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Moral chronicity and social information processing: Tests of a social cognitive approach to the moral personality

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Abstract

Following Higgins, King, and Mavin (1982) chronicity paradigm, we examined the effects of chronically accessed moral constructs for prototypic moral character using two different research paradigms, spontaneous trait inferencing and lexical decision. Study 1 presented target sentences in a deliberate or spontaneous processing condition. Recall was cued with either a dispositional or semantic cue. Moral chronics made more spontaneous trait inferences with dispositional cues than semantic cues. In Study 2, participants read stories about characters who did or did not help. Moral chronics were faster responding to probes reflecting negative evaluations of story characters who did not help when requested (e.g., "disloyal"). Findings support claims that the moral personality is usefully conceptualized in terms of the chronic accessibility of moral knowledge structures.
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1. Introduction

In recent years there has been a remarkable resurgence of interest in studying moral rationality within the broader context of moral personality, selfhood, and identity to account more adequately for issues of character and virtue (e.g., Lapsley & Narvaez, 2004; Lapsley & Power, 2005). These topics were largely pushed to the margins of research in moral psychology by the ascendance of the cognitive developmental tradition, notably Kolhberg's theory of moral development (Kohlberg, 1969, 1981, 1984). Kohlberg rejected character as a basis for moral development for a number of reasons. He argued that the language of character traits does not provide the resources to combat ethical relativism (because one person's *integrity* is another person's *stubbornness*); that it cannot provide guidance for moral education (because it involves sampling arbitrarily from a "bag of virtues"); and that the psychological reality of traits is much in doubt (because the cross-situational consistency of traits has not been adequately demonstrated). Moreover, the Kantian and Piagetian sources of Kohlberg's theory led him to focus on those aspects of morality (deontic judgments of duty and obligation) that could be stage-typed (justice reasoning), at the expense of more traditional "Aristotelian" concerns, such as the cultivation of virtuous character.

Although the Piagetian stage-and-structure approach to justice reasoning has yielded an enormously productive research program over the years, there is also growing recognition that moral reasoning cannot be abstracted cleanly from the complex dynamic system of selfhood and personality of which it is both part and product (Blasi, 2005). If character is the moral dimension of personality, then the explanatory reach of moral psychology must be grounded on, or at least compatible with, well-attested models of personality. Unfortunately, there has been little history of cross-pollinating work across the two domains of psychology. For example, researchers in personality psychology rarely attempt to account for the dispositional aspects of moral functioning, or to derive robust implications of personality theories for constructs of interest to the moral domain, such as moral selfhood, identity and character (for notable exceptions, see Bandura, 1986; Bandura, 1991). In turn, researchers in moral psychology rarely avail themselves of the theoretical resources, constructs and mechanisms of personality psychology for conceptualizing the moral *person* who discerns issues, constructs reasons, forms an identity, sets goals, favors projects, makes commitments, pursues justice, and otherwise attempts to live well the life that is good for one to live.

But two research programs have attempted recently to frame integrative accounts of the moral personality, and in a way that aligns with the two distinct disciplines of personality psychology. According to Cervone (1991) personality psychology divides on the question of which units should best conceptualize personality. One discipline favors trait/dispositional constructs and understands personality structure in terms of between-person variation as described by certain interindividual taxonomic systems (e.g., the Big 5 trait variables). The second discipline favors cognitive–affective constructs, or social-cognitive units, and understands personality structure in terms of within-person processes (Cervone, 2005). Each discipline of personality psychology has attracted interest with respect to integrative theories of moral personality.

For example, Walker and his colleagues examined the personality structure of moral exemplars with respect to the Big 5 trait dimensions. In one study (Walker & Pitts, 1998) three types of moral exemplars were studied: brave, caring and just. Brave individuals were

found to align with a complex of traits associated with the extraversion dimension, caring individuals aligned with agreeableness, while just individuals aligned with a complex mixture of conscientiousness, emotional stability and openness to experience. This pattern was largely replicated in a subsequent study (Walker & Hennig, 2004, Study 2) that related prototype descriptors of moral exemplars with the interpersonal circumplex and five-factor models of personality as assessed by the Revised Interpersonal Adjectives Scales-Big 5 (Wiggins, 1995). The just prototype, for example, was described as a moderate blend of nurturance and dominance, and aligned with Conscientiousness and Openness to Experience. Matsuba and Walker (2004) showed that the personality of young adults who were nominated for their moral exemplarity was characterized by traits associated with the agreeableness dimension (Matsuba & Walker, 2004).

In contrast to a traits/dispositions approach we have attempted to understand moral personality from the perspective of social-cognitive theory (Lapsley, 1996, 1999; Lapsley & Narvaez, 2004; Narvaez & Lapsley, 2005). The social-cognitive approach attempts to explain the cross-situational coherence of personality, and its variability, not by appealing to broad-band descriptive traits, but rather by a "bottom–up" analysis of the causal mechanisms, structures and processes of social information-processing (Cervone, 1997; Cervone & Shoda, 1999a). It asserts that knowledge accessibility and knowledge activation are general principles of cognitive functioning (Higgins, 1990; Higgins, 1996), and that the activation of available mental representations is critical for processing social information. According to this view, chronically accessible constructs are at a higher level of activation than are inaccessible constructs, and are processed so efficiently so as to approach automaticity (Bargh, 1989). These constructs "include knowledge of social situations, representations of self, others and prospective events, personal goals, beliefs and expectations and knowledge of behavioral alternatives and task strategies" (Cervone & Shoda, 1999a, p. 18), and are variously conceptualized as schemas, scripts, prototypes, and similar constructs (Hastie, 1981; Mischel, 1990).

Moreover, there are individual differences in the availability and accessibility of these knowledge structures (Higgins et al., 1982; Higgins, 1996), and, as such, should properly be considered a personality variable (Higgins, 1999). The source of individual differences in construct accessibility lies in the particularities of each person's unique developmental history (Bargh, Lombardi, & Higgins, 1988). It is assumed, for example, that accessibility results from a developmental history of frequent and consistent experience with a specific domain of social behavior, so that accessible constructs are readily activated for interpreting interpersonal experience. Chronic accessibility would also influence our impression of others and our memory for social events such that individuals with non-overlapping accessible constructs would have quite different interpretations and recollections of the same event.

This has been demonstrated in a number of studies. In a classic study, for example, Higgins et al. (1982) measured subjects' chronically accessible constructs by asking them to list the traits of a person they liked, disliked, sought out, avoided, and frequently encountered. Trait chronicity was determined by primacy of output. A trait was considered "chronic" if it was listed first in response to one or more questions, and "non-chronic" if it was not listed at all for any question. One week later subjects returned to participate in an ostensibly unrelated study on "psycholinguistics" conducted by a different experimenter. Each subject read individually tailored essays containing trait-related descriptions of a target person. Half the traits used in the target descriptions were chronic for each subject, and

half were non-chronic. On measures of spontaneous impression and recall subjects were significantly more likely to include information related to chronic traits than non-chronic traits. Moreover, there is evidence that the effect of chronic accessibility on impression and memory are stable over time and guide the processing over a wide variety of objects (Anderson, Glassman, Chen, & Cole, 1995; Bargh et al., 1988; Higgins & Brendle, 1995; Higgins et al., 1982; Lau, 1989).

We have adapted this framework to account for the moral personality (Lapsley, 1996, 1999; Lapsley & Narvaez, 2004, 2005). We argue that moral personality is best understood as the chronic accessibility of moral constructs for construing social events. On this account a moral person, or a person who has a moral identity or a moral character would be one for whom moral schemas are chronically accessible, readily primed and easily activated for processing information.

Two additional claims are made. First, moral chronicity is a dimension of individual differences. It is a major determinant of moral personality in the sense that chronically accessible moral knowledge structures are also those that are essential, central and important for one's self-identity. Virtuous individuals are those for whom moral constructs are chronically accessible, but individuals may well differ in the sort of moral constructs that are available, and, indeed, for many individuals, it is non-moral constructs that are chronically accessible for processing social information.

Second, moral chronicity accounts for the fact that many moral dispositions are automatically engaged by individuals for whom moral categories are chronically accessible. This is seen, for example, in Colby and Damon's (1992) analysis of "moral exemplars" whose lives of extraordinary moral commitment were largely absent protracted moral deliberation. Instead, many of these individuals reported that they "just knew" what was required of them, automatically as it were, without engaging in the elaborate decision-making calculus envisioned by Kohlberg's account of principled moral reasoning. The automaticity of moral information processing characteristic of these individuals is perhaps the result of chronically accessible schemes that encourage spontaneous moral inferences to guide behavior.

In the present studies we attempted to test important claims of the social-cognitive approach to moral personality using two different experimental paradigms. In Study 1 we employed the spontaneous trait inference (STI) paradigm to examine whether individuals with chronically accessible moral schemas would be more likely to make spontaneous moral trait inferences than would individuals with other kinds of schemas chronically accessible. In Study 2 we employed a lexical decision-making task to examine whether individual differences in moral chronicity influence the moral evaluation of characters in narratives. Our use of two rather different paradigms allowed us to examine whether moral chronicity has broad generality or tied to specific tasks or methodological manipulations.

2. Study 1

The spontaneous trait inference paradigm assumes that the meaning of social events is constructed routinely, habitually and unintentionally (Uleman, 1989). Spontaneous trait inferences (STIs) are said to occur when attending to another person's behavior produces a trait inference without an explicit intention to infer traits or to form an impression (Uleman, Hon, Roman, & Moskowitz, 1996; Uleman, Newman, & Moskowitz, 1996). This is typically demonstrated using a cued-recall procedure. The typical design includes two

conditions, a spontaneous processing condition and a deliberate processing condition. Participants in the spontaneous processing condition are instructed to memorize a list of sentences that contain behavioral information (e.g., "The lawyer strongly disagrees with the economist."). Note that these "memory instructions" do not ask participants to form an impression of the actors in the sentence or to draw an inference about character, motivation or reasons-for-action. Hence, it is assumed that any inference that is drawn about the actors is spontaneous.

In contrast, participants in the deliberate processing condition are told to focus on possible reasons for the actor's behavior, and then to memorize the sentences. Consequently, inferences drawn about actors are said to be deliberate given the explicit instruction to form an impression. Participants are then given cues to help them recall the presented sentences. Some of the cues are dispositional ("argumentative"), others are semantic ("courtroom"). If STIs were formed at time of encoding, then trait-cued recall should be effective in eliciting recall of target sentences. When participants are given no instruction about how to encode information, and are simply left to their own devices, they tend to make dispositional inferences congruent with their most accessible schemas.

Two studies provide illustration. Zelli, Huesmann, and Cervone (1995) asked aggressive and non-aggressive participants to read sentences (e.g., "The policeman pushes Dave out of the way.") that included actors whose behavior could be interpreted as hostile or non-hostile. The results showed that, within the spontaneous inference condition, hostile dispositional cues prompted significantly more recall than did semantic cues for aggressive subjects, while semantic cues prompted twice as much recall among non-aggressive participant than did hostile dispositional cues. These differences were not apparent in the deliberate processing condition. Presumably, individual differences in aggressive experiences is associated with differences in hostility inferences that are spontaneous and outside of one's awareness (Zelli, Cervone, & Huesmann, 1996; Zelli & Dodge, 1999). This study provides evidence, then, that there may be stable individual differences in the types of STIs that are produced about the same stimulus information. Indeed, as Zelli and Dodge (1999, p.119) put it, "salient social experiences foster knowledge structures that may become so highly accessible as to pervasively influence one's social thinking."

Uleman, Winborne, Winter, and Schechter (1986) also demonstrated the influence of a personality variable on the production of STIs. Using a cued-recall procedure, Uleman et al. (1986) presented sentences that had different trait implications for individuals who were high and low on authoritarianism. For example, the sentence "The architect loved the excitement of military parades" implied the trait attribution "patriotic" for authoritarian participants, but non-authoritarian participants were unable to reach a consensus about what trait the sentence implied.

Taken together, these studies show that STIs vary depending on dimensions of individual difference such as aggressiveness and authoritarianism. In this study, we extend this line of research by treating *moral* chronicity as a possible individual difference variable that influences the production of spontaneous trait inferences. We hypothesized that participants who have moral constructs chronically accessible would tend to make dispositional STIs more than participants who do not show moral chronicity. We attempted to demonstrate this using a methodology that combines the cued-recall procedures common in STI research with standard procedures for determining schema accessibility.

2.1. Method

2.1.1. Participants

The participants were 254 (154 female, 100 male) psychology students who attended a large regional university in the Midwestern United States. The participants ranged in age from 18 to 22, and included 162 freshmen, 58 sophomores, 24 juniors, and 10 seniors. Participants who were determined to be moral chronics and non-chronics were randomly assigned to the spontaneous and deliberate processing conditions. In the spontaneous processing condition, there were 31 (11 male, 20 female) participants who demonstrated chronically accessible moral constructs (and are denoted as "chronics"); and 38 (11 male, 27 female) participants who did not show chronically accessible moral constructs (and are denoted as "non-chronics"). Within the deliberate processing condition, there were 30 (12 male, 18 female) moral chronics and 39 (18 male, 21 female) non-chronics.

2.1.2. Measures

Following Higgins et al. (1982) we used the primacy-of-output method for determining participants' chronically accessible constructs. Participants were asked to record the traits of someone they like, someone they dislike, someone they seek out, and someone they avoid. In addition, participants also recorded the traits of individuals that they frequently encounter. These traits were recorded in order of output. A maximum of 10 traits was permitted for each question.

Chronically accessible traits were those traits that participants listed first in response to each question. One trait came from each of the four affect questions and two came from the frequency question. If synonyms and antonyms were selected, then traits listed second and third were selected to ensure the distinctiveness and reasonableness of a participant's six accessible traits. Participants were considered to have high moral chronic accessibility if three of the six traits that they listed were also traits that are highly prototypic of good moral character, as determined by prototypicality ratings reported by Lapsley and Lasky (2001). Participants who did not name any trait adjectives prototypic of good moral character were considered to be "non-chronic."

2.1.2.1. Sentence creation. The procedure for creating statements was modified from a procedure used by Zelli et al. (1995) and Winter and Uleman (1984). Twenty stimulus statements were created that described social interactions that are ambiguous and therefore open to alternative judgments. Ten sentences included virtue dispositional terms, and 10 were included as filler statements. We limited the virtue set to 10 sentences and included filler sentences to minimize the possibility that participants would perceive the purpose of the study. The 10 virtue traits were selected from traits that are highly prototypic of good character, as determined by Lapsley and Lasky (2001), and are reported as dispositional cues in Table 1. The filler traits were randomly selected from a set of the 20 least prototypic good character traits, and are reported as dispositional cues in Table 2. The order of the sentences was randomized to control for order effects.

2.1.2.2. Manipulation check. We attempted to assess whether the sentences that we created adequately reflected the dispositional term that it was designed to reflect. This assessment was done in two ways. Following Zelli et al. (1995), we created five candidate sentences for each trait term. Then a group of five judges rated each sentence on a 7-point continuum

Table 1
Target sentences for virtue traits and recall cues

Target sentence	Dispositional cue	Semantic cue
The plumber always meets his obligations and keeps his word	Responsible	Pipes
The receptionist is sympathetic to the student's dilemma	Understanding	Telephone
The electrician encourages his employees' efforts	Supportive	Wires
The librarian gives her son a hug before he leaves for school	Loving	Books
The tailor comforts a friend who recently lost his job	Compassionate	Clothes
The elevator operator always makes time to exchange pleasantries	Friendly	Floors
The farmer remains devoted to his disabled wife	Faithful	Crops
The professor teaches his children lessons about virtues	Moral	Teacher
The accountant assists others with no expectation of a reward	Kind	Numbers
The butcher is trustful when he responds to questions	Honest	Meat

Table 2
Target sentences for non-virtue traits (filler) and recall cues

Target sentence	Dispositional cue	Semantic cue
The mother stumbles over her feet when walking	Clumsy	Father
The successful film-maker is frugal with his finances	Thrifty	Movie
The pianist struggles to make conversation with new people	Shy	Music
The secretary eats nutritious foods and exercises daily	Healthy	Typewriter
The sailor takes a shower everyday	Clean	Sea
The barber always analyzes his actions and knows himself well	Introspective	Hair
The carpenter understands difficult topics easily	Intelligent	Wood
The reporter has an aura that makes people want to be around him	Charismatic	Newspaper
The lawyer considers the 4th of July to be the most important holiday	Patriotic	Courtroom
The doctor evaluates the applicants without bias	Objective	Clinic

ranging from 1 (not related) to 7 (very related). In addition to rating the items, the judges were also asked to create their own statement that was representative of each trait word. The judges' mean ratings were used to determine which sentences to retain and which to discard (only the highest rated sentence within each set of five was retained). The retained sentences, plus the statements created for each trait by the judges, were then evaluated by a new set of five judges, who rated each sentence along the same 7-point continuum that was used in the first round. The top rated sentence for each trait construct (as determined by mean ratings across the five judges) was retained for use as stimulus materials in this study.

As a further manipulation check we asked fourteen participants to read each target sentence and to write a one word adjective that described the central character in the sentence. On average, participants adduced the intended trait term 43% of the time, with a range of 21–93%. This range is similar to what is typically obtained in previous studies (e.g., Bassili, 1989; Whitney, Waring, & Zingmark, 1992).

2.1.3. Procedure

Participants were told that they were engaging in an experiment on "personality." To determine the chronicity of moral constructs participants were asked to write down the traits of someone they like, someone they dislike, someone they seek out, someone they avoid, and someone they frequently encounter with a maximum of 10 traits for each question. The order of the four affect questions (i.e., like, dislike, seek out, and avoid) was counterbalanced across participants, and half the participants received the frequency question

before the affect questions and half received them after. There was a 4-min delay between participants' completing their response to one question and receiving the next question. During this delay period participants were given a nonverbal task (arithmetic operations) to reduce the possibility that their prior responses affected later responses. This was adapted from a procedure used by Zelli et al. (1995).

Next, participants were randomly assigned to either the spontaneous or the deliberate processing condition. Each participant was given a booklet which contained task instructions and protocols. Participants in the spontaneous processing condition were given these instructions: "While you are reading the sentences, try to memorize as much of it as you can." Participants in the deliberate processing condition were given these instructions: "While you are reading the sentences, think about the reasons why the individuals described in the sentences performed the behaviors they did. Think about what caused the outcome described. Then, try to memorize as much as you can of the statement."

Twenty sentences were then presented on slides at a rate of 5 s per slide (Zelli et al., 1995). Immediately after the slide presentation, participants engaged in an interpolated activity (arithmetic operations) for 2 min to clear short-term memory. Immediately following the interpolated activity, participants in both the spontaneous and deliberate processing conditions received a list of dispositional and semantic cues and were asked to recall the sentences presented during the acquisition phase. Participants received semantic cues for half of the "good character" and filler statements and dispositional cues for the other half. Cues for filler sentences were intermixed randomly. The dispositional cues were traits associated with good moral character. The semantic cues were linked to semantic elements of the sentences. For example, if participants read the sentence "The celebrity devotes his time to the community charity" the semantic cue for this sentence might be "Hollywood" (linked semantically with "celebrity") while the dispositional cue could be "conscientiousness" (linked to a "good character" disposition). Tables 1 and 2 show the semantic and dispositional cues that were used for prompting recall of the sentences.

2.1.3.1. Recall scoring. Following Zelli et al. (1995) sentence recall was scored by assigning one point for the accurate recall of each of three syntactic components of the sentence: the actor, the action(s), and the action's target. The recall score for each sentence thus ranged from 0 (no recall) to 3 (perfect recall). Two independent judges, blind to the participants' experimental condition, conducted the recall scoring. The judge's ratings showed a 93% agreement rate. Full credit was given for recalling a virtue sentence even if the dispositional cue had been originally intended to trigger the recall of a different virtue-centered sentence. A similar scoring decision was used when a virtue sentence was cued by a semantic cue different than the one originally intended for the sentence. Credit was given only for the first time a given statement was recalled. Recall of the virtue sentences when prompted by dispositional cues and when prompted by semantic cues were scored separately. For each cue type there were five sentences. Scores for each sentence (0–3) were added together for a total score (maximum score possible = 15). Mean total scores for recall are reported in Table 3.

2.2. Results

Sets of planned contrasts were calculated on recall of dispositional and filler sentences in the spontaneous and deliberate processing condition. The Bonferroni procedure was

Table 3
Total recall (means and standard deviations) of target sentences by chronics and non-chronics, by cue type and processing condition

Cue type	Chronics		Non-chronics	
	Mean	Standard deviation	Mean	Standard deviation
Spontaneous processing condition				
Dispositional	5.42	2.17	2.17	2.19
Semantic	2.03	1.82	5.29	2.14
Filler	3.42	2.53	3.11	2.52
Deliberate processing condition				
Dispositional	4.20	3.24	3.97	2.74
Semantic	4.43	2.30	4.18	3.18
Filler	4.13	3.08	3.38	2.18

used to protect the family wide α rate of .05. Table 3 provides the means and standard deviations by group and condition.

We predicted that moral chronics in the spontaneous processing condition would recall more sentences than non-chronics when prompted with dispositional cues. This hypothesis was supported, $t\ (248) = 5.34$, $p < .001$. We predicted that non-chronics in the spontaneous processing condition would perform better with semantic cues than with dispositional cues. This hypothesis was also supported, $t\,(248) = 5.27$, $p < .001$.

In the deliberate processing condition we hypothesized that dispositional cues should provide no advantage to moral chronics. This view was supported. Recall between chronics and non-chronics was statistically equivalent, $t\,(248) = .37$ (ns). Similarly, we hypothesized that semantic cues should provide no advantage to non-chronics in the deliberate processing condition. This hypothesis was also supported, $t\,(248) = .41$ (ns).

We also analyzed recall for filler sentences. We did not expect to find significant differences between chronics and non-chronics in the recall of filler sentences, regardless of cue type or processing condition. As expected, all comparisons were non-significant.

2.3. Discussion

In this study, we tested whether moral chronicity would constitute an individual differences variable that influences the sort of spontaneous trait inferences that are made about others, using a standard cued-recall paradigm. After first assessing levels of moral chronicity, we compared moral chronics and non-chronics in how well they recalled sentences when prompted with dispositional and semantic cues, under two conditions. In the spontaneous processing condition, participants were instructed to memorize target sentences. In the deliberate processing condition, participants were instructed to form an impression of the characters in each of the sentence and to memorize the sentences. We hypothesized that moral chronics (vs. non-chronics) would recall more target sentences when cued with moral dispositional cues than semantic cues, when told simply to memorize the target sentences ("spontaneous processing"). In contrast, we hypothesized that non-chronics would rely upon semantic cues to recall the sentences when told to simply memorize them. We did not expect to find recall differences between moral chronics and non-chronics in the deliberate processing condition.

The results supported these expectations. Moral chronics, when instructed to memorize target sentences, appeared to form spontaneous trait inferences of characters featured in the sentences. This was evident given the superiority of dispositional cues in prompting recall over semantic cues. Because moral chronics were not instructed to form characterological impressions, any trait inference that was evident is assumed to be a spontaneous construction. The chronic use of moral dispositional constructs for encoding and recall also explains why moral chronics did not outperform non-chronics when recall was prompted with semantic cues. Non-chronics were able to profit from semantic cues because target sentences were encoded with reference to the semantic properties of the sentences, and not in terms of the moral dispositions of sentence characters. As expected, however, there were no differences between chronics and non-chronics in the deliberate processing condition, presumably because the impression formation instructions also directed non-chronics to attend to dispositional features of characters.

Previous research has shown that the tendency to make spontaneous trait inferences varies along certain dimensions of individual differences, such as aggressiveness and authoritarianism. The present results suggest that *moral* chronicity is also an important individual differences dimension that influences social information-processing. Moreover, the present study also documents the accessibility of a construct that is at a higher level of generality than is typically reported in the chronic accessibility literature. Previous research typically demonstrates chronic accessibility effects with specific trait constructs (e.g., "conceited"). In this study, however, we showed that individuals also have more general constructs ("moral character") chronically accessible, and that individual differences in the accessibility of the moral character construct influences information-processing. This study contributes, then, to growing evidence regarding the automaticity of social psychological phenomena. Automatic activation has been demonstrated for attitudes (Bargh, 1989), self-concepts (Bargh, 1982; Higgins, 1987), stereotypes (Pratto & Bargh, 1991), and social behaviors (Bargh, 1996). It now appears that moral character is a construct that can be chronically accessible for social information processing that is spontaneous, unintentional and automatic.

3. Study 2

It is possible that evidence adduced in favor of moral chronicity explanations of moral personality is specific to certain kinds of experimental manipulations or methodological tasks. In Study 2 we attempted to assess the generality of moral chronicity and its influence on social information processing by using a text comprehension paradigm that is novel to this question. Text comprehension also depends critically upon schema activation, particularly in the form of elaborative inferences that readers generate from prior knowledge to make sense of text (van den Broek, 1989). General knowledge about the world is activated by readers to explain the focal event or to fill in a missing causal link to the focal event (e.g., Singer, Revlin, & Halldorson, 1990; van den Broek, 1990). Moreover, elaborative inferences are influenced by individual differences in background knowledge as indexed by culture and domain familiarity (e.g., Chiesi, Spilich, & Voss, 1979; Harris, Lee, Hensley, & Schoen, 1988; Singer, 1994). Individual differences in moral development also influence the processing of moral stories and narratives. Narvaez (1998) showed, for example, that individual's prior moral knowledge greatly influenced the recall of moral narratives. Developmental differences in moral judgment schemas influenced what was remembered accurately

and what was invented during recall of moral narratives with embedded moral reasoning (Narvaez, 1998; Narvaez & Gleason, 2005).

The second study attempts to integrate the chronicity paradigm of social cognitive personality research and the text comprehension paradigm to provide evidence regarding the influence of accessible moral constructs on inferences made while reading moral stories. We tested moral inference generation between groups of participants with high or low levels of moral chronicity. A lexical decision task was used to assess activation of moral inferences. Lexical decision tasks are often used to determine activation of a concept in the mind of a reader. We expected those with high levels of moral chronicity to react more quickly to moral inference probes than those with low moral chronicity due to differences in levels of moral schema activation.

3.1. Method

3.1.1. Participants

There were 120 college student participants (53 male, 67 female). Data from 10 respondents were eliminated overall (5 for incorrect responses to key datum, 3 for not being native speakers of English, and 2 for unacceptably large reaction time discrepancies).

3.1.2. Materials

3.1.2.1. Stories. The stories were written by the researchers and used in previous research (Narvaez, Mitchell, & Linzie, 1998; Narvaez & Mitchell, 1999). There were "help" stories (protagonist helps the requestor) and "no-help" stories (protagonist does not help). Stories were approximately 400 words long. Both kinds of stories had characters that were on their way to fulfilling personal goals.

3.1.2.2. Help stories. In the "help" stories, the protagonists either postponed or sacrificed their own goals. The stories were: "Sherman Takes Italian" in which Sherman's aunt's small repeated requests interfere with Sherman's goal of learning Italian for his forthcoming vacation in Italy; "Marisol Starts College" in which Marisol sacrifices her desired living arrangements during her first year in college to help out her cousin after her cousin's husband breaks a hip; "Mark and the Party" in which Mark has a last chance to meet a girl he has a crush on but helps his drunk cousin instead; "Calley and the Dance" in which Calley sacrifices going to a reunion dance to fix her disabled uncle's fence.

3.1.2.3. No-help stories. In the "no-help" stories, the protagonist declined to help and went on to fulfill his or her personal goals. The no-help stories were: "Leroy and the Race" in which Leroy is asked by his cousin to help out in a family emergency but he refuses because he is about to run in a marathon (see the Appendix A for the full text of this story, with probes); "Paula and the Concert" in which Paula's aunt asks her to help move furniture for a cleaning crew but she refuses because she has tickets for a much anticipated concert; "Glen and the Photos" in which Glen refuses to drive his aunt to a weekly social because it interferes with his plans to shoot photos for a contest; "Christie's Money" in which Christie refuses to lend money to a cousin because it conflicts with her plans to buy tickets for a long-awaited vacation.

3.1.2.4. Filler stories. The filler stories were: "Verna Skips School," about high school seniors skipping a day of school to go to the beach; "Wanda's Winter Day," about a snowbound teacher who has a water pipe leak; "Nancy Remembers Her Sister," about a woman who participates in an AIDS walk in memory of her sister; "Tony's First Day," about a man who takes on a difficult dog-sitting job; "Sam Gets a Job," about a man looking for a job so he can finish school; "Frank's Paper," about a college student submitting a term paper at the last minute before leaving for vacation; "Martha Moves to Arizona," about a young woman who joins the dirt bike team after moving to Arizona; and "Steve and the Camp," about an overweight man who attempts to spend a weekend at a weight-loss camp.

3.1.2.5. Chronicity assessment. As in Study 1 we used the primacy-of-output method for determining participants' chronically accessible constructs (Higgins et al., 1982). We used a stringent criterion to determine level of chronicity. We coded only the first response on each of the four questions (people liked, disliked, sought out, and avoided) and the first two responses on the remaining question (people frequently encountered). We coded the trait words according to whether or not they reflected moral regard for the other ("loyal", "unselfish", "respectful", and "dutiful") or self-regard ("self-centered"), including both synonyms and antonyms. High moral chronics were those individuals that used 3–6 moral terms. Non-chronics were those individuals that either had one moral term or none.

3.1.2.6. Lexical decision probes. Lexical decision is a measure of semantic activation. It is a common methodology to study concept priming during reading. Participants were interrupted during their reading of each story with six lexical decision tasks ("Is this an English word or not?") and were required to answer "yes" or "no" by pressing corresponding keys. Probes for each target story were: one moral evaluative inference, one reinstatement (of information earlier in the story), one irrelevant English word, three non-English words. The Appendix A has a sample story that contains examples of a reinstatement probe and a moral evaluative probe. Probes in the filler stories were: one reinstatement, one elaborative (evoking prior knowledge) inference, one irrelevant English word, three non-English words. The location of the moral probes occurred in the second half of the story, after the decision was made to help/not help. The locations of the rest of the probes were determined randomly with no less than two sentences between probes. For half the target stories, the moral probe came before the reinstatement, and for the other half, the reinstatement probe came first. The reinstatement and elaborative inferences that we tested were inferences required for comprehension.

The moral probes were selected to reflect a moral other-regarding or an egoist perspective. That is, for the "Help" stories in which the protagonist sacrificed his or her own interests to help, we probed with words like loyal, respectful, dutiful, unselfish. In the "no-help" stories in which the protagonist refused to help and continued to complete his or her personal goal, we probed with words like disloyal, self-centered, selfish, and disrespect.

3.1.2.7. Data trimming. We calculated median reaction times across the different types of inference probes for each individual participant. Responses (correct and incorrect) that exceeded three standard deviations both from the participant's mean and that particular item's mean across subjects were eliminated from the analyses. If a participant had more than 20% such responses, the participant was eliminated from the analysis entirely. Two participants were dropped for having more than 6 responses with reaction times greater than 3 standard deviations from the mean for each term.

3.1.3. Procedure

Participants were tested individually. First, participants completed the five questions that assess chronicity. Participants then read a practice story on a computer to familiarize them with the task requirement of making lexical decisions. Following the familiarization procedure participants next read a filler story, followed by eight (alternating target and filler) stories that were displayed clause by clause at the participant's own pace (by pressing the spacebar with the left hand). As the participants read each story they were interrupted six times at randomly selected points (at least two sentences between probes). Instead of the next sentence, a row of asterisks was presented for 750 ms. The letter-string probe was then presented and the respondent's task was to indicate whether the letter string was an English word or not (pressing a key for "yes" or a key for "no"). Most participants completed the tasks within 30 min.

3.1.3.1. Participant blocks. There were two blocks of participants. Each block read different stories except for the first filler story which all participants read. Each block read (1) two stories in which the protagonist sacrificed his or her own plans to help someone else; (2) two stories in which the protagonist said no to a request for help to complete his or her own plans; and (3) four filler stories. The order of the stories was determined in a semi-random manner making sure that there were an equal number of female and male protagonists in each block.

3.1.4. Variables and hypothesis

3.1.4.1. Variables. Dependent variables were difference scores computed for each type of story (help, no-help) from median reaction times for the two types of probes (moral, reinstatement). Reinstatement inferences are commonly made by readers to maintain local coherence while reading (van den Broek, 1990) so times for these inferences were used as a baseline from which the moral inferences times were subtracted. The independent variable was moral chronicity. We compared those with high chronicity to those with low moral chronicity. There were 20 high moral chronics and 41 low moral chronics or non-chronics.

3.1.4.2. Hypothesis. We expected high moral chronics to respond faster when making moral inferences on both types of stories, no-help and help. We expected stronger differences with the no-help stories because of the violation of expectation to help.

3.2. Results

Means and standard deviations are listed in Tables 4 and 5. All significant tests were conducted with alpha set at .05.

Table 4
Average means (and standard deviations) for median response times for type of inference by group

Group	Probe category		
	Reinstatements	Moral probe help stories	Moral probe no-help stories
High moral chronicity ($n = 20$)	734.38 (109.43)	954.53 (439.17)	902.03 (246.75)
Low moral chronicity ($n = 41$)	866.11 (265.10)	1000.01 (387.30)	1294.33 (640.16)

Table 5
Lexical decision difference scores (moral median-reinstatement median) by story type (help or no-help) and group (high chronic, low chronic)

Group	Story type	
	Help story: reinstatement probe—moral probe	No-help story: reinstatement probe—moral probe
High moral chronic ($n = 20$)	220.15 (398.44)	167.65 (169.76)
Low chronic ($n = 41$)	133.90 (234.46)	428.22 (477.57)

We conducted a MANOVA with the two dependent variables, the difference score between median reaction time for the reinstatement probes and median reaction time for the moral probes for help stories and the difference score between the median reaction time for reinstatement probes and median reaction time for moral probes for the no-help stories. Chronicity was the grouping factor. The multivariate analysis was significant, Wilk's $\lambda = .88$, $F_{(2,58)} = 3.85$, $p < .027$, $\eta^2 = .12$. Univariate tests proved significant for no-help stories ($F_{(1,59)} = 5.56$, $p < .02$, $\eta^2 = .09$) but not for help stories ($F_{(1,59)} = 1.13$, $p < .29$, $\eta^2 = .02$). See Table 5 for mean reaction time differences. High moral chronics were significantly faster than non-chronics on reacting to negative evaluations about characters that did not help as requested in the story, but there was no difference in reaction time between chronics and non-chronics for inferences about story characters that helped. Fig. 1 shows the median reaction times for each type of story by group.

Because there were only two responses combined for each type of story, the median resulted in being equivalent to a mean. To verify that the previous findings were not based on skewed data, we also conducted a Mann–Whitney test examining the difference scores between reinstatement response times and moral inference response times. The significance for help stories was $p < .58$ whereas for no-help stories it was $p < .025$, thereby confirming the parametric analysis.

Follow-up tests indicated that high moral chronics were equally fast in reacting to moral inferences for helping (positive evaluations) and not helping (negative evaluations)

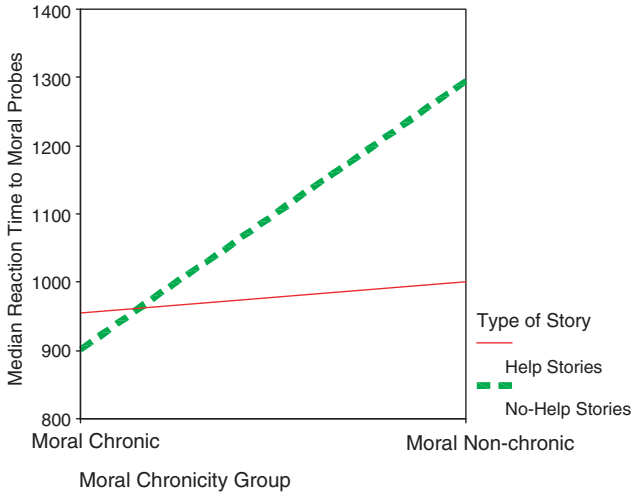


Fig. 1. Median reaction time for moral probes for story type by group.

$t_{(19)} = .67, p < .51$. On the other hand, non-chronics were significantly slower to react to negative evaluations than they were to positive evaluations ($t_{(40)} = 3.77, p < .001$). That is, they were less likely to judge negatively the action of not helping. The Wilcoxon Signed Rank test indicated no difference in median responses for chronics for the two types of stories ($p < .76$) whereas for non-chronics, there was a significant difference ($p < .001$).

3.3. Discussion

The purpose of the second study was to measure the effects of moral chronicity on evaluative inferences generated when reading moral stories. Participants were presented with moral inferences about protagonists who either helped or did not help when asked by a relative. It was assumed that high moral chronics, that is, individuals for whom moral categories are chronically accessible, in comparison to non-chronics, would show faster reaction time to probes that reflect moral evaluations about the actions of story characters. It was anticipated that the chronic accessibility paradigm for studying personality coherence would demonstrate the dispositional qualities of moral information processing on an inference generation task during reading.

The results showed that moral chronicity influenced the evaluative moral inferences that participants generated while reading. As expected, high moral chronics were equally fast in responding to the two types of probes, those that reflected positive judgments of a character that helped and those that reflected negative judgments of a character that did not help, indicating that they activated expectations for helping while reading both types of target stories. In contrast, non-chronics responded differentially to the two types of probes. Their reaction times to probes reflecting positive evaluation of characters that helped were as fast as the chronics'; but their reaction times to probes reflecting negative evaluations of characters that did not help were significantly slower than the chronics' reaction times, indicating that no generalized schema for helping was activated while reading the no-help stories. Alternatively, it would appear that non-chronics activated moral schemas only when story characters dropped personal goals and actively embraced the altruistic alternative; but otherwise did not notice the moral implications of not helping.

These findings suggest that those who more frequently think of relationships with others in moral terms, high chronics, are as likely make moral evaluations of people who help as of people who do not help when expected. High chronics activate moral schemas in a general fashion when judging other people's behavior, regardless of the outcome, suggesting that moral responsibility may be paramount to high moral chronics regardless of the situation.

4. General discussion

The present results demonstrate the viability of a social cognitive conceptualization of moral character. According to this view, moral personality can be understood in terms of the chronic accessibility of moral schemas for construing social events. On this account a moral person, or a person with a moral identity or character, would be one for whom moral constructs are chronically accessible, readily primed and easily activated for social information-processing.

In Study 1 this was demonstrated using cued-recall in a spontaneous trait inference paradigm. In Study 2 this was demonstrated using a lexical decision-making task commonly

used in text comprehension research. Both studies showed that moral chronics and non-chronics respond differently to the dispositional and moral implications of social cues. Indeed, moral chronicity appears to be a dimension of individual differences that influences spontaneous trait inferences and text comprehension. Moreover, the effects of moral chronicity on social information-processing is not limited to specific experimental manipulations or paradigms but has broader generality, insofar as moral chronicity was shown to influence both spontaneous trait inferences and inferences tested through a lexical decision task.

Our attempt to frame a social cognitive theory of moral personality stands in contrast to another strategy which attempts to understand moral personality by reference to between-person taxonomic constructs, such as the Big 5 (e.g., Walker & Hennig, 2004). These dual approaches to understanding moral personality represent the two disciplines of personality psychology (Cervone, 1991, 2005). The social cognitive approach focuses on within-person cognitive-affective mechanism (e.g., Mischel, 1999; Mischel & Shoda, 1995), and attempts to understand individual differences from the "bottom–up", that is, on the basis of specific psychological systems that are in dynamic interaction with changing situational contexts (Cervone, 2005). In contrast, the traits/dispositions approach understands personality structure as a between-person classification, and understands individual differences in terms of "top–down" abstract dispositional constructs as might be evident in latent variable taxonomies. Our preference for the social cognitive option reflects a strategic bet that it will more likely lead to robust integrative developmental models of the moral personality than would the between-person taxonomic approach. The emphasis of social cognitive theory on cognitive–affective units that are in dynamic interaction with changing social contexts to produce a stable dispositional signature aligns with the paradigmatic assumptions of ecological-contextualist "systems" models of development (Lerner, 1991), which improves considerably the prospect for constructing developmental models of emerging social cognitive mechanisms of the moral personality. In addition, as Cervone (2005) points out, between-person taxonomic classifications of personality may have little explanatory value with respect to causal and dynamic intraindividual processes, an advantage that favors the social cognitive approach.

The present studies make a number of novel contributions to the literature. To our knowledge these are the first studies to document variations in the generation of Spontaneous Trait Inferences using moral chronicity as the individual differences variable and to integrate lexical decision-making with chronic accessibility methodology. Narvaez and Lapsley (2005; Lapsley and Narvaez, 2005) recently argued that advances in the "post-Kohlberg" era in moral psychology will hinge on deeper integration with the theories, constructs and methodologies of other domains of psychological science, including cognitive and social cognitive science, personality research and motivation. The present studies take some steps in this direction, and vindicate the promise of a social cognitive conceptualization of the moral personality.

Of course there are also a number of questions for this research program. One question concerns the mechanism that accounts for the findings. In Study 2, for example, it is not clear whether the difference between moral chronics and non-chronics is best explained by reference to generalized expectancy violation or to the fact that chronics simply apply moral schemas to a wider variety of behaviors. Although the present study was not designed to tease out this subtlety our general view is that chronically accessible moral schemas dispose one to "see" readily the moral dimensions of experience, that is, to set up

certain expectations for behavior (e.g., that one is responsive to the needs of others). These expectations, in turn, serve as the basis for differential behavioral attributions reported by chronics and non-chronics. On this interpretation expectancies mediate the relationship between moral schemas and behavioral attributions. Testing the validity of this and other mechanisms is an important line of research for the future.

Another question concerns the developmental formation of the moral personality (Thompson, 1998). If individual differences in moral chronicity are the basis of the moral personality, then the key developmental question concerns the critical formative experiences that lead to the availability, accessibility and activation of moral constructs. It is generally assumed that specific and frequent developmental experiences with a particular domain of behavior results in the formation of available and accessible social cognitive constructs (Bargh et al., 1988). Similarly, we have speculated that parents who socialize morally relevant event representations ("what happened when you pushed your sister?"), who make frequent character attributions ("you are a honest and helpful person"), and consistently and inductively draw out the moral implications of the child's behavior, would tend to have children for whom moral categories are chronically accessible (Lapsley, 1996; Lapsley & Narvaez, 2005; Narvaez, 2005). Future research should test these developmental assumptions.

Although we have argued that moral chronicity is a dimension of individual differences, it is unclear how the present model relates to other theories of moral selfhood and identity. Blasi (1984) has argued that one has a moral identity just when moral categories are essential, central and important to one's self-understanding. One has a moral personality when the self is constructed around moral commitments. The study of moral exemplars has shown that individuals who lead lives of extraordinary moral commitment tend to align self-goals with moral ideals. Future research should explore the possibility of theoretical frameworks that integrate the moral exemplar and moral identity tradition in moral psychology with social-cognitive theories of personality. One possibility is to argue that moral categories (schemas, episodes, scripts, prototypes) that are essential, central and important for one's self-identity would also be ones that are chronically accessible for interpreting the social landscape. Such categories would be readily primed and easily activated for discerning the meaning of events. And, once activated, these constructs would dispose the individual to interpret these events in light of their moral elements.

Finally, in light of recent political discourse about moral values and their importance in political decision making, it is not too soon to begin to evaluate the effects of moral chronicity in areas beyond social evaluation of hypothetical situations. For example, moral chronicity may have a large effect on voting behavior and may make one more vulnerable to political discourse intended to prime chronic moral constructs of a certain kind. The influence of situational priming on construct accessibility can also pay dividends in our understanding of how person and context interact in accounting for moral behavior.

Appendix A. Sample story with target probes

A.1. Leroy and the race (NO HELP)

Every morning, Leroy got up early to run before breakfast and work. He was in good shape for his age. After running, he would shower and eat breakfast and then head out for work. He was a carpenter and would drive to many places around the city. Every other Sat-

urday he would not work so he could do a 10–15 mile-long run. He knew how important this run was for developing good endurance, so he rarely missed it. He liked to enter races and, even though he had never won, he usually finished in the top of his age group. He worked hard to better his times. For four months, he trained for the local "Grandpa's" marathon race, for men 55–65. He logged nearly 60 miles a week. As a 57-year-old in good shape, his wife and friends were certain that he could win the local title.

When the day of the race finally arrived, he got up early for breakfast, pancakes and coffee. He drank lots of orange juice and water. The event started at 8 AM. (*Reinstatement inference*: Marathon) While he was getting dressed, the phone rang. It was Thomas, his cousin. Thomas had a family emergency, his father-in-law had had a heart attack during the night and was in the hospital. Thomas needed to drive the family to the small town hospital to see him. Thomas asked if Leroy would watch his corner grocery store for the day. The supply truck would be bringing the week's produce during the day. If no one was there to receive them, Thomas would miss getting the supplies for the week. Leroy was the only person he trusted with running the store. Leroy sympathized but told him that he had other plans. Leroy said he had a good chance at winning the race this year. He told Thomas he would call after the race. He wished him well and then hung up the phone. (*Moral evaluative inference*: Disloyal).

After he parked his car, he jogged around to warm up and then headed for the starting line. There were so many people on the narrow street that he could hardly move. As the race got underway, Leroy found that he was not able to reach his normal pace until more people fell behind him. Once he hit his regular pace, he felt comfortable. Although he was exhausted at the finish, he came in with a faster time than he ever had. But he did not win. A 62-year-old came in first. He felt good about his personal record. After some stretching, he milled around with the crowd, picked up his marathon T-shirt and ate some bagels. That night, he went out to celebrate his accomplishment with some other racers.

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