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Cognitive Consistency as a Basic Principle of Social Information Processing

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Leon Festinger's (1957) theory of cognitive dissonance is arguably one of the most significant theories in the history of social psychology. The theory assumes that inconsistent cognitions produce an aversive feeling of dissonance, which motivates people to reduce the underlying inconsistency and to maintain a state of consonance. According to Festinger, two cognitive elements are inconsistent, or in a dissonant relation, if one element follows from the opposite of the other. More formally, this definition can be restated as "*x* and *y* are dissonant if not-*x* follows from *y*" (p. 13), with *x* and *y* subsuming "any knowledge, opinion, or belief about the environment, about oneself, or about one's behavior" (p. 3).

Despite the generality of Festinger's original assumptions about cognitive consistency, about half a century since its original publication, the theory is mainly known for its contribution to research on attitude change. Counter to the notion of reinforcement that dominated psychology in the middle of the 20th century, dissonance theory predicted that people who engage in counterattitudinal behavior should show a more favorable evaluation of the relevant attitude object when they receive a low rather than a high incentive

for engaging in the behavior (see Brehm, 2007). The rationale underlying this prediction was that a high incentive would resolve the aversive feeling of dissonance arising from the conflict between one's attitude and the counterattitudinal behavior. In contrast, a low incentive is insufficient to reduce the underlying conflict, thereby leading people to change their attitudes to bring them in line with their behavior. The counterintuitive nature of this prediction made Festinger and Carlsmith's (1959) seminal demonstration of this effect one of the most prominent findings in social psychology. At the same time, however, the accumulating body of research on dissonance-related attitude change directed the attention away from the theory's original conceptualization of cognitive consistency as a fundamental principle of human thought (Abelson, 1983; Berkowitz & Devine, 1989; McGuire, 1968). Over the following decades, the focus became even narrower when dissonance-related attitude change was reinterpreted as the result of self-related processes rather than a basic desire for cognitive consistency (e.g., Aronson, 1968; Steele, 1988; Stone & Cooper, 2001; Wicklund & Brehm, 1976). Yet, as Greenwald and Ronis (1978) noted, many of the proposed refinements of dissonance theory had a stronger resemblance to theories of ego defense than to Festinger's (1957) original formulation, which limited their capacity to explain important examples used to illustrate the psychological significance of cognitive consistency.

To illustrate this gap, consider two examples from Festinger's (1957) seminal monograph. The first one, the man-on-the-moon example, describes the logical inconsistency between two beliefs: "If a person believed that man will reach the moon in the near future and also believed that man will not be able to build a device that can leave the atmosphere of the earth, these two cognitions are dissonant with one other. The obverse of one follows from the other on logical grounds in the person's own thinking process" (p. 14). The second one, the man-standing-in-the-rain example, describes the inconsistency between two experience-related cognitions: "If a person were standing in the rain and yet could see no evidence that he was getting wet, these two cognitions would be dissonant with one another because he knows from experience that getting wet follows from being out in the rain" (p. 14). It is worth noting that neither example includes a discrepancy between attitudes and behavior. Similarly, neither example requires a reference to the self to illustrate the motivational consequences of the implied inconsistencies. In both cases, it is assumed that the person would be motivated to resolve the inconsistency between the involved cognitive elements. Of course, Festinger proposed that the aversive feeling of dissonance that is aroused by inconsistent cognitions is moderated by the subjective importance of the involved cognitions. Still, what these examples show is that inconsistency plays a much more fundamental role for thinking and reasoning than is commonly assumed in contemporary reinterpretations of Festinger's (1957) original theory.

Although many basic assumptions of consistency theories have dissi-

pated from the social psychological literature since their development in the 1950s (Greenwald & Ronis, 1978), various areas of social and cognitive psychology have started to rediscover the ubiquity of cognitive consistency as a fundamental principle of information processing. In fact, conceptual links to the early consistency theories can be found at all levels of analysis, ranging from micro-level research on neuropsychological processes (see Harmon-Jones, Harmon-Jones, & Amodio, Chapter 3, this volume) and the relation between consistency and consciousness (see Morsella, Zarolia, & Gazzaley, Chapter 2, this volume) to macro-level applications to perceptions of social justice (see Van den Bos & Maas, Chapter 20, this volume) and the development of social groups (see Park, Tindale, & Hinsz, Chapter 21, this volume). Our goal with this edited volume is to reestablish the notion of cognitive consistency as a basic principle of social information processing by highlighting the role of consistency principles at various levels of analysis. The premise of this endeavor is that cognitive consistency plays a fundamental role in multiple aspects of social cognition; a role that goes far beyond its well-established relevance for dissonance-related attitude change.

MENTAL REPRESENTATION

At a very fundamental level, cognitive consistency plays a major role in contemporary theories of consciousness. In his supramodular interaction theory, Morsella (2005) argues that the primary function of conscious states is to harmonize processes that would otherwise be in conflict (see Morsella et al., Chapter 2, this volume). According to this view, consciousness is a physical state that supports the communication between systems in the brain to solve large-scale, cross-talk problems between the outputs of these systems. Interestingly, the research reviewed by Morsella et al. suggests that consciousness is only required for the resolution of particular kinds of conflicts, namely, efference–efference binding of two (or more) conflicting stimulus–response links (e.g., conscious conflict between different response tendencies in the Stroop effect; see Stroop, 1935). Integration of stimulus–stimulus links (afference binding) and stimulus–response links (efference binding) is assumed to occur efficiently without conscious awareness (e.g., unconscious integration of conflicting visual and auditory cues in the McGurk effect; see McGurk & MacDonald, 1976). Moreover, conflicts between higher-order beliefs are assumed to be rooted in conflicts between stimulus-response links via their involvement in action planning.

These ideas resonate with the core assumptions of the Harmon-Jones action-based model of dissonance (Harmon-Jones, Amodio, & Harmon-Jones, 2009), which assumes that inconsistency between cognitions evokes an aversive state, because it has the potential to interfere with effective and unconflicted action (see Harmon-Jones et al., Chapter 3, this volume). According to the action-based model, conflicts between knowledge and other infor-

mation have the power to create dissonance, because knowledge is often tied to action, and it is the inconsistency among these "actional" cognitions that causes dissonance. The resolution of inconsistency that is motivated by this aversive state brings cognitions into line with behavioral commitments, thus serving the function of facilitating the execution of effective and unconflicted action. In other words, the *proximal* motivation underlying dissonance reduction is to eliminate the aversive feeling resulting from inconsistent cognitions; the *distal* motivation is the need for effective and unconflicted action. In addition to the available evidence from behavioral paradigms, the assumptions of the action-based model have been confirmed by a number of studies using neuroscientific methods, which are reviewed in the chapter by Harmon-Jones et al. (Chapter 3, this volume).

The notion consistency as a basic aspect of human thought is also captured by connectionist models, which use principles of parallel constraint satisfaction to describe the transition from inconsistency to consistency (see Read & Simon, Chapter 4, this volume). According to connectionist models, mental representation can be conceptualized as a network of concepts interconnected by excitatory and inhibitory links. By applying a constraint satisfaction or relaxation algorithm, the network settles into a stable state in which the asymptotic activation levels of the units define a set of coherent concepts. In this way, the representation drifts toward a point of equilibrium. Transitions from a state in which fewer constraints are satisfied to one in which more constraints are satisfied can be described as a reduction of the energy in the system, with the current energy serving as an equivalent of the level of arousal that may be elicited by inconsistent cognitions. The notion of parallel constraint satisfaction not only provides a conceptual integration of consistency processes that is amenable to formalization in mathematical algorithms but it also offers a number of novel empirical insights, which are reviewed in the chapter by Read and Simon (Chapter 4, this volume).

FLUENCY AND FIT

An area that is highly relevant for the idea of cognitive consistency as a basic principle of social information processing is research on fluency and fit. Even though the concepts of consistency, fluency, and fit have a strong resemblance, their conceptual relation has never been explicitly addressed. The chapter by Winkielman, Huber, Kavanagh, and Schwarz (Chapter 5, this volume) aims to fill this gap by discussing the relation between consistency and fluency. According to their framework, the concept of *fluency* refers to the speed and ease with which a particular cognitive element, or set of elements, is processed (*how?*); the concept of *consistency* refers to the match between cognitive elements in terms of abstract, content-independent rules (*what?*). As such, consistency represents one of the factors that can produce fluency, as it is the case for fluency effects resulting from semantic coherence. The nature

and the conditions of such consistency-based fluency effects are extensively reviewed in the chapter by Topolinski (Chapter 6, this volume). Yet consistency may also occur in the absence of fluency, for instance, when the relation between two cognitive elements is consistent in terms of an abstract rule, but this relation is not based on empirically encountered regularities (cf. Gawronski & Bodenhausen, 2006; Strack & Deutsch, 2004). Considering that fluency increases the perceived truth of the relevant information, a novel prediction implied by this conceptualization is that fluent information should produce stronger dissonance effects resulting from inconsistencies between personal beliefs (for the role of perceived truth in dissonance, see Gawronski & Strack, 2004). Interestingly, the relation between fluency and consistency can also be captured by connectionist models and principles of parallel constraint satisfaction (cf. Read & Simon, Chapter 4, this volume). For instance, Winkielman et al. (Chapter 5, this volume) discuss an extended variant of a simple attractor neural network (Hopfield, 1982), which allows the network to monitor the fluency of its own processing. In this model, markers of fluency include the network's "volatility," which refers to the proportion of nodes changing their activation state at a given point (Lewenstein & Nowak, 1989).

Another important concept that has considerable resemblance with the notion of consistency is fit. According to Higgins (Chapter 7, this volume), the strength of engagement or "feeling right" about what we are doing is greater when our manner of goal pursuit sustains (*fit*) versus disrupts (*nonfit*) our goal pursuit orientation (see Higgins, in press). Thus, whereas consistency theories are concerned with consistent versus inconsistent relations among *cognitive* elements, fit theories focus on sustaining versus disrupting relations between *motivational* elements of goal pursuit, in particular, the orientation toward the goal pursuit and the manner of the goal pursuit. At the same time, the two classes of theories share an emphasis of the motivational significance of the relations between psychological elements (e.g., feelings of dissonance arising from inconsistent cognitive elements; feelings of value arising from fitting motivational elements). According to Higgins, consistency theories highlight people's motivation to be successful in establishing what is real (i.e., truth effectiveness). Fit theories, in contrast, are concerned with the manner and the strength of goal pursuit (i.e., control effectiveness).

IMPLICIT SOCIAL COGNITION

The development of implicit measurement procedures is arguably one of the most important contributions in the recent history of social psychology (for an overview, see Gawronski & Payne, 2010). From a consistency perspective, implicit measures represent a very interesting case, because they often show dissociations to explicit self-report measures (Hofmann, Gschwendner, Nosek, & Schmitt, 2005). Thus, two important questions that emerged from research using implicit measures concern the processes that guide (1)

consistency among different kinds of mental contents assessed with implicit measures, and (2) consistency between implicit and explicit measures of the same construct.

Cvencek, Greenwald, and Meltzoff's (Chapter 8, this volume) meta-analytic review of balanced identity theory focuses on the consistency between different kinds of automatically activated associations assessed with the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). The central assumption of the theory is that the links among three associated concepts (e.g., self, valence, group) constrain each other, thereby producing activation patterns that can be described as balanced (Heider, 1958). Specifically, their meta-analysis shows that IAT measures of self–valence associations (e.g., self-positive), self–group associations (e.g., self-male), and group–valence associations (e.g., male-positive) are generally related in a manner, such that one is predicted by the interaction of the other two. Interestingly, such balanced patterns tend to be stronger for implicit than explicit measures. Further evidence for the theory comes from studies that experimentally manipulated associative links between the self and random objects, showing that automatic self-evaluations associatively spread to these objects (e.g., Gawronski, Bodenhausen, & Becker, 2007; Prestwich, Perugini, Hurling, & Richetin, 2010; Zhang & Chan, 2009). Conceptually, however, it is important to note that the associative mechanisms underlying balanced identity effects can produce patterns that are imbalanced from the perspective of Heider's (1958) original theory (e.g., Langer, Walther, Gawronski, & Blank, 2009). Such findings led some theorists to argue for a conceptual distinction between the propositional principles underlying cognitive balance and the associative mechanisms of spreading activation underlying balanced identity effects (e.g., Gawronski & Bodenhausen, 2011; see also Walther & Weil, Chapter 17, this volume).

Another important question in the area of implicit social cognition concerns the psychological nature of discrepancies between implicit and explicit measures. Petty, Briñol, and Johnson (Chapter 9, this volume) conceptualize *explicit ambivalence* as the self-reported endorsement of both positive and negative aspects of a given attitude object; *implicit ambivalence*, in contrast, is characterized as the discrepancy between implicit and explicit evaluations of the same object. A major difference between the two states of ambivalence is that people with implicit ambivalence do not report themselves to be ambivalent, because they do not endorse conflicting evaluations of the same object. Nevertheless, implicit ambivalence has been shown to enhance the motivation to process information that is relevant to the object for which the discrepancy exists, leading to more elaborate processing of object-related information (e.g., Petty, Tormala, Briñol, & Jarvis, 2006). Expanding on these findings, Jordan, Logel, Spencer, and Zanna (Chapter 10, this volume) review evidence showing that the behavioral consequences of discrepancies between implicit and explicit evaluations can be much broader. With regard to self-esteem, for example, individuals with high explicit, but low implicit,

self-esteem can be characterized by a sense of insecurity and unacknowledged negative self-views, which have been shown to be associated with enhanced defensiveness (e.g., Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003). Similarly, patterns of low explicit, but high implicit, prejudice have been described as aversive prejudice (Dovidio & Gaertner, 2004), which is characterized by a conflict between explicit egalitarian values and underlying negative feelings toward the target group. According to Jordan et al. (Chapter 10, this volume), a common means to reduce such discrepancies is to affirm one's explicit evaluation and to deny the relevance of one's implicit evaluation. Yet by relating discrepancies between implicit and explicit evaluations to Festinger's (1957) theory of cognitive dissonance, the authors identify a number of alternative means to reduce discrepancies, such as seeking additional information, bridging the discrepancy with additional consonant cognitions, or simply distracting oneself from the discrepancy. These assumptions imply a number of interesting predictions, which remain to be tested.

THINKING AND REASONING

Many philosophers have argued that inconsistency plays a major role in evaluating the accuracy of one's beliefs (e.g., Quine & Ullian, 1970). The main argument is that even though consistency does not guarantee accuracy, inconsistency is an unambiguous indicator for an erroneous component in one's system of beliefs; that is, if a set of n assertions is inconsistent, at least one of them must be false. Yet identifying inconsistencies among one's beliefs is much more difficult than it may seem. Johnson-Laird's (Chapter 11, this volume) analysis suggests that a set of n assertions can be inconsistent even though any $n-1$ of them yields a consistent set. The resulting capacity problem is illustrated by the fact that an exhaustive assessment of a set of 100 propositions requires the consideration of 2^{100} possibilities. Even if each possibility can be examined in a millionth of a second, a comprehensive examination would still take longer than the universe has existed. Johnson-Laird argues that individuals resolve this capacity problem by means of mental models. Instead of engaging in an exhaustive check, an efficient way to evaluate the consistency of a set of assertions is to seek a mental model in which all the assertions hold (Johnson-Laird, Girotto, & Legrenzi, 2004). If it is possible to find such a model, the assertions will be judged as consistent. If not, they will be judged as inconsistent. In addition to implying a number of novel predictions about illusions of consistency and inconsistency, Johnson-Laird's theory leads to the broader conclusion that people have a stronger tendency to explain how a given inconsistency arose instead of revising the inconsistent beliefs that yielded the inconsistency. Using Festinger's (1957) terms, this means that people should be more likely to resolve dissonance by adding a new

cognitive element instead of changing one of the old cognitive elements that produced the aversive feeling of dissonance.

The notion of inconsistency as a tool in the evaluation of one's beliefs also resonates with Kruglanski and Shteynberg's (Chapter 12, this volume) description of consistency "as a means to an end" in the epistemic process of knowledge creation and knowledge evaluation. Counter to the claims of many consistency theories, however, Kruglanski and Shteynberg remain skeptical as to whether consistency represents a motivational force in itself. Instead, the authors argue that the affective consequences of consistency or inconsistency depend entirely on the individual's epistemic motivation, in particular the individual's motivation to validate or invalidate a given proposition.

DECISION MAKING AND CHOICE

When people have to make a decision between mutually exclusive choice options, they often experience decisional conflict. The aversive feelings of postdecisional conflict and their cognitive and behavioral consequences have been extensively discussed by dissonance theory (Festinger, 1964), which focuses primarily on the psychological processes that kick in after a decision has been made (e.g., Brehm, 1956). Yet feelings of conflict can operate even before a decision has been made. The chapter by van Harreveld, Schneider, Nohlen, and van der Pligt (Chapter 13, this volume) reviews their model of ambivalence-induced discomfort (MAID), which addresses (1) the conditions under which ambivalent evaluations of a given object are experienced as unpleasant and (2) how people cope with such unpleasant experiences (van Harreveld, van der Pligt, & de Liver, 2009). A central claim of their model is that ambivalent evaluations of an object are experienced as unpleasant only when people have to make a choice between object-relevant alternatives. In such situations, people are assumed to engage in either *emotion-focused* coping or *problem-focused* coping (see also Harmon-Jones et al., Chapter 3, this volume). Whereas the former refers to strategies that reduce the negative affect without resolving the underlying inconsistency (e.g., postponing decision, redefining situation), the latter refers to strategies that aim at reducing the underlying inconsistency that is responsible for the negative affect (e.g., effortful integration of object attributes). The MAID includes a number of specific assumptions about the sequence of different processes and their respective outcomes, which are illustrated by van Harreveld et al. (Chapter 13, this volume) by means of relevant empirical evidence.

When people feel conflicted about two or more choice options, a potential strategy to facilitate a decision is to anticipate potential feelings of regret that may result from the different courses of action. However, a number of obstacles can distort the anticipation of regret. Bullens, Förster, van Harreveld, and Liberman (Chapter 14, this volume) discuss how inaccurate meta-cogni-

tive beliefs about the determinants of postdecisional regret can lead to suboptimal decision outcomes. Their chapter addresses three conventional wisdoms that have been challenged by empirical evidence. First, counter to the view that it is better to have more choice options, higher numbers of choice options have been shown to be associated with higher levels of decision conflict and lower levels of postchoice satisfaction (e.g., Iyengar & Lepper, 2000). Second, counter to the view that extensive deliberation and introspection on reasons for one's preferences increases decision quality, extensive deliberation and introspection on reasons have been found to reduce decision quality and postchoice satisfaction (e.g., Wilson, Lisle, Schooler, Hodges, Klaaren, & LaFleur, 1993). Third, counter to the view that having the option to reverse one's decision is generally desirable, reversible decisions have been shown to be associated with lower levels of postchoice satisfaction (e.g., Gilbert & Ebert, 2002). According to Bullens et al., the common theme underlying these three cases is that many people have inaccurate metacognitive beliefs about the psychological processes that effectively resolve decision conflicts, which can lead to suboptimal choices when decisions are based on these beliefs.

A central aspect in Bullens et al.'s (Chapter 14, this volume) analysis is the notion of anticipated regret. According to dissonance theory, regret can be conceptualized as the reversal of a decision, which seems rather unlikely if postdecisional dissonance reduction is successful (e.g., spreading of alternatives; see Brehm, 1956). Deviating from this conceptualization, regret theory argues that the reversal of a decision should be regarded as a behavioral consequence of *regret*, with the concept regret referring to the aversive state that leads to decision reversal (Zeelenberg & Pieters, 2007). Markman and Beike (Chapter 15, this volume) show that this conceptualization offers valuable insights into the relation between consistency and regret. According to their opportunity × mitigation framework (O × M), past decisions with undesired outcomes should produce low levels of regret when people see future opportunities to take corrective actions (high opportunity) and, at the same time, have the ability to engage in regulatory processes that allow for the diminishment of regret (high mitigation). In contrast, people should experience high levels of regret when they see little or no future opportunities to take corrective actions (low opportunity) and, at the same time, lack the ability to engage in regulatory processes (low mitigation). In their chapter, Markman and Beike provide an extensive analysis of how their assumptions about regret are related to cognitive inconsistency and feelings of dissonance, including specific predictions of the two underlying frameworks.

One of the most frequently studied causes of dissonance is inconsistency between attitudes and behavior. As shown by Festinger and Carlsmith (1959), people often resolve this inconsistency by changing their attitudes, at least when there is no situational explanation for the counterattitudinal behavior. To the extent that these attitudes influence future behavior, it could be argued that dissonance-related attitude change represents an effective means for behavioral interventions (e.g., to change health-related behavior).

However, as Stone (Chapter 16, this volume) argues, this approach has a number of limitations. For instance, dissonance-related attitude change may be ineffective in bringing about the desired change in behavior when the impact of attitudes on behavior is reduced by other factors (Ajzen, 1991). As an alternative approach, Stone suggests the *hypocrisy paradigm*, in which dissonance produces direct behavior change that is not mediated by attitudes (e.g., Aronson, Fried, & Stone, 1991). The rationale underlying the hypocrisy paradigm is to motivate people to bring their behavior in line with attitudes and beliefs to which they already subscribe. By emphasizing the rational side of dissonance reduction ("Practice what you preach") rather than the irrational side that is often seen in dissonance-related attitude change (e.g., Abelson, 1983), this approach provides several links to the literature on self-regulation, including a shared focus on discrepancy detection, the reduction of negative affect, and the motivation to change cognitions and behavior to reduce discrepancies (e.g., Strack & Deutsch, 2004). At the same time, dissonance theory contributes some interesting questions to research on self-regulation, such as the possibility that people sometimes rationalize their impulsive behaviors instead of reclaiming control. This integration of dissonance theory with theories of self-regulation offers a number of interesting perspectives for future research in either of the two areas.

INTERPERSONAL PROCESSES

Although the principles identified thus far are assumed to reflect domain-independent processes of human thought, many of them play a particularly important role in interpersonal contexts. Walther and Weil (Chapter 17, this volume) address the desire to maintain consistent cognitions about other people, as proposed by Heider's (1958) balance theory. Contrasting balance principles with mechanisms of associative linking underlying evaluative conditioning effects (De Houwer, Thomas, & Baeyens, 2001), Walther and Weil identify some interesting boundary conditions under which associative processes can disrupt the emergence of cognitive balance. An important implication of the reviewed findings is that the mechanisms underlying cognitive balance should be distinguished from associative processes of spreading activation given that the two mechanisms can have opposite effects on attitudes and evaluations. For instance, the balanced identity mechanisms discussed by Cvencek et al. (Chapter 8, this volume) seem closer to the notion of spreading activation, which can produce patterns of attitudes that violate the logic of cognitive balance (e.g., Langer et al., 2009; for a more detailed discussion, see Gawronski & Bodenhausen, 2011). As Walther and Weil point out, this distinction is not only important for conceptual reasons but it also has a number of interesting implications for the effect of celebrity endorsements in advertising and the interpersonal relationships of depressed individuals.

Similar considerations underlie Gawronski, Brochu, Sritharan, and Strack's (Chapter 18, this volume) conceptual integration of different forms of prejudice (Gawronski, Peters, Brochu, & Strack, 2008). Drawing on generalized dual-process models (Gawronski & Bodenhausen, 2006; Strack & Deutsch, 2004), the authors distinguish between affective reactions and evaluative judgments as two qualitatively distinct kinds of evaluative responses. These responses are further assumed to have their roots in two distinct, yet interacting, mental processes: associative and propositional processes. A central assumption in their framework is that the affective reactions resulting from activated associations provide the basis for a verbally endorsed evaluative judgment, unless the evaluation implied by the affective response is inconsistent with other relevant information. Drawing on this conceptualization, the notion of *implicit prejudice* (Rudman, Greenwald, Mellott, & Schwartz, 1999) can be equated with the affective reactions resulting from activated associations; the concepts of *old-fashioned prejudice* (Swim, Aikin, Hall, & Hunter, 1995), *modern prejudice* (McConahay, 1986), and *aversive prejudice* (Dovidio & Gaertner, 2004) can be described as distinct cases of how people maintain consistency within a broader set of prejudice-related beliefs, including the evaluation implied by one's affective reaction, perceived discrimination, and egalitarianism-related nonprejudicial goals.

An important question in research on prejudice and stereotyping concerns the conditions under which disconfirming information has the potential to change prejudiced and stereotypical beliefs. Drawing on an elaborate analysis of different stages of information processing, Sherman, Allen, and Sacchi (Chapter 19, this volume) identify three types of moderators that influence how perceivers resolve conflicts between stereotypical knowledge structures and stereotype-disconfirming information: *motivational factors* (e.g., desire to perceive a group in a particular way), *cognitive process factors* (e.g., cognitive capacity), and *cognitive representation factors* (e.g., associative strength). In their review of the available evidence, Sherman et al. show that each of the three moderators has unique effects on the processing of stereotype-confirming and stereotype-disconfirming information. Interestingly, their analysis suggests that the same factor can have opposite effects at different processing stages, including information search, attention, encoding, attribution, storage, retrieval, and judgment. Thus, a conceptualization of stereotype disconfirmation in terms of basic consistency principles not only provides an overarching framework for integrating conflicting findings in the stereotyping literature but it also offers useful insights for research and theorizing on cognitive consistency by highlighting the determinants of inconsistency resolution at different stages of information processing.

Analyzing the significance of consistency principles in justice-related contexts, Van den Bos and Maas (Chapter 20, this volume) identify three cases in which inconsistency influences perceptions of social justice. The first

one involves effects of victim derogation, which have been explained by the naive belief that the world is a just place where good things happen to good people and bad things happen to bad people (Lerner, 1980). According to Van den Bos and Maas, perceptions of innocent victims are inconsistent with the belief in a just world, thereby causing an aversive feeling of dissonance. If justice is restored, the underlying inconsistency is resolved and dissonance reduced. If, however, justice is not restored, people may blame the victim for the unjust event to reduce the aversive feeling aroused by their inconsistent cognitions. Importantly, Van den Bos and Maas' analysis suggests that negative responses to innocent victims can also result from a conceptually distinct associative process, in which innocent victims become associatively linked to the negative event (see Gawronski & Bodenhausen, 2006). Because such processes of associative linking are independent of the proposed conflict to just world beliefs, they can lead to victim derogation even when justice has been restored and the person does not believe in a just world (e.g., Van den Bos & Maas, 2009).

Two other cases in which inconsistency affects perceptions of social justice involve (1) consistency in the application of justice-related principles over time, and (2) consistency in the application of justice-related principles between different individuals. With regard to the first case, Van den Bos and Maas (Chapter 20, this volume) argue that consistency in the application of a particular principle over time is often regarded as more important compared with the subjective disadvantages that may arise from maintaining that principle (e.g., Van den Bos, Vermunt, & Wilke, 1996). With regard to the second case, the reviewed evidence suggests that immediate responses to procedural inconsistencies across individuals are dominated by self-interest, whereas more deliberate responses are influenced by perceptions of fairness (e.g., Van den Bos, Peters, Bobocel, & Ybema, 2006).

The final chapter by Park et al. (Chapter 21, this volume) investigates the importance of interpersonal cognitive consistency in group contexts. Distinguishing between five stages of group development (Tuckman, 1965), Park et al. argue that shared mental representations are a basic requirement for efficient communication in social groups. As such, interpersonal consistency plays a major role during (1) the *forming stage*, in which group members create a psychological foundation for an emerging social entity; (2) the *storming stage*, in which group members have to resolve initial tensions that arise from expressions of dissatisfaction with group processes, dynamics, and procedures; (3) the *norming stage*, which involves the development of an agreed-upon set of expected behaviors to be performed by the group members; (4) the *performing stage*, which is characterized by mutual cooperation in task execution to bring together the group members' knowledge, skills, abilities, dispositions, and preferences to achieve a goal; and (5) the *adjourning stage*, which involves the dissolution of a group or a separation into different subgroups. Park et al. outline how interpersonal cognitive consistency may result from either cognitive or normative processes, and how interpersonal

cognitive consistency can have both functional and dysfunctional effects at either of the five developmental stages.

CONCLUSION

In the initial sections of our introduction, we noted the increasingly narrow perspective that has dominated research on cognitive consistency from the 1950s to the dawn of the new millennium. Counter to this development, the last decade has seen a resurgence of the original proposal that cognitive consistency represents a basic principle of human thought. As the chapters of this volume illustrate, consistency principles play a fundamental role at various levels of social information processing, ranging from micro-level to macro-level processes. A careful analysis of these processes—including their commonalities and differences—may help us move toward the forgotten goal of consistency theories to provide a unifying framework for understanding human cognition. This book is intended as a step in this direction, and we are eager to see the research that will be inspired by the theoretical ideas outlined in its chapters.

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