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Motivated Heuristic and Systematic Processing

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Even after a quick scan of the three target articles, many readers are likely to be struck by the simultaneous scope and coherence of a single symposium on motivated cognition. Our mission here is to present our own work on motivated cognition, in which we have examined the impact of motivated heuristic and systematic processing on social judgment (for reviews, see Chaiken, Giner-Sorolla, & Chen, 1996; Chaiken, Liberman, & Eagly, 1989) and to highlight ways in which our work dovetails with the arguments put forth in the target articles.

Heuristic and Systematic Modes of Information Processing

Our thinking and research on motivated cognition is theoretically grounded in the heuristic–systematic model (e.g., Chaiken, 1980, 1987; Chaiken et al., 1989). This model is one of a growing family of dual-process theories in social psychology, each of which argues, in some manner, that social judgments can be formed on the basis of more and less thoughtful cognition (e.g., Chen & Chaiken, 1999; Fiske & Neuberg, 1990; Petty & Cacioppo, 1986; for a review, see Chaiken & Trope, 1999). The heuristic–systematic model's dual-process framework proposes two basic modes of processing by which social judgments can be made—the heuristic and systematic modes of processing.

Heuristic processing involves the use of judgmental rules or "heuristics" (e.g., "Consensus opinions are correct"). Heuristics are knowledge structures, presumably learned and stored in memory. Judgments formed on the basis of heuristic processing reflect easily processed heuristic cue information (e.g., source expertise), rather than individualistic or particularistic information. As such, heuristic processing makes minimal cognitive demands. However, the heuristic mode is constrained by basic principles of knowledge activation and use—namely, availability, accessibility, and applicability (e.g., Higgins, 1996). That is, heuristic processing requires that heuristics are stored in memory (i.e., available), are retrieved from memory (i.e., accessible), and are relevant (i.e., applicable) to the judgmental task at hand.

Systematic processing involves a relatively comprehensive and analytic scrutiny of judgment-relevant information. As such, systematic forms of processing require cognitive ability and capacity. Judgments formed on the basis of systematic processing involve a relatively in-depth treatment of judgment-relevant information and are accordingly responsive to the semantic content of this information.

Although either may occur alone, heuristic and systematic modes of processing may also co-occur (Chaiken et al., 1989; cf. Petty & Cacioppo, 1986). For example, they may co-occur in an additive fashion (e.g., Maheswaran & Chaiken, 1991) or in such a way that the judgmental implications of one mode bias the nature of the other (e.g., Chaiken & Maheswaran, 1994).

Motivational Underpinnings of the Heuristic–Systematic Model

So where is the "motivation" in the "cognition" of the heuristic–systematic model? Motivation plays two roles in the theory. First, *level* of motivation predicts whether heuristic or systematic forms of cognition will predominate in a given judgmental setting. Second, *type* of motivation predicts the nature or "direction" of whatever cognition occurs. We consider each of these roles in turn.

The Sufficiency Principle

The heuristic–systematic model assumes that perceivers are economy-minded (e.g., Chaiken, 1980,

1987; Fiske & Taylor, 1991)—that is, guided in part by least effort motives in their information processing. Thus, heuristic processing is often expected to prevail over systematic processing because the latter is more cognitively demanding. At the same time, the model recognizes that there are motives other than cognitive economy. Indeed, the model's sufficiency principle contends that perceivers attempt to strike a balance between minimizing cognitive effort and maximizing confidence that a given judgment satisfies other relevant motives (Chaiken et al., 1989; Chaiken, Giner-Sorolla, & Chen, 1996; see also Simon, 1976). For any given judgment, the sufficiency principle proposes a continuum of judgmental confidence, along which two critical points lie: one designating perceivers' level of actual confidence and the other designating their level of desired confidence, or sufficiency threshold. The *sufficiency threshold* is that point at which perceivers feel confident that the judgment will satisfy their currently operative motives. Assuming adequate capacity, perceivers exert cognitive effort until their level of actual confidence reaches their sufficiency threshold, or desired confidence level.

Despite requiring greater cognitive resources, systematic processing is generally more effective in increasing subjective confidence than heuristic processing. Thus, systematic processing is likely when the gap between actual and desired levels of judgmental confidence is widened. An increase in perceivers' level of motivation is one factor that elevates sufficiency thresholds, thereby widening confidence gap and instigating systematic processing. In contrast, a decrease in level of motivation deflates sufficiency thresholds, shrinking confidence gaps and rendering it more likely that heuristic processing alone can confer the judgmental confidence needed to close the gap. In short, higher levels of motivation tend to elicit systematic processing, whereas lower levels tend to result in a reliance on heuristic processing.

The Multiple-Motive Framework

Orthogonal to level of motivation, the heuristic–systematic model maintains that there are multiple types of motives that influence the nature of processing. Thus far, the multiple-motive framework of the model has examined three broad motives: accuracy, defense, and impression motivation (Chaiken, Giner-Sorolla, & Chen, 1996). This framework builds in part on theorizing and research on the functional underpinnings of attitudes (e.g., Katz, 1960; Smith, Bruner, & White, 1956; Snyder & DeBono, 1987). We describe our view of each form of motivated processing in the following sections.

Accuracy motivation. Accuracy-motivated processing entails an open-minded and evenhanded treatment of judgment-relevant information (Chaiken, 1980, 1987). When either or both motivation and cognitive resources are minimal, accuracy-motivated perceivers may simply base their judgments on the heuristic cue information seen as best suited for achieving their accuracy goals. With higher accuracy motivation and sufficient cognitive resources, however, they are likely to engage in systematic processing to reach their heightened accuracy sufficiency thresholds, which is the point at which they feel adequately confident that a given judgment will satisfy their accuracy concerns (Chaiken, Giner-Sorolla, & Chen, 1996).

Defense motivation. Defense motivation reflects a desire to form judgments congruent with one's perceived material interests or self-definitional beliefs (Chaiken, Giner-Sorolla, & Chen, 1996). Self-definitional beliefs are those closely tied to the self, often involving one's values, social identities, or personal attributes. Defense-motivated perceivers aim to preserve the self-concept and thus process information selectively.

Defense-motivated heuristic processing involves the selective use of heuristics. Heuristics that have judgmental implications congenial to perceivers' existing beliefs are especially likely to be used, whereas incongenial heuristics may be ignored or disparaged. Hence, defense-motivated perceivers may rely on the same heuristics that accuracy-motivated perceivers rely on, but in a selective manner.

When defense motivation is high and cognitive resources are available, defense-motivated systematic processing is likely to emerge, characterized by effortful but biased scrutiny and evaluation of judgment-relevant information. Information that is congruent with one's existing beliefs, such as research supporting one's position on abortion, will be judged more favorably than incongruent information (e.g., Lord, Ross, & Lepper, 1979; Pyszczynski & Greenberg, 1987). In fact, incongruent information may be scrutinized in an effort to derogate its validity (e.g., Ditto & Lopez, 1992; Liberman & Chaiken, 1992).

Predictions for defense-motivated processing follow the sufficiency principle. Whether defense motives engender heuristic, systematic, or some combination of the two processing modes depends on factors that influence perceivers' actual and desired levels of confidence that their judgments will satisfy their defense motives. Heuristic cue information incongenial to one's valued opinions undermines one's actual confidence, inciting defense-motivated systematic processing to close a

widened confidence gap. Congenial heuristic cue information, on the other hand, boosts actual defensive confidence, shrinking the confidence gap and rendering systematic processing less likely (see Giner-Sorolla & Chaiken, 1997).

Impression motivation. *Impression motivation* refers to the desire to form judgments that will satisfy current social goals. Thus, impression motives elicit a consideration of the interpersonal consequences of expressing a particular judgment in a given social context. Like defense-motivated processing, impression-motivated processing is selective, but this selectivity is directed at satisfying social goals rather than the preservation of self-definitional beliefs (Chaiken, Giner-Sorolla, & Chen, 1996).

Impression-motivated heuristic processing entails the selective use of heuristics. For instance, a "moderate opinions minimize disagreement" heuristic may be applied to serve the goal of having a smooth interaction with a person of unknown views. When others' opinions are known, a "go along to get along" heuristic may be used. With sufficient cognitive resources and higher levels of impression motivation, individuals may also process in more effortful, although similarly selective, ways. For example, Chen, Shechter, and Chaiken (1996) found that impression-motivated participants systematically processed information about an attitudinal issue in a way that was judgmentally consistent with the attitude of an anticipated interaction partner. That is, they selectively applied a "go along to get along" heuristic based on easily processed information about their partner's attitude on the issue, which then biased the evaluative nature of their systematic processing.

The impression sufficiency threshold refers to that point of processing at which perceivers feel sufficiently confident that their judgments will satisfy their social motives. Heuristic processing should confer sufficient confidence in situations that elicit minimal impression motivation. In contrast, when impression motivation is higher and cognitive resources are available, perceivers are likely to systematically process information in a way biased toward achieving their interpersonal objectives.

Building Conceptual Bridges

By now it should be clear that we wholeheartedly agree with the overarching thrust of the three target articles. What conceptual bridges can be built between our work on motivated heuristic and systematic processing and each of the three target articles?

Familiar Motives

We see familiar motives in the ideas and research presented in the three target articles. In heuristic–systematic terms, the primary motivation operating in the work of Kunda and Sinclair, Dunning, and to some extent Murray, appears to be defense motivation—the desire to form judgments that are congruent with one's perceived material interests or existing self-definitional beliefs.

Kunda and Sinclair (this issue) argue that stereotyping may occur in the service of forming a "desired impression of an individual." In the findings they report, the desirability of an impression is determined by its congruence with the self-definitional belief that one is competent and worthy. That is, an impression is desired to the extent that it serves the defense-motivated concern of maintaining or reaffirming positive self-regard. Dunning's (this issue) work also focuses on defense motivation. He argues that the very nature of social schemata is colored by the motivation to maintain and enhance self-worth.

The motivation driving the motivated construals discussed by Murray (this issue) is most obviously akin to the heuristic–systematic model's impression motivation. Indeed, Murray's motivated construals reflect, perhaps, the most fundamental of impression motives: the need to bond with and remain connected to significant others. Yet, Murray's brand of motivated cognition also implicates self-related or defensive motives in that self-esteem moderates the emergence of these motivated construals of significant others. Unlike high-self-esteem individuals, for those with low self-esteem, defensive motives prevail over impression motives—low-self-esteem individuals are less willing to take the "leap of faith" inherent to idealizing significant others, perhaps out of fear that their acceptance and idealization will not be reciprocated. If we are correct in relating motivated construals to the heuristic–systematic model's defense and impression motives, Murray's research represents an interesting case of the interaction of different types of motivations. As such, it has implications for our own recent theorizing on the implications of competing motivations for social judgments (Zuckerman, 1997).

Overall, to the extent that there is a set of "core" motives being examined in research on motivated cognition, conceptual bridges should be easier to build and to cross. For instance, although Kunda and Sinclair (this issue) focus on defense-motivated stereotyping, perhaps the same kind of motivated picking and choosing among stereotypes occurs when impression motives are operative. On the other hand, it may be that there is a "special" relationship between defense motivation and stereotyping. That is, stereotypes in the lab and in the real world are often derogatory, rendering

them particularly "useful" to the defense-motivated perceiver's desire to maintain or enhance a sense of positive self-regard.

Level of Motivation Matters

The heuristic–systematic model is explicit in how level of motivation plays a role in predicting when and in what form motivated cognition is likely to occur. Specifically, increases in level of motivation are associated with a greater likelihood of systematic processing. Although the three approaches in the target articles discuss level of motivation much less explicitly, they do appear to make implicit assumptions that seem compatible with our views on the role of level of motivation.

Although the empirical evidence Kunda and Sinclair present for motivated activation, application, and inhibition of stereotypes pertains primarily to defensive motives and the need to form judgments that reflect positively on the self, these authors also suggest that people have a need to feel justified in rendering such judgments. From our perspective, we wonder if the need (conscious or unconscious) to feel that one's judgments are justifiable is at all analogous to the concept of a sufficiency threshold, which refers to that point of processing at which perceivers feel sufficiently confident that their judgments will serve their motivational concerns. Would manipulating the extent to which perceivers feel their judgments are justifiable affect the likelihood of motivated activation, application, and inhibition of stereotypes? Or, what happens when there are no stereotype-relevant cues to support one's desired judgment? Would people turn to systematic processing—that is, suspend judgment, avoid reliance on stereotypes, and individuate because their motives have not yet been satisfied?

In our view, level of motivation plays an implicit and similar role in the work of Dunning and of Murray. Dunning argues that people emphasize the self-flattering attributes of schemata and rely on self-flattering standards of judgments, thereby developing self-serving schemata. Somewhat analogously, Murray argues that people construct idealized representations of significant others, emphasizing, if not embellishing, positive attributes and deemphasizing, refuting, and at times even transforming negative attributes. Thus, for both Dunning and Murray, motivated cognition involves the motivated fashioning and refashioning of, respectively, schemata relevant to the self and schemata about one's significant others. From our perspective, the fashioning of such motivated schemata requires, at least initially, systematic forms of processing, and thus it assumes that people experience high levels of motivation when it comes to judgments about the self and significant others. Put another way, we speculate that for judgmental domains associated with lower levels of motivation, such motivated fashioning of schemata is much less likely to occur.

Along these lines, it might be interesting to examine whether the kind of motivated fashioning of self-flattering schemata for which Dunning reports evidence is especially likely to occur in judgmental domains that people deem as highly relevant to their self-definitions. Thus, an avid tennis player might be especially likely to possess self-flattering schemata about tennis and related domains and less motivated to fashion self-flattering schemata about less self-relevant domains (e.g., Swann, 1990).

In Murray's work on motivated cognition, one might wonder whether the high level of impression motivation that is presumably associated with judgments about significant others and that presumably fuels the construction of idealized construals of significant others holds in other types of relationships—for example, intergroup relations. To what extent do people fashion motivated, idealized construals about the groups to which they belong? Overall, whether assumptions about level of motivation are implicit or explicit, level of motivation clearly plays some role in each of the three views on motivated cognition in the target symposium, as it does in our heuristic–systematic approach to motivated cognition.

The Many Faces of Motivated Heuristic Processing

Each of the three approaches to motivated cognition in the target symposium involves, in some manner, a knowledge structure: Kunda and Sinclair focus on stereotypes, Dunning focuses on social schemata, and Murray focuses on representations of significant others. In our work, we focus on heuristics as knowledge structures (Chen & Chaiken, 1999). In what ways can this similar reliance on the concept of knowledge structures serve as a basis for building conceptual bridges between our work and the work presented in the target articles?

It is easy to draw linkages between Kunda and Sinclair's work on stereotypes and our work on heuristic processing. We and others have conceptualized stereotypes as heuristics (e.g., Chaiken, Wood, & Eagly, 1996; see also Bodenhausen, Macrae, & Sherman, 1999). Thus far, in our research, we have considered the motivated activation and application of heuristics (Chen & Chaiken, 1999). More specifically, we have discussed the notion that heuristics may be activated and applied in a selective manner reflecting perceivers' motivational concerns. For example, Giner-Sorolla and Chaiken (1997) presented partici-

pants with consensus heuristic cue information. Among participants with a vested interest, a consensus heuristic was selectively activated and applied when its judgmental implications supported their vested interests, but not otherwise.

Our own work has not yet considered the possibility that heuristics that hinder the pursuit of one's motives may be selectively inhibited—that is, the motivated inhibition of heuristics. Kunda and Sinclair's work suggests that perceivers may do more than simply disparage or ignore heuristic cue information; they may actually inhibit the activation level of a particular heuristic. We find this possibility intriguing and worthy of future empirical attention.

Dunning's self-flattering social schemata and Murray's idealized construals of significant others both seem to suggest the motivated fashioning of judgmental rules or heuristics. For example, in Dunning's case, these heuristics might reflect the practiced use of self-serving standards of judgment, and in Murray's case, these heuristics might reflect practiced ways to defuse the negative implications of a significant other's faults. Although we argued earlier that the initial fashioning of these heuristics undoubtedly involved cognitively demanding systematic forms of processing, once established, such heuristics may well be used relatively effortlessly, perhaps even outside of people's conscious awareness.

Continuing in the same vein, elsewhere we have argued that the repeated activation and application of particular heuristics to particular judgments is likely to result in the development of strong associations between these heuristics and judgments (Chen & Chaiken, 1999). If heuristic processing is motivated—that is, heuristics are repeatedly invoked selectively—links formed between particular heuristics and particular judgments would be motivated associations. To the extent that the knowledge structures discussed in each of the target articles can be conceptualized as types of heuristics, motivated associations reflecting the repeated, selective use of particular heuristics to form particular judgments may play some role in the approaches put forth in all three target articles. The existence and operation of motivated associations between particular heuristics and particular judgments raises many interesting issues and questions for future research (see Chen & Chaiken, 1999). For example, it raises issues having to do with people's awareness of the influence of these motivated associations on their social judgments. To the extent that such motivated associations are strong, perceivers may be unaware of this influence. In turn, this suggests not only that it may be difficult to avoid reliance on such motivated associations, but also that such motivated associations are likely to be difficult to change.

Concluding Remarks

Motivated cognition occurs and is critical to examine if one is to understand how most of social cognition transpires and through which forms of processing most social judgments are made. We hope that presenting our work in the context of the three target articles has the dual effect of expanding and lending still greater coherence to the target symposium. To us, this symposium is a testament to the richness of the field's current understanding of motivated cognition and is a promising sign of more good things to come.

Note

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To Stereotype or Not to Stereotype: Motivation and Stereotype Activation, Application, and Inhibition

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Clearly 'tis nobler to harness one's slings and arrows rather than to take arms against a sea of others through the use of negative stereotypes. That is not the question here. What is an important question is what role motivation can play in determining whether stereotypes are likely to be activated and applied. Just as Hamlet was on the brink of choosing whether to continue to be, or not to be, are we all faced frequently with the choice, often unknowingly, of whether we want to perceive others in stereotypic ways and, in so doing, act on that choice? Do our goals and needs moderate stereotype activation, application, and inhibition?

This is a critical issue raised in the target article by Kunda and Sinclair. Indeed, the research reported in the entire set of target articles illustrates the kind of insightful contributions that can be made by integrating motivational and cognitive approaches. While Hamlet speculated in his famous soliloquy about what course of action to take, he noted, "Perchance to dream: Ay, there's the rub." To many researchers during the last few decades who have been interested in how individuals' dreams—that is, their wishes, goals, and sundry motivations—shape their social judgments and decisions, the "rub" has always been that their motiva-