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The Dynamics of Green HRM Behaviors:
A Cognitive Social Information Processing Approach[**]

This paper applies cognitive-social theory to Green HRM, articulating a meta-theory based on cognitive-social HRM information processing (C-SHRIP) which centers on initiation and maintenance of green HRM behaviors. It focuses on managers' encodings, expectancies, affects, goals and values, self-regulation, and their interactions with each other, and the green HRM-relevant information in the course of cognitive-affective processing. In processing green HRM information, managers are presumed to differ in accessibility of mental representations and the organization of relationships among them. Implications for research and practice of Green HRM in organizations are discussed.

Die Dynamiken umweltorientierten Personalmanagementverhaltens:
Ein kognitiv-sozialer Informationsverarbeitungsansatz

Der Beitrag wendet die Theorie kognitiv-sozialer Informationsverarbeitung auf umweltorientiertes Personalmanagement an. Es wird eine Metatheorie formuliert, die auf der Verarbeitung kognitiv-sozialer Personalmanagement-Information basiert und auf die Einführung und Beibehaltung umweltorientierten Personalmanagementverhaltens fokussiert. Die Metatheorie setzt den Schwerpunkt auf Enkodierung, Erwartungen, Affekte, Ziele und Werte sowie Selbst-Regulierung von Managern sowie deren Wechselwirkungen untereinander. Im Zentrum stehen dabei die für umweltorientiertes Personalmanagement relevanten Informationen. Es wird angenommen, dass sich Manager bei der Verarbeitung solcher Informationen darin unterscheiden, wie zugänglich die jeweiligen mentalen Repräsentationen der Informationen sind. Diese Annahme bezieht sich auch auf die Organisation der Beziehungen zwischen den Repräsentationen. Abschließend werden Implikationen für die Forschung und Praxis des umweltorientierten Personalmanagements in Organisationen diskutiert.

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The natural environment is significant to economies and organizations because of its sustenance value. Consequently, organizations have always been interested in management of the environment. That interest, however, intensified around the 1960s due to concerns about sustainability of the environment (Jackson, 1997). Organizations' desire for solutions to environmental degradation has resulted in a large volume of ecological studies on the contribution of environmental management (EM) to organizational strategies and effectiveness (Melnyk, Sroufe, & Calantone, 2003; Ziegler & Nogareda, 2009), functional units in green initiatives (Margerum, 1999; Peattie, 1992), environmental response strategies (Steger, 2000) and managerial orientations toward EM (Sharma & Nguan, 1999). EM *practices* (i.e., waste reduction, environmental preservation, energy conservation and sustainability – Zieglera & Nogareda, 2009) differ from EM *systems*, the "formal set of procedures and policies that define how an organization will manage its potential impacts on the natural environment and on the health and welfare of the people who depend on it" (Darnall et al., 2000, p. 1). The latter determines the effectiveness of EM practices. Policy establishment, planning, implementation, control or corrective action, and management review components of EM systems enable organizations evaluate, organize and quantify their impact on the natural environment (Jackson, 1997).

Studies of EM span disciplines such as natural resources to marketing, accounting, operations management, and management (Margerum, 1999; Ziegler & Nogareda, 2009). An exception, however, is Human Resources Management (HRM) (Renwick, Redman, & Maguire, 2008). This is unfortunate considering that HRM facilitates human capital acquisition, development, allocation, utilization, and maintenance in organizations. Human capital and its management are instrumental to the fulfillment of EM objectives (Hersey, 1998) because of the "role that HR processes play in translating Green HR policy into practice" (Renwick et al., 2008, p. 1). Recent attempts to integrate ecological concerns at the micro level have led to special issues on Sustainability and HRM (Taylor, Egri, & Osland, 2010) and Green HRM (Muller-Camen, Jackson, Jabbour, & Renwick, 2010). Consequently, few models of Green HRM exist in the literature (Muller-Camen et al., 2010). Even though Renwick et al., (2008) proposed a process model of Green HRM, and Daily and Huang (2001) proposed the integration of practices in EM, a view echoed by Darnall et al., (2000), those studies focused on the *practice* rather than *managerial* decisions and behaviors.

There is therefore a knowledge gap which leads to the question, what are the dynamics of HR managers' green decisions and behaviors? HR managers' decisions and behaviors effectuate EM practices and policies (Sharma et al., 1999). Thus, it seems important to understand the unique features of HR managers' decisions and behaviors which are central to Green HRM, the integration of EM in HRM (Renwick, et al., 2008). Defined in this paper as the use of HRM policies, philosophies, and practices to promote sustainable use of resources and prevent harm arising from environmental concerns within business organizations, Green HRM depends on the unique and identifiable patterns of green decisions and behaviors of HR managers (*green signatures*). This definition suggests that HR managers' green signatures are either promotive or preventive. Promotive green signatures refer to the pattern of behaviors and use of HR practices to promote EM while preventive green signatures refer to the pattern of

behaviors and decisions that prevent negative environmental outcomes. Because HR managers make the integration decisions, their green signatures are important to understanding Green HRM.

Unfortunately, the literature lacks studies of HR managers' green signatures partly because of the paucity of theoretical frameworks. In this paper, we help address the gap by proposing a meta-theory, cognitive social human resource information processing of EM (C-SHRIP) that can be used to examine green signatures. C-SHRIP focuses on the green decisions of HR managers that result from the interactive processes of cognitive, affective, and motivational (CAM) factors which are transformed to EM-related role behaviors through self-regulatory strategies, competencies and resources. The theory seems consistent with the dynamic processes of EM and environmental phenomena. When HR managers encounter environmental situations, the formation, execution, and maintenance of green decisions and behaviors are not static; they are dynamic, characteristics that define the signatures of those HR managers. The theory adopts a managerial perspective and focuses on the cyclical process in which managers are motivated to plan for (form decisions) and engage in promotive and preventive behaviors that continuously benefit their organizations in both the short- and long-term. Next we briefly review the major theories upon which C-SHRIP is based. We then discuss C-SHRIP and offer propositions on the various relationships to encourage empirical testing of green signatures.

Theoretical framework

We integrate two major theoretical perspectives to propose a dynamic model of Green HRM: behavioral and cognitive social information processing. First, the cognitive social information processing perspective is based on Mischel and Shoda's (1995) cognitive affective processing system which was originally developed to explain the dynamics of personality relative to behavior. It suggests that an individual's behavior results from his/her personality, an organized whole with units that are activated by the specific features of the situation the individual encounters. Those features are processed through CAM mechanisms in a dynamic fashion. Because individuals differ in the ease with which particular CAM attributes become activated (Higgins, 1998), the levels of activation that occur in response to (a) elements of the "psychological situation" that is being processed, and (b) the activity of other associated units that stimulate, inhibit, or exert influence on the units, also differ among individuals (Smith, 2006). The dynamic interactions among the units mediate relations between situations and behaviors (Mischel & Shoda, 1995). The perspective has been applied to health behavior (Miller, Shoda, & Hurley, 1996), sports behavior (Smith, 2006), maladaptive behavior (Shoda & Smith, 2004), and employee development (Zoogah, 2010). We apply it to Green HRM.

Second, the behavioral perspective is based on the role behavior theory of Schuler and Jackson (1987). Using Katz and Kahn's (1978) role theory Schuler and Jackson (1987) proposed that through role behaviors, "the recurring actions of an individual appropriately interrelate with the repetitive activities of others so as to yield a predictable outcome" (Katz & Kahn 1978, p. 189), HRM practices can be linked with competitive strategies (cost, innovation, and growth) of organizations. HRM serves as a

mechanism by which organizations send role information through the organization, support desired behaviors, and evaluate role performances. Depending on the type of strategy, different role behaviors of employees (and different HR practices) are exhibited. They concluded that HRM effectiveness depends on the extent to which HRM is congruent with organizations' behavioral requirements which emerge from the expectations that are communicated internally to employees and the ways in which performance is evaluated (Fredericksen, 1986).

Combined the two perspectives suggest that managers' green signatures constitute interdependent roles that not only are responses to specific environmental situations but when executed contribute to achievement of environmental strategies of organizations. HR managers function as role senders and executors, encoding and decoding information from internal and external contexts to form decisions about establishment and maintenance of EM-related behaviors. This process suggests a dynamic interplay of multiple roles, some internal, others external, that interact in upstream and downstream manner to influence green signatures. Those signatures emerge at the organizational level through role enactment to determine organizational outcomes and strategies (Daily & Huang, 2001; Schuler & Jackson, 1987).

Cognitive-social information processing and Green HRM

Managers play a major role in EM (Sharma, Pablo, & Vredenburg, 1999). Their orientation toward EM is affected by their beliefs, attitudes, goals, and values (Crognale, 1999; Tinsley & Pillai, 2006). However, previous studies show only linear effects. In contrast, we propose nonlinear effects that result from the interactive and dynamic processes undergirding HR managers' encodings, CAM, and self-regulatory processes. It is such processes that determine HR managers' green signatures. The model suggests that HR managers' green signatures result from encoding of information from internal and external sources in response to environmental situations they encounter, and the interactive influences of activated CAM factors as well as self-regulatory strategies, competencies, and resources. These green signatures influence environmental management and organizational effectiveness. Figure 1 shows the conceptual model.

Green Signatures

Green signatures comprise of green decisions and behavior. While *green decisions* refer to the formation of intentions and volitions of HR managers to use policies and practices to promote or prevent harm to EM, green *behaviors* refer to the EM-related role behaviors of HR managers. This view is consistent with promotion and prevention in decision-making (Crowe & Higgins, 1997), information processing theory (Simon, 1979), and the regulative influence of HRM on EM (Daily & Hung, 2001).

Green Behaviors

Renwick et al., (2008) suggest that managers may take up different roles in EM. Using Schuler and Jackson's (1987) behavioral theory, we propose integration, cooperation, compliance, focus, risk-taking, and creativity role behaviors as important for green HRM. They are either promotive or preventive behaviors.

Promotive Behaviors. These are role behaviors that are concerned with EM advancement and growth. They include integration, creativity, and risk-taking behaviors.

Integration behaviors, higher level actions that enable organizations to function effectively (Lawrence & Lorsch, 1967), facilitate the integration of EM to other organizational systems. HR managers interconnect HRM and EM practices and systems in a way that enhances organizational functioning. For example, in the NUMMI joint venture, managers facilitated integration of knowledge management and HR practices (e.g., employee involvement and participation), and management style to produce environmental improvements for the firm (Rothenberg, 2003). Further, through planning and solicitation of information from relevant departments, managers integrate operational activities with EM practices and systems.

Figure 1: Cognitive-social HRM information processing (CSHRIP) model of green signatures on organizational effectiveness

Green Signatures

Solid lines = positive activation
Dotted lines = inhibitory relations

Exp: Expectancy; V: Values; G: Goals;
Aff: Affects; C Competencies; S: strategies;
R: Resources; B: Behavioral scripts
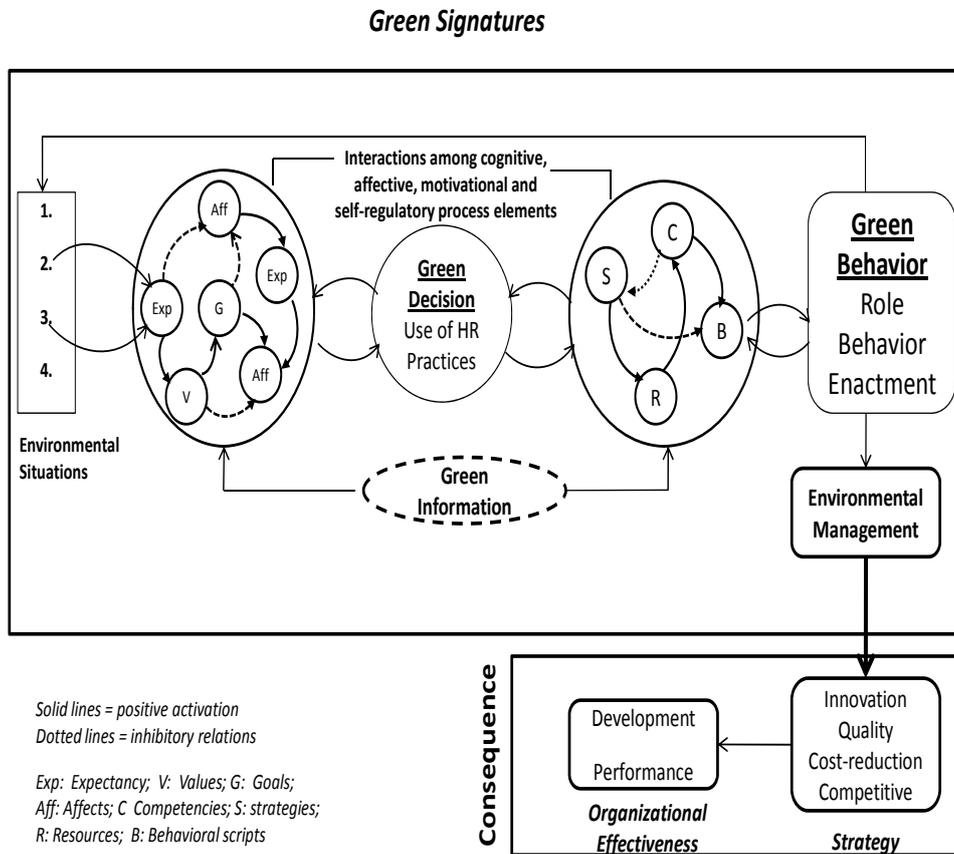
Risk-taking behaviors which refer to actions that are risk-laden, may be associated with higher EM returns. While risky behavior may be detrimental, the returns from such behavior can be high. The value of risk-taking behavior depends on the degree of risk: high, moderate, and low. High risk-taking behavior is associated with innovation while low risk-taking behavior is associated with quality enhancement and cost reduc-

tion (Schuler & Jackson, 1987). Depending on the circumstance both high and low risk-taking behaviors are likely in EM. In contrast to behaviors that lead to environmental degradation those that lead to environmental improvement help improve organizations. Through creative behaviors, actions that are novel or improve upon existing ways of doing things, managers devise creative ways of maximizing EM's benefits and minimizing its costs. Novel approaches to environmental problems as well as creative solutions can enhance the training, monitoring, and corrective measures of EM and thereby improve EM and organizational effectiveness.

Preventive Behaviors. These are role behaviors that are concerned with EM protection, safety, and accountability or responsibility. They include cooperative, compliance, and focus behaviors. Cooperative actions link up with those of others deemed significant. They arise from a sense of interdependence. One major role for environmental managers is "to guide line managers in terms of gaining full staff co-operation towards implementing environmental policies" (Wehrmeyer & Parker, 1996, p. 163), which suggests that HR managers have to solicit allies, nurture supporters and create networks of problem-solvers who are willing to act as change agents (Sharma et al., 1999). Cooperative behavior enhances EM effectiveness in organizations by influencing planning, implementation, monitoring, and corrective action particularly in integrated EM systems. Compliance behavior, defined as actions that fulfill norms, rules and regulations, ensure that organizations' structural mechanisms, strategies, and goals are achieved. Organizations have to comply with International Standards Organization (ISO) rules and standards as well as governmental and international environmental standards. Through compliance behavior, HR managers facilitate compliance with environmentally linked responsibilities and duties, and enable organizations to minimize costs, and enhance effectiveness. Focus behavior deals with the attention of HR managers on tasks, activities, and programs; ensures that organizations are not distracted from EM goals when circumstances change, and contributes to innovation and quality-enhancement as well cost reduction (Schuler & Jackson, 1987). In the context of EM, both long- and short-term foci are essential. While long-term focus is linked to preservation and sustainable development goals of the organization through planning and implementation, short-term focus is associated with waste reduction and energy conservation. Managers who exhibit focus behaviors ensure that organizations achieve not only short term EM goals but also innovation and quality enhancement. They also facilitate EM maintenance.

Green Decisions

Green behaviors result from executions of green decisions. HR managers' decisions to use HR practices are intended to fulfill green behaviors. Those decisions can promote or prevent harm to EM.

Promotive decisions are concerned with advancement, growth, and accomplishment of EM. These decisions center on the use of planning and work design, staffing, employee relations, and teamwork practices. First, work design and HR planning which are future-oriented assign individuals with knowledge and skills that are congruent with EM needs and requirements. Planning ensures that HR aligns with EM goals and ensures that the requisite expertise and resources are available. In facilitating effective

acquisition of appropriate competencies that enhance EM, this practice advances EM. Second, staffing, the process of filling job vacancies involves recruitment and selection of candidates with skill sets congruent with organizational goals. Green staffing, the process of hiring individuals with EM skills, mindsets, and behaviors also promotes EM. Job analysis that specifies environmental aspects such as environmental reporting duties and responsibilities; identification and influencing of candidates with EM-related experiences; EM-centered testing (e.g., knowledge of risks, harmful substance, potential emissions, etc), and interviewing that focuses on EM-behaviors enable managers identify candidates that fit environment-centered jobs (Renwick et al., 2008). The selected candidates should possess personality and attitudinal attributes that prevent waste, show creativity and innovative ideas vis-à-vis the environment.

Third, the practice of employee relations centers on establishing positive relations between employees and employers to facilitate productivity, involves empowerment, participation, and engagement activities. It promotes EM by aligning employees' goals, capabilities, motivations, and perceptions with EM practices and systems. Individual empowerment positively influences productivity and performance, and facilitates self-control, individual thinking, and problem solving skills (Renwick et al., 2008; Wee and Quazi; 2005). To the extent that managers delegate authority, time, and resources; involve employees and organized groups (Daily & Huang, 2001), climates conducive to effective functioning of practices and systems can be created to advance EM.

Finally, although teamwork is not a practice it is essential in demonstrating the value of HR; it influences EM within organizations (Daily & Hung, 2001). HR managers can use teams to promote EM particularly when environmental problems are group-oriented (Daily, Bishop, & Steiner, 2007). For example, an organization that seeks to achieve less than ten hazardous spills may employ teams to work on that organization-wide project. Further, through EM teamwork solutions to complex EM problems may be devised to eliminate extant or future environmental problems at their sources (Carter & Dresner, 2001) because teams can be harnessed for collective knowledge to develop comprehensive solutions, and accomplish many tasks simultaneously (Daily et al., 2007). According to Daily and Huang (2001), "teamwork is a necessity of a successful environmental management system," (p.1547). These effects advance EM.

Preventive decisions. These decisions which center on the use of compensation, performance management, training and development, and top management support practices are concerned with protection, safety, and responsibility for EM. Compensation, the process by which employees are rewarded for performance, can prevent harm to EM if it focuses on avoidance of negative behaviors. Rewards motivate and increase commitment from workers to be environmentally responsible (Daily & Huang, 2001). Furthermore, rewards sensitize employees to environmental consciousness; and discourage undesired behaviors while reinforcing preferred ones. Specific incentives that prevent environmental degradation can be implemented. To the extent that managers use reward systems (e.g., bonuses) systematically to regulate employees toward avoidance of negative EM behaviors, they can prevent harm to the company and themselves. Performance management, the process by which

Table 1: Green HRM as a function of cognitive-social HR information processing system

C-SHRIP Element	Green HRM
Situations	Leverage, Vulnerable, Constraint, Problematic
Encodings	Regulations/Policies;
	EMS Availability/access
	Threat and risk information
	Generation of Green Decisions
CAM Factors	
Expectancies	Stimulus-outcome (Efficacy)
	Response-outcome (Utility beliefs)
Affect	Emotions (Anxiety & fear)
	Attitudes (Commitment & involvement)
Goals	Performance (Achievement)
	Mastery (Learning)
Values	Instrumental (Benefits)
	Terminal (Costs)
	Execution of Green Behaviors
Self-Regulatory Processes	
Strategies	Attentional focus
	Self-monitoring
Competencies	EM knowledge
	Experience
	Training/Updating
Resources	Technology
	Rewards
	Maintenance of Green Behaviors
Sustaining processes	
Mental Representations	Cool and Hot representations

EM = Environmental Management; CAM = cognitive, affective, and motivation

employees are enabled to focus their work efforts in ways that contribute to achieving the organization's objectives, consists of setting expectations, monitoring behaviors to keep performance on track, and evaluating performance. HR managers prevent harm to EM when they integrate environmental performance into performance management systems by setting EM objectives, monitoring EM behaviors, and evaluating achievement of environmental objectives (Epstein & Roy, 1997). Training and development, a practice that focuses on development of employees' skills, knowledge, and attitudes, prevents deterioration of EM-related knowledge, skills,

and attitudes. Activities that educate employees about the value of EM, train them in working methods that conserve energy, reduce waste, diffuse environmental awareness within the organization, and provide opportunity to engage employees in environmental problem solving. It also increases employees' ability to adapt to change, and develop proactive attitudes toward environmental issues (Carter & Dresner, 2001).

Finally, though not a practice, top executive support is a key component to successful organizational performance and implementation of organization-wide and EM programs (Daily & Huang, 2001). Executive support prevents EM failure if executives endorse change, promote employee empowerment, institute punishment systems, and communicate EM-information throughout the organization (Emerson, Meima, Tansley, & Welford, 1997). To the extent that HR managers can obtain executive support, they can prevent EM failure. Through involvement, executives model 'what to do' for employees.

The above discussion focuses on green signatures. One question therefore is how do HR managers form and execute green decisions? The organized system of C-SHRIP factors for generating, executing, and maintaining green signatures are summarized in table 1 and discussed below.

Generation of Green Decisions

Environmental Situations. HR managers' EM-related decisions depend on the environmental situations they encounter. Generally, situations influence attitudes, decisions, and behavior by their strength or weakness (Mischel, 1968). Situations also relate to environmental goals (Ramus, 2005) and behavior (Corraliza & Berenguer, 2000). We focus on the psychological features of environmental situations HR managers process to form green decisions; they create facilitate or constrain green behavior. Environmental situations may present economic opportunities or threats (Barrow, 1999) and involve strong or weak stakeholder demand which arise from the multiplicity of stakeholders and their competing demands (Barrow, 2005). Four situations – leverage, vulnerable, constrained, and problematic – emerge from a combination of these dimensions.

Leverage situations arise from opportune environments and weak stakeholder demands; they enable managers to influence EM. In constraint situations where opportune environments interact with strong stakeholder demand, managers are constrained from maximizing EM benefits (i.e., advantage of the environmental opportunities). Vulnerable situations which emerge from the interaction of threatening environments and weak stakeholder demands show the susceptibility of HR managers to environmental threats even though they are buffered by weak stakeholder demands. Finally, problematic situations arise from threatening environments and strong stakeholder demands where the challenges facing managers are compounded by the threat and strength of stakeholder demand.

Managers' decisions in these situations are likely to be different. In leverage situations managers can take advantage of opportunities with minimal resistance. As a result, they may adopt promotive decisions. The weak stakeholder influence in vulnerable situations also suggests managers may take promotive decisions. In contrast, pre-

ventive decisions may be adopted in constraint and problematic situations given the threats and strength of stakeholders.

CAM Attributes. Cognitive attributes such as expectancies influence how individuals perceive cues and construct meaning of EM such as corporate social responsibility (Maon & Swaen, 2009; Ramus, 2005). Defined as EM-related belief systems that are held by managers, and which help confer meaning on EM events and situations, expectancies may be situation-specific or more global expectations of "what leads to what." HR managers may have stimulus-outcome expectancies or response-outcome expectancies. Stimulus-outcome expectancies represent a predictive relation between environmental stimuli and subsequent outcomes while response-outcome expectancies represent conditional relations between a manager's responses and EM outcomes (Bolles, 1972; Smith, 2006). The two types of expectancies have different effects (see Coppel & Smith, 1980). The EM literature shows instances of stimulus outcome expectancies exemplified by self-efficacy expectancies which are beliefs about managers' ability to effectively manage environmental situations (Ramus, 2005). Unfortunately, response-outcome expectancies (i.e., situation-behavior relations) which center on utility beliefs are non-existent in the literature. They refer to the distinctive *'if'* . . . *'then'*…environmental situation-green behavior relations. If a manager expects positive outcomes from an environmental situation, then he/she may respond positively to advance EM (e.g., planning). However, if he/she expects negative outcomes, the response may be negative and intended to prevent harm.

Affect refers to a broad range of feelings that managers experience including emotions (intense feelings that are directed at EM), moods (feelings that tend to be less intense, longer-lived, and more diffuse feelings), and attitudes (positive or negative orientations toward EM) (Carver, 2004). It is often categorized as positive or negative affect. Positive affect reflects a manager's level of pleasurable engagement with the environment (e.g., enthusiasm, interest, joy, and determination). Negative affect, on the other hand, is a general factor of subjective distress, and subsumes a broad range of negative mood states, including fear, anxiety, hostility, scorn, and disgust for EM. Managers' affect influences EM (Maon & Swaen, 2009; Sharma & Nguan, 1999). Managers with positive affect (i.e., favorable views of EM) are likely to form decisions that motivate employees to exhibit green behaviors; drive the energies of employees toward innovative processes and products, and lead them to form green decisions and adopt role behaviors that advance EM and organizational objectives. On the other hand, those with negative affect such as fears of the repercussions of EM issues (e.g., crisis emergence), negative thoughts about EM, and hostility toward environmental issues are likely to decide against EM. They may stir stimuli that diminish active engagement in EM. Promotive and preventive decisions therefore depend on positive and negative ecological affectivity of managers.

Goals refer to EM objectives that managers intend to achieve. Three types of goals are likely to influence green decisions. First, career goals which center on the career aspirations of managers influence green decisions such that EM activities that advance those goals are pursued. Second, performance goals which arise from the desire to achieve meaningful EM outcomes also drive green decisions. HR managers who seek to contribute value to organizations may use practices that promote EM. Third,

learning goals, which center on EM-learning influence green decisions by stimulating managers' intentions to use educational activities in the organization and establishment of continuous improvement or quality systems that enhance EM. Managers' motives guide short- and long-term goals they seek, the manner in which they encode events; situations they approach or avoid; outcomes they desire, and their emotional reactions to those situations and outcomes (Sharma et al., 1999). Because career goals are likely to enhance the careers of managers, they are likely to be associated with promotive decisions. Performance and learning goals, on the other hand, are intended to prevent obsolescence or environmental degradation (Sharma et al., 1999) and may be associated with preventive decisions.

Values refer to internalized social representations or moral beliefs that managers appeal to as the ultimate rationale for their EM actions. Studies show "managers' personal values influence their inclination to take an interest in specific CSR-related stimuli and issues" (Maon & Swaen, 2009, p. 15). Two major types of values – instrumental (modes of behavior – e.g., honesty, helpfulness) and terminal (self-sufficient end-states of existence that managers strive to achieve – e.g., a comfortable, life, wisdom) – influence green decisions. Terminal values influence decision to plan for, staff, and form green teams, practices that promote EM. A manager's disposition toward self-transcendent values (i.e., universalism and benevolence) may influence his/her propensity to engage strongly in ecological situations (Hemingway & Maclagan, 2004) and thereby advance EM. HR managers' instrumental values (e.g., personal benefits) which relate to prevention of EM may affect the decision to reward, train, and evaluate EM-related performance of subordinates. In other words, decisions related to when and how to address EM issues are made relative to personal benefits either in the short-term or long-term. Further, HR managers' career values affect policy implementation decisions. When HR managers implement effective policies they are likely to be perceived as competent or potential leaders for executive succession. Indeed, instrumental values (e.g., helpful) may cause HR managers to cooperate with other managers thereby facilitating attainment of terminal values such as security, sustainability, and environmental harmony.

Execution of green behaviors

CAM attributes are instrumental in the formation of green decisions but of limited value in predicting actual green behaviors because that requires transformation of those decisions to actual behaviors through HR managers' effective self-regulation. Decision execution depends on the ability of HR managers to exert personal control over their thoughts, feelings, behaviors, and environment in order to achieve their EM goals.

Self-regulation. Self-regulation is important for mastery of EM practices (waste, pollution, energy) which are essential to environmental risk reduction, and for behaviors and attitudes toward EM implementation (Sharma et al., 1999). Self-regulation takes various forms (Bandura, 1997) and comprises strategies, competencies, resources, and behavioral scripts (Mischel & Ayduk, 2002a). Self-regulatory strategies which are critical to green behavior generation include EM-relevant attentional focus, self-monitoring, and self-efficacy. They transform EM decisions to green role behavior.

Attentional focus refers to the process by which HR managers control their focus on EM. It enables them to selectively focus attention on the internal or external cues most necessary for successfully transforming EM decisions to green behaviors, and helps them direct attention away from irrelevant or dysfunctional stimulus elements (such as stressful self-preoccupations). Self-monitoring refers to the process through which individuals regulate their own behavior in order to "look good" so that they will be perceived by others in a favorable manner (Snyder, 1974). High self-monitoring managers may be concerned about the appropriateness of HR's response to green decisions. They may also compare their own EM-tendencies with those of other managers which may lead them to transform their decisions to green role behaviors. Low self-monitors, on the other hand, may be less concerned and therefore less likely to transform green decisions to green behaviors. Self-efficacy which generally refers to an individual's belief in his/her capability to perform a task or function in a certain manner to attain desired goals has several variants (Bandura, 1997). In this paper, we refer to it as green self-efficacy defined as managers' belief about their capability to transform green decisions to green role behaviors. HR managers may execute decisions signatures if they believe they can succeed. Regulatory strategies enable HR managers to discern activities that advance while avoiding those that harm EM.

Competencies are HR managers' abilities to enact or generate a given behavior pattern at the desired performance level. They comprise knowledge, skills, and abilities (Mischel & Shoda, 1995), and influence execution and maintenance of green behaviors (Sharma et al., 1999). Three competencies – EM knowledge, experiences and updating skills – enable managers to transform EM decisions to green behaviors. EM knowledge helps managers analyze and prognosticate on potential outcomes if EM-decisions are executed. EM-related experiences are harnessed to manage future EM crises or problems. Updating skills enable managers to determine and update EM information and activities consistent with environmental changes. Collectively, these competencies facilitate promotive behaviors that contribute to continuous EM improvement (Tinsley & Pillai, 2006). They also enable managers to enact preventive behaviors that minimize harm to EM.

Resources refer to psychological, social, and organizational assets available to HR managers. To the extent that HR managers can access tangible (e.g., funds) and intangible (e.g., commitment) resources they are likely to follow through on promotive decisions. A manager's persistence or commitment to EM and perceived support from organizational executives enables him/her to execute green decisions and persist in green behaviors. Second, availability of technological resources assist managers transforming green decisions (e.g., use of training) to green behaviors (e.g., integration of EM-training within the entire organization). For example, EM information systems not only help organizations to gather relevant data but also to gain knowledge that can be used for strategic and operational purposes (Barrow, 1999). HR managers' ability to access such information fosters easy and speedy execution of green decisions. Such access combines with reminder systems, social or otherwise, to ease the execution and maintenance of green behaviors. Third, organizational rewards which may be person-based, team-based, or organization-based incentivize managers to execute EM decisions (Crognale, 1999; Welford, 1997). HR managers who perceive that they will be

rewarded for their green decisions and behaviors are not only likely to execute the decisions but to persist in such behaviors.

Behavioral Scripts are behavior-centered schemas. Generally, a script is a schema held in memory that describes events or behaviors (or sequences of events or behaviors) appropriate for a particular context (Abelson, 1981). Examples in our context would be attending an environmental group activity or EM-related performance appraisals, and green decision making processes. A behavioral script therefore is "the performance of the observable stream of behaviors retained in an activated cognitive script" (Gioia & Poole, 1984, p. 456). One type of behavioral script, performative script, which is an actor's perception of his or her own behaviors, seems particularly important in execution of green decisions. Through performative scripts managers execute strategies that fulfill green decisions. Behavioral scripts also enable managers to enact the "right" EM behaviors because they retain a cognitive repertoire of EM scripts. Furthermore, scripts enable understanding of environmental situations (and thus are schema-based sense-making structures—see Louis, 1980) which guide behaviors appropriate for those situations. Consequently, they facilitate continuous advancement and responsible green behaviors.

Maintenance of green behaviors

Unlike the above which focus on decision *formation and execution* mental representations (the structure of cognitions and affects based on processed information) focus on *persistence* of green behaviors. Mental representations comprise 'cool' or 'hot' representations (Mischel & Ayduk, 2002a). Cool representations generally refer to 'objective' task-focused thoughts that are intended to enable the manager to regulate and orient him/herself to achieve immediate or delayed rewards from task execution (Miller et al., 1996). They are positive and motivating cognitions intended to drive the individual to persist in the execution of green decisions. Cool representations reinforce the promotive and preventive behaviors. Hot representations, on the other hand, refer to thoughts, usually negative and anxiety-arousing, that explicitly or implicitly seek to deter execution of green behaviors. When managers experience anxiety in environmental situations, it may have negative effects on their self-efficacy and possible beliefs that positive outcomes will emerge from their response. Both cool and hot representations therefore influence persistence of green behaviors. While cool representations facilitate continuous green behaviors hot representations deter sustenance of such behaviors by inhibiting continuous decision execution.

Encoding of Green information

The formation and execution of green decisions as well as persistence in green behaviors depend on green information. The types and manner of HR managers' encodings influence those decisions and behaviors (Ungson, Braunstein, & Hall, 1981). With regard to decision formation, HR managers process EM-related information relative to themselves, organizations, and society. First, work (task, social, organization) information is processed relative to self, job, and career needs vis-a-vis EM (Sharma & Nguan, 1999). Salient information such as potential job threats, work stressors and career inhibitions are encoded more rapidly because of potentially severe consequences

for managers (e.g., job termination). For example, if an environmental crisis is interpreted as likely to lead to termination of a manager's career, he/she may not only decide on communication but also when and how to cooperate with other organizational units to resolve the environmental crisis (Crognale, 1999). Second, HR managers process information about organizational systems (e.g., EMS) for maintenance of green behaviors (Sharma & Nguan, 1999). Systems that are readily available to managers help the latter initiate Green HRM processes. For example, ISO systems within the organization enable managers discern desired behaviors. Those systems serve as reminders and sense-making devices. Third, managers encode information from societal culture, institutions, and regulatory mechanisms on environmental conduct. For example, managers of US companies may process US environmental policies to form green decisions and to execute role behaviors.

In sum, the formation and execution of green signatures result from a number of factors. First, green decisions which are in response to environmental situations are influenced by CAM attributes. Second, self-regulatory attributes affect execution of those green decisions. Finally, encoding of green information influences both generation and execution of green signatures. Next, we discuss the dynamics of green signatures.

Dynamics of green signatures

In contrast to previous research, C-SHRIP proposes that psychological attributes influence green decisions dynamically. Green decisions result from the interactive and configurational processes of CAM attributes of managers. As a system, the attributes interact with each other as well as with other external stimuli in influencing green decisions. HR managers have diverse expectancies, affects, and motivations. Some affects may be activated when specific expectancies are encountered. Further, personal goals may interact with terminal values in influencing green signatures.

The dynamics of green signatures is a function of activations, streams, and organizations. HR managers differ significantly and stably in the ways in which various construals, CAM factors, and regulatory processes become activated when they encounter EM-relevant information. First, different units may be activated. For example, one manager may perceive environmental and career risks highly ("The company may get bankrupt"), whereas another manager may perceive less risk ("The company may suffer financial loss"). Unlike the former who fears lost of job from bankruptcy, the latter does not entertain similar fear. The former may therefore decide to use preventive practices while the latter focuses on promotive practices. Second, some units may be deactivated later counteracting those activated earlier. A manager may decide to promote a particular EM practice or policy because a specific expectancy has been activated but decide against that EM because of the deactivation of a particular affect. For example, a manager who is delighted by the expectation of innovative outcomes from energy efficiency practices may later be anxious over injuries and workers' compensation issues. The latter deactivates intentions to deploy employees to energy conservation activities. Third, managers differ in the *ease* of activation and deactivation. While some managers may easily activate positive outcome expectations, others may instead become pessimistic about the company's prospects. The ease with which these activa-

tions occur suggests that the speed of decisions will be different. The activations may lead to proactive behaviors in easily activated managers but reactive behaviors in hardy managers. These dynamics suggest that managers will exhibit different orientations toward EM.

By stream we mean the direction of the activations and deactivations. Similar to forced field mechanisms, upstream activations function as drivers for decision and action while downstream activations restrain decisions and action. The streams show whether or not green decisions and actions will be taken. Upstreams not only stimulate and enhance green decisions and but also maintain green behaviors. Downstreams on the other hand seem to have the opposite effect; they suppress behaviors resulting from green decisions. In the intersection of streams – decisions and behaviors generated from upstreams and those from downstreams – a dynamic state of self-equilibrating decisions and actions emerges and endures. That state may define the manager as balancing organizational needs with ecological requirements. In terms of system dynamics, this state is similar to an attractor, the area a system approaches, occupies, and tends toward more frequently than other areas (Guastello, 1995).

The interactions of activations and streams suggest organizational structures that may differ for managers. Two structures emerge from green signatures. First, the internal structure which is characterized by internal feedback loops where "downstream" units activate "upstream" units, (and vice versa) generating a flow of thoughts, feelings, and even behaviors without necessarily requiring an outside stimulus (see Figure 1) differs from the external structure. The latter is characterized by information loops that originate from external sources (e.g., industry, country, region, or global) that influence the decisions and behavioral signatures thereby transforming the system from one relatively stable state to another. For example, information from a United Nations conference on the environment that will occur in future is likely to be fed into environmental situations that lead to different encodings, decisions and behaviors. The feedback loops from green behavior to environmental situations emphasize the dynamic interactions during decision formation and execution that occur over time.

Second, the processing of information based on psychological features of environmental situations yields substantial HR manager x situation, *"if . . . then..."* interaction effects (e.g., if environmental situation A, HR manager decides X; but if situation B, HR manager decides Y). The *"if…then…"* relations underpin an HR manager's cognitive-affective and behavioral dynamics. In other words, CAM attributes interact with one another and with self-regulatory units in influencing green signatures given different environmental situations.

The above discussion suggests different configurations of green signatures. Configurations that involve internal dynamics initiate green decisions and behaviors. CAM units interact with one another to facilitate decision effectiveness while the self-regulatory units interact to facilitate execution of those decisions. Configurations that involve external dynamics on the other hand sustain and modify green signatures. The latter facilitate adaptive efficiency: feedback from external sources is used to modify decisions and behaviors that enhance EM. This state of self-organization contributes to novel processes and technologies that enhance organizational adaptation. In sum, while internal configurations enable green signatures to subsist external configurations

enable them to adapt. Collectively these processes suggest that green decisions and behaviors are dynamic.

Consequences of green signatures

Even though green management has diverse outcomes (Sharma & Aragon-Correa, 2005), we focus on three major consequences of green signatures. First, behavioral signatures contribute to EM effectiveness. This influence manifests through EM execution, compliance, and capabilities. The behavioral signatures of managers enable them to implement EM policies by acting as champions, negotiators, resource providers, and supporters which contributes to EM improvement (Sharma & Aragon-Correa, 2005). As discussed above, the integration and cooperative behaviors of managers facilitate EM policy implementation. In addition, behavioral signatures facilitate compliance with ISO 14000 requirements which orients the organization toward environmentally-conscious consumers thereby increasing the customer loyalty base (Kirk, 1995). Behavioral signatures also influence EM capabilities by facilitating routines on EM implementation and EMS execution. Such capabilities can lead to innovative products and processes that not only result in profitability but also competitive advantage (Sharma & Aragón-Correa, 2005).

Second, green signatures enable managers to demonstrate the value of HRM. One of the major challenges of HRM is value creation (contribute meaning, usually financial, to organizations) and value delivery (demonstration of tangible impact) through alignment with and driving the issues critical to organizations. Managers who are able to effectively manage environmental situations can show their individual value to the organization as well as the significance and effectiveness of the HR function. Value creation can be enhanced through capabilities such as prevention of harm to EM. To the extent that managers' decisions and behaviors curb deviance and reduce turnover, they enhance the capabilities of HRM. These outcomes complement resource utilization. Green behaviors that facilitate EM-related human capital acquisition, development, allocation, utilization, and maintenance boost the capabilities and efficiency of HRM. According to the ISO 14001, human capital processes are instrumental in the fulfillment of EM objectives (Hersey, 1998).

Third, green signatures enhance organizational effectiveness. The literature on organizational effectiveness shows a plethora of outcomes (Cameron & Whetten, 1983) that may be categorized as development-centered and performance-centered. Development-centered outcomes include stability, growth, and industry leadership. Performance-centered outcomes on the other hand include efficiency, productivity, and profitability (see Cameron & Whetten, 1983). Both sets of outcomes depend on the strategies of the organization (Shuler & Jackson, 1987). Three strategies that mediate the relationship between green signatures and organizational effectiveness include competitive, innovative, quality, and cost-reduction strategies. Development outcomes depend on competitive and innovation strategies. The strategic management literature shows that these strategies contribute to organizational development by facilitating resource growth, industry leadership, and stability. Innovation enables companies to gain industry leadership or competitive advantage. Competitive strategies also contribute to growth. Performance outcomes have also been shown to de-

pend on quality and cost-reduction strategies. Quality strategies which focus on en-hancing the quality of organizational products contribute to organizational perfor-mance by increasing profitability and productivity. Further, quality strategies contri-bute to stability by ensuring that customers perceive the organization positively there-by ensuring order while innovation strategies contribute to productivity by reducing productive man-hours. Cost-reduction strategies which focus on reducing production expenses contribute to efficiency and profitability.

Green signatures facilitate transformation of the strategies to organizational out-comes. Integration behaviors enable competitive and innovation strategies to influ-ence development outcomes while cooperative behaviors influence innovation and quality strategies. Focus and creative behaviors impact cost-reduction strategies in ad-dition to the above. Risk-taking behaviors affect competitive, innovation, and quality strategies. Finally, compliance behaviors relate to competitive and cost-reduction strategies by ensuring that legal, social, and environmental costs from non-compliance are kept to a minimum.

Discussion

In this paper, we propose a meta-theory of Green HRM based on dynamic processes of EM and cognitive social information processing. We adopt an individual difference approach; a focus on individual differences in the relationships among the attributes. In addition to their accessibility i employees are enabled to focus their work efforts in ways that contribute to achieving the organization's objectives, consists of setting expectations, monitoring behaviors to keep performance on track, and evaluating performance. HR managers prevent harm to EM when they integrate environmental performance into performance management systems by setting EM objectives, mon-itoring EM behaviors, and evaluating achievement of environmental objectives (Epstein & Roy, 1997). Training and development, a practice that focuses on devel-opment of employees' skills, knowledge, and attitudes, prevents deterioration of EM-related knowledge, skills, and attitudes. Activities that educate employees about the value of EM, train them in working methods that conserve energy, reduce waste, diffuse environmental awareness within the organization, and provide opportunity to engage employees in environmental problem solving. It also increases employees' ability to adapt to change, and develop proactive attitudes toward environmental is-sues (Carter & Dresner, 2001). n the processing of green information, researchers are likely to understand, predict, and explain green signatures more accurately. The model, C-SHRIP – proposes that Green HRM encompasses promotive and preventive prac-tices. How managers decide and use these practices defines their green signatures.

The organized system of C-SHRIP units for generating and maintaining Green HRM begins with environmental situations. Situations are nominal or psychological (Mischel & Ayduk, 2002a). This paper focuses on the latter. Nominal environmental situations (e.g., crisis) are embedded with psychological features (e.g., perception of problem or opportunity) that managers process to form their decisions. It is these psychological situations that have meaning for HRM. Second, the model proposes that the CAM attributes of HR managers influence the formation of green decisions. Because there are diverse attributes individual managers enact those that are activated.

HR managers transform their green decisions to green behaviors through self-regulatory strategies, competencies, and resources. They encode self-, work-, organization-relevant green information which is integrated with the attributes in the decision formation and execution. If that information is processed to have potential positive or negative effects HR managers act to enhance (positive) or to neutralize (negative) the effects.

The model has implications for research and practice. It recognizes that green decisions are made relative to environmental situations. As a result, HR managers may decide one way when they encounter a particular situation and another way when they encounter a different situation. In other words, HR managers' green signatures depend on *if…then…*conditions. Green behavior signatures therefore constitute a new way of conceptualizing and analyzing HR managers' green behavior patterns. Second, the model is dynamic. One notable property of dynamic systems like C-SHRIP is the emergence of a distinctive set of activation patterns into which the system settles over time (Hopfield, 1982). Dynamic systems have multiple attractor states that produce distinctive reaction patterns. The states suggest that the CAM attributes that become activated simultaneously in C-SHRIP may form stronger associations with one another eventually becoming a nodal cluster of mutually activating thoughts (Smith, 2006). Specific CAM units are not always activated; rather, their activation levels change from one time to another and from one situation to another, depending on the cues that impinge upon the manager. The key to understanding a manager's decisions therefore lies in comprehension of the structural organization of the units and specification of their mutual influence and activation by particular aspects of the environmental situation. In short, the processing dynamics of C-SHRIP, operating in concert with the work environment, produce the stable patterns of situation-behavior relations or green signatures.

Third, the model proposes that research on Green HRM focuses on how HR managers' individual difference characteristics – construals and attributes – become activated in different environmental situations. HR managers' decisions may be based on their perception of career threats and perceived risks. Because a number of risks, some severe, others inconsequential, exists in EM (see Sharma & Aragon-Correa, 2005), encodings of those risks and subsequent decisions are likely to be different for different managers. To the extent that green information fits with the attributes of an HR manager, he/she is likely to act more promotively than when there is incongruence in those attributes. He/she may channel more personal and subordinate energies toward effective EM.

To facilitate research on C-SHRIP and Green HRM we offer the following propositions:

Proposition 1a: HR *managers that have positive response-outcome expectancies will form promotive decisions while those that have negative response-outcome expectancies will form preventive decisions.*

Proposition 1b: HR *managers that have positive ecological affect will form promotive decisions while those that have negative ecological affect will form preventive decisions.*

Proposition 1c: HR *managers that are motivated by career goals will form promotive decisions relative to those that have performance and learning goals that will form preventive decisions.*

Proposition 1d: HR *managers that have terminal values will form promotive decisions while those that have instrumental values will form preventive decisions.*

Proposition 2:   HR *managers' self-regulation will transform green decisions to green behaviors relative to those that lack self regulation.*

Proposition 3a: HR *managers' encodings will be associated with formation and execution of green decisions while their mental representations will be associated with maintenance and persistence in green behaviors.*

Proposition 3b: HR *managers' that have cool representations will persist in promotive behaviors while those that have hot presentations will persist in preventive behaviors.*

Proposition 4a: *Cognitive-affective and motivational structures that emphasize positivity will more likely engender promotive green signatures while those that emphasize negativity will engender preventive green signatures.*

Proposition 4b: *Self-regulatory structures that emphasize positivity will more likely engender transformational green signatures while those that emphasize negativity will engender transactional green signatures.*

Proposition 5a: HR *managers' green signatures are conditioned on environmental situations such that leverage and vulnerable situations are likely to be associated with promotive green signatures while constraint and problematic situations are likely to be associated with preventive decisions and behaviors.*

Proposition 5b: *Internal dynamic structures are associated with maintenance of green signatures relative to external dynamic structures which are associated with adaptation of green signatures.*

In testing the propositions, we suggest researchers pay attention to issues of measurement. The model can be examined using idiographic and nomothetic methods. Idiographic approaches have been used to examine individualized self-efficacy patterns (Miller et al., 1996), and situation-behavior relations in anger responses (Ruiz & Hanin, 2004). In addition, nomothetic analyses which assess mean-level relations among variables may also represent the patterns of relations found in individual HR managers. Furthermore, we encourage researchers to pay attention to the sample of subjects for green signatures. We focus only on HR managers' decisions and behaviors in this paper. The approach is consistent with previous studies (Sharma & Nguan, 1999). However, decisions and behaviors of employees can also influence Green HRM. For example interviewers, resume sorters, work analysts, trainers, and performance evaluators can influence hiring, training, performance management of employees with regard to EM (Wehrmeyer & Parker, 1996). Our model implicitly suggests that these actors' influence on green signatures occurs through HR managers. Their attributes can affect the relations in the model (Emerson et al., 1997). However, we encourage explicit examination of employees' behaviors and their effects on HR managers' green signatures. There may be interactive effects that could provide insight. Lastly, we encourage researchers to consider levels of analysis. The model sug-

gests that HR manager's green decisions influence organizational outcomes. That influence occurs through emergence processes (Kozlowski & Klein, 2000).

Three practical implications are also important. First, organizations have to avail information to managers in a way that enables the latter to make meaningful decisions that influence effective environmental management. Second, organizations have to target regulatory attributes of managers to facilitate execution of green decisions. Self-regulation training may help in that regard. Third, green practices include value-added opportunities such as new innovations that create business value while at the same time having environmental benefits. Organizations that are concerned about increasing innovation and productivity in the workforce can support HR managers by facilitating green signatures that focus on sustainability.

A few limitations are noteworthy. First, until the model is tested its validity may be questionable. Second, we adopted a managerial perspective as mentioned above. Third, our model is not limited to a particular EM practice. Its breadth may limit testing. However, a programmatic view of Green HRM is our intended objective. Finally, we did not limit our model to a particular context (i.e., industry and location). Variations in context can influence the expected effects. So, we encourage testing of not only the model but other perspectives. We also encourage experimental approaches including simulation to tease out some of the intricacies of the model.

In conclusion, we present a different perspective on Green HRM: a dynamic and psychological approach that integrates social information processing in HR managers decisions and behaviors. The model addresses the dynamic interactions between construals and other cognitions and affects that HR managers prime and activate within the processing system as they interpret, transform, and act on green information to generate green decisions and maintain green behaviors.

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