1997

Everyday Problem-Solving Goals: Contributions of Age and Individual Differences.

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EVERYDAY PROBLEM SOLVING GOALS:
CONTRIBUTIONS OF AGE AND INDIVIDUAL DIFFERENCES

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment for the degree of
Doctor of Philosophy

in

The Department of Psychology

by
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May, 1997
ACKNOWLEDGEMENTS

I wish to express my deepest gratitude to my dissertation committee chairperson, Dr. Katie Cherry, who is a remarkable person as well as an exceptional scientist and educator. Her constant encouragement and support provided me with the motivation to complete this project and I am extremely fortunate to have worked with her. I also wish to thank the members of my dissertation committee, Dr. Don Williamson, Dr. Bob Coon, Dr. Don Marzolf, and Dr. Steven Rose for their time and effort on this project. Special thanks to Dr. Fredda Blanchard-Fields, who inspired my interest in this area of research. My appreciation also to the Retirement Research Foundation/APA Division 20 Student Research Award for funding this project.

Finally, I am especially grateful to Frank Teeple for his encouragement, patience, and understanding on a daily basis, and to my parents, Diane Williams and James Norris, for their support and encouragement.
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ABSTRACT

The purpose of the present research was to examine the contribution of age and individual differences to everyday problem solving, focusing on goal preference. Three pilot studies were conducted to generate interpersonal problem solving goals that were high in emotional arousal and low in emotional arousal. In the Experiment Proper, 40 young and 40 older adults were given 6 vignettes depicting everyday problems. Subjects rated their preference of both high and low experimenter-provided goals. Subjects then completed 4 individual difference questionnaires that measured stimulation intensity, affect intensity, and emotional control. Results showed that both younger and older adults endorsed more low emotional arousal goals than high emotional arousal goals. The age by goal type interaction was non-significant. Predicted age main effects were found on a measure of reducer/augmenter type (Revised Form G2), and emotional control (ECQ), with older adults scoring more in the augmenter direction and endorsing greater inhibition of negative emotions than younger adults. Predicted age main effects were not found on a measure of affect intensity (AIM), suggesting that younger and older adults may not differ in experience of affect intensity. Predicted reducer/augmenter type main effects were found on a measure of emotional control (ECQ), with individuals needing stimulation (reducers) endorsing fewer strategies to inhibit negative emotions. Correlations suggested that with age, individuals need less stimulation and use more strategies to inhibit negative emotion. These findings are discussed in terms of conceptualization of age and individual differences in everyday problem solving. In
addition, implications for intervention, design of environments, and future research on age differences in everyday problem solving and emotion are discussed.
INTRODUCTION

Interest in adult cognition has increased over the last twenty-five years. This trend has been prompted by the aging of the population and the inadequacies of child development models for explaining cognitive changes in adulthood. Researchers have been particularly interested in everyday problem solving as an important aspect of successful adaptation in adulthood (e.g., Baltes, Dittman-Kohli, & Dixon, 1984; Berg & Sternberg, 1985; Labouvie-Vief, 1992; Sinnott, 1989). Moreover, everyday problem solving has been identified as an area where age or experience may facilitate performance. For example, the perception of age and experience as advantageous in certain occupations (e.g., law, medicine, academics) conflicts with views of age-related cognitive declines in real world performance (Denney, 1989). Therefore, identifying the areas where age-related cognitive changes would be most likely to influence problem solving has sparked an interest in this topic among cognitive aging researchers.

Despite its importance for adaptation in later life, the lack of appropriate conceptual frameworks for studying everyday problem solving in older adults has led to diverse methodologies and conflicting results. For example, researchers have found age-related declines (e.g., Denney, 1989; Hartley, 1989), stability (e.g., Berg, Strough, Calderone, Meegan, & Sansone, 1996; Camp, Doherty, Moody-Thomas, & Denney, 1989; Capon, Kuhn, & Gurucharri, 1981), and increases in problem solving performance (Cornelius & Caspi, 1987; Blanchard-Fields, 1986; 1994; Blanchard-Fields & Norris, 1994). These findings, coupled with studies indicating age-related declines in cognitive

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abilities, have fostered a view of inevitable age deficits in problem solving skills and abilities.

In recent years, researchers have adopted a contextual perspective on everyday problem solving, suggesting that successful adaptation to changing life circumstances depends on an individuals' ability to achieve their goals in specific contexts. This perspective emphasizes the importance of examining age and individual differences (such as emotional regulation) in the selection of strategies to achieve desired outcomes.

There is an important "process versus product" distinction between strategies and goals in the problem solving process. Problem solving may be thought of as processes (i.e., problem interpretation and strategies) to achieve a goal (Anderson, 1985). That is, strategies may be conceptualized as the processes (e.g., goal-directed methods; Siegler & Jenkins; 1989) individuals use to obtain the desired outcomes. In turn, the desired end result of the problem solving process may be best conceptualized as a goal, or end product of cognition. Everyday problem solving research has primarily addressed differences in strategy selection (process), overlooking the nature and achievement of the individual's desired outcome or goal (product).

Evidence suggests that achievement of personal goals is an important predictor of adaptation and psychological well-being in older adults (Brunstein, 1993; Buss & Cantor, 1989; Cantor & Zirkel, 1990; Rapkin & Fischer, 1992). Achievement of goals in an interpersonal context may be particularly relevant to adaptation for at least two reasons. First, the interpersonal context is fundamental to everyday problem solving (Hartley, 1989; Meacham & Emont, 1989). For example, when asked to describe
problems encountered in everyday life, persons of all ages most often report interpersonal problems (Hartley, 1989; Strough, Berg, & Sansone, 1994). Everyday interactions usually involve social behavior, whether with friends, family, coworkers, etc. (Baltes et al., 1984; Denney, 1989). Second, age and individual differences frequently emerge in interpersonal problems (e.g., Berg, Klaczynski, Calderone, & Strough, 1994; Blanchard-Fields, 1986; Camp et al., 1989), suggesting that the nature of these problems may elicit differing interpretations, goals, and/or strategies in individuals.

Strategy selection or goal-directed methods (Siegler & Jenkins, 1989) for performing a particular task (Salthouse, 1991) are most often the dependent measure of interest in everyday problem solving research. Goals are usually assumed to be consistent across individuals (Strough et al., 1994). However, preliminary research is suggestive of goal differences, both within and between age groups. Specifically, older adults report more emotional regulation goals (Strough et al., 1994) and appear more concerned with emotional regulation (Lawton, Kleban, Rajagopal, & Dean, 1992) than younger adults. Individual differences in preference for emotional arousal outcomes have been documented for younger adults (e.g., Larsen & Zarate, 1991; Larsen, Diener, & Cropanzano, 1987).

The present study is designed to examine two key issues that are fundamental to understanding age-related differences in everyday problem solving: a) individual goals as an important component of interpersonal problem solving, and b) the contribution of age and individual differences to goal selection. Thus, the proposed research should advance the everyday problem solving literature by providing evidence on age and individual
differences in desired outcomes in interpersonal problems, an issue that has not been addressed in previous studies to date.

The introduction is organized as follows. In the first section, the historical antecedents of research on adult age differences in interpersonal everyday problem solving are reviewed. This review illustrates the evolution of problem solving research from the traditional psychometric approach to the current interest in a contextual perspective on interpersonal problem solving. The second section evaluates everyday problem solving research from a contextual perspective that incorporates the contribution of age and individual differences in solving real-world problems. Discrepancies in the literature are noted, including contrasting views on definition and assessment of skills representing adaptive functioning in adulthood. These contrasting views are reflected in evaluation of strategy efficacy (i.e., effectiveness). The third section discusses the importance of age and individual differences in goal selection. Emotional arousal goals in interpersonal problem solving will be examined with respect to age and individual differences. In sections four through six, the discussion focuses on age differences in the experience of emotion, followed by developmental and individual differences in emotional expression. Finally, the rationale for examining the interaction of both age and individual characteristics in solving emotionally salient, interpersonal problems is presented.
REVIEW OF LITERATURE

Everday Problem Solving Research: Historical Antecedents

The problem solving paradigm consists of three basic components: a) interpretation of the problem, b) establishment of desired outcome (i.e., goal), and c) strategies to obtain desired outcomes. Stated differently, the process of problem solving may be described as "assessment of the present state, definition of the desired state, and finding ways to transform the former to the latter" (Reese & Rodeheaver, 1985, p. 474). Practical problem solving performance in older adults has traditionally been determined on the basis of only one of these components: strategy selection.

With the growth in everyday problem solving research, attention has shifted to include issues that may illuminate age and individual differences in problem solving: a) age differences in desired outcomes, b) the relationship between problem interpretation, outcomes, and strategies, and c) ecological validity of problems as representative of those encountered by adults in everyday functioning. The rationale for examining these issues is revealed by tracing the origins of current perspectives on everyday problem solving research.

Prior Research on Strategy Selection. Adaptive functioning in adulthood was initially evaluated based on strategy selection with "traditional" problem solving tasks. Traditional tasks are laboratory tasks usually developed for use with children and adolescents, such as Piagetian, concept learning, classification, and categorization tasks (see Reeve & Rodeheaver, 1985, for review). Findings of linear declines with age using
these tasks has an extensive history in the experimental literature (see Berg & Klaczynski, 1996; Denney, 1989; and Reeve & Rodeheaver, 1985, for reviews).

While many of these traditional tasks are highly predictive of important behaviors in the everyday lives of children and young adults (e.g., academic performance; Minton & Schneider, 1980), use of these tasks with middle-aged and older adults has been questioned on the basis of ecological, predictive, and face validity (Berg, et al., 1992; Denney, 1989). Academic success is an important outcome for younger individuals, but as Schaie (1978) points out, a more relevant demand for older adults is the ability to cope with the tasks of daily living. Previous experimental tasks have been criticized as inappropriate measures of the skills and abilities necessary for everyday functioning in later life (Berg & Klaczynski, 1996; Denney, 1989; Heidrich & Denney, 1994).

Consequently, the domain of practical problem solving emerged as an attempt to assess adult adaptive functioning in an everyday context, a more valid approach to the topic (e.g., Cornelius, 1984; Denney, 1989).

Researchers have developed two main categories of tasks to assess practical skills needed by older persons for everyday competence: a) traditional problem solving tasks with realistic stimuli (often referred to as practical problems) and b) realistic problems with realistic stimuli (i.e., everyday, or social problem solving tasks). Research with both types of problems has often led to contradictory findings (i.e., age-related decline, stability, and improvement in problem solving performance). These inconsistencies in the literature have been attributed to the diverse theoretical and
methodological approaches that guide everyday problem solving research (Berg & Klaczynski, 1996; Marsiske & Willis, 1995; Reeve & Rodeheaver, 1985).

**Theoretical Perspectives in Problem Solving Research.** Interpretation of prior studies is clarified when considered in terms of two perspectives, the competency perspective and the contextual perspective. Berg and Klaczynski (1996) have described these two perspectives on adult intelligence that often implicitly guide researchers in assessment and interpretation of everyday problem solving. According to Berg and Klaczynski (1996), the competency perspective of practical intelligence parallels theories of traditional intelligence. That is, practical problem solving is assumed to rely on underlying general abilities. Environmental influences are secondary. In contrast, a contextual perspective defines practical intelligence as successful adaptation to social and cultural milieu, (i.e., the fit between person and environment; Berg & Klaczynski, 1996). The two perspectives differ in how skills required for adult adaptive functioning (i.e., practical intelligence) are conceptualized. Thus, the perspectives vary in criteria used to determine effective problem solving, which has resulted in diversity in measurement and interpretation of problem solving data. These two perspectives will be discussed more extensively in relation to the relevant research in the following sections.

Although there is some overlap, research involving traditional tasks with older adults generally represents the competency perspective. Realistic tasks usually represent the contextual perspective. The first part of this review will address the concepts and criticisms regarding traditional and realistic types of problems.
Practical Problems: Traditional Tasks with Realistic Stimuli

To improve ecological validity of problem solving tasks for older adults, researchers replaced abstract stimuli in traditional laboratory tasks with more realistic stimuli drawn from everyday life. As Arenberg (1968) has noted, classical concept learning paradigms, where learning stimuli vary in color, form, and number, were probably too abstract for older adults to understand. Thus, abstract geometrical shapes of varying colors have been replaced by farm animals of varying colors (Denney & Denney, 1973). While older adults' performance has been facilitated by more meaningful stimuli, they remain less successful at these types of tasks when compared with younger adults (e.g., Arenberg, 1968; Denney, 1989; Reeve & Rodeheaver 1985). These differences have been interpreted as reflecting deficiencies in older adults' cognitive abilities (e.g., Denney, 1982; Denney & Palmer, 1981; Denney, Pearce, & Palmer, 1982; Reeve & Rodeheaver, 1985). This research is based on the assumption that underlying cognitive abilities are expressed in practical problem solving and can be measured based on only one correct standard (i.e., the competency perspective).

The Competency Perspective. While these attempts to improve upon traditional tasks consist of replacing novel stimuli with more meaningful stimuli, the use of both types of tasks operate on similar assumptions regarding adult intelligence. The competency perspective parallels a traditional, psychometric conception of intelligence: underlying general abilities (genotype) are reflected (phenotypically) in practical problem solving situations (Berg & Klaczynski, 1996). The role of the environment is of importance only in that it may allow optimization of cognitive ability (or lessen declines
in cognitive ability); however, minimum and maximum problem solving potential is determined by these underlying cognitive abilities. Therefore, performance is evaluated according to a standard criterion, regardless of individual and environmental differences (e.g., age, culture, etc.).

Older adults have been found to show similar problem solving deficiencies in traditional tasks with meaningful and relatively "meaningless" stimuli. For example, Welford (1958) reported two studies that required subjects to determine the correspondence between a diagram and an actual "stimulus". An electrical problem required subjects to take meter readings to determine which terminals on a box corresponded to terminals in a diagram. A similar study was conducted using a horse racing paradigm. Buttons on a box represented horses and subjects were given a diagram illustrating the winning order of a horse race. Subjects were to determine which button corresponded to which horse from information given after pressing two buttons representing horses. In both studies, Welford (1958) reported older individuals made more redundancy errors and took more readings than younger adults, suggesting that older adults are less efficient problem solvers, even with more meaningful stimuli.

Other researchers (Arenberg, 1968; Hayslip & Sterns, 1979; Hartley, 1989) have used concept learning tasks with food as stimuli. Subjects were informed as to whether or not a fictitious person lived or died after eating different combinations of three foods. Older subjects required more trials and committed the most errors on determination of which of the foods was "poisoned". Wetherick (1966) found this task to be positively correlated with fluid intelligence in older adults. Again, these findings indicate that older
adults are less efficient problem solvers, even in potentially life-threatening everyday situations. The correspondence between task performance and fluid intelligence suggests that general intellectual abilities may underlie everyday functioning (cf. Siegler, 1980). Thus, well-documented findings of age-related declines on traditional measures of intelligence (e.g., Horn & Cattell, 1966; Horn, 1982) would be expected to be replicated in declines in everyday problem solving.

One of the most frequently cited studies of problem solving in older adults is the Twenty Questions tasks (see Denney, 1989, for a review). This is a concept identification task, where individuals are required to identify the one "correct" item by asking any questions that can be answered "yes" or "no". The items (e.g., a cow, pig, etc.) vary on dimensions such as color. The most efficient strategy is to ask constraint-seeking questions (i.e., eliminate a set of answers) such as, "is it a color?" rather than hypothesis-scanning questions such as "is it a brown cow?". When compared to younger adults, older adults asked more questions overall, more hypothesis-scanning questions (Denney & Denney, 1973; Kesler, Denney, & Whitely, 1976), and more redundant questions (Denney & Denney, 1973). Performance on this task has also been correlated with measures of fluid intelligence (Kesler et al., 1976). Again, these results suggest that declines in general cognitive abilities underlie older adults' poorer problem solving performance.

Summary. The use of realistic stimuli with traditional tasks resulted from observations that using stimuli such as color and geometric form were too abstract for older adults (Arenberg, 1968). Despite the use of more meaningful stimuli that facilitates
older adults' problem solving performance in some cases (cf. Denney, 1989), there remain overall declines with age on these types of problems. These types of tasks are appealing in that they provide experimental control; however, they have been criticized for: a) not representing realistic situations encountered by older adults (ecological validity) and b) ignoring the potential adaptive significance in older adults' use of different strategies (performance criteria). Consequently, traditional problems may yield a distorted view of aging and problem solving (Reeve & Rodeheaver, 1985).

In recent years, realistic tasks with realistic stimuli have been developed to better assess adults' problem solving abilities and knowledge necessary for everyday functioning. This research has generally improved upon the limitations inherent in the traditional task research by a) deriving realistic situations from reports of actual adult problem situations, and b) basing strategy efficacy on peer group or self-generated standards of effectiveness.

The following review of representative studies in this area illustrates the emergence of everyday problem solving in an interpersonal problem solving domain. While this research examines adult problem solving in terms of goal achievement in a social context, the unique goals and individual differences among participants were not empirically addressed in these studies. Consequently, this research will be reviewed with an eye towards age and individual differences that may have contributed to the empirical outcomes. However, some interpretive caution is warranted, as individual difference variables were not the central focus of this research.
Everyday Problem Solving Research: Current Findings and Future Directions

Although traditional and everyday problem solving share the three basic problem solving components (problem interpretation, goals, and strategies), there is considerable diversity in terms, definitions, and categories of everyday problem solving. Thus, interpretation of the literature is complicated by methodological inconsistencies, such as: a) measures used to assess everyday problem solving, b) the ecological validity of these measures, and c) the experimenter-defined criteria to evaluate performance. Conflicting findings of age-related declines, stability with age, and increases in performance with age are likely due to variations in terms and measures (for reviews see Berg & Klaczynski, 1996; Hartley, 1989). Research showing age-related declines, stability, and increases in everyday problem solving performance are reviewed next. These studies will be evaluated in terms of their compatibility with the contextual perspective, followed by a contrast and comparison of traditional and everyday problem solving research.

Basically, everyday problems are those problems which individuals may encounter in the course of their daily lives. Everyday problem solving has been defined based on factors such as the problem domain (e.g., interpersonal or instrumental; Blanchard-Fields & Camp, 1990), the form of the problem (e.g., ill-structured or constrained; Sinnott, 1989), and how frequently these problems occur in life (Camp et al., 1989; Denney, 1989). In addition, the three components of problem solving (noted earlier) may be evaluated on multiple dimensions. For instance, problem interpretation (i.e., how the problem is defined), can be examined on a number of dimensions, including: a) social, affective and cognitive dimensions (Klaczynski & Berg, 1992),
causal attributions (Blanchard-Fields, 1986; Blanchard-Fields, 1994), attentional biases, personal control (Blanchard-Fields & Irion, 1987), and so forth. How an individual defines and interprets the problem space is also thought to be central to problem interpretation (Arlin, 1989).

In addition, everyday problem solving goals have been broadly classified in terms of self and other goals, as well as desired state (e.g., independence, affective, improvement, etc.; Strough et al., 1994). Goals may, in turn, motivate selection of strategies (Siegler & Jenkins, 1989). Evaluation of strategy selection has received the most attention in the problem solving literature.

Strategies may be optimally defined as goal-directed methods (Siegler & Jenkins, 1989) for performing a particular task (Salthouse, 1991) and are also classified according to many different categories. Strategies have been dimensionalized as interpersonal versus intrapersonal, (e.g., Folkman et al., 1987), as well as involving regulation of cognition, behavior, other individuals, physical environment, and emotion (Berg, Calderone, Strough, & Williams, 1993; Folkman, Lazarus, Pimley, & Novacek, 1987). Strategy selection has been evaluated according to quantity (i.e., number of solutions generated; Denney, Pearce, & Palmer, 1982; D'Zurilla & Nezu, 1980; Nezu & D'Zurilla, 1979; Platt & Spivack, 1975) and/or quality of the strategies (e.g., generation of the best solution; Blanchard-Fields & Camp, 1990; Cornelius & Caspi, 1987; Sinnott, 1984).

The following review of everyday problem solving research will be discussed within a contextual perspective of problem solving. In particular, this perspective suggests that: a) quantitative measures of strategy selection present an inadequate
representation of the individual's abilities, and b) performance criteria based on strategy selection is premature; individuals' goals must be considered before strategy efficacy can be evaluated.

**Everyday Problem Solving: Realistic Tasks with Realistic Stimuli**

Given the diversity in problem solving terms and performance criteria, research inconsistencies are not surprising. This research has led to the following conclusions: a) age-related declines (e.g., Denney, 1989; Hartley, 1989) or equivalent performance in younger and older adults with middle-age performing best (Denney, 1989; Denney & Palmer, 1981; Denney et al., 1982; Denney & Pearce, 1989), b) stability with age (e.g., Berg et al., 1994; Camp et al., 1989; Capon et al., 1981), and c) age-related increases in everyday problem solving (Cornelius & Caspi, 1987; Blanchard-Fields, 1986; 1994; Blanchard-Fields & Norris, 1994). In addition, age differences in everyday problem solving have been found as a function of task domain (Blanchard-Fields & Camp, 1990; Blanchard-Fields, Jahnke, & Camp, 1995; Cornelius & Caspi, 1987), assessment measure (Marsiske & Willis, 1995), and emotional saliency of the problem (Blanchard-Fields & Norris, 1994; Blanchard-Fields & Camp, 1990). Interpretation of these discrepant findings is aided by a contextual approach, as discussed next.

**The Contextual Perspective.** Everyday problem solving research supports a contextual approach to the study of problem solving in older adults. This perspective promotes the role of environmental demands, problem solvers' goals, and individual characteristics in understanding adaptation to particular life contexts (Berg & Klaczynski, 1996). This approach differs from the competency perspective in that the
contextual perspective: a) does not emphasize underlying intellectual abilities in everyday problem solving, b) emphasizes the interaction between the individual and environment, and c) the outcome of interest is the individual's adaptation to the particular context (e.g., Berg, 1989; Scribner, 1986) and attainment of individual goals (e.g., Klaczynski & Reeve, 1991).

The social context appears particularly relevant; interpersonal problems are frequently reported, and age and individual differences often emerge in socioemotional domains (i.e., social contexts with an emotional component; Blanchard-Fields & Norris, 1994). Adaptive social behavior has been defined as flexibility in adapting old strategies and learning new strategies in a social context. This is accomplished by generating alternative strategies and using affective appraisal and emotional regulation (Cantor & Kihlstrom, 1989). The following review examines current everyday problem solving research in terms of current definitions of problem solving efficacy.

Age-Related Declines in Everyday Problem Solving. Denney and colleagues developed one of the first studies using realistic problem situations with realistic stimuli (Denney & Palmer, 1981; Denney, Pearce, & Palmer, 1982; Denney & Pearce, 1989). Subjects were asked to generate solutions to hypothetical real-life problem situations (e.g., what would you do if you don't have a car and need to go to the doctor?). Performance criterion was based on the number of safe and effective solutions generated. In three studies, middle-aged adults performed better than younger and older adults, even when the problems were designed to represent problems frequently encountered by elderly persons (Denney & Pearce, 1989; Denney et al., 1982). According to the scoring
system used, the optimum response would involve "self-action" (i.e., no involvement of others) and more than one solution. However, Denney and her associates did not provide a rationale for why "self-action" would be better than reliance on others (Denney & Pearce, 1989).

Denney’s interpretation of these findings is more in line with a competency perspective. According to Denney (1989), optimally exercised abilities (e.g., everyday problem solving experience) may compensate for declines in unexercised abilities (e.g., performance on traditional tasks) in middle-aged adults. Declines in everyday problem solving in older adults occur when experience cannot compensate for the declines in unexercised abilities.

Blanchard-Fields and Camp (1990) also found a curvilinear relationship of age on problems varying in emotional saliency and on the Everyday Problem Solving Inventory (Form A; Cornelius & Caspi, 1987). In Study 1, subjects solved fifteen everyday problems varying in emotional saliency. Their responses were scored according to four response styles; higher scores were given to responses that acknowledged the interaction of multiple factors. Contrary to expectation, older adults produced more "cut and dry" responses in more emotional situations than did younger adults. Blanchard-Fields and Camp (1990) suggest that older adults may automatically provide solutions according to experience-based schemata; this may also be true in Denney’s (1989) realistic task as well.

In a second study, Blanchard-Fields and Camp (1990) had subjects rate how likely they are to use each of four strategies (categorized as problem-focused, cognitive-
analysis, passive-dependent, and avoidant-denial) in three problem domains (consumer problems, home management, conflicts with friends). These ratings were compared with "optimal ratings" generated by "judges" (experimenters and laypersons varying in age). A high correlation represents a higher ability of problem solving. They found age-related declines in problem solving, contrary to a previous study by Cornelius and Caspi (1987) where a linear increase in performance from young to older adults was found. Blanchard-Fields and Camp (1990) explain that this discrepancy may be a result of methodological differences, including differences in the age range of older adults, educational level, and geographic differences (northeast versus southeast). The sample differences could also have important implications in terms of the performance criteria, which were established in the Cornelius and Caspi (1987) study. Different patterns of age-related performance between the two studies could occur if subjects' goals in Cornelius and Caspi's (1987) study were a closer match to the criterion group than the Blanchard-Fields and Camp (1990) subjects. This reinforces the importance of considering how performance criteria are established.

Stability. Camp et al. (1989) found no age differences in self-rated and experimenter-rated problem solving efficacy. Subjects generated solutions to four problems they had experienced in everyday life. They also generated solutions to four realistic tasks previously developed by Denney (1989). Subjects and experimenters then rated the efficacy of subjects' solutions for all eight problems. While younger and middle-aged adults judged their strategies on experimenter-generated problems as superior to their personal problem strategies, experimenters found no age differences in
strategy efficacy for either type of problem. These findings were interpreted to suggest that solution efficacy may depend on who is judging, the experimenter or the individual who actually applied the solution.

Similarly, Berg, Klaczynski, Calderone, & Strough, (1994) found no overall age differences in self-perceived strategy effectiveness. In this study, adults described recent problems and their solutions, as well as a recent problem and solution in one of six domains: school, family, friends, leisure time, health and work. Subjects then rated on a seven-point scale how well they thought they dealt with the problem. Although age differences were found in strategies perceived as effective in the domain-constrained problems, overall, young and older adults perceived their strategies as equally effective. In the domain-constrained problems, young adults rated cognitive and behavioral regulation strategies as more effective than did older adults, who rated regulation and inclusion of others as more effective. This is an interesting finding, given experimenter's tendency to rate unfavorably solutions involving "reliance on others". It appears that older individuals perceive these strategies as more effective than do younger individuals. This brings into question scoring schemes developed based on what others perceive as most effective.

Hartley (1989) found no age differences in choosing the best Medicare insurance and giving personal advice. Subjects were given information regarding features of four Medicare-supplement insurance policies. There were no age differences in the number of questions asked and the proportion of redundant questions. In a second study, subjects were asked to provide strategies to two hypothetical advice-seeking letters to a
columnist. Again, no age differences were found on strategy quality (appropriateness, effectiveness, or unusualness).

**Improvement with Age.** Cornelius and Caspi (1987) examined age differences in strategy selection for solving problems on the Everyday Problem Solving Inventory (EPSI). Subjects rated how likely they would be to use each of four strategies for problems representing six domains: consumer, information, home, family, friends, and work. Each strategy represented one of four types of responding: problem-focused action, cognitive problem analysis, passive-dependent, and avoidant thinking and denial. Individuals' ratings were compared to effectiveness ratings generated by a panel of judges (psychologists, graduate students and laypersons). This study found a linear increase in everyday problem solving performance with age.

Blanchard-Fields and Camp (1990; Experiment 2) (as discussed earlier) found evidence of overall declines with age on the EPSI, but a more qualitative analysis of strategies provided interesting age differences by domain. In general, there were no overall age differences in the use of the two more proactive strategies (problem-focused and cognitive-analysis). However, in the domains requiring "emotional management strategies" (i.e., the home and friend domain), older adults used more passive-dependent and avoidance strategies compared to younger and middle-aged adults. This finding suggests that older adults are using more "defensive and emotionally regulating responses", which may be adaptive in uncontrollable situations (cf. Blanchard-Fields & Camp, p. 490). While the results of these studies are mixed, some generalities emerge.
with respect to: a) ecological validity issues b) performance criteria, and c) the role of emotion, as discussed next.

**Ecological Validity.** Everyday problems with realistic stimuli may achieve greater ecological validity by using actual problems experienced by the subject (Camp et al., 1989; Berg et al., 1994), or representative samples (Denney & Palmer, 1981; Denney, Pearce, & Palmer, 1982; Blanchard-Fields & Camp, 1990). However, Banaji and Crowder (1989) bring up a potential problem with increased ecological validity; this results in greater context specificity and therefore less generalizability of findings. Indeed, skills and/or goals have been found to vary according to problem domain (e.g., Blanchard-Fields & Camp, 1990), suggesting effects of context specificity. There are two explanations for this skill by domain effect: a) familiarity with an area may lead to differential performance, or b) performance may depend on some interaction between the context and the individual. Cornelius and Caspi (1987) found little convergence between age differences in problem familiarity and performance. In fact, despite a linear age-related increase in problem solving performance, older adults were less familiar with the situations than younger adults. Conversely, older adults did not perform better on realistic tasks designed for their age group (Denney, 1989). Despite these findings, it would be prudent to control for possible effects of problem familiarity when examining performance across age groups.

**Performance Criteria.** According to the contextual perspective, performance criteria should reflect the individual's desired outcome. Age-related declines in performance have been found to vary, according to whether the most effective solution
was established by experimenters (e.g., Denney & Palmer, 1981), judges including laypersons (e.g., Cornelius & Caspi, 1987), or the subjects themselves (e.g., Camp et al., 1989). There are problems associated with the use of each of these three groups as setting criterion. Specifically, experimenter standards of efficacy (e.g., Denney & Palmer, 1981) have been criticized for failing to provide justification for the superiority of certain strategies over others (Berg & Klaczynski, 1996). Blanchard-Fields and Camp (1990) point out that using efficacy ratings generated by laypersons may not be generalizable to subject pools with differing education and age. Although Berg and Klaczynski (1996) defend self-ratings of efficacy, this type of rating may be susceptible to social desirability effects (i.e., subjects trying to present their performance in a more positive light). In sum, performance criteria based on group judgments of strategy efficacy are advantageous in that this is more representative of the subject sample, but only when the criterion group is similar in sample characteristics. However, a fundamental issue in the problem solving research remains definition of problem solving efficacy. Determination of optimal problem solving should include the extent to which the desired outcome is achieved.

Content analysis of the form of the strategy (e.g., problem-focused, passive-dependent, etc; Cornelius & Caspi, 1987; Blanchard-Fields & Camp, 1990) by problem domain (e.g., consumer, friend, etc.) has yielded interesting qualitative information. However commendable this more qualitative approach may be, there are two basic flaws in this methodology. First, researchers are apt to regard certain types of behavior as preferable. For example, proactive strategies have been deemed superior to passive
strategies (cf., Camp et al., 1989) and independent solutions have been considered to be superior to reliance on others (e.g., Denney & Palmer, 1981). As discussed earlier, a rationale is rarely given for these types of judgments and may reflect a youth-oriented standard of behavior. Second, researchers continue to overlook a fundamental assumption of the contextual perspective: adaptation is dependent on the individual achieving their unique desired outcome (i.e., goal). A plausible alternative explanation of age differences in strategies is that older adults have different intended outcomes than do younger adults, particularly in emotionally salient domains. Thus, the use of different strategies may reflect attempts to achieve different outcomes, which may be adaptive for older persons. The review that follows highlights the limited research on goals, followed by physiological, social, and cognitive research which provides a rationale for expecting age and individual differences in goal preference.

To summarize, two concepts that are fundamental to the contextual perspective have received little attention: a) goal attainment as indicative of adaptation, and b) age and individual differences in goals. The following sections discuss the significance of goal selection in the problem solving process. As the above review suggests, affective variables (e.g., emotional saliency) appear to be very important to the problem solving process (see Blanchard-Fields, 1994; Blanchard-Fields et al., 1995). Therefore, age group and individual differences in affect and how they may impact upon goal selection will be explored.
Everyday Problem Solving Goals

The bulk of everyday problem solving research has focused on manipulation of independent variables rather than the dependent measure of problem solving performance (cf. Blanchard-Fields & Camp, 1990). Although a contextual perspective holds that performance criteria should reflect achievement of the individual's goals, goal selection has received scant attention in the everyday problem solving research.

As previously noted, problem solving research assumes that the same goals motivate strategy selection, regardless of age and individual characteristics (Lave, 1989; Sansone & Berg, 1993). However, individual differences in extrinsic variables, such as changing life circumstances (Campbell, 1981), socioeconomic status, and education (Rapkin & Fischer, 1992), as well as intrinsic variables, such as arousal threshold (Larsen & Zarate, 1991) have been related to preferred outcomes in studies with younger adults. Problem solving performance is deemed deficient when individuals do not choose the most efficient strategy to achieve the experimenter-imposed goal. However, selection of alternate strategies may actually reflect attempts to achieve a different goal (Sansone & Berg, 1993). This is an important issue in psychology with respect to advancing the problem solving literature and identifying potential practical applications as well.

Assuming that strategy selection is motivated by goal preference, age and individual differences in strategy selection would probably be reflected in stated goal differences. Very few studies have directly examined age-related differences in everyday problem solving goals. There is some evidence to suggest that adults have a greater diversity of goals, and more interpersonal goals (i.e., goals with the purpose of bringing...
about some outcome involving others) than do younger individuals (Sansone & Berg, 1993). Importantly, older adults also have more goals involving regulation of affective state (Strough et al., 1994), which further attests to the importance of examining the contribution of affective variables to problem solving performance.

The role of emotion in goal and strategy selection is suggested by research on age differences in problem solving in socioemotional contexts. For instance, age differences in problem solving processes have been found as a function of the emotional saliency of the stimuli (Blanchard-Fields & Camp, 1990; Blanchard-Fields et al., 1995). Age differences have also been documented in the use of emotional regulation strategies (Blanchard-Fields & Camp, 1990). Findings of preference for emotional regulation in older adults are also implicated in the coping literature (Folkman et al., 1987; Prohaska, Leventhal, Leventhal, & Keller, 1985). In these studies, older adults appeared to be more concerned with emotional regulation (i.e., controlling the content and expression of emotion; Lawton et al., 1992) than were younger adults. Research on affect intensity (Lawton et al., 1992) and qualitative studies of older adults (Lawton & Albert, 1990; Carstensen, 1987; 1992) have also come to this conclusion. Indeed, older adults have more emotional regulation goals than do younger adults (Strough et al., 1994).

However, variability within age groups indicates there are most likely individual differences in desired emotional arousal. These age and individual differences in emotional regulation are discussed in the sections that follow.

**Summary.** Prior research can be interpreted to suggest that the correspondence between goals and strategy selection in interpersonal problem solving is important for
understanding age-related differences in everyday problem solving. To date, researchers have not empirically addressed the influence of age and individual difference variables on goal and strategy selection in everyday problem solving. Older adults may have different desired outcomes than younger adults, especially in emotionally salient domains (e.g., avoidance of negative affect, Lawton & Albert, 1990; increase relationship quality, Carstensen, 1987; 1992). One might therefore expect that older adults would choose different strategies to achieve these goals, compared to young adults, who may have more task completion goals (Strough et al., 1994) or information acquisition goals (Frederickson & Carstensen, 1990). In addition, individual preferences in affective intensity may influence affective goals and regulation of affect (i.e., strategies to attain these affective goals). Consequently, before examining the influence of individual and developmental characteristics on goal selection in emotionally salient interpersonal problems, it is necessary to first examine individual and developmental differences in affect and affect regulation.

**Age-Related Differences in Affect**

Emotional regulation has been implicated as an important factor in the problem solving process (e.g., Blanchard-Fields & Camp, 1990; Blanchard-Fields, 1994). Physiological and self-report data show an overall lessening of affect intensity with age, thought to be an inevitable consequence of biological aging. Consistent with this view, older adults appear to deliberately avoid potentially negative emotionally arousing situations (Blanchard-Fields, 1994). Other evidence suggests that affective valence (i.e., the quality of affect, either positive or negative) may also change with age. For example,
younger adults define positive affect different (qualitatively) relative to older adults; this may result in younger adults scoring higher on affect intensity questionnaires. Younger adults are also more likely to positively rate stimulating items that older adults would consider aversive (Lawton et al. 1992).

While early research on problem solving focused primarily on the cognitive component of problem solving ability, research incorporating an affective component (either in the nature of the stimuli and/or as a strategy choice) has often resulted in interesting age differences. For instance, age differences in emotionally salient problems have been documented in interpretation of the problem (e.g., Blanchard-Fields & Norris, 1994), strategy selection (e.g., Blanchard-Fields & Camp, 1990; Blanchard-Fields et. al., 1995), and outcome goal (e.g., Strough et al., 1994). These findings are consistent with the notion that emotion is an important component in problem solving.

Moreover, recent research has indicated that older adults employ a more varied range of strategies in more highly emotionally salient problem domains (e.g., family and relationship issues) than do younger adults (Blanchard-Fields & Camp, 1990; Blanchard-Fields et al., 1995). These studies have also found that older adults use more emotion-focused strategies in emotionally salient domains, compared to younger adults. Emotion-focused strategies refer to strategies to regulate distressing emotions (Folkman et al., 1987), such as the avoidance of an interaction that would elicit anger in oneself (Gross & Levenson, 1993). Research examining coping styles has also indicated that older adults generally prefer emotion-focused coping styles compared to younger adults (Folkman et. al., 1987; Prohaska et al., 1985). Therefore, this emotional component

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appears to be an important variable to study in a developmental context when examining strategy and goal selection.

Based on this analysis, one might infer that age interacts with emotion in problem solving. That is, older adults would be more likely than younger adults to adopt affect reduction strategies in response to emotionally salient problems. As this review will demonstrate, this is a complicated issue. Not only age, but individual differences within age groups must also be considered in interpreting research where emotionally salient issues in an interpersonal context were studied.

Studies of affect in older individuals have primarily examined affect intensity (Diener, Sandvik, & Larsen, 1985; Lawton et al., 1992; Malatesta, 1981; Weiner & Graham, 1989), the influence of emotions on task performance (e.g., Geen, 1985), and basic learning and memory processes (e.g., Kausler, 1990). Much of this research has taken a unidimensional view of emotion (e.g., positive and negative emotion as one continuous variable). However, emotional experience may be conceptualized not only in terms of emotional valence (i.e., the positive and negative quality of affect), but also as dynamics of emotion (i.e., intensity, frequency, duration, speed of onset and decay, and variability). The volitional self-regulation of emotion (i.e., subjective or behavioral actions which influence the occurrence and content of emotion; Lawton, Kleban, Rajagopal, & Parmalee, 1993) must also be considered in the conceptualization of emotion. These dimensions of emotion, in particular emotional valence, affect intensity, and self-regulation, will be discussed in with an eye towards age-related differences and similarities in the sections that follow.
**Emotional Valence.** Research supports a two-factor model of emotion, consisting of two uncorrelated factors: positive and negative affect. The statistical independence of positive and negative affective factors has been shown in numerous studies where each factor poorly predicted the other (Bradburn, 1969; Diener, Larsen, Levine, & Emmons, 1985; Watson, 1988), and each factor was correlated with different personality factors (Costa & McCrae, 1980; Costa et al., 1987; Emmons & Diener, 1985). While the structure of positive and negative affect has been shown to be similar across three age groups (Lawton et al., 1992), significant age-related differences do emerge for items composing these factors (e.g., for younger adults, positive affect depends more on psychophysiology, with excited and arousal items more salient definers of positive affect; Lawton et al., 1993). In addition, research documents age-related differences in affect intensity, frequency, and prevalence of negative and positive affect; each will be discussed in turn below.

**Affect Intensity.** Numerous studies on age-related differences in affect have focused on the dynamics of emotion, in particular, affect intensity (an individual difference characteristic reflected in the intensity or magnitude of an individual’s emotional response; Larsen & Diener, 1985; 1987). According to a unidirectional perspective, with age comes a blunting in experience and expression of emotion (Malatesta, 1981). This expectation is based on speculation that increasing age is accompanied by biological and social losses, such as neurological system deterioration, habituation to repeated exposure to emotional events (e.g., Schulz, 1985; Solomon, 1980), personal and financial losses and the societal devaluation of the elderly (Lawton
& Albert, 1990). However, the effects of physiological and socio-historical processes on emotional experience and expression are rather complicated, and thus are inadequately captured by a unidirectional perspective. In order to gain a better understanding of affect intensity differences, it is therefore necessary to examine studies which have investigated the various components of affect intensity.

One issue concerning affect in later life is whether or not older individuals are overaroused or underaroused in terms of autonomic functioning. According to the decline perspective, it is assumed that older individuals experience decreased affect intensity, due to deterioration in neurological systems or habituation to stimuli (Schulz, 1985). However, physiological indices indicate that although autonomic arousal in older adults increases more slowly, (Eisdorfer, 1968; Schulz, 1985) when compared to younger adults, older persons reach higher levels of arousal when confronted with new stressors and take longer to return to baseline (Eisdorfer, 1968). Self-report measures do not always directly correspond to these findings; older adults report longer lasting positive moods and shorter lasting negative moods (Lawton et al., 1992). In sum, the discrepancy in physiological and self-report findings indicate that the complexity of emotional experience cannot be adequately indexed by physiological markers alone.

Self-report measures indicate an age-related decrease in emotional intensity (Diener et al., 1985; Lawton et al., 1992). However, this pattern of outcomes may be misleading; as mentioned previously, examination of specific emotions indicates that there is a qualitative difference in the experience and factor composition (i.e., factor structure) of particular emotions with age. For example, with increasing age, individuals
report decreased feelings of zest, but also decreased worries (Veroff et al., 1981) and anger (Weiner & Graham, 1989). On the other hand, intensity of pity has been found to increase with age (Weiner & Graham, 1989).

Factor structure analyses also suggest both qualitative and quantitative age-related differences in emotional experience. Application of a two-factor model of affect intensity of young versus older adults revealed that the two-factor model provides a better fit for older adults, whereas a unidimensional concept is a better explanation for younger adults (Lawton et al., 1992). These findings suggest that younger adults are more responsive, labile, and display greater impulse affectivity, regardless of whether the situation is pleasant or unpleasant (Lawton et al., 1992). However, qualitative differences did emerge when positive affect was examined; younger adults rate excited and aroused items as more salient definers of positive affect than do middle-aged and older adults. These results suggest that for younger adults, an essential component of positive affect may be the self-perception of arousal (Lawton et al., 1992). Similarly, the personality trait "sensation seeking", or "valuing stimulation for its own sake", is higher among younger persons (Lawton et al., 1992; Lubin et al., 1988). However, "more is not necessarily better"; greater affect intensity is not necessarily an optimal state. Individuals reporting high affect intensity not only report stronger positive affect, but also stronger negative affect than do low affect intensity individuals (Larson, Diener, & Emmons, 1986). In addition, frequency, rather than intensity, of negative and positive emotions is strongly implicated in overall psychological well-being (Diener, Sandvik, & Pavot, 1991).
Some gerontologists have suggested that personal loss and decline is an inevitable part of aging (cf. Estes, 1979). For instance, with age comes the potential for loss of social roles, income, physical abilities, health, deaths of friends and family, and so forth (Pastalan, 1982). Therefore, one might expect that older individuals would report more negative emotions than younger individuals. However, elderly persons, as a group, do not evidence any more negative emotions than do young individuals (e.g., Cameron, 1975; Lawton & Albert, 1990). In fact, they tend to report less negative emotion (Lawton, Kleban, Rajagopal, & Dean, 1993) and more extended positive moods (Lawton et. al., 1992), contrary to expectation. Moreover, they are also generally less distressed and depressed and more contented than younger individuals (Lawton et al., 1993). The findings of less negative emotions despite increased stressors, in conjunction with findings of increased use of emotional regulation, suggest that elderly persons are actively regulating their emotional responses to environmental events.

Summary. There appears to be a qualitative difference in affective experience between older and younger adults. Contrary to what would be expected, given physiological data, increased stressors, and negative life events, older adults report extended positive moods and shorter negative moods. Older adults also define positive moods differently from younger adults, who rate stimulating items as positive. It may be that older adults are more likely to perceive "stable" events as positive. In addition, older adults may be proactively regulating their environment and behavior to decrease the occurrence of negative events (Lawton & Albert, 1990). These data implicate proactive emotional regulation, as well as arousal threshold, in the experience of
emotional arousal. Derryberry and Rothbart (1988) have described the experience of emotional arousal in social contexts as a function of two variables: a) proactive regulation of emotions (emotional regulation/modulation) and b) individual responsivity to emotions (individual responsivity disposition; Derryberry & Rothbart, 1988). These two variables have implications for interpersonal problem solving from both a developmental and individual differences perspective.

Emotional self-regulation has been defined as the ability to regulate subjective, physiological and behavioral manifestations of emotion (Lawton & Albert, 1990). Emotional responsivity disposition refers to "a stable trait of responding to stimuli" (Larsen & Diener, 1987). In the following sections, developmental approaches to examining age-related changes in emotional regulation are discussed. Individual differences in emotional responsivity disposition and regulation are addressed next, in terms of the theory of Stimulation Intensity Modulation (SIM; Barnes, 1976). Individual differences in emotional responsivity disposition have not been examined from a developmental perspective; therefore, only the developmental implications of this theory will be discussed.

**Affective Regulation from a Developmental Perspective**

Lawton and colleagues (Lawton & Albert, 1990; Lawton et al., 1992) have hypothesized that with age, individuals develop expertise in emotional regulation. Everyday problem solving research has revealed age differences in use of emotional regulation, but few researchers have directly examined developmental differences in this domain.
Cognitive Regulation. There are relatively few developmental studies of emotional regulation. These studies indicate that emotional regulation is susceptible to age-related change, with older adults becoming expert in balancing positive and negative affect, as compared to younger adults, who are more "sensation-seeking". For example, Lawton and colleagues (Lawton & Albert, 1990; Lawton et al., 1992) have examined emotional regulation in older adults; specifically, their ability to manage negative emotions. Lawton has argued that with experience, individuals develop expertise in managing emotions. Therefore, despite the stressors that typically accompany aging, most older persons manage to maintain psychological well-being. Lawton concluded from this research that overall positive affect remains relatively constant in older adults, and better cognitive coping skills are learned to reduce negative emotions. Participants in one study reported that coping with negative affect requires a conscious strategy, so they employ more cognitive control with negative affective situations (Lawton & Albert, 1990). As for positive affect, it appears that stimulation is necessary for the experience of positive emotion in younger but not older adults (Lawton et al., 1993). This complements findings that older subjects are lower in sensation seeking behaviors compared to younger adults (Lawton et al., 1992). Given diminishing resources with age (e.g., physical abilities, social network), it may be adaptive to rely more on cognitive strategies to decrease negative emotions, and rely less on stimulation as an important component of positive emotion.

Pilot studies conducted by Carstensen and her colleagues provide preliminary evidence showing that persons' ability to control their emotions improves with age,
particularly the emotions of anger and sadness (Carstensen & Erickson, 1986). According to one subject: "What can't be cured must be endured. I have learned to take a tremendous amount of happiness in small things that I took for granted when I was younger". Carstensen (1987; 1992) has developed a Socioemotional Selectivity theory which extends self-reports of emotional regulation into the behavioral domain, as discussed next.

**Behavioral Regulation.** Carstensen's (1987; 1992) Socioemotional Selectivity theory holds that there is a developmental change in desired rewards in social relationships, with older individuals placing greater value on quality rather than quantity of relationships. Increasing age may be accompanied by decreased physical and emotional resources. An adaptive strategy would be to maximize social and emotional gains, and minimize social and emotional risks. This makes quality, rather than the quantity of social interactions, a greater priority for older people. In other words, with age, individuals are able to extract optimal emotional rewards from decreasing psychosocial resources.

Research has emphasized the necessity of frequent social interactions for psychological well-being. A number of studies support the claim that socially active elderly are better adjusted psychologically than are the inactive elderly (e.g., Graney, 1975; Maddox, 1968; Luke, Norton, & Denbigh, 1981). However, this relationship may actually be mediated by several additional factors. For instance, the quality, not quantity, of interactions may determine successful adaptation (Conner, Powers, & Bultena, 1979; Duckitt, 1982; Heltsley & Powers, 1975; Lowenthal & Haven, 1968). Despite declines
in interaction frequency with acquaintances and close friends, subjects report increased emotional closeness throughout adulthood with relatives and friends (Carstensen, 1992). Revenson (1984) found those aged 65 and older were the least lonely, and reported greater satisfaction with their relationships. Similarly, Lowenthal and Haven (1968) found that low social interaction levels were positively related to depression, only if the individual did not have a confidante. Therefore, while elderly people generally show decreased rates of social activity (Carstensen, 1987), this may not indicate a "preparation for death" (as proposed by disengagement theory; Cumming & Henry, 1961) and relationship quality may play a more important role in determining adaptation than quantity of relationships.

These developmental perspectives suggest that age-related declines in affect intensity and social withdrawal of the elderly are deliberate emotional regulation strategies to minimize negative affect and maximize rewards. Therefore, documented findings of decreased affect intensity (e.g., Diener et al., 1985; Lawton et al., 1992) and increased emotional regulation goals (Strough et al., 1994) and strategies (Blanchard-Fields & Camp, 1990; Folkman et al., 1987) in older adults may be reinterpreted. Rather than indicating decline, older adults may be "proactively constructing" (Lawton, 1987) their world to achieve their emotional goals. This is an important area for further study, given the implications of goal attainment for well-being and adaptation in older adults.

Adaptiveness of Emotional Regulation. As previously mentioned, researchers have frequently used youth-oriented standards to evaluate the performance of older adults. Thus, findings of decreased affect intensity and social interactions in older adults
often imply declines. However, as previously discussed, the phenomena are multifaceted, and may represent adaptation in older adults (Carstensen, 1992). For instance, age-related experiential, environmental, and physical changes might be expected to change goal definition and approximation (Campbell et al., 1976). Older adults may use emotional regulation to adapt to these changes. In addition, frequency, not intensity, of affect has been found to be a better predictor of well-being (Diener et al., 1991). Therefore, balancing positive and negative affect and maximizing social gains may be a better determinant of well-being as opposed to "sensation-seeking".

Examination of these developmental changes and individual characteristics may provide insight into age differences in interpersonal problem solving.

To date, researchers have focused more on similarities accompanying aging, rather than individual differences in older adults (cf. Mishara & Baker, 1981). Age-related changes in experience, environment, and physiology may interact with individual traits (in particular desired stimulation), and quite possibly be expressed in differences in interpersonal goals. The older individual may find him/herself adapting his/her strategies or ways of coping to adjust to: a) environmental changes, such as relocation or institutionalization, deaths of friends, b) sociocultural stereotypes regarding age appropriate behavior, and c) physiological changes reducing stimulation (e.g., auditory and visual deficits). Older adults often have less control over the social and physical environments in which they live (Mishara & Baker, 1981); therefore, "passive" and "interdependent" strategies may be effective in maximizing gains in their environment.
Subjective well-being, aversiveness of emotional experiences, and social competence may all be influenced by regulation of affect intensity. As Diener, Sandvik, and Pavot (1991) have shown, subjective well-being is better predicted by frequency, not intensity, of positive or negative affect and greater intensity may have negative physiological consequences for older adults.

Emotional regulation of an event may also be expressed in subjective experience and behavior. For example, in the case of empathy, emotional regulation appears adaptive in that it may determine whether the emotional experience is perceived as aversive or not (Eisenberg, Fabes, Murphy, et al., 1994). In other words, the inability to maintain emotional reactions within a tolerable range may lead to personal distress, self-centeredness, and poor social skills, which negatively impact behavior in emotional social situations (Eisenberg, Fabes, Murphy, et al., 1994). With age, exposure to stressful, negative life events (e.g., death of loved ones), necessitates the development of better skills to manage negative affect. Therefore, deliberate attempts to decrease the experience of negative emotions would be adaptive for older persons. And, as previously reviewed literature indicates, characteristics such as age and desired emotional arousal would be reflected in emotional regulation goals and strategies.

In sum, there is ample evidence to suggest that age and individual differences exist in the quality, frequency, and prevalence of emotions. Therefore, generalizations of age-related decreases in affect intensity, frequency, and prevalence require closer empirical scrutiny. One could argue that age is not inevitably accompanied by blunting of affect, but that a qualitative difference in affect management emerges with age. Older
persons appear to define positive experiences differently (Lawton, et al., 1992), be more motivated to avoid negative affect (Lawton & Albert, 1990), and more efficient at extracting rewards from fewer social relationships than younger adults (Carstensen, 1992). Thus, examination of individual variability within age groups would be helpful in understanding the contribution of experiential and dispositional factors in everyday problem solving.

**Affective Regulation from an Individual Differences Perspective**

Age differences in emotional regulation have been well documented in the literature (Lawton & Albert, 1990; Lawton et al., 1992; Lawton et al., 1993). This regulation may be a consequence of age differences in desired emotional arousal (Lawton et al., 1992). Research with younger adults has suggested that emotional regulation is impacted by individual differences in desired emotional arousal (Larsen & Diener, 1987; Larsen et al., 1987; Larsen & Zarate, 1991). These individual differences in desired emotional arousal are assumed to remain stable throughout the lifespan (Mishara & Baker, 1981). Two relevant questions arise: a) are these individual differences in desired emotional arousal stable throughout the lifespan, and if so, b) do age-related factors such as experience modify the expression of these factors (i.e., emotional regulation)? Examination of these two issues may be essential in interpretation and prediction of age differences in solving emotionally salient problems. The following section will address individual differences in desired emotional arousal and the developmental implications.
Stimulation Intensity Modulation Theory. Stimulation Intensity Modulation theory (SIM; Barnes, 1976) addresses the well-documented finding of individual variations in preferred levels of arousal/stimulation. According to this theory (also known as reducer/augmenter theory; Petri, 1967), individuals vary in their physiological responses to sensory stimulation. Due to these physiological differences in sensitivity to sensory stimuli, some individuals experience a subdued or reduced physiological response to sensory stimuli (reducers). Others experience a heightened sensitivity to sensory stimuli (augmenters; Baker, Mishara, Kostin, & Parker, 1976; 1979; Petrie, 1967; Silverman, Buchsbaum, & Henkin, 1969). Simply put, reducers have a higher threshold of arousal and augmenters have a lower threshold of arousal. Therefore, to achieve the optimal level of stimulation, individuals actively modulate CNS arousal via control of both external (environmental) and internal (cognitive) factors (Larsen & Zarate, 1991). In everyday life, reducers are more "sensory deprived" than augmenters, and are therefore prone to seek out stimulation to achieve this optimal level of stimulation (Larsen & Zarate, 1991). On the other hand, the physiology of augmenters leads to amplified sensory stimulation, which in turn prompts them to avoid or lessen sensory stimulation. This pattern of preferences for different amounts of sensory stimulation may account for interindividual differences in reports of affect intensity, and arousal and sensation seeking behavior.¹

¹The distinction between reducers and augmenters was first documented in behavioral and physiological responses to stimulation. Early research found that reducers and augmenters differ on physiological indices such as pain tolerance (Petrie, Collins, & Solomon, 1958), brain responses to sensory stimulation (reducers' cortical responsiveness is slower and weaker than augmenters in response to sensory stimulation;
Most of the prior research addressing the reducer/augmenter trait has focused on how individuals manipulate sensory or social stimulation to meet their physiological arousal needs. However, Larsen and Zarate (1991) propose that individuals also use emotional responses as sources of stimulation. Therefore, not only do reducers seek to maximize sensory stimulation, they also use strong emotional responses to maximize stimulation. Correspondingly, augmenters seek to reduce stimulation by creating or seeking out emotional responses to decrease stimulation as a result of a chronically overstimulated state.

Evidence suggests that reducers and augmenters use behavioral and cognitive strategies to obtain these emotional responses. For example, reducers are more likely than augmenters to choose emotional stimulation when bored, even if the emotional stimulation is negative (Larsen & Zarate, 1991). In addition, certain cognitive control strategies may be used by reducers and augmenters to increase or decrease emotional responses to regulate arousal (Larsen & Zarate, 1991). In other words, reducers and augmenters may cognitively interpret events in such a way as to increase or decrease affective intensity.

Cognitive interpretation of emotional stimuli may result in a more or less intense emotional response (Larsen, Diener, & Cropanzano, 1987). For example, "cognitive

Buchsbaum, Hair, & Johnson, 1983; Buchsbaum & Pfefferbaum, 1971; Schooler, Buchsbaum & Carpenter, 1976), and absolute auditory threshold (Goldman, Kohn, & Hunt, 1983). Reducers also exhibit a preference for contact sports (Ryan & Foster, 1967), high levels of activity (Petrie, 1967; Sales, 1971), show a greater desire for social and sensory stimulation (Herzog, Williams, & Weintraub, 1985; Mishara & Baker, 1978) and exhibit greater social engagement (Mishara & Baker, 1981).
control" of emotion indicates deliberate attempts to regulate intensity, circumstances, and types of emotion experienced or expressed (Lawton et al., 1992). Therefore, reducers and augmenters may use cognitive mechanisms (in addition to behavioral mechanisms) to increase or decrease emotional stimulation (Larsen et al., 1987). Given age differences in preferred emotional arousal and emotional arousal goals, examination of individual differences may have important developmental implications for understanding strategy selection processes and desired outcomes for solving everyday problems in older persons.

Examination of the SIM characteristic from a developmental perspective would be revealing with respect to: a) the physiological basis of SIM, b) whether age and experience modify this trait, and c) whether age-related changes occur in the behavioral expression of this trait.

Developmental Implications. The reducer/augmenter characteristic has been identified in older populations and is assumed to be stable throughout the lifetime (i.e., similar base rates of reducers and augmenters in young and older populations; Mishara & Baker, 1981). Although desired stimulation level is thought to be an enduring trait, this assumption has not been empirically verified. To date, developmental psychologists have not examined individual differences in desired emotional arousal as indexed by SIM or in relation to problem solving in older adults. Consequently, the interaction of age and individual differences on emotional arousal goals and means of obtaining these goals appears to be an important direction for research.
Reducers and augmenters are assumed to use cognitive and behavioral strategies to increase or reduce their emotional responses, respectively (Larsen et al., 1987; Larsen, Diener, & Emmons, 1986; Larsen & Zarate, 1991). As discussed previously, goals and strategies would be expected to vary as a function of cohort and/or changes accompanying age. Taken together, one might expect to observe age group differences in cognitive and behavioral arousal regulation strategies, whereas individual differences would result in variability within age groups. For example, diminishing social resources may pose more of a dilemma for older reducers than for older augmenters. In this instance, it is possible that older reducers would need to modify their goals and/or their strategies to obtain emotional arousal, whereas older augmenters would not. Conversely, given an increase in stressors with age, older augmenters would be more compelled than older reducers to adjust their goals and/or strategies to decrease negative emotional arousal. In this sense, examination of goal selection in emotionally salient (e.g., interpersonal) problems as a function of age and individual differences (SIM) may provide important insight into age-related inconsistencies in everyday problem solving literature.

**Summary.** Stimulation Intensity Modulation (SIM) theory addresses individual differences in desired levels of arousal and how these differences affect arousal regulation. Individual differences in physiological sensitivities to stimulation (arousal threshold) determine whether an individual is generally motivated to increase or decrease
stimulation. The goal (desired stimulation), dictated by reducer or augmenter characteristics (i.e., degree of arousal), is achieved by cognitive (e.g., reducers endorse cognitive strategies, such as focusing on emotional aspects of stimuli, that enhance stimulation) and/or behavioral strategies (e.g., high levels of activity). The interaction of this individual difference characteristic and age has implications for emotional arousal goals and strategies, as will be examined in the present research.

Specific Aims

Everyday problem solving and goal attainment have been recognized as important to successful aging (e.g., Baltes et al., 1984; Berg & Sternberg, 1985; Labouvie-Vief, 1992; Brunstein, 1993; Buss & Cantor, 1989). Although research on everyday problem solving in older adults has yielded mixed results, the weight of experimental evidence suggests that problem solving is probably age-sensitive. Age-related differences in problem solving performance are often attributed to deficits in cognitive abilities among older persons (cf. Reese & Rodeheaver, 1985). Alternatively, an examination of prior research from a contextual perspective would suggest that age-related differences in problem solving may actually reflect age and individual differences in goal and strategy selection. This account is necessarily speculative, because these variables have not been systematically examined in prior research to date.

Everyday problem solving studies with older adults have mostly focused on the problem solving process (i.e., strategy selection), based on the assumption that younger and older persons are working towards the same product (i.e., goal). However, there are reasons to suspect that age and individual differences in desired goals would
influence the choice of strategies used for goal attainment. Specifically, older adults may prefer decreased emotional arousal (Lawton & Albert, 1990) as would be adaptive for them, given the potential for increases in stressors and decreases in resources with age (Pastalan, 1982; Lawton & Albert, 1990). Therefore, older adults' use of more emotional regulation strategies as compared to younger adults (e.g., Blanchard-Fields & Camp, 1990) may serve an adaptive function. Similarly, individual differences in desired levels of emotional arousal (e.g., reducer/augmenter characteristics) have been linked to individual differences in emotional goals and strategies in studies with younger adults (e.g., Larsen & Zarate, 1991). Therefore, individuals requiring increased emotional arousal (reducers) would be expected to use more arousal-seeking strategies than individuals requiring decreased emotional arousal (augmenters). Finally, given the variability observed in older adults' goals (Lawton et al., 1992; Strough et al., 1994) and strategy use (Blanchard-Fields & Camp, 1990; Folkman et al., 1987), an interaction of age and individual differences seems likely. This interaction would indicate the necessity for examination of both age and individual factors to obtain a more complete account of problem solving in adulthood.

The present research was designed to extend the literature on everyday problem solving by examining age-related differences in emotional arousal goals and the impact of individual differences on goal selection. The first objective of the present research was to provide new evidence of age-related differences in preferred everyday problem solving outcomes, consistent with the earlier work of Strough et al. (1994). The second
objective was to examine the role of individual differences in selection of preferred outcomes. The third objective was to demonstrate the relationship between age and individual differences, and then document the contribution of these variables to outcome preference.
METHOD

Development and Validation of Vignettes

Three pilot studies were conducted to provide normative data on the interpersonal problem vignettes used in the Experiment Proper. The vignettes are short stories consisting of one or more fictitious persons, a setting and a plot that depicts unresolved conflict situations. Twenty-two vignettes were developed based on the following criteria: a) a primary character is involved in an interpersonal situation where there is potential for a negative outcome, b) the vignette ends before the situation is resolved, and c) there is potential for emotional arousal.

To summarize, Pilot Study 1 was conducted to obtain a range of possible desired outcomes for each of the 22 vignettes. Based on familiarity ratings, 14 of these vignettes were selected for use in Pilot Study 2. The purpose of Pilot Study 2 was to select 4 high emotional arousal goals and 4 low emotional arousal goals for each of the 14 vignettes. Two trained judges rated the goals for the vignettes along two dimensions: goal focus and emotional arousal of the goal. Based on these ratings, 12 vignettes (each with 4 high and 4 low emotional arousal goals) were selected for use in Pilot Study 3. Pilot Study 3 was conducted to select 2 high emotional arousal goals and 2 low emotional arousal goals for 6 vignettes that were used in the Experiment Proper. Pilot studies are described more fully next.

Pilot Study 1. In Pilot Study 1 we obtained a range of potential goals for each of 22 interpersonal vignettes. The sample consisted of 33 adults between the ages of 20
and 82 years (23 females, 10 males). Participants were recruited from psychology classes at Louisiana State University. Others were community-dwelling adults.

Participants read each vignette and responded to four questions, as follows. First, participants were asked, "If you were the main character in this situation, how would you resolve this problem?" modeled after a strategy elicitation procedure used by Blanchard-Fields (in press). Second, participants were asked, "If you were the main character in this situation, what would be your goal in dealing with the problem? That is, what would you want to have happen; what would be your desired outcome of the situation?" (modeled after Strough et al., 1994). Third, participants were asked to "List other possible outcomes". Fourth, participants were asked to "Please rate how familiar you are with this situation" on a 7-point Likert type scale from "not at all familiar" (1), to "extremely familiar" (7). Problem familiarity was measured to control for potential influences of age or individual differences on desired outcome. Analyses of covariance, with problem familiarity as a covariate, were not expected to alter the outcomes in the principle analyses of goal preference, reported later. Next, t-tests were performed on age differences in problem familiarity for each vignette. Three vignettes were discarded based on significant age differences in familiarity ratings (p's < .05). Five other vignettes were discarded based on low ratings of familiarity (scores of "3" or less) by one or both age groups. Consequently, 14 vignettes were selected for use in Pilot Study 2.

Pilot Study 2. The 14 vignettes and corresponding goals generated from Pilot Study 1 were given to two judges (both undergraduate psychology majors). Judges were asked to rate each goal according to two dimensions: goal focus and potential for
emotional arousal. These two dimensions were selected to obtain high and low emotional arousal goals that were consistent in goal focus. Judges were provided with written definitions of both dimensions and trained on the rating procedure. Goals were rated on who the desired outcome was intended for, either "self" focus, "other" focus, or "self and other" focus (after Strough et al., 1994). In addition, judges rated goals according to "How likely is it that achieving this goal would provoke strong emotion in the average person" on a 7-point Likert type scale from "not at all likely" (1), to "extremely likely" (7). This procedure was based on research by Larsen and Zarate (1991) where daily activities were rated according to how likely engaging in the activity would provoke strong emotion in the average person. In the Larsen and Zarate (1991) study, ratings were used to determine participation in sensation seeking activities in reducers and augmenters.

Interrater agreement for goal focus was 98%. Interrater reliabilities on ratings

---

2Given the complexity of the term "emotional arousal", the use of trained judges rather than a sample of the population was deemed necessary for optimal classification of goals on this dimension. Judges were provided with a written definition regarding the term "emotional arousal". The term "emotional arousal" refers to the internal stimulation level (Larsen & Diener, 1987) accompanying emotion. Definition of emotion is complex, but in general may be considered "biologically based reactions that organize an individual's response to important events (p. 970; Gross & Levenson, 1993). The term emotion" includes "subjective feelings and expressions or displays of particular somatic and autonomic responses" (p. 548; Rosenzweig & Leiman, 1982). Thus, emotional arousal may be indexed according to the degree of internal stimulation as evidenced in subjective feelings and/or physiological responses. This definition corresponds to the Emotional Arousal scale devised for use in examining affect intensity and cognitive operations (Larsen, Diener, & Cropanzano, 1987).

3Percentage agreement was calculated by \[\frac{A}{(A + D)} \times 100\], where A is the number of agreements and D is the number of disagreements among judges.
of emotional arousal were conducted separately for each vignette using goals that had a primarily "self" or "self and other" focus. We excluded goals rated primarily as "other" for two reasons. First, "other" goals were reported less often than "self" and "self and other" goals. Second, "other" goals were excluded to maintain consistency in goals so that goal focus would not be confounded with goal preference. That is, goal focus was controlled for in the event that focus of goal affected desirability of goal. Twelve vignettes were selected for use in Pilot Study 3 based on interrater reliabilities for each vignette (effective reliabilities ranged from $r = .76$ to $.89$). Based on the mean emotional arousal rating for each goal, 4 high ($M = 6.20$, $SD = .63$) and 4 low ($M = 2.59$, $SD = .42$) emotional arousal goals were selected for each of the 12 vignettes that were used in Pilot Study 3.

**Pilot Study 3.** In Pilot Study 3, we selected 2 high and 2 low emotional arousal goals for the 6 vignettes used in the Experiment Proper. A total of 32 adults participated in Pilot Study 3. The sample consisted of 16 younger adults (11 females, 5 males) between the ages of 19 and 26 years ($M = 20.81$, $SD = 2.14$), and 16 older adults (12 females, 4 males) between the ages of 56 and 82 years ($M = 69.75$, $SD = 7.61$). Younger adults were Louisiana State University undergraduate psychology students who participated in exchange for extra credit points. Older adults were recruited from Lagniappe Studies Unlimited, a Louisiana State University Continuing Education Program for retired adults. Older adults were compensated $5.00 for their participation. All participants were living independently and were primarily Caucasian. A short form of the Wechsler Adult Intelligence Scale Vocabulary sub-test was given as a measure of
verbal ability (Jastak & Jastak, 1965). There was no significant difference in vocabulary score for the younger (M = 30.4) and older adults (M = 29.9), t(30) = .25, p = .80. Participants were given each of the 12 vignettes developed in Pilot Study 2. Order of administration of the vignettes was counterbalanced so that each vignette was accompanied by 4 high emotional arousal goals (Goal Type 1) and 4 low emotional arousal goals (Goal Type 2) equally often across participants. For half of the participants (8 young and 8 old), vignettes 1, 4, 6, 7, 9, and 10 were each accompanied by 4 high emotional arousal goals. For these same participants, vignettes 2, 3, 5, 8, 11, and 12 were each accompanied by 4 low emotional arousal goals. For the remaining participants, vignettes 1, 4, 6, 7, 9, and 10 were each accompanied by 4 low emotional arousal goals. For these same participants, vignettes 2, 3, 5, 8, 11, and 12 were each accompanied by 4 high emotional arousal goals. For each goal, participants were asked to think how they would react if they were in the main character's situation. They were then asked to rate "How likely you would be to pursue each outcome if you were the main character" on a 7-point Likert type scale, from "not at all likely" (1) to "extremely likely" (7).

Following completion of the vignette task, participants completed a 13-item short form of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982) to determine whether choice of high or low emotional arousal goals was related to socially desirable responding. The total ratings for high and low emotional arousal goals were correlated. The Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) is designed to identify individuals who are attempting to present an "overly positive self-image". This is achieved by examining participants' denial of common but somewhat
separately with the Marlowe-Crowne Social Desirability Scale. Relationships between scores on the Marlowe-Crowne Social Desirability Scale and the high and low arousal goal ratings were non-significant (p's > .24). These results suggested that goal preference was not influenced by the desire to present an overly positive self-image in this pilot study.

To narrow the pool of potential vignettes from 12 to 6, we compared mean ratings for high and low arousal goals across vignettes. It was desirable to discard vignettes where there was a priori evidence of a greater preference for high versus low goals (or vice versa). In other words, if one goal type was inherently more preferable than the other goal type within any given vignette, then goal preference and goal type would be confounded in the Experiment Proper. We computed a mean high and low goal rating separately for each vignette by averaging the two most highly rated high and low arousal goal scores. For each vignette, t-tests were conducted separately on mean high and low goal scores (collapsed across age group). Five vignettes were discarded based on significant differences between the high and low goal score. One vignette was discarded for low ratings of both high and low arousal goals (M < 4.00). For the remaining 6 vignettes, preference for high versus low arousal goals was comparable (p's negative "personal attributes". For example, non-significant correlations between this scale and measures relevant to this study have been found in research on emotional involvement ratings with everyday problems (Blanchard-Fields & Camp, 1990) and arousal regulation (Larsen & Zarate, 1991). The 13-item form has been found to correlate highly with the standard 33-item Marlowe-Crowne ($r = .93$, $p < .001$; Reynolds, 1982).
The 2 highest emotional arousal goals and 2 lowest emotional arousal goals were selected for use in the Experiment Proper.

**Experiment Proper**

**Participants.** A total of 80 persons participated in the Experiment Proper. The younger adults consisted of 40 Louisiana State University undergraduates (26 females, 14 males) between the ages of 18 to 24 years (M = 20.40 years, SD = 1.78) who were given course credit for their participation. The older adult participants consisted of 40 community-dwelling adults (31 females, 9 males) between the ages of 57 to 76 years (M = 69.98 years, SD = 4.32) recruited from local church groups and civic organizations. Older adults were compensated $10.00 each in exchange for their voluntary participation. All participants completed a demographic questionnaire that contained three self-perceived health questions from the Older American Resources and Services questionnaire (OARS: Duke University Center for the Study of Aging and Human Development, 1975) and other questions that assessed educational attainment, occupational status, and social activity characteristics. Participants also completed the Jastak and Jastak (1965) verbal test, a short form of the Wechsler Adult Intelligence Scale (WAIS; Wechsler, 1955) Vocabulary subtest, as a measure of verbal ability. Table 1 presents a summary of the demographic and health characteristics of the sample.

Self-perceived health ratings did not differ across age groups [t(78) = .18, p = .86]. Older adults were more likely than younger adults to report that health troubles interfere with activities [t(78) = 3.50, p = .001]. Older adults also rated their health as the same or better than age-matched peers more often than did younger adults [t(78) =
<table>
<thead>
<tr>
<th>Variable</th>
<th>Old</th>
<th>Young</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary subtest</td>
<td></td>
<td></td>
<td>30.65</td>
<td>.66</td>
<td>20.15</td>
<td>.88</td>
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<tr>
<td>Years of education*</td>
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<td></td>
<td>5.64</td>
<td>.87</td>
<td>5.48</td>
<td>1.72</td>
</tr>
<tr>
<td>Occupational levelb</td>
<td></td>
<td></td>
<td>4.20</td>
<td>.97</td>
<td>3.83</td>
<td>1.36</td>
</tr>
<tr>
<td>Self-perceived healthc</td>
<td></td>
<td></td>
<td>1.80</td>
<td>.61</td>
<td>1.78</td>
<td>.66</td>
</tr>
<tr>
<td>Health prevents activitiesd</td>
<td></td>
<td></td>
<td>1.63</td>
<td>.59</td>
<td>1.23</td>
<td>.42</td>
</tr>
<tr>
<td>Health compared with othersf</td>
<td></td>
<td></td>
<td>1.28</td>
<td>.55</td>
<td>1.73</td>
<td>.45</td>
</tr>
<tr>
<td>Number of acquaintancesg</td>
<td></td>
<td></td>
<td>3.10</td>
<td>1.45</td>
<td>3.58</td>
<td>1.28</td>
</tr>
<tr>
<td>Number of close friendsb</td>
<td></td>
<td></td>
<td>3.50</td>
<td>1.18</td>
<td>3.20</td>
<td>1.09</td>
</tr>
<tr>
<td>Frequency of contact with close friendsi</td>
<td></td>
<td></td>
<td>3.70</td>
<td>.82</td>
<td>4.05</td>
<td>1.09</td>
</tr>
<tr>
<td>Emotional closeness with close friendsj</td>
<td></td>
<td></td>
<td>2.79</td>
<td>.86</td>
<td>3.83</td>
<td>.81</td>
</tr>
</tbody>
</table>

Note. Years of education and occupational level for the young adults reflect the educational attainment and professional status of their same-sex parents. *Years of education (1 = less than 7th grade, 2 = 7th to 9th grade, 3 = 10th to 11th grade, 4 = high school degree, 5 = partial college or specialized training 6 = college degree, 7 = graduate degree). b Occupational status (1 = unskilled, 2 = semiskilled, 3 = skilled, 4 = semiprofessional, 5 = professional). c Self-perceived health on a 4-point scale (1 = excellent to 4 = poor). d Health prevents activities (1 = not at all to 3 = a great deal). e Health compared with others (1 = better to 3 = worse). f Number of acquaintances (1 = 1 to 5, 2 = 6 to 10, 3 = 11 to 15, 4 = 16 to 20, 5 = over 20). g Number of close friends (1 = none, 2 = 1 to 3, 3 = 4 to 6, 4 = 7 to 9, 5 = over 9). h Frequency of contact with close friends (1 = very seldom to 5 = very often). i Emotional closeness with close friends (1 = not at all to 5 = extremely emotionally close). *** p < .001.
3.98, \( p < .001 \). On the vocabulary test, older adults (\( M = 30.65 \)) scored higher than did younger adults (\( M = 20.15 \)), a significant difference [\( t(78) = 9.83, p < .001 \)].

As can be seen in Table 1, the only age differences in reports of social activity characteristics were on ratings of emotional closeness. Carstensen (1987; 1992) has made the point that older adults may limit social interactions to those few which provide positive rewards. However, the present results show that there were no significant age differences in number of acquaintances, close friends, and contact with close friends (\( p 's > .11 \)). In addition, younger adults rated emotional closeness with close friends more highly than did older adults, [\( t(78) = 3.61, p = .001 \)]. In short, our findings are inconsistent with Carstensen's (1987; 1992) Socioemotional Selectivity theory which predicts that with age, frequency of social interactions decreases while emotional closeness with friends and relatives increases.

Interpersonal Problem Solving Vignettes. Six vignettes developed in the pilot studies were used to measure participants' preference for high versus low emotional arousal goals (See Appendix A for vignettes). Each vignette was accompanied by two questions, as follows. First, participants were asked to "Rate how likely you would be to pursue each outcome if you were the main character" on a 7-point Likert type scale, where 1 = "not at all likely" and 7 = "extremely likely". Second, participants were asked to rate "How familiar are you with this situation?" on a 7-point Likert type scale, from "not at all familiar" (1) to "extremely familiar" (7).

Instruments. Participants also completed 4 individual difference measures, including one measure of reducing/augmenting traits (the Revised Form G2 Reducer...
Index; Norris & Cherry, 1996); one measure of affect intensity (the Affect Intensity Measure; AIM); and two measures of emotional regulation (Emotional Control Questionnaire, ECQ; Dimensions of Affective Experience, AE; see Appendix B for questionnaires). The AIM, ECQ, and AE were chosen to provide more specific information regarding dimensions of emotional experience and control, as suggested in the general experimental literature. It was expected that the hypothesized age and individual differences in desired emotional arousal would be revealed in self-reports of affective responsivity to life events (AIM) and self-reports of regulating affective responsivity (ECQ and AE). Table 2 presents a brief summary of these instruments; a more complete description of each of the four instruments follows.

The Form G2 Reducer Index. (Revised Form G2; Norris & Cherry, 1996). An adapted version of the Form G2 Reducer Index was used to assess reducer/augmenter behaviors and experiences in the present sample. The original Form G2 was significantly correlated with other criterion variables representative of seeking emotional arousal (e.g., loud noise tolerance, Need for Sensory Stimulation index, and concealed figures; Herzog et al., 1985). Due to greater "ease of administration", the Form G2 was selected for use in this study rather than the Petrie (1967) kinesthetic figural aftereffect (KAE) perceptual measure of the reducer/augmenter dimension. The KAE may be more stressful for older adults, due to administration time (i.e., 45 minute minimum testing time). The original Form G2 is significantly related to the KAE measure of the reducer/augmenter dimension (Herzog et al., 1985) and has been used in studies of the reducer/augmenter characteristic and affect intensity in samples of college students (e.g.,
Table 2

Summary of Instruments

<table>
<thead>
<tr>
<th>Study</th>
<th>Instrument</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herzog, et al. (1985)</td>
<td>Form G2 Reducer Index</td>
<td>Assesses potential reducer or augmenter behaviors and experiences</td>
</tr>
<tr>
<td>Larsen (1984)</td>
<td>Affect Intensity Measure (AIM)</td>
<td>Assesses strength of affective reactions to typical life situations</td>
</tr>
<tr>
<td>Roger &amp; Nesshoever (1987)</td>
<td>Emotional Control Questionnaire (ECQ)</td>
<td>Assesses inhibition of emotions</td>
</tr>
<tr>
<td>Lawton, et al. (1992)</td>
<td>Affective Experience Scales (3 scales)</td>
<td>Assess self-perceived emotional regulation of negative and positive emotions</td>
</tr>
</tbody>
</table>
Larsen & Zarate, 1991; Lawton et al., 1992). The original Form G2 is also significantly correlated with the Vando Reducer/Augmenter Scale (Vando, 1969). However, the original Form G2 has fewer items, and was found to have more common variance with a daily measure of emotion seeking behaviors compared to the Vando Reducer/Augmenter Scale (Larsen & Zarate, 1991).

The original Form G2 consists of forty-five items designed to assess potential reducer/augmenter behaviors and experiences (cf. Herzog et al., 1985). Sample items include: "I am bothered by bright lights (reversed)", and "I prefer friends who are exciting and unpredictable". Participants rated how much they agree that the item applies to them on a 6-point scale, where 1 = "strongly disagree" and 6 = "strongly agree".

To provide a version suitable for assessing the reducer/augmenter dimension in older adults, we revised 28 items of the original 45 Form G2 items to enhance applicability to an older population. To verify the comparability of the revised and original version of the Form G2, 60 subjects, ranging in age from 17 to 75 years completed both versions of the Form G2. Administration of the original and revised forms of the Form G2 was counterbalanced across subjects. Internal consistency (Cronbach's alpha) for the Revised Form G2 ($\alpha = .70$) was virtually identical to internal consistency for the original scale ($\alpha = .69$). Thus, our revision of selected items did not appear to substantially alter the internal consistency of the reducer/augmenter scale. Next, based on the two factor solution found by Herzog et al. (1985), confirmatory factor analyses were conducted separately for the original and Revised Form G2. As can
be seen in Table 3, the factor structure was comparable for the original and Revised
Form G2. On the basis of these data, we assumed that our Revised Form G2 was
suitable for informing the issues under investigation in the Experiment Proper.

To examine age differences in endorsement of reducer/augmenter characteristics,
a median split was conducted on the Revised Form G2 by collapsing across age groups.
This median split was used to classify individuals as responding more in the reducing or
augmenting direction. Individuals with scores greater than 3.60 on the Revised Form G2
were considered responding more in the reducing direction, whereas those with scores
less than or equal to this median score were considered to be responding more in the
augmenting direction.

To determine if the proportion of reducers to augmenters was significantly
different in the younger compared to the older adult sample, a chi-square analysis of age-
group by augmenter/reducer score (as assessed by the Revised Form G2; Norris &
Cherry, 1996) was performed. This analysis was expected to be nonsignificant,
consistent with the notion in the literature that the reducer/augmenter characteristic is a
stable individual trait across the lifespan (Mishara & Baker, 1981). However, no studies
have directly examined age differences in the augmenter/reducer characteristic. A chi-
quare analysis revealed significant differences in reducer/augmenter type by age group
\[ \chi^2(1) = 6.05, p = .014 \]. A disproportionate number of younger adults were classified
as reducers (25 reducers), whereas a disproportionate number of older adults were
classified as augmenters (15 augmenters). These findings suggest that younger adults
may have a greater need for emotional arousal than do older adults. Unfortunately, the
Table 3
Factor Loadings on Original and Revised Form G2

<table>
<thead>
<tr>
<th>Factor Loadings on Original and Revised Form G2</th>
<th>Original</th>
<th>Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Need for Sensory/Social Stimulation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy parties that have lots of noise, action, and varied lighting effects</td>
<td>.59</td>
<td>.66</td>
</tr>
<tr>
<td>I prefer friends who are exciting and unpredictable</td>
<td>.69</td>
<td>.65</td>
</tr>
<tr>
<td>I like to be &quot;stirred up&quot;</td>
<td>.69</td>
<td>.58</td>
</tr>
<tr>
<td>I think loud noises are unpleasant</td>
<td>-.49</td>
<td>-.57</td>
</tr>
<tr>
<td>I enjoy myself at parties or large social gatherings</td>
<td>.49</td>
<td>.57</td>
</tr>
<tr>
<td>I enjoy &quot;thriller&quot; movies or shows on TV</td>
<td>.59</td>
<td>.54</td>
</tr>
<tr>
<td>I like to share recreational activities or outings with several friends</td>
<td>.56</td>
<td>.51</td>
</tr>
<tr>
<td>If I had to choose a sporting event to participate in, I think I would pick a contact sport (e.g., football, wrestling)</td>
<td>.42</td>
<td>.50</td>
</tr>
<tr>
<td><strong>Factor 2: Need for Cognitive Activity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I lack the drive necessary to get as much done as other people do</td>
<td>-.47</td>
<td>-.65</td>
</tr>
<tr>
<td>I have a lot of curiosity</td>
<td>.46</td>
<td>.52</td>
</tr>
<tr>
<td>I don't like tasks that require attention to detail</td>
<td>-.44</td>
<td>-.51</td>
</tr>
<tr>
<td>I have always needed more hours of sleep than the average person</td>
<td>-.41</td>
<td>-.43</td>
</tr>
</tbody>
</table>
design of the study does not allow conclusions to be made regarding potential cohort versus maturational effects on need for emotional arousal.

Social characteristics (as reported on the demographic questionnaire, see Table 1) were also examined as a function of reducer/augmenter type. Participants' scores on the Revised Form G2 were broken down into quartiles. Social activity scores were examined for individuals scoring in the upper and lower quartiles on the Form G2. That is, individuals in the lower quartile (i.e., 25% of participants, or 20 participants) scored 3.31 or lower on the Revised Form G2 and were classified as scoring more in the augmenting direction. Individuals in the upper quartile (i.e., 25% of participants, or 20 participants) scored 3.84 or greater on the Revised Form G2 and were classified as scoring more in the reducing direction. To more closely examine patterns of social activity as a function of reducer/augmenter type, separate t-tests were conducted on social activity questions as a function of arousal type. There was a significant difference in number of acquaintances \( t(38) = 2.43, p = .02 \), with reducers reporting an average of 16 to 20 acquaintances as compared to augmenters, who reported 11 to 15 acquaintances. There was also a significant difference in ratings of emotional closeness \( t(38) = .046, p = .05 \), with reducers rating relationships with close friends as higher in emotional closeness. There was no significant difference in number of close friends \( t(38) = .52, p = .609 \) or frequency of interaction with close friends \( t(38) = 1.69, p = .10 \). Overall, these findings suggest that individuals with an increased need for emotional arousal have more acquaintances and report more emotional closeness with close friends. This finding is tempered by the fact that age is confounded with arousal
The Affect Intensity Measure (AIM; Larsen, 1984). The AIM assesses a "disposition towards the expression of strong emotions" (Larsen et al., 1987); that is, the intensity or strength of affective reactions to typical life situations. This measure was developed in part to test the SIM theory; Larsen and Diener (1987) propose that differences in affect intensity reflect differences in emotional responses used for regulating emotional arousal. The AIM was used in this study for two reasons. First, the AIM was used to replicate prior self-reports of age-related declines in affect intensity (Diener et al., 1985). Second, the AIM was expected to be used as a predictor of emotional regulation and goal selection.

The AIM is a 40-item questionnaire, based on a construct definition of affect intensity emphasizing the distinction between frequency of emotional responses (e.g., "I am happy quite often") and the intensity of experienced emotion (e.g., "When I am happy the feeling is one of intense joy"). These items are rated on a 6-point scale, where 1 = "never" and 6 = "always".

The AIM has received extensive convergent validity, based on significant correlations between self-reports and parental reports of the subject's emotional response intensity (τ = .50, p < .01; Larsen & Diener, 1985) and peer reports (τ = .41, < .01; Larsen & Diener, 1987) of emotional response intensity. Other studies have confirmed the predictive validity of the AIM (see Larsen et al., 1986).
To replicate the finding of age differences in AIM scores in the present sample (Diener et al., 1985), a one-way ANOVA was conducted on AIM with age group as a between group factor. The main effect of age group was non-significant ($F = .57$, $p = .45$), suggesting that younger and older adults in this study were not different in experience of emotional intensity.

**Emotional Control Questionnaire.** (ECQ; Roger & Nesshoever, 1987). The Emotional Control Questionnaire assesses emotional control, defined as the "tendency to inhibit the expression of emotional responses" (Roger & Nesshoever, 1987, p. 527). This scale has been used to identify emotional control strategies (e.g., Eisenberg et al., 1994). This questionnaire was included here to assess whether emotional regulation is related to individual preferences for emotional arousal. It is also of interest to determine whether the correspondence between desired emotional arousal (as indexed by the Revised Form G2) and emotional regulation strategies improves with age/experience.

Four factors compose the ECQ: inhibition of the experience of emotion, rehearsal of emotion, and aggressive and benign expression of emotion. The ECQ uses a true-false format. Items were keyed so that higher scores indicate more emotional control.

The ECQ was selected for use in this study based on satisfactory test-retest reliability (cf. Roger & Nesshoever, 1987) and internal reliability (cf. Masters, Polman, & Hammond, 1993). In addition, three factors of the ECQ have been moderately correlated with factors of the Eysenck Personality Index (EPI; Eysenck & Eysenck, 1964) in studies with college students (Roger & Nesshoever, 1987).
Both the ECQ and scales from the Dimensions of Affective Experience (AE; discussed below) were used as measures of emotional control in the present research. The rationale for using both measures was that the ECQ has satisfactory psychometric properties, although this measure has not been tested on an elderly population. Conversely, the AE was developed with a younger and older population, but has not received extensive validation. The AE assess regulation of both positive and negative emotions, whereas the ECQ assesses only regulation of negative emotions. Therefore, the AE was included to determine if older adults use emotional regulation strategies for both positive and negative emotions.

A one-way ANOVA was conducted on the ECQ with age as the between-group factor. There was a significant main effect of age \[F(1, 79) = 33.65, MS_e = .70, p < .001\]. Older adults (\(M = .65\)) endorsed more emotional control items than did younger adults (\(M = .47\)). This finding suggests that older adults use more regulation of negative emotions as compared to younger adults (see Lawton et al., 1992, for similar results).

Dimensions of Affective Experience scale. (Selected scales; Lawton, et al., 1992). Three selected scales from the Affective Experience questionnaire were used as a measure of convergent validity with the Emotional Control questionnaire. Items from the "Leveling of Positive Affect" (e.g., "It has become harder to find things that excite me"), "Cognitive Control" (e.g., "I try to stay in a neutral state and avoid emotional situations"), and "Emotional Maturity through Moderation" (e.g., "Both pleasure and worries become fewer as I grow older") scales were administered (Lawton & Albert, 1990; Lawton et al., 1992). These items are rated on a 3-point Likert type response.
scale (1 = "very true of me", 2 = "somewhat true of me", and 3 = "not at all true of me"). Low scores indicate greater regulation of both positive and negative emotions.

These scales were chosen for inclusion because they have been developed with older adults and assess overall emotional regulation, rather than only inhibition of negative emotions. These three scales from the Affective Experience questionnaire emerged as factors with both younger and older adults and are useful for a multidimensional conceptualization of emotional regulation across age groups (Lawton et al., 1992). These scales were developed in previous research examining dimensions of affective experience across age groups. A six-factor solution was generated for three age groups (items were required to show a loading of .30 or higher for inclusion). However, Lawton et al. (1992) cautioned that this approach to defining dimensions of affective experience should be subjected to further exploration. The present research was expected to yield some useful new information regarding affective experience in older adults, in line with Lawton's suggestion.

A one-way ANOVA was conducted on the AE with age as the independent variable. The main effect of age group was non-significant \( F = 1.70, p = .20 \). This finding suggests that younger and older adults endorse similar regulation of both positive and negative emotions, as indexed by the AE.

Design. The design used in the Experiment Proper was a 2 x 2 mixed factorial with age (young, old) as a between-group factor, and goal type (high emotional arousal, low emotional arousal) as a repeated measures factor. Forty participants were tested in each between-group condition.
Procedure. Participants were tested individually or in small groups. A written set of instructions, as well as two practice vignettes, were presented to participants to acquaint them with the materials and task. After participants read the instructions, the experimenter paraphrased the instructions and gave the participants the opportunity to ask questions.

After completing the sample items, participants again were given the opportunity to ask questions. Following practice on the vignette rating task, participants were given each of the six vignettes developed in Pilot Study 1, 2 and 3. Goal Type was counterbalanced so that each vignette was accompanied by 2 high emotional arousal goals (Goal Type 1) and 2 low emotional arousal goals (Goal Type 2) equally often across participants. In addition, order of administration of the 6 vignettes was counterbalanced so that for half of the participants, the order was Goal Type 1/Goal Type 2/Goal Type 2/Goal Type 1/Goal Type 2/Goal Type 1; and for the other half, this sequence was reversed to control for potential order effects. For each vignette, participants rated how likely they would be to pursue each of two outcomes. They were then asked to rate problem familiarity. After the vignette task, participants completed the individual difference measures in the following invariant order: Affective Intensity Measure, Emotional Control Questionnaire, Affective Experience, and the Revised Form G2 Reducer Index. The questionnaires were presented in this order (emotional responsivity, emotional control, emotional disposition) to minimize the likelihood of reactivity across measures. The demographic questionnaire and vocabulary measure were then given. Debriefing followed.
Summary of Analyses

Overview of Scoring. For each participant, vignette ratings of high emotional arousal goals, low emotional arousal goals, and problem familiarity were obtained. High and low arousal goals and familiarity ratings were then averaged separately across vignettes, yielding three dependent measures for each subject. The primary analyses included ratings of high and low arousal goals as the dependent measure of interest (described below). Familiarity ratings were of secondary interest and were therefore treated as a covariate in follow-up analyses.

Overview of Analyses. These data were analyzed according to the following plan. First, mixed model analyses of variance (ANOVAs) were used to examine goal type data as a function of age and reducer/augmenter type (as indexed by the Revised Form G2 separately for each age group, and reducer/augmenter type separately across age groups). Second, multivariate analyses of variance (MANOVAs) were performed on the individual difference scores (AIM, ECQ, AE, Revised Form G2) as a function of age and reducer/augmenter type. Third, intercorrelations between age, goal type data, and the individual difference measures were calculated to examine the predicted relationships among these variables. For all of the proposed analyses, reported effects were significant at the $p < .05$ level.
RESULTS

Age and Individual Differences in Preferred Goal Type

The analyses described next were conducted to examine: a) age differences in goal preference, b) age differences in familiarity ratings, and c) reducer/augmenter differences in goal preference.

Age Differences in Goal Preference. For each subject, two composite goal scores were obtained by calculating mean goal ratings for high and low emotional arousal goals across vignettes. That is, a high arousal goal score was obtained by collapsing across high arousal goal ratings for 3 vignettes and a low arousal goal score was obtained by collapsing across low arousal goal ratings for the other 3 vignettes. A mixed ANOVA with age as the between-group factor and goal type as the repeated measures factor yielded only a significant main effect of goal type \([F(1, 78) = 63.73, MSe = .17, \ p < .001]\). Overall, individuals were more likely to endorse low arousal goals (\(M = 5.26\)) as compared to high arousal goals (\(M = 4.27\)). The age main effect was non-significant (\(F = .42, p = .52\)), as was the Age X Goal Type interaction (\(F = .27, p = .61\)). Contrary to expectation, there was little evidence to suggest that goal preference varied as a function of age.

To provide further evidence bearing on this issue, we conducted follow-up analyses examining age differences separately for high and low goal ratings. Analyses of simple effects confirmed that the age effect was non-significant for both high arousal (\(F = .533, p = .47\)) and low arousal (\(F = .049, p = .83\)) goals. These findings replicate the
previous analysis indicating the lack of age differences in preference for high and low arousal goals.

On the basis of prior research (e.g., Lawton et al., 1992; Lawton et al., 1993), older adults were expected to show greater endorsement of low emotional arousal goals than younger adults. Conversely, younger adults were expected show greater endorsement of high emotional arousal goals than older adults. The finding that both age groups preferred low arousal goals does not necessarily contradict earlier findings of age differences in arousal (Lawton et al., 1992; 1993) and goal preference (Strough et al., 1994). Low arousal goals may have appeared to be less confrontational and perhaps more socially appropriate. Further discussion of this point will be delayed until the results of the follow-up analyses are reported.

To determine whether familiarity with the interpersonal conflicts depicted in the vignettes varied by age group, a one-way ANOVA was performed with age as the independent variable and familiarity rating (collapsed across all 6 vignettes) as the dependent variable. The main effect of age was significant, \( F(1, 79) = 8.34, MS_e = 1.12, p = .005 \). Younger adults (\( M = 4.01, SD = 1.15 \)) rated vignettes as more familiar than did the older adults (\( M = 3.33, SD = .96 \)). Intercorrelations between familiarity, age, and goal ratings were then computed. A significant negative relationship was found between age and familiarity (\( r = -.30, p = .006 \)), indicating that familiarity with vignettes decreased with age. Further correlational analyses revealed a significant relationship between familiarity and ratings of low arousal goals (\( r = .284, p = .038 \)) but not high
arousal goals ($r = .18$, $p = .107$), suggesting that preference for low arousal goals increased with familiarity of vignettes.

Based on age differences in familiarity and the significant relationship between familiarity and low arousal goal ratings, it was necessary to determine whether there were age differences in low arousal ratings after statistically controlling for differences in familiarity. A one-way analysis of covariance (ANCOVA) was performed on low arousal goal with age as the between-group factor and familiarity as a covariate. After adjustment by covariate, the age effect was still non-significant ($F(1, 77) = .37$, $p = .544$). Thus, even after statistically controlling for familiarity, there was no overall difference in younger and older adults' preference for low arousal goals. The finding that problem familiarity did not appear to affect goal preference in this study is consistent with previous everyday problem solving research in which problem familiarity did not affect problem solving performance (Cornelius & Caspi, 1987).

**Follow-Up Analyses on Age Differences.** We conducted follow-up analyses to determine whether participants' responses varied according to some idiosyncratic characteristic of the vignettes. A 2 (Age) x 2 (Goal Type) ANOVA was conducted separately for each of the 6 vignettes. Significant main effects of goal type occurred for all vignettes ($p$'s $< .001$), with the exception of vignettes 4 and 5 ($p$'s $> .101$). On vignettes 1, 2, 3, and 6, individuals endorsed more low arousal as compared to high arousal goals (see Table 4). The age main effect was significant only for vignettes 3 and 4 ($p$'s $< .04$). On vignette 3, younger adults ($M = 4.9$) indicated greater overall preference for the goals than did older adults ($M = 4.1$). This was also the case for
Table 4

Low and High Arousal Goal Means as a Function of Vignette and Age

<table>
<thead>
<tr>
<th>Vignette</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
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<td>5.78</td>
<td>5.25</td>
<td>4.65</td>
<td>5.42</td>
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<tr>
<td></td>
<td>(.95)</td>
<td>(1.10)</td>
<td>(.92)</td>
<td>(.99)</td>
<td>(1.09)</td>
<td>(1.12)</td>
</tr>
<tr>
<td>High</td>
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<td>4.18</td>
<td>4.03</td>
<td>4.75</td>
<td>5.00</td>
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<td>(1.27)</td>
<td>(1.93)</td>
<td>(1.11)</td>
<td>(1.76)</td>
<td>(1.61)</td>
<td>(1.51)</td>
</tr>
<tr>
<td><strong>Old</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>6.18</td>
<td>5.58</td>
<td>4.83</td>
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<td>4.60</td>
<td>5.70</td>
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<td>(1.45)</td>
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<td>(.98)</td>
</tr>
<tr>
<td>High</td>
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<td>3.28</td>
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<td>(1.73)</td>
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<td>(.88)</td>
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<td>(1.17)</td>
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<tr>
<td>Total</td>
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<td>4.68</td>
<td>4.48</td>
<td>4.64</td>
<td>4.81</td>
<td>4.63</td>
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<tr>
<td></td>
<td>(1.36)</td>
<td>(1.53)</td>
<td>(1.44)</td>
<td>(1.55)</td>
<td>(1.21)</td>
<td>(1.68)</td>
</tr>
</tbody>
</table>

*Note.* Standard deviations are noted in parentheses.
vignette 4, with younger adults (M = 5.0) demonstrating greater preference for goals than older adults (M = 4.3). There were no significant Age X Goal Type interaction effects for any vignette (F's < 1.55, p's > .21). Thus, younger and older adults appeared to be responding similarly across vignettes. That is, scores collapsed across the 6 vignettes reflected a consistent pattern of responding within the majority of vignettes.

Given the similar pattern of findings for vignettes 1, 2, and 6, a mean high and low arousal goal score was computed by collapsing ratings across these 3 vignettes. Analyses of simple effects were performed separately on high arousal and low arousal goals (collapsed across vignettes 1, 2 and 6), with age as the independent variable. The main effect of age was non-significant on high arousal goal type (F = .13, p = .72), indicating younger and older adults' ratings were comparable for high arousal goals. There was a significant main effect of age with low arousal goal type [(F (1, 78) = 5.05, MS_e = 1.14, p = .028)]. Older adults endorsed more low arousal goals (M = 5.76, SD = 1.07) than did younger adults (M = 5.22, SD = 1.07). A one-way analysis of covariance (ANCOVA) was performed on low arousal goal with age group as the between-group factor and familiarity as a covariate. After adjustment by covariate, there remained a significant main effect of age on low arousal goal rating [(F(1, 77) = 9.42, p = .003)]. Thus, for these 3 vignettes, older adults rated low arousal goals as more preferable than did younger adults, even after statistically controlling for the effect of familiarity. These findings of relationships between low arousal goal preference and age with vignettes 1, 2, and 6, should be interpreted with caution, because this outcome was not observed in the analyses with all 6 vignettes. The most conservative conclusion to be drawn is that
with some problem situations, older adults may prefer low arousal goals more than younger adults, although further research is needed before firm conclusions could be made.

Reducer/Augmenter Differences in Goal Preference. The impact of the reducer/augmenter trait on goal selection was examined next to determine whether the individual characteristic of desired emotional arousal influenced goal preference. Median scores on the Revised Form G2 were examined separately for each age group. Younger adults scoring above 3.789 were classified as reducers, and those scoring below this median score were classified as augmenters. Older adults scoring above 3.489 were classified as reducers and those scoring below this median score were classified as augmenters.

A mixed ANOVA with arousal type as the between-group factor and goal type as the repeated measures factor was conducted separately for each age group. For the younger adults, there were significant main effects only for goal type \( F(1, 38) = 31.39, MSe = .40, p < .001 \), with individuals indicating a greater preference for low arousal (\( M = 5.28, SD = .79 \)) compared to high arousal (\( M = 4.35, SD = .96 \)) goals. The arousal type main effect was non-significant for the younger adults \( F = 3.53, p = .07 \). The Arousal Type X Goal Type interaction was also non-significant \( F = .71, p = .40 \), suggesting that differences in reducer/augmenter type did not contribute to goal preference for younger persons.

For older adults, there was a significant main effect for goal type \( F(1, 38) = 32.21, MSe = 1.33, p < .001 \), with individuals indicating greater preference for low
arousal ($M = 5.24$, $SD = .72$) as compared to high arousal ($M = 4.18$, $SD = 1.08$) goals. The arousal type main effect was non-significant, ($F = 1.56$, $p = .22$) as was the Arousal Type X Goal Type interaction for the older adults ($F = 1.95$, $p = .17$). Taken together, the results of these analyses suggest that within age groups, low arousal goals were preferred independently of desire for emotional arousal (as assessed by the Revised Form G2). These findings are at odds with the notion that younger adults may prefer stimulation more than older adults (cf. Lawton et al., 1992).

Because the arousal type main effects were non-significant for both younger and older adults, goal preference was examined next as a function of arousal type collapsed across age. That is, using a median split across age (as discussed in the description of the Revised Form G2), a mixed ANOVA was conducted with arousal type as the between-group factor and goal preference as the repeated measures factor. This analysis yielded only a significant main effect of goal type [$F(1, 78) = 63.44$, $MS_e = .63$, $p < .001$)]. Overall, individuals were more likely to endorse low arousal goals ($M = 5.26$) as compared to high arousal goals ($M = 4.27$). The Arousal Type X Goal Type interaction was non-significant ($F = .01$, $p = .91$).

Previous research on individual differences in preferred levels of emotional arousal in college students implies that reducers will choose goals high in emotional arousal and augmenters will choose goals low in emotional arousal (e.g., Barnes, 1976; Geen, 1985; Larsen & Zarate, 1991; Petri, 1967). Overall, there was little evidence to support the notion that reducers' preference for emotional stimulation, compared to augmenters (Larsen & Zarate, 1991), was reflected in goal preference in this study.
Follow-up Analyses on Reducer/Augmenter Differences in Goal Preference. To provide further evidence on the hypothesized differences in goal preference by reducers and augmenters, we compared those persons scoring in the upper and lower quartiles on the Revised Form G2. In this analysis, age was confounded with the Revised Form G2 ranking. Therefore, age was not included as a factor in this analysis. A mixed ANOVA with arousal type as the between-group factor and goal type as the repeated measures factor yielded a significant main effect of arousal type \( F(1, 38) = 4.89, MS_e = 1.13, p = .03 \). Overall, reducers gave goals higher ratings (\( M = 4.94 \)) than augmenters (\( M = 4.41 \)). There was also a significant main effect of goal type \( F(1, 38) = 39.49, MS_e = .01, p < .001 \). Overall, individuals were more likely to endorse low arousal goals (\( M = 5.26, SD = .79 \)) as compared to high arousal goals (\( M = 4.09, SD = 1.14 \)). The Arousal Type X Goal Type interaction was non-significant (\( F = .01, p = .93 \)). These findings suggest that even with extreme scorers on the Revised Form G2, there was no evidence that need for arousal was related to preference for high arousal goals in this study.

Relationships Between Age, Reducer/Augmenter Characteristics, and Individual Difference Measures

The analyses reported next were conducted to examine a) age differences in the three individual difference measures (AIM, ECQ, and AE), and b) reducer/augmenter type differences in the individual difference measures and indices of social activity.

Age and Individual Differences Measures. A MANOVA was conducted with age as the independent variable and the individual difference scores (Revised Form G2, AIM, ECQ, and AE) as dependent measures. The results of the MANOVA yielded a main
effect of age using Wilk's criterion \( F(4, 75) = 11.46, p < .001 \). Consequently, separate one-way ANOVAs were conducted on each questionnaire as a function of age (see Table 5). A significant age effect was found on the Revised Form G2 \( F(1, 79) = 20.67, MSe = .15, p < .001 \). Younger adults \( (M = 3.81, SD = .42) \) scored more in the reducing direction than did older adults \( (M = 3.42, SD = .34) \). This pattern of outcomes for the Revised Form G2 confirms earlier research suggesting that younger adults endorse more characteristics consistent with the reducer trait than do older adults (i.e., "stimulation seeking"; Lawton et al., 1992) and older adults endorse more characteristics consistent with the augmenter trait than do younger adults (i.e., "avoidance of strong or intense emotional responses"; Larsen & Zarate, 1991, p. 714; Lawton & Albert, 1990).

A significant age effect also occurred on the ECQ \( F(1, 79) = 33.65, MSe = .02, p < .001 \). Older adults \( (M = .65, SD = .13) \) endorsed more emotional control items as compared to younger adults \( (M = .47, SD = .16) \). Age differences on the ECQ supports research suggesting older adults use more emotional regulation strategies as compared to younger adults (Blanchard-Fields & Camp, 1990; Lawton et al., 1992). Findings of more reducer characteristics and less emotional control in the younger group supports previous research suggesting that younger adults have a greater need for emotional arousal (Lawton et al., 1992) which may be facilitated by using less emotional control. Alternatively, age differences in use of emotional control may be a result of life experience. That is, with age, emotional control strategies may improve, but further research would be warranted before firm conclusions could be drawn.
Table 5

Means on Dependent Measures as a Function of Age

<table>
<thead>
<tr>
<th>Measure</th>
<th>Younger</th>
<th>Older</th>
</tr>
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<tbody>
<tr>
<td>Form G2&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.81(.42)**</td>
<td>3.42(.34)</td>
</tr>
<tr>
<td>AIM&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.79(.48)</td>
<td>3.70(.52)</td>
</tr>
<tr>
<td>ECQ&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.47(.16)**</td>
<td>.65(.13)</td>
</tr>
<tr>
<td>AE&lt;sup&gt;d&lt;/sup&gt;</td>
<td>2.22(.25)</td>
<td>2.14(.28)</td>
</tr>
</tbody>
</table>

Note. Each row represents a separate ANOVA. Standard deviations are given in parentheses. <sup>a</sup>The Revised Form G2 assesses reducer/augmenter behaviors (Norris & Cherry, 1996). <sup>b</sup>The Affect Intensity Measure assesses the intensity of affective reactions to typical life situations (Larsen, 1984). <sup>c</sup>The Emotional Control Questionnaire assesses the tendency to inhibit emotional responses (Roger & Nesshoever, 1987). <sup>d</sup>Three scales assessing overall emotional regulation were selected from the Dimensions of Affective Experience questionnaire (Lawton, et al., 1992).

* p < .05  
** p < .01
The age effect on the AIM was non-significant ($F = .57, p = .45$), suggesting that younger and older adults in this study were comparable in experience of affect intensity. Age differences in affect intensity using the AIM have only been documented in one study (Deiner et al., 1985). Therefore, there is not extensive evidence of age differences in affect intensity as assessed by the AIM. The finding in this study of non-significant age effects is noteworthy, suggesting that older adults may have the capacity to experience intense emotions, although further research is needed to provide a more definitive analysis of this issue.

The age effect on the AE was non-significant ($F = 1.70, p = .20$). Thus, younger and older adults were comparable in use of emotional regulation as indexed by the AE. This result conflicts with the finding of significant age differences in emotional regulation as indexed by the ECQ. Perhaps the AE is assessing a somewhat different dimension of emotional regulation than the ECQ. For example, many questions on the AE involve regulation of both positive and negative emotions, whereas the ECQ measures only suppression of negative emotions. The contrasting pattern of age effects on the ECQ and the AE can be interpreted to suggest that while older adults may be more likely to inhibit negative emotions (ECQ), this does not guarantee that they also inhibit positive emotions.

Relationships Between Reducer/Augmenter Characteristic and Other Individual Difference Measures. The MANOVA with arousal type (using median score collapsed across age) as the independent variable and the individual difference scores (AIM, ECQ, and AE) as dependent variables yielded a significant main effect of arousal type using
Wilk's criterion \[F(3, 76) = 3.53, p = .002\]. Therefore, separate ANOVAs were conducted on each questionnaire as a function of arousal type. A significant arousal type difference occurred only on the ECQ \[F(1, 79) = 10.38, MS_e = .27, p < .002\]. Individuals who scored more in the reducing direction (\(M = .50, SD = .17\)) endorsed fewer emotional control items than did individuals who scored more in the augmenting direction (\(M = .62, SD = .15\)). This is a noteworthy finding insofar as it confirms prior research suggesting that individuals who desire more emotional arousal may use less emotional regulation (Larsen & Diener, 1987). There were no significant arousal type differences on the AIM \(F = 2.45, p = .12\) and AE \(F = .12, p = .73\). These non-significant effects were contrary to expectation that individual differences in desired emotional arousal would be related to intensity of emotional responses (as indexed by the AIM) and regulation of emotional responses (as indexed by the AE). Tentatively, these data imply that reducers and augmenters may experience comparable amounts of emotional intensity and may not differ in overall emotional regulation. Further discussion of this point will be delayed until the correlational analyses are presented.

**Intercorrelations Between Age, Individual Difference Measures and Goal Type**

Table 6 presents the intercorrelations between age, the individual difference measures, and high and low arousal goals. As can be seen in Table 6, a significant, negative relationship occurred between age and the Revised Form G2 \(p < .001\), indicating a decrease in need for emotional arousal with age. This is an important finding that confirms previous research showing that younger adults are more "stimulation seeking" than older adults (Lawton et al., 1992; Lubin et al., 1988). It has been
Table 6

Intercorrelations Among Variables

<table>
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<tr>
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<th>1</th>
<th>2</th>
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<th>4</th>
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<th>6</th>
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<td></td>
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<td>2. AIM</td>
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<td>3. G2</td>
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<td>-.438**</td>
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<td>.066</td>
<td>-.190*</td>
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<td>.087</td>
<td>-.195*</td>
<td>.130</td>
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<td></td>
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<tr>
<td>7. Low goal</td>
<td>-.085</td>
<td>.112</td>
<td>.245*</td>
<td>-.067</td>
<td>.080</td>
<td>.246*</td>
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*p ≤ .05. **p ≤ .001.
suggested that stimulation is an important component of positive emotion in younger, but not older adults (Lawton et al., 1992). Given diminishing resources with age (e.g., physical abilities, social network; Pastalan, 1982), it may be more adaptive for older adults to rely less on stimulation as an important component of positive emotion. Our findings of a significant negative relationship between age and the Revised Form G2 are largely compatible with this notion.

Importantly, a significant positive relationship occurred between age and the ECQ (p < .001), indicating an increase in emotional regulation with age. This aspect of this data is in line with findings that older adults appear to develop expertise in managing emotions (Lawton & Albert, 1990; Lawton et al., 1992) and use emotional regulation strategies to minimize negative affect and maximize rewards (Carstensen, 1987; 1992). This pattern of outcomes has been supported in everyday problem solving research, with older adults using more emotional regulation strategies (Blanchard-Fields & Camp, 1990; Folkman et al., 1987) and reporting more emotional regulation goals (Strough et al., 1994) than younger adults. Age was not significantly related to the remaining individual difference variables (p's > .17).

The AIM was significantly related to the Revised Form G2 (p = .03), indicating an increase in affect intensity with an increase in need for stimulation. This finding is consistent with Larsen and Deiner's (1987) arousal regulation theory of affect intensity. According to this theory, individuals use emotional responses to regulate internal arousal. Therefore, heightened affect intensity reflects the use of emotional responses, presumably to increase stimulation. This finding is noteworthy in that affect intensity of
daily events have been found to correlate with the reducer/augmenter trait (Larsen & Zarate, 1991). The present study is the first to show a direct relationship between Form G2 and affect intensity as indexed by the AIM.

There was also a significant negative relationship between AIM and ECQ ($p = .001$), suggesting that increase in intensity of emotions was related to decrease in emotional regulation. This finding is consistent with Larsen and Diener's (1987) conceptualization of affect intensity; individuals with heightened affect intensity use emotional responses as a source of stimulation. Therefore, one would expect individuals with heightened affect intensity to use fewer strategies to inhibit emotions. None of the remaining correlations with AIM approached significance ($p's > .16$).

A significant negative relationship occurred between the Revised Form G2 and the ECQ ($p < .001$), where individuals who show an increase in need for stimulation use less emotional regulation strategies. Again, this finding is consistent with Larsen and Diener's (1987) explanation of arousal regulation; individuals who are underaroused (reducers) may use emotional responses as a source of stimulation. It is therefore not surprising that reducers would use fewer strategies to inhibit emotions.

There was a significant positive relationship between the Revised Form G2 and endorsement of low goals ($p = .014$), with reducers endorsing more low goals. While this finding is inconsistent with the hypothesis that persons needing stimulation would endorse more high arousal goals, this result may be understood from a social interaction perspective. As discussed previously, reducers seek out higher levels of social stimulation (Herzog et al., 1985). It may be that individuals who need stimulation are
more concerned with preserving these sources of stimulation (i.e., social relationships). Therefore, they may find low arousal goals preferable, as these goals are less confrontational and perhaps less likely to jeopardize relationships.

There was a significant negative relationship between the ECQ and AE (r = .045). Because the ECQ and AE both measure emotional regulation, a significant association was expected. However, the obtained r value was quite small, suggesting that AE and ECQ may be tapping different aspects of emotional regulation.

The ECQ and high arousal goals were significantly related (p = .042), with endorsement of high arousal goals related to less use of emotional control. This finding is noteworthy, suggesting that individuals who endorse goals resulting in greater emotional arousal also use fewer strategies to inhibit emotions. Importantly, use of emotional regulation may be related to how individuals react in social situations. That is, individuals who are less concerned with the consequences of high arousal goals may be more confrontational and use fewer strategies to inhibit negative emotions.

To summarize, we expected that age, stimulation seeking (Revised Form G2), emotional response intensity (AIM), and emotional regulation (ECQ & AE) would be significantly intercorrelated. Increasing age was related to decreased stimulation seeking (Revised Form G2) and increased emotional regulation (ECQ), suggesting that older adults seek less emotional arousal and use more emotional regulation to prevent emotional arousal. However, contrary to expectation, there was little evidence of a relationship between age and experience of affect intensity (AIM) in this study. This
finding is at odds with previous research suggesting that older adults experience less intense emotions (Diener, et. al, 1985; Lawton et al., 1992).

Significant correlations between the need for emotional arousal (Revised Form G2), intensity of emotional responses (AIM), and emotional regulation (ECQ) are consistent with Larsen and Diener's (1987) arousal regulation theory of affect intensity. That is, individuals who desire emotional arousal (Revised Form G2) appear to experience intense emotions (AIM) and may not use emotional regulation strategies (ECQ) that might lessen emotional arousal. However, while both emotional regulation measures (ECQ and AE) were significantly related, they did not share the same pattern of intercorrelations with other variables. Quite possibly, the AE may be measuring a somewhat different dimension of emotional regulation that is unrelated to affective intensity, discussed below.

Further Analyses of Emotional Regulation Measures. Although both measures of emotional control (AE and ECQ) were significantly related to each other, they did not show the same pattern of intercorrelations with age and the individual difference measures (see Table 6). Three scales of the AE were selected for use in this study to examine different components of emotional regulation (Leveling of Positive Affect, Cognitive Control, and Emotional Maturity). The ECQ is composed of four scales assessing different components of emotional regulation (Emotional Rehearsal, Emotional Inhibition, Aggression Control, and Benign Control). Therefore, finer-grained analyses of the scales from these questionnaires were conducted to gain insight into the different aspects of emotional regulation tapped by AE and ECQ (see Table 7).
### Table 7

Intercorrelations Among ECQ and AE Scales

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<tr>
<td>1. AE Leveling of Positive Affect</td>
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<td>2. AE Cognitive Control</td>
<td>.124</td>
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<tr>
<td>3. AE Emotional Maturity</td>
<td>-.009</td>
<td>.408**</td>
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<tr>
<td>4. ECQ Emotional Inhibition</td>
<td>-.137</td>
<td>-.443**</td>
<td>-.057</td>
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<tr>
<td>5. ECQ Aggression Control</td>
<td>-.038</td>
<td>-.182</td>
<td>-.105</td>
<td>.345**</td>
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<tr>
<td>6. ECQ Rehearsal</td>
<td>.179</td>
<td>-.138</td>
<td>-.099</td>
<td>.114</td>
<td>.388**</td>
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<tr>
<td>7. ECQ Benign Control</td>
<td>.166</td>
<td>-.101</td>
<td>-.105</td>
<td>-.005</td>
<td>.379**</td>
<td>.518**</td>
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**p ≤ .001
The only significant relationship between scales of the two measures was between the AE Cognitive Control and the ECQ Emotional Inhibition scale (p < .001). This relationship indicated that increased use of cognitive control (as indexed by the AE) was related to increased use of emotional inhibition (as indexed by the ECQ). Both of these scales consist of questions regarding expression of emotions. For example, the question on the ECQ Emotional Inhibition scale, "People find it difficult to tell whether I'm excited about something or not" may be similar to the AE Cognitive Control item, "I try to avoid reacting emotionally, whether the emotion is positive or negative". Many questions on the AE assess the inhibition of both positive and negative emotions, whereas the ECQ assesses inhibition of only negative emotions. This may explain the lack of correspondence between responses on these two questionnaires. Individuals who inhibit negative emotions may not necessarily endorse questions regarding inhibition of both negative and positive emotions.
DISCUSSION

The study of everyday problem solving in older adults has attracted an increasing amount of attention in recent years (e.g., Berg et al., 1994; Cornelius & Caspi, 1987; Denney, 1989). Research on adult age differences in everyday problem solving from a contextual perspective focuses on the interaction of the individual and the environment in achieving interpersonal goals (Berg & Klaczynski, 1996). A contextual perspective is useful, insofar as this view may clarify current findings in the literature on everyday problem solving in adulthood and provide new directions for research.

The present research was conducted to provide new evidence on the contribution of age and individual differences to everyday problem solving, focusing on goal preference. The results of this study have shown that younger and older adults, overall, expressed similar preference for low emotional arousal goals. There was also relatively little evidence to suggest that individual differences influenced goal preference. These findings and their implications for current views on everyday problem solving and aging are discussed more fully in the sections that follow.

Age and Individual Differences in Goal Preference

Age Differences in Preferred Goal Type. Very few studies have directly examined goal preference in younger and older adults. There is some evidence from self-report measures indicating that older adults tend to avoid high stimulation levels (which result in heightened arousal), whereas younger adults display more need for stimulation (cf. Lawton & Albert, 1990; Lawton et al., 1992; Lawton et al., 1993). On the basis of these findings, one might expect that younger, but not older adults would pursue
outcomes that would result in higher levels of stimulation. Consequently, we assumed that younger adults would prefer high emotional arousal goals more than older adults, and older adults would show greater preference for low emotional arousal goals than the younger adults. The present results indicated that both age groups preferred low arousal goals more than high arousal goals. Age did not interact with goal type. Thus, there was little evidence to suggest that younger adults prefer high emotional arousal goals more than older adults, or that older adults prefer low emotional arousal goals more than younger adults.

Finer-grained analyses of goal preference by vignette did yield age effects on three of the six vignettes, however. Examination of goal preference for these vignettes revealed that older adults preferred low arousal goals more than younger adults, consistent with our hypothesis. Thus, older adults may prefer low arousal goals more than do younger adults under limiting conditions. Older adults may learn to avoid emotionally laden situations that have little reward (Carstensen, 1987). Older adults' greater preference for low emotional arousal goals (on three vignettes) compared to younger adults may reflect older adults' perception of low arousal goals as more effective in avoiding negative emotional stimulation. It is important to note that although statistically significant, pairwise differences between younger and older adults on these three vignettes were quite small in size (see Table 4). The most conservative conclusion to be drawn here is that most persons, regardless of age, showed greater preference for low arousal goals.
One explanation for the finding that low arousal goals were preferred, overall, focuses on perceived social propriety. Perhaps low arousal goals were less confrontational than high arousal goals; therefore, they were rated as preferable on the basis of social appropriateness. One direction for future research would be to include ratings of perceived appropriateness of low versus high emotional arousal goals.

Another explanation concerns potential differences in the social consequences of low arousal goals versus high arousal goals. It may be that high arousal goals were rated as less preferable, overall, due to perceived negative consequences associated with pursuing these goals. We did not measure subjects' perceptions of the social consequences of low versus high emotional arousal goals, which is a potentially important issue for future research.

Reducer/Augmenter Differences in Preferred Goal Type. Research suggests that individuals vary in amount of sensory (e.g., Baker et al., 1976; 1979; Petrie, 1967; Silverman et al., 1969) and social stimulation (e.g., Mishara & Baker, 1981; Larsen & Zarate, 1991) needed to meet their physiological arousal needs. Larsen and Zarate (1991) argue that reducers are more "sensory deprived" than augmenters, and they appear to use behavioral and cognitive strategies to obtain stimulation. Research conducted by Larsen and his associates (e.g., Larsen et al., 1987; Larsen & Zarate, 1991) can be interpreted to suggest that persons who are classified as "reducers" may prefer more high emotional arousal goals, whereas "augmenters" may prefer more low emotional arousal goals. The present research indicated that persons preferred low arousal goals more than the high arousal goals, regardless of their classification as a
reducer or augmenter. Thus, the hypothesized pattern of outcomes was not obtained here.

Interestingly, examination of extreme scores on the Revised Form G2 (upper and lower quartiles) revealed individual differences in social characteristics. Those scoring more in the reducing direction reported more acquaintances and emotional closeness with close friends. This result suggests that individuals who desire greater levels of arousal may also place greater emphasis on social relationships. This is consistent with previous research indicating that reducers may use social activities to maximize stimulation (Larsen & Diener, 1987) and in fact, show a greater desire for social stimulation (Herzog et al., 1985, Lawton & Zarate, 1991; Mishara & Baker, 1981). Desire for social stimulation may have implications for the null effects of reducer/augmenter type on goal preference observed in this study.

To speculate, the hypothesized reducer/augmenter type differences in goal preference may not have been revealed here due to the social nature of the high arousal goals. High arousal goals involve interpersonal conflict. Consequently, high arousal goals may have the potential to "jeopardize" interpersonal relationships. On the assumption that reducers would be motivated to maintain interpersonal relationships as sources of stimulation, it would be maladaptive for them to endorse goals which may disrupt or forfeit these relationships. In short, reducers and augmenters may both want to minimize conflict, but for different reasons.

Conceivably, reducers may wish to avoid conflict to maintain social relationships, whereas augmenters may wish to avoid conflict to prevent emotional arousal. This study
did not examine individuals' motivation for goal preference, a potentially important
direction for future research.

On a broader note, reducer/augmenter differences in goals may be revealed better
by examining "personal strivings", defined as a class of goals that is characteristic for a
particular person (Emmons & Kaiser, 1996). "Personal strivings" are evidenced in a
person's behavior, are relatively stable, and are consistently expressed in various
situations (Emmons & Kaiser, 1996). Thus, the behavioral patterns and consequences of
pursuit of individual goals may be similar, but may actually reflect different, higher-order
personal strivings. For example, immediate goals in pursuit of a personal striving such as
"maintain good interpersonal relationships" may resemble immediate goals in pursuit of a
personal striving such as "avoid arguments when possible". Therefore, in specific
situations, differences in immediate goals may not be evident, although the individuals
are oriented towards different "personal strivings". Reducers and augmenters may have
differed in "personal strivings" in this study. However, goals presented in this study
were not designed to allow for examination of personal strivings. The hypothesized
differences between reducers and augmenters may emerge only in examination of classes
of goals and behaviors expressed in a variety of situations, a potentially useful direction
for future research.

Summary

According to the contextual perspective on everyday problem solving,
characteristics of the individual and the environment are expected to influence all aspects
of the problem solving process, including strategy selection and adaptation of goals to
changing circumstances (Sansone & Berg, 1993). Interestingly, age and individual differences did not appear to affect goal preference in the present study. Thus, our findings are at odds with a contextual perspective on everyday problem solving.

The contextual perspective holds that age and individual differences in everyday problem solving should be observed across a variety of problem situations. The contextual perspective is supported by findings of age and individual differences in strategy selection as a function of task domain (Blanchard-Fields & Camp, 1990), assessment measure (Marsiske & Willis, 1995), and emotional saliency of the problem (Blanchard-Fields & Camp, 1990; Blanchard-Fields & Norris, 1994). While strategy selection may be susceptible to age and individual difference effects, persons' overall desired outcomes, or goals, may actually be comparable in adulthood.

Prior research examining age differences in goals has relied almost exclusively on self-report of everyday problems and goals for solving them. Goals, then, were classified based on experimenter defined criteria (Sansone & Berg, 1993; Strough et al., 1994). Age differences in self-reported goals have been found, as well as age differences in types of problems reported (Strough et al., 1994; Sansone & Berg, 1993). However, individuals have not been questioned as to their desired outcome given the same everyday problems situations. The closest approximation of examination of strategies, given similar goals, has occurred when strategy efficacy was evaluated in terms of "immediately removing the problem" (Berg et al., 1994; Camp et al., 1989; Cornelius & Caspi, 1987). In other words, "immediately removing the problem" could be viewed as a broadly defined goal. Interestingly, age invariance (Berg et al., 1994; Camp et al., 1989)
or improvements with age (Cornelius & Caspi, 1987) are noted when strategy efficacy is examined from this perspective (i.e., attaining this goal of "removing the problem"). For the most part, age-related declines in everyday problem solving performance are found when goal attainment is secondary, that is when strategy efficacy is based on the number of number of safe and effective solutions generated (Denney & Palmer, 1981; Denney et al., 1982; Denney & Pearce, 1989), or strategies that acknowledge the interaction of multiple factors (Blanchard-Fields & Camp, 1990). Findings of "stability or improvement" in problem solving with age given "similar" goals (Berg et al., 1994; Camp et al., 1989; Cornelius & Caspi, 1987) complements our research findings. In the present study, interpersonal problems and goals were held constant across age groups, allowing a more precise assessment of goal preference. It may be that when presented with an everyday problem, younger and older adults have similar goals, but given different individual and environmental factors, they use different strategies to obtain these goals.

Findings of age invariance or improvement in strategy use given researcher-defined goals and findings of age invariance in goal preference in this study underscores the need for re-evaluation of approaches to everyday problem solving. Frequently, age differences in problem solving strategies are assumed to reflect age-related declines in underlying cognitive abilities. Given changes in experiences and life circumstances across the life span, strategies would be expected to vary as a function of age, individual, and contextual characteristics (Berg et al., 1994). For example, older adults have been found to use more strategies that relied on others (Denney & Palmer, 1981). Although this finding has been interpreted as demonstrating age-related deficiencies in strategy
selection, relying on others may instead actually be more adaptive for older adults (see Berg et al., 1994 for discussion). One direction for future research would be to examine age and individual differences in strategy selection, given similar goals.

Relationships Between Age and Individual Difference Measures

Age and the Reducer/Augmenter Trait. We expected that there would be no difference in proportion of reducers to augmenters in the younger and older samples on the assumption that the reducer/augmenter characteristic is a stable trait throughout the lifespan (Mishara & Baker, 1981). The results of the present study indicated that the proportion of reducers and augmenters in each age group differed. Younger adults scored in the reducing direction more often than older adults, whereas older adults scored in the augmenting direction more often than younger adults. This result is consistent with the notion that younger adults endorse more behaviors characteristic of "sensation seeking" or "valuing stimulation for its own sake" compared to older adults (Lawton et al., 1992; Lubin et al., 1988).

Given the cross-sectional design of this study, it was not possible to determine whether the reducer/augmenter characteristic is a stable individual trait across the lifespan (Mishara & Baker, 1981). The present study was the first to compare younger and older adults along the reducer/augmenter dimension. Importantly, confirmatory factor analyses on the Form G2 separately for younger and older adults revealed comparable factor structure for both age groups (see Appendix B). The results of the factor analysis are noteworthy in that they provide provisional validation of a measure of the reducer/augmenter trait for use with both older and younger adults. Thus, the
Revised Form G2 may be useful for future studies of age differences in manifestation of this trait (e.g., changes/differences in types of stimulation preferred, regulation of stimulation, and how this trait impacts emotional regulation). From an applied perspective, use of the Revised Form G2 may also help in identifying individual differences in stimulation preference in older adults.

The finding of individual differences in reducer/augmenter type in older adults also has important practical implications. Given that individual differences exist in desired stimulation, the intensity or amount of available stimulation in specific environments may have a profound effect on how "tolerable" the environment is (Mishara & Baker, 1981). Additionally, the environment may constrain the acceptable expression of augmenter or reducer qualities. This may be particularly evident in the elderly. For example, a nursing home setting may not provide enough stimulation for an older reducer, forcing the reducer to "act out" in order to get desired stimulation, whereas this individual in a community setting may be able to seek stimulation in more acceptable ways or the community environment may be more stimulating for him or her. Conversely, an augmenter in a nursing home setting may choose isolation over social interaction; the nursing home environment may not challenge their emotional needs. Older adults could benefit from practitioners' sensitivity to these needs when designing environments and planning therapeutic interventions for them.

**Age and Remaining Individual Difference Measures.** On the basis of previous research, we expected that: a) older adults would score lower than younger adults in affect intensity as indexed by the AIM (Diener et al., 1985; Lawton et al., 1992) and, b)
older adults would demonstrate greater emotional regulation (Carstensen, 1987; Lawton et al., 1992), as indexed by the ECQ and AE.

Previous research indicates that self-reported affect intensity decreases with age (Diener et al., 1985; Lawton et al., 1992); therefore, we expected that older adults would score lower on affect intensity (as indexed by the AIM). This finding was not obtained here. Only one (published) study has directly measured age differences in affect intensity using the AIM (Deiner et al., 1985). While researchers speculate that age is accompanied by concomitant declines in affect intensity (Malatesta, 1981; Schulz, 1985), this may not be the case. In fact, Carstensen (1987) suggested that older adults may not experience less intense emotions; rather, fewer emotion-eliciting stimuli may exist for them. In addition, the capacity for experiencing emotional intensity across the lifespan is supported by the finding that older adults actually reach higher levels of arousal than younger adults when confronted with new stressors (Eisdorfer, 1968). Examination of the mechanisms purported to be driving affect intensity may aid in understanding the non-significant age differences found on the AIM.

As predicted, age differences were found in emotional regulation as indexed by the ECQ. This supports previous research which has shown that older adults use more emotional regulation strategies in everyday problem solving (Blanchard-Fields & Camp, 1990) and report age-related increases in emotional regulation (Carstensen & Erickson, 1986; Lawton & Albert, 1990). From an applied perspective, the development of better skills to manage negative affect would be adaptive in older adults, given the potential for increased negative life events with age (Pastalan, 1982). Age differences in emotional
regulation (as indexed by the AE) were non-significant. The AE assesses regulation of both positive and negative emotions, so that positive and negative emotional regulation were confounded. The non-significant age difference on the AE is consistent with the notion that older adults use deliberate emotional regulation strategies with negative emotions, but not positive emotions (Carstensen & Erickson, 1986; Lawton & Albert, 1990). Given age differences in inhibition of negative emotion (as indexed by the ECQ, discussed previously), older individuals may be more adept at inhibiting negative emotional arousal, rather than seeking to reduce both positive and negative affect. This would be adaptive, given the potential for increased stressors and decreased resources with age (Lawton & Albert, 1990).

To summarize, the pattern of intercorrelations between age and individual difference measures was largely consistent with our predictions. As expected, increasing age was accompanied by decreased need for emotional arousal (Revised Form G2) and increased emotional regulation (ECQ). With age, individuals may desire less emotional arousal and use more emotional regulation strategies to inhibit negative emotions. It should also be noted that age group differences on the individual difference measures were obtained using a cross-sectional design, where age and cohort effects are unavoidably confounded. Longitudinal studies would be the optimal means of examining the extent to which these individual differences are modified by life experiences (Lawton et al., 1992).
Relationships Between Reducer/Augmenter Characteristics and Other Individual Difference Measures

The Reducer/Augmenter Trait and Social Characteristics. As discussed previously, reducers show a preference for social stimulation (Herzog et al., 1985, Lawton & Zarate, 1991; Mishara & Baker, 1981). In this study, reducers reported more acquaintances and closer relationships with close friends than did augmenters. This finding complements previous research indicating that reducers have a greater need for social stimulation than augmenters, which may have contributed to the non-significant difference in reducer/augmenter type on goal selection. Reducers may be endorsing low emotional arousal goals because they appear less confrontational and may be more beneficial to maintaining social relationships. Augmenters may be endorsing low emotional arousal goals because they wish to avoid emotional arousal. In other words, the consequences of pursuing the low arousal goals may have been perceived differently by reducers (i.e., maintenance of interpersonal relationships) compared to augmenters (avoidance of conflict). Therefore, goals may have been rated similarly but for different reasons. This is of course speculative, and would need to be experimentally tested.

Reducer/Augmenter Trait and Other Indices of Emotional Regulation.

According to Larsen and Diener’s (1987) arousal regulation theory of affect intensity, affect intensity reflects the use of emotional responses to regulate internal arousal. One might expect that individuals who seek greater stimulation to increase internal arousal ( reducers) would also use affect intensity to regulate internal arousal (Larsen & Diener, 1987). Although there was no main effect of reducer/augmenter type on the AIM, a significant positive correlation between the AIM and the Revised Form G2 was found.
here (see Table 6). This is an important finding. While Larsen and Zarate (1991) have argued that persons who desire stimulation (arousal) may amplify their experience of intense emotions to obtain greater arousal, they have not provided direct evidence to confirm this notion using the AIM. Our results show that stimulation seeking (Revised Form G2) and affect intensity (AIM) were related, but the magnitude of the relationship was small ($r = .20$). Thus, there may be additional factors involved in methods to regulate arousal level, such as cognitive operations. Individuals may use sensory stimulation and emotional responses differentially in mediating their internal arousal. This points to the need for additional research on constructs involved in regulating arousal level.

The significant main effect of reducer/augmenter type on emotional regulation (as indexed by the ECQ) was consistent with our expectation that augmenters would inhibit negative emotions more than reducers. This was supported by a significant relationship between Revised Form G2 and the ECQ, indicating that individuals who endorsed more need for emotional arousal (Revised Form G2) used less emotional regulation. According to SIM theory, augmenters use strategies to reduce arousal, whereas reducers use strategies to increase arousal, even when the arousal is potentially negative. For example, reducers have been found to choose negative emotional arousal over boredom (Larsen & Zarate, 1991). Therefore, individuals who seek stimulation may not be motivated to inhibit negative emotions, because negative arousal is not necessarily as aversive to them. Consequently, they may not use as many strategies to inhibit negative emotions.
The was a non-significant main effect of reducer/augmenter type on the AE. Reducer/augmenter type and AE were not significantly correlated either. These findings may be due to the confounding of positive and negative emotional regulation on this questionnaire. Consequently, endorsement of emotional regulation items reflects inhibition of positive and negative emotions. This questionnaire does not lend itself to differentiation between inhibition of positive and negative emotions, and therefore may not be appropriate for use with the reducer/augmenter trait.
CONCLUSIONS AND FUTURE DIRECTIONS

Limitations

Two limitations of the present study warrant brief mention. First, we examined goal preference in everyday problem solving using a forced-choice methodology, where subjects rated experimenter-provided goals. This type of methodology has not been used in prior research on everyday problem solving. The rationale for using this method was to provide greater experimental control than has been the case in previous research, and permit more precise inferences to be made regarding the variables that influence goal preference. Prior research has examined age differences in self-generated goals (Sansone & Berg, 1993; Strough et al., 1994) and goals inferred from strategy and activity choices (Blanchard-Fields & Camp, 1990; Larsen & Zarate, 1991). While self-generation of problems and outcomes may enhance ecological validity, this methodology does not allow direct comparison of individual and age group differences in goal preference. In short, the use of a forced-choice procedure here may have improved internal validity, yet sacrificed ecological validity to some degree (cf. Banaji & Crowder, 1989).

As a second point, we did not measure subjects' rationale for goal preference. Therefore, it is quite possible that there may be different reasons for reducers and augmenters selecting low arousal goals. Examination of "personal strivings" may yield better insight into the contribution of personal characteristics to goal preference in interpersonal problem solving. Reducers seek out social stimulation (Herzog et al., 1985; Larsen & Zarate, 1991, Mishara & Baker, 1981). High arousal goals (i.e., with the potential for conflict with others) may not be conducive to maintaining interpersonal
relationships. More stimulation may be obtained from having a large social network. Therefore, it would be beneficial to reducers to maintain and promote interpersonal relationships (i.e., pursue low arousal goals in this study). On the other hand, augmenters, who wish to avoid arousal, would be wise to endorse goals less likely to involve conflict.

Future Directions

The finding that both younger and older adults expressed greater preference for low emotional arousal goals gives rise to a number of interesting questions for future research. This study found that both younger and older adults show similarities in goal endorsement. In contrast, other studies have found age differences in components of everyday problem solving such as problem interpretation (see Berg & Calderone, 1994, for a review) and problem solving strategies (e.g., Blanchard-Fields & Camp, 1990; Cornelius & Caspi, 1987; Denney & Palmer, 1981; Denney & Pearce, 1989; Denney et al., 1982). An area for future investigation would be to examine the correspondence between strategy selection and goal endorsement. For example, it could be that younger and older adults have similar goals, but differ in strategies selected to obtain their goals. That is, age-related declines in everyday problem solving have been reported based on older adults' use of more avoidant and passive strategies (Blanchard-Fields & Camp, 1990), and involvement of others (Denney & Pearce, 1989; Denney et al., 1982). Given the potential for diminishing resources with age (e.g., physical limitations and social resources; Pastalan, 1982), age-related changes in strategy selection may be adaptive.

Direct examination of the correspondence between strategy selection and desired...
outcome is warranted to determine whether there are age differences in strategies to obtain similar goals, and if so, are these strategies adaptive given the differing environmental demands faced by younger and older adults.

Another potentially important direction for future research would be to systematically vary self/other orientation of the interpersonal problem. In this study, it was important to control for goal focus so that goal focus would not be confounded with goal preference. Goals selected for use in this study were those involving outcomes for self and others, as these were most often reported. As a result, the goals involved consequences for others. Reducer/augmenter differences may emerge when arousal is a consequence for only themselves. For example, reducers may choose attending a social event with the potential for negative emotional arousal over being alone. This would be suggested by research that found that reducers prefer potentially negative emotional arousal over boredom (Larsen & Zarate, 1991). Thus, reducer/augmenter differences may emerge when high arousal goals are not confounded with the potentially negative consequence of damaging relationships.

Summary

The results of the present study have demonstrated that younger and older adults tend to show similar preferences for low arousal goals in the context of interpersonal problem solving. This research contributes to the life span problem solving and emotion literature in at least three ways.

First, research on age differences in everyday problem solving has focused primarily on strategy selection. Studies that show age-related declines in everyday problem solving have often defined strategy efficacy according to the number of correct
solutions generated and reliance on others (Denney & Pearce, 1989; Denney et al., 1982). However, differing strategies may be reflecting attempts to achieve different goals, and/or the types of strategies older adults use may be more adaptive given age differences in problem interpretation and available resources. The finding of non-significant age effects in goal selection in this study may have been a step towards clarifying this argument. The present findings emphasize the need to move away from youth-oriented criteria and return to examination of strategy-goal match, taking into consideration age differences in available resources and individual differences.

Second, the validation of the Revised Form G2 provides a measure of the reducer/augmenter trait that may be used with older adults. This instrument may be useful in the assessment of older adults for treatment planning and design of environments (i.e., nursing homes). This instrument also provides a means of classifying younger and older adults which may be instrumental in examining changes in regulation of emotional arousal as a function of environmental and cohort effects.

Third, relationships between constructs involved in desired emotional arousal, emotional intensity, and emotional regulation were examined. Larsen and Deiner's (1987) arousal regulation theory of affect intensity has "hypothesized" a relationship between these variables; the present study provided evidence to suggest that need for stimulation is related to experience of emotional intensity and inhibition of negative emotions. Future research that includes measures of the various components of emotion may aid in understanding the developmental course of problem solving in adulthood.
REFERENCES


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APPENDIX A

INTERPERSONAL VIGNETTES
Form A

1. After totaling her automobile, Ellen was dependent upon others for transportation. Her friend, Andy, often gave her rides to and from work. Although Ellen appreciated Andy's help, he was often late picking her up in the morning. One evening, he forgot to pick her up and she was stranded at the office. Ellen was worried because next week a team of auditors will be visiting the office and all employees are expected to be available for consultation.

Listed below are different options that Ellen could pursue in dealing with her situation. Imagine that you are in Ellen's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Ellen.

**Please rate both outcomes**

(High Arousal Goals)

1. Tell Andy it's important he is on time next week.

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Not at A Quite Extremely
all likely little a bit likely

2. For Andy to say that he could definitely give me a ride and also have a great explanation for not picking me up that day at work.

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3. Please rate how familiar you are with this situation.

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Form A

2. Mary was invited by her good friend Rachael to a family dinner. Mary enjoyed meeting Rachael's relatives and was having a nice time, until Rachael's father began telling off-color jokes. He didn't realize that Mary would find them offensive. Mary laughed along and tried to be a good sport about it. But she found the jokes difficult to endure as they became increasingly obnoxious.

Listed below are different options that Mary could pursue in dealing with her situation. Imagine that you are in Mary's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Mary.

Please rate both outcomes

(Low Arousal Goals)

1. Avoid being placed in this situation a second time but respect the feelings of my friend Rachael.

   |   |   |   |   |   |
   1  2  3  4  5  6  7
   Not at all likely A quite likely Extremely likely

2. Get myself out of this situation without offending Rachael or her father in their own house.

   |   |   |   |   |   |
   1  2  3  4  5  6  7
   Not at all likely A quite likely Extremely likely

3. Please rate how familiar you are with this situation.

   |   |   |   |   |   |
   1  2  3  4  5  6  7
   Not at all little a bit extremely familiar
Form A

3. Janet recently moved into the neighborhood and became friends with her next door neighbors. She liked her neighbors and was grateful for their friendship, until the day that her neighbors purchased a new stereo. Not only did she find their choice of music offensive, they often played it very loudly.

Listed below are different options that Janet could pursue in dealing with her situation. Imagine that you are in Janet's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Janet.

Please rate both outcomes
(Low Arousal Goals)

1. Explain my situation in a pleasant and understanding way. Hope that they would understand, and wouldn't mind at all turning down their music.

   |   |   |   |   |   |   |
   1  2  3  4  5  6  7
   Not at all likely A quite likely

2. For my neighbors to completely understand and we could come up with a way for all of us to be happy.

   |   |   |   |   |   |   |
   1  2  3  4  5  6  7
   Not at all likely A quite likely

3. Please rate how familiar you are with this situation.

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   Not at all familiar A quite extremely familiar

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4. **Stewart** and Lynda are happily married. Stewart came from a big family. Lynda was an only child who had always been very close to her mother. Lynda's mother visited them frequently, but she had a bad habit of making disapproving remarks towards Stewart. Stewart's resentment began to grow when her remarks became overly personal. He was reluctant to say anything to Lynda because he didn't want to upset her, but spending time with Lynda's mother was becoming intolerable.

Listed below are different options that Stewart could pursue in dealing with his situation. Imagine that you are in Stewart's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Stewart.

**Please rate both outcomes**

**(High Arousal Goals)**

1. Discuss the problem with Lynda and if she couldn't do anything to stop the remarks, I'd go straight to her mother and tell her of my disapproval of her negative remarks about me.

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2. Tell her mother myself how she hurts my feelings.

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5. **Wendy** and Lynn were very good friends. Over the years, Lynn would often call Wendy when she was having problems and needed emotional support. One night Lynn called, extremely upset and crying about a big fight she had with her boyfriend. Wendy was working on an important presentation for work and was concerned she would be up all night completing the project.

Listed below are different options that Wendy could pursue in dealing with her situation. Imagine that you are in Wendy’s situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Wendy.

**Please rate both outcomes**
(Low Arousal Goals)

1. Deal with Lynn rather quickly, without getting into a lengthy, drawn-out conversation. I would want Lynn to relax and say she feels better and thank me for the help, and want to get off the phone so she can have some time to think alone.

   |   |   |   |   |   |   |
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   | Not at all likely | A little | Quite a bit | Extremely likely |

2. To be understanding of my friend’s situation, but I would also like my friend to understand that I needed to do my project after or while I was talking to her.

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   | Not at all likely | A little | Quite a bit | Extremely likely |

3. Please rate how familiar you are with this situation.

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Form A

6. **Allen** and Barbara were dating. Barbara liked to have Allen with her on Sundays when she ate dinner with her parents. Barbara's family really liked Allen and they often asked him when he was going to marry Barbara. Allen thought their questions were too personal. He mentioned this to Barbara but she dismissed his concern. He became extremely uncomfortable around Barbara's parents.

Listed below are different options that Allen could pursue in dealing with his situation. Imagine that you are in Allen's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Allen.

**Please rate both outcomes**

(High Arousal Goals)

1. Get Barbara's parents to stop asking such personal questions.

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2. Let the parents know I was capable of attending to my own business and personal affairs.

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Form B

1. After totaling her automobile, Ellen was dependent upon others for transportation. Her friend, Andy, often gave her rides to and from work. Although Ellen appreciated Andy's help, he was often late picking her up in the morning. One evening, he forgot to pick her up and she was stranded at the office. Ellen was worried because next week a team of auditors will be visiting the office and all employees are expected to be available for consultation.

Listed below are different options that Ellen could pursue in dealing with her situation. Imagine that you are in Ellen's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Ellen.

Please rate both outcomes
(Low Arousal Goals)

1. Find a more dependable means of getting to work, and let Andy off of the hook.

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2. Tactfully disengage myself from an inconvenient situation involving a well-meaning person. Hope that Andy would accept my thanks and think nothing of it.

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Form B

2. **Mary** was invited by her good friend Rachael to a family dinner. Mary enjoyed meeting Rachael's relatives and was having a nice time, until Rachael's father began telling off-color jokes. He didn't realize that Mary would find them offensive. Mary laughed along and tried to be a good sport about it. But she found the jokes difficult to endure as they became increasingly obnoxious.

Listed below are different options that Mary could pursue in dealing with her situation. Imagine that you are in Mary's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Mary.

**Please rate both outcomes**

*(High Arousal Goals)*

1. Get up and leave the room.

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2. Let my friend know how I felt and get out of a situation that was uncomfortable for me but not others.

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Form B

3. Janet recently moved into the neighborhood and became friends with her next door neighbors. She liked her neighbors and was grateful for their friendship, until the day that her neighbors purchased a new stereo. Not only did she find their choice of music offensive, they often played it very loudly.

Listed below are different options that Janet could pursue in dealing with her situation. Imagine that you are in Janet's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Janet.

Please rate both outcomes
(High Arousal Goals)

1. Make the neighbors aware that they play their music too loud.

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2. Tell them to turn off their radio.

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4. Stewart and Lynda are happily married. Stewart came from a big family. Lynda was an only child who had always been very close to her mother. Lynda's mother visited them frequently, but she had a bad habit of making disapproving remarks towards Stewart. Stewart's resentment began to grow when her remarks became overly personal. He was reluctant to say anything to Lynda because he didn't want to upset her, but spending time with Lynda's mother was becoming intolerable.

Listed below are different options that Stewart could pursue in dealing with his situation. Imagine that you are in Stewart's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Stewart.

Please rate both outcomes
(Low Arousal Goals)

1. Hope Lynda understands my point of view without feeling like I was attacking her mother. Hope that after Lynda spoke with her mother, the comments would cease.

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2. Reduce the frequency I visit with Lynda's mother or have Lynda's mother reduce the frequency of her remarks.

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Form B

5. Wendy and Lynn were very good friends. Over the years, Lynn would often call Wendy when she was having problems and needed emotional support. One night Lynn called, extremely upset and crying about a big fight she had with her boyfriend. Wendy was working on an important presentation for work and was concerned she would be up all night completing the project.

Listed below are different options that Wendy could pursue in dealing with her situation. Imagine that you are in Wendy’s situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Wendy.

Please rate both outcomes
(High Arousal Goals)

1. For Lynn to know I was concerned for her welfare and interested in her problems, but I would want my first priority to be my work. So I would have to finish my project.

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2. For Lynn to calm down as quickly as possible by explaining to her that the situation is not going to be the end of the world and then have her postpone telling me the agonizing details until the following day after the project has been presented.

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6. Allen and Barbara were dating. Barbara liked to have Allen with her on Sundays when she ate dinner with her parents. Barbara's family really liked Allen and they often asked him when he was going to marry Barbara. Allen thought their questions were too personal. He mentioned this to Barbara but she dismissed his concern. He became extremely uncomfortable around Barbara's parents.

Listed below are different options that Allen could pursue in dealing with his situation. Imagine that you are in Allen's situation. For each statement below, please rate how likely you would be to pursue each outcome if you were Allen.

**Please rate both outcomes**  
*(Low Arousal Goals)*

1. Keep my options open with Barbara while not creating the wrong expectations by her parents.

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</thead>
</table>
   1 2 3 4 5 6 7
   Not at all likely A Quite Extremely likely
   little a bit

2. Not to be pushed into marriage.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
</table>
   1 2 3 4 5 6 7
   Not at all likely A Quite Extremely likely
   little a bit

3. Please rate how familiar you are with this situation.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
   1 2 3 4 5 6 7
   Not at all A Quite Extremely likely
   little a bit familiar
CONSENT FORM (younger adults)

I, ______________________, agree to participate in the research entitled "Age Differences in Everyday Problem Solving" which is being conducted by Dr. Katie Cherry and Lisa Norris (388-8745). I understand that this participation is entirely voluntary; I can withdraw my consent at any time and have the results of the participation, to the extent that it can be identified as mine, returned to me, removed from the experimental records, or destroyed.

The following points have been explained to me:
1) The reason for the research is to understand age-related differences in everyday problem solving. The benefits I may expect from it are: (a) an appreciation of everyday problem solving (b) an opportunity to contribute to scientific research; (c) one credit point to meet the psychology course requirement.
2) The procedures are as follows: I will be presented with 6 short stories, each accompanied by two rating scales. After reading each story, I will complete two rating scales for each story based on what I would want to accomplish if I were the main character. I will then complete a demographics questionnaire, a vocabulary measure, and three questionnaires asking me how well statements about feelings describe me. The purpose of these measures is to compare health, verbal skills, and emotions with the older adults.
3) The discomforts or stresses that may be faced during this research are: absolutely none.
4) Participation entails the following risks: There are no risks with this research.
5) The results of this participation will be confidential and will not be released in any individually identifiable form without my prior consent unless required by law. All data sheets will be coded by number, preserving complete anonymity for all participants involved.
6) The investigator will answer any further questions about the research either now or during the course of the project.

________________________________________  __________________________
Signature of Investigator                  Signature of Participant

___________________________
Date

Please sign both copies. Keep one and return the other to the investigator. Research at the Louisiana State University which involves human participants is conducted under the oversight of the Human Subjects Committee. Questions or problems regarding these activities should be addressed to Dr. Alan Baumeister, Chairman of the HSC, Louisiana State University, Department of Psychology, Baton Rouge, Louisiana 70803 (504) 388-8745.
CONSENT FORM (older adults)

I, _______________________, agree to participate in the research entitled "Age Differences in Everyday Problem Solving" which is being conducted by Dr. Katie Cherry and Lisa Norris (388-8745). I understand that this participation is entirely voluntary; I can withdraw my consent at any time and have the results of the participation, to the extent that it can be identified as mine, returned to me, removed from the experimental records, or destroyed.

The following points have been explained to me:

1) The reason for the research is to understand age-related differences in everyday problem solving. The benefits I may expect from it are: (a) an appreciation of everyday problem solving (b) an opportunity to contribute to scientific research; (c) payment of $10.00.

2) The procedures are as follows: I will be presented with 6 short stories, each accompanied by two rating scales. After reading each story, I will complete two rating scales for each story based on what I would want to accomplish if I were the main character. I will then complete a demographics questionnaire, a vocabulary measure, and three questionnaires asking me how well statements about feelings describe me. The purpose of these measures is to compare health, verbal skills, and emotions with the younger adults.

3) The discomforts or stresses that may be faced during this research are: absolutely none.

4) Participation entails the following risks: There are no risks with this research.

5) The results of this participation will be confidential and will not be released in any individually identifiable form without my prior consent unless required by law. All data sheets will be coded by number, preserving complete anonymity for all participants involved.

6) The investigator will answer any further questions about the research either now or during the course of the project.

_________________________  _______________________
Signature of Investigator    Signature of Participant

_________________________
Date

Please sign both copies. Keep one and return the other to the investigator.

Research at the Louisiana State University which involves human participants is conducted under the oversight of the Human Subjects Committee. Questions or problems regarding these activities should be addressed to Dr. Alan Baumeister, Chairman of the HSC, Louisiana State University, Department of Psychology, Baton Rouge, Louisiana.
Demographic questions (younger adults)

1. How would you rate your health at the present time?
   1. excellent
   2. good
   3. fair
   4. poor

2. How much do health troubles stand in the way of your doing things you want to do?
   1. not at all
   2. a little (some)
   3. a great deal

3. Do you think your health is better, the same as, or worse than most people your age?
   1. better
   2. same
   3. worse

4. Sex: Male Female

5. Age:

6. Race:

7. Your marital status:
   1. never married
   2. married
   3. divorced or separated
   4. widowed

8a. Occupation of same-sexed parent:

8b. Occupational level of same-sexed parent:
   1. unskilled
   2. semi-skilled
   3. skilled
   4. semi-professional
   5. professional
9a. Occupation of opposite-sexed parent:

9b. Occupational level of opposite-sexed parent:
   1. unskilled
   2. semi-skilled
   3. skilled
   4. semi-professional
   5. professional

10a. Years of Education (self):
   Less than 7th grade
   7th-9th grade
   10th-11th grade
   High School graduate
   Partial college (at least 1 year) or specialized training
   College or university graduate
   Graduate degree

10b. Years of Education (parents):

<table>
<thead>
<tr>
<th>Same-sexed parent</th>
<th>Opposite-sexed parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 7th grade</td>
<td>Less than 7th grade</td>
</tr>
<tr>
<td>7th-9th grade</td>
<td>7th-9th grade</td>
</tr>
<tr>
<td>10th-11th grade</td>
<td>10th-11th grade</td>
</tr>
<tr>
<td>High School graduate</td>
<td>High School graduate</td>
</tr>
<tr>
<td>Partial college (at least 1 yr) or</td>
<td>Partial college (at least 1 yr) or</td>
</tr>
<tr>
<td>specialized training</td>
<td>specialized training</td>
</tr>
<tr>
<td>College or university graduate</td>
<td>College or university graduate</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>Graduate degree</td>
</tr>
</tbody>
</table>

11. How many acquaintances do you have (i.e., people you may interact with in everyday situations, such as co-workers, neighbors, merchants)?
   a. 1-5
   b. 6-10
   c. 11-15
   d. 16-20
   e. 21 or more
12. How many close friends do you have (i.e., people you are attached to and can comfortably confide in)?
   a. none
   b. 1-3
   c. 4-6
   d. 7-9
   e. 10 or more

13. How often do you see or have contact with your close friends (i.e., people you are attached to and can comfortably confide in)?
   a. very seldom
   b. seldom
   c. occasionally
   d. often
   e. very often

14. How would you rate the emotional closeness of your relationships with your close friends (i.e., people you are attached to and can comfortably confide in)?
   a. not at all emotionally close
   b. somewhat emotionally close
   c. emotionally close
   d. very emotionally close
   e. extremely emotionally close
Louisiana State University Aging Research

Demographic questions (older adults)

1. How would you rate your health at the present time?
   1. excellent
   2. good
   3. fair
   4. poor

2. How much do health troubles stand in the way of your doing things you want to do?
   1. not at all
   2. a little (some)
   3. a great deal

3. Do you think your health is better, the same as, or worse than most people your age?
   1. better
   2. same
   3. worse

4. Sex: Male Female

5. Age:

6. Race:

7. Your marital status:
   1. never married
   2. married
   3. divorced or separated
   4. widowed

8a. Your occupation (if retired, before retirement):

8b. Your occupational level:
   1. unskilled
   2. semi-skilled
   3. skilled
   4. semi-professional
   5. professional
9a. If married, occupation of spouse (if retired, before retirement):

9b. If married, occupational level of spouse:
   1. unskilled
   2. semi-skilled
   3. skilled
   4. semi-professional
   5. professional

10. Years of Education:
   If married, spouse

<table>
<thead>
<tr>
<th>Self</th>
<th>If married, spouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 7th grade</td>
<td>Less than 7th grade</td>
</tr>
<tr>
<td>7th-9th grade</td>
<td>7th-9th grade</td>
</tr>
<tr>
<td>10th-11th grade</td>
<td>10th-11th grade</td>
</tr>
<tr>
<td>High School graduate</td>
<td>High School graduate</td>
</tr>
<tr>
<td>Partial college or specialized training (at least 1 yr)</td>
<td>Partial college or specialized training (at least 1 yr)</td>
</tr>
<tr>
<td>College or university graduate</td>
<td>College or university graduate</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>Graduate degree</td>
</tr>
</tbody>
</table>

11. How many acquaintances do you have (i.e., people you may interact with in everyday situations, such as co-workers, neighbors, merchants)?
   a. 1-5
   b. 6-10
   c. 11-15
   d. 16-20
   e. 21 or more

12. How many close friends do you have (i.e., people you are attached to and can comfortably confide in)?
   a. none
   b. 1-3
   c. 4-6
   d. 7-9
   e. 10 or more
13. How often do you see or have contact with your close friends (i.e., people you are attached to and can comfortably confide in)?
   a. very seldom
   b. seldom
   c. occasionally
   d. often
   e. very often

14. How would you rate the emotional closeness of your relationships with your close friends (i.e., people you are attached to and can comfortably confide in)?
   a. not at all emotionally close
   b. somewhat emotionally close
   c. emotionally close
   d. very emotionally close
   e. extremely emotionally close
AIM QUESTIONNAIRE

DIRECTIONS: The following questions refer to the emotional reactions to typical life-events. Please indicate how YOU react to these events by placing a number from the following scale in the blank space preceding each item. Please base your answers on how YOU react, not on how you think others react or how you think a person should react.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>ALMOST NEVER</th>
<th>OCCASIONALLY</th>
<th>USUALLY</th>
<th>ALMOST ALWAYS</th>
<th>ALWAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. ___ When I accomplish something difficult I feel delighted or elated.
2. ___ When I feel happy it is a strong type of exuberance.
3. ___ I enjoy being with other people very much.
4. ___ I feel pretty bad when I tell a lie.
5. ___ When I solve a small personal problem, I feel euphoric.
6. ___ My emotions tend to be more intense than those of most people.
7. ___ My happy moods are so strong that I feel like I'm "in heaven".
8. ___ I get overly enthusiastic.
9. ___ If I complete a task I thought was impossible, I am ecstatic.
10. ___ My heart races at the anticipation of some exciting event.
11. ___ Sad movies deeply touch me.
12. ___ When I'm happy it's a feeling of being untroubled and content rather than being zestful and aroused.
13. ___ When I talk in front of a group for the first time my voice gets shaky and my heart races.
14. ___ When something good happens, I am usually much more jubilant than others.

15. ___ My friends might say I'm emotional.

16. ___ The memories I like the most are of those of times when I felt content and peaceful rather than zestful and enthusiastic.

17. ___ The sight of someone who is hurt badly affects me strongly.

18. ___ When I'm feeling well it's easy for me to go from being in a good mood to being really joyful.

19. ___ "Calm and cool" could easily describe me.

20. ___ When I'm happy I feel like I'm bursting with joy.

21. ___ Seeing a picture of some violent car accident in a newspaper makes me sick to my stomach.

22. ___ When I'm happy I feel very energetic.

23. ___ When I receive an award I become overjoyed.

24. ___ When I succeed at something, my reaction is calm contentment.

25. ___ When I do something wrong I have strong feelings of shame and guilt.

26. ___ I can remain calm even on the most trying days.

27. ___ When things are going good I feel "on top of the world".

28. ___ When I get angry it's easy for me to still be rational and not overreact.

29. ___ When I know I have done something very well, I feel relaxed and content rather than excited and elated.

30. ___ When I do feel anxiety it is normally very strong.

31. ___ My negative moods are mild in intensity.

32. ___ When I am excited over something I want to share my feelings with everyone.
<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.</td>
<td>When I feel happiness, it is a quiet type of contentment.</td>
</tr>
<tr>
<td>34.</td>
<td>My friends would probably say I'm a tense or &quot;high-strung&quot; person.</td>
</tr>
<tr>
<td>35.</td>
<td>When I'm happy I bubble over with energy.</td>
</tr>
<tr>
<td>36.</td>
<td>When I feel guilty, this emotion is quite strong.</td>
</tr>
<tr>
<td>37.</td>
<td>I would characterize my happy moods as closer to contentment than to joy.</td>
</tr>
<tr>
<td>38.</td>
<td>When someone compliments me, I get so happy I could &quot;burst&quot;.</td>
</tr>
<tr>
<td>39.</td>
<td>When I am nervous I get shaky all over.</td>
</tr>
<tr>
<td>40.</td>
<td>When I am happy the feeling is more like contentment and inner calm than one of exhilaration and excitement.</td>
</tr>
</tbody>
</table>
ECQ

INSTRUCTIONS: Please indicate how you feel about each item by circling either "TRUE" or "FALSE". If you feel that an item is neither entirely true nor false, please choose the alternative that is most like you. If you haven't been in the situation described, please say how you feel you would behave in that situation.

1. When someone upsets me, I try to hide my feelings.  TRUE FALSE
2. If someone pushed me, I would push back.  TRUE FALSE
3. I remember things that upset me or make me angry for a long time afterwards.  TRUE FALSE
4. I seldom feel irritable.  TRUE FALSE
5. I often take chances crossing the road.  TRUE FALSE
6. If I don't like a friend's new clothes, I say so.  TRUE FALSE
7. People find it difficult to tell whether I'm excited about something or not.  TRUE FALSE
8. I often do or say things I later regret.  TRUE FALSE
9. Almost everything I do is carefully thought out.  TRUE FALSE
10. I generally don't bear a grudge—when something is over, it's over, and I don't think about it again.  TRUE FALSE
11. Sometimes I just can't control my feelings.  TRUE FALSE
12. If a friend borrows something and returns it dirty or damaged, I usually just keep quiet about it.  TRUE FALSE
13. I've been involved in many fights or arguments.  TRUE FALSE
14. I get "worked up" just thinking about things that have upset me in the past.  TRUE FALSE
15. I'm not easily distracted.  TRUE FALSE
16. If I'm badly served in a shop or restaurant I don't usually make a fuss. TRUE FALSE
17. I lose my temper quickly. TRUE FALSE
18. I frequently change my mind about things. TRUE FALSE
19. I don't like taking chances. TRUE FALSE
20. If a passing car splashes me, I shout at the driver. TRUE FALSE
21. If someone were to hit me, I would hit back. TRUE FALSE
22. I seldom show how I feel about things. TRUE FALSE
23. I often say things without thinking whether I might upset others. TRUE FALSE
24. I often find myself thinking over and over about things that have made me angry. TRUE FALSE
25. If I'm pleasantly surprised, I show immediately how pleased I am. TRUE FALSE
26. I seldom snap at people. TRUE FALSE
27. When I get upset, I like to talk to someone about it. TRUE FALSE
28. If someone says something stupid, I tell them so. TRUE FALSE
29. If I see someone pushing into a line ahead of me, I usually just ignore it. TRUE FALSE
30. I can usually settle things quickly and be friendly again after an argument. TRUE FALSE
31. My interests tend to change quickly. TRUE FALSE
32. I don't feel embarrassed about expressing my feelings. TRUE FALSE
33. Even when I'm angry I seldom use bad language. TRUE FALSE
34. I think about ways of getting back at people who have made me angry long after the event has happened. TRUE FALSE
35. I'd rather concede an issue than get into an argument. TRUE FALSE

36. I never forget people making me angry or upset, even about small things. TRUE FALSE

37. I often "put my foot in it". TRUE FALSE

38. If I receive bad news in front of others I usually try to hide how I feel. TRUE FALSE

39. I think people show their feelings too easily. TRUE FALSE

40. I find it hard to get thoughts about things that have upset me out of my mind. TRUE FALSE
DIMENSIONS OF AFFECTIVE EXPERIENCE

Please write a number from 1 to 3 beside each statement below indicating how well it describes you. In making your responses, please use the following scales:

1 = Very True of Me
2 = Somewhat True of Me
3 = Not at all True of Me

1. _____ Both pleasure and worries become fewer as I grow older.
2. _____ Extreme pleasures are better to avoid as you get older.
3. _____ I find that over the years I react less and less to such things as worries over my relatives, the loss of friends, or social problems.
4. _____ I have the same worries and bad moods that I always have had, but they bother me less at this stage of life.
5. _____ Part of maturing is being able to arrange your life so there are fewer highs and fewer lows.
6. _____ My feelings are likely to become more moderate as I grow older.
7. _____ Moments of extreme despair or unhappiness become much less frequent as you grow older.
8. _____ It is hard to find things that are new and interesting.
9. _____ I can continue to do the same things year after year and enjoy them as much or more than I used to.
10. ___ Although I still enjoy them, the activities that I've done for years seem to give me less pleasure as I grow older.
11. ___ It has become harder and harder to find things that excite me as I grow older.
12. ___ Fewer novel or interesting things happen as I get older.
13. ___ As I get older I am even more likely to feel elated over something.
14. ___ I find things that excite my interest even more frequently now.
15. ___ Things continue to interest me but few are as exciting as they were.
16. ___ Self-control in the face of strong feelings come easily to me.
17. ___ The number of different emotions I'm likely to experience is very small.
18. ___ I try hard to stay in a neutral state and to avoid emotional situations.
19. ___ I try to avoid reacting emotionally, whether the emotion is positive or negative.
20. ___ Detachment or cool judgment is my best way to meet most life situations.
21. ___ When my feelings have been hurt, I usually feel better after I've indulged these feelings a bit.
22. ___ My emotions are pretty much at the mercy of circumstances.
23. ___ I choose activities carefully so as to give me just the right amount of emotional stimulation, neither too much nor too little.
24. ___ "Calm and cool" could easily describe me.
INSTRUCTIONS: This is a questionnaire on different aspects of personality. You are asked to circle the number that indicates how much each statement applies to you. In making your responses, think about how each item reflects your preferences across the whole of your adult life. Please use the following scale:

1 = Strongly Disagree
2 = Disagree
3 = Weakly Disagree
4 = Weakly Agree
5 = Agree
6 = Strongly Agree

Remember, 1 means Strongly Disagree and 6 means Strongly Agree. Please use the full range of the scale for each item below.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1. I drink a lot of coffee</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>*2. I crave excitement</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>*3. I am a &quot;swinger&quot;</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>4. I started smoking at an early age</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>*5. I like to be alone</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>*6. I would like a job that required a lot of traveling</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>*7. I study a lot on school nights</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>*8. I don't like jobs that require attention to detail</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>*9. I am a heavy smoker</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>10. I have a lot of curiosity.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>*11. I tend to be shy and withdrawn</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>12. I enjoy rock bands</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>13. I enjoy the thrills of watching car races</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>14. I am not bothered very much by cold temperatures</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>15. I participate in behavior that could be termed delinquent</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>16. I lack the drive necessary to get as much done as other people do</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>17. I have difficulty concentrating on one thing for a long time at a stretch</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>18. I tend to bite my nails</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>19. I think I would enjoy participating in contact sports (e.g., football, wrestling)</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>20. I enjoy &quot;thriller&quot; movies</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>21. I get edgy when I am alone for a long time</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>22. I am bothered by bright lights</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>23. I find that time passes quickly</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>24. I like to share recreational activities with several friends</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>25. I need more hours of sleep than the average person</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>26. I think I would enjoy participating in non-contact sports (e.g., golf, tennis, bowling)</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>*27. I readily think of new ideas</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>*28. I drink alcoholic beverages frequently</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>29. I like to take chances</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>*30. I can stand more pain than most people</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>31. I am bothered by having useless thoughts come into my mind over and over</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>*32. I can usually listen to a lecture without becoming restless</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>33. I like to have several projects going at the same time</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>34. I enjoy parties that have lots of noise, action, and varied lighting effects</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>35. I need more variety and change than most people</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>36. I think loud noises are unpleasant</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>37. I am the kind of person who is &quot;on the go&quot;</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>*38. I fall asleep easily at night</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>*39. I participate sports regularly</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>40. I prefer friends who are exciting and unpredictable</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>*41. I fear getting an injection</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>42. I grew up in a large city</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>*43. I am bored easily</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Question</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>*44. I feel full of energy</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>45. I look forward to new experiences</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>
Revised Form G2

INSTRUCTIONS: This is a questionnaire on different aspects of personality. You are asked to circle the number that indicates how much each statement applies to you. In making your responses, think about how each item reflects your preferences across the whole of your adult life. Please use the following scale:

1 = Strongly Disagree  
2 = Disagree  
3 = Weakly Disagree  
4 = Weakly Agree  
5 = Agree  
6 = Strongly Agree

Remember, 1 means Strongly Disagree and 6 means Strongly Agree. Please use the full range of the scale for each item below.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  2  3  4  5  6</td>
<td>1  2  3  4  5  6</td>
</tr>
</tbody>
</table>

1. I drink a lot of tea, soda, or coffee
2. I like to be "stirred-up" or excited
3. I enjoy myself at parties or large social gatherings
4. I started smoking at an early age
5. I prefer to be by myself most of the time
6. If I were looking for a job, I would want one that involved traveling to different cities
7. I like to read or do solitary activities during the week
8. I don't like tasks that require attention to detail

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<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9. I am a heavy smoker or I used to be before I quit</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I have a lot of curiosity.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I like to keep to myself</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I enjoy big bands with a full or loud sound</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I enjoy the thrills of watching sports events, horse races, or other activities with crowds in the stands</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I am not bothered very much by cold temperatures</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I participate in behavior that could be described as &quot;outside of the bounds of societal norms&quot;</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. I lack the drive necessary to get as much done as other people do</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I have difficulty concentrating on one thing for a long time at a stretch</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. I tend to bite my nails or I used to before I quit</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. If I had to choose a sporting event to participate in, I think I would pick a contact sport (e.g., football, wrestling)</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I enjoy &quot;thriller&quot; movies or shows on TV</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. I get edgy when I am alone for a long time</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. I am bothered by bright lights</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.</td>
<td>I have always felt that time passes quickly</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>24.</td>
<td>I like to share recreational activities or outings with several friends</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>25.</td>
<td>I have always needed more hours of sleep than the average person</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>26.</td>
<td>If I had to choose a sporting event to participate in, I think I would pick a non-contact sport (e.g., golf, tennis, bowling)</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>27.</td>
<td>New ideas or ways of looking at things have always popped into my mind quite readily</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>28.</td>
<td>I enjoy drinking alcoholic beverages</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>29.</td>
<td>I like to take chances</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>30.</td>
<td>I can tolerate more pain or discomfort than most people</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>31.</td>
<td>I am bothered by having useless thoughts come into my mind over and over</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>32.</td>
<td>I can usually listen to a public speaker without becoming restless</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>33.</td>
<td>I like to have several projects going at the same time</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>34.</td>
<td>I enjoy parties that have lots of noise, action, and varied lighting effects</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>35.</td>
<td>I need more variety and change than most people</td>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Number</td>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>I think loud noises are unpleasant</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>I am the kind of person who is &quot;on the go&quot;</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>I have always been able to fall asleep when I want some rest</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>I participate in mild or moderate exercise regularly</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>I prefer friends who are exciting and unpredictable</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>When I go to the physician, I get nervous thinking about the prospect of getting a shot</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>I grew up in a large city</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>I tend to get restless or bored easily</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>I feel full of energy most of the time</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>I look forward to new experiences</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Word Definitions

Write the meaning of each word in the space provided:

1. Breakfast

2. Slice

3. Fabric

4. Regulate

5. Enormous

6. Conceal

7. Hasten

8. Designate

9. Commence
10. Obstruct


11. Ponder


12. Calamity


13. Tangible


14. Fortitude


15. Audacious


16. Edifice


17. Ominous


18. Tirade


19. Impale


20. Travesty


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APPENDIX C

FACTOR ANALYSIS ON REVISED FORM G2
### Factor Loadings on Revised Form G2 for Younger and Older Groups

<table>
<thead>
<tr>
<th>Factor 1: Need for Sensory/Social Stimulation</th>
<th>Younger</th>
<th>Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>I look forward to new experiences</td>
<td>.59</td>
<td>.80</td>
</tr>
<tr>
<td>I enjoy myself at parties or large social gatherings</td>
<td>.45</td>
<td>.75</td>
</tr>
<tr>
<td>I like to have several projects going at the same time</td>
<td>.48</td>
<td>.70</td>
</tr>
<tr>
<td>I like to take chances</td>
<td>.68</td>
<td>.64</td>
</tr>
<tr>
<td>I feel full of energy most of the time</td>
<td>.47</td>
<td>.64</td>
</tr>
<tr>
<td>I like to share recreational activities or outings with several friends</td>
<td>.62</td>
<td>.64</td>
</tr>
<tr>
<td>I enjoy parties that have lots of noise, action, and varied lighting effects</td>
<td>.73</td>
<td>.54</td>
</tr>
<tr>
<td>I am the kind of person who is &quot;on the go&quot;</td>
<td>.53</td>
<td>.54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2: Need for Cognitive Activity</th>
<th>Younger</th>
<th>Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>I tend to get restless or bored easy</td>
<td>.40</td>
<td>.68</td>
</tr>
<tr>
<td>I have difficulty concentrating on one thing for a long time at a stretch</td>
<td>.51</td>
<td>.49</td>
</tr>
<tr>
<td>I get edgy when I am alone for a long time</td>
<td>.49</td>
<td>.49</td>
</tr>
</tbody>
</table>
VITA

Lisa Eileen Norris was born in Ruston, Louisiana. She received a Bachelor of Science degree in Psychology from Louisiana State University in 1988. She received her Master of Arts degree in Clinical Psychology. She is currently a candidate for the Doctor of Philosophy degree in Developmental Psychology at Louisiana State University and anticipates graduating in May, 1997.
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Lisa Eileen Norris

Major Field: Psychology

Title of Dissertation: Everyday Problem Solving Goals: Contributions of Age and Individual Differences

Approved:

Katii E. Cheng
Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

Donald A. Weil

Jeff Cline

David R. Mann

Steve K. Fox

Date of Examination:

February 26, 1997