

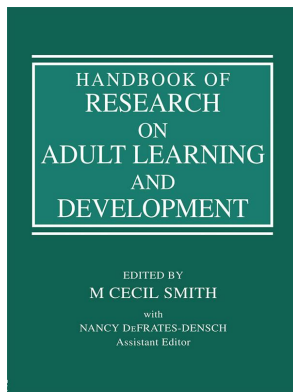
This article was downloaded by: 10.3.97.143

On: 08 Dec 2023

Access details: *subscription number*

Publisher: *Routledge*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London SW1P 1WG, UK



Handbook of Research on Adult Learning and Development

M Cecil Smith, Nancy DeFrates-Densch

An Intergrative Model of Everyday Problem Solving Across the Adult Life Span

Publication details

<https://www.routledgehandbooks.com/doi/10.4324/9780203887882.ch18>

Cynthia A. Berg, Michelle Skinner, Kelly Ko

Published online on: 07 Nov 2008

How to cite :- Cynthia A. Berg, Michelle Skinner, Kelly Ko. 07 Nov 2008, *An Intergrative Model of Everyday Problem Solving Across the Adult Life Span from: Handbook of Research on Adult Learning and Development* Routledge

Accessed on: 08 Dec 2023

<https://www.routledgehandbooks.com/doi/10.4324/9780203887882.ch18>

PLEASE SCROLL DOWN FOR DOCUMENT

Full terms and conditions of use: <https://www.routledgehandbooks.com/legal-notices/terms>

This Document PDF may be used for research, teaching and private study purposes. Any substantial or systematic reproductions, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The publisher shall not be liable for an loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

HANDBOOK OF
RESEARCH
ON
ADULT LEARNING
AND
DEVELOPMENT

EDITED BY
M CECIL SMITH

with
NANCY DEFRATES-DENSCH
Assistant Editor

First published 2009
by Routledge
270 Madison Ave, New York, NY 10016

Simultaneously published in the UK
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

This edition published in the Taylor & Francis e-Library, 2008.

“To purchase your own copy of this or any of Taylor & Francis or Routledge’s collection of thousands of eBooks please go to www.eBookstore.tandf.co.uk.”

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2009 Taylor & Francis

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark Notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Library of Congress Cataloging in Publication Data

Handbook of research on adult learning and development / edited by M Cecil Smith with Nancy DeFrates-Densch.

p. cm.

Includes bibliographical references and index.

1. Adult learning—Research—Handbooks, manuals, etc. 2. Adult education—Research—Handbooks, manuals, etc. I. Smith, M Cecil. II, DeFrates-Densch, Nancy.

ISBN 0-203-88788-3 Master e-book ISBN

ISBN 10: 0-8058-5819-9 (hbk)
ISBN 10: 0-8058-5820-2 (pbk)
ISBN 10: 0-203-88788-3 (ebk)

ISBN 13: 978-0-8058-5819-8 (hbk)
ISBN 13: 978-0-8058-5820-4 (pbk)
ISBN 13: 978-0-203-88788-2 (ebk)

An Integrative Model of Everyday Problem Solving Across the Adult Life Span

Cynthia A. Berg, Michelle Skinner, and Kelly Ko

In daily life, adults experience a variety of different types of everyday problems. The following examples encompass the wide range of everyday problems mentioned by our research participants who were asked to describe a recent everyday problem they experienced: dealing with a malfunctioning computer at work, deciding on the best medical insurance program for changing family needs, scheduling multiple time demands dealing with work, family, and leisure activities, making a treatment decision for a recent diagnosis of prostate cancer, and dealing with late family members who chronically derail leisure plans. These types of problems have been studied under a variety of labels including everyday competence (Baltes, Mayr, Borchelt, Maas, & Wilms, 1993; Willis 1991), everyday problem solving (Berg, Strough, Calderone, Sansone, & Weir, 1998; Blanchard-Fields, Jahnke, & Camp, 1995; Denney, 1989; Diehl, Willis, & Schaie, 1995; Marsiske & Willis, 1995; Sinnott, 1989), everyday cognition (Allaire & Marsiske, 2002; Poon, Rubin, & Wilson, 1989; Rogoff & Lave, 1984), everyday reasoning and decision making (Johnson, 1990; Klaczynski, 2000), and practical intelligence (Sternberg & Wagner, 1986). We use the term “everyday problem solving,” because it is the term most commonly applied in the cognitive aging literature. We use the term despite the great diversity in the content, structure, and processes involved in these everyday problems.

The history of everyday problem solving may help to explain how such a diverse set of problems has been grouped together as representative of the concept of “everyday problems.” The study of everyday problem solving arose from dissatisfaction with traditional measures of intelligence to assess the intellectual ability of adults. As traditional intelligence tests were designed to predict how successful individuals would be in the academic environment, researchers questioned the utility of such tests for measuring the intelligence of adults who were no longer in the academic environment (Berg & Sternberg, 1995; Demming & Pressey, 1957; Labouvie-Vief, 1982). Thus began the search for a set of tasks that would reflect somewhat uniquely on an individual’s ability to solve problems in the “real world.” Early attempts to measure everyday problem solving focused on the instrumental tasks of daily living such as finding numbers in a telephone book or how to double a recipe (Demming & Pressey, 1957). The field quickly expanded (Berg, Meegan, & Deviney, 1998; Blanchard-Fields et al., 1995; Cornelius & Caspi, 1987; Denny, 1989) to explore problems where instrumental demands occurred in the context of a rich social context (e.g., dealing with a landlord who refuses to make expensive repairs to your residence; a person who spends time taking care of a relative, but is busy with a family of her own). Although the field has developed a large number of tools to measure everyday problem solving (Marsiske & Margrett, 2006), there has been much less success in assessing whether these new measures of everyday problem solving do a better job of predicting real-world indicators of everyday functioning than traditional intelligence tests (c.f., Allaire & Marsiske, 2002).

The field has traditionally defined everyday problem solving in contrast to “traditional” measures of intelligence (Meacham & Emont, 1989; Sternberg & Wagner & Sternberg, 1986). First, everyday problems are often described as *ill-structured* (as opposed to well-structured) in that there is not a single correct solution and there are many ways to get to each solution. Second, everyday problems occur in a rich interpersonal context where other people can facilitate or impede problem solution (Dixon, 1999; Meacham & Emont, 1989; Meegan & Berg, 2002; Strough & Margrett, 2002). Third, related to the fact that many everyday problems occur within a complex web of interpersonal relationships, these problems frequently require an individual to regulate both emotion and cognition (Blanchard-Fields et al., 1995; Labouvie-Vief, 2003). Fourth, problem solution may occur over an extended time frame of days, weeks, and months, whereas traditional intelligence tests are administered within a very limited time frame. Finally, the content of everyday problems is such that adults frequently experience such problems on an “everyday” basis more so than items found on typical intelligence tests.

Scholars in the field are beginning to make distinctions between different types of everyday problems on the basis of whether the problems are well-defined (i.e., is there a single correct answer and solution strategy or many; see Allaire & Marsiske, 2005; Berg, 2008; Marsiske & Margrett, 2006) or ill-defined (i.e., there are many possible solution strategies and correct answers). We have argued that well-defined and ill-defined problems derive from distinct theoretical traditions in the field (Berg, 2008). Those who examine well-defined problems view everyday problem solving as a manifestation of underlying intellectual abilities (Willis & Schaie, 1986), a view we have termed the “competency perspective” (see also Berg & Klaczynski, 1996). Researchers who focus on the ill-defined nature of everyday problems have frequently examined everyday problem solving as the cognitive, social, motivational, and cultural factors that influence adaptation to specific contexts (Berg & Klaczynski, 2002; Blanchard-Fields & Chen, 1996), reflective of the contextual approach. Although it is true that distinctions are needed in the field to help provide some order to the diverse set of problems currently examined under the umbrella of everyday problem solving, we argue in this chapter that an integrative model is needed that explores the cognitive, emotional, interpersonal, physiological, and personality factors that are involved in solving both well and ill-defined problems.

In this chapter, we first provide a brief review of the current work in the field of everyday problem solving, which is organized around the well-defined versus ill-defined distinctions of everyday problems. We then provide a model of everyday problem solving that encompasses both of these types of problems, and that captures the cognitive, emotional, and physiological processes involved in solving everyday problems. We argue that this model of everyday problem solving will likely lead to an expansion of the outcomes of everyday problem solving beyond those that are simply cognitive to include other markers of successful aging (e.g., social relationships, health, and overall psychological well-being). In this way, everyday problem solving may get closer to its original goal of understanding the multiplicity of factors that lead to successful adaptation to everyday life across the adult life span.

Review of Everyday Problem Solving

Two traditions have guided much of the field of everyday problem solving. The first has focused on designing measures of everyday problem solving that are well-defined, that is they have one correct answer (Allaire & Marsiske, 2002; Willis & Schaie, 1986). The second tradition has examined everyday problem solving on ill-defined problems (where a

single correct answer does not exist) that are often embedded in a complex web of interpersonal relationships and involve regulating one's emotions. These two traditions have come to very different conclusions regarding the relationship between everyday problem solving and more traditional measures of intelligence. We will now briefly review the major findings coming from these two traditions.

The Well-Defined Tradition

The well-defined tradition is guided by a perspective that defines everyday problem solving as a manifestation of underlying intellectual abilities (Willis & Schaie, 1986). Thus, the focus within this perspective has been to design everyday problems that are analogues of traditional intelligence tests (e.g., knowledge, reasoning) and compare performance on these two types of problems. For instance, Allaire and Marsiske (1999) devised everyday analogues of inductive reasoning, knowledge, declarative memory, and working memory and compared these measures to traditional measures of these constructs. These everyday analogues involved processing information from nutritional labels and medication labels. Two questions have guided much of the work within this tradition: What is the relationship between traditional intelligence tests and everyday problem solving? Are age-related differences in everyday problem solving similar to those found on traditional measures of intelligence?

The general finding from this tradition is that performance on everyday problem-solving measures is quite similar to performance on traditional intelligence measures (Allaire & Marsiske, 1999; Marsiske & Willis, 1995; Willis & Schaie, 1986; see Thornton & Dumke, 2005, for a review). For instance, in Allaire and Marsiske (1999) correlations between each cognitive analogue were high (ranging from $r = .26$ to $.74$), suggesting that everyday problem solving is quite related to traditional measures of intelligence (see also Willis & Schaie, 1986). Furthermore, age-related differences in everyday problem solving were quite similar to those found for measures of fluid intelligence, providing additional evidence of the similarity in abilities underlying everyday problem solving and traditional intelligence.

In sum, the view coming from the literature focusing on everyday problem solving of well-defined problems is that everyday problem solving is determined by one's underlying cognitive abilities. Supportive evidence for this claim comes from the results indicating substantial relationships between measures of everyday problem solving and intelligence items and the similarity in age differences on both traditional intelligence tests and everyday problem-solving measures.

The Ill-Defined Tradition

The ill-defined tradition largely comes from a contextual perspective on everyday problem solving that views everyday problem solving as the abilities that are necessary in order that adults may provide a closer fit between themselves and their environment (Berg & Calderone, 1992; Blanchard-Fields & Chen, 1996). Researchers within this tradition often use adults' own descriptions of the problems that they have recently experienced in daily life as the starting point for measuring everyday problem solving (Berg et al., 1998; Blanchard-Fields et al., 1995) or hypothetical problems based in adults' everyday experience (Berg, Meegan, & Klaczynski, 1999; Blanchard-Fields, Chen, & Norris, 1997; Blanchard-Fields, Chen, Schocke, & Hertzog, 1998; Cornelius & Caspi, 1987). The problems that adults mention typically involve enduring interpersonal relationships

(Blanchard-Fields et al., 1995; Strough, Berg, & Sansone, 1996) that are a substantial part of the problem or are used to assist in the solution of the problem (Berg et al., 1998). Because of the overlap between the types of problems that adults mention experiencing and daily hassles from the stress and coping literature, researchers have often assessed problem-solving strategies utilizing the distinctions found in the coping literature (e.g., problem-focused versus emotion-focused coping strategies of Folkman, Lazarus, Pimley, & Novacek, 1987; Lazarus & Folkman, 1984). The set of skills needed to successfully solve such problems transcend typical cognitive skills and involve regulating emotions (Blanchard-Fields et al., 1995), regulating one's physiological arousal (Uchino, Berg, Smith, Pearce, & Skinner, 2006), drawing on one's interpersonal skills (Berg et al., 1998; Chang, D'Zurilla, & Lawrence, 2004; Meegan & Berg, 2002), and one's ability to cope with daily hassles (Blanchard-Fields et al., 1997; Cornelius & Caspi, 1987; Folkman et al., 1987).

A thorny problem from this perspective is how to determine "optimal" everyday problem-solving performance (see Berg & Klaczynski, 1996, for a more complete treatment of this problem). Some studies rely on the fit between the strategies that are adopted and some standard of optimal performance derived from relevant subgroups of individuals (e.g., experts; Cornelius & Caspi, 1987). Others rely on the participants' own subjective appraisal of strategy effectiveness (Berg et al., 1998) or the extent of contextual fit between strategies and goals (Berg et al., 1998). Optimal problem solving is typically defined more locally and consistent with contextualist principles that focus on the fit between the individual's performance and what is required by the specific context. This does present challenges for the assessment of everyday problem solving such that optimal problem solving in one context may not transcend to another context (Berg & Klaczynski, 2002). However, broad principles of effective functioning (e.g., efficient cognitive strategies, fit between goals and strategies) may transcend specific contexts to index effective problem solving.

Research emanating from this perspective reveals a substantially different picture of the relation between everyday problem solving performance and traditional intelligence tests, than that seen from the well-defined tradition. Everyday problem solving in the contextual perspective is seen as only modestly related to measures of traditional intelligence ($r = .27$ to $.29$ in Cornelius & Caspi, 1987; see also Blanchard-Fields et al., 1997). In addition, age-related differences in everyday problem-solving performance are not the same as age-related differences in fluid intelligence. Older adults often perform better than their younger counterparts (Cornelius & Caspi, 1987), especially when the problems deal with high emotional content (Blanchard-Fields et al., 1997; Watson & Blanchard-Fields, 1998) and involve the ability to utilize the interpersonal context by working collaboratively with close-relationship partners (Gould, Kurzman, & Dixon, 1994).

In sum, the contextual perspective examines everyday problem solving largely from an ill-defined perspective, where problems are embedded in a context of interpersonal relationships, emotions, and cognitions. The view from this perspective is that everyday problem solving is substantially different from traditional intelligence and that age-related differences in everyday problem solving diverge from the differences found for traditional fluid measures of intelligence.

Integration of the Well- and Ill-Defined Perspectives

Current positions in the field seem to be moving toward recognition that everyday problem solving consists of both well and ill-defined problems that activate different cognitive

and emotional processes in problem solving. Several recent investigations that include both well- and ill-defined measures find that there is little overlap between these measures (Allaire & Marsiske, 2002) and that age differences are found only for performance on well-defined measures (Marsiske & Willis, 1995). This work seems to suggest that everyday problem solving, as it has been studied is multidimensional and that even the component skills that are required to complete a single task are distinct. For instance, Allaire and Marsiske (1999) found that for the same ill-defined task (Denny's (1989) task involving generating as many solutions as possible to hypothetical problems), two measures of performance (outside ratings of the quality of the solution and number of strategies generated) were not significantly correlated ($r = .17$). These findings suggest that in the realm of everyday problems, the ability to generate multiple solutions does not necessarily map onto perceptions of efficacious solution. This may be particularly important for ill-defined problems where one "tried and true" solution may be adequate for the problem. Further, different problems may require both well and ill defined components where an individual may utilize skills flexibly with relative emphasis on maximizing solution quality.

We have argued (Berg, 2008) that the field may benefit by seeing the well- and ill-defined components of many everyday problems. The balance between well- and ill-defined facets of everyday problems is quite apparent when examining the types of everyday decisions that individuals must make within a specific domain. For instance, within the health domain of managing a condition such as type 2 diabetes, there are well-defined problems like how much medication to take and how to balance carbohydrates with insulin intake. There are also more ill-defined problems such as how to keep on a regular exercise program, how to lose weight, and survive the holidays. In fact, it is possible that what is a well-defined problem for one person (e.g., how much insulin to take) is an ill-defined problem for another person (i.e., the person interprets the task as how to manage the diabetes in ways that avoid insulin). Current models in the decision making field that integrate the analytic and heuristic nature of cognitive processing (Epstein, Lipson, Holstein, & Huh, 1992; Kahneman, Slovic, & Tversky, 1982; Klaczynski, 2000; Stanovich, 1999) may be particularly helpful in seeing that individuals may oscillate between appraising problems as well- and ill-defined even for problems within the same domain (Klaczynski & Robinson, 2000). We discuss this idea in depth below.

In the present chapter, we argue for an integrative model of everyday problem solving that encompasses both the well- and ill-defined facets of everyday problem solving. This integrative model encompasses the contextual and individual factors involved in problem appraisal as well as the cognitive, emotional, and physiological processes that are involved as adults solve everyday problems. We argue that all everyday problems have the potential to draw on these diverse skill sets for adults. Distinctions between well- and ill-defined problems may lie in the differential activation of one or more of these skill sets. For instance, making a complicated decision regarding whether to take hormone replacement therapy may draw differentially on the cognitive system, whereas making a decision regarding what to do with a struggling adult child may draw on one's ability to regulate one's emotion and physiological arousal together with one's partner or spouse. However, even for the same everyday problem different appraisal processes may make it so that what appears to be a well-defined problem for one person is an ill-defined problem for another individual. We now present this integrative model, drawing from the existing literature.

An Integrative Model of Everyday Problem Solving

This integrative model encompasses many of the defining features of everyday problem solving including the fact that problem solving occurs over an extended temporal frame, draws on a number of different capacities (e.g., cognitive, emotional, social, personality, physiological), and includes problems that are well- and ill-defined. The temporal frame (depicted in Figure 18.1) acknowledges that everyday problems are frequently ones that are anticipated yet infrequently are steps taken to avoid the problem (Berg, Strough, Calderone, Meegan, & Sansone 1997). The problem occurs, strategies are enacted, and often an evaluation process occurs as to how effective one was in dealing with the problem. In some cases, the problem is only mitigated but not ultimately “solved” for the time and may occur in the future. This is not to say that problem solvers do not learn from their experience with solving everyday problems. Experience with similar problems may activate a more automatic appraisal process that facilitates the cognitive, emotional, and physiological responses to the problem.

A key feature of the model is that how an individual solves an everyday problem will depend on how an individual appraises the problem-solving situation. Such appraisals can include the overall “definition” of the problem (Berg, Meegan, & Klaczynski, 1999; Sinnott, 1989), goals for the solution of the problem (Berg et al., 1998), and whether the problem is appraised together with another individual (Berg et al., 1998; Wiebe et al., 2005). We have argued (Sansone & Berg, 1993) that the appraisal of the problem draws from a variety of contextual (e.g., domain) and individual difference (e.g., personality) factors that are activated in a particular situation. Experience with an everyday problem may activate a stored schema for appraisal that serves as a starting part for the solution to the problem (Crick & Dodge, 1994).

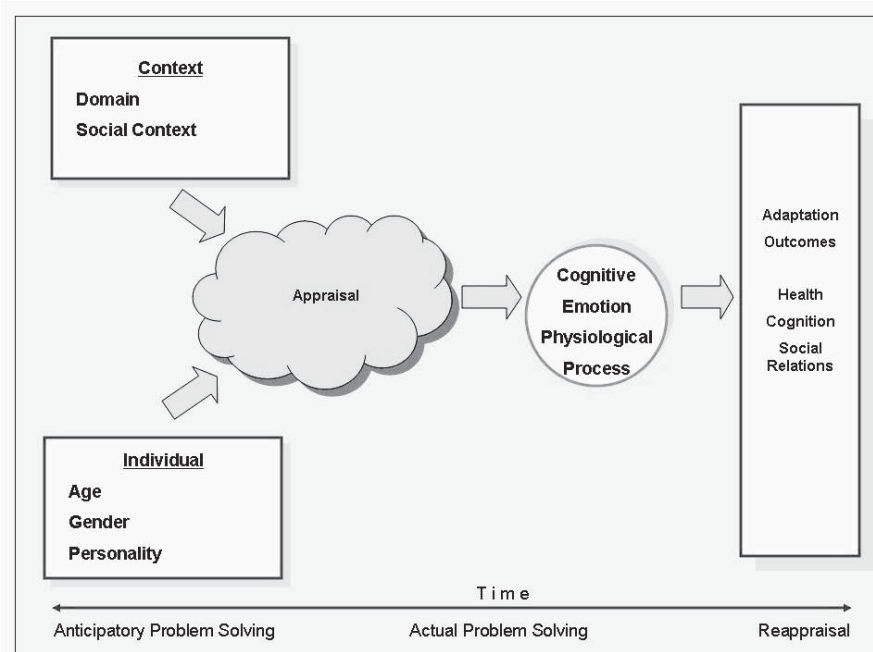


Figure 18.1 Problem solving process.

This differential activation of individual and contextual factors may be responsible for some of the stark distinctions found between well-defined and ill-defined problems. Take the examples of well-defined problems from the work of Willis and Schaie (1986), Marsiske and Willis (1995), and Allaire and Marsiske (2002). These problems are often timed and generally are presented in a multiple-choice format similar to that of traditional intelligence test items. The instructions are to pick the best answer and scoring is conducted based on whether the answer is correct or incorrect. It is likely that this context activates for the individual competence features of the self (Berg et al., 1998) and thereby the cognitive system is activated to solve the problem. Other skills and abilities may not be drawn upon as the context does not evoke interpersonal features (in fact, the interpersonal features are somewhat odd in that the experimenter likely knows the answers to the questions, but is unable to share that knowledge).

In contrast, the ill-defined problems used by investigators like Berg et al. (1998), Blanchard-Fields (Blanchard-Fields et al., 1995, 1997, 1998), Cornelius and Caspi (1987), and Denney and colleagues (see Denney, 1989, for a review) often include a task to be completed that is infused with interpersonal issues and emotional content (e.g., resolving a conflict with a friend). The answers that an individual must make involve inherently subjective assessments such as “how likely is it that you would do the strategy,” “generate as many strategies as are possible,” or “describe what you did to solve this problem and rate how well you felt you solved the problem.” Such a context of everyday problem solving does not suggest to the participant that a “single” correct answer is desirable (particularly in the case where participants are encouraged to generate as many solutions as possible) or required. Rather the context suggests that many strategies are possible and numerous options may be equally desirable. In addition, the content of such problems contain other individuals who may impede or facilitate problem solving, thereby evoking from the individual interpersonal and emotional facets of the self from which the person draws to address the problem in addition to cognitive factors.

Appraisal processes are so crucial that the very same problem may be experienced by one person as a “well-defined” problem, whereas for another individual it is not. Several such examples exist in the literature. For instance, Sinnott (1989) devised a set of logical combination problems (originally devised by Piaget) that were infused with everyday content, as a way to make the problems easier for older adults. She found that young adults clearly identified these problems as a “math” problem and quickly undertook strategies that would get at the correct answer. Older adults, however, identified the problems as ones that they frequently experience in their lives and could not acknowledge that there was a single correct answer. In our own work on the problems that individuals experience on a daily basis, couples have been asked to describe the most difficult problem of the week. In Table 18.1, two descriptions of the same problem are given by a wife and husband; although the problems are quite different in emotional, interpersonal, and task components. This example, and others, point out how crucial appraisal processes are to the solution of everyday problems.

Different appraisal processes may produce a different problem solving process during adulthood. That is, appraisal of the problem as well-defined and contained may involve more of a cognitive system of encoding the elements of the problem, combining information, and selecting a response (Sternberg, 1984) or analytical versus heuristic cognitive processing (Klaczynski & Robinson, 2000). Appraisal of the problem as interpersonal and shared with another person may activate a process of shared decision making, using interpersonal skills to not only solve the task at hand, but to maintain the interpersonal relationship (Meegan & Berg, 2002). Such appraisal processes may vary over time for

Table 18.1 Multiple Perspectives of the Same Everyday Problem

Wife's Description:

I quit my job and got my son in job core up in Oregon because he has been in trouble in Salt Lake. Well job core called and said "oh Michael can't make it" so they shipped him back home and so we said "well you have to get a job and these are things you have to do" because he doesn't like to do those things because he likes mom to take care of him. This makes us so mad. So, we gave him a car and told him there were certain things he would have to get done. He would still come home at 4:30 in the morning, sleep all day, none of the job hunting. So we changed the locks as of Saturday, on the door and told him he had to find a place to live.

Husband's Description:

Having to change the locks on the house. Well I had to go get two bolts and put it on the deadbolt and had to take the knob set over to home depot and have them rekey it to match the dead bolt.

the same problem. Take the case of a couple describing a problem with their adult son. The wife appears to initially appraise the problem as one of assisting her son in successfully securing job skills to be independent. Currently, however, her goals revolve around removing herself from the problem situation and minimizing her distress.

These examples highlight the importance of problem *definition* in activating the process of everyday problem solving. Thus, our integrative framework will detail some of the factors that are involved in the initial appraisal process as it drives solution of both well-defined and ill-defined everyday problems. We briefly focus on how contextual (e.g., domain of problem, social context) and individual factors (e.g., age, gender, personality) affect how problems are appraised. We then provide a more detailed discussion of some of the cognitive, emotional, and physiological processes that are involved as individuals approach problems and enact strategies to deal with the problems.

Contextual Factors

The context of the problem has been an important factor relevant to how problems are solved, particularly within the ill-defined approach to everyday problem solving (Berg & Calderone, 1994; Blanchard-Fields & Chen, 1996). Although there are numerous contextual factors that could be involved, we will focus on the two that have received empirical attention in the everyday problem-solving literature: domain of the problem and the social context of the problem.

Domain of the Problem. Much of the literature on the ill-defined approach to everyday problem solving has occurred within a contextual perspective to everyday problem solving (Berg & Klaczynski, 2002; Blanchard-Fields & Chen, 1996). Within a contextual perspective, everyday problem solving is examined in terms of the cognitive, social, motivational, and cultural factors that influence adaptation to specific contexts (Berg & Calderone, 1994; Sternberg, 1986). Much of this research has instantiated "context" as domains of problem solving. Multiple domains have been examined (e.g., consumer, health, friends, family), with more recent work contrasting instrumental (involving competence concerns) from interpersonal ones (involving social/interpersonal concerns) (see Berg et al., 1998; Blanchard-Fields et al., 1997).

Context is important for understanding everyday problem solving, as the normative context of everyday problem solving likely varies across adult development (Berg & Calderone, 1994). For example, Sansone and Berg (1993) found that the domains of

individuals' actual everyday problems varied across adult development. For college-aged students, multiple contexts were mentioned (e.g., family, friends, work, leisure, school, health), whereas for older adults, the family context and problems dealing with health were most frequently mentioned. For middle-aged adults, everyday problems frequently occurred from the juxtaposition of multiple domains (e.g., conflicts between family and work; work and leisure). These different domains likely reflect that different developmental life tasks (Heckhausen, 1997; Hooker, 1999) and problems (Folkman et al., 1987) actually occur for adults across the life span.

The fact that everyday problems occur within different domains at different points during adult development may be important in understanding aspects of appraisal. Berg et al. (1998) found that interpersonal domains (e.g., family, friends) were largely associated with interpersonal goals, whereas instrumental domains (school, work) were associated with a combination of interpersonal and competence goals. The domain in which a problem occurs also affects the type of problem solving strategy that a person uses. Interpersonal domains draw from interpersonal strategies for their solution (e.g., utilization of others), whereas instrumental domains draw from more problem-focused strategies for their solution (Berg et al., 1998; Blanchard-Fields et al., 1997). There is some evidence that older adults' problem-solving strategies may be most sensitive to the effects of context (Blanchard-Fields et al., 1997), although other studies show no age differences in how strategies relate to context (Berg et al., 1998; Folkman et al., 1987). Problems across domains may be appraised as differentially controllable and familiar and may evoke more perceived ability to resolve the problem (Artistico, Cervone, & Pezzuti, 2003; Blanchard-Fields et al., 1997).

These results suggest that domains may be associated with different cognitive, emotional, and physiological processes. For instance, the school domain may be associated with more well-defined problems appraised in terms of competence and processed with an analytical strategy. However, family domains may activate high emotion and make salient roles and responsibilities that evoke a need to modulate emotion and physiological arousal. Future work will benefit from an understanding of the different appraisal and problem-solving strategies that are evoked as problems occur in different contexts.

Social Context of the Problem. Everyday problems vary in the extent to which they occur in a social context (Berg, Meegan & Deviney, 1998; Blanchard-Fields et al., 1997). Some everyday problems are oriented toward the solution of a problem that involves only the individual (Berg et al., 1998). However, from the problems that adults report experiencing in their everyday lives, it is clear that other individuals are frequently the source of the problem, involved in the goals that individuals set, and are substantially involved in the solution of the problem (Berg et al., 1998; Meegan & Berg, 2002).

In our work, an important factor in understanding whether others are substantially involved in the solution of everyday problems involves an appraisal of "whose problem is it?" When individuals appraise an everyday problem as "shared" with another close relationship partner, that partner is more likely to be involved in a collaborative manner (Berg et al., in press; Wiebe et al., 2005). Many of the everyday problems examined in the literature (e.g., finances, medical decision making and prescription compliance, interfacing as a consumer with others) are likely ones that individuals share with a spouse, another family member, or a close friend. Older couples report that they prefer to work collaboratively with their spouse (Strough, Patrick, Swenson, Chen, & Barnes, 2003), believe that working with their spouse will be superior to working with other partners

(e.g., friends, unacquainted individuals) more so than do than young adults (Dixon, Gagnon, & Crow, 1998), and they collaborate more frequently when they are satisfied in their relationship. As individuals age and lose close relationship partners (most particularly the spouse), other potential collaborators may be important to consider, such as friends and adult children (Cicirelli, 2006).

When an everyday problem is appraised as shared it may initiate a process of collaborative problem solving (Dixon, 1996; Meegan & Berg, 2002; Strough & Margrett, 2002). The collaborative problem-solving literature has focused on (1) how collaboration may optimize problem-solving performance through the utilization of transactive memory or cognitive systems (Johansson, Andersson, & Ronnberg, 2000; Wegner, Erber, & Raymond., 1991) or (2) compensate for cognitive decline experienced in one or both members of the couple (Dixon, 1996). Dixon and Gould (1992) found that older couples performed as well as younger couples on a text memory task, where typically substantial age differences are seen in individual performance. When examining the strategies for remembering text, Gould et al. (1994) indicated that older adults may use collaboration to compensate for cognitive declines through their greater use of strategy discussion at a time in recall when individual-based story recall is waning. Older adults not only benefit from direct forms of collaboration (i.e., when two or more individuals physically work together), but also from mentally evoking the involvement or suggestions of another. Staudinger and Baltes (1996) found that performance on a wisdom problem-solving task benefited as much from an “internal dialogue” with another individual as from actually working side by side with another person.

Very recent research is acknowledging that the interpersonal process of collaboration may vary in ways that either facilitate or impede collaborative performance. Couples vary in the way in which they interact (e.g., affiliation and dominance), which could affect how well the couple works together. Berg, Johnson, Meegan, and Strough (2003) found that couples who were interdependent and warm performed better on an errand running task and a vacation decision task than those who were more separate and less warm. Berg et al. (2007) found that when the person taking control over the task was the more cognitively capable member, performance was enhanced on an errand running task.

In summary, the appraisal of an everyday problem and the types of strategies employed may vary depending on the domain in which the problem is found as well as aspects of the social context (e.g., Whose problem is it? Who is a potential collaborator?). Numerous other contextual factors could be addressed in this literature, such as the cultural context of everyday problem solving, most notably cultural differences in the level of independence and interdependence among individuals (Markus & Kitayama, 2003).

Individual Characteristics

Numerous individual difference characteristics can be examined as important in understanding how individuals appraise everyday problems (e.g., age, gender, personality, self-concept). We will focus on three factors that have been examined in this literature: age, gender, and personality.

Age. A growing literature exists on how age differences may be involved in how individuals appraise everyday problems. As indicated above from Sinnott's (1989) findings, age may be involved in whether older adults view an everyday problem as one that is well- versus ill-defined. Similar results have been discovered by Laipple (1991) who

found that older adults were more likely to interpret logical problems involving plants as experienced problems involving their own plants rather than purely logical hypotheticals. Similarly, Berg et al. (1999) found that adults of all ages will impute their own experience into hypothetical everyday problems they are given to solve, which may alter aspects of the everyday problem-solving process. These results seem to suggest that older adults may be more likely to interpret what researchers view as “well-defined problems” as “ill-defined problems” in that there is not a single correct solution but rather a wide array of solutions based on experiential knowledge.

Older adults may also be guided by different goals in everyday problem-solving situations, in part because their problems are activated within different domains. They may gravitate toward complex interactions between interpersonal and competence goals in everyday problem-solving situations rather than to simply focus on either interpersonal or competence goals (Berg et al., 1998). Further, their interpersonal goals may be less focused on resolving interpersonal problems, but rather on creating interpersonal harmony and positive emotional regard in dealing with everyday interpersonal problems (Carstensen, Isaacowitz, & Charles, 1999; Rook, Sorkin, & Zettel, 2004; Sorkin & Rook, 2006). These different goals may arise from shifts in larger motivational structures (Brandtsadter & Greve, 1994; Heckhausen & Schulz, 1995) that allow for reappraisal of problems and shifting of goals or an acknowledgement that time is more limited (Carstensen et al., 1999).

Gender. Very little research has focused on gender differences explicitly when examining how individuals may appraise everyday problems. The research that has examined gender has focused on how males and females may be sensitive to the interpersonal goals and strategies present in everyday problems. Strough, Berg, and Sansone (1996) found that females from adolescence throughout late adulthood were more attuned to the interpersonal issues present in everyday problems than were males. In describing everyday problems that they experienced, females were more likely to mention interpersonal relationships and that their goals were more focused on other people than males. However, when the context of the problem was controlled, gender differences in goals were eliminated.

These gender differences in other-focused and interpersonal goals in problem appraisal may relate to the gender differences reported by Watson and Blanchard-Fields (1998) in preferences for strategies for dealing with everyday problems. They found that gender differences were most apparent in interpersonal conflict situations. Women were less confrontational in these situations and sought more social support, whereas men responded with more problem-focused action. Further, gender differences may exist in how individuals collaborate in problem-solving situations in terms of preferences for collaboration and the affiliative process of collaboration (Berg et al., 2007; Margrett & Marsiske, 2002).

Personality. As personality involves a consistent pattern of interacting with one’s environment based on one’s thoughts, feelings, and actions (Roepke, McAdams, Lindamer, Patterson, & Jeste, 2001), it may be a factor in how individuals appraise and deal with everyday problems. Consistent with the research on personality and coping, factors such as neuroticism, optimism, and hostility may predispose individuals to identify situations as “problems” and activate different processes of cognitive, emotional, and physiological approaches to everyday problems. Although the role of personality in understanding everyday problem solving has not been addressed, we draw on the work in stress and coping (given the commonality between the hassles examined within the stress and coping

literature and problems within the everyday problem literature) to make links between personality and facets of the everyday problem-solving process.

Neuroticism. The role of neuroticism in understanding facets of stress and coping has been well researched in the stress and coping literature. Neuroticism has been described as a heightened sensitivity for negative stimuli that may influence behavior, cognitions, and negative mood (Tellegen, 1985). Individuals with high levels of neuroticism are more inclined to report everyday stressors and deal with them in a less effective manner (Holahan & Moos, 1987; Maitlin, Wethington, & Kessler, 1990). Highly neurotic individuals may create problems for themselves in that they report higher emotional reactivity to situations that contain negative mood and perceive potentially stressful situations in a more negative manner (Larsen, & Ketelaar, 1989).

The relationship between neuroticism and the experience of everyday stressors has recently been explored through daily diary studies. Individuals high in neuroticism were more likely to report stressful events and experience higher levels of distress on a daily basis (Bolger & Schilling, 1991) than individuals low in neuroticism. In addition, when faced with stressful events, individuals high in neuroticism employ less effective coping strategies which may result in higher levels of negative affect and increased everyday problems (Bolger, 1990; Lazarus & Folkman, 1984). Although it remains unclear whether individuals high in neuroticism are actually exposed to more daily stressors or merely more likely to report them, it is apparent that highly neurotic individuals experience higher levels of distress on a regular basis. Thus, it might be expected that highly neurotic individuals might expend energy managing emotion and physiological reactivity when solving everyday problems rather than seeking social support or relying solely on problem-focused solutions, and they may exhibit less cognitive control (Robinson & Tamir, 2005).

Optimism. Optimistic individuals are described as those who have a generalized mentality that they will experience good things in their future (Carver & Scheier, 2001). In contrast to neurotic individuals, optimists may perceive everyday problems in a positive manner. Optimism may not only facilitate the orientation toward accomplishing positive goal states, but also processing negative information relevant to accomplishing the goal (Aspinwall, 2001). Thus, optimism may affect appraisal processes such that optimists report fewer daily stressors and more adaptive coping strategies when stressors do arise (Carver & Scheier, 2001). The positive affect that accompanies optimism may also be associated with cognitive flexibility that encourages the generation of multiple solutions to everyday problems (Fredrickson & Joiner, 2002) and effective decision making (Isen, 2000). In addition, Tugade and Fredrickson (2002) find that positive emotional states may affect interpretative processes after a problem has occurred such that the problems are interpreted in a more positive light. Thus, optimism may be especially beneficial to the solution of everyday problems by affecting appraisal processes, generation of solutions, and re-appraisal after strategies have been implemented.

Previous research has also demonstrated that optimism predicts a host of other health-related outcomes such as longevity, medical outcomes following coronary artery bypass surgery, decreased chance of reoccurring cardiac events following angioplasty, and childbirth (Carver & Gaines, 1987; Carver & Scheier, 2001; Scheier et al., 1999). These findings suggest that optimists may not experience the heightened physiological arousal that neurotic individuals do when faced with stressful events. Further there is some suggestion that predisposition to higher positive emotionality may provide a useful resource in speeding cardiovascular recovery and allaying perceptions of threat when faced with a stressor (Tugade & Fredrickson, 2004).

Hostility. Hostility can be defined as a set of cognitive, affective, and behavioral characteristics (Smith, 1992) that influence the way in which the individual perceives others, responds to others in social situations, and experiences emotions such as anger. Hostility becomes a particularly relevant personality characteristic for everyday problem solving as so many of the problems that adults experience involve others in rather substantial ways (Berg et al., 1998; Hartley, 1989). Adults describe that others are central to everyday problems (Berg et al., 1998), that their goals often involve goals for other people, and that their problem-solving strategies involve others to address the problem situation. Hostility has been described as a lens through which individuals hold hostile expectations regarding how others will act (Allred & Smith, 1991). Hostile individuals may help to create social environments that are more antagonistic, due in part to their low competence to operate in social situations (Smith, 1992; Smith, Uchino, Berg, Florsheim, Pearce, Hawkins, et al., 2007). Hostile individuals may interpret everyday social problems as ones where the social context is hostile and also not be able to enlist the aid of other individuals when needed to solve their everyday problems. A particularly important way that adults may use their social context is through collaboration with close relationship partners. Hostile individuals, by virtue of their hostile attribution bias, may not be able to configure these collaborative relationships and/or maintain them over time. Further, the negative emotional and physiological reactivity in such everyday interpersonal situations may draw individuals toward expending effort to reduce physiological and emotional reactivity responses.

In summary, these contextual and individual factors transact so that not all contextual factors are activated in the same way for all individuals. The combination of contextual and individual factors affect the appraisal of the problem and are thought to influence the balance of subsequent cognitive, emotional, and physiological processes that are involved as individuals solve everyday problems. We will now review relevant literature that addresses the cognitive, emotional, and physiological processes that may underlie everyday problem-solving performance.

Cognitive Process of Everyday Problem Solving

Although the field of everyday problem solving arose as a way to examine cognitive processes in everyday life, there has been surprisingly little in the aging field that really examines the cognitive processes involved in dealing with an everyday problem either from the ill-defined or well-defined approach. Rather, the focus in the literature thus far has largely been on examining how traditional cognitive tests (e.g., intelligence tests) relate to overall performance on the everyday problem-solving tests (e.g., Allaire & Marsiske, 2002) and whether age differences exist in everyday problem-solving performance (Thornton & Dumke, 2005). Thus, we know relatively little about the role of specific cognitive processes and everyday problem-solving performance.

Much of what we do know about age differences in cognitive processes involved in everyday problem-solving tasks comes from work on everyday decision making and reasoning, which represents in some ways a mid-point along what could be viewed as a continuum between well-defined and ill-defined everyday problem solving. Everyday decision making has examined a range of problems including decisions regarding purchasing cars (Johnson, 1990), over the counter medications (Johnson & Drungle, 2000), financial decisions (Chen & Sun, 2003; Hershey & Wilson, 1997), complex decisions regarding health, nutrition, and finance (Finucane, Mertz, Slovic, & Schmidt, 2005) to medical decisions as to treatments concerning breast cancer (Meyer, Russo, & Talbot, 1995) as

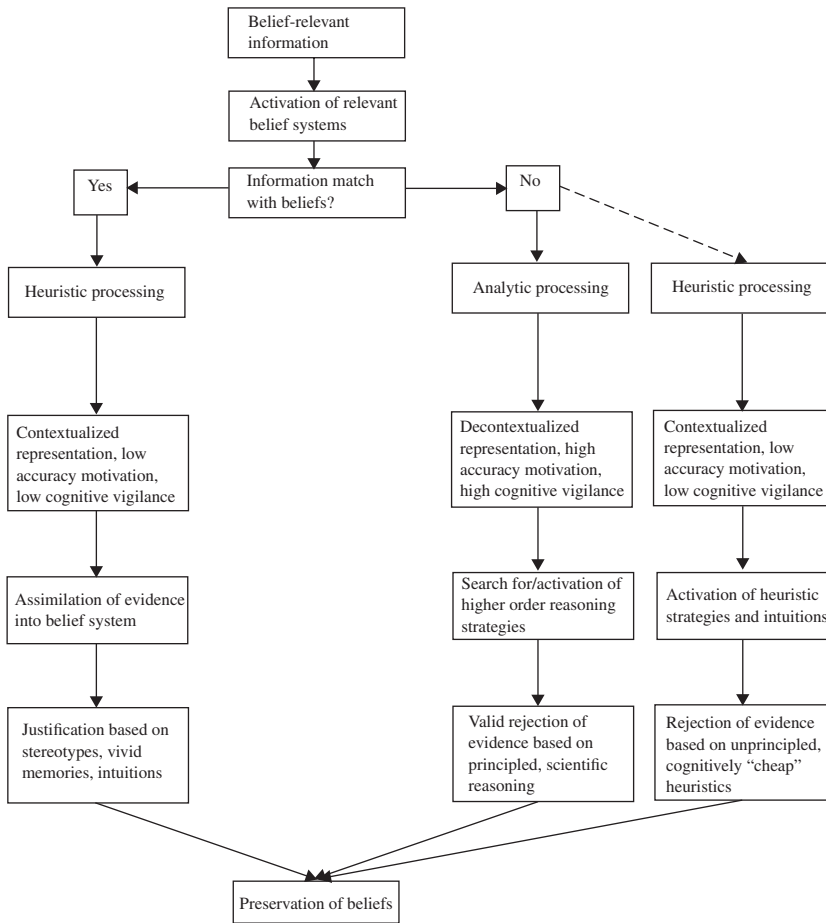
well as hormone replacement therapy (Zwahr, Park, & Shiffren, 1999). These problems are not really well-defined in that they contain more than one solution, but perhaps not as ill-defined as are examined in the contextual literature as there are a limited number of decisions that can be made.

Findings from the decision making literature reveal that older adults frequently use less information to make a decision (e.g., Finucane et al., 2005; Johnson, 1990; Johnson & Drungle, 2000; Meyer et al., 1995) and that older adults sometimes attend to different kinds of information (Johnson & Drungle, 2000). Results are much less consistent, however, in whether the quality of the overall decision of older adults is disadvantaged relative to other groups, because of these differences in process. For instance, Meyer et al. (1995) found that although older adults searched for less information prior to making a decision, there were no age differences in the final treatment selected for breast cancer. Johnson and Drungle (2000) found that although older adults were slower to review information about over the counter medications, they displayed more organization in their search patterns. The ability of older adults to make a similar quality decision, despite differences in process may relate to their greater knowledge about treatment decisions (Meyer, Talbot, & Ranalli, 2007, but not always their greater experience with these decisions (Johnson & Drungle, 2000; Meyer et al., 1995). Experience may be important in understanding strategy flexibility (Patrick & Strough, 2004) and information considered (Berg et al., 1999). Age differences in processing have been described as a “mature” style by Sinnott (1989), and includes more of a top-down approach to gathering data and making decisions, as opposed to the bottom-up approach of younger adults (see also Meyer et al., 1995).

The decision-making literature has often linked the type of “mature” processing style of older adults to their greater use of a heuristic that may compensate for declining cognitive function (Chen & Sun, 2003; Johnson, 1990). Klaczynski and his colleagues, however, have explored how individuals of all ages rely on heuristic processing when problems are consistent with one’s beliefs (Klaczynski, 2000, 2001; Klaczynski & Robinson, 2000), and that middle-aged and older adults may be more likely to engage in heuristic processing than young adults. Klaczynski’s research demonstrates that individuals shift between two different processing systems (one analytical, the other heuristic) across problems that are either consistent with or inconsistent with one’s belief systems. For instance, Klaczynski and Robinson (2000) explored how adults reasoned about problems that were either consistent with or inconsistent with their beliefs regarding religion and social class differences. The fact that middle-aged and older adults demonstrated more bias in their reasoning in terms of their beliefs, suggests that adults may rely on their own personal experiences to a greater extent in dealing with everyday problems than young adults.

Two-process theories of cognition have been used successfully in the child development and social psychological literature to address this variability in cognitive functioning in reasoning (Klaczynski, 2005; Stanovich & West, 1999) and decision making (Stanovich, 1999), and may fruitfully be applied to understanding adult age differences in everyday problem solving. In two-process theories (see Figure 18.2), decision making is determined by the interaction of two ongoing cognitive systems. Specific features of the context (e.g., familiarity of the task, accuracy demands) as well as of the individual (e.g., beliefs relevant to the problem) interact to push processing toward one system or the other on a specific problem.

Several properties of the two systems can be distinguished. Heuristic processing is highly contextualized processing that operates on representations where problem



A two-process model of motivated reasoning biases. From Klaczynski (2000). Adapted with permission of Elsevier Science.

Figure 18.2 A two-process model of motivated reasoning biases.

content is familiar and rich with existing beliefs and schemas (Stanovich & West, 1997). Analytic processing is de-contextualized and is more likely activated when the task is in some sense stripped of its familiarity and the activation of beliefs and schemas. Brainerd and Gordon (1994) relate these two systems to different types of encoding, where analytic processing is associated with verbatim traces and heuristic processing is associated with gist traces. Klaczynski's (2005) research has shown that the heuristic system predominates in daily life and may do so because it is more efficient (i.e., produces the same outcome but in a shorter time with less cognitive effort; see also Scribner, 1986).

We would like to suggest that these two cognitive systems may be useful in understanding the different results found in the well-defined and ill-defined approaches to everyday problem solving. In well-defined problem situations, the task characteristics described above (instructions to circle a single correct answer that makes salient accuracy demands) may activate the analytical processing system. However, ill-defined problems with their rich contextualized features including emotion, interpersonal, and task demands may activate the heuristic processing system. Older adults by virtue of their

greater use of gist encoding (Adams, Labouvie-Vief, Hobart, & Dorosz, 1990; James, Burke, Austin, & Hulme, 1998), may gravitate more toward the heuristic processing system even in well-defined tasks.

There is still much to uncover concerning the cognitive processes involved as individuals solve everyday problems. The information that individuals selectively encode and process and how that information is used to select a decision or a problem-solving strategy are important to understand. The two-process model of cognition may be a beneficial framework to begin to explore these processes that may assist in the integration of well- and ill-defined approaches to everyday problem solving. The activation of the heuristic processing system may be especially affected by the emotions made salient by the rich context associated with its activation. We now explore how the processing of emotions in everyday problem-solving situations may be useful in understanding cognitive processing.

Everyday Problem Solving and Emotion

We have argued up to this point that appraisal processes, as defined by contextual and individual factors, pull for enactment of cognitive strategies consistent with problem definition. Similarly, when discussing the contribution of emotion and emotion regulation in everyday problem solving, the distinction between well-defined and ill-defined problems becomes important (Allaire & Marsiske, 2002) in how adults approach problem situations. Researchers using the well-defined approach to problem solving do not typically acknowledge the role of emotion in solving problems. In contrast, the majority of research within the ill-defined tradition, acknowledges the importance of emotion in understanding how individuals approach, solve, and appraise everyday problems (Blanchard-Fields, 1996; Blanchard-Fields et al., 1997). In fact, this research indicates that older adults may solve everyday problems better by virtue of their greater ability to regulate the emotions present in the problem (Blanchard-Fields, 1986; Watson & Blanchard-Fields, 1998). Emotional and cognitive systems appear to have differing developmental trajectories with both developmental changes being important for understanding the solution of everyday problems in adulthood (Diehl, Coyle, & Labouvie-Vief, 1996; Labouvie-Vief & Medler, 2002). In this section we will discuss adult age differences in emotional experience and how these developmental differences shape the importance and structure of emotion in solving everyday problems in terms of the ill-defined and well-defined traditions.

The suggestion that emotional modulation may be a primary strategy for containing everyday problems is reflected in the general literature regarding the emotional expression, experience, and control of emotions in later adulthood. Several studies indicate that older adults process and use emotions to interact with the environment in a more adaptive way than younger adults (Carstensen, Gottman, & Levenson, 1995; Carstensen, Pasupathi, Mayr, & Nesselrode, 2000; Lawton, Kleban, Rajagopal, & Dean, 1992). For example, older adults are less likely than young adults to experience long periods of negative emotion and may strive to regulate these negative emotions (Lawton et al., 1992) such that they often report less distress when these emotions occur (Carstensen et al., 2000). Similarly, Aldwin, Sutton, Chiara, and Spiro (1996) found that older individuals often appraised problems as trivial perhaps indicating that appraisals become less emotionally charged in late life. These findings indicate that as individuals age they may be more likely to appraise everyday problems as less emotionally salient but also may be more effective at regulating negative affect generated by everyday problem situations

through the use of cognitive control and reappraisal (Carstensen et al., 1991; Carstensen et al., 2000).

Much of the work within the ill-defined approach to everyday problems has examined emotion modulation strategies borrowed from the stress and coping literature (i.e., emotion-focused coping; see Lazarus & Folkman, 1984). Older adults may utilize more emotion-focused strategies or strategies aimed at controlling the internal environment for managing everyday problems (Blanchard-Fields & Irion, 1988; Folkman, Lazarus, Pimley, & Novacek, 1987; Lazarus & Folkman, 1984; Levine & Bluck, 1997) than do young adults. For example, Folkman et al. (1987) found that older adults were more likely to use strategies for coping that included distancing and positive reappraisal whereas younger adults relied more on instrumental coping strategies for managing stressful experiences. These attempts to regulate emotions may be a function of increased affect reactivity to stressful experiences. Mroczek (2001, 2004) found that older adults show a stronger association between stress and negative affect than younger individuals. However, other research has suggested that older adults do not exclusively use more emotion-focused strategies but rather use strategies that are complimentary to individuals' problem definitions (Berg et al., 1998). For example, if a particular problem was defined as interpersonal, the use of managing or controlling others was employed. These findings suggest that older adults may be more likely to use emotional reappraisal as a way of compensating for negative emotions that arise during problem solving contexts or matching different goals in these situations.

The ability to regulate emotions may be of particular importance for solving interpersonal problems (Blanchard-Fields, 1997; Fredrickson & Carstensen, 1990; Sansone & Berg 1993). Carstensen and colleagues (1991; Carstensen et al., 2000) link older adults' greater ability to regulate emotions with the idea that their goals for social interaction are oriented more toward emotional regulation (i.e., increasing positive mood and minimizing negative mood) than younger adults (Carstensen, 1991; Carstensen, Isaacowitz, & Charles, 1999; Carstensen et al., 2000; Lang, Staudinger, & Carstensen, 1998). Blanchard-Fields et al. (1995) found that in contexts high in emotional salience (e.g., interpersonal domains) older adults used more passive-dependent and avoidant strategies and more emotion regulation strategies than did middle-aged or younger adults.. Further, these differences were confined to problems high in emotional salience; there were no age differences in low or medium emotionally salient problems (Blanchard-Fields et al., 1997). However, this is not to say that older individuals exclusively focused on emotional regulation. When solving interpersonal conflict situations, older adults preferred emotion-focused strategies in combination with problem-focused coping and increased cognitive analysis, whereas younger age groups preferred passive dependent strategies. This might suggest that older adults manage their emotional states in the context of emotionally charged problems by using more suppression of emotion and acceptance of the problem situation, perhaps due to their different goals (Sorkin & Rook, 2006), compared to younger adults who often prefer to understand emotions and use outward expression of emotion (Blanchard-Fields et al., 1995; Blanchard-Fields et al., 1997). Thus, older adults may demonstrate a more diverse and perhaps flexible repertoire of strategies that include both emotion and problem-focused coping regarding everyday problems.

Affective Complexity. Labouvie-Vief and colleagues (Labouvie-Vief et al., 1989a, 1989b) examined a different facet of emotional experience, that is, the role of affective complexity and differentiation in everyday problem situations. This is consistent with her work that views cognitive functioning as becoming increasingly intertwined with affective

understanding during middle and late adulthood. Affect complexity involves the ability to analyze emotional reactions at high levels of conceptual complexity and experience the ambiguity of mixed emotions. Diehl, Coyle, and Labouvie-Vief (1996) suggest that the ability to think dynamically about emotion is associated with more adaptive emotional responses linked with mature and flexible coping (e.g., impulse control, acceptance, cognitive restructuring). Labouvie-Vief et al. (1989a) have found that ego level and cognitive ability have been associated with older adults' ability to use mature and flexible coping strategies. Further, they found that middle-aged and older adults were more cognitively and affectively integrated than younger adults, indicating high affect complexity and high maintenance of positive affect (Labouvie-Vief & Medler, 2002). However, there is a potential decline in affect complexity and differentiation in late adulthood (i.e., focus on the positive, minimize the negative), that may prevent rich explorations of affect and problem solution. Thus, cognitive complexity and affective integration may contribute to the use of greater emotion regulatory strategies leading to more effective problem approach.

Emotion Regulation. Thus far we have discussed the importance of emotion regulation in the context of older adults managing everyday problems that are ill-defined and that are frequently interpersonal. This literature indicates that emotion regulation is an important goal in daily life and a mechanism by which a person copes with problems, especially when the context is fraught with emotional content. Additionally, results indicate that affect and cognition are increasing intertwined in middle age and later adulthood (Labouvie-Vief, 2003). We are now starting to see research emerge as to how emotion may function within the well-defined problem solving literature that may help us identify the overarching contribution of emotion to well-defined problem solving.

In the literature on more traditional or well-defined problem solving tasks, emotion is examined as it may interfere with the ability to manage problems effectively (e.g., heightened arousal from anxiety) and impede the cognitive functioning necessary to generate and implement effective solutions (Lazarus & Folkman, 1984). For example, Phillips, Smith, and Gilhooly (2002) found that induced positive and negative mood influenced older adults', but not younger adults' ability to effectively solve a typical planning problem where the goal was to efficiently achieve the correct solution by using the minimum number of moves to do so. The authors concluded that emotion regulation strategies took priority above cognitive efficiency for older adults. Further, older adults recovered more quickly from the negative mood states than younger adults (Phillips, Smith, & Gilhooly, 2002). These findings might suggest that older adults would be initially impaired in well-defined everyday problem-solving tasks but would be quicker to adjust to emotionally salient problems over time. This is important as many everyday problems are ones that have a long temporal extension.

Although emotion may be a liability when attempting to find a correct solution to a problem, other research has shown that emotion can produce both gains and losses in cognitive control and memory. Dreisbach and Goschke (2004) found in a cognitive set-switching paradigm that affect induction was associated with increased cognitive flexibility and reduced perseveration, but that this occurred at the cost of increased distractibility. This work did not examine the effect that adult age may have on these effects. Older adults seem especially to benefit when the content of the material is positive, termed the positivity effect. For example, Mather and Knight (2005) found that older adults used more elaborative processing when viewing positive images as they remembered more positive images compared to negative images (see also Carstensen & Turk-Charles, 1994; Mikels, Larkin, Reuter-Lorenz, & Carstensen, 2005).

Taken together, the findings on how affect impacts cognitive performance and memory efficiency and flexibility suggests that, to the extent that emotional goals are incompatible with cognitive outcomes (e.g., efficiently solving a puzzle), emotion may relate to lower ability to achieve effective solutions. However, if the emotional goals are consistent with the task (e.g., memory for emotional imagery or content), performance is improved. If emotion regulation strategies take priority, one must be able to shift from cognitive control to mood management. If this control is taxed, the individual may not be able to focus on emotional goals. This fit between goals and strategies harkens back to the literature within the ill-defined tradition where emotion regulation is a goal for older adults and leads to greater emotion-focused coping.

In general, the ill-defined and well-defined traditions of everyday problem solving are rich with the notion that emotion plays an important role in how individuals solve everyday problems. There also appears to be a large overlap between how emotion may be acting in these very disparate contexts. We see that in both traditions emotion is integral to how individuals appraise problem-solving situations, set goals, process the information, enact strategies, and the effectiveness of those strategies. However, these two literatures have as of yet come together to form a comprehensive understanding of where emotional processes come into action with consideration of problem context, individual difference variables, physiological arousal, and social resources.

Physiological Processes

The field of everyday problem solving has focused on cognitive resources and, to some extent, emotion regulation as individuals manage daily problems. The physiological processes involved as adults solve such problems have, however, not been systematically examined. Currently, ongoing research in several laboratories aims to address whether older adults are more physiologically aroused as a result of experiencing everyday problems compared to other aged adults and whether this arousal may impair effective solutions.

The idea that daily stressful events are associated with higher blood pressure reactivity is supported in the work of Kamarck et al. (2005). The extant literature is much less clear on whether there are reliable age differences in reactivity to daily stress. Drawing from the work examining individuals in marital conflict situations, older adults show lower physiological responses (Levenson, Carstensen, & Gottmann, 1994) than middle-aged adults. However, physiological responses to acute stressors (e.g., a prepared speech task) show elevated cardiovascular reactivity in older adults as compared to younger adults (Jennings, Kamarck, Manuck, Everson, Kaplan, & Salonen, 1997; Uchino, Holt-Lunstad, Bloor, & Campo, 2005).

In our research, we have examined the physiological reactivity of middle-aged and older adult couples as they experienced everyday stressors in their daily lives (Uchino et al., 2006). Individuals' ambulatory blood pressure and heart rate were monitored for one day as they completed diaries about mood and experiences of an everyday stressor. Although older adults reported less negative affect to daily stress than younger adults, they experienced greater increases in blood pressure. These results point to the possibility that self-reported affect and physiological responses may be uncoupled in daily life (Cacioppo & Berntson, 1992). Although we do not have data on coping processes, it is possible that coping strategies may be responsible for the uncoupling of affect and physiological reactivity. For example, given the literature, it may be the case the older adults used greater emotion-focused strategies to manage everyday problems, thereby regulating affect but not having benefits for physiological responding.

In other recent work, Tugade and Fredrickson (2004) found that when faced with anticipation of a laboratory stressor, individuals characterized by high resiliency (e.g., flexible management of stressful encounters, modification to meet environmental demands) had faster cardiovascular recovery post stressor. They also found that those characterized by high resiliency were more likely to find positive meaning in everyday problems, *in vivo* (Tugade & Fredrickson, 2004). Such results are consistent with work on stress exposure and immune system dysregulation, which further details how coping responses that are matched with the appraisal of the stressor may either prolong or reduce physiological arousal. Hawley et al. (2005) found that if a stressor is perceived to be controllable to some extent active coping may temporarily increase heart rate, blood flow and physiological reactivity, and this may be the best way to mobilize resources for problem solution. However, if the stressor is uncontrollable, active coping may unnecessarily activate physiological response without promise of resolution. Here we see the importance of the temporal nature of the everyday problem in understanding physiological dysregulation and chronic stress exposure.

Taken together, these results might suggest that acute well-defined everyday problems may not perpetuate dysregulation of cardiovascular or immune system function. However, when exposure increases or becomes ill-defined and chronic this may lead to health declines. Further, this work reveals that older adults may be at a greater risk for dysregulation in immune system function. Our initial work in this area and the work of others provide fertile ground for additional investigations that are of interest in the field to examine additional elements of physiological response (e.g., galvanic skin response, cortisol) as it relates to coping with daily problems and laboratory stressors.

The physiological processes underlying everyday problem-solving performance may be helpful in understanding how coping with everyday stressors may hold long-term health implications. For example, maladaptive or avoidance coping strategies such as increased substance abuse, wishful thinking, and hostile reaction have been associated with ineffective or negative health outcomes such as increased risk of cancer and cardiovascular disease (Bolger, 1990). Effective coping strategies (e.g., planful problem solving, seeking social support) have been associated with more positive health benefits. The accumulated effects of physiological arousal and the continued utilization of ineffective coping strategies may lead to long term health concerns. Understanding how physiological arousal is experienced and addressed on a daily basis may help address how everyday problems influence physical health.

Our research has also focused on physiological responses as individuals are in collaboration with other individuals. As we have discussed above, a substantial number of the problems that individuals experience on a daily basis involve other individuals and an important way that others are involved is in direct collaboration. The effect of other people as one is engaged in a task on physiological outcomes has been widely explored in the social support literature where social support has been related to several health outcomes such as immune system function, recovery from surgery, and blood pressure reactivity (Scheier, Matthews, Owens, Schulz, Bridges, Magovern, & Carver, 1999; Uchino, Cacioppo, & Kiecolt-Glaser, 1992). Having a marital partner or family member present as one is doing a task is associated with decreased cardiovascular reactivity during social interactions (Holt-Lundstad et al., 2003). The closer the relationship with one's collaborators, the greater is the decrease in physiological arousal experienced (Holt-Lundstad et al. 2003).

In our research, we have examined cardiovascular reactivity as married couples engage in a typical marital conflict task (where couples are asked to engage in a discussion about

a typical area of conflict in their marriage) as well as a collaborative problem-solving task frequently used in the everyday problem solving literature (i.e., an errand running task). As couples engage in the tasks, blood pressure and heart rate are taken. Our results indicate that for all groups (except older husbands), cardiovascular reactivity is much lower in the collaborative problem-solving task than in the marital conflict task. However, the physiological reactivity of older husbands in the collaboration task is as high as it is for the conflict task (Smith et al., 2006). The older husbands' reactivity seems to be due, in part, to having to engage in a collaborative manner on a task in which they perceive (and actually are) more cognitively capable in performing than are their wives (Berg et al., 2004).

These results are suggestive of an important, but only recently examined, component of everyday problem solving, that of physiological arousal. As everyday problems are ones that are frequently experienced as stressors with accompanying negative emotions, physiological arousal may help explain when individuals are able to coordinate negative affect and cognition and when the system is sufficiently taxed that regulatory processes become more difficult to implement. Research is needed that incorporates not only the sorts of ill-defined problems that we have examined in our own research, but examines physiological arousal as it occurs when individuals solve well-defined problems.

Summary and Conclusions

We have presented in this chapter an initial model of everyday problem solving that attempts to integrate the well-defined and ill-defined approaches to everyday problem solving. This model extends beyond the traditional focus on cognitive function and everyday problem solving to understand how everyday problem solving exists within different contexts and how individuals come to these contexts with different resources and abilities. In addition, the model explored the cognitive, emotional, and physiological processes that may be involved as individuals deal with everyday problems. As illustrated throughout our review, these processes are not separable, but interact in complex ways that are beginning to be understood.

This model includes numerous factors that have traditionally been outside the realm of everyday problem-solving research (e.g., personality, physiology). However, we posit that such a broad model may assist us in getting closer to the original goal of everyday problem-solving research, which is to understand how everyday problem solving is associated with successful adaptation to everyday life. Very few studies have explored whether performance on everyday problem-solving tasks is important for understanding successful everyday functioning (Allaire & Marsiske, 2002; Diehl, Willis, & Schaie, 1995). These studies have examined adaptation to everyday life through functional ability as assessed by instrumental activities of daily living (Allaire & Marsiske, 2002), observational counterparts of hypothetical problem solving tasks (Diehl et al., 1995), or clinically meaningful outcomes such as mortality and impaired cognitive status (Allaire & Willis, 2006). These attempts are important ones at establishing the validity of everyday problem-solving measures, especially for adults of advanced age. Future work must expand on these attempts to understand a broader range of adaptational outcomes that may extend to young, middle-aged and young-old adults.

As the field explores adaptation outcomes more relevant to adults in young, middle adulthood, and young-old adulthood, the notion of "successful aging" may be useful as a broad starting point for examining possible outcomes. Successful aging has been conceptualized in two primary ways: by identifying domains of successful functioning (Rowe

& Kahn, 1997) and processes whereby individuals achieve a good person-environment fit (e.g., Baltes & Baltes, 1990; Lawton, 1983). According to Rowe and Kahn (1997), successful aging involves achieving success in cognitive functioning, physical health, and social relations. The ways in which everyday problems are solved may play a role in each of these outcomes, as is implied throughout our review, although the literature has focused heavily on the relation between everyday problem solving and success in cognitive functioning.

The link between everyday problem-solving performance and health outcomes has been noted throughout our review. Particularly within the health domain, individuals who appropriately make good decisions regarding chronic health conditions (e.g., breast cancer, hormone replacement therapy, over the counter medications) may directly benefit from making better decisions (Johnson & Drungle, 2000; Meyer et al., 1995; Zwahr et al., 1999). On an everyday basis, individuals who are at risk for how they appraise and deal with everyday problems (e.g., high in neuroticism, low in optimism, high in hostility) are at increased risk for a host of physical health problems including cardiovascular disease (Smith & Ruiz, 2004), suppressed immune function (McGuire, Kiecolt-Glaser, & Glaser, 2002), and negative health behaviors (Carney, Freedland, Rich, & Jaffe, 1995). An important area for future research will be to examine if these personality risk factors are associated with poor health outcomes as a function of poorer everyday problem solving performance and emotional dysregulation.

Similarly, the role of everyday problem solving in understanding successful social relationships will be an important area for future research. As noted throughout our review, a large part of what makes up a good everyday problem solver is one who can effectively deal with other individuals (see also Hartley, 1989). D’Zurilla and colleagues (Chang et al., 2004) have established that solving social problems is associated with less distress for college students. Additional work linking the ways in which adults solve everyday problems and their goals and strategies in interpersonal situations will be important as negative social exchanges detract from life satisfaction (Sorkin & Rook, 2006).

A second approach to successful aging has emphasized how individuals manage their goals, motivations, and approach to problems in a way that maximizes life satisfaction (see Freund & Riediger, 2003, for a review) and mood. With aging, individuals may shift their goals from assimilating to stressors to accommodating and shifting goals (Brandtstadter & Greve, 1994), change the balance of primary and secondary control attempts (Heckhausen & Schulz, 1995), and increasingly use strategies such as selective optimization with compensation (Baltes & Baltes, 1990). The role of these broader developmental processes in everyday problem solving would be a very fruitful direction for future research and may help to explain some of the age-related differences seen in the strategies individual use to deal with everyday problems and the emotions that they experience.

Consistent with the focus in this volume on adult learning, our integrative model has implications for the study of adult learning. In late life, older adults are faced with many new everyday problems (e.g., health concerns, changes in health insurance, problems oriented around relocation, loss of spouse), which pose challenges for their routine ways of approaching problems. As adults learn to deal with these new types of problems, the broad integrative approach described here may be fruitfully applied to the study of adult learning. Understanding not only the cognitive processes that an individual uses to approach a problem, but the emotional and physiological processes that are activated in a learning environment may shed light on the design of effective learning environments for adults.

In summary, we hope that the broad approach outlined here to work on everyday problem solving across the adult life span will serve to integrate the work on ill-defined and well-defined everyday problems in a way that fosters cross-fertilizations rather than increasing separateness in these literatures. Such an integration is important as the daily problems that adults experience likely involve both well- and ill-defined problems. The field of everyday problem solving has amassed an impressive array of tasks and strategies that adults use as they deal with their everyday world. The task for the future will be to understand how performance on these tasks relates to the complex ways that adults can achieve success in their everyday lives.

Note

Cynthia Berg was supported by grant R01 DK063044-01A2 from the National Institute of Diabetes and Digestive and Kidney Diseases. Some of the research reported in this article was supported by a grant from the National Institutes of Aging R01 AG 18903 awarded to Timothy Smith (PI) and Cynthia Berg (co-PI).

References

- Adams, C., Labouvie-Vief, G., Hobart, C. J., & Dorosz, M. (1990). Adult age group differences in story recall style. *Journal of Gerontology, 45*, 17–27.
- Aldwin, C. M., Sutton, K. J., Chiara, G., & Spiro, A. (1996). Age differences in stress, coping, and appraisal: Findings from the normative aging study. *Journal of Gerontology: Psychological Sciences, 51B*, 179–188.
- Allaire, J. C., & Marsiske, M. (1999). Everyday cognition: Age and intellectual ability correlates. *Psychology and Aging, 14*(4), 627–644.
- Allaire, J. C., & Marsiske, M. (2002). Well- and ill-defined measures of everyday cognition: Relationship to older adults' intellectual ability and functional status. *Psychology & Aging, 17*(1), 101–115.
- Allaire, J. C., & Willis, S. L. (2006). Competence in everyday activities as a predictor of cognitive risk and mortality. *Aging, neuropsychology, and cognition, 13*, 207–224.
- Allread, K. D., & Smith, T. W. (1991). Social cognition in cynical hostility. *Cognitive Therapy and Research, 15*, 399–412.
- Artistico, D., Cervone, D., & Pezzuti, L. (2003). Perceived self-efficacy and everyday problem solving among young and older adults. *Psychology & Aging, 18*(1), 68–79.
- Aspinwall, L. G. (2001). Dealing with adversity: Self-regulation, coping, adaptation, and health. In A. Tesser & N. Schwarz (Eds.), *The Blackwell handbook of social psychology, Vol. 1. Intrapersonal processes*. Malden, MA: Blackwell.
- Baltes, M. M., Mayr, U., Borchelt, M., Maas, I., & Wilms, H.-U. (1993). Everyday competence in old and very old age. An interdisciplinary perspective. *Ageing and Society, 13*, 657–680.
- Baltes, P. B. & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1–34). New York: Cambridge University Press.
- Berg, C. A. (2008). Everyday problem solving in context. In S. Hofer & D. Alwin (Eds.), *Handbook of cognitive aging: Interdisciplinary perspectives* (pp. 207–208). Newbury Park, CA: Sage.
- Berg, C. A., & Calderone, K. S. (1994). The role of problem interpretations in understanding the development of everyday problem solving. In R. J. Sternberg & R. K. Wagner (Eds.), *Mind in context: Interactionist perspectives on human intelligence* (pp. 105–132). New York: Cambridge University Press.
- Berg, C. A., Johnson, M. M. S., Meegan, S. P., & Strough, J. (2003). Collaborative problem-solving interaction in young and old married couples. *Discourse Processes, 35*, 33–58.
- Berg, C. A., & Klaczynski, P. (1996). Practical intelligence and problem solving: Searching for

- perspectives. In F. Blanchard-Fields & T. M. Hess (Eds.), *Perspectives on cognition in adulthood and aging*, (pp. 323-357). New York: McGraw-Hill.
- Berg, C. A., & Klaczynski, P. (2002) Contextual variability in the expression and meaning of intelligence. In R. J. Sternberg & E. L. Grigorenko (Eds.), *The general factor of intelligence: How general is it?* (pp. 381-412). Mahwah, NJ: Erlbaum.
- Berg, C. A., Meegan, S. P., & Deviney, F. P. (1998). A social contextual model of coping with everyday problems across the life span. *International Journal of Behavioral Development*, 22(2), 239-261.
- Berg, C. A., Meegan, S. P., & Klaczynski, P. (1999). Age and experiential differences in strategy generation and information requests for solving everyday problems. *International Journal of Behavioral Development*, 23, 615-639.
- Berg, C., Smith, T., Ko, K., Beveridge, R., Allen, N., Florsheim, P., et al. (2007). Task control and cognitive abilities of self and spouse in collaboration in middle-aged and older couples. *Psychology and Aging*, 22, 420-427.
- Berg, C. A., & Sternberg, R. J. (1985). A triarchic theory of intellectual development during adulthood. *Developmental Review*, 5, 334-370.
- Berg, C. A., Strough, J., Calderone, K. S., Meegan, S. P., & Sansone, C. (1997). The social context of planning and preventing everyday problems from occurring. In S. L. Friedman, & E. K. Scholnick (Eds.), *Why, how, and when do we plan? The developmental psychology of planning* (pp. 209-236). Hillsdale, NJ: Erlbaum.
- Berg, C. A., Strough, J., Calderone, K. S., Sansone, C., & Weir, C. (1998). The role of problem definitions in understanding age and context effects on strategies for solving everyday problems. *Psychology and Aging*, 5, 334-370.
- Berg, C. A., Wiebe, D. J., Butner, J., Bloor, L., Bradstreet, C., Upchurch, R., Hayes, J., Stephenson, R., Nail, L., & Patton, G. (in press). Collaborative coping and daily mood in couples dealing with prostate cancer. *Psychology and Aging*.
- Blanchard-Fields, F. (1986). Reasoning on social dilemmas varying in emotional saliency: An adult developmental perspective. *Psychology and Aging*, 1, 325-333.
- Blanchard-Fields, F., & Chen, Y. (1996). Adaptive cognition and aging. *American Behavioral Scientist*, 39(3), 231-248.
- Blanchard-Fields, F., Chen, Y., & Norris, L. (1997). Everyday problem solving across the life span: Influence of domain specificity and cognitive appraisal. *Psychology and Aging*, 12, 684-693.
- Blanchard-Fields, F., Chen, Y., Schocke, M., & Hertzog, C. (1998). Evidence for content-specificity of causal attributions across the adult life span. *Aging, Neuropsychology, and Cognition*, 5, 241-263.
- Blanchard-Fields, F., & Irion, J. (1988b). The relation between locus of control and coping in two contexts: Age as a moderator variable. *Psychology and Aging*, 3, 197-203.
- Blanchard-Fields, F., Jahnke, H. C., & Camp, C. (1995). Age differences in problem-solving style: The role of emotional salience. *Psychology and Aging*, 10, 173-180.
- Bolger, N. (1990). Coping as a personality process: A prospective study. *Journal of Personality and Social Psychology*, 59, 525-537.
- Bolger, N., & Schilling, E. A. (1991). Personality and the problems of everyday life: The role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality*, 59, 355-386.
- Brainerd, C. J., & Gordon, L. L. (1994). Development of verbatim and gist memory for numbers. *Developmental Psychology*, 20, 163-177.
- Brandtstadter, J., & Greve, W. (1994). The aging self: Stabilizing and protective processes. *Developmental Review*, 14, 52-80.
- Cacioppo, J. T., & Bernston, G. G. (1992). Social psychological contributions to the decade of the brain. Doctrine of multilevel analysis. *American Psychologist*, 47, 1019-1028.
- Carstensen, L. L., Gottman, J. M., & Levenson, R. W. (1995). Emotional behavior in long-term marriage. *Psychology and Aging*, 10, 140-149.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, C. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54, 165-181.

- Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. R. (2000). Emotional experience in everyday life across the adult life span. *Journal of Personality and Social Psychology*, *79*, 644–655.
- Carstensen, L. L., & Turk-Charles, S. (1994). The salience of emotion across the adult life course. *Psychology and Aging*, *9*, 259–264.
- Carney, R. M., Freedland, K. E., Rich, M. W., & Jaffee, A. S. (1995). Depression as a risk factor for cardiac events in established coronary heart disease: A review of possible mechanisms. *Annals of Behavioral Medicine*, *17*, 142–149.
- Carver, C. S., & Gaines, J. G. (1987). Optimism, pessimism, and post-partum depression. *Cognitive Therapy and Research*, *11*, 449–462.
- Carver, C. S., & Scheier, M. F. (2001). Optimism, pessimism, and self-regulation. In E. C. Chang (Ed.), *Optimism and pessimism: Implications for theory, research, and practice* (pp. 31–52). Washington, DC: American Psychological Association.
- Chang, E. C., D’Zurilla, T. J., & Lawrence, S. (Eds.). (2004). *Social problem solving: Theory, research, and training*. Washington, DC: American Psychological Association.
- Chen, Y., & Sun, Y. (2003). Age differences in financial decision-making: Using simple heuristics. *Educational Gerontology*, *29*, 627–635.
- Cicirelli, V. (2006). Caregiving decision making by older mothers and adult children: Process and expected outcome. *Psychology and Aging*, *21*, 209–221.
- Cornelius, S. W., & Caspi, A. (1987). Everyday problem solving in adulthood and old age. *Psychology and Aging*, *2*, 144–153.
- Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information processing mechanisms in children’s social adjustment. *Psychological Bulletin*, *115*, 74–101.
- Demming, J. A., & Pressey, S. L. (1957). Tests “indigenous” to adult and older years. *Journal of Counseling Psychology*, *4*, 144–148.
- Denney, N. W. (1989). Everyday problem solving: Methodological issues, research findings, and a model. In L. W. Poon, D. C. Rubin, & B. A. Wilson (Eds.), *Everyday cognition in adulthood and late life* (pp. 330–351). New York: Cambridge University Press.
- Diehl, M., Coyle, N., & Labouvie-Vief, G. (1996). Age and sex differences in strategies of coping and defense across the life span. *Psychology and Aging*, *11*(1), 127–139.
- Diehl, M., Willis, S. L., & Schaie, K. W. (1995). Everyday problem solving in older adults: Observational assessment and cognitive correlates. *Psychology and Aging*, *10*(3), 478–491.
- Dixon, R. A., Gagnon, L. M., & Crow, C. B. (1998). Collaborative memory accuracy and distortion: Performance and beliefs. In M. J. Intons-Peterson & D. L. Best (Eds.), *Memory distortions and their prevention* (pp. 63–88). Mahwah, NJ: Erlbaum.
- Dixon, R. A., & Gould, O. N. (1996). Adults telling and retelling stories collaboratively. In P. B. Baltes & U. M. Staudinger (Eds.), *Interactive minds: Life-span perspectives on the social foundation of cognition* (pp. 221–241). New York: Cambridge University Press.
- Dixon, R. (1999). Exploring cognition in interactive settings: The aging of N+1 minds. In T. M. Hess & F. Blanchard-Fields (Eds.), *Social cognition and aging* (pp. 297–290). San Diego, CA: Academic.
- Dreisbach, G., & Goschke, T. (2004). How positive affect modulates cognitive control: Reduced preservation at the cost of increased distractibility. *Journal of Experimental Psychology*, *30*(2), 343–353.
- Epstein, S., Lipson, A., Holstein, C., & Huh, E. (1992). Irrational reactions to negative outcomes: Evidence for two conceptual systems. *Journal of Personality and Social Psychology*, *62*, 328–339.
- Finucane, M. L., Mertz, C. K., Slovic, P., & Schmidt, E. S. (2005). Task complexity and older adults’ decision-making competence. *Psychology and Aging*, *20*(1), 71–84.
- Folkman, S., Lazarus, R. S., Pimley, S., & Novacek, J. (1987). Age differences in stress and coping processes. *Psychology and Aging*, *2*, 171–184.
- Fredrickson, B. L., & Carstensen, L. L. (1990). Choosing social partners: How old age and anticipated endings make people more selective. *Psychology and Aging*, *5*, 335–347.
- Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science*, *13*(2), 172–175.

- Freund, A. M., & Riediger, M. (2003). Successful aging. In R. M. Lerner, M. A. Easterbrooks, & J. Mistry (Eds.), *Handbook of psychology: Vol. 6: Developmental psychology* (pp. 601–628). New York: Wiley.
- Gould, O. N., Kurzman, D., & Dixon, R. A. (1994). Communication during prose recall conversations by young and old dyads. *Discourse Processes, 17*, 149–165.
- Hartley, A. A. (1989). The cognitive ecology of problem solving. In L. W. Poon, D. C. Rubin, & B. A. Wilson (Eds.), *Everyday cognition in adulthood and late life*. New York: Cambridge University Press.
- Hawley, L. C., Berntson, G. G., Engleland, C. G., Marucha, P. T., Masi, C. M., & Cacioppo, J. T. (2005). Stress, aging, and resilience: Can accrued war and tear be slowed? *Canadian Psychology, 46*(3), 115–125.
- Heckhausen, J. (1997). Developmental regulation across adulthood: Primary and secondary control of age-related challenges. *Developmental Psychology, 33*, 176–187.
- Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review, 102*, 284–304.
- Hershey, D. A., & Wilson, J. A. (1997). Age differences in performance on a complex financial decision making task. *Experimental Aging Research, 23*, 257–273.
- Holahan, C. J., & Moos, R. H. (1987). Personal and contextual determinants of coping strategies. *Journal of Personality and Social Psychology, 52*(5), 946–955.
- Holt-Lunstad, J., Uchino, B. N., Smith, T. W., Cerny, C. B., & Nealey-Moore, J. B. (2003). Social relationships and ambulatory blood pressure: Structural and qualitative predictors of cardiovascular function during everyday social interactions. *Health Psychology, 22*, 388–397.
- Hooker, K. (1999). Possible selves in adulthood: Incorporating telonomic relevance into studies of the self. In T. M. Hess & F. Blanchard-Fields (Eds.), *Social cognition and aging* (pp. 97–116). New York: Academic Press.
- Isen, A. M. (2000). Positive affect and decision making. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of emotions* (pp. 417–435). New York: Guilford.
- James, L. E., Burke, D. M., Austin, A., & Hulme, E. (1998). Production and perception of “verbosity” in younger and older adults. *Psychology and Aging, 13*(3), 355–376.
- Jennings, J. R., Kamarck, T., Manuck, S., Everson, S., Kaplan, G., Salonen, J. (1997). Aging or disease? Cardiovascular reactivity in Finnish men over the middle years. *Psychology and Aging, 12*, 225–238.
- Johansson, O., Andersson, J., & Ronnberg, J. (2000). Do elderly couples have a better prospective memory than other elderly people when they collaborate? *Applied Cognitive Psychology, 14*, 121–133.
- Johnson, M. M. S. (1990). Age differences in decision making: A process methodology for examining strategic information processing. *Journal of Gerontology, 45*, 75–78.
- Johnson, M. M. S., & Drungle, S. C. (2000). Purchasing over-the-counter medications: The influence of age and familiarity. *Experimental Aging Research, 26*, 245–261.
- Kamarck, T. W., Schwartz, J. E., Shiffman, S., Muldoon, M. F., Sutton-Tyrrell, K., & Janicki, D. L. (2005). Psychosocial stress and cardiovascular risk: What is the role of daily experience? *Journal of Personality, 73*(6), 1–26.
- Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgment under uncertainty: Heuristics and biases*. New York: Cambridge University Press.
- Klaczynski, P. A. (2000). Motivated scientific reasoning biases, epistemological beliefs, and theory polarization: A two-process approach to adolescent cognition. *Child Development, 71*, 1347–1366.
- Klaczynski, P. A. (2001). Framing effects on adolescent task representations, analytic and heuristic processing, and decision making: Implications for the normative-descriptive gap. *Journal of Applied Developmental Psychology, 22*, 289–309.
- Klaczynski, P. A. (2005). Metacognition and cognitive variability: A dual-process model of decision making and its development. In J. E. Jacobs & P. A. Klaczynski (Eds.), *The development of judgment and decision making in children and adolescents* (pp. 39–76). Mahwah, NJ: Erlbaum.

- Klaczynski, P. A., & Robinson, B. (2000). Personal theories, intellectual ability, and epistemological beliefs: Adult age differences in everyday reasoning biases. *Psychology and Aging, 15*, 400–416.
- Labouvie-Vief, G. (1982). Dynamic development and mature autonomy: A theoretical prologue. *Human Development, 25*, 161–191.
- Labouvie-Vief, G. (2003). Dynamic integration: Affect, cognition, and the self in adulthood. *Current Directions in Psychological Science, 201–206*.
- Labouvie-Vief, G., DeVoe, M., & Bulka, D. (1989a). Speaking about feelings: Conceptions of emotion across the life span. *Psychology and Aging, 4*, 425–437.
- Labouvie-Vief, G., Hakim-Larson, J., DeVoe, M., & Schoeberlein, S. (1989b). Emotions and self-regulation: A life span view. *Human Development, 32*, 279–299.
- Labouvie-Vief, G., & Medler, M. (2002). Affect optimization and affect complexity: Modes and styles of regulation in adulthood. *Psychology and Aging, 17*(4), 571–588.
- Laipple, J. S. (1991). *Problem solving in young and old adulthood: The role of task interpretation*. Unpublished doctoral dissertation, West Virginia University, Morgantown.
- Lang, F. R., Staudinger, U. M., & Carstensen, L. L. (1998). Perspectives on socioemotional selectivity in late life: How personality and social context do (and do not) make a difference. *Journal of Gerontology: Psychological Sciences, 53B*(1), 21–30.
- Larsen, R. J., & Ketelaar, T. (1989). Extroversion, neuroticism and susceptibility to positive and negative mood induction procedures. *Personality and Individual Differences, 10*, 1221–1228.
- Lawton, M. P. (1983). The varieties of wellbeing. *Experimental Aging Research, 9*(2), 65–72.
- Lawton, M. P., Kleban, M. H., Rajagopal, D., & Dean, J. (1992). The dimensions of affective experience in three age groups. *Psychology and Aging, 7*, 171–184.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Levenson, R. W., Carstensen, L. L., & Gottman, J. M. (1994). The influence of age and gender on affect, physiology, and their interrelations: A study of long-term marriages. *Journal of Personality and Social Psychology, 67*, 56–68.
- Levine, L. J., & Bluck, S. (1997). Experienced and remembered emotional intensity in older adults. *Psychology and Aging, 12*(3), 514–523.
- Maitlin, J. A., Wethington, E. M., & Kesser, R. C. (1990). Situational determinants of coping and coping effectiveness. *Journal of Health and Social Behaviour, 31*, 103–122.
- Margrett, J. A., & Marsiske, M. (2002). Gender differences in older adults' everyday cognitive collaboration. *International Journal of Behavioral Development, 26*, 45–59.
- Markus, H. R., & Kitayama, S. (2003). Culture, self, and the reality of the social. *Psychological Inquiry, 14*, 277–283.
- Marsiske, M., & Margrett, J. (2006). Everyday problem solving and decision making. In J. E. Birren & K. W. Schaie (Eds.), *Handbook of the psychology of aging* (6th ed, pp. 315–342). Burlington, MA: Academic Press.
- Marsiske, M., & Willis, S. L. (1995). Dimensionality of everyday problem solving in older adults. *Psychology and Aging, 10*, 269–283.
- Mather, M., & Knight, M. (2005). Goal directed memory: The role of cognitive control in older adults memory. *Psychology and Aging, 20*(4), 554–570.
- McGuire, L., Kiecolt-Glaser, J. K., & Glaser, R. (2002). Depressive symptoms and immune function in community dwelling older adults. *Journal of Abnormal Psychology, 111*, 192–197.
- Meacham, J. A., & Emont, N. C. (1989). The interpersonal basis of everyday problem solving. In J. D. Sinnott (Ed.), *Everyday problem solving: Theory and applications* (pp. 7–23). New York: Praeger.
- Meegan, S. P., & Berg, C. A. (2002). Contexts, functions, forms, and processes of collaborative everyday problem solving in older adulthood. *International Journal of Behavioral Development, 26*, 6–15.
- Meyer, B. J. F., Russo, C., & Talbot, A. (1995). Discourse comprehension and problem solving: Decisions about the treatment of breast cancer by women across the life-span. *Psychology and Aging, 10*, 84–103.
- Meyer, B. J. F., Talbot, A. P., & Ranalli, C. (2007). Why older adults make more immediate treatment decisions about cancer than younger adults. *Psychology and Aging, 22*(3), 505–524.

- Mikels, J. A., Larkin, G. R., Reuter-Lorenz, P. A., & Carstensen, L. L. (2005). Divergent trajectories in the aging mind: Changes in working memory for affective versus visual information with age. *Psychology and Aging, 20*(4), 542–553.
- Mroczek, D. K. (2001). Age and emotion in adulthood. *Current Directions in Psychological Science, 10*, 87–90.
- Mroczek, D. K., & Almeida, D. M. (2004). The effect of daily stress, personality, and age on daily negative affect. *Journal of Personality, 72*(2), 355–378.
- Patrick, J. H., & Strough, J. (2004). Everyday problem solving: Experience, strategies, and behavioral intentions. *Journal of Adult Development, 11*(1), 9–18.
- Phillips, L. H., Smith, L., & Gilhooly, K. J. (2002). The effects of adult aging and induced positive and negative mood on planning. *Emotion, 2*(3), 263–272.
- Poon, L. W., Rubin, D. C., & Wilson, B. A. (1989). *Everyday cognition in adulthood and late life*. Cambridge, UK: Cambridge University Press.
- Robinson, M. D., & Tamir, M. (2005). Neuroticism as mental noise: A relation between neuroticism and reaction time standard deviations. *Journal of Personality and Social Psychology, 89*(1), 107–114.
- Roepke, S., McAdams, L., Lindamer, L., Patterson, T., & Jeste, D. (2001). Personality profiles among normal aged individuals as measured by the NEO-PI-R. *Aging and Mental Health, 5*(2), 159–164.
- Rogoff, B., & Lave, J. (Eds.). (1984). *Everyday cognition: Its development in social context*. Cambridge, MA: Harvard University Press.
- Rook, K. S., Sorkin, D. H., & Zettel, L. A. (2004). Stress in social relationships: Coping and adaptation across the life span. In F. Lang & K. Fingerma (Eds.), *Growing together: Personal relationships across the lifespan* (pp. 21). New York: Cambridge University Press.
- Rowe, J. W., & Kahn, R. L. (1997). Human aging: Usual and successful. *Science, 237*, 143–149.
- Sansone, C., & Berg, C. A. (1993). Adapting to the environment across the life span: Different process or different inputs? *International Journal of Behavioral Development, 16*, 215–241.
- Scheier, M. F., Matthews, K. A., Owens, J. F., Schulz, R., Bridges, M. W., Magovern, G. J., et al. (1999). Optimism and rehospitalization after coronary artery bypass graft surgery. *Archives of Internal Medicine, 159*, 829–835.
- Scribner, S. (1986). Thinking in action: Some characteristics of practical thought. In R. J. Sternberg & R. Wagner (Eds.), *Practical intelligence: Origins of competence in the everyday world* (pp. 143–162). New York: Cambridge University Press.
- Sinnott, J. D. (1989). (Ed.), *Everyday problem solving: Theory and applications*. New York: Praeger.
- Smith, T. W. (1992). Hostility and health: Current status of a psychosomatic hypothesis. *Health Psychology, 11*, 139–150.
- Smith, T. W., Berg, C. A., Uchino, B. N., Florsheim, P., Pearce, G., Hawkins, M., et al. (2006). *Conflict and collaboration in middle-aged and older married couples: Sex, age, and interaction context as moderators of cardiovascular response*. Unpublished manuscript.
- Smith, T. W., & Ruiz, J. M. (2004). Personality theory and research in the study of health and behavior. In T. Boll (Series Ed.), R. Frank, J. Wallander, & A. Baum (Vol. Eds.), *Handbook of clinical health psychology: Vol. 1. Models and perspectives in health psychology* (pp. 143–199). Washington, DC: American Psychological Association.
- Smith, T. W., Uchino, B. N., Berg, C. A., Florsheim, P., Pearce, G., Hawkins, M., & Hopkins, P. N. (2007). Hostile personality traits and coronary artery calcification in middle-aged and older married couples: Different effects for self-reports versus spouse ratings. *Psychosomatic Medicine, 69*, 441–448.
- Smith, T. W., & Zautra, A. J. (2002). The role of personality in exposure and reactivity to interpersonal stress in relation to arthritis disease activity and negative affect in women. *Health Psychology, 21*(1), 81–88.
- Sorkin, D. H., & Rook, K. S. (2006). Responding to negative social exchanges in later life: coping strategies, goals, and effectiveness. *Psychology and Aging, 21*, 715–725.
- Stanovich, K. E. (1999). *Who is rational? Studies of individual differences in reasoning*. Mahwah, NJ: Erlbaum.

- Stanovich, K. E., & West, R. F. (1997). Reasoning independently of prior belief and individual differences in actively open-minded thinking. *Journal of Educational Psychology, 89*, 342–357.
- Stanovich, K. E., & West, R. F. (1999). Discrepancies between normative and descriptive models of decision making and the understanding/acceptance principle. *Cognitive Psychology, 38*, 349–385.
- Staudinger, U. M., & Baltes, P. B. (1996). Interactive minds: A facilitative setting for wisdom-related performance. *Journal of Personality and Social Psychology, 71*, 746–762.
- Sternberg, R. J. (1984). A contextual view of the nature of intelligence. *International Journal of Psychology, 19*, 307–334.
- Sternberg, R. J., & Wagner, R. K. (Eds.). (1986). *Practical intelligence*. New York: Cambridge University Press.
- Strough, J., Berg, C. A., & Sansone, C. (1996). Goals for solving everyday problems across the life span: Age and gender differences in the salience of interpersonal concerns. *Developmental Psychology, 32*, 1106–1115.
- Strough, J., & Margrett, J. (2002). Overview of the special section on collaborative cognition in later adulthood. *International Journal of Behavioral Development, 26*, 2–5.
- Strough, J., Patrick, J. H., Swenson, L. M., Cheng, S., & Barnes, K. A. (2003). Collaborative everyday problem solving: Interpersonal relationships and problem dimensions. *International Journal of Aging and Human Development, 56*, 43–66.
- Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma & J. D. Maer (Eds.), *Anxiety and the anxiety disorders* (pp. 681–706). Hillsdale, NJ: Erlbaum.
- Thornton, W. J. L., & Dumke, H. A. (2005). Age differences in everyday problem-solving and decision-making effectiveness: A meta-analytic review. *Psychology and Aging, 20*, 85–99.
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology, 86*(2), 320–333.
- Uchino, B., Berg, C. A., Smith, T. W., Pearce, G., & Skinner, M. (2006). Age-related differences in ambulatory blood pressure during daily stress: Evidence for greater blood pressure reactions in older individuals. *Psychology and Aging, 21*, 231–239.
- Uchino, B., Cacioppo, J., & Kiecolt-Glaser, J. (1996). The relationship between social support and physiological processes: A review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin, 119*, 488–531.
- Uchino, B. N., Holt-Lunstad, J., Bloor, L. E., & Campo, R. A. (2005). Aging and cardiovascular reactivity to stress: Longitudinal evidence for changes in stress reactivity. *Psychology and Aging, 20*(1), 143–143.
- Watson, T. L., & Blanchard-Fields, F. (1998). Thinking with your head and your heart: Age differences in everyday problem-solving strategy preferences. *Aging, neuropsychology, and cognition, 5*, 225–240.
- Wegner, D. M., Erber, R., & Raymond, P. (1991). Transactive memory in close relationships. *Journal of Personality and Social Psychology, 61*, 923–929.
- Wiebe, D. J., Berg, C. A., Korb, C., Palmer, D. A., Beveridge, R. M., Upchurch, R., Lindsay, R., Swinyard, M. T., & Donaldson, D. L. (2005). Children's appraisals of maternal involvement in coping with diabetes: Enhancing our understanding of adherence, metabolic control, and quality of life across adolescence. *Journal of Pediatric Psychology, 30*, 167–178.
- Willis, S. L. (1991). Cognition and everyday competence. In K. W. Schaie (Eds.), *Annual Review of Gerontology and Geriatrics* (Vol. 11, pp. 80–109). New York: Springer.
- Willis, S. L., & Schaie, K. W. (1986). Practical intelligence in later adulthood. In R. J. Sternberg & R. K. Wagner (Eds.), *Practical intelligence: Nature and origins of competence in the everyday world* (pp. 236–268). New York: Cambridge University Press.
- Zwahr, M. D., Park, D. C., & Shifren, K. (1999). Judgments about estrogen replacement therapy: The role of age, cognitive abilities, and beliefs. *Psychology and Aging, 14*, 179–191.