

Young and Old Adults' Concerns About Morality and Competence¹

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Two experiments were conducted to examine people's sensitivity to person information from the morality domain (relation-oriented) and the competence domain (task & achievement-oriented). In a lexical decision paradigm, the findings from Experiment 1 showed that younger adults were faster to identify person cues (trait words) from the morality than from the competence domain, especially cues that were related to immorality. Experiment 2 compared the responses of younger and older adults. Despite the slower responses of the older adults, the findings indicated that all participants were faster at identifying cues from the morality domain than from the competence domain, with no age interactions. The results from Experiment 2 also suggested that disparate findings in the literature regarding reaction times to morality/competence cues and valence (positive or negative) were a function of word frequency effects. The findings are discussed in terms of people's chronic concern with the moral aspects of others as invariant across the lifespan, given that the morality domain is where interpersonal costs and threats are most likely to be signaled.

To act in the social field requires a knowledge of social facts—of persons and groups. To take our place with others we must perceive each other's existence and reach a measure of comprehension of one another's needs, emotions, and thoughts. (Asch, 1952, p. 139)

As Asch noted, a basic, if not the central, mechanism underlying interpersonal interaction is that people must come to some conclusion regarding each others' intentions, dispositions, and feelings (Asch, 1946; Heider, 1944; Jones & Gerard, 1967;

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Tagiuri & Petruccio, 1958). However, it seems that when people perceive and think about others and try to determine their intentions, numerous things would come to mind. How is it that people, for the most part, have little trouble in solving this potentially overwhelming cognitive task? One possibility is that people rely on recurring themes or schemas to organize their social world. Such schemas might be expected to help simplify the number of hypotheses people entertain about others.

Two potential themes that people appear to use to structure and make sense of their lives are morality and competence. Morality refers to characteristics relevant to ethics and a sense of right and wrong in interpersonal relationships. Competence refers to characteristics relevant to task accomplishment, achievement, and attainment. The distinction between morality and competence is apparent in many different research domains in the psychological literature. For example, the distinction is used to characterize the types of groups that emerge in organizations. Some groups are more informal in nature and develop among members of organizations in order to fulfill socioemotional or relationship needs, whereas formal groups are formed in order to perform tasks and accomplish objectives (Hamner & Organ, 1978). A similar characterization is used to describe leadership behavior and styles (e.g., Bales, 1953; Fiedler & Chemers, 1974; Shartle, 1956), and it could be argued that the distinction maps onto the major demarcation in political affiliation in the modern United States.

A discussion of morality and competence is also inherent in posited cultural differences in self-construals, namely collectivism and individualism (Sanchez-Burks, Nisbett, & Ybarra, 2000; Wojciszke, 1997). Collectivists are characterized as more interdependent and more concerned with social relations, whereas individualists are characterized as being more concerned with achievement and accomplishment. In a related vein, the distinction between morality and competence is used to make sense of self-regulation goals, for example, relational versus task (Bales, 1965; Benne & Sheats, 1948). The distinction is also apparent in discussions concerning the functions that conflict serves, to solidify the bonds of group members or to help bring about problem resolution (Coser, 1956).

Most relevant to the present research, the distinction between morality and competence is also used to describe the structure of personality (e.g., Benet & Waller, 1995). Benet and Waller have found that, in addition to the big five personality dimensions, the two other "big" dimensions people use to understand themselves are morality and competence. In terms of person perception, it has been shown in multidimensional approaches that the morality and competence dimensions account for most of the variance in people's judgments of others (Rosenberg, Nelson, and Vivekananthan, 1968). This characterization is echoed in more recent person perception research dealing with dispositional

attribution and inference (e.g., Reeder & Brewer, 1979; Skowronski & Carlston, 1987).

It thus appears that what underlies much of people's social cognition has either to do with morality or relationship-related issues and competence or achievement and task-related issues. So when thinking and trying to make sense of other people, some constraints appear to be available regarding the hypotheses people will entertain and the inferences they will draw. Our focus in the present research is to examine the possibility that one of these themes or categories of information is primary and dominates people's concerns about others, and whether the focus evident in young adults is different in older adults.

IS ONE DOMAIN PRIMARY?

Even though the thoughts people are likely to entertain about others in general will have to do with the relational aspects of others or their competence and abilities, perceivers should be chronically concerned with one of these categories. Part of the reason for this concern is that people should be most affected by whether or not others pose threats or will create costs for them (cf. Peeters & Czapinski, 1990; Kahneman & Tversky, 1979). We hypothesize that potential threats and costs from others are most likely to be signaled in the morality rather than the competence domain.

In line with this reasoning, models of social inference propose that for the morality domain, people hold the lay theory that *immorality* is more informative regarding a person's dispositions than is *morality* (Reeder & Brewer, 1979; Skowronski & Carlston, 1987; Ybarra & Stephan, 1996, 1999). For example, Reeder and Brewer suggest that people have schemata that relate different behaviors with underlying trait dispositions. For the morality domain, perceivers believe that moral people tend not to do immoral things, but that immoral people can do moral and immoral things. Thus, in the morality domain, the most informative cue about others is negative person information.

The reverse tends to be the case in the competence domain. For this domain, people hold the lay theory that it is unlikely that an *incompetent* person will, all of a sudden, produce a competent performance. But it is likely that a *competent* person will on occasion, for a variety of possible reasons, do incompetent things. Therefore, the most informative cue in the competence domain is positive person information (Reeder & Brewer, 1979; Skowronski & Carlston, 1987).

It thus appears that the domain in which people will tend to glean any information about potential threats or costs from others is the morality domain—that is where cues signaling potential harm stand out (cf. Peeters & Czapinski, 1990). Consequently, it should be expected that people will be particularly concerned with others' morality rather than others' competence.

THE CHRONIC CONCERNS OF YOUNGER AND OLDER ADULTS

An uncontroversial premise of the present research is that there are cognitive declines as a person grows older. As people grow older, their general ability to process information is reduced (Craik & Byrd, 1982), and they experience declines in speed of processing and working memory (for a review see Park, 2000). Speed of processing refers to how rapidly people perform mental operations (Salthouse, 1991, 1996), whereas working memory is the on-line processing capacity available to store, retrieve, and manipulate information. There is evidence that age-related decreases in speed of processing and working memory account for age differences in a broad range of behaviors including long-term memory tasks (Park et al., 1996, 2000); the assembly of abstract three-dimension figures from blocks (Morrell & Park, 1993); memory for television, radio, and print news (Frieske & Park, 1999); and reasoning about medical decisions (Zwahr, Park, & Shifren, 1999).

Despite these general age-related declines in cognition, people's chronic concern with others' morality is likely to be present regardless of a person's age. It is the case that life goals change as people get older and that older adults tend to place less value in achievement than do younger adults (cf. Carstensen, Gross, & Fung, 1997). However, all people regardless of their age tend to remain embedded in a web of social relations (Antonucci & Akiyama, 1987; Charles & Carstensen, 1999), although the rate of social interaction may decline in later life (e.g., Lee & Markides, 1990). Given the continuing social nature of humans across the life-span, it should thus be expected that all people should remain sensitive to relationship or the morality-related aspects of others. This should be especially true for immoral cues because immorality signals potential threats and costs. The case for whether age differences might be found with respect to competence is less clear. On one hand, because older adults value achievement in self less, they might be less sensitive to competence than are young adults. On the other hand, as one becomes older and perhaps needs to rely more on others for services, competence may remain as salient as it did in young adulthood or could even increase. It seems, for example, unlikely that older adults would be less concerned about the competence of a surgeon or other service provider than young adults.

The first experiment assessed young adults' sensitivity to person information from the morality and competence domains to examine the hypothesis that people tend to be more concerned with others' morality than competence, especially cues that suggest immorality. The second experiment compared the sensitivity of younger and older adults to these domains in addition to addressing a methodological issue regarding word frequency effects associated with the lexical decision paradigm used to study the major theoretical issues.

EXPERIMENT 1

One way to investigate what concerns people most is to examine the categories of person information they tend to use when thinking about others. In the present studies participants were asked to complete a lexical decision (LDT) task in which they had to identify person cues (trait words) and nonword letter strings presented on a computer monitor. In a standard LDT task participants are asked to identify whether letter strings with which they are presented constitute a word or a nonword, and they have to do this as quickly as possible. Thus, if a participant was presented with the following letter string, *OSTROLY*, they should respond by saying or pressing a “NO” button indicating that this is not a word. However, if the following letter string was presented to participants, *DISHONEST*, they should respond by saying or pressing a “YES” button indicating that this is a word.

Researchers have used this method to test ideas of how the semantic relatedness of words that are presented prior to the letter strings affect the speed with which people respond to the letter strings (e.g., Meyer & Schvaneveldt, 1971). Thus, if the word *SCOUNDREL* were presented prior to seeing *DISHONEST*, participants should respond faster in saying that dishonest is a word than if the word *FLOWER* was presented.

In the present studies, participants were not presented with any priming words prior to the presentation of the target letter strings. Instead, it was reasoned that people’s chronic concern with other’s morality would result in greater activation or readiness of the morality category compared with the competence category. Compared to words related to competence, this activation should facilitate to a greater extent people’s identification of words related to morality (cf. Bruner, 1957; Higgins, 1996).

Method

Design and Participants

Twenty-seven young adults were recruited from introductory psychology classes at the University of Michigan. They were given course credit for their participation in the study. All participants had to respond to stimuli (person cues) that were related to the domains of morality and competence. In addition, within each domain the information included both positive and negative person cues. Thus, the design of the study was a 2 (Person cue domain; morality, competence) \times 2 (Cue valence; positive, negative) repeated measures factorial, with both factors varying within participants. Participants were run in noninteracting groups of 2–4.

Materials and Procedure

Participants were recruited to take part in a study dealing with word recognition. Participants were seated in front of a computer monitor and were told that their task was to recognize as quickly as possible whether letter strings presented to them on the computer monitor were words or nonwords. In the current experiments, we were not interested in participants' responses to the nonwords. The nonword letter strings were included to reinforce the cover story for the experiment, that the experiment dealt with word recognition.

In this experiment the major concern was with participants' responses to person cues as a function of whether they described morality or competence-related aspects of people, and whether the person cues referred to positive or negative aspects of people's personalities. Eighty person cues were chosen from the lists created by Anderson (1968), and 80 nonwords were created for the study. Forty of the target words (person cues) were related to the morality domain and 40 words were related to the competence domain. In addition, half of the cues (20) within each domain were positive in valence and half were negative in valence. The positive cues in the morality domain included, for example, "honest," "helpful," "friendly," and "gentle." Some of the positive cues in the competence domain included "clever," "creative," "skillful," and "talented." Some of the negative person cues in the morality domain included "deceitful," "hostile," "cruel," and "disloyal." And some of the negative cues in the competence domain included "stupid," "ignorant," "weak," and "clumsy." Examples of nonwords included "aetrivce," "tignnoar," "pelhulf," and "negetg." Favorability ratings were obtained from norming participants ($n = 65$) and were submitted to a 2 (Person cue domain; morality, competence) \times 2 (Cue valence; positive, negative) repeated measures ANOVA. The analysis produced only a reliable main effect for Cue valence, $F(1, 64) = 626.53$, $p < .0001$. This effect, as expected, indicated that positive cues ($M = 5.44$) were rated more favorably than negative cues ($M = 2.05$).

The stimulus words (person cues) used in the study were controlled for how frequently they occurred in the natural language. This is critical given that positively valenced words occur more frequently than negatively valenced words, and frequency facilitates the speed with which people recognize words (e.g., Balota & Chumbley, 1984; Schilling, Rayner, & Chumbley, 1998). We controlled for a word's frequency of occurrence by preselecting the items with regard to the Kucera and Francis (1967) word norms. The mean frequencies were submitted to a 2 (Person cue domain; morality, competence) \times 2 (Cue valence; positive, negative) repeated measures ANOVA. The analysis produced no reliable main effects ($F_s < 1.00$). The cues related to morality ($M = 4.57$ per million) occurred as frequently as the cues related to competence ($M = 4.45$). In addition, the positive cues ($M = 4.52$) occurred as frequently as the negative cues ($M = 4.50$). Finally, the interaction of the two factors was also nonsignificant ($F < 1.00$), indicating

that the frequency of occurrence was equivalent for all the cues (positive morality cues, $M = 4.60$; negative morality cues, $M = 4.55$; positive competence cues, $M = 4.45$; negative competence cues, $M = 4.45$).

The participants' task was to press a key on the computer keyboard to indicate whether the letter string presented on the computer monitor was a word and a different key if the letter string was a nonword. Prior to the appearance of the target string, a "+" sign appeared as a fixation point in the middle of the screen for 1 s to direct participants' attention to where the letter string would be presented. Then with an equal probability of occurrence, a word or nonword appeared on the screen until participants responded that it was a word by pressing the "1" key or a nonword by pressing the "2" key. After participants made their response, a 2-s interval expired before the fixation point appeared on the screen and participants continued with the next trial. Each participant received a different random order of presentation. Before the real task, participants were presented with 20 practice trials. The time it took participants to respond to the person cues served as the dependent measure for the study. After responding to the items, participants were debriefed, given course credit, and thanked for their participation.

Results

Four average response latencies were created for each participant, representing the combination of cue domain and cue valence. Wrong responses occurred at a low rate (6%), so they were not analyzed. In addition, responses beyond 2 s were classified as outliers and removed from the analysis. This criterion represents an average of previously used limits. Previous research has used limits of 1.5 s (Wentura, Rothermund, & Bak, 2000) or 2.5 s (Bargh, Chaiken, Govender, & Pratto, 1992). The analysis was equivalent whether these responses were included or not.

Participants' response latencies to the person cues were submitted to a 2 (Person cue domain; morality, competence) \times 2 (Cue valence; positive, negative) repeated measures ANOVA (see Table I for means). All three effects of the overall analysis were significant. As anticipated, the analysis yielded a main effect for domain, $F(1, 26) = 8.89$, $p < .006$. Participants responded faster to morality ($M = 652$ ms) than to competence-related person cues ($M = 688$ ms). The analysis

Table I. Mean Response Times (Milliseconds) as a Function of Person Cue Domain and its Favorability

Valence	Person cue domain	
	Morality	Competence
Positive	678	682
Negative	626	686

Note. The larger the number the longer the response time.

also produced a main effect for valence, $F(1, 26) = 4.65$, $p < .04$. This effect indicated that participants were faster to respond to negative ($M = 656$ ms) than to positive person cues ($M = 680$ ms). Finally, the interaction was also reliable, $F(1, 26) = 7.89$, $p < .009$. In general terms, this effect indicated that the difference in responding to the negative versus positive cues was larger in the morality domain ($M_{\text{difference}} = 52$ ms) than in the competence domain ($M_{\text{difference}} = 4$ ms).

With regard to the hypothesis that people would be more sensitive to negative cues in the morality domain compared to the other cues, responses to the immorality cues were compared to responses to the other three types of cues. In all three comparisons, people's responses to the immorality cues were faster than to any other type of cue (all $ps < .007$). People were fastest to recognize person cues that were related to immoral dispositions.

Discussion

The findings from Experiment 1 indicated that people responded faster to person cues from the morality than the competence domain. Further, people were faster to respond to immorality cues than to any other type of cue. These findings were obtained despite the fact that the person cues did not differ in word frequency and despite the fact that the favorability of the cues was equivalent across the morality and competence domains. These results are consistent with the idea that people chronically attend to the morality domain to discern potential threats and costs from others.

In the next experiment we wanted to replicate the findings from Experiment 1, in addition to examining how older adults might be similar to or different from younger adults in their responses to different person cues. Based on cognitive aging research showing that older adults have decreased speed of processing and working memory resources than younger adults (e.g., Craik & Byrd, 1982; Park et al., 1996; Salthouse, 1996; see Park, 2000, for a review), it was anticipated that older adults would be slower to respond to person cues in general compared with the younger adults. Despite these general differences as a function of age, the case was made earlier that all people should be concerned with morality monitoring, especially information that indicates immoral tendencies in others. Older adults should be no exception. As a result, it was expected that all participants would respond faster to morality-related than competence-related person cues, especially immorality cues.

In addition to investigating the sensitivity of younger and older adults to information from the morality and competence domains, a secondary goal of Experiment 2 was to reconcile the findings from Experiment 1 with recent research by Wentura, et al. (2000, Experiment 3). These investigators also used a lexical decision task to examine people's responses to person cues. In their study, some participants were asked to press a button to make their responses while other

participants were asked to withdraw a finger from depressing a button to make their responses. Their findings showed an interesting interaction between type of response and the person cue to which participants responded. Of greater relevance to the present research, these investigators found that participants were faster in responding to positive compared with negative cues overall, inconsistent with the present research.

One possible explanation for the discrepancy in findings is that these researchers did not control for the cues' frequency of occurrence. They reported that the positive words they used occurred more frequently in the language than the negative words. Thus, if word frequency had been controlled for, their results might be more in line with ours—showing that people are faster in responding to negative than positive person cues. Experiment 2 was designed to examine this issue as well.

EXPERIMENT 2

Method

Design and Participants

Twenty-six young adults were recruited from introductory psychology classes at the University of Michigan. The average age of these participants was 18.84 years (range = 18–22). They were given course credit for their participation in the study. Twenty-six older adults (mean age = 69.8 years, range = 62–79) were recruited from the greater Ann Arbor, MI, area and were paid \$25 for their participation. All participants had to respond to stimuli that were related to the domain of morality and competence. In addition, within each domain the information included both positive and negative person cues, as done in Experiment 1. Thus, the design of the study was a 2 (Age Group; older adults, younger adults) \times 2 (Person cue domain; morality, competence) \times 2 (Cue valence; positive, negative) mixed design, with the first factor varying between participants and the latter two factors varying within participants. Participants were run in same-age, noninteracting groups of 2–4.

Materials and Procedure

In order to examine the word frequency explanation for the findings obtained by Wentura et al. (2000), we created a new stimulus list so that word valence covaried with frequency, as it does naturally, in an effort to mimic the conditions of Wentura et al. Forty person cues (words) and 40 nonwords were used in this study. Half of the items were related to morality and half were related to competence.

In addition, half of the items were positive in valence and half were negative in valence. The negative items on average had a frequency of occurrence of $M = 7.85$ per million (negative moral = 6.80; negative competence = 8.90). On the other hand, the positive items had a frequency of occurrence of $M = 36.60$ per million (positive moral = 31.30; positive competence = 41.90). The word frequencies were submitted to a 2 (Person cue domain; morality, competence) \times 2 (Cue valence; positive, negative) repeated measures ANOVA. The analysis produced the main effect for valence as expected, $F(1, 36) = 6.27, p < .01$, but no other effects were reliable. Thus, the analysis confirmed that only the person cue's valence covaried with word frequency.

The remaining aspects of the procedure were the same as those used in Experiment 1, except that participants responded to the stimuli twice in two separate blocks. After completing their responses to the two blocks of items, participants were debriefed, given course credit or paid, and thanked for their participation.

Results

Wrong responses occurred at a low rate (1.47%; younger = 1.88%, older = 1.06%), so they were not analyzed. In addition, responses beyond 2 s were classified as outliers and removed from the analysis. The outliers constituted less than 1% of all responses (younger = .19%, older = 1.2%). The analysis was equivalent whether these responses were included or not.

The effect of word frequency on the speed with which people process words is not linear; there is a marginal decrease in reaction time per unit of increase in word frequency (Balota & Chumbley, 1984; Gordon & Caramazza, 1982). In order to control for this bias, we adjusted participants' response latencies for each item by multiplying it by the log of the word's frequency of occurrence in the Kucera and Francis (1967) norms. This technique corresponds to that used by other researchers who have examined the effects of word frequency on a variety of cognitive processes, including assessments of visual duration (Howes & Solomon, 1951), spelling errors (Bricker, Schuell, & Jenkins, 1964), object recognition (Milianti & Cullinan, 1974), and lexical decisions (Balota & Chumbley, 1984; Gordon & Caramazza, 1982; Schilling et al., 1998). Then, as done in Experiment 1, we created four average response latencies for each participant, representing their responses to the positive and negative person cues from the morality and competence domains. Participants' *adjusted* response latencies to the person cues were submitted to a 2 (Age Group; older adults, younger adults) \times 2 (Person cue domain; morality, competence) \times 2 (Cue valence; positive, negative) mixed design ANOVA, with the first factor varying between participants and the latter two factors varying within participants (see Table II for means). As expected, younger adults ($M = 513$) responded faster to the cues than the older adults ($M = 704$), $F(1, 50) = 28.18, p < .0001$.

Table II. Mean Adjusted Response Times (Response Time \times Log(Frequency)) as a Function of Person Cue Domain, Descriptor Favorability, and Participant's Age

Valence	Person cue domain	
	Morality	Competence
Younger adults		
Positive	609	679
Negative	316	449
Older adults		
Positive	796	902
Negative	481	639

Note. The larger the number the longer the response time.

Of greater interest, the findings replicated Experiment 1. The analysis yielded a main effect for domain, $F(1, 50) = 82.18$, $p < .0001$, which indicated that participants responded faster to morality ($M = 551$) than competence-related person cues ($M = 667$). The analysis also produced a main effect for valence, $F(1, 50) = 314.24$, $p < .0001$. This effect indicated that participants were faster to respond to negative ($M = 471$) than positive person cues ($M = 746$). Finally, the interaction of domain and valence was also reliable $F(1, 50) = 5.92$, $p < .02$. Similar to Experiment 1, this effect indicated that the difference in responding to the negative versus positive cues was larger in the morality domain (M difference = 303) than the competence domain (M difference = 246).

In terms of the hypothesis that all people would be most sensitive to immoral cues than to any other type of cue, people's responses to the immorality cues were compared to each of the other three types of cues. All of the comparisons were reliable ($ps < .0001$). People were fastest to recognize person cues that were related to immoral dispositions than any other type of disposition.

With regard to the responses of the younger and older adults, the analysis revealed no age interactions ($F_s < 1.00$). Thus, despite the general difference in response times between the younger and the older adults, participants from both age groups responded to the different person cues in the same manner.

We conducted a second analysis of the data uncorrected for word frequency. This mimics the analysis of Wentura et al. (2000) who found that people responded faster to positive compared with negative words. Participants' *unadjusted* response latencies were submitted to a 2 (Age Group; older adults, younger adults) \times 2 (Person cue domain; morality, competence) \times 2 (Cue valence; positive, negative) mixed design ANOVA, with the first factor varying between participants and the latter two factors varying within participants. The analysis produced a main effect for valence, $F(1, 50) = 36.28$, $p < .0001$, which in this case showed that people responded fastest to the positive ($M = 620$ ms) than negative words ($M = 701$ ms), just as Wentura et al. found. Despite the change in the results with respect to valence, the analysis still showed that people responded fastest to morality person cues ($M = 645$ ms) than to competence person cues ($M = 676$ ms), $F(1, 50) = 7.05$,

$p < .01$. The analysis also produced an interaction of Age and Cue valence, $F(1, 50) = 12.11$, $p < .001$. This effect indicated that the difference in the responses of the younger and older adults was greater for negative person cues ($M = 264$ ms) than for positive person cues ($M = 171$ ms). No other effects were reliable.

GENERAL DISCUSSION

The present studies have shown that people have a greater sensitivity to person information (traits) from the morality domain than the competence domain. This effect was strongest in people's responses to person cues that signal immorality. These effects were obtained using two different procedures, one in which word frequency was experimentally controlled (Experiment 1) and one in which word frequency was statistically controlled (Experiment 2). Despite the overall slower responses of the older participants in recognizing the person cues, consistent with much research in cognitive aging, the results indicated that responses to the person cues were age-invariant. Finally, the findings indicated that word frequency can play a role in determining people's responses to words (see Balota & Chumbley, 1984; Schilling et al., 1998), so that if word frequency is not taken into account experimentally or statistically, the word frequency effect will mask the real contribution of a person cue's informativeness.

The present results suggest that people evidence a life-long concern with others' morality. This is likely due to their interest in determining costs and threats (cf. Pratto & John, 1991), as person information from the morality domain tends to signal negative personal characteristics, whereas person information in the competence domain tends to signal positive personal characteristics (cf. Reeder & Brewer, 1979; Skowronski & Carlston, 1987). Consistent with this interpretation, the findings from both studies showed that participants were fastest in responding to immorality cues than to any other type of person cue.

This greater sensitivity to immorality cues than to other types of cues is consistent with research findings on automatic vigilance (Pratto & John, 1991). Pratto and John (1991, Experiment 2) used a stroop task to test their hypothesis. In a typical stroop experiment, participants are presented with words in different colors, and the main task for participants is to name the color in which the word is printed. However, attending to the meaning of the word can lead to interference in processing if the word itself refers to a color. Pratto and John used this reasoning to examine the degree to which the evaluativeness of stimuli that differed in valence could capture attentional resources and interfere with the color-naming task. Because of the more automatic evaluation of negative compared with positive words, people took longer to respond to negative than positive words in a Stroop task.

Although the findings of the present studies are based on facilitation rather than inhibitory effects, the underlying reasoning is similar to that underlying the notion of automatic vigilance—certain stimuli grab people's attention. The present findings would suggest, however, that inhibitory effects would also depend on the domain of person information participants are asked to respond to. Given that in the present research participants responded fastest to immorality cues than to other types of cues, it might be that in a stroop task such cues would create the greatest disruption (cf. Wentura et al., 2000).

It is also important to point out the finding showing that younger and older adults differed little in their responses to cues from the morality domain, as well as the competence domain. These findings support the idea that people's sensitivity (chronic concern) to cues about others' morality, especially their immorality, remains stable over the life-course. Moreover, older adults show less sensitivity to competence than morality, the same pattern evidenced by young adults. Thus, it appears that the value placed on both morality and competence is invariant across the lifespan. The notion that older people are less concerned about competence in others than are young adults is not validated by this study. Although longitudinal data would provide a better test of this conclusion, the findings nevertheless are consistent with the perspective that although certain life goals change as a person grows older (Carstensen et al., 1997), all people remain embedded in a web of social relations where both morality and competence are important.

The present analysis at some level provides a characterization of the perceiver as slightly paranoid. But is such wariness warranted? It is interesting to point out that social systems can tolerate only a small amount of deception (Boehm, 1997; Dawkins & Krebs, 1978; Zahavi, 1993). Otherwise, social life would be chaotic. In addition, under many circumstances there is a tendency for fairness and cooperation to evolve in social systems (Skyrms, 1996). Consequently, in many functional social systems, the degree to which people should be watching out for others in actuality should be small. The present findings, along with many others in social cognition demonstrating negativity effects (see Ybarra, 2001, for a review), suggest that people's minds (that is, some component of the mind) may be poised to recognize and select threatening social stimuli from the environment. Such a set of responses may not necessarily be learned but may be built into the architecture of the mind (cf. Atran, 1988; Barkow, Cosmides, & Tooby, 1992; Sperber, 1996).

In conclusion, people regardless of age are particularly sensitive to cues that have to do with others' morality rather than their competence. In addition, people's sensitivity to person cues from the morality domain, especially cues that suggest immorality, may tend to remain relatively stable over a person's life-course. These findings may reflect the value all people place in knowing whether or not others are immoral and will pose threats. This pattern of sensitivities suggests that when people attempt to make sense of others, constraints are in place that make such a

cognitively demanding task possible to accomplish, although potentially inclining people to judge others negatively.

REFERENCES

- Anderson, N. H. (1968). Likableness ratings of 555 personality-trait words. *Journal of Personality and Social Psychology*, 9, 272–279.
- Antonucci, T. C., & Akiyama, H. (1987). An examination of sex differences in social support in mid and late life. *Sex Roles*, 17, 737–749.
- Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal and Social Psychology*, 41, 1230–1240.
- Asch, S. E. (1952). *Social psychology*. NY: Prentice-Hall.
- Atran, S. (1988). Basic conceptual domains. *Mind and Language*, 3, 7–16.
- Bales, R. F. (1953). The equilibrium problem in small groups. In T. Parsons, R. F. Bales, & E. A. Shils (Eds.), *Working papers in the theory of action*. Glencoe, IL: Free Press.
- Bales, R. F. (1965). The equilibrium problem. In A. P. Hare, E. F. Borgatta, & R. F. Bales (Eds.), *Small groups: Studies in social interaction* (pp. 437–447). New York: Knopf.
- Balota, D. A., & Chumbley, J. I. (1984). Are lexical decisions a good measure of lexical access? The role of word frequency in the neglected decision stage. *Journal of Experimental Psychology: Human Perception and Performance*, 10, 340–357.
- Bargh, J. A., Chaiken, S., Govender, R., & Pratto, F. (1992). The generality of the automatic attitude activation effect. *Journal of Personality and Social Psychology*, 62, 893–912.
- Barkow, J. H., Cosmides, L., & Tooby, J. (1992). *The adapted mind: Evolutionary psychology and the generation of culture*. New York: Oxford University Press.
- Benet, V., & Waller, N. G. (1995). The big seven factor model of personality description. Evidence for its cross-cultural generality in a Spanish sample. *Journal of Personality*, 69, 701–718.
- Benne, K. D., & Sheats, P. (1948). Functional roles of group members. *Journal of Social Issues*, 4, 41–49.
- Boehm, C. (1997). Egalitarian behavior and the evolution of political intelligence. In A. Whiten & R. W. Byrne (Eds.), *Machiavellian intelligence II* (pp. 341–364). Cambridge: Cambridge university Press.
- Bricker, A. L., Schuell, H., & Jenkins, J. J. (1964). Effect of word frequency and word length on aphasic spelling errors. *Journal of Speech and Hearing Research*, 7, 183–192.
- Bruner, J. S. (1957). On perceptual readiness. *Psychological Review*, 64, 123–152.
- Carstensen, L. L., Gross, J., & Fung, H. (1997). The social context of emotion. *Annual review of geriatrics and gerontology*, 17, 325–352.
- Charles, S. T., & Carstensen, L. L. (1999). The role of time in the setting of social goals across the lifespan. In T. M. Hess & F. Blanchard-Fields, (Eds.), *Social cognition and aging* (pp. 319–342). San Diego: Academic Press.
- Coser, L. (1956). *The functions of social conflict*. Glencoe, IL: Free Press.
- Craik, F. I. M., & Byrd, M. (1982). Aging and cognitive deficits: The role of attentional resources. In F. I. M. Craik & S. Trehub (Eds.), *Aging and cognitive processes* (pp. 191–211). New York: Plenum Press.
- Dawkins, R., & Krebs, J. R. (1978). Animal signals: Information or manipulation. In J. R. Krebs & N. B. Davies (Eds.), *Behavioral ecology: An evolutionary approach* (pp. 282–309). Oxford: Blackwell.
- Fiedler, F. E., & Chemers, M. M. (1974). *Leadership and effective management*. Glenview, IL: Scott, Foresman.
- Frieske, D. A., & Park, D. C. (1999). Memory for news in young and old adults. *Psychology and Aging*, 14, 90–98.
- Gordon, B., & Caramazza, A. (1982). Lexical decision for open- and closed-class words: Failure to replicate differential frequency sensitivity. *Brain and Language*, 15, 143–160.
- Hammer, W. C., & Organ, D. W. (1978). *Organizational behavior: An applied psychological approach*. Dallas, TX: Business publications.

- Heider, F. (1944). Social perception and phenomenal causality. *Psychological Review*, *51*, 358–374.
- Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In A. W. Kruglanski and E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (pp. 133–168). New York: The Guilford Press.
- Howes, D. H., & Solomon, R. L. (1951). Visual duration threshold as a function of word-probability. *Journal of Experimental Psychology*, *41*, 401–410.
- Jones, E. E., & Gerard, H. B. (1967). *Foundations of social psychology*. New York: Wiley.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*, 263–291.
- Kucera, H., & Francis, W. N. (1967). *Computational analysis of present-day American English*. Providence: Brown University Press.
- Lee, D. J., & Markides, K. S. (1990). Activity and mortality among aged persons over an eight-year period. *The Journals of Gerontology: Social Sciences*, *45*, 39–42.
- Meyer, D. E., & Schvaneveldt, R. W. (1971). Facilitation in recognizing pairs of words: Evidence of a dependence between retrieval operations. *Journal of Experimental Psychology*, *90*, 227–234.
- Miliani, F. J., & Cullinan, W. L. (1974). Effects of age and word frequency on object recognition and naming in children. *Journal of Speech and Hearing Research*, *17*, 373–385.
- Morrell, R., & Park, D. C. (1993). Effects of age, illustrations and task variables on the performance of procedural assembly tasks. *Psychology and Aging*, *8*, 389–399.
- Park, D. C. (2000). The basic mechanisms accounting for age-related decline in cognitive function. In D. C. Park & N. Schwarz (Eds.), *Cognitive aging: A primer* (pp. 3–22). Philadelphia, PA: Psychology Press.
- Park, D. C., Davidson, N., Lautenschlager, G., Smith, A. D., Smith, P., & Hedden, T. (2000). Models of visuospatial and verbal memory across the adult life span. (Manuscript under review, University of Michigan, Ann Arbor, MI).
- Park, D. C., Smith, A. D., Lautenschlager, G., Earles, J., Frieske, D., Zwahr, M., & Gaines, C. (1996). Mediators of long-term memory performance across the life span. *Psychology and Aging*, *11*, 621–637.
- Peeters, G., & Czapinski, J. (1990). Positive-negative asymmetry in evaluations: The distinction between affective and informational negativity effects. *European Review of Social Psychology*, *1*, 33–60.
- Pratto, F., & John, O. P. (1991). Automatic vigilance: The attention-grabbing power of negative social information. *Journal of Personality and Social Psychology*, *61*, 380–391.
- Reeder, G. D., & Brewer, M. B. (1979). A schematic model of dispositional attribution in interpersonal perception. *Psychological Review*, *86*, 61–79.
- Rosenberg, S., Nelson, C., & Vivekananthan, P. S. (1968). A multi-dimensional approach to the structure of personality impressions. *Journal of Personality and Social Psychology*, *9*, 283–294.
- Salthouse, T. A. (1991). *Theoretical perspectives on cognitive aging*. Hillsdale, NJ: Erlbaum.
- Salthouse, T. A. (1996). The processing-speed theory of adult age differences in cognition. *Psychological Review*, *103*, 403–428.
- Sanchez-Burks, J., Nisbett, R. E., & Ybarra, O. (2000). Relational schemas, cultural styles and prejudice against outgroups. *Journal of Personality and Social Psychology*, *79*, 179–181.
- Schilling, H. E. H., Rayner, K., & Chumbley, J. (1998). Comparing naming, lexical decision, and eye fixation times: Word frequency effects and individual differences. *Memory and Cognition*, *26*, 1271–1281.
- Shartle, C. L. (1956). *Executive performance and leadership*. Englewood Cliffs, NJ: Prentice-Hall.
- Skowronski, J. J., & Carlston, D. E. (1987). Social judgment and social memory: The role of cue diagnosticity in negativity, positivity, and extremity biases. *Journal of Personality and Social Psychology*, *52*, 689–699.
- Skyrms, B. (1996). *Evolution of the social contract*. Cambridge, MA: Cambridge University Press.
- Sperber, D. (1996). *Explaining culture: A naturalistic approach*. Cambridge, MA: Blackwell.
- Tagiuri, R., & Petrullo, L. (1958). *Person perception and interpersonal behavior*. Stanford, CA: Stanford University Press.
- Wentura, D., Rothermund, K., & Bak, P. (2000). Automatic vigilance: The attention-grabbing power of approach and avoidance-related social information. *Journal of Personality and Social Psychology*, *78*, 1024–1037.

- Wojciszke, B. (1997). Parallels between competence-versus morality-related traits and individualistic versus collectivistic values. *European Journal of Social Psychology, 27*, 245–256.
- Ybarra, O. (2001). *People's naive causal understanding of valenced behaviors and its implications for social information processing*. Manuscript submitted for publication, University of Michigan, Ann Arbor, MI.
- Ybarra, O., & Stephan, W. G. (1996). Misanthropic person memory. *Journal of Personality and Social Psychology, 70*, 691–700.
- Ybarra, O., & Stephan, W. G. (1999). Attributional orientations and the prediction of behavior: The attribution-prediction bias. *Journal of Personality and Social Psychology, 76*, 718–727.
- Zahavi, A. (1993). The fallacy of conventional signaling. *Proceedings of the Royal Society of London, 340*, 227–230.
- Zwahr, M. D., Park, D. C., & Shifren, K. (1999). Judgments about estrogen replacement therapy: The role of age, cognitive abilities and beliefs. *Psychology and Aging, 14*, 179–191.