on attitudes under high EL conditions *because* when people are highly motivated to process all the relevant information although aware of the cue—do not consider it particularly relevant in making evaluative judgments … the cues are in essence discounted as irrelevant at the time of attitude judgment. This hypothesis isolates the reduced impact of the cues in the integration stage of information processing. (p. 6)

Petty (1994) furthermore suggested that cues may be weighted less and arguments more because people

come to have more “confidence” in their assessments of the arguments “if it turns out that confidence is the key to weighting, researchers can next turn to why differential confidence is produced” (p. 6).

Another important emphasis in ELM is the proposition that the same variable can serve different functions in the persuasion process. Specifically, “a variable serving as a peripheral cue can have some persuasion *impact* or outcome under both high and low elaboration conditions but the underlying processes producing these outcomes are postulated to differ” (Petty, 1994, p. 6). When the elaboration likelihood is low, a variable (e.g., source attractiveness) could serve as a cue; when it is high, the same variable could serve as an issue argument (e.g., an advertisement by a physically attractive source of a beauty product may imply that use of the product may have contributed to her attractiveness). Finally, when the elaboration likelihood is intermediate, the very same variable could determine the elaboration likelihood (e.g., an attractive source may prompt a more extensive processing of her message). For instance, when the personal consequences of, or prior knowledge about, an issue are moderate or unclear, people may not be sure if the message is worth thinking about or if they are able to do so. Under these circumstances characteristics of the message source can help a person decide if the message warrants close scrutiny. In a relevant study by Puckett, Petty, Cacioppo, and Fisher (1983), arguments were more carefully processed when they were associated with a socially attractive rather than a socially unattractive source. More specifically, the significant Message Quality  $\times$  Source Attractiveness interaction was due to the joint tendencies for attractiveness to enhance agreement with the proposal when the arguments presented were strong, but to reduce agreement when they were weak (p. 188).

Research by Petty, Schumann, Richman, and Strathman (1993) on mood effects additionally demonstrated that a variable (positive mood in this case) can impact attitudes differently under varying levels of elaboration likelihood. Specifically, under low elaboration likelihood, positive mood can function as a heuristic and affect attitudes directly; under moderate elaboration likelihood, positive mood can reduce the overall level of elaborative processing; and under high elaboration likelihood, it can impact attitudes via the generation of positive message-relevant thoughts (see also Wegener & Petty, 1996).

Finally, and yet of considerable importance, the ELM holds that attitudes acquired via the central route differ in their consequences from those acquired via the peripheral route. The former are expected to manifest greater temporal persistence, be more predictive of behavior, and exhibit greater resistance to counterpersuasion than attitudes acquired via the peripheral route. The rationale for this hypothesis asserts

that under the central route, the issue-relevant attitude schema may be accessed, rehearsed, and manipulated more often, strengthening the interconnections among the components and thus rendering the schema more internally consistent, accessible, enduring, and resistant than under the peripheral route (Petty & Cacioppo, 1986, p. 176). Evidence for differential consequences of attitudes formed via central versus peripheral routes is reviewed by Petty and Cacioppo (1986, pp. 175–182; as well as Petty, Haugtvedt, & Smith, 1995).

## HSM

Chaiken et al. (1989) defined *systematic processing* as a “comprehensive, analytic orientation in which perceivers access all informational input for its relevance and importance to their judgment task, and integrate all useful information in forming their judgments” (p. 212). By contrast, *heuristic processing* is viewed as a more limited processing mode that demands much less cognitive effort and capacity than systematic processing. When processing heuristically, people focus on that subset of available information that enables them to use simple inferential rules, schemata, or cognitive heuristics to formulate their judgments and decisions” (p. 213). Heuristic processing is furthermore regarded as “more exclusively theory driven than systematic processing,” and the mode of processing distinction is assumed to be “*not merely quantitative*” (p. 213, italics added), but *qualitative*. Specifically, heuristic processing is “more exclusively theory driven because recipients utilize minimal informational input in conjunction with simple (declarative or procedural) knowledge structures to determine message validity quickly and efficiently” (p. 216).

Much like the ELM, the HSM assumes that the dominant motivational concern of persons in persuasion settings is the desire to form or hold valid or accurate attitudes, and that “both heuristic and systematic processing can occur in the service of this goal” (Chaiken et al., 1989, p. 214). Moreover, the HSM holds that motivational variables may have similar effects on systematic and heuristic processing. According to this position, personal relevance does not

influence only the magnitude of systematic processing  
... (but) also enhances the likelihood of heuristic processing, because (it increases) the cognitive accessibility of relevant persuasion heuristics and/or increases the vigilance with which people search (the setting or their memories) for relevant heuristic cues. (p. 226)

Consistent with this contention, Sorrentino, Bobocel, Gitta, Olson, and Hewitt (1988) found that participants high on certainty orientation were more influenced by source expertise when personal relevance was high (vs. low).

In its recent versions (Chaiken et al., 1989; Eagly & Chaiken, 1993), the HSM is featured as a multiple-motive model, encompassing defensive and impression management motivations in addition to the motivation for accuracy. The defense motivation is “the desire to form or to defend particular attitudinal positions. ... The processing goal of defense-motivated recipients, then, is to confirm the validity of particular attitudinal positions and disconfirm the validity of others” (Chaiken et al., 1989, p. 234). In addition, the HSM posits an impression management motive, that, “When paramount, [causes the] desire to express attitudes that will be socially acceptable to potential evaluators, both real and imagined” (p. 234).

Just as with accuracy motivation, the “defense-motivated goal of confirming the validity of particular attitudinal positions, and the impression motivated-goal of assessing the social acceptability of ... attitudinal positions” (Chaiken et al., 1989, p. 235) can prompt systematic or heuristic processing, according to their model. “In other words, the multiple-motive HSM views processing mode and processing goals as orthogonal; heuristic and systematic processing occur in the service of the individual’s processing goal, whatever that goal may be” (p. 235).

An important premise of HSM is that systematic and heuristic processing can co-occur. Three possible effects of such co-occurrence are referred to as (a) the attenuation, (b) the bias, and (c) the additivity hypotheses. The *attenuation* hypothesis assumes that systematic processing may provide recipients with additional evidence regarding message validity, which may contradict the implications of the persuasion heuristics being utilized. Consequently, the impact of the heuristic cues may be attenuated. The *bias* hypothesis assumes that heuristic cues

influence recipients’ perceptions of the probable validity of persuasive messages, and they may also bias recipients’ perceptions of message content. Thus, if a message is delivered by an expert, its arguments may be viewed more positively than if the message is delivered by a nonexpert. (p. 228)

The *additivity* hypothesis assumes that both message factors and heuristics should exert significant effects on recipients’ attitudes. Yet

most existing research indicates that when recipients are willing and able to process systematically, message content manipulations exert strong main effects on postmessage attitudes, whereas heuristic cue manipulations exert no significant persuasive impact. ... In other words, this research overwhelmingly demonstrates the attenuation effect, in which systematic processing overrides the judgmental impact of heuristic processing. (p. 233)

To account for these findings, Chaiken et al. (1989) proposed that a  $2 \times 2$  design in which variations in argument quality are orthogonally crossed with heuristic cues (mostly source expertise) provides a weak test of the additivity hypothesis because “two of the study’s four cells represent clear cut cases in which message content blatantly *contradicts* the expertise heuristic (i.e., expert/weak arguments, inexpert/strong arguments)” (Chaiken et al., 1989, p. 223). If so, “inclusion of no-heuristic-cue control conditions, ... should make additive effects in the two noncontradictory cells more detectable” (Chaiken et al., 1989, p. 223).

A major emphasis in the HSM concerns the relation of persuasion phenomena to broader social cognition principles. This emphasis is particularly apparent in the treatment of persuasion heuristics. It is reflected in “the assumption that the judgmental impact of heuristic cues should be moderated by the availability, accessibility, and perceived reliability of their associated heuristics” (Eagly & Chaiken, 1993, p. 342; see Baker, 1993, for further discussion of the role of information accessibility and relevance in persuasion). This social cognitive emphasis is assumed to be distinctive to their approach because “aside from the heuristic-systematic model, the relevance of accessibility logic to persuasion processes has not generally been recognized” (Eagly & Chaiken, 1993, p. 342). It is of interest, however, that according to the HSM, accessibility considerations may also enter into the systematic processing of persuasive messages. Thus, Chaiken et al. (1989) acknowledged that “systematic processing (depends) upon ... cognitive factors (e.g., the accessibility of knowledge structures that influence perceivers’ interpretation and evaluation of information)” (p. 213). Similarly, Chaiken et al. recognized the relevance of availability considerations to systematic processing in their discussion of prior knowledge effects on such processing (Wood, 1982; Wood & Kallgren, 1988; Wood, Kallgren, & Preisler, 1985). As they put it, “Possessing an evaluatively biased store of knowledge may enhance recipients’ abilities to rebut counterattitudinal arguments and to generate proattitudinal arguments ... (so that) more knowledgeable recipients may be less persuaded by counterattitudinal messages but more persuaded by proattitudinal messages” (Chaiken et al., 1989, p. 230).

### Commonalities Between the ELM and the HSM

Undoubtedly, the ELM and the HSM differ in some respects. Those are explicitly treated in Eagly and Chaiken (1993, chap. 7) and Petty (1994, p. 4) and will not be revisited here. More relevant to our purpose are features that the two frameworks share. First, both posit the existence of two qualitatively different modes

of persuasion, one is more thorough and extensive than the other. Second, both assume that engagement of the more extensive mode (i.e., the central or the systematic mode) depends on sufficient motivation and ability to process information. Third, both agree that persuasion accomplished via one of the modes (i.e., the central or systematic mode) is more persistent, more closely linked to subsequent behavior, and more resistant to persuasion than persuasion accomplished via the remaining (peripheral-heuristic) mode. Fourth, both assert that the two persuasive modes can co-occur, albeit the exact manner of their co-occurrence is depicted somewhat differently in the ELM and the HSM: Although it permits co-occurrence, the ELM adheres, nonetheless, to the notion of a continuum whereby a trade-off (hence, a negative correlation) governs the use of the two modes. The HSM, on the other hand, allows orthogonality in use of the modes so that they can augment each other, or clash in their influence.

Finally, both the ELM and the HSM imply that the desire to hold accurate attitudes and opinions is often the “default” motivation in persuasion contexts. Similarly, both models assume that beyond accuracy strivings, extensive processing (i.e., central or systematic) can be affected by alternate motivations. In brief then, even though they may differ in specific emphasis, the ELM and the HSM share considerable features in common, the most important of which is the presumption of two qualitatively different persuasion modes. But are these two modes truly different? And how can such difference (or its absence) be decided anyway? We turn to these matters next.

### Persuasion by a Single Route

#### How Should Process Uniformity Be Established? The “Rules of the Game”

Our basic argument is simple: The crucial distinction between cues and/or heuristics on the one hand and message arguments on the other refers to informational contents relevant to a conclusion, rather than to a principled difference in the persuasion process as such. Accordingly, cues and message arguments should be subsumed as special cases of the more abstract category of persuasive evidence. We argue, in other words, that the different informational contents corresponding to the cue versus message argument partition do not, in and of themselves, have a general effect on persuasion, nor are they impacted differently by persuasively relevant variables. Instead, the same overall process may transpire irrespective of whether the informational grist for the persuasive mill is of the cue or message type.

Let us illustrate the special case argument with the following analogy. Consider the distinction between

Tylenol caplets versus tablets. Both may be considered special cases of the same medication, and the distinction between them is irrelevant, for all intents and purposes, to the phenomena that Tylenol is assumed to affect. Of course, a given caplet may differ from a given tablet in ways that are absolutely critical; for example, it may contain a different dosage, a different concentration, or a different purity of the drug. But caplets versus tablets, as a whole, need not differ on these dimensions. Once these differences are controlled for, it should not really matter what form of the drug is administered, because the process whereby Tylenol exerts its effects should be the same in both cases. In analysis of variance (ANOVA) terms, the form of the drug should yield no main effects, nor should it interact (cf. Kruglanski & Mackie, 1990) with other parameters relevant to Tylenol-relevant phenomena (e.g., pain symptomatology, gastric sensitivity, etc.).

Just as specific caplets may differ from specific tablets, specific cues and specific message arguments may also differ from each other in parametrically relevant ways. For instance, a specific cue may appear less (or more) relevant to a conclusion than a specific message argument, and this degree of relevance may in fact constitute a significant characteristic of persuasion. A specific cue may be less (or more) complex, salient, or accessible than a specific message argument, and complexity, saliency, or accessibility may qualify as an important element of persuasion. Finally, a specific cue may appear either before or after a specific message argument, and the order of appearance or presentation may constitute an important dimension of persuasion. The foregoing does not imply that cues as a category systematically differ from message arguments as a category in those particular ways. For on the same parametric dimension that a given cue may differ from a given message argument (e.g., relevance, complexity, or order of presentation), a particular cue may differ from another cue, and a particular message argument may differ from another message argument. Of course, within-category variability as such does not deny the additional possibility of between-category variability. However, as we now proceed to demonstrate, there is little reason to believe that arguments as a category differ from cues and heuristics as a category on parameters relevant to persuasion.

Thus, once differences on persuasively relevant informational parameters are controlled for, cue-based and message argument-based persuasion should be impacted similarly by various persuasively relevant processing variables (e.g., motivation and cognitive capacity). In other words, we try to show that, all things considered, the two modes of persuasion lack discriminant validity, or functional independence—a known criterion for arguing the dissociation of psychological systems (used by Tulving, 1983, pp. 59–60, among others, to argue the distinction between seman-

tic and episodic memory, or by Sloman, 1996, p. 10, to discuss the distinction between associative and rule-based reasoning).

To apply the functional independence criterion to this case, however, it is incumbent on us first to outline what variables are, in fact, relevant to persuasion, as well as what the underlying process of persuasion may be. These issues are addressed in our unimodel of persuasion, described next.

### The Unimodel

Our persuasion unimodel is based on the Lay Epistemic Theory (LET) of the processes governing the formation of subjective knowledge (Kruglanski, 1989). Such knowledge may consist of judgments, opinions, or attitudes individuals may acquire or alter in various circumstances. Thus, in agreement with Chaiken et al. (1989), we view persuasion as integrally related to the general epistemic process of judgment formation. We believe it to be a motivated process of hypothesis testing and inference dependent on individuals' cognitive capacity and affected by cognitive availability and accessibility (Higgins, 1996) of pertinent information. More generally speaking, it is a process during which beliefs are formed on the basis of appropriate evidence.

### The Concept of Evidence

But how may the concept of evidence be understood? According to LET, *evidence* refers to information relevant to a conclusion. *Relevance*, in turn, implies a prior linkage between general categories such that affirmation of one in a specific case (observation of the evidence) affects one's belief in the other (e.g., warrants the conclusion). Such a linkage is assumed to be mentally represented in the knower's mind, and it constitutes a premise to which he or she subscribes. For example, an individual may be convinced that "if a candidate totally lacked political experience, he would make a poor president," or alternatively, maintain a belief in a conditional probability whereby "given that a candidate lacked experience, the chances of her making a good president are low (say 15%)." In both cases, granting our knower's beliefs, the candidate's lack of political experience becomes relevant evidence for his or her expected presidential performance. More formally speaking, the conditional belief linking (hence rendering relevant) the evidence to the conclusion is the *major premise* of a syllogism. Affirmation of the evidence in a particular instance—for example, compelling information that a specific Candidate X (say, Forbes) indeed lacked all political experience—constitutes the *minor premise*.

Jointly, the two premises yield the (logical or probabilistic) conclusion concerning Candidate X's future presidential attainments.

The LET notion of evidence is compatible with major analyses of this concept within the philosophy of inference (e.g., Achinstein, 1983; Carnap, 1962, sec. 86; Glymour, 1980; Hempel, 1965). More to the point, it is highly congruent with treatment of this topic in major social psychological models of persuasion. Most explicit recognition of those evidential properties is accorded by the probabilistic models of belief inference put forth by McGuire (1960) and Wyer (1970, 1974) and in the Bayesian analysis offered by Fishbein and Ajzen (1975, pp. 181–188). Kindred notions of evidence appear in dissonance and balance theories (for reviews see Kruglanski, 1989, chap. 5; Kruglanski & Klar, 1987), or in the theories of reasoned action (Fishbein & Ajzen, 1975) and planned behavior (Ajzen, 1991).

For instance, according to the theory of *planned behavior*, attitudes or evaluations of objects "follow reasonably from the beliefs we hold about that object" (Ajzen, 1988, p. 120). Thus,

we learn to like objects we believe have largely desirable characteristics, and we form unfavorable attitudes toward objects we associate with mostly undesirable characteristics. Specifically, the subjective value of each attribute contributes to the attitude in direct proportion to the strength of the belief, i.e., the subjective probability that the object has the attribute in question. (Ajzen, 1988, p. 32)

In terms of this discussion, the object's (positively or negatively) valenced attributes, as well as the outcomes the object may mediate (e.g., the health-promoting consequences of a given drug), constitute relevant evidence for its overall "goodness" or "badness," thus determining one's attitude toward the object. Presumably, this is based on a major premise, whereby the overall positivity of an object is conditional on the positivity of its attributes or mediated outcomes. In other words, if the object's attributes or mediated outcomes are believed to be positive (the minor premise), the object merits a positive evaluation (i.e., a positive attitude toward it); if these attributes or mediated outcomes are negative, it merits a negative evaluation (attitude). In the same way, then, that an enumeration of Bill Gates's assets may be relevant evidence for his wealth, a listing of Mother Teresa's good works is relevant evidence for her human kindness (meriting a positive attitude toward her), and a listing of aspirin's positive health implications is evidence for its medical benefits (also warranting a positive attitude). In summary then, a listing of positive (and/or negative) attributes associated with an object or positive and/or negative outcomes the object mediates af-

fects one's belief or subjective likelihood that it is good (or bad) in accordance with a major premise conditionalizing an object's overall "goodness" on the positivity of its attributes, outcomes, or both.

**The dual modes of persuasion as specific contents of evidence.** The foregoing notion of evidence is the integrative glue that binds together the dual modes of persuasion. Specifically, the distinction between heuristic (or peripheral) cues and message arguments is now assumed to represent a difference in contents of evidence relevant to a conclusion, rather than a qualitative difference in the persuasive process as such. Consider a statement ascribed to Dr. Smith, a noted environmental specialist, whereby "the use of freon in household appliances destroys the ozone layer, and therefore ought to be prohibited." This argument may seem to be persuasive evidence to a recipient whose background knowledge included the (major) premise that "if something contributes to the thinning of the ozone layer (then) it should be prohibited." Dr. Smith's specific argument supplies the minor premise that "the use of freon in everyday appliances does destroy the ozone layer." In other words, Dr. Smith's pronouncement constitutes the "evidence" that, granting the major premise, warrants the conclusion that "the use of freon ought to be prohibited." Such orderly and logical processing of a message argument from evidence to conclusion has been typically considered the hallmark of persuasion by the systematic or central route.

But consider now a recipient who did not subscribe to the notion that "anything that causes the thinning of the ozone layer ought to be prohibited." Alternatively, this same recipient might be strongly committed to the assumption: "If an opinion is offered by an expert, (then) it is valid." This assumption may serve as a major premise of a syllogism, and the realization "Dr. Smith is an expert" may serve as a minor premise, hence furnishing evidence that (granting the major premise) points to the conclusion "Dr. Smith's opinion (that the use of freon ought to be prohibited) is valid." Such reliance on source attributes (such as expertise) has been typically regarded as characteristic of persuasion via the peripheral or the heuristic route. Yet from our unimodel's perspective, the two persuasion types share a fundamental similarity in that both are mediated by if-then, or syllogistic, reasoning leading from evidence to a conclusion.

### Motivation and Cognitive Capacity

The foregoing, highly schematic (i.e., syllogistic or probabilistic) depiction of the evidence concept conceals the considerable amount of cognitive work often involved in constructing the evidence from the various

bits and pieces available to the recipient in a given persuasion setting. The evidence may have to be gleaned from a thicket of informational detail in which it is embedded. Furthermore, the major premises that lend evidence its perceived relevance may need to be retrieved from memory, or may need to be made accessible beyond some functional threshold of activation. The memory search and activation processes occur partially in reaction to information presented to recipients in a given persuasive setting, including the heuristic/cue-related information, as well as the message as such. Thus, in a proper sense, they constitute a "cognitive response to persuasion" (Petty, Ostrom, & Brock, 1981). Moreover, such activities often entail considerable "cognitive work" that is quite painstaking and laborious. It is here that motivation and cognitive capacity enter into the equation; if the information is lengthy, complex, or unclear, the distillation of intelligible evidence may require a considerable amount of processing motivation and capacity. Similarly, if processing motivation and capacity are relatively low, only relatively simple and straightforward evidence will register, and thus exert a significant persuasive impact. In what follows, we address first motivational and cognitive ability concerns in general. Then, we relate them to the specific issue of persuasion via single versus dual modes.

### Motivation

In agreement with the ELM and the HSM, the LET also assumes that persuasion, and the formation of subjective knowledge more generally, is substantially affected by motivation (e.g., see Kruglanski, 1989). The variety of possible motivations that may impact knowledge formation is quite considerable. An individual trying to crystallize a judgment on some issue may desire accuracy and confidence on the topic. However, the relative weight given these two epistemic properties may vary, often outside the individual's awareness (Austin & Vancouver, 1996). The greater the proportional weight assigned to confidence or assurance as such, the stronger the individual's motivation for nonspecific cognitive closure (Kruglanski & Webster, 1996). In contrast, the greater the proportional weight assigned to accuracy *per se*, the stronger will be the individual's tendency to avoid closure and remain open-minded. The needs for nonspecific closure or the avoidance of closure are nondirectional in that they do not bias the judgmental process toward any particular conclusions. Another epistemically relevant, nondirectional motivation is the need for cognition (Cacioppo, Petty, Feinstein, & Jarvis, 1996); that is, the proclivity for, and intrinsic enjoyment of, complex thinking and information processing (see also Thompson, Chaiken, & Hazlewood, 1993).

Additionally, the judgmental process is affected by various directional motivations, or needs for specific closure (Kruglanski, 1989, 1990). Such specific closures refer to contents that appeal to the knower for some reason, representing preferred conclusions he or she may wish to reach. These may encompass a broad range of possible conclusions including self-esteem concerns (including ego-defensive or enhancing motivations implicating conclusions favorable to one's self as the preferential closures), impression management concerns (implicating as preferential closure conclusions that one is favorably evaluated by significant others), concern with one's economic and physical well-being, with one's good fortunes in various domains, and so on. Each such category of preferred conclusions may be treated as a specific goal, considerably expanding the set of persuasively relevant motivations discussed in the persuasion literature so far. In short, according to LET, persuasion may be affected by a broad range of motivations including the three motivations specified in HSM (i.e., accuracy, defensive, and impression-management motivations) but also by additional motivations (e.g., need for nonspecific closure, need for cognition, and assorted needs for various specific closures).

The LET assumes that, generally speaking, all epistemic motivations impact the same broad parameters of judgment formation. These include initiation of a judgmental activity by a discrepancy between an actual and a desired epistemic state (whose specific nature depends on the momentarily operative motivation) and its termination when the discrepancy has been removed. Beyond initiating and terminating the epistemic activity, motivation may importantly affect the course of the persuasive encounter including its extent and direction. These may depend on both the quality and the magnitude of the underlying motivation for the activity. For example, the higher the need for (nonspecific closure; i.e., the greater its magnitude), the less extensive the information processing. By contrast, the higher the motivation for accuracy, or more specifically for the avoidance of closure, the more extensive the information processing (for discussion see Kruglanski, 1996b; Thompson & Kruglanski, 1998).

As implied earlier, motivation may also affect the direction of cognitive activity accompanying persuasion or judgment. Because a goal constitutes a cognitive structure (Austin & Vancouver, 1996; Bargh & Gollwitzer, 1994; Kruglanski, 1996a, 1996b; Srull & Wyer, 1986), its activation may spread to associated cognitions, increasing their accessibility (Higgins, 1996). This, in turn, may impact the construal of subsequent events (Higgins, Rholes, & Jones, 1977; Thompson, Roman, Moskowitz, Chaiken, & Bargh, 1994). Motivation may also affect selective attention to relevant stimuli. The attention-grabbing properties of

goal-relevant objects have been demonstrated in several studies (Berscheid, Graziano, Monson, & Dermer, 1976; Erber & Fiske, 1984; Ruscher & Fiske, 1990; Taylor, 1975).

In sum, the LET assumes that all instances of knowledge formation, including persuasion, are potentially impacted by a broad variety of motivations that affect the course of the judgmental process; that is, its extent (or depth) and direction. Later, we argue that these motivational effects are the same irrespective of whether the evidence for the judgments is contained in heuristics or cues, versus message arguments. Now, however, let us consider some cognitive ability concerns of pertinence to persuasion.

### Cognitive Ability: Its "Software" and "Hardware" Aspects

Both the ELM and the HSM stress that persuasion importantly depends on the recipient's cognitive ability. It seems important to further distinguish between a "software" aspect of ability, which we refer to as *capability*, and a "hardware" aspect, referred to as *capacity*.

**Capability.** The capability notion refers to the knower's possession of active cognitive structures that enable the reasoning process involved in the production of knowledge and judgment. In this sense, cognitive capability refers to the epistemic "software" that is stored in the individual's memory and selected or rendered operative in particular circumstances. As noted earlier, beliefs representing the major and minor premises from which judgmental conclusions are derived need to be both mentally represented or available (Higgins, 1996) in the individual's mental repertory, as well as sufficiently accessible, to be used in a specific instance. Take, for example, a physician who, after consulting an MRI scan, concludes that the patient has a slipped disk. This physician must have available and accessible (a) the mental representation linking a specific MRI pattern with disk slippage and (b) the representation asserting that the specific imaging pattern did indeed turn up.

Availability and accessibility of mental representations in a given content domain may both determine the extent of information processing and bias its direction. Extent of processing might be affected, for example, if a knower possessed many (vs. few) beliefs of the major premise type linking different types of evidence to conclusions about a given object. The application of multiple conditional beliefs may require the processing of different types of evidence, thus enhancing the amount (and duration) of processing. Occasionally, such evidence may give rise to conflicting inferences, requiring even further processing.

The biasing effect of mental representations (prior knowledge) refers to the fact that the presence of specific premises may direct the knower's attention selectively to categories those premises specify (see Spiegel, Kruglanski, & Thompson, 1998). For example, a premise specifying that "Only *unlit* streets in New York are dangerous" (i.e., "only if a street is unlit is it *then* dangerous") may bias the individual's attention toward the degree of lighting, whereas a premise specifying that "only streets between the 70th and the 90th are dangerous" may direct one's attention to the street number.

Recent empirical evidence has confirmed the importance of belief accessibility in the processing of both message and cue information in persuasion situations. With respect to message processing, Fabrigar, Priester, Petty, and Wegener (1998) found that experimentally increasing the cognitive accessibility of participants' attitudes toward an issue increased processing of subsequent persuasive communications, as evidenced by an enhanced persuasive impact of strong (vs. weak) message arguments. According to one explanation proposed by Fabrigar et al., this was due to spreading activation from the primed attitude to related knowledge and beliefs, which were subsequently utilized in participants' elaboration of the message arguments. Also, Howard (1997) reported that highly familiar (and hence, accessible) arguments (e.g., don't put all your eggs in one basket) had greater persuasive impact than less familiar arguments of comparable length and semantic meaning (e.g., don't risk everything on a single venture) for participants low (vs. high) in issue involvement, high (vs. low) in distraction, or low (vs. high) in need for cognition. With respect to the impact of heuristic and peripheral cues, Maio and Olson (1998) found that misrepresenting one's attitude toward a likable communicator increased subsequent agreement with the communicator's position toward an issue, presumably because dissimulation heightened the accessibility of participants' genuine attitude toward the source, and thus enhanced the operation of a "likability heuristic." Thus, recent research, as well as theoretical statements within the dual-process models, confirms our unimodel's position that availability and accessibility of relevant knowledge structures can enhance the judgmental impact of both heuristics and cues and persuasive arguments.

**Capacity.** The "hardware" aspect of cognitive ability refers to the "state of the machine," given the individual's degree of alertness, energy level, or cognitive load. It refers, in other words, to attentional capacity limitations on the amount of processing the knower is capable of carrying out at any given moment (Kahneman, 1973). Thus, under conditions that tax the

knower's cognitive capacity, he or she should be less able to process extensive bodies of information than under conditions where his or her capacity is relatively unencumbered. Again, we assume that cognitive capability or capacity considerations are unrelated to whether persuasion is accomplished via cues and heuristics or message arguments. We revisit this point later.

### The Unimodel and the Dual-Mode Frameworks: Compare and Contrast

As the foregoing discussion attests, the unimodel shares important points in common with the two dual-mode frameworks. All three formulations assume that the elaboration of persuasively relevant information can vary in extent. Similarly, all three assume that such elaboration can be affected by motivational and cognitive ability considerations. The unimodel differs from the dual-process frameworks, in that it (a) recognizes as relevant to persuasion a broader range of motivations than do the dichotomous models; (b) distinguishes between the software and hardware aspects of cognitive ability; and (c) is more explicit about the evidence concept, which it shares with prior, classic models of persuasion (McGuire, 1960; Wyer, 1970, 1974). It is this concept that warrants our essential claim for the unimodel, namely that heuristics or cues and message arguments all constitute forms (or content categories) of persuasive evidence.

It is instructive to consider this claim in reference to the motivation and cognitive ability factors outlined earlier. Specifically, we propose that these factors exert an identical impact on the processing of heuristics or cues and message arguments. To see why this is so, it is necessary to clarify at the outset what we take the terms *cues* and *heuristics* to signify. Essentially, we define them as information types extraneous to the message arguments as such. This definition is hardly esoteric. On the contrary, it is thoroughly consistent with discussions of these terms in the dual-mode literature. Both theoretically and empirically, cues and heuristics were invariably juxtaposed to message arguments. Even though in the ELM a specific bit of information (e.g., about the source's expertise) can act as a cue in some cases, and in other circumstances function as a message argument, it cannot serve as both at the same time (Petty, 1994). This suggests that the cue and argument *functions* are fundamentally different. In other words, within the ELM, the same bit of information can fulfill different functions in different circumstances. Cues have been contrasted with message arguments in the HSM research program as well. For example, although Chaiken and Maheswaran (1994) measured participants' cognitive responses both to the

source (*Consumer Reports* article vs. K-Mart brochure) and also to the message (promoting the XT-100 answering machine), they calculated their “valenced index of *systematic processing* ... [as] ... the net positivity of subjects’ positive and negative cognitive responses to *specific product attributes* [i.e., those mentioned directly in the communication]” (p. 465, *italics added*).

By contrast, in our unimodel, the function fulfilled by cues and heuristics and message arguments is essentially the same. Both serve as forms of evidence, hence they are functionally equivalent. As we see it, there is no inherent difference between a cue and heuristic function, and a message argument function, in the persuasion process.

We can now turn to the issue of whether heuristics and cues and message arguments are impacted differently by motivation and cognitive ability. Note that in this connection cues or heuristics, as information types extraneous to message arguments, need not systematically differ from arguments in their difficulty of processing. Thus, message arguments may be presented in a clear, succinct form requiring little decoding effort; in an oblique form; or replete with irrelevant detail that may render them extremely laborious to digest. Similarly, persuasively relevant information extraneous to the message (i.e., cues or heuristics) can be presented briefly and succinctly, or in a form that is particularly long and unwieldy. In fact, the notion that peripheral cues need not be very simple and straightforward, but rather could be elaborate and complex, was explicitly noted by Petty and Cacioppo (1986, p. 130).

If heuristic cues and message arguments do not systematically differ in their length or complexity, it follows then that their processing should not require systematically different amounts of either cognitive capacity (the hardware aspect of cognitive ability) or processing motivation. More generally, the effects of capacity or motivation should be the same irrespective of whether the evidence is comprised of cues and heuristics or message arguments. Again, precedent for this notion exists in statements from the dual-process literature. For instance, Chaiken et al. (1989) noted that “motivational variables such as personal relevance do not influence only the magnitude of systematic processing. These variables ... also enhance heuristic processing” (p. 226).

The directional biasing effects that various motivations or cognitive capabilities (the software aspect of cognitive ability) may induce also should have a similar impact on information irrespective of its evidential type. In reference to cognitive capability, Chaiken et al. (1989) noted that “heuristic processing depends on whether cognitively available heuristics are activated or accessed from memory” (p. 217). Similarly “systematic processing (depends) upon ... cognitive fac-

tors (e.g., the accessibility of knowledge structures that influence perceiver’s interpretation and evaluation of information” (p. 217). With regard to motivation, Chaiken et al. explicitly stated that “the multiple-mode HSM views processing mode and processing goals as orthogonal; heuristic and systematic processing occur in the service of the individual’s processing goal whatever that goal may be” (p. 235).

By now we have seen that heuristics and cues or message arguments share the same evidential structure, that they do not differ systematically in their length or complexity, and that they should be impacted similarly by cognitive ability or motivational factors. However, one still might ask whether these two forms of evidence differ systematically in any other way germane to persuasion. For instance, are message arguments as a category more or less relevant to persuasive conclusions than are heuristic cues? A moment’s reflection suggests that this could not be the case. Both message arguments and heuristics or cues may vary widely among themselves in their relevance to the conclusion. In fact, the “strong” or high-quality arguments in ELM research are such precisely because they are more relevant to the conclusion than are “weak” or low-quality arguments. Similarly, Chaiken’s work on the reliability of heuristics (Chaiken, 1987; see also Chaiken et al., 1989; Eagly & Chaiken, 1993) indicates that heuristics may differ in their perceived relevance to a conclusion. For instance, some people may subscribe to the premise “friends give good advice,” whereas other people may not. For the former person, the friendship status of the communicator is relevant to the validity of his or her advocacy, whereas for the latter, it is not. Although it is clear that both cues and heuristics and message arguments may exhibit within-category variability in relevance, can one assume that one of these categories is systematically more relevant than the other? The answer appears to be no. For a devoutly religious person, a “heuristic” involving the authority of God or of a central ecclesiastical text may seem more relevant to the veracity of a particular opinion than does a logically impeccable message argument of lowly, secular origin. In contrast, to an individual who is deeply suspicious and distrustful of institutional authority in all its forms, a message argument (even a technically flawed one) may nearly always appear more relevant to a conclusion than does information portraying a communicator as a renowned expert in the area. In short, the relevance of evidence to a conclusion is subjective, and fundamentally orthogonal to whether the evidence is a cue or heuristic or a message argument.

Is message-related evidence systematically more accessible in memory than heuristic evidence? The answer, again, seems to be no. As Chaiken et al. (1989) pointed out, different heuristics may differ in their accessibility, as may the premises relevant to

different message arguments. Nor should one expect that message arguments as a category will be more or less accessible than cues and heuristics as a category. Does message-related evidence differ from heuristic or peripheral evidence in ordinal position—another variable known to affect persuasion (Hovland, 1957)? In other words, is it inevitable that recipients encounter cues and heuristics before they encounter message arguments? Once more, no. Ordinal position, after all, is under the control of the presenter and has little to do with the content or type of information *per se*. For instance, the authors' credentials in "op-ed" pieces are often conveyed at the end of the article, that is, after the reader has been exposed to the "message" as such.

### An Interim Summary

It is time now to take stock, and revisit the "routes to persuasion" question: How many of them exist? According to our LET-inspired unimodel, most knowledge formation—persuasion being a specific case—is affected by a process wherein conclusions are inferred from subjectively appropriate evidence. This process, in turn, requires the construction of evidence both from the information presented and also from background notions stored in memory. Also, it is affected by the availability and accessibility of relevant knowledge structures influencing the recipient's cognitive capability to construct the evidence, by the type and amount of information presented, by the recipient's motivation to process this information deeply (vs. superficially), and by the recipient's cognitive capacity (or available attentional resources) for doing so. Applying our "rules of the game" for deciding process uniformity, the material reviewed thus far seems strongly consistent with our unimodel. This analysis, incorporating numerous statements in the dual-process literature, implies that heuristics, cues, and message arguments do not systematically differ on such persuasively critical variables as the accessibility or availability of premises related to conclusions, their degree of relevance to the conclusion, the length and complexity of information in which the persuasive information is embedded, or the order in which it is processed by the recipient. Moreover, heuristics and cues and message arguments do not appear to be impacted differentially by motivation or cognitive ability. In short, persuasion outcomes based on the processing of heuristics and cues, and of message arguments, do not appear to be functionally independent. Therefore, the case for the unimodel would seem to be solid. However, one minor obstacle mitigates against unequivocal acceptance of this conclusion: veritable mountains of published empirical evidence apparently suggesting the very opposite. We now proceed to examine this evidence in greater detail.

### Empirical Evidence for the Dual Modes

A major empirical point for the functional independence of psychological processes can be made through demonstrations that they are impacted differently by, and hence that they "interact with," other variables (Tulving, 1983). In the case of the dual-process models, the large body of empirical findings (for reviews see Eagly & Chaiken, 1993; Petty & Cacioppo, 1986) is commonly taken to suggest the presence of interactions between evidential content type (i.e., cue vs. argument) and determinants of "depth of processing" (e.g., motivation and cognitive capacity) on such significant persuasion outcomes as attitude change, its persistence over time, its resistance to counterpersuasion, and its relation to relevant, overt behaviors. Two categories of such interaction effects may be discerned. One we call *inferred* interactions, because these are cases where a variable's effect (e.g., that of distraction) is empirically observed in research incorporating one evidence type only (e.g., message arguments). The implicit, albeit untested, assumption in such a case is that the effect in question would fail to be manifest with the alternative evidence type (e.g., with cues or heuristics). The other type we call *manifest* interactions. These are cases where one evidence type (e.g., heuristic cues) is actually observed to interact with a determinant of processing extent (e.g., issue relevance or need for cognition) in a way patently different from that of the other evidence type (e.g., message arguments). We first consider findings in these two categories, reconsider them in terms of our unimodel, and then describe the empirical evidence supporting our reformulation.

**Inferred interactions.** The inferred interaction category is exemplified by research on distraction (for a review see Petty & Cacioppo, 1986, pp. 139–141). In the classical work by Petty, Wells, and Brock (1976), distraction was found to enhance persuasion by low-quality arguments and to decrease persuasion by high-quality arguments. Petty and Cacioppo (1986) concluded that "distraction is one variable that affects a person's ability to process a message in a relatively objective manner" (p. 141). Although in agreement with this conclusion, our perspective raises the question (addressed subsequently) of whether distraction may not interfere similarly with the processing of cue-related or heuristic information. We present evidence relevant to this issue later.

In a study by Schumann, Petty, and Clemens (1990), the repetition of message arguments extolling the desirable properties of a new pen increased the correlation between the positivity of recipients' attitudes toward this object and their expressed intention to pur-

chase it. Yet, it is unclear whether repetition of cue-based or heuristically based evidence (and the opportunity to thoroughly process it) might not affect the attitude-behavior correlation in much the same way. Here, the interaction between evidence form and repetition (as far as the attitude-intention relation is concerned) may be only inferred, rather than manifestly observed.

Cacioppo, Petty, Kao, and Rodriguez (1986) found that "attitudes toward the candidates in the 1984 presidential election predicted voting intentions and reported behavior better for people who were high rather than low in their 'need for cognition'" (Petty & Cacioppo, 1986, p. 180). They concluded that when dispositional factors enhance people's motivation or ability to elaborate message-relevant information, attitude-behavior correlations become higher. Yet, the need for cognition might also enhance people's motivation to process heuristic or cue-related information, thus increasing the correspondence between behavior and attitudes formed on the basis of information extraneous to the communication.

In research by Petty, Cacioppo, and Heesacker (1985), source credibility and message quality were deliberately confounded. Participants received either a high-quality message (in support of a senior comprehensive exam) delivered by a prestigious source or a low-quality message from a low-prestige source. They manipulated issue involvement to be high for half the participants (the advocacy was said to involve a change in policy at participants' own university), and low for the other half (the change was said to occur at a remote university). They found that under high personal relevance, the relatively positive attitude formed in the strong message/source (vs. weak message/source) condition persisted over a period of 10 to 14 days following exposure to the advocacy, whereas in the low-involvement condition the same difference did not emerge. Petty and Cacioppo (1986) concluded accordingly that "subjects who formed their initial attitudes based on a careful consideration of issue relevant arguments (high relevance) showed greater persistence of attitude change than those subjects whose initial attitudes were based primarily on the source cue (low relevance)" (p. 178). Yet, because of the confounding in this study of source prestige and message quality, one may not know for certain that an interaction occurred between evidential type and personal relevance with respect to the persistence of initial attitude change. Such an interaction is inferred, rather than being explicitly manifest, resting on the assumption that under high relevance recipients process primarily message arguments. If, however, high-relevance participants may be generally attentive to information, they might under some conditions (specified later) carefully process cue-related information as well (e.g., information about source expertise or prestige). Moreover, it is

possible that it is the care and thoroughness of processing, rather than the type of information processed (i.e., cues and heuristics vs. message arguments), which is the critical factor in determining the persistence of attitude change.

Finally, Petty and Cacioppo (1986) cited previous work (e.g., Burgoon, Cohen, Miller, & Montgomery, 1978; McGuire, 1964) that "attitudes can be made more resistant by motivating or enabling people to engage in additional thought about the reasons or arguments supporting their attitudes" (p. 182). We agree, but add the injunction that this should be so irrespective of the content type of the evidence on which the attitude, or the change in attitude, was based. As Petty and Cacioppo acknowledged, thus far these issues have not been adequately addressed in empirical research.

**Manifest interactions.** If the foregoing inferred interactions studies allow ambiguity as to whether cue or heuristic versus message argument-based persuasion is impacted differently by various factors, the manifest interaction studies answer the question directly and affirmatively. Prototypical of this research is the classic study by Petty, Cacioppo, and Goldman (1981) in which the following variables were manipulated orthogonally: (a) personal relevance of the issue to message recipients, (b) the quality of the arguments in the communication, and (c) the apparent expertise of the source. The data indicated clearly that personal relevance had the opposite persuasive effects in regard to source expertise than it did in regard to argument quality. Whereas argument quality was a more important determinant of persuasion for high- (vs. low-) relevance participants, source expertise was the more important determinant for low- (vs. high-) relevance participants. Taken at a face value, these interactive results and many similar ones reported in the literature (for reviews see Eagly & Chaiken, 1993; Petty & Cacioppo, 1986) appear to constitute powerful support for the dual-process models. They imply that the content type of evidence does in fact matter, and that cues and heuristics (vs. message arguments) are impacted in diametrically opposite ways by the very same moderator variables. Confirmation of the dual-process approach would appear virtually inescapable unless an alternative account of these results were possible.

### Reinterpreting Manifest Interaction Effects

Consider the research by Petty, Cacioppo, and Goldman (1981) cited earlier. In that experiment, cue information regarding source expertise (a) was presented to participants prior to the message arguments

and (b) was considerably briefer (in terms of the sheer number of words it contained) than message argument information. As a consequence, it seems plausible that the cue and heuristic information in this case was much easier to process than the message argument information. But earlier we noted that cue and heuristic information need not be briefer, less complex, or easier to process than message information. If one takes this notion seriously, and also assumes that the amount, complexity, and ordinal position of information in the communicative sequence do matter to persuasion, then one may account for previous findings without according a necessary role to the content type of the evidence.

It is entirely possible, in other words, that the reason why message arguments have had a greater impact under high (vs. low) issue involvement is that they were both more extensive and also appeared later in the informational sequence, either of which would have made them less likely to be thoroughly processed. As such, message arguments were particularly likely to benefit from the enhanced processing motivation en-

gendered in the high- (vs. the low-) involvement condition. Similarly, because the more extensive, and secondarily presented, message arguments failed to be processed carefully under the low-involvement condition; the brief, easily processed, and initially presented cue and heuristic information may have enjoyed a persuasive advantage in this situation.

The unintended covariation in the Petty, Cacioppo, and Goldman (1981) research between information length and ordinal position on the one hand, and the evidential type of the information on the other hand, is hardly unique. Quite the contrary, it is endemic in much of the work conducted with the ELM and HSM research programs. Thus, Petty's (1994) "State of the Art" review described six major (most frequently cited) ELM studies, and chapter 7 in Eagly's and Chaiken's (1993) volume discussed seven influential HSM studies. In all of this research, listed in Table 1, the message argument information was considerably more extensive, elaborate, and easy to process than the cue or heuristic information. Furthermore, in 9 out of

**Table 1. Characteristics of Message Arguments and Peripheral/Heuristic Cues From Studies Featured in Petty (1994) and Eagly and Chaiken (1993)**

Study	Type of Cue or Heuristic	Order of Presentation	Length of Arguments (A) and Cues, Heuristics (C)	Cues Seem Easier to Process?
<b>ELM studies</b>				
Heesacker, Petty, & Cacioppo (1983)	Source expertise	Cue first	A: <i>Several arguments</i> C: 30-word statement	Yes
Petty & Cacioppo (1984)	Number of arguments	Simultaneous	A: 3 to 9 arguments C: —	Yes
Petty, Cacioppo, & Goldman (1981)	Source expertise	Cue first	A: <i>8 elaborated arguments</i> C: Short statement	Yes
Petty, Cacioppo, & Schumann (1983)	Celebrity status	Cue first	A: 5 one-sentence arguments C: —	Yes
Petty, Harkins, & Williams (1980)	Group size	Cue first	A: <i>5-min videotape</i> C: Short statement	Yes
Wells & Petty (1980)	Head movements	Simultaneous	A: Short spoken editorial C: —	Yes
<b>HSM studies</b>				
Axsom, Yates, & Chaiken (1987)	Audience response	Simultaneous	A: 5-min audiotape C: —	Yes
Chaiken (1979)	Source attractiveness	Cue first	A: 2 brief oral arguments C: —	Yes
Chaiken (1980)	Source likeability	Cue first	A: 2 or 6 short arguments C: Paragraph	Yes
Chaiken & Eagly (1983)	Source likeability	Cue first	A: <i>5-min message</i> C: Paragraph	Yes
Chaiken & Maheswaran (1994)	Source credibility	Cue first	A: <i>450-word description</i> C: Short statement	Yes
Maheswaran & Chaiken (1991)	Consensus	Cue first	A: <i>450-word description</i> C: Short statement	Yes
Ratneshwar & Chaiken (1991)	Source expertise	Cue first	A: 9-sentence paragraph C: 2 short paragraphs	Yes

*Note.* In column 4, the longer set of information is italicized; in some cases, cues had no "length" per se; also, in Chaiken (1980) and Ratneshwar and Chaiken (1991), cue and argument information were roughly equal in length. ELM = elaboration likelihood model; HSM = heuristic systematic model.

the 13 studies the cue or heuristic information appeared before the message arguments, and in the remaining 4 studies, concomitantly with the message arguments. (For instance, in the research by Wells & Petty [1980] the cue consisted of the communicator's head movements that occurred as he was delivering the message arguments.) If our analysis is correct, controlling for informational extent and ordinal position should eliminate the apparent differences in the way cues and heuristics versus message arguments have interacted with various factors known to affect persuasion (e.g., involvement) in past research. These notions were examined empirically by Thompson, Kruglanski, and Spiegel (1998). We summarize their results later.

### Testing the Unimodel

#### Study 1

A major finding in the dual-mode literature has been that only message arguments but not cue-related or heuristic information drive attitude change when the issue is personally involving for the recipient (e.g., Petty, Cacioppo, & Goldman 1981). In contrast, when personal involvement is low, attitude change has been influenced primarily by cues or heuristics. As noted earlier, one reason for this may be that in the typical dual-mode study cue information is brief, whereas message argument information is relatively lengthy. When the issue is involving to the recipient, his or her motivation may be sufficiently high to prompt the relatively laborious processing that lengthy informational passages may require to yield a persuasive impact. According to the unimodel, however, the critical feature here is not whether the information is of the heuristic or cue versus message argument variety, but rather its length and complexity. Consistent with this logic, our first experiment utilized relatively long heuristic information manipulating apparent source expertise, followed by an equally lengthy paragraph containing message arguments about an issue. Cross-cutting the source expertise manipulation we varied the personal relevance of the issue. We predicted that the heuristic information in this case would have the greater persuasive impact in the high (vs. low) personal relevance condition. Specifically, the tendency of recipients to be more persuaded by the expert source than by the inexpert source should be greater when personal involvement was high than when it was low.

#### Participants and Procedure

Participants in our study, all introductory psychology students at the University of Maryland, College Park (UMCP), read an introductory paragraph about a

proposal to institute a policy requiring graduating seniors to pass a comprehensive exam in their major area of study. If implemented, participants were informed, the proposal would take effect the following year either at several schools in the Midwest (the low-involvement condition), or at several Mid-Atlantic schools, including UMCP (the high-involvement condition). Following that, participants received information about a potential speaker at a conference where implementation of the proposal would be decided. This information included a one-page résumé listing the educator's academic credentials and activities, followed by a letter he allegedly wrote in support of the comprehensive exam proposal.

All participants read a sample résumé of "Mr. David Whittaker," initially described as a "BA in Communications from Lincoln State University." Subsequently, however, the information diverged for the expert and inexpert conditions. In the expert condition, the résumé emphasized Whittaker's work on curriculum studies in higher education, including relevant publications and presentations at various professional meetings. In the inexpert condition, by contrast, the résumé listed instead Whittaker's work on physical education with an emphasis on special needs of elementary school students. All participants then read the same letter allegedly written by Whittaker to "Dr. Julian Bradshaw" of the "Interim Board on Improving Higher Education." After initially expressing strong support for implementing the exams, the letter listed six arguments in favor of the policy, adopted from Petty, Harkins, and Williams (1980). According to a pretesting, four of the arguments for the exams were moderately weak. They stated that the exams would "put the university at the forefront of a national trend," that "many parents were in their favor," that "the students' job prospects might be improved," and that the exams "would allow students to compare their achievements with students at other schools." Two of the arguments were strong, namely, that the exams "have been associated with a reversal in declining achievement test scores" and "with an increase in the quality of undergraduate teaching." After they finished reading the letter, participants responded to a variety of measures including manipulation checks on the expertise and issue involvement manipulations and the critical dependent variable; that is, their personal attitude toward the proposed exam policy.

#### Results

**Manipulation checks.** Appropriate manipulation checks verified that participants exposed to the expert source perceived his expertise as significantly greater than those exposed to the inexpert source ( $p < .02$ ), and that participants in the high- (vs. low-) in-

volvement condition indeed appeared to be more personally involved in the issue ( $p < .001$ ).

**Attitude toward comprehensive exams.** On the first page of participants' response booklet, they reported their personal attitude toward the proposed policy. First, they indicated "the extent to which you personally agree or disagree with the policy of requiring seniors to pass a mandatory comprehensive exam before they can graduate" by circling a number on a Likert-type, 9-point scale ranging from  $-4$  (*strongly disagree*) to  $4$  (*strongly agree*). Then they responded to three identically scaled semantic differentials to indicate the extent to which they thought that comprehensive exams for seniors ranged from  $-4$  (*bad, harmful, foolish*) to  $4$  (*good, beneficial, wise*). The four scores were highly intercorrelated ( $\alpha = .91$ ) and were combined to form an overall index of participant attitude. When the scores from this index were submitted to an Involvement  $\times$  Source Expertise ANOVA, a significant interaction emerged,  $F(1, 98) = 4.78, p < .05$ . As shown in Table 2, issue involvement decreased participants' favorability toward the policy when it was advocated by the inexpert and increased their acceptance of the policy when it was advocated by the expert. Most important, although communicator expertise made no difference in participants' attitude when they did not expect the policy to affect them personally ( $t < 1$ ), participants in the high-involvement condition evaluated the policy more favorably when it was advocated by the expert than when it was advocated by the inexpert,  $t(48) = 2.18, p < .05$ .

These results suggest that when the heuristic or cue information (in this case, information about the source expertise) is relatively lengthy and complex, participants under high involvement are more successful in realizing its implications than participants under low involvement. It begins to appear, then, that it is not the content or type of the evidence that matters but rather its length or complexity. Consistent with the unimodel, the motivational variable of issue relevance seems to have had the same effect on the processing of heuristic

and cue (i.e., nonmessage) information as it has had on message argument information in prior research.

## Study 2

Adequate processing of relatively lengthy and complex information requires not only the proper degree of motivation, but also sufficient cognitive capacity. Capacity-depleting events such as distraction or cognitive load should, therefore, attenuate the persuasive impact of such information. Indeed, prior research (e.g., the classic experiment by Petty et al., 1976) has demonstrated that distraction does interfere with the processing of message information, thus increasing the persuasive impact of low-quality arguments, and reducing the persuasive impact of high-quality arguments. As Petty and Cacioppo (1986) put it,

distraction is one variable that affects a person's ability to process a message in a relatively objective manner. Specifically, distraction disrupts the thoughts that would normally be elicited by a message. Distraction should be especially important as a thought disrupter when people are highly motivated and able to process the message. (p. 141)

The unimodel suggests, however, that capacity depletion would impact not only the processing of message arguments, but also of appropriately lengthy and complex heuristic information. Our second study explored this particular possibility.

The design of this study was the same as that of Study 1 except for two changes. For one, half the participants were run in a cognitive load (or distraction) condition. Also, to ensure that cognitive load would have an effect, all participants were run in a high-involvement condition to establish a sufficient baseline level of effortful processing. Second, and most important, a cognitive load manipulation was carried out. Half the participants were presented at the outset with a nine-digit number and were asked to rehearse it to themselves as they went through the materials, so as to be able to reproduce it later. Our interest was in seeing whether distraction would interfere with participants' ability to carefully process the information about the communicator's background, hence diminishing the persuasive advantage of the expert (vs. inexpert) source.

**Table 2.** Attitude Toward Mandatory Comprehensive Exam Proposal as a Function of Outcome-Relevant Involvement and Source Expertise (Study 1)

Source	Involvement	
	Low	High
Inexpert	−0.01 <sub>ab</sub>	−0.95 <sub>a</sub>
Expert	−0.54 <sub>ab</sub>	0.22 <sub>b</sub>

*Note.* Logical comparisons not sharing a common subscript differ at  $p < .05$ .

## Participants and Procedure

Participants in the study were introductory psychology students at UMCP. They all received instructions identical to those in the high-involvement condition of Study 1. As in that experiment, participants all read a

one-page (fictitious) résumé of Mr. Whittaker indicating that he was either relatively expert (or inexpert) in the domain of curriculum studies in higher education. Half the participants, those in the distraction condition, were shown a nine-digit number prior to reading the educator's résumé and were asked to silently rehearse the number until they were asked to write it down later during the session. No similar request was made to the remaining half of the participants, who were run in the no distraction condition.

## Results

**Manipulation checks.** As in Study 1, participants exposed to the expert source viewed his expertise as significantly higher than those exposed to the inexpert source ( $p < .001$ ). Furthermore, appropriate manipulation checks indicated that participants who rehearsed the nine-digit number while reading the source and message materials felt more distracted than those who did not rehearse a number ( $p < .05$ ).

**Attitude toward comprehensive exams.** The measure of participants' attitudes was identical to that of Study 1 ( $\alpha = .93$ ). When scores on this index were submitted to a Source Expertise  $\times$  Distraction ANOVA, a significant interaction emerged,  $F(1, 107) = 6.88, p < .01$ . As shown in Table 3, distraction tended to increase participants' favorability toward the policy when it was advocated by the inexpert, but to decrease their agreement when it was advocated by the expert. Specifically, communicator expertise did not reliably affect participants' attitude in the distraction condition,  $t(53) = 1.22, p = .224$ ; however, participants in the no distraction condition evaluated the policy more favorably when it was advocated by the expert communicator than when it was advocated by the inexpert,  $t(54) = 2.51, p < .02$ . It would seem then that relatively lengthy and complex heuristic information requires both sufficient cognitive capacity, as well as processing motivation, to yield a persuasive impact, just as with comparably elaborate message information in prior research. When such capacity is depleted, participants are less able to realize the implications of "heuristic" information about the source than they are when their attentional resources are fully at their disposal.

## Study 3

In Studies 1 and 2, by using relatively lengthy and complex source background information, we demonstrated that differences in apparent source expertise could have a greater, rather than lesser, impact under conditions of either high motivational involvement or

**Table 3.** *Attitude Toward Mandatory Comprehensive Exam Proposal Under High Involvement as a Function of Source Expertise and Distraction (Study 2)*

Source	No Distraction	Distraction
Inexpert	-0.74 <sub>a</sub>	0.87 <sub>b</sub>
Expert	0.71 <sub>b</sub>	0.13 <sub>ab</sub>

*Note.* Logical comparisons not sharing a common subscript differ at  $p < .05$ .

processing capacity, compared to conditions where those variables were constrained to be low. However, in those studies we did not attempt to replicate past findings using the more traditional, briefer presentation of source information. In Study 3, we employed the design and procedure of Study 2, but extended it by adding a short source background condition to create a  $2 \times 2 \times 2$  (Source Background [inexpert, expert]  $\times$  Distraction [no, yes]  $\times$  Source Background Length [short, long]) experimental design. We expected to replicate the Source Expertise  $\times$  Distraction effect from Study 2 when the source information was relatively long, as before. However, when the source information was shorter, and therefore less difficult to process when one is distracted, we expected to find only a main effect of expertise.

## Participants and Procedure

Participants were undergraduates at UMCP who took part either to partially fulfill a course requirement or in exchange for \$7. The procedure was identical to that of Study 2, with the exception of the additional short source background condition. Here, source information was condensed from the one-page résumé to a brief, two-sentence summary (approximately 50 words). In addition, we included self-report checks on the amount of effort participants felt was required to read both the information about the source, as well as that contained in his communication. These scales ranged from 0 (*no effort at all*) to 8 (*a great deal of effort*).

## Results

**Manipulation checks.** As expected, participants rated the source as more expert in the expert (vs. inexpert) condition ( $p < .001$ ) and they reported feeling more distracted when they had to rehearse the nine-digit string than when they did not ( $p < .001$ ). Finally, participants described reading the long versions of the source background as requiring more effort than the shorter versions ( $p < .02$ ).

**Attitude toward comprehensive exams.** We submitted the same composite measure of attitude used in Studies 1, 2, and 3 ( $\alpha = .92$ ) to an Expertise  $\times$  Distraction  $\times$  Background Length ANOVA. The pertinent means are displayed in Table 4. A significant main effect of source expertise,  $F(1, 118) = 6.27, p < .02$ , indicated that attitudes were more favorable when the source was an expert ( $M = 0.43$ ) than when he was not ( $M = -0.49$ ). This was moderated by a marginally reliable Expertise  $\times$  Distraction interaction,  $F(1, 118) = 2.77, p = .099$ . Just as we saw in Study 2, the impact of the expertise manipulation was greater when we did not distract participants,  $F(1, 61) = 8.99, p < .005$ , than when we did,  $F < 1$ . Finally, the predicted Expertise  $\times$  Distraction  $\times$  Length interaction,  $F(1, 118) = 6.10, p < .02$ , revealed that the by now familiar two-way interaction between expertise and distraction was reliable only when background information about the source was relatively long,  $F(1, 65) = 10.43, p < .005$ , and not when it was shorter,  $F < 1$ . Thus, it appears that distraction does not interfere with the processing of short cue or heuristic information of the type traditionally used in prior research, but it does significantly interfere with the processing of cue or heuristic information when the latter is sufficiently lengthy and complex.

## Study 4

As we have seen, in a typical persuasion experiment brief heuristic information (e.g., about source expertise) is followed by much lengthier and more complex message argument information. According to our analysis, it is the length and complexity of the information or its position in the sequence, rather than its content (i.e., being comprised of message arguments or cues and heuristics), that determine its persuasive impact. If so, the same pattern of interactions (e.g., with issue involvement) previously found to distinguish cue and heuristics from message arguments should obtain with any two informational sets, the first of which is rela-

**Table 4. Attitude Toward Mandatory Comprehensive Exam Proposal as a Function of Source Background Information Length, Cognitive Load, and Source Expertise (Study 3)**

		Source Background Information Length			
		Short		Long	
Cognitive Load	No Load	Load	No Load	Load	
Source expertise					
Inexpert	-0.52 <sub>a</sub>	-0.78 <sub>a</sub>	-1.05 <sub>a</sub>	0.65 <sub>bc</sub>	
Expert	0.57 <sub>ab</sub>	1.08 <sub>b</sub>	0.81 <sub>bc</sub>	-0.43 <sub>ac</sub>	

*Note.* Logical comparisons not sharing a common subscript differ at  $p < .06$ .

tively brief and simple and the subsequent one relatively lengthy and complex. Consider, for example, two separate sets of arguments exhibiting these characteristics. If the unimodel analysis is valid, the early appearing, brief arguments ought to exert greater persuasive impact under low as compared with high involvement, whereas the later appearing, lengthier arguments ought to exert greater persuasive impact under high as compared with low involvement.

Our Study 4 put these ideas to an empirical test. To that end, we independently manipulated the persuasive strength of brief, initial arguments supporting the comprehensive exam issue, as well as the strength of subsequent, extensive arguments that comprised a traditional persuasive communication. These were cross-cut with a manipulation of the recipients' personal involvement in the issue. In line with our single-process approach, we predicted that exposure to strong (vs. weak) initial, brief arguments would result in greater agreement with the communicator's position when issue involvement was low. Conversely, we expected that exposure to strong (vs. weak) subsequent, lengthy arguments would result in a more favorable attitude toward the communicator's position when issue involvement was high.

## Participants and Procedure

A total of 174 introductory psychology students (98 women and 76 men) at UMCP participated in a study allegedly about "how people form impressions of those who represent the interests of others." They read about a proposal to implement mandatory comprehensive exams at their university. In the high-involvement condition, they learned that if approved the policy would be implemented the following year, whereas in the low-involvement condition, they learned that it could not be implemented before 10 years hence. Participants were told that a number of educators had responded to a newsletter advertisement soliciting opinions about several new educational programs, in preparation for a national educational conference where the acceptance or rejection of those policies would be decided.

Participants then read two initial, one-sentence arguments allegedly submitted by a particular educator on a form from the newsletter ad, followed by six arguments (several sentences each) that comprised a formal letter to the National Board of Education expressing the educator's support for the mandatory exam policy. Argument quality (weak vs. strong) was manipulated independently both for initial, brief arguments and for subsequent, lengthy arguments. After reading the educator's letter, participants completed the four-item measure of attitude, as well as a number of checks on

the manipulations. Finally, participants were fully debriefed by the experimenter.

## Results

**Manipulation checks.** Participants who read the strong initial arguments rated this first set as higher in quality than did participants who read the weak, initial arguments ( $p < .001$ ). Also, participants who read the strong, subsequent arguments rated this second set as higher in quality than those who read the weak, subsequent arguments ( $p < .001$ ). Furthermore, participants rated the initial, brief arguments as requiring less processing effort than the subsequent, lengthy arguments ( $p < .05$ ). Finally, participants rated the policy as more personally relevant when issue involvement was high versus low ( $p < .001$ ).

**Attitude toward comprehensive exams.** The four-item index of participant attitude used in Studies 1, 2, and 3 ( $\alpha = .93$ ) was used here as well. An Initial Argument Strength  $\times$  Subsequent Argument Strength  $\times$  Issue Involvement ANOVA conducted on these scores revealed main effects for initial argument strength,  $F(1, 162) = 5.92$ ,  $p < .02$ , and for subsequent argument strength,  $F(1, 162) = 9.68$ ,  $p < .002$ . These means are displayed in Table 5. As expected, strong (vs. weak) initial arguments produced greater agreement with the communicator's position ( $M_s = 1.73$  and  $1.03$ ), as did strong (vs. weak), subsequent arguments ( $M_s = 1.79$  and  $0.91$ ). Also consistent with our predictions, the main effects of argument strength for both the initial and subsequent arguments were qualified by the issue involvement factor;  $F_s(1, 162) = 3.99$  and  $6.59$ , respectively, both  $p < .05$ . As depicted in the left panel of Table 5, strong (vs. weak) initial arguments elicited greater agreement in the low-involvement condition,  $t(77) = 3.15$ ,  $p < .005$ , than in the high-involvement condition,  $t(89)$ ,  $p < 1$ . However, as shown in the right panel of Table 5, strong (vs. weak) subsequent arguments induced more favorable attitudes when issue involvement was high,  $t(89) = 4.03$ ,  $p < .001$ , than when it was low,  $t(7) p < 1$ .

These results lend greater generality to the evidence supporting our persuasion unimodel. In particular, they speak to its proposition that the important characteristics of persuasive evidence (such as length/complexity, order, perceived relevance) are independent of whether such evidence constitutes cues or arguments. Previously, we demonstrated that nonargument cue information (e.g., pertaining to the expertise of the source) can have a greater, rather than lesser, impact on participants' attitudes when that information is made similar in length and complexity to that of message argument information typically used in prior research. In this study we showed further that variations in partici-

**Table 5.** *Mean Favorability Toward Mandatory Senior Comprehensive Exams in Study 4, as a Function of Issue Involvement and Strength of Initial, Brief Arguments (Left Panel), and as of Subsequent, Lengthy Arguments (Right Panel)*

Issue Involvement	Initial, Brief Arguments		Subsequent, Lengthy Arguments	
	Weak	Strong	Weak	Strong
Low	0.93 <sub>a</sub>	2.20 <sub>b</sub>	1.51 <sub>b</sub>	1.59 <sub>b</sub>
High	1.12 <sub>a</sub>	1.32 <sub>a</sub>	0.33 <sub>a</sub>	1.94 <sub>b</sub>

*Note.* Scores could range from  $-4$  (*very unfavorable*) to  $+4$  (*very favorable*). Entries not sharing a common subscript in each panel differ at the  $p < .05$  level.

pants' processing motivation had precisely the same moderating effect on the impact of brief, initially encountered persuasive evidence when that information was of the argument type as it has in past research when that information was of the cue or heuristic type. Variations in the strength of brief, initially encountered message arguments had greater impact on attitudes when issue involvement was low (vs. high), presumably because here participants' lesser elaboration of the subsequent, lengthier message arguments did not overwhelm the judgmental implications of the arguments they encountered earlier.<sup>1</sup>

## Discussion

The results of Studies 1 through 4 support, by and large, the basic premise of the unimodel whereby the

<sup>1</sup>In a recent consumer advertising study, Haugvedt and Wegener (1994) found that when they presented successive messages of comparable argument strength that varied in their advocacy (i.e., pro-con, con-pro), the attitudes of participants in the low- (vs. high-) involvement condition were more heavily impacted by the implications of the second message, whereas those of high- (vs. low-) involvement participants were more affected by the implications of the first message. Although these results may seem to contradict the results in our Study 4, it also is possible that the Haugvedt and Wegener findings had more to do with high personal relevance, prompting a stronger online issue evaluation goal, which would attenuate the "recency effect" of the second message, despite the fact that in the high- (vs. low-) relevance condition the latter message may have received more extensive processing (Hastie & Park, 1986; Mackie, Worth, & Asuncion, 1990). Thus, the stronger recency effect of the second message under low relevance may have counteracted the greater processing of the second message under high involvement, with respect to the statistical comparisons on participants' final attitude. Alternatively, conclusions reached through extensive processing of the initial message in the high-involvement condition may have biased the processing of the counteradvocacy in the second message, thus reducing acceptance of its position. Our experimental procedures differ in a number of other ways (e.g., length of argument sets, cover story, manipulation of argument strength) that make direct comparisons between the two studies difficult.

same persuasion process takes place irrespective of whether the persuasive evidence is contained in the message arguments or in the heuristic/cue-related information (e.g., about the source). Controlling for information length and complexity, the same persuasively relevant variables (processing motivation and cognitive capacity) seem to interact with heuristic/message argument information in the same ways that they were found to interact with message argument and heuristic information in prior research.

In these studies, when made appropriately lengthy, the heuristic or cue-related source information yielded no systematic effects under low issue involvement, unlike previous findings where it was found to exert its effects under such conditions. Moreover, whereas in prior research (e.g., Petty, Cacioppo, & Goldman, 1981) source information typically yielded no significant effects under high issue involvement, it did yield consistent effects across these studies.

An interesting question in regard to this last finding is whether the expertise effects in the high-involvement condition (in Studies 1, 2, and 3) might have been mediated via biased elaboration of the specific arguments presented in the message. Although this would hardly explain why, contrary to the dual-process models, expertise information exerted no persuasive impact in the low-involvement condition, it would be consistent with the dual-process notion that heuristic and cue information may occasionally bias the (central route or systematic) processing of message argument information, particularly when message quality is moderate, mixed, or ambiguous (e.g., Chaiken & Maheswaran, 1994; Petty et al., 1993). According to this view, the reliable source effects obtained under conditions of high involvement (or of low distraction) could be due to the extent to which the respective manipulations biased or guided effortful elaboration of the presented message arguments, in Studies 1, 2, and 3, where we combined strong and weak arguments to create mixed-strength messages of moderate overall quality. An alternative possibility suggested by the unimodel is that when the cue and heuristic (e.g., source) information is relatively substantial in amount, elaboration of that material itself could lead to greater confidence in the veracity of the advocated position, as well as to the generation of novel arguments that buttress that stance.

Note first that biased elaboration of message arguments seems unlikely in reference to Study 4. First, Chaiken and Maheswaran (1994) found biased systematic processing of message arguments only when message quality was mixed or ambiguous. In our Study 4, message quality (both for the initial, brief arguments and for the subsequent, strong arguments) was clearly weak or clearly strong. More to the point, no cue or heuristic information was varied in that particular study. Hence, the observed effects could not possibly

be explained by the biasing effects of cues or heuristics on central or systematic processing.

Finally, in regard to Studies 1, 2, and 3, there is another, more direct way to address the biased elaboration issue, namely by looking at our participants' cognitive responses to the persuasive materials with which they were presented. Specifically, we conducted regression analyses in each study to test whether the Source Expertise  $\times$  Involvement (or Distraction) effects we found on attitudes were mediated by the valence of participants' cognitive responses about the specific message arguments, or else (or additionally) whether these effects were mediated by the valence of thoughts about the source, the issue, or new arguments not mentioned in the message. Note in this connection that in the dual-mode literature, biased central or systematic processing seems to refer exclusively to the elaboration of the specific message arguments as such. For instance, Petty and Cacioppo (1986) stated that "variables can affect persuasion by affecting motivation and/or ability to process message arguments in a ... biased fashion" (p. 162); and methodologically, they instruct judges to examine all thoughts listed by participants and "to delete those that were clearly irrelevant to *the topic of the message*" (Petty et al., 1993, p. 11, italics added; see also Petty et al., 1995, pp. 119–122). Similarly, Chaiken et al. (1989) asserted that "heuristic cues may ... function to bias recipients perception of *message content*. ... In essence heuristic cues can be used to disambiguate *message content*" (p. 228, italics added).

In each of our experiments, participants were given 3 min after completing the main measures of attitude to list any thoughts they recalled having had while reading the materials earlier. These protocols were coded by independent judges (average agreement = 74%) as involving either the source (e.g., "He's well qualified to speak to this issue"), the presented message arguments (e.g., "It's dumb to think that having the exams will lead to higher salaries for graduates"), the issue globally (e.g., "Having the exams is a good idea"), novel arguments for or against the policy (e.g., "Having the exams will put pressure on professors to 'teach to the test'"), and unrelated statements (e.g., "It's hot in this room"). Coders also made the additional discrimination as to whether each thought was positive, negative, or neutral in valence. For each participant we created valenced indexes for the first four content categories by subtracting the number of negative thoughts from the number of positive thoughts.

Mediational analyses were conducted following the guidelines discussed by Baron and Kenny (1986). The results of these analyses (for detailed descriptions, see Thompson et al., 1998) indicated that although valenced thoughts about presented message arguments did predict attitudes, this particular cognitive response index was not in turn predicted reliably either by the

Source Expertise  $\times$  Involvement interaction (in Studies 1 and 3), or by the Source Expertise  $\times$  Distraction interaction (in Study 2). Finally, the direct effect of the experimental manipulations on attitude remained largely unchanged in each study, even after controlling for the effect of thoughts about the presented message arguments. Thus, in these studies, there was little evidence that the critical experimental interactions were mediated by thoughts about presented message arguments.<sup>2</sup>

Were the experimental effects then not mediated by participants' elaborations in these conditions? The answer is that they were, albeit not by the specific elaborations on the presented message arguments as such. In Studies 1, 2, and 3, a combined valenced index of global issue- and novel argument-related thoughts did predict attitude reliably, was itself predicted by the relevant interactions, and did reduce the impact of those same interactions on the index of participant attitude. In other words, this valenced cognitive response index did mediate the effect on attitude of the Expertise  $\times$  Involvement and Expertise  $\times$  Distraction interactions. The moral of the story? It is that extensive processing of source information can instigate considerable thinking about the issue that, in turn, may impact the individuals' pertinent attitudes. However, such thinking is not tantamount to central or systematic processing in as far as the latter have been operationally defined by the dual-process models in terms of elaboration on the specific message arguments presented.

### Further Dual-Process Issues

The foregoing studies hardly exhaust the plethora of issues dealt with in the voluminous dual-mode literature. Space constraints render this a nearly impossible mission for any article, this one included. Nevertheless, it would be appropriate to briefly touch on the implications of the unimodel for a few major such concerns.

**Reduced impact of cues under high elaboration likelihood.** As noted earlier, Petty (1994) explained the reduced impact of cues under high elaboration like-

<sup>2</sup>In Thompson et al. (1998, Study 3), regression analyses indicated that the main effect of source expertise on attitude was in fact mediated by our valenced index of participants' cognitive responses about the presented message arguments, but only in the short source background condition. Recall that in Study 3 issue involvement was fixed to be high for all participants. Thus, the overall set of conditions for these participants was much the same as for those in the high task importance condition of Chaiken and Maheswaran (1994), who also found that valenced thoughts about the presented communication mediated the source credibility effects on participants' final attitude. When the length of the source information in our study was constrained to be comparable to Chaiken and Maheswaran's, we replicated their biased systematic processing effect.

lihood (e.g., with high issue involvement) by invoking the hypotheses of (a) attention decrement (less attention being paid to cues when participants are thinking about message content); (b) salience loss of the cues "because of the extensive argument processing in which they are engaged" (Petty, 1994, p. 5); (c) cue-loss, "if the cue is drowned out by the arguments or is undermined by the implications of the arguments" (Petty, 1994, p. 5); (d) reduced cue extremity, because of lesser amount of thought about the cue when occupied with processing the message arguments (Tesser & Conlee, 1975); and (e) reduced cue weighting because by comparison with the message argument the cue may appear less relevant to the requisite judgments.

From the unimodel perspective, the *cue* and *message arguments* terms in Petty's (1994) analysis merely represent two types of information presented in sequence. The reduced attention, weight, saliency, or perceived relevance accorded to the brief, early appearing information could occur irrespective of whether it constituted either a cue or another message argument, as in our Study 4. Similarly, the more extensive, later appearing information could be a cue (e.g., extensive source information) rather than a message argument. In short, the patently reasonable hypotheses advanced by Petty to explain the reduced impact of cues under high elaboration likelihood may apply to all cases where either brief (or less apparently relevant) information of whatever type is followed by extensive (or more apparently relevant) information.

**The co-occurrence of systematic and heuristic processing.** The HSM stresses that heuristic and systematic processing can exert joint effects of three possible kinds: (a) the impact of heuristic cues may be attenuated by systematic processing whose implications contradict those of the cues; (b) heuristic cues may bias recipients' perceptions of message content; and (c) both message arguments and heuristics can exert independent, hence additive, effects on recipients' attitudes. But from the unimodel perspective all three types of joint effects (i.e., attenuation, bias, and additivity) should be possible under the appropriate circumstances irrespective of whether one type of information was heuristic and the other constituted a message argument, versus both representing heuristics, or both representing message arguments. Thus, we might see that the impact of argument A is attenuated by, biases the processing of, or exerts an independent effect with respect to argument B. Similarly, the impact of one type of nonargument, heuristic information (e.g., about the source's expertise), might be attenuated by, bias the processing of, or exert an independent effect with respect to another piece of heuristic information (e.g., about the source's trustworthiness), and so on.

**Multiple roles for variables in persuasion.** An important feature of ELM theorizing (e.g., see Petty, 1994) concerns the multiple possible roles a variable could play in persuasion. Specifically, in different circumstances any one variable could serve as a cue, a message argument, or a motivating factor affecting the extent of processing (Petty, 1994, p. 3).

It is noteworthy that the multiple roles concept is thoroughly compatible with our unimodel. From the present perspective, the notion that a variable (e.g., source expertise) could serve under some conditions as a cue (e.g., "She is an expert," "experts can be trusted") and under other conditions as a message argument (e.g., "She is an expert," "she was trained at Ohio State," "therefore, Ohio State training is good") could simply mean that the same information could be relevant to different inference rules, or probabilistic schemata, some related to the content of the message, other exogenous to its content. This does not mean to say that a variable plays a qualitatively different role when it fits one type of inference rule versus another. As noted earlier, the unimodel makes no distinction between the persuasive functions of cues and heuristics and message arguments. Both constitute types of evidence whereby conclusions can be reached. By contrast, the ELM assumption that the same information could occasionally serve as cue and at other times as a message argument implies that the cue and message argument functions differ. Finally, the unimodel is compatible with the notion that a given bit of information (either contained in the message arguments or exogenous thereto) could activate a processing goal, and hence be motivating. This follows from the increasingly recognized notion that motivation has a definite cognitive aspect, or that goals constitute a special type of knowledge structures (cf. Austin & Vancouver, 1996; Bargh & Gollwitzer, 1994; Kruglanski, 1996a, 1996b).

### Concluding Comments

The arguments and data presented in this article suggest that, on the whole, heuristics and cues and message arguments do not systematically differ on epistemic variables pertinent to persuasion (e.g., their degree of relevance to various conclusions, their availability or accessibility, their length or complexity, or their ordinal position), nor do they systematically interact with variables pertinent to persuasion (like issue involvement or cognitive capacity). It seems fair to conclude then that these two information types do not really signify two qualitatively separate, or functionally independent, processes whereby persuasion occurs. Rather, they are functionally equivalent in the persuasive process, both serving as evidence for the evaluative inferences perceivers draw. In other words,

this analysis seems compatible with our LET-based unimodel that explicates the essential components of persuasion (evidential premises, motivation, cognitive ability) implicated in all of its instances.

But can the unimodel notion be sustained? Is it compatible with what is generally known about the way our minds function? In what follows we briefly consider the single versus dual-process question in light of a major, pertinent distinction in cognitive psychology between two systems of reasoning—the associative and the rule-based (Sloman, 1996).

### Associative and Rule-Based Models of Reasoning and the "Routes to Persuasion" Issue

The partition between associative and rule-based reasoning goes back to James (1890/1950). It currently relates to a recent debate in cognitive psychology between those who

prefer models of mental phenomena to be built out of networks of associative devices that pass activation in parallel and distributed form ... (and) those who prefer models built out of formal languages in which symbols are composed into sentences that are processed sequentially (the way computers function). (Sloman, 1996, p. 3)

In the context here, the dichotomy between associative and rule-based reasoning raises two fundamental questions: (a) To what extent does it map onto, and in that sense support, the current distinctions between the two persuasion modes in either the ELM or the HSM? and (b) What does it imply for the feasibility of our unimodel? We consider both questions in turn.

### Two Reasoning Systems and the Dual-Process Models

Although the distinction between two modes of reasoning has had a distinguished history, it does not command as yet a general consensus in cognitive psychology (cf. Margolis, 1987; Sloman, 1996). For the sake of argument though, let us assume it is valid. The issue then becomes to what extent it relates to the two persuasion modes depicted in the ELM and the HSM. Our answer is that it does not; hence, this particular distinction seems rather irrelevant to the "routes to persuasion" issue.

First, rule-based reasoning is common to both persuasion modes, rather than constituting the defining characteristic of only one of the modes, according to both the ELM and the HSM. Systematic and central processing are quintessentially rule based, depending as

they do on the quality (i.e., logical plausibility) of the arguments contained in the message. So too, however, are the heuristic and peripheral modes. Thus, in the HSM heuristics are virtually defined as “simple inferential rules” and heuristic processing is regarded as largely “theory driven” (Chaiken et al., 1989, p. 213). Similarly, in the ELM, peripheral processing is based on “various persuasion rules or inferences” (Petty & Cacioppo, 1986, p. 130). Furthermore, “In addition to the relatively simple acceptance and/or rejection rules, … (peripheral processing) may be affected by more complex reasoning processes, such as those based on balance theory … or certain attributional principles” (p. 130). It is true that peripheral processing is also said to include “rather primitive affective and associational process” (p. 129) such as classical conditioning (Staats & Staats, 1958; Zanna, Kiesler, & Pilkonis, 1970) or mere exposure (Zajonc, 1968) and in that sense it may encompass both associative and rule-based reasoning. However, there seems no good reason to believe that such affective and associative processes are restricted to any particular type of information, in this case information exogenous to the message arguments (i.e., to cues and heuristics), that may not be equally instigated by message arguments (e.g., emotion-laden ones) as well. In short, the associative–rule-based distinction between types of reasoning does not adequately map onto the currently proposed divisions between the two, qualitatively distinct persuasion modes. Hence, it does not really bear on the routes to persuasion question one way or the other.

### The Modes of Reasoning Issue and the Unimodel

Our unimodel of persuasion assigns a central role to (syllogistic or probabilistic) reasoning from evidence to conclusion; hence, it clearly belongs within the rule-based category. The possibility that persuasion may be occasionally accomplished alternatively (i.e., associatively) might thus restrict the generality of our formulation. It seems appropriate to repeat in this regard that the question of whether associative and rule-based reasoning qualitatively differ is far from being settled within cognitive psychology proper. In a recent review, Sloman (1996) noted that, as compared with the case for rule-based reasoning, “the case for associative processes in reasoning … is less compelling” and “any apparently associative process can be described as rule-based” (p. 11). Sloman (1996) went on to argue, nonetheless, that the hypothesis of two reasoning systems is supported by evidence that occasionally people may “simultaneously believe two contradictory responses” whereby belief is meant “a propensity, a feeling or conviction that a response is appropriate” (p. 11). He gives as a striking example the case of the Muller–Lyer illusion in which measure-

ment and eye-balling yield disparate, yet highly credible, conclusions.

We admit to finding such data less than completely compelling evidence for qualitatively different systems in so far as credible, yet contradictory, conclusions seem equally attainable via different applications of the very same (e.g., a rule-based) system. Note that the rules being applied need not be objectively, but only subjectively, correct. For instance, applying simultaneously the rules “all professors are disorganized” and “all Japanese are organized” one may reach two incompatible conclusions about a Japanese professor. Similarly, two objectively “correct” rules may yield incompatible conclusions because one is applied incorrectly. For example, because in cases of erroneous application the counting rule may occasionally yield a different outcome than the multiplication rule, the person performing the calculations may feel subjectively assured (inappropriately, of course) that he or she has both counted and multiplied correctly, giving rise to two incompatible conclusions and a maddening impasse. In short, the “two incompatible conclusions” criterion does not seem a particularly compelling marker of a two systems framework. All things considered then, it seems fair to conclude that as of now our unimodel and various alternative rule-based models (McGuire, 1960; Wyer, 1974), remain viable as general depictions of the persuasion process.

### Implications of The Unimodel

The unimodel represents a fundamental critique of the dual-process frameworks in one sense only. It disputes the central assumption of these frameworks that a qualitative difference in the persuasion process hinges on whether persuasion is accomplished by the processing of message arguments versus the processing of information exogenous to the message; that is, by cues or heuristics. Our conclusion as to the uniformity of process in these two instances is supported not only by our own analysis and empirical results, but also, strikingly, by statements of the dual-mode theorists themselves. As noted throughout, many of the arguments here (e.g., for the similar way in which various factors affect heuristic- or cue-based and message-based persuasion) were either explicitly articulated or at least strongly implied in the dual-mode literature. In this sense, this conceptualization merely spells out the logical consequences of considerations recognized at some level, but not fully followed through, within the dual-mode frameworks. Also, we essentially agree with the dual-mode theorists on the role that motivational and cognitive factors play in determining the extent to which available evidence gets processed. Third, as ample evidence attests (see Eagly & Chaiken, 1993, for a review), the dual-mode frame-

works work very well in situations where brief cue, or heuristic, information is followed by more extensive message arguments. Where such situations are encountered the dual-mode frameworks may work well indeed. How often they occur outside the lab, however, is more difficult to ascertain.

Occasionally, information about the source's reputation may need to be processed extensively and laboriously, and subsequent message arguments may be relatively brief, and require much less processing effort. For example, when an "expert witness" testifies in a legal case, there often may be extensive, tortuous debate between the prosecution and the defense, as the respective sides attempt to establish (or undermine) before the jury the expert credentials of the witness (i.e., heuristic information). This may, in some cases, be followed by the expert making a couple of focused points about a fairly specific point of evidence (i.e., message arguments). In other cases, we may first read an elaborate essay in a magazine (i.e., be exposed to an extensive message) and only at its conclusion be presented with a byline specifying the writer's credentials. In all such fairly common situations, the current dual-mode analyses may not apply. In short, because of the infinite heterogeneity of real-world situations, the frequentist argument—that in the real world the cue or heuristic versus message argument distinction is confounded actuarially with the length and complexity of information, its relevance, or its ordinal position—is rather difficult to verify.

More important, the unimodel offers a number of serious advantages for persuasion researchers. Not the least of these is its considerable generative potential as a source of novel, testable predictions. In that regard, our studies merely scratch the surface. Although they call attention to the need to control for different types of persuasive information (i.e., heuristics and cues vs. message arguments) for length, complexity, and ordinal position, additional research is needed to demonstrate the need to control also for its perceived relevance to the conclusion and for the availability and accessibility of its premises (see Spiegel et al., 1998).

Furthermore, whereas prior dual-process research has stressed the biasing potential of heuristics or peripheral cues on systematic or central processing of presented message arguments, the unimodel predicts that the flow of bias can be bidirectional; that is, processing of initial arguments can bias the subsequent processing of nonmessage, cue information, just as initial cues can affect the interpretation of subsequently encountered communications. For instance, if the message argument impressed one as particularly compelling, one might process source information in a biased way by accentuating positive (and downplaying negative) information pertaining to source features such as expertise, trustworthiness, and likability.

Finally, the unimodel implies that major persuasive advantages, such as increased persistence of attitude

change, resistance to counterarguments, and a link to behavior derive from the depth or extent of processing, rather than the type of information processed (i.e., heuristics and cues vs. message arguments). By contrast, in the dual-mode literature such properties typically are linked to the processing of message arguments. For instance, Petty and Cacioppo (1986) stated that

the ELM predicts that people who come to accept an issue position because of a peripheral cue (e.g., source expertise) should be more susceptible to an attacking message than people who adopt the same issue position based on a careful scrutiny and elaboration of message arguments. (p. 182)

In addition, they asserted more generally that "Attitude changes that result mostly from processing issue-relevant arguments (central route) will show greater temporal persistence, greater prediction of behavior, and greater resistance to counterpersuasion than attitude changes that result mostly from peripheral cues" (p. 175).

In general, the unimodel forms a bridge between prior persuasion work that stressed the syllogistic (or probabilistic) processes whereby people's attitudes and opinions are formed or altered (McGuire, 1960; Wyer, 1970, 1974) and contemporary work highlighting both the extent and depth of information processing involved in persuasion, as well as the motivational and capacity factors that affect it. Whereas previous work affirmed that people's conclusions are largely consistent with their premises (cf. McGuire, 1960; Wyer, 1976), we assume that when persuasively relevant information is extensive or complex, this degree of consistency will be maximized when sufficient processing motivation and attentional resources allow recipients to fully apply their premises to the information at hand. These issues could be fruitfully investigated in future research.

The unimodel also abounds with implications for real-world persuasion contexts that expand the range of tools in the communicator's kit and lend increased flexibility to their endeavors. To mention just a few examples, it opens the possibility of effectively using contextual information exogenous to the message arguments (i.e., cuelike, heuristic information) *vis-à-vis* issues of high personal relevance to the recipients. Similarly, it affords the possibility of effective persuasion via message arguments when the recipient's processing motivation is low, providing that such messages are appropriately terse and easily understood (e.g., Howard, 1997). It suggests that distraction and repetition techniques, to name a few, may work as well with persuasion driven by contextual information as with that based on message arguments.

Of special significance, the unimodel offers the fundamental conceptual advantages of parsimony and integration. Such integration consists not only in

synthesizing the ubiquitous dual modes into one, but also in forging linkages to previous models of persuasion and attitude change, such as McGuire's (1960, 1968) and Wyer's (1970, 1974) probabilistic notions, the theories of reasoned action or planned behavior (Ajzen, 1988; Fishbein & Ajzen, 1975), or the various cognitive consistency models of attitude change like Festinger's (1957) or Heider's (1958). In all these approaches, as in the unimodel, the concept of persuasive evidence that supports (i.e., is consistent with) or undermines (i.e., is inconsistent with) a conclusion plays a major role (see Kruglanski, 1989, chap. 6; Kruglanski & Klar, 1987). These explicit ties to past theorizing and research both highlight the cumulative nature of our progress in understanding persuasion and take advantage of important prior insights and discoveries.

Finally, but by no means least important, the unimodel integrates the Laswellian dictum to which much social psychological research on persuasion heretofore was indebted. Specifically, Laswell's (1948) slogan of "who says what in what channel to whom and with what effect" (p. 37) traditionally has been taken to indicate the separateness of its various terms. Here, the unimodel implies a fundamental shift in perspective. Within our new paradigm neither the source, the channel, nor the message any longer represents a distinct entity in the world external to the perceiver. Nor are they treated as separate from the recipient as such. Rather, they all are part and parcel of the recipient's cognitive repertory, represented (as premises and assumptions) in the belief systems that populate his or her mind. Although their distinctness may be what meets the eye, their profound commonalities and functional equivalence may be what ultimately matters for understanding the processes underlying the phenomena of persuasion.

## Notes

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