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Social Knowledge and Goal-based Influences on Social Information Processing in Adulthood

Thomas M. Hess and Dana Kotter-Grühn

Department of Psychology, North Carolina State University, Raleigh, NC 27695-7650, (919) 515-1729, (919) 515-1716, (fax)

Thomas M. Hess: thomas_hess@ncsu.edu

Abstract

Effective social functioning is reflected in the ability to accurately characterize other people and then use this information in the service of social goals. To examine this type of social functioning, the authors conducted two studies that investigated potential influences of social experience and chronic socioemotional goals on adults' social judgments in an impression formation task. In line with a social expertise framework, middle-aged and older adults were more sensitive to trait-diagnostic behavioral information than were younger adults. Relative to younger adults, older adults paid more attention to negative than to positive information when it related to morality traits. Increasing the salience of the social context, and presumably activating such goals, did not alter this pattern of performance. In contrast, when more global social evaluations were examined (e.g., suitability as a social partner), older adults were less likely than younger or middle-aged adults to adjust their evaluations in response to situational goals. Consistent with a heightened focus on socioemotional goals, older adults' judgments were more consistently influenced by their attributions of traits that would likely impact the affective outcomes associated with interpersonal interactions. The results demonstrate the interaction between social knowledge, situational social goals, and chronic socioemotional goals in determining age differences in social information processing.

Keywords

Aging; Social Cognition; Goals; Socioemotional Selectivity; Social Judgments

In any given situation, it is well-established that our attention to and use of information is selective. For example, humans appear to automatically attend to negative information in the environment, perhaps reflecting in-built responses to danger (e.g., Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001, Rozin & Royzman, 2001). Selection of information is also affected by experience as well as by relatively stable intrinsic (i.e., chronic) goals and task-specific situational goals. Whereas experience influences the meaning attributed to cues in a situation, chronic and situational goals heighten the salience of goal-relevant information in the environment (e.g., Hess, Osowski, & Leclerc, 2005; Light & Isaacowitz, 2006; Moskowitz, 2002). These latter types of selectivity may be viewed as important facets of

Correspondence should be addressed to Thomas M. Hess, Department of Psychology, North Carolina State University, Raleigh, NC 27695-7650.: thomas_hess@ncsu.edu.

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social intelligence that facilitate everyday interactions and achievement of social goals (Blanchard-Fields & Hess, 1999; Kihlstrom & Cantor, 2000). For example, research has demonstrated that the effectiveness of interpersonal interactions is associated with one's ability to make accurate inferences about the characteristics of others based on limited information (e.g., Halberstadt, Denham, & Dunsmore, 2001; Ickes, Stinson, Bissonnette, & Garcia, 1990; Weis & Süß, 2005). Similarly, there is evidence that individuals selectively use social information in a manner that is consistent with situation-specific social goals (e.g., Abele & Wojciszke, 2007). Given the potentially adaptive nature of these social-cognitive processes, an important question in the study of adult development is whether these selection processes change with age in response to social experience and shifting social goals.

Research with younger adults has provided comprehensive evidence for selectivity in social judgment situations. For example, there is emerging consensus that judgments regarding self and others can be characterized along two general trait dimensions: morality and competence (for review, see Wojciszke, 2005). Moral traits have primary benefit or harm implications for others (e.g., honesty), and thus are characterized as *other-profitable* (Peeters & Czapinski, 1990). Alternatively, competence traits are more directly beneficial or detrimental to the individual possessing them (e.g., intelligence), and are thus deemed *self-profitable*. Selectivity in social information processing is evident in how individuals differentially attend to and use information associated with each of these trait dimensions. When assessing competence, people focus more on positive behaviors than on negative ones, whereas the opposite is true when making morality judgments (e.g., Hess, & Auman, 2001; Skowronski & Carlston, 1987). This differential weighting of positive and negative behaviors across trait domains represents variations in *trait diagnosticity* (i.e., the information value of a behavior in inferring possession of a specific trait; Skowronski & Carlston, 1989).

Selectivity is further demonstrated when individuals use trait information in forming *global evaluations* of others (e.g., likability judgments, social partner selection). Morality attributions are generally given more weight than competence attributions in such evaluations due to the inherent relevance of other-profitable traits for social relationships (e.g., Abele & Wojciszke, 2007). These relative weightings shift, however, in conjunction with social goals and interdependence between self and other (i.e., the extent to which personal outcomes are dependent on others). For example, in some relationships, the self-profitable behavior of one person may also have positive benefits for a close social partner (e.g., exploring an unfamiliar city with a friend possessing good spatial skills). In such situations, Abele and Wojciszke (2007; Wojciszke & Abele, 2008) found that individuals increased their weighting of competence in making social evaluations.

When looking at adult age differences in social judgments, we consider two potential developmental influences in adulthood that may moderate the just-described selectivity effects. The first is based in work by Hess and colleagues (e.g., Hess & Auman, 2001; Hess et al., 2005; Leclerc & Hess, 2007) suggesting that the accumulation of social experience across adulthood is associated with the development of expert-like behavior in social judgment situations. Consistent with this claim are findings that the selective focus on trait-diagnostic behavioral information increases with age and is further moderated by social experience (e.g., Hess et al., 2005; Leclerc & Hess, 2007). This heightened sensitivity to important social cues is an example of social-cognitive functioning that in—contrast to most other cognitive performance indicators—actually increases after young adulthood and is relatively stable through old age. If expertise in social settings extends beyond trait inferences, increasing age might also be associated with greater sensitivity to situational goals. For example, middle-aged and older adults might be more adept than younger adults

at adjusting their social judgments in response to increased interdependence (e.g., Abele & Wojciszke, 2007).

Chronic age-related social goals might also impact selectivity processes in older adults' social judgments. For example, socioemotional selectivity theory (SST; Carstensen, Isaacowitz, & Charles, 1999) proposes that when individuals perceive time as limited (as is often the case in old age), they shift from knowledge-related to emotion-regulatory social (i.e., socioemotional) goals. This leads to a greater focus on affective outcomes of interpersonal relationships in later life along with an increasing preference for positive over negative information (Mather & Carstensen, 2005; but also see Murphy & Isaacowitz, 2008). The increased salience of socioemotional goals might result in older adults exhibiting less sensitivity to social contexts in their social judgments as they focus primarily on characteristics of others that have implications for affective outcomes, thereby maximizing personally relevant chronic goals at the expense of situational goals. Further, older adults might also focus more than younger adults on the valence (e.g., positivity) as opposed to information content (e.g., trait-diagnosticsity) of behaviors in judging others.

The expertise and SST perspectives appear to provide very different predictions regarding selection processes in social judgment situations. For example, in apparent contradiction to the SST-based focus on positive information in later life (Mather & Carstensen, 2005), Hess and colleagues found that older adults exhibit greater attention to negative morality information than do younger adults when forming impressions of others (e.g., Hess & Auman, 2001). One possible means of reconciliation involves considering the nature of social inference and the possibility that different factors exert influence at different stages of processing. Wyer and Srull (1989) propose that trait inferences are given priority when forming an impression of another person, and occur relatively early during social information processing. These inferences then form the basis for later social evaluations (e.g., suitability as a social partner). Given that trait inferences are based in concepts contained in semantic memory, social expertise effects that reflect the refinement of trait-related knowledge may be most influential during early stages of processing. In contrast, goal-related influences may be most evident in later stages of processing as individuals selectively use initially encoded trait inferences in support of both chronic and situational goals. To test these ideas, we conducted two experiments that examined early (attention, trait attributions) and downstream (evaluative judgments, memory) aspects of social information processing in response to specific situational goals. Our aim was to examine the differential impact of expertise (e.g., Hess, 2006) versus socioemotional goal influences (e.g., Carstensen et al., 1999) at each stage.

EXPERIMENT 1

In our first study, young, middle-aged, and older adults viewed pairs of person descriptions containing positive and negative behaviors relating to either competence or morality under two task conditions (i.e., situational goals). In the *impression condition*, participants simply formed a general impression of each individual. In the *interaction condition*, participants also chose which person they preferred to spend time with socially. Thus, in comparison to the impression condition, the interaction condition was designed to reflect greater interdependence. We then examined performance measures that were indicative of early versus late stage processing.

Based on our foregoing analysis of processing stage-related influences, we predicted that effects associated with social knowledge (i.e., trait-diagnosticsity) and the refinement of such knowledge (i.e., age-related expertise effects) would be most evident during initial processing. Thus, during initial exposure to target persons, participants were expected to

attend more to positive than to negative behavioral information when it related to competence, whereas the opposite would be true when the behaviors related to morality. This differential attention to positive versus negative behaviors across trait domains was also expected to be reflected in trait attributions, with trait ratings for competence being more positive than those for morality. Consistent with the social expertise framework (Hess, 2006), we expected these effects to increase with age. Finally, situational goals were not expected to impact these indicators of initial processing. An alternative set of hypotheses might be formulated when taking into account the age-related increased focus on positivity that is proposed in SST. Specifically, relative to young and middle-aged adults, older adults would be expected to focus more on positive as opposed to negative behavioral information both at initial presentation and in constructing trait attributions.

In contrast, we hypothesized that chronic socioemotional goals would interact with situational goals in determining later stage global evaluations (i.e., likability judgments). Specifically, we predicted that morality attributions would exert a stronger influence on evaluations than competence attributions. This could be indicated either in overall ratings (i.e., more negative evaluations reflect the impact of trait diagnosticity in the morality domain) or the relatively greater strength of morality versus competence attributions as predictors of evaluations. Consistent with Abele and Wojciszke (2007), however, the impact of competence attributions was expected to increase in the interaction condition due to greater interdependence between participant and target. We also predicted that, with an increased focus on socioemotional implications of social information, older adults would be more likely than younger and middle-aged adults to base their global evaluations of targets on information relevant to the affective outcomes of social interactions. Given that morality traits are likely to influence such outcomes due to their other-profitable nature, we predicted that older adults' evaluations would be more strongly influenced than those of the younger adults by morality attributions. We further hypothesized that the chronic focus on affective outcomes would supersede situational goals, resulting in less variability across conditions in the old adult groups. These expectations might be contrasted with an alternative set of hypotheses stating that social expertise should increase sensitivity to situational goals. Thus, increasing age was predicted to be associated with greater adjustment of social evaluations in response to situational goals, with little impact of more general chronic goals on performance.

Finally, we hypothesized that situational and chronic goals would also influence downstream representations in memory, as reflected in attributions of observed behaviors to target persons. Wyer and Srull (1989) argue that evaluations (e.g., likability judgments) influence the organization of behavioral information in memory. Thus, we predicted that social interaction instructions would result in a positivity bias (i.e., choice-supportive memory), as reflected in more positive than negative behaviors being assigned to the chosen target versus the opposite effect for the unchosen target. No such bias was expected in the impression task since no choice was made. Consistent with SST and prior research (e.g., Mather, Shafir, & Johnson, 2000), we further predicted that this positivity bias would be stronger for older adults due to the hypothesized increase in socioemotional goals.

Method

Participants—The sample comprised 54 young adults (age range = 20 – 44 years, 52% women), 52 middle-aged adults (age range = 45 – 64 years, 54% women), and 54 older adults (age range = 65 – 85 years, 46% women). Participants were recruited through newspaper advertisements and received \$30 compensation. Within each Age \times Gender group, participants were randomly assigned to task conditions, resulting in 81 persons in the impression condition and 79 persons in the interaction condition. Subsequent 3 \times 2 (Age

Group \times Task) analyses of variance (ANOVAs) conducted on the background measures shown in Table 1 (top) revealed typical age differences, but no significant effects associated with condition.

Materials—Descriptions of four target persons, each consisting of eight positive and eight negative behaviors, were created, with two targets characterized by morality-related behaviors and two by competence-related behaviors (sample items are presented in Table 2). Women read behavior descriptions of female targets whereas men read the same descriptions for male targets. Behaviors were selected from a larger pool of behaviors for which z -transformed ratings of trait-representativeness and valence were available for young, middle-aged, and older adults (cf., Hess & Auman, 2001). In our study, trait-representativeness¹ ranged from 0.75 to 1.20 for positive competence behaviors, -0.75 to -1.16 for negative competence behaviors, 0.69 to 1.13 for positive morality behaviors, and -0.82 to -1.25 for negative morality behaviors. Valence ratings ranged from 0.75 to 1.17 for positive competence behaviors, -0.73 to -1.14 for negative competence behaviors, 0.75 to 1.17 for positive morality behaviors, and -0.76 to -1.30 for negative morality behaviors.

Procedure—Prior to their test session, participants were mailed and completed a background questionnaire, the SF-36 Health Survey (Ware, 1993), and several questionnaires unrelated to this study. Upon arrival at the lab, participants completed several tasks for an unrelated project as well as the vocabulary test from the Wechsler Adult Intelligence Scale-III (WAIS-III; Wechsler, 1997). After a break, participants were informed that they were going to read descriptions of different target persons and that they should form an impression about each person. Participants in the interaction condition also received the following instructions, adapted from Frederickson and Carstensen (1990, Study 1): “*We also want you to imagine that you will have the chance to spend a day with one of the two persons. You will interact with the person you choose in a social manner, not a professional or business manner. Thus, while reading the descriptions, try to think about whether you would like to spend time with the described person. After you have evaluated both persons, you will be asked to choose one of the two described persons.*”

Within each Age \times Gender group, half the sample read the morality-based descriptions first, whereas the other half read the competence-based descriptions first. Each target person was introduced by a name and fabricated hometown, after which the behaviors were presented individually on the computer monitor in random order. Participants controlled presentation rate using the spacebar, and study time for each item was recorded. Following presentation of each pair of descriptions, participants rated each target person in terms of trustworthiness, competence, and likability on 5-point scales (e.g., -2 [incompetent] to $+2$ [competent]) using a response box. Those in the interaction condition also indicated their choice for a potential interaction partner using the keyboard. Participants then completed the WAIS III Digit-Symbol-Substitution test to assess perceptual speed and the Letter-Number-Sequencing test to assess working memory.

A source recognition task for the behaviors in each set of descriptions was administered next. For each set, the 32 behaviors from both target descriptions were individually presented in random order, with participants using the keyboard to indicate with which target person each behavior was associated. Participants in the impression condition chose between target persons' names, whereas participants in the interaction condition indicated whether the presented behavior described the person they had chosen or the person they had not chosen as an interaction partner.

¹Trait representativeness ratings reflected responses on scales anchored by the positive trait term (e.g., honest) and negative trait term (e.g., dishonest).

Analytic Plan—To investigate influences on early stage processing, we used $3 \times 2 \times 2 \times 2$ ANOVAs to examine the effects of age (young, middle-aged, old), task (impression vs. interaction), trait domain (morality vs. competence), and target (chosen vs. unchosen target person) on study times (as an indicator for attention) and trait attributions. For the former dependent variable (DV), we also examined the impact of behavior valence (positive vs. negative). Age and task were between-participant factors. The impact of situational goals on judgments about others was assessed by comparing responses to chosen versus unchosen targets in the interaction condition with responses to the same targets judged under standard impression formation instructions. Given that participants in the latter condition did not discriminate between targets, we decided to create a dummy variable involving choice for these participants by assigning one target description in each set to the “chosen” category and the other to the “unchosen” category. To do this, the number of individuals in the interaction condition who chose target person A as an interaction partner for a particular set was determined within age decades. An equal number of same-aged participants in the impression condition were then randomly selected, and their responses to target person A in that same set were assigned to the chosen category whereas responses to target person B were assigned to the unchosen category. For the remaining participants, responses to person B were assigned to the chosen category and responses to person A to the unchosen category. This permitted a comparison of both chosen and unchosen targets with targets for which no such social judgment was made (i.e., the impression condition essentially served as a control condition) in the same analysis while controlling for content of the descriptions involved in these comparisons.

To examine influences of situational and chronic social goals on downstream processing (i.e., global evaluations), we used two sets of multi-level models (MLM), one for morality descriptions and one for competence descriptions. In each set, likability ratings for the two descriptions in each pair comprised the DV, with description-specific morality and competence ratings as level 1 (i.e., within-person) predictors and age group—dummy-coded with young adults as the reference group—and task condition as level 2 (i.e., between-person) predictors. This allowed us to see how the relative influence of competence and morality attributions on general evaluations varied as a function of age and task (i.e., situational goal).

Finally, our research question regarding choice-supportive memory (as another indicator of downstream processing) was examined by calculating a memory bias score for each set of descriptions based on that used by Mather et al. (2000): (proportion positive behaviors attributed to chosen target + proportion negative behaviors attributed to nonchosen target) – (proportion positive behaviors attributed to nonchosen target + proportion negative behaviors attributed to chosen target). These scores were then examined using an Age \times Task \times Trait Domain ANOVA.

Results

Study Times—Study times were examined to determine the effects of age and task (i.e., situational goal) on attention to the trait-diagnostic versus affective value of the behavioral information. To control for variations in length, individual study times were divided by the number of words in each behavior description. Individual times ± 3 SD from a participant’s overall mean were dropped from further consideration, resulting in exclusion of 1.5% to 1.7% of the data across age groups. Additionally, five participants (one young, two middle-aged, two old) were excluded from this analysis due to their data containing statistical outliers at the level of aggregated scores. As might be expected, mean study times increased with age, $F(2,149) = 7.45, p = .001, \eta_p^2 = .09$. Statistically significant effects were also obtained for valence, $F(1,149) = 169.55, p < .001, \eta_p^2 = .53$, trait domain, $F(1,149) = 5.13, p$

$= .03$, $\eta_p^2 = .03$, and their interaction, $F(1,149) = 233.57$, $p < .001$, $\eta_p^2 = .61$. Consistent with the expected diagnosticity effect, positive behaviors were studied longer in the competence domain ($M = 388$ ms) than in the morality domain ($M = 341$ ms), whereas negative behaviors were studied longer in the morality domain ($M = 347$ ms) than in the competence domain ($M = 321$ ms). Consistent with our expertise-based hypothesis, age further moderated this interaction, $F(2,149) = 4.66$, $p = .01$, $\eta_p^2 = .06$, with the diagnosticity effect increasing in strength with age (see Figure 1). No support was obtained for the SST-based hypothesis, in that the Age \times Domain \times Behavior Valence interaction term was not moderated by task condition, $F < 1$. That is, regardless of age or situational goal, individuals focused on the information value of behavior rather than their valence.

Trait Attributions—We examined trait attributions next to further investigate differential attention to the trait-diagnosticity of behavioral information. Consistent with past research, trait ratings were standardized within participants to control for potential differences in use of the scales. Our analysis examined only ratings on the relevant trait dimension (i.e., trustworthiness for morality descriptions, competence for competence descriptions).² As expected, trait attributions for morality descriptions ($M = -.75$) were significantly lower than those for competence descriptions ($M = .23$), $F(1,154) = 150.86$, $p < .001$, $\eta_p^2 = .50$. That is, in spite of similar numbers of positive and negative behaviors in each type of description, targets described by morality behaviors were viewed as relatively untrustworthy whereas those described by competence behaviors were judged as relatively competent. This is indicative of differential weighting (i.e., diagnosticity) of negative and positive information across trait domains. Consistent with past research, this domain effect was further moderated by age, $F(2,154) = 3.31$, $p = .04$, $\eta_p^2 = .04$, with the difference in ratings across the competence and morality domains being greater for middle-aged adults (.43 vs. $-.88$) than for younger (.12 vs. $-.73$) and older (.16 vs. $-.66$) adults. In line with a social expertise perspective, this interaction was not further moderated by task and/or target, $F_s < 1$. That is, the focus on diagnostic information was unaffected by situational goals. Older adults were also clearly not disproportionately favoring positive over negative information in making trait attributions, a finding inconsistent with expectations derived from SST. Note that a significant Task \times Target interaction was obtained, $F(1,154) = 16.90$, $p < .001$, $\eta_p^2 = .10$. The chosen target in the interaction condition received significantly higher ratings ($M = .03$) than the unchosen target ($M = -.43$) whereas there was no difference between the analogous targets in the impression condition ($-.29$ vs. $-.36$). Thus, selecting a social partner did result in more positive trait inferences about the chosen target, but the effect was not age-specific and it resulted from a general elevation in all ratings rather than a change in focus from the diagnostic to the affective aspects of the targets' behaviors.

Global Evaluations—We next examined predictors of global evaluations (i.e., likability judgments) using MLM. For morality descriptions, the only significant predictor of likability was morality attributions ($B = .33$, $p < .01$): higher morality ratings were related to higher likeability. Inconsistent with Abele and Wojciszke (2007), we did not find any impact of competence ratings with an increase in interdependence in the interaction condition.

For competence descriptions, morality attributions were once again significant predictors of likability ($B = .75$, $p < .001$), an intriguing result given that the content of the behavioral information did not explicitly relate to morality. Of more direct interest, the following significant interactions were observed: Task \times Morality \times Competence ($B = .28$, $p = .02$),

²Note that ratings for the non-relevant trait dimension (e.g., competence ratings for morality-based descriptions) were also available. Given the absence of information relevant to these traits, it was not surprising that ratings were less variable across conditions, with participants generally providing positive ratings. As with the relevant trait ratings, however, a similar interaction between task and target was observed, $F(1,154) = 10.82$, $p = .001$, $\eta_p^2 = .07$.

Age \times Task \times Competence ($B = -.60, p = .03$), and Age \times Task \times Morality \times Competence ($B = -.44, p = .03$). The latter two interactions were of primary interest and were specific to the dummy-coded contrast comparing older adults to the two younger groups. We decomposed these interactions by running separate models for older adults and for the young and middle-aged adults together. For the latter groups, the Task \times Morality \times Competence interaction was significant ($B = .25, p = .01$) and supported the predicted influence of morality and competence on likeability ratings as a function of interdependence (i.e., in the interaction condition). When estimated likability scores associated with representative high and low scores for morality and competence ratings (i.e., 1 *SD* above and below the sample mean; see Table 3) were calculated, morality was the primary predictor of likability in the impression condition. In the social interaction condition, however, competence also predicted likeability, particularly when morality ratings were high. In contrast to the younger age groups, morality attributions were the only significant predictors of older adults' likability ratings ($B = .62, p < .001$), regardless of task.

Taken together, these results are more consistent with expectations based in age differences in socioemotional goals than with those based on social expertise. For competence descriptions, both young and middle-aged adults adjusted their likability responses as a function of interdependence, with competence attributes being more influential in the social interaction than in the impression condition. In contrast, older adults based their evaluations on morality attributions regardless of context. The relatively stable focus on such information appears consistent with the hypothesized salience of socioemotional goals in later life, leading to older adults focusing more on the attributes of others that have important implications for affective outcomes in interpersonal contexts.

Memory—Finally, we examined choice-supportive memory to determine whether salient socioemotional goals in later life result in positively biased memories (Table 4). As expected, a significantly greater level of choice supportiveness—as indicated by more positive scores—was observed in the social interaction condition ($M = .17$) than in the impression condition ($M = -.08$), $F(1,154) = 19.76, p < .001, \eta_p^2 = .11$. (Remember that no bias would be expected in the impression condition since targets were randomly assigned to the chosen or nonchosen conditions.) A significant Task \times Trait Domain interaction was also obtained, $F(1,154) = 4.83, p = .03, \eta_p^2 = .03$, and the Age \times Task \times Trait Domain interaction just missed significance, $F(2,154) = 2.93, p = .056, \eta_p^2 = .04$. Examination of means suggested that choice-supportive memory was stronger for the morality descriptions than for the competence descriptions, but this effect also appeared to be specific to the older adults. Separate Task \times Trait Domain ANOVAs conducted within age groups confirmed this observation. Both younger and middle-aged adults exhibited significant ($ps < .01$) choice supportiveness in the interaction condition, irrespective of trait domain. In contrast, a significant Task \times Trait Domain interaction was found for the older group, $F(1,52) = 8.42, p = .005, \eta_p^2 = .14$, reflecting different levels of choice supportiveness over trait domain. Comparing the social interaction condition with the impression formation condition, a clear choice-supportiveness effect was evident for the morality descriptions but not for competence descriptions (see Table 4).

Taken together, all age groups exhibited a bias in the social interaction condition in terms of remembering the target they chose in a more positive light than the one they did not choose. Thus, there was little evidence of a general age-related increase in positive memory bias, as might be expected based on SST. However, choice-supportiveness was found to be specific to the morality domain in older adults. This specificity of bias to target descriptions containing behavioral information most relevant to the affective outcomes of interpersonal interactions could reflect the heightened salience of such information in later life, a result in line with an increased focus on socioemotional goals in old age.

Discussion

Our results generally support the notion that age-related variation in both social expertise and chronic socioemotional goals impact social inference processes, but that they do so at different stages of processing. Specifically, expertise effects—as reflected in age-related differences in attention to trait-diagnostic information—were most evident during initial stages of processing as individuals encoded behavioral information in terms of semantic trait concepts. Note that this elevated sensitivity was more reliably displayed by middle-aged than by older adults (see Hess et al., 2005, for a similar effect). In contrast, chronic socioemotional goals appeared to have a greater impact on downstream evaluation and representational processes. Specifically, whereas younger and middle-aged adults adjusted global evaluations and memory representations in response to situational goals (e.g., degree of interdependence), older adults' evaluations were more stable across contexts, reflecting a focus on factors associated with affective outcomes in social contexts (i.e., morality). Older adults did exhibit some sensitivity to situational goals when memory performance was examined, with the focus on morality being most evident in the interaction condition. This may reflect the increased salience of chronic social goals in response to task demands.

In spite of the supportive results in this experiment, several areas of possible concern can be noted. First, situational goal influences—in the form of increased influence of competence attributions with increased interdependence—were not apparent in evaluations for morality-based target descriptions. The fact that competence attributions did not play a stronger role in the presence of interaction goals may reflect the absence of behaviors specifically relating to competence—and thus the lack of a strong basis for making such attributions—in the morality descriptions. Second, the fact that older adults did not adjust their evaluations to take into account situational goals was interpreted as reflecting the impact of chronic socioemotional goals. This finding might also reflect the fact that the interdependence associated with general social interaction goals is not strong enough to cause participants to shift their focus from morality to competence traits of the target. A final complicating factor relates to the fact that our MLM analyses did not take into account the choice that participants made in the social interaction condition in order to facilitate direct comparisons between this condition and the impression condition (where no such discrimination occurred). Given these concerns, we decided to conduct a follow-up study to provide further support for our hypotheses under conditions designed to minimize alternative explanations.

EXPERIMENT 2

The goals and hypotheses of our second study corresponded to those of Experiment 1, again focusing on the impact of age-related social expertise and chronic socioemotional goals on social judgments. The procedure involved three modifications designed to deal with the aforementioned concerns. First, in addition to impression and social interaction goals, participants were also asked to make social judgments under the situational goal of determining the suitability of others as work colleagues. We reasoned that the interdependence associated with work contexts might accentuate the focus on competence, allowing us to provide a more sensitive test regarding the impact of situational and chronic goals on social evaluations. We were particularly interested in older adults' responses to the work context based upon our initial findings indicating that they focused primarily on morality-based information when judging others, regardless of context. If this effect reflected the impact of chronic socioemotional goals, we might expect similar disregard for competence in judging work partners in spite of the situational focus on task accomplishment.

Second, all target descriptions contained clear behavioral referents to both competence and morality. We assumed this would reduce the possibility that participants would vary their

reliance on competence versus morality trait attributions in making evaluations due to the strength of behavioral information supporting such attributions.

Finally, we also eliminated the choice aspect used in the interaction condition in Experiment 1, thereby reducing the complexity of analyses since we did not have to accommodate for actual choice. Instead, participants simply provided global evaluation ratings applicable to the task assigned to each target (e.g., rating suitability as a social partner).

Method

Participants—Participants were recruited and compensated as before, with 57 young adults (age range = 19 – 44; 46% women), 43 middle-aged adults (age range = 45 – 64; 58% women), and 40 older adults (age range = 65 – 84; 43% women) being included in the final sample. Group characteristics (Table 1, bottom) were similar to those in Experiment 1.

Materials—Six target descriptions of eight behaviors each were created, with two positive and two negative behaviors from each trait domain (i.e., competence and morality). The range of mean trait-representativeness ratings for the behaviors in each Domain \times Valence category across the six descriptions was 1.02– 1.07 for positive morality, –1.03 – –1.06 for negative morality, 1.03– 1.05 for positive competence, and –1.03 – –1.06 for negative competence. The range of mean valence ratings was .88 – 1.17 for positive morality, –.93 – –1.16 for negative morality, .90– 1.03 for positive competence, and –.87 – –1.11 for negative competence.

The same ability and background measures were used as in Experiment 1.

Procedure—The six descriptions were presented in random order across participants, with the study procedure identical to that used before. Prior to viewing each description, one of three different task-related cues was displayed. If *impression* appeared, participants were instructed to form a general impression of the target. For the cue *social partner*, participants were to determine the extent to which the person would be someone that they would like to interact with on a social basis. Finally, *work partner* indicated that participants should determine if the target was someone they would like to work with in order to perform a specific job or task. One of each cue was randomly assigned to one of the three first-presented descriptions and to one of each of the three remaining descriptions. After a description had been viewed, a series of rating scales appeared on the computer screen. Participants made attributions regarding three morality traits (honest, sincere, trustworthy; $\alpha = .78$) and three competence traits (capable, intelligent, clever; $\alpha = .59$), presented in random order. They then made three more general ratings regarding (a) the target's likability, (b) their general feelings toward the target, and (c) a response based on the specific task: general impression or desirability as a social or work partner. The first two were designed to measure relatively general evaluations, whereas the last rating was intended to assess evaluations specific to the task. All ratings were made on a 5-point scale (–2 to +2) using a response box.³

Analytic Plan—Construction of DVs and examination of selectivity effects in study times and trait attributions proceeded in a manner similar to that in Experiment 1 with the exceptions that (a) task was a within-participants variable and included an additional condition relating to work partner and (b) target was excluded as a factor since no choice was involved.

³Memory was not assessed in this study due to the heightened complexity associated with determining which of 6 different targets was associated with each of 48 different behaviors.

The analytic plan for examining predictors of global evaluations was similar to Experiment 1 as well with two exceptions. First, two sets of analyses were conducted in which we contrasted the baseline impression condition first with the social partner condition and then with the work partner condition. Second, two evaluation measures were used as outcomes, one reflecting relatively nonspecific evaluations (mean of likability and overall evaluation ratings) and one reflecting responses to the task-specific questions (e.g., suitability as a work partner). We reasoned that the effects of interdependence might be more evident with the latter measure due to its specificity with respect to the type of task.

Results

Study Times—Per-word study times were calculated as in Experiment 1, with two young, four middle-aged, and three older adults excluded as outliers due to their unusually long study times relative to their same-age compatriots. Given a positive correlation between age and education ($r = .20, p = .02$) in the sample, we also included education as a covariate here and in all subsequent analyses. As before, study times increased with age, $F(2,127) = 9.17, p < .001, \eta_p^2 = .13$, and negative morality behaviors (329 ms) were studied longer than negative competence behaviors (308 ms), whereas positive competence behaviors (343 ms) were studied longer than positive morality behaviors (302 ms), $F(1,127) = 7.36, p = .01, \eta_p^2 = .06$. Consistent with the social expertise perspective, the strength of this diagnosticity effect also increased with age (Figure 2), $F(2,127) = 5.64, p = .01, \eta_p^2 = .08$, replicating the results of Experiment 1. Once again, we obtained no evidence in support of the SST-derived hypothesis that socioemotional goals heightened sensitivity of older adults to positive behavioral information. Although a significant Task \times Domain \times Valence interaction was obtained, $F(2,254) = 5.67, p = .01, \eta_p^2 = .04$, it was not moderated by age, $F < 1$.

Trait Attributions—As in Experiment 1, ratings of morality were lower than ratings of competence (i.e., the diagnosticity effect). Although inclusion of the education covariate reduced the trait domain effect to marginal significance, $F(1,136) = 3.54, p = .06, \eta_p^2 = .03$, the expected Age \times Domain interaction was obtained, $F(2,136) = 5.13, p = .01, \eta_p^2 = .07$. Specifically, the diagnosticity effect increased from young adulthood through middle-age to old age (Figure 3). Consistent with Experiment 1, attributions of specific traits were not affected by task (i.e., situational goals), $F < 1$. Thus, once again, these results support the hypothesis that social expertise will be the primary factor influencing age differences in social judgments during early stages of processing.

Predictors of Global Evaluations

General ratings: We next used MLM to examine predictors of social evaluations. In both analyses (i.e., impression vs. social partner condition, impression vs. work partner condition), morality and competence ratings were positively associated with general evaluations (morality: $Bs = .68 - .69, p < .0001$; competence: $Bs = .19, p = .01$). A significant Age \times Task \times Competence interaction was also observed in the work partner analysis ($B = -.35, p = .04$), but it reflected a nonsystematic pattern of relationships between these three variables. Thus, the effects of situational goals were relatively minimal on general evaluations.

Task-specific ratings: When task-specific evaluations (i.e., general impression or suitability as an interaction or work partner) were examined, similar general trait influences were observed in both the social partner contrast (morality: $B = .66, p < .0001$; competence: $B = .21, p = .01$) and the work partner contrast (morality: $B = .67, p < .0001$; competence: $B = .27, p = .003$). As expected, however, additional task-specific influences were observed. In the social partner contrast, evaluations were lower in the social partner condition than in the impression condition ($B = -.41, p < .0001$). As noted earlier, lower ratings are thought to

reflect the greater influence of negatively valenced diagnostic information related to morality, which might be viewed as especially relevant to social interactions. A significant Task \times Morality \times Competence interaction was also obtained ($B = .25, p = .05$). As seen in Table 5, morality and competence attributions were both associated with task-specific evaluations in the impression condition, but morality was clearly more influential. In contrast, competence was also an important predictor in the social partner condition, with positive social partner evaluations being greatest when a target's morality and competence were both judged to be high. In the work partner contrast, a significant interaction between task and competence ($B = .27, p = .03$) was obtained. Consistent with expectations, competence attributions were weighted more when evaluating potential work partners ($B = .55, p < .0001$) than when simply forming impressions ($B = .24, p = .01$). Thus, as expected, morality based attributions took on added significance in social interactions whereas competence was given relatively more weight in work contexts when judging social partners.

Of central importance, age also influenced evaluations. In the social partner contrast, older adults' exhibited ratings that were significantly lower than those of the other two age groups ($B = -.37, p = .01$), with task moderating this age effect ($B = .39, p = .02$). An examination of predicted scores revealed that the imposition of the social interaction goal resulted in lower task-specific evaluations relative to the impression condition in the two younger groups (young: .23 vs. $-.18$; middle-aged: .17 vs. $-.22$), but not in the older group, where evaluations were relatively low regardless of condition ($-.16$ vs. $-.14$). In the work partner contrast, older adults also exhibited lower overall ratings ($-.16$) than either the young (.21) or middle-aged (.17) adults, $B = -.37, p = .03$. The variability in the ratings of younger and middle-aged adults across tasks suggests that they were modifying their responses to be consistent with situational goals. In contrast, older adults were relatively consistent in their evaluations, providing negative ratings regardless of task. Given that lower ratings presumably reflect the impact of diagnostic behavioral information relating to morality, these results can be viewed as consistent with the idea that affective aspects of interpersonal interactions take on added weight in later life and that this chronic focus may overwhelm situational goals.

Discussion

Together, the results of this study largely reinforce the conclusions derived from Experiment 1. First, task context did not differentially influence the focus on trait-diagnostic behavioral information across age groups during early stages of processing. Second, evidence for the influence on both situational and chronic goals on later stage processing was obtained. With respect to situational goals, degree of interdependence affected the determinants of evaluations. In general, morality attributions were the strongest determinants of evaluations. When task-specific evaluations were examined, however, interdependence increased the impact of competence attributions. In addition, it appeared that diagnostic information relating to morality was accorded additional weight in the social partner condition, as indicated by the lower overall evaluations of targets in the condition. It is noteworthy that these effects were only evident when participants made task-specific evaluations, suggesting that situational goal influences will be most evident when evaluations are more specifically linked to interdependence (e.g., would this person be a good work partner). The use of more general evaluations (i.e., likability) may account for the somewhat weaker task effects in Experiment 1.

Finally, although older adults exhibited sensitivity to context in their evaluations, they also once again appeared to consistently weight morality information more than did younger and middle-aged adults, as reflected in their more negative evaluations. This effect could reasonably be taken to reveal the stronger impact of diagnostic (i.e., negative) morality

information on their evaluations of others, presumably indicative of chronic socioemotional goals. This reasoning is supported by the fact that the younger and middle-aged groups' evaluations were also lower when situational goals focused on social interactions.

General Discussion

We reported the results of two studies that examined adult age differences in the selective processing and use of social information in making judgments about others. Our focus was on understanding how age-related variations in social knowledge and chronic social goals would impact these social cognitive processes, with a specific eye toward reconciling apparent contradictions in expected age effects associated with each. From the perspective of SST (e.g., Carstensen et al., 1999), the accentuation of socioemotional goals in later life should result in both processing being biased toward positive information and evaluations of others being grounded primarily in information relevant to affective outcomes associated with social interactions. In contrast, age-related changes in social expertise (e.g., Hess, 2006) might result in improved accuracy of social inferences, with the focus being on the information value of social content (e.g., degree to which a person's behavior reflects a specific trait) as opposed to its valence. We argue that both types of factors are important, and that operation of one does not preclude influences associated with the other. Specifically, we hypothesized that expertise and goal-based influences should be evident at different points in the social inference process. Consistent with Wyer and Srull's (1989) model of social information processing, we expected social expertise influences to be most evident during initial stages of processing as individuals seek to interpret the meaning of targets' behaviors using existing trait concepts contained in semantic memory. In contrast, goal-based influences were expected to be most evident during later stages of processing as individuals selectively attend to and use trait information in making evaluations consistent with situational or chronic goals. Our results mainly support these expectations.

When age differences in attention allocation and trait attributions were examined, the results clearly reflected social knowledge-related influences. Specifically, middle-aged and older adults exhibited greater sensitivity to trait-diagnostic information—including negative morality behaviors—than did younger adults, with reading times and trait ratings being relatively insensitive to situational goals (i.e., task instructions). In addition, consistent with expectations, there was no evidence of an age-related positivity effect reflective of salient socioemotional goals in later life. We also found that this expertise effect was exhibited somewhat more consistently by middle-aged than by older adults across tasks and experiments, a result consistent with previous work suggesting higher levels of complexity in social reasoning in middle-aged adults (e.g., Blanchard-Fields & Norris, 1994; Follett & Hess, 2002; Hess et al., 2005; Labouvie-Vief, Chiodo, Goguen, Diehl, & Orwoll, 1995). This may reflect optimal levels of everyday functioning associated with the confluence of experience and relatively well-maintained basic cognitive abilities in mid-life.

In contrast, hypothesized socioemotional goal influences were more evident in downstream markers of processing. Consistent with expectations drawn from the literature on social judgments (Wojciszke, 2005), morality ratings were the primary determinants of more general social evaluations, but competence ratings increased in importance as interdependence between self and other increased. We observed this effect more consistently in Experiment 2, perhaps due to the facts that: (a) explicit evidence regarding competence *and* morality—rather than one or the other—was contained in each target description; and (b) evaluations more specifically tied to rater-target interdependence were assessed. We also found that older adults were less sensitive to situational goals, and consistently weighted morality attributions more than did the other two age groups, regardless of context. This can be seen in relative weightings of morality and competence ratings as predictors of

evaluations (Experiment 1), the patterns of choice-supportive memory (Experiment 1), and the general negativity of evaluations (Experiment 2). Given the other-profitable nature of such information, this general focus on morality—often at the expense of responsiveness to situational goals—can be interpreted as consistent with an increase in the salience of chronic socioemotional goals in later life.

Conclusions

Taken together, the present results suggest that social judgments provide a meaningful context for understanding social functions in adulthood. Our findings reinforce previous research demonstrating selectivity in social information processing in response to the nature of the information and the context in which it is being used. More importantly, we extend basic social psychological research focused on young adults by also demonstrating that this selectivity varies in meaningful ways with age as social knowledge and goals change in an arguably adaptive manner in response to changes in experience and life circumstances. Specifically, judgments about other people mirror hypothesized age differences in both social expertise and chronic social goals, with the impact of each varying across stages of processing. This comparison of effects across stages suggested a resolution of apparent discrepancies in the literature regarding the degree to which aging was associated with increased focus on affective content, with older adults' focus on the information versus affective (i.e., trait-diagnostic vs. valence) content of behaviors being dependent upon relevance to the situation.

Certainly, caveats must be made about the present research. For example, judgments were only made about fictitious others. One could argue that the salience of chronic socioemotional goals—and thus their impact—might vary depending upon familiarity with the target. The focus on affective social outcomes might be accentuated for uncertain outcomes involving strangers, perhaps accounting for older adults' reduced sensitivity to situational goals in the present research. This is obviously an empirical question, but such context sensitivity would not detract from the conclusion that socioemotional goals in later life influence perceptions of others. Although we focused on socioemotional goals associated with SST due to the current influence of this theory, it is also possible that other types of age-related chronic social goals might influence aspects of social information processing (e.g., Brandstädter, Rothermund, Kranz, & Kühn, 2010; Ryff & Baltes, 1976).

Perhaps a more interesting question is whether older adults focusing on trait-diagnostic information runs counter to hypothesized age-related shifts to optimizing affect in social situations. Recent work from an SST perspective assumes that older adults will be biased toward positive information or away from negative information in the service of maintaining positive affect (Mather & Carstensen, 2005). But is a focus on negative behavioral information in the morality domain necessarily inconsistent with the idea that older adults are focused on the affective consequences of social outcomes? We would argue that it is not. To the extent that negative cues carry information regarding the probable affective outcomes of interpersonal interactions, it would be adaptive for older adults to attend to such information. Indeed, this seems to be in line with earlier discussions of SST where the focus was on the importance or relevance of social contacts rather than on valence (e.g., Carstensen, 1991). Thus, we argue that older adults' focus on negative diagnostic information as well as their adjustment of social evaluations to more strongly weight trait attributions with strong interpersonal implications appear to encompass two aspects of adaptive social functioning: the ability both to make accurate trait inferences and to use this information appropriately in the service of social goals.

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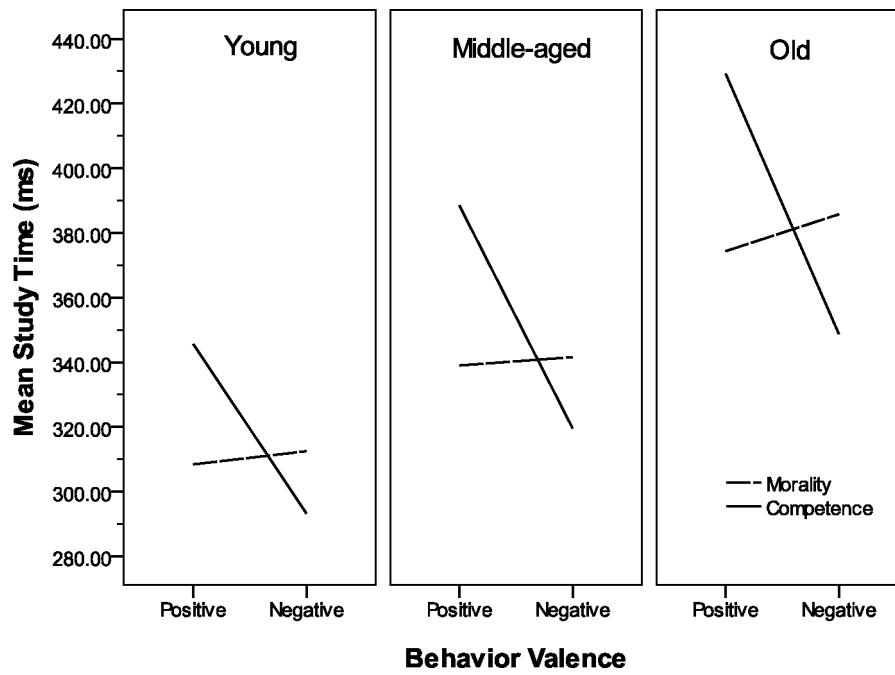


Figure 1.
Experiment 1: Mean study times as a function of age, trait domain, and valence.

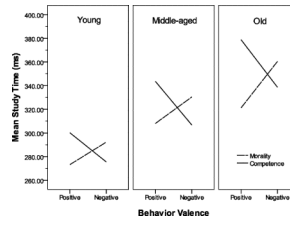


Figure 2.
Experiment 2: Mean study times as a function of age, trait domain, and valence.

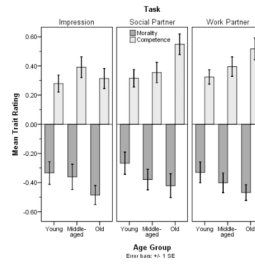


Figure 3.
Experiment 2: Trait ratings as a function of age, task, and trait domain.

Table 1

Participant Characteristics by Age Group

	Young		Middle-Aged		Older	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
	<i>Experiment 1</i>					
Age ^a	33.9	7.4	54.3	6.5	73.6	6.2
Education	16.2	1.7	16.2	1.9	15.7	2.4
SF-36: Physical Health ^a	54.6	6.0	49.8	8.2	46.7	9.0
SF-36: Mental Health ^a	48.7	8.8	49.6	9.9	57.1	5.1
Digit-Symbol Substitution ^a	84.5	17.7	70.7	14.8	58.5	13.3
Letter-Number Sequencing ^a	11.9	3.3	10.8	3.0	9.7	2.8
Vocabulary	49.2	9.5	50.1	9.6	50.4	8.2
	<i>Experiment 2</i>					
Age ^a	29.0	6.9	54.9	5.7	71.4	6.0
Education	15.6	2.2	15.7	1.8	16.4	2.0
SF-36: Physical Health	49.8	7.3	48.7	4.6	48.2	6.4
SF-36: Mental Health	52.4	8.2	55.8	5.6	55.1	9.0
Digit-Symbol Substitution ^a	88.4	16.7	74.6	15.3	66.1	15.7
Letter-Number Sequencing	11.8	3.5	11.6	2.9	11.0	2.8
Vocabulary ^a	46.3	11.7	51.3	9.8	50.8	9.1

Note. SF-36 scores are norm-based *T*-scores.

^aDifference between age groups significant at $p \leq .001$.

Table 2

Sample Items for Positive and Negative Behaviors in the Morality and Competence Domain.

	Morality	Competence
Positive	Elaine told her boss she was responsible for the accounting error. Julie left a note on the car she backed into.	Susan fixed her broken refrigerator. While in college, Mary won a scholarship to study abroad.
Negative	Elaine kept the money from a wallet she found. Julie lied about her qualifications on the job application.	Susan put gasoline in her diesel car and ruined the engine. Mary washed her new blue jeans with a white shirt and ruined it.

Table 3

Experiment 1: Estimated Likability Scores with Age Groups and Tasks when Trait Attributions of Morality and Competence are High or Low^a

	Impression		Social Interaction	
	High Morality	Low Morality	High Morality	Low Morality
Young & middle-aged adults				
High Competence	.40	-.97	.37	-1.14
Low Competence	.46	-1.09	-.44	-1.15
Older adults				
High Competence	.57	-.78	.16	-1.15
Low Competence	.11	-1.00	.73	-1.00

^aLikability estimates were calculated when trait attributions were high (1 *SD* above the sample mean) or low (1 *SD* below the sample mean).

Table 4

Choice Supportive Memory Scores

Age Group	Task and Description Type					
	Impression			Social Interaction		
	Morality	Competence		Morality	Competence	
Young	<i>M</i>	-.03	-.03	.20	.19	
	<i>SE</i>	.09	.09	.10	.09	
Middle-age	<i>M</i>	-.15	-.12	.21	.13	
	<i>SE</i>	.10	.09	.09	.09	
Old	<i>M</i>	-.11	-.07	.39	-.10	
	<i>SE</i>	.09	.09	.09	.09	

Table 5

Experiment 2: Estimated Task-Specific Evaluations for the Impression and Social Partner Tasks when Trait Attributions of Morality and Competence are High or Low^a

	Impression		Social Partner	
	High Morality	Low Morality	High Morality	Low Morality
High Competence	1.01	-.13	.78	-.75
Low Competence	.70	-.64	.08	-.84

^aEstimates were calculated when trait attributions were high (1 *SD* above the sample mean) or low (1*SD* below the sample mean).