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CHAPTER 40

Intelligence and Wisdom

Ursula M. Staudinger and Judith Glück

Wisdom is a construct characterized by a rich cultural history and complex associations. Across cultures and history, wisdom has been discussed as the prototypical ideal of human knowledge and character. Starting from the dictionary definition of wisdom as "good judgment and advice in difficult and uncertain matters of life," psychologists have described wisdom as the search for the moderate course between extremes, a dynamic between knowledge and doubt, a sufficient detachment from the problem at hand, and a well-balanced coordination of emotion, motivation, and thought. This implies that wisdom shows overlap with the construct of intelligence but clearly extends beyond it. Most wisdom researchers probably agree that a certain level of intelligence is necessary but not sufficient for wisdom to be displayed. Within psychological research on wisdom, two kinds of approaches can be distinguished. One is the study of lay conceptions of wisdom and the other is the attempt to measure expressions of wisdom. With regard to expressions, personal and general wisdom have been distinguished. Age trajectories, antecedents, and plasticity of general

and personal wisdom are discussed with a focus on the relationship between wisdom and intelligence.

Historical Background

Since the beginnings of human culture, wisdom has been viewed as an ideal end point of human development. Indeed, the idea of wisdom as one of the highest forms of knowledge and skill is evident in the very definition of the historical grand master of all scholarship, philosophy (philosophia): "The love/pursuit of wisdom." Historically, wisdom was conceptualized in terms of a state of idealized being (such as Lady Wisdom), as a process of perfect knowing and judgment as in King Solomon's judgments, or as an oral or written product such as wisdom-related proverbs and the so-called wisdom literature. Important to recognize is that the identification of wisdom with individuals (such as wise persons), the predominant approach in psychology, is but one of the ways by which wisdom is instantiated. In fact, in the historical literature on wisdom,

the identification of wisdom with the mind and character of individuals is not the preferred mode of analysis. Rather, wisdom is conceptualized as a characteristic of texts or other bodies of knowledge. Wisdom is considered an ideal that is difficult to be fully represented in the isolated individual.

Throughout history, interest in the topic of wisdom has waxed and waned. In general, two main lines of argument were pivotal in the historical evolution of the concept of wisdom: the distinction between philosophical and practical wisdom – often attributed to Aristotle's differentiation between *sophia* and *phronesis* – and the question of whether wisdom is divine or human. In the Western world, these two issues (philosophical vs. practical; divine vs. human) were at the center of heated discourse during the Renaissance, with many important works written on these wisdom topics during the 15th through the 17th centuries. An initial conclusion of this debate was reached during the later phases of the Enlightenment. Wisdom was still critical, for instance, to the thinking of Kant and Hegel. Both understood wisdom as being based on the coordination of the world of science and the practical world of humankind. However, the 18th-century French *Encyclopédie* of Diderot (and others), despite its more than 50 volumes, barely mentioned the topic. During the Enlightenment and the process of secularization, wisdom lost its salience as one of the fundamental categories guiding human thought and conduct.

Nevertheless, from time to time, scholars in such fields as philosophy, political science, theology, and cultural anthropology continue to attend to wisdom, although in our view, less in a cumulative sense of theory building than in rejuvenating and revisiting its meaning, historical roots, and implications for raising human awareness about the complexities and uncertainties of life. During the last decade, for example, some philosophers have struggled with the definition of wisdom, including the polarization between practical and philosophical wisdom, the integration of different forms of knowledge into one overarching whole,

and the search for orientation in life (e.g., Kekes, 1995; Welsch, 2001). The last issue has gained special importance in relation to the advent of postmodernity. Finally, there is archaeological-cultural work dealing with the origins of religious and secular bodies of wisdom-related texts in China, India, Egypt, Old Mesopotamia, and other sites of ancient civilizations. Proverbs, maxims, and tales constitute a great part of the materials underlying such efforts. It is impressive to realize how wisdom-related proverbs and tales evince a high degree of cultural and historical invariance. This relative invariance gives rise to the assumption that concepts such as wisdom, with its related body of knowledge and skills, have been selected in the course of cultural development because of their adaptive value for humankind.

The psychological study of wisdom emerged around the late 1970s and early 1980 in the general context of a search for the potentials of aging or, more specifically, the search for domains or types of intellectual functioning that would not show age-related decline. While earlier investigations of cognitive aging had largely focused on losses in fluid intelligence, later the focus shifted to include the crystallized, experience-based dimension of intelligence that was found to grow until mid-life and remain stable into old age. It was suggested that with age, experience is able to compensate for the declines in fluid intelligence (Baltes, Dittmann-Kohli, & Dixon, 1984). In this vein, life experience and wisdom as well as professional expertise, everyday problem solving, or practical intelligence were selected as topics of investigation from the 1980s on (e.g., Sternberg & Jordan, 2005).

Psychological Approaches to the Definition of Wisdom

A first approach to the definition of wisdom from a psychological perspective is its treatment in dictionaries. The major German historical dictionary, for instance, defined wisdom as "insight and knowledge about

oneself and the world... and sound judgment in the case of difficult life problems" (Grimm & Grimm, 1854/1984). Similarly, the *Oxford English Dictionary* includes in its definition of wisdom "Good judgment and advice in difficult and uncertain matters of life" (Fowler & Fowler, 1964). These definitions differ from the notion of intelligence in that they define a certain problem domain – that is, difficult life problems – which asks for the application of knowledge and intelligence. Furthermore, good judgment and advice in difficult life matters not only ask for intelligence. They also require one to deal with emotional, social, and moral aspects.

When psychologists approach the definition of wisdom, like philosophers, they are confronted with the need to specify the content and formal properties of wisdom-related thought, judgment, and advice in terms of psychological categories. Another important goal of wisdom research has been to describe characteristics of persons who have approached a state of wisdom and who are capable of transmitting wisdom to others. Initial efforts by psychologists in this direction were for the most part theoretical and speculative. In his pioneering piece on senescence, G. Stanley Hall (1922), for example, associated wisdom with the emergence of a meditative attitude, philosophic calmness, impartiality, and the desire to draw moral lessons that emerge in later adulthood. Furthermore, other writers have emphasized that wisdom involves the search for the moderate course between extremes, a dynamic between knowledge and doubt, a sufficient detachment from the problem at hand, and a well-balanced coordination of emotion, motivation, and thought. In line with dictionary definitions, writings by psychologists typically refer to wisdom as knowledge about the human condition at its frontier, knowledge about the most difficult questions of the meaning and conduct of life, and knowledge about the uncertainties of life, about what cannot be known, and how to deal with that limited knowledge. Thus, much of wisdom is meta-knowledge, knowledge about the limitations of knowledge and

about when to apply which strategy of problem solution or self-regulation.

Most of the empirical psychological research on wisdom to date falls into one of two categories (Sternberg, 1998): studies of so-called implicit theories, that is, what "laypeople" think wisdom is, and studies based on theoretical conceptions of wisdom that psychologists have developed. In the following, we first review the literature on implicit theories of wisdom and then give an overview of explicit theories and related empirical findings.

Implicit (Subjective) Theories About Wisdom

Most empirical research on wisdom in psychology so far has focused on further elaboration of the definition of wisdom. Moving beyond dictionary definitions of wisdom, research explored the nature of everyday beliefs, folk conceptions, or implicit (subjective) theories of wisdom. The pursuit of answers to questions such as "What is wisdom?" "How is wisdom different from intelligence or creativity?" "Which situations require wisdom?" "What is a wise act?" and "What are the characteristics of wise people?" has been an important focus of psychological wisdom research since the 1980s. These studies in principle built on research initiated by Clayton and colleagues (e.g., Clayton, 1975; Clayton & Birren, 1980), whose methodology to identify lay conceptions of wisdom has become fairly common among wisdom researchers (overview in Bluck & Glück, 2005): First, a sample of laypersons or experts (e.g., professors from different fields; Sternberg, 1985) are asked to generate a list of wisdom-related characteristics or vignettes. The resulting pool of items – or, at least, a subgroup of items that is left after terms have been screened for synonyms and redundancies – in turn, is rated by another group of individuals in terms of its wisdom-relatedness or typicality. Subsequently, statistical procedures such as factor analysis or multidimensional scaling are frequently used to

identify underlying dimensions of items. In Clayton and Birren's study, this procedure yielded three dimensions found to be prototypical of wise people: (1) *affective characteristics* such as empathy and compassion, (2) *reflective processes* such as intuition and introspection, and (3) *cognitive capacities* such as experience and intelligence. The dimensions found by Clayton and Birren (1980) pertain until today (e.g., Ardelet, 2003).

Recently, new dimensions have been added, and characteristics have been ordered differently (see Table 40.1). For example, in their review of implicit theories Bluck and Glück (2005) draw more heavily on the distinction between real-world skills and interpersonal skills ("concern for others") as opposed to capacities with a less interactive emphasis, such as cognitive ability, insight, and reflective attitude. Notably, results of studies on implicit notions of wisdom are heavily influenced by the initial pool of items. For example, a study by Hershey and Farrell (1997), comprising – in contrast to most other studies – also characteristics assumed *not* to be associated with wisdom yielded one dimension labeled "egotism" comprising only attributes deemed as unwise. In the same vein, another study including items referring to *protection of the environment* or *religion* resulted in two additional factors that had not been identified by previous studies (Jason et al., 2001; see Table 40.1).

Additional dimensions of a contextual and interactive nature emerge when individuals are asked about their own experiences with wisdom (rather than describing a wise person in general), as is the case, for example, in studies on wisdom nominees or when asking participants about their own wisdom. In studies of wisdom nominees, typically, individuals are asked to name persons they consider wise, and potential commonalities are identified among the nominees. The most general finding of these studies is that most wisdom nominees are *relatively old* (e.g., around 60 years in the studies by Jason et al., 2001 or Baltes, Staudinger, Maercker, & Smith, 1995). Further criteria ascribed to wise people emerging from the nomi-

nee approach – next to those mentioned earlier – were, most of all, *guidance*, and *moral principles*.

Finally one may ask, What is the function of wisdom in everyday life? Drawing on autobiographical memories of events in which individuals retrospectively viewed themselves as wise, three forms of wisdom were identified (Glück, Bluck, Baron, & McAdams, 2005): *empathy and support*, *self-determination and assertion*, and *knowledge and flexibility*. *Self-determination and assertion*, as opposed to the other two facets, may be recognized as an aspect of wisdom primarily when people are asked about their own life, that is, when interviewees also have access to their inner thoughts, feelings, and motivations. A similar result, that is, a focus on inner motives or the relationship between intentions and external circumstances, was found when analyzing wise acts. According to studies by Oser and colleagues (1999), wise acts seem to be characterized by the following seven features: (1) *paradoxical, unexpected*; (2) *of moral integrity*; (3) *selfless*; (4) *overcoming internal and external dictates*; (5) *striving toward equilibrium*; (6) *implying a risk*; (7) *striving toward improving the human condition*. Hence, different approaches to the study of implicit notions of wisdom yield findings that supplement and enrich the results from other studies.

From this research on implicit theories of wisdom and wise persons, it is evident that people in Western samples hold fairly clear-cut images of the essential characteristics of wisdom. There are also interesting individual differences in individual conceptions, however. Using an exploratory approach, Glück and Bluck (in press) found two distinct types of conceptions of wisdom in a large German-speaking sample. About one-third of the participants viewed wisdom as largely a property of the *mind*: they judged knowledge and life experience, insight, and cognitive complexity as the most important characteristics of wisdom. The other two-thirds viewed wisdom as an integration of *mind and virtue*: They also endorsed the cognitive aspects but viewed tolerance, empathy, an orientation to the greater good, and love for humanity as equally central

Table 40.1. Implicit Theories of Wisdom: A Comparison of Findings from Five Studies with Sample Items^a

Clayton (1975)	Sternberg (1985)	Holliday & Chandler (1986)	Hershey & Farrell (1997)	Jason et al. (2001)
Affective (1) – Empathy – Compassion	Sagacity (2) – Concern for others – Considers advice Perspicacity (6) – Intuition – Offers right and true solutions	Interpersonal skills (4) – Sensitive – Sociable Judgment and communication skills (2) – Is a good source of advice – Understands life	Egotism, inverse (2) – Extravagant – Presumptuous Perceptive Judgment (1) Sincere – Fair – Thoughtful	Warmth (2) – Compassion and warmth for others – Kindness
Reflective (2) – Intuition – Introspection	Judgment (4) – Acts within own limitations – Is sensible Learning from ideas and environment (3) – Perceptive – Learns from mistakes	Social unobtrusiveness (5) – Discreet – Nonjudgmental Exceptional understanding as based on ordinary experience (1) – Has learned from experience – Sees things in a larger context	Basic Temperament (3) – Withdrawn – Reflective	Harmony (1) – Good judgment – Experiences an underlying unity in life
Cognitive (3) – Experience – Intelligence	Reasoning ability (1) – Good problem-solving ability – Logical mind Expedient use of information (5) – Experienced – Seeks out information	General competence (3) – Intelligent – Educated	Intelligence (3) – Intelligence – Problem-solving ability Connecting to nature (4) – Reverence for nature – Childlike wonder and awe Spirituality (5) – Feels love, fellowship, or union with god – Living a spiritual life	

Note: Sequence of factors or dimensions obtained in original research is given in parentheses. Studies are based on different methodologies (factor analysis, multidimensional scaling).

^a Modified after Staudinger and Baltes, 1994.

components of wisdom. Thus, the two clusters differ in the importance they assign to intelligence-related components within the concept of wisdom: The first group seems to view wisdom as a form of intelligence, while the second group views intelligence as but one necessary component of wisdom. The noncognitive components seem to become more important to people in the course of young adulthood: While most individuals under age 30 viewed wisdom as a property of the mind, the majority of those over 30 shared the mind-and-virtue view.

Interestingly, gender differences in conceptions of wisdom are mostly small to nonexistent: men and women differ only marginally in the characteristics they associate with wisdom (Glück, Strasser, & Bluck, 2009). This picture changes somewhat when participants think about concrete instances of wisdom in their own lives: Men are more often nominated as wise than women, and this is particularly so with male nominators (e.g., Glück, Bischof, & Siebenhüner, 2009; Jason et al., 2001). When asked about events in which they were wise in their own life, men mostly report professional situations whereas women tend to report family or relationship-related events (Glück et al., 2009).

What about other cultures? Are similar conceptions of wisdom found in non-Western cultures? Several studies have reported cultural differences in conceptions of wisdom (Takahashi, 2000; Takahashi & Bordia, 2000; Takahashi & Overton, 2002, 2005; Yang, 2001). Takahashi and Bordia (2000), for instance, compared implicit definitions of wisdom among young adults from the United States, Australia, India, and Japan. They found that the association between wisdom and cognitive variables pervasive in Western samples is less important in East-Asian cultures, in which characteristics such as being aged, experienced, and discreet are perceived as pivotal for wisdom. Additionally, the association of wisdom with experience and practical knowledge was found to be stronger in Asian than in Western samples. Integrating these findings with psychological models

of wisdom, Takahashi and Overton (2005) distinguished two broad modes of wisdom: an analytic (Western) mode that emphasizes knowledge and cognitive complexity, and a synthetic (Eastern) mode that focuses on the integration of cognition, reflection, and affect. Thus, according to these authors, the analytic conception assigns intelligence a much more prominent role for wisdom than the synthetic conception. Takahashi and Overton identified these two modes of wisdom in both theoretical models of wisdom and cross-cultural studies of Eastern and Western wisdom conceptions. They linked the analytic conception of wisdom to the developmental idea of wisdom as highly complex life expertise developed through learning. The synthetic notion of wisdom was viewed as developing through transformation of the individual through existential experiences.

Despite differences, five features can be identified that are common to how people across different cultures view wisdom, wise people, and wise acts: First, in the minds of people, wisdom seems to be closely related to wise persons and their acts as "carriers" of wisdom. Second, wise people are expected to combine features of mind and character (even though the mind may have been assigned varying importance), and to balance multiple interests and choices. Third, wisdom carries a strong interpersonal and social aspect with regard both to its application (advice) and the consensual recognition of its occurrence. Fourth, wisdom exhibits overlap with other related concepts, such as intelligence; but in aspects like sagacity, prudence, and the integration of cognition, emotion, and motivation, it also carries unique variance. Fifth, it seems to make a difference whether I conceive of my own wisdom or describe that of another prototypical person.

"Explicit" Theories and the Assessment of Wisdom

A more recent line of empirical psychological inquiry on wisdom addresses the question of how to define wisdom conceptually

("explicit," as compared to laypeople's more implicit conceptions of wisdom) and measure behavioral expressions of wisdom based on scientific definitions. Researchers of wisdom are usually quite aware that it is a courageous undertaking to try to study wisdom empirically. Wisdom is a complex and content-rich phenomenon, and, as many scholars have claimed, it defies attempts at scientific identification. However, research on explicit theories of wisdom has made remarkable progress at measuring wisdom in terms of personality characteristics (standardized or open-ended), characteristics of adult thought, and performance (judgment, advice) on difficult life tasks.

The Distinction Between General and Personal Wisdom

The various lines of work can be subsumed under two main headings, namely, *personal* wisdom, on the one hand, and *general* wisdom, on the other. This distinction is loosely related to the philosophical separation between the ontology of the first and the third person (Searle, 1992). The ontology of the first person indicates insight into life based on personal experience. In contrast, the ontology of the third person refers to the view on life that is based on an observer's perspective. In loose analogy to Searle's first-person perspective, *personal* wisdom refers to a person's insight into his or her own life: What does a person know about himself or herself, his or her life? Analogous to the third-person perspective, *general* wisdom is concerned with insights into life in general. What does an individual know about life from an observer's point of view, that is, when she or he is not personally concerned? For instance, your general wisdom is tapped if a friend comes to you because *his or her* marriage is in a deep crisis and he or she is considering divorce. But it takes your personal wisdom if you search for a solution because your *own* marriage is in a deep crisis and you are considering divorce.

The distinction between general and personal wisdom may be helpful when trying to settle some of the ongoing debates in

the field of wisdom research. For heuristic purposes, Table 40.2 assigns many of the extant approaches in research on wisdom to either a personal-wisdom or a general-wisdom perspective. Note that this categorization is sometimes difficult to make because the original authors do not describe their notion of wisdom along the distinction between personal and general wisdom. Consequently, the assignment is based on inferences on our behalf and is made according to the relative emphasis placed on either personal or general wisdom. Another way of ordering could also be to classify the different approaches on a multifaceted continuum from highly personal, experience-based, intuitive wisdom to wisdom as an abstract characteristic of writings or problem solutions.

The two types of wisdom do not necessarily have to coincide in a person. A person can be wise with regard to the life and problems of other people and can be sought out for advice from others because of her wisdom but the very same person does not necessarily have to be wise about her own life and her own problems. To test this contention, the two types of wisdom need to be conceptualized and measured independently of each other.

Different research traditions have led to interest in one or the other type of wisdom. The approaches primarily geared toward personal wisdom are usually based in the tradition of personality research and personality development. Wisdom in this perspective describes the mature personality or an ideal end point of personality growth (e.g., Erikson or Ryff). Intelligence is not explicitly mentioned in these conceptions of wisdom but one may infer that it is at most viewed as a necessary precondition of wisdom. When one thinks about wisdom from this vantage point, clearly there is also a close link to research on personality growth and learning from traumatic events (e.g., stress-related growth, Park, Cohen, & Murch, 1996; post-traumatic growth, Tedeschi & Calhoun, 2004). The approaches primarily investigating general wisdom typically have a stronger connection with the historical wisdom

Table 40.2. Tentative Assignment of Extant Wisdom Approaches to Personal or General Wisdom^a

Wisdom Approach	Personal Wisdom	General Wisdom
Explicit Theories		
Self-report Questionnaires		
Erikson: Integrity	X	
Loevinger: Ego level	X	
Helson & Wink: ...	X	
Orvill & Perlmutter: ...	X	
Ardeit: Reflection – Cognition – Affect	X	
Webster: Five-component model	X	
Ryff, Whitbourne	X	
Performance Measures e.g., Arlin, Kitchener, Kramer		X
Berlin Paradigm: Expertise in the Fundamental Pragmatics of Life		X
Sternberg: Balance Theory		X
Labouvie-Vief: Integration of Affect and Cognition	X	
Bremen Paradigm of Personal Wisdom	X	
Self-concept Maturity	X	
Implicit Theories		
Holliday & Chandler	X	X
Clayton & Birren	X	X
Hershey & Farrell		X
Jason et al.		X

^a Modified after Staudinger, Dörner, & Mickler, 2005.

literature (i.e., wisdom as sound advice or life insight independent of individuals) and an expertise approach to the study of wisdom (e.g., Berlin wisdom paradigm, e.g., Baltes & Staudinger, 2000; Sternberg's balance theory of wisdom, e.g., Sternberg, 1998).

The distinction between personal and general wisdom is also relevant when exploring the ontogenesis of wisdom. First, there is reason to assume that it is the dynamic between personal and general life insight that is at the heart of eventually attaining wisdom. Decades of research on self-regulation as well as research on the therapeutic process have demonstrated that it is much more difficult to obtain insight into one's own life (let alone apply it) than into the difficulties and problems of others (e.g.,

Greenwald & Pratkanis, 1984). Thus, general wisdom might be less difficult to attain than personal wisdom (first empirical evidence for that claim has been ascertained: Mickler & Staudinger, 2008) and therefore the final attainment of the former may precede that of the latter in ontogenesis. Certainly, in the course of ontogeny, that is, in working toward general and/or personal wisdom, both types may alternate in taking the lead. Generally, the development of wisdom is a dynamic process in which cognitive, affective, and motivational resources develop interactively through the reflection of experience. We do know, however, from research on the development of the self-concept that the infant appropriates general knowledge about the world before she or he is able to acknowledge the self. From

research on the self later in ontogeny, we have learned that self-related information is processed differently from general information. On the one hand, under certain conditions we do have better memory for self-related information. However, threatening or inconsistent self-related information is often suppressed or modified, which may hinder the development of personal wisdom. On the other hand, it is conceivable that even individuals who have been able to overcome perceptual and cognitive biases and have attained personal wisdom, which involves the ability to be critical of oneself, do not have the ability and/or the motivation to think about life problems beyond their own specific circumstances or to give advice to others. As a consequence, the coincidence of personal and general wisdom in one person is probably very rare (Staudinger, Mickler, & Dörner, 2005).

Psychological Conceptions of General Wisdom

Various approaches to general wisdom can be distinguished, one of which is the cultural-historical analysis of wisdom mentioned above. Cultural-historical work concerning the origins of religious and secular bodies of wisdom-related texts has revealed a common core of defining features of wisdom that seems to reflect the notion of general wisdom more than that of personal wisdom. According to an analysis conducted by Paul Baltes, the common core of general wisdom is this: (1) Wisdom comprises knowledge with extraordinary scope, depth, measure, and balance; (2) it addresses important and difficult questions and strategies about the conduct and meaning of life; (3) it includes knowledge about the limits of knowledge and the uncertainties of the world; (4) it represents a truly superior level of knowledge, judgment, and advice; (5) it is easily recognized when manifested, but difficult to achieve and to specify. Note that in this analysis personality characteristics are not mentioned as a defining feature common to wisdom across cultures and historical time.

Wisdom as postformal operations. Within psychology, different approaches to general wisdom include wisdom as postformal thought in the neo-Piagetian tradition (Riegel, 1975; Labouvie-Vief, 1990), Sternberg's balance theory of wisdom (Sternberg, 1998, 2001), and the notion of wisdom as expert knowledge in the Berlin wisdom paradigm (e.g., Baltes & Staudinger, 2000). In the following, these conceptions of general wisdom are discussed in more detail.

Informed by the Piagetian tradition of studying cognitive development, several investigators proposed a postformal stage of adult thinking and related this stage to mature thought or wisdom. In theories of postformal thought, wisdom is conceptualized as increasingly complex and dialectical thinking (Riegel, 1975). Criteria of postformal thinking include awareness of multiple causes and solutions; awareness of paradoxes and contradictions; and the ability to deal with uncertainty, inconsistency, imperfection, and compromise. Pivotal for postformal thinking is the transcendence of the universal truth criterion that characterizes formal logic – a tolerance of ambiguity created by an acceptance of multiple truths. (In this approach, little attention has been paid to the need for setting boundaries of relativity.) Thus, conceptions of wisdom as a postformal stage of cognitive development obviously view wisdom as the adult form of intelligence characterized by particularly high tolerance of complexity and ambiguity, which renders its assessment through classical, linear, intelligence tasks highly difficult.

Empirical research in the field of *neo-Piagetian conceptions* of wisdom has addressed, for example, the relationship of postformal stages of cognitive development with social cognition (e.g., Arlin, 1990; Kitchener & Brenner, 1990; Kramer, 1983; Labouvie-Vief, 1990; Pascual-Leone, 1990). For example, postformal thinkers demonstrated a tendency to show less of an actor-observer effect (in which situational causes are held responsible for one's own behavior and dispositional factors for others' behavior) and higher levels of moral reasoning than nonpostformal thinkers. It was also

found that positive mood induction and relaxation improved postformal thinking, whereas focusing attention had detrimental effects. In sum, it might be concluded that "wise thinking" in the neo-Piagetian sense is related to a tolerant and open-minded attitude, which is also characteristic of the Big Five personality dimension "openness to experience," a frequent correlate of general and personal wisdom in empirical studies. Plus, it seems easier to think "wisely" when relaxed and in a positive mood.

Sternberg's (1998, 2001) balance theory. Sternberg relates wisdom to both practical and academic intelligence. Academic intelligence, in the sense of fluid intelligence, provides a necessary but by no means sufficient basis to wisdom-related functioning. But wisdom also involves the application of tacit knowledge, which is the key aspect of practical intelligence. Tacit knowledge is action-oriented (procedural) knowledge that is usually implicit and acquired without direct help from others (rather by role modeling) and that allows individuals to achieve goals that they personally value. In contrast to practical intelligence, however, wisdom is by definition oriented toward a balance between self-interest, the interests of others, and external contextual interests in order to achieve a common good. This balancing is the key aspect of Sternberg's theory of wisdom. The output of wisdom typically is a piece of advice. Wisdom is assessed by presenting people with problems whose best solution integrates several intrapersonal, interpersonal, and extrapersonal interests (Sternberg, 2001).

A wise person in this sense is comfortable with ambiguity, in contrast to a conventionally intelligent person, who considers ambiguity as something to be resolved, and in contrast to a creative person who can tolerate ambiguity but is uncomfortable with it (Sternberg, 1998). Also, when faced with obstacles, the wise person tries to understand the problem and its implications for self and others. The wise person endorses a judicial thinking style, that is, she or he likes to analyze and evaluate ideas and procedures and not only pass judgment on them

(Sternberg, 1997). Also related to the area of personality is the assumption that a wise person is highly motivated to seek the common good.

The Berlin wisdom paradigm (e.g., Baltes & Smith, 1990; Baltes & Staudinger, 2000). Here, wisdom is defined as expertise in the fundamental pragmatics of life. The fundamental pragmatics of life refer to deep knowledge and sound judgment about the essence of the human condition and the ways and means of planning, managing, and understanding a good life. Expert knowledge in fundamental pragmatics of life can be described according to five criteria. The first criterion, *factual knowledge*, concerns knowledge about such topics as human nature, life span development, variations in developmental processes and outcomes, interpersonal relations, and social norms. The second criterion, *procedural knowledge*, involves strategies and heuristics for dealing with the meaning and conduct of life – for example, heuristics for giving advice, ways to handle life conflicts. Additionally, a wise person should show *life span contextualism*, that is, to consider life problems in relation to the domains of life (e.g., education, family, work, friends, leisure, the public good of society, etc.), their interrelations, and to put these in a lifetime perspective (i.e., past, present, future). *Relativism of values and life priorities* is another criterion of wisdom. It means to acknowledge and tolerate interindividual differences in values while at the same time being geared toward optimizing and balancing the individual and the common good. Finally, the last criterion, the *recognition and management of uncertainty*, is based on the idea that human beings can never know everything that is necessary to determine the best decision in the present, to predict the future perfectly, or to be 100% sure about why things happened the way they did in the past. A wise person is aware of this uncertainty and has developed ways to manage it.

Measurement. To elicit and measure general wisdom-related knowledge and skills, the Berlin group of wisdom researchers has presented participants with difficult life

dilemmas such as the following: "Imagine a good friend of yours calls you up and tells you that he/she can't go on anymore and has decided to commit suicide. What would one/you be thinking about, how would one/you deal with this situation?" Participants are then asked to "think aloud" about the dilemma. Their responses are recorded on tape and later transcribed. To quantify performance quality, a select panel of judges, who are extensively trained and calibrated to apply the five wisdom criteria defined above, evaluates the protocols of the respondents using 7-point scales. Every rater only evaluates one criterion in order to avoid halo affects. Two raters were assigned to each criterion to allow calculation of interrater reliabilities, which, across many studies, were consistently in the .70s and .80s per criterion and even above .9 for the overall wisdom score, which averages across the five criteria. The obtained scores provide an approximation of the quantity and quality of wisdom-related knowledge and skills of a given person. When using this wisdom paradigm to study people who were nominated as wise according to nominators' subjective beliefs about wisdom, wisdom nominees received higher wisdom scores than comparable control samples of various ages and professional backgrounds (Baltes, Staudinger, Maercker, & Smith, 1995).

Ontogenetic model. In the context of the Berlin paradigm, a general framework was developed that outlines the conditions for the development of wisdom as it is instantiated in persons. The model presents a set of factors and processes that need to "cooperate" for wisdom to develop. First, there are general individual characteristics such as intelligence and personality. Second, the model presumes that the development of wisdom is advanced by certain expertise-specific factors, such as a strong motivation to learn about life, practice with difficult life situations, and guidance by a mentor. Third, the model implies the operation of macro-level facilitative experiential contexts. For example, certain professions and historical periods are more conducive

to the development of wisdom than others. Given such experiences, certain social-cognitive processes (life planning, life management, and life review) are assumed to be critical for the development of wisdom-related knowledge and judgment.

Empirical work testing this ontogenetic model confirmed that crystallized and fluid intelligence are a necessary but by no means a sufficient condition for wisdom. In line with the historical wisdom literature, which portrays wisdom as the ideal combination of mind and virtue, it was found that wisdom-related performance is best predicted by measures located at the interface of cognition and personality, such as social intelligence, creativity, and moral reasoning (Staudinger, Lopez, & Baltes, 1997; Pasupathi & Staudinger, 2001). Neither intelligence nor personality, as measured by standard tests, independently of each other made a significant contribution to wisdom-related knowledge and judgment. Interestingly, a very different predictive pattern is found when wisdom-related performance in adolescence is considered, where cognitive development seems to be a crucial basis for the emergence of wisdom-related knowledge (Staudinger & Pasupathi, 2003). While general wisdom as measured according to the Berlin wisdom paradigm is unrelated to subjective well-being, Kunzmann and Baltes (2003) found that it is related to experiencing positive and negative affect. Wise individuals reported experiencing both positive (e.g., happy, cheerful) and negative affect (e.g., angry, afraid) less frequently than other individuals, but they reported a higher degree of affective involvement (e.g., interested, inspired) than the rest of the sample. According to the authors, this pattern suggests that wisdom might go along with a more realistic, less self-enhancing and less positively biased view of life, but at the same time with better skills of regulating negative emotions. A further finding of this study was that wise individuals tended to endorse values referring to personal growth, life insight, societal engagement, the well-being of friends, and ecological protection more than other individuals did.

Age trajectories and plasticity. Contrary to work on the fluid mechanics of cognitive aging, older adults perform as well as younger adults (> 25 yrs.) in the Berlin wisdom paradigm (overview in Staudinger, 1999a). It seems that wisdom-related knowledge and judgment emerges between the ages of 14 and 25 years (Pasupathi, Staudinger, & Baltes, 2001). Furthermore, when advanced age was combined with wisdom-related experiential contexts, such as professional specializations involving training and experience in matters of life (e.g., clinical psychology), higher levels of performance were observed (Smith, Staudinger, & Baltes, 1994; Staudinger, Smith, & Baltes, 1994). Wisdom-related knowledge and judgment have also been found to demonstrate plasticity. In two intervention studies, Staudinger and coworkers found that by either providing for a certain type of social performance context (Staudinger & Baltes, 1996) or by teaching a certain knowledge search strategy (Böhmig-Krumhaar, Staudinger, & Baltes, 2002), wisdom-related performance was significantly increased. Thus, interventions that support individuals to trace their memory and construct relevant insights can enhance wisdom-related performance. However, activation of their abstract knowledge about wisdom (by means of the instruction to "try to give a wise response") does not lead to increases in performance (Glück & Baltes, 2006).

Psychological Conceptions of Personal Wisdom

As explained earlier, personal wisdom is asked for when problems in one's own life (rather than those of other people) are at stake. Models of personal wisdom differ in whether they put special emphasis on difficult, negative events (e.g., Ardel, 2005a; Kramer, 2000), as is central in related conceptions such as post-traumatic or stress-related growth, but they agree that learning from the socioemotional changes and challenges of an individual's personal life experience is necessary for making progress on the

path toward personal wisdom. In this vein, two other notions come to mind: "maturity" and "personal growth." Influential conceptions of personal wisdom can be found in clinical, personality, and developmental psychology.

Since the space is far too limited to provide a complete overview here, only a selection can be discussed. In this area of wisdom research two large strands can be distinguished based on their respective ways of assessing personal wisdom: (1) approaches that use self-report questionnaires (e.g., Ardel, 1997, 2003; Ryff & Keyes, 1995; Webster, 2003, 2007), and (2) approaches that use various kinds of performance measures (Loevinger & Wessler, 1978; Labouvie-Vief & Medler, 2002; Mickler & Staudinger, 2008; Dörner & Staudinger, 2009).

PERSONAL WISDOM AS MEASURED BY SELF-REPORT QUESTIONNAIRES

(i) *Ardel's three-dimensional model of wisdom as a personality characteristic* (e.g., Ardel, 1997, 2003). This model proposes that wisdom is a personality characteristic rather than a body of knowledge and that it has three broad components based on Clayton and Birren's (1980) work on implicit wisdom theories. The *cognitive* component is based on a constant desire to understand the truth about the human condition, especially intra- and interpersonal matters, and includes the knowledge resulting from this desire. The *reflective* component refers to the ability to take multiple perspectives, which also implies self-examination and self-insight. The *affective* component is defined as "sympathetic and compassionate love for others," that is, a positive, empathetic attitude toward other persons. Following the classical traditions of personality assessment, Ardel (2003) has developed a self-report scale (Three-Dimensional Wisdom Scale, 3DWS) to measure the three dimensions of wisdom. The 3DWS shows significant and positive correlations with mastery, subjective well-being, purpose in life, and subjective health and negative relations with depressive symptoms, death avoidance, fear of death, and feelings of economic pressure. Education

and occupation both showed significant and positive correlations with 3DWS.

(ii) *Ryff and Whitbourne's Eriksonian approach.* Based on the theory of personality development proposed by Erikson (1959), Ryff and also Whitbourne characterized a wise person as integrating rather than ignoring or repressing self-related information, by having coordinated opposites, and by having transcended personal agendas and turned to collective or universal issues. Ryff (Ryff & Heinicke, 1983) and Whitbourne (e.g., Walaskay, Whitbourne, & Nehrke, 1983-84), for example, have undertaken the effort to develop self-report questionnaires based on the Eriksonian notions of personality development, especially integrity or wisdom. More recently, Carol Ryff integrated her earlier work on personal wisdom in the development of a questionnaire assessing psychological well-being (PWB). In particular, one of the six scales of the PWB questionnaire aims at personal growth. In cross-sectional work to date, slightly negative age trends were found for this scale (Ryff & Keyes, 1995). Also working with Erikson's theory, Orwoll (1988) investigated people who had been nominated as wise according to subjective beliefs about wisdom. She found that wise nominees were indeed characterized by high scores on questionnaire measures of Erikson's notion of ego integrity and showed a greater concern for the world state or humanity as a whole than the comparison group.

(iii) *Webster's self-assessment wisdom scale (SAWS; 2003, 2007).* SAWS was developed based on components that were identified in a review of the psychological wisdom literature. The SAWS assesses five components of wisdom: emotional regulation, reminiscence and reflectiveness, openness, humor, and experience. In line with expectations, the SAWS scores have been shown to correlate with measures of generativity and ego integrity. Furthermore, the scores were not significantly correlated with the age of the respondents.

Measuring wisdom is generally difficult because of the complexity of the construct; it becomes even more difficult when

personal wisdom, as opposed to general wisdom, is the focus, as the notion of personal wisdom entails a focus on individual experiences, emotion, and reflection. Self-report measures of personal wisdom may constitute a particularly difficult instance of some general problems of self-report assessment: If wise individuals are assumed to be more reflective and critical of themselves than less wise individuals, then one could actually predict a negative correlation between wisdom and favorable self-presentation in questionnaires (see also Aldwin, 2009).

PERSONAL WISDOM AS ASSESSED BY PERFORMANCE MEASURES

(i) *Loevinger's ego levels.* In contrast, Loevinger's ego level (Loevinger & Wessler, 1978) is measured by qualitative coding of standardized self-descriptions. It was Loevinger's goal to capture character development in a stage model similar to the Piagetian model of cognitive development. She conceived the stages of ego development as a successive progression toward psychological maturity, unfolding along the four dimensions of impulse control, interpersonal style, conscious preoccupations, and cognitive styles. The model comprises eight stages (impulsive, self-protective, conformist, self-aware, conscientious, individualistic, autonomous, integrated) that are characterized by increasingly mature forms of those four dimensions. Most people are categorized in the third to fifth stages, that is, the conformist, self-aware, and conscientious stages. The self-aware stage is the modal stage in late adolescence and adult life. The eighth stage, the integrated stage, is rarely observed in random samples.

Ego level has been found to be positively related with ego-resiliency, interpersonal integrity, and regulation of needs, or mastery of socioemotional tasks and impulse-control, as well as indicators of mental health (for a review of associations between ego level and other relevant constructs, see Cohn & Westenberg, 2004 and Manners & Durkin, 2001). Interestingly, ego level is also positively correlated with number of lifetime psychiatric visits

and regular psychotherapeutic sessions. It is unclear, however, whether psychotherapy helped subjects to advance developmentally or whether later stage capacity to see ambiguities in life increased their willingness to seek psychotherapy (see Dörner, 2006). The latter interpretation is in line with the positive quadratic relation between neuroticism and ego level (i.e., *higher* neuroticism at low and high ego level) and a negative quadratic relation between conscientiousness and ego level (i.e., *lower* conscientiousness at low and high ego level). Openness to experience, extraversion, and agreeableness show positive linear relations with ego level. Finally, chronological age is unrelated to ego development.

In sum, this pattern of results around Loevinger's measure of ego development suggests that central features of (general and personal) wisdom such as moving beyond the given, seeing reality more clearly, transcending extant social norms, do not come without costs. It seems that being faced with the complexities of one's own life in the way it is true for a person at high levels of ego development does not always lead to greater happiness but also to greater concern and doubt as well as the insight that further self-development is needed ("I know that I don't know").

(ii) *Labouvie-Vief's theory of the life span development of affect.* Combining Piaget's cognitive theory with psychoanalytic notions and ideas from adult attachment theory, Gisela Labouvie-Vief designed developmental models of self as well as emotional understanding (e.g., Labouvie-Vief, 1982; Labouvie-Vief, Hakim-Larson et al., 1989). Building on this earlier work, her most recent publications have focused on the development and/or maturation of self- and affect-regulation. In this latest approach, she has developed a notion of growth or maturity that combines Affect Optimization (AO), "the tendency to constrain affect to positive values," with Affect Complexity (AC), "the amplification of affect in the search for differentiation and objectivity." In this notion of maturity, it is crucial that the search for complexity and differentiation is

combined with, or rather, constrained by, a search for optimizing positive affect in any given situation. But at the same time, the search for positive affect is guarded by the ability to experience events and other persons in an open and differentiated fashion. Combining the two (dichotomized) dimensions of AC and AO results in four "personality" types, Labouvie-Vief and Medler (2002) expected individuals with high levels on both dimensions to function best also in other aspects of psychological adjustment. And, indeed, high ego levels, high fluid intelligence, and adaptive coping patterns, excluding repressive or regressive strategies, characterize this group.

(iii) *The Bremen measure of personal wisdom.* Another performance measure of personal wisdom has been developed by the first author and her coworkers starting from the Berlin general wisdom paradigm (Mickler & Staudinger, 2008). Thus, five criteria have been defined, based on the literature about personality development, to index personal wisdom. The first criterion is *rich self-knowledge*, that is, deep insight into one-self. A self-wise person should be aware of his or her own competencies, emotions, and goals and should have a sense of meaning in life. The second criterion requires a self-wise person to have available *heuristics for growth and self-regulation* (e.g., how to express and regulate emotions or how to develop and maintain deep social relations). Humor is an example of an important heuristic that helps one cope with various difficult and challenging situations. *Interrelating the self*, the third criterion, refers to the ability to reflect on and have insight in the possible causes of one's behavior and/or feelings. Such causes can be age-related or situational or linked to personal characteristics. Interrelating the self also implies that there is an awareness about one's own dependency on others. The fourth criterion is called *self-relativism*. People high in self-relativism are able to evaluate themselves as well as others with a distanced view. They critically appraise their own behavior but at the same time display a basic acceptance of themselves. They also show tolerance for others' values and

lifestyles – as long as they are not damaging to self or others. Finally, *tolerance of ambiguity* involves the ability to recognize and manage the uncertainties in one's own life and one's own development. It is reflected in the awareness that life is full of uncontrollable and unpredictable events, including death and illness. At the same time, tolerance for ambiguity includes the availability of strategies to manage this uncertainty through openness to experience, basic trust, and the development of flexible solutions. Personal wisdom is measured by first using a thinking-aloud and subsequently a rating procedure.

Age trajectory and validity. In a first study, the new measure of personal wisdom showed good convergent validity (Mickler & Staudinger, 2008). It was positively correlated with other measures of personality growth, such as Ryff's personal growth and purpose in life, and Loevinger's ego development, as well as with benevolent personal values. With regard to discriminant validity, personal wisdom, as to be expected for a measure of personal maturity, was uncorrelated with notions of well-being and adaptation, such as life satisfaction, negative or positive emotions, and adaptive motives such as power, achievement, and hedonism. Also, personal wisdom is not preempted by knowing a person's intelligence. Interestingly, the relationship between personal wisdom and fluid intelligence followed an inverted u-shape, implying that among highly intelligent persons there is a significant negative correlation of fluid intelligence with personal wisdom. Follow-up analyses suggested that this may be due to differences in the value system, in particular, lower scores in the value domain "universalism." Extremely intelligent people may tend to be rather egotistical and focused on achievement, such as career, as opposed to interpersonal or social issues. As far as the relationship with personality variables is concerned, openness to experience was the most important predictor; of the other Big Five variables, none showed significant correlations with personal wisdom. Psychological mindedness, a concept measuring interest in thoughts and

feelings of other people, however, was positively correlated with personal wisdom.

(iv) Finally, the last performance measure of personal wisdom, *self-concept maturity*, is based on the self-concept literature. Five self-concept facets were identified as theoretically meaningful indicators of personal wisdom, namely, complexity of content, self-concept integration, affect balance, self-esteem, and value orientation. It was hypothesized that only by combining these five components an appropriate operationalization of personal wisdom was obtained. That is, a profile of the five self-concept facets was established that should serve as a prototype of a mature personality as reflected in the self-concept or *self-concept maturity* (SCM).

Validity, age trends, and plasticity. As hypothesized, SCM correlated strongly and significantly with other measures of personal wisdom, especially with Loevinger's ego development and the newly developed personal-wisdom task presented earlier, whereas no significant associations existed with chronological age and fluid as well as crystallized intelligence (Dörner & Staudinger, 2009). This lack of a significant relationship with the two components of intelligence is most likely due to the measurement paradigm that does not have a problem-solving component like the other performance measures of personal wisdom discussed previously.

Also, in a first intervention study using SCM and the Bremen measure of personal wisdom, in contrast to findings for general wisdom (see earlier discussion; Staudinger & Baltes, 1996), personal wisdom was not facilitated by the opportunity to exchange ideas with a familiar person before responding. Rather, it was found that receiving instruction about how to infer insight from personal experiences (Staudinger, 2001) increased personal wisdom ratings (Staudinger, Kessler, & Dörner, 2006). The authors provided the following interpretation for this finding: In the case of personal wisdom, the exchange with a well-known other person may be less helpful as partners often learn to get along well

without touching upon sensitive issues. Thus, for personal wisdom to be facilitated, it seems more useful to seek support from a "stranger." However, as strangers usually are not inclined to provide that kind of support, it may be better to seek support from a professional, that is, a psychotherapist.

Conclusion and Future Directions

Research over the last decades has demonstrated that the concept of wisdom represents a fruitful topic for psychological investigations for several reasons. First, the study of wisdom emphasizes the search for continued optimization and the further evolution of the human condition, and second, it allows, in a prototypical fashion, for the study of collaboration between cognitive, emotional, and motivational processes. Currently, there has been a notable increase of psychological work on the topic of wisdom (Ardelt, 2005b), a development that may be related to a general interest in features of a positive psychology as well as an ever increasing uncertainty of individuals about how to lead their lives. We expect that future research on wisdom will be expanded in at least three ways.

1. *The further identification of social and personality factors and life processes relevant for the ontogeny of wisdom:* Why do some individuals develop further than others on the road to wisdom in the course of their life? Is it possible to distinguish societies according to how much they facilitate the development of wisdom? Wisdom theorists agree that the development of wisdom is a complex interaction of intraindividual, interindividual, and external factors that dynamically interact over the course of an individual life (e.g., Baltes & Staudinger, 2000; Brugman, 2006; Kramer, 2000; Sternberg, 1998). To date, however, no longitudinal data are yet available to trace these interactions and possibly identify different types of developmental trajectories leading toward wisdom. These

investigations into the ontogenesis of wisdom will also help to clarify the developmental dynamics between personal and general wisdom.

2. *The exploration of wisdom as a meta-heuristic aimed at orchestrating mind and virtue toward human excellence:* As mentioned at the beginning of this chapter, wisdom does not necessarily need to be viewed as a characteristic of individuals. It can also be a characteristic of problem solutions in a very general sense, for example, political or legal decisions. Understanding characteristics of wise strategies of information processing and decision making may be highly fruitful beyond the boundaries of psychology.
3. *The differentiation between personal and general wisdom and their ontogenetic dynamics:* The controversy among wisdom researchers about the definition of wisdom will probably never be resolved unequivocally. The question may not be which model is "right," but how much can be learned about wisdom by integrating the findings from different conceptualizations and operationalizations of wisdom, as well as what can be learned for designing the best interventions to facilitate wisdom.

All these approaches might contribute to building a psychological art of living based on life insight and life composition and integrating the analytic, aesthetic, and moral aspects of human life (Staudinger, 1999b), and improving societal ways of fostering wisdom and of dealing wisely with difficult problems of today's world (e.g., Ferrari & Potworowski, 2008).

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CHAPTER 41

Intelligence and Expertise

Phillip L. Ackerman

Defining Terms

One traditional approach to starting a discussion of the relations between two constructs is to attempt to define one's terms. Various methods are often used for providing such a foundation for discussion, but the two most common, and central to the current purposes are the "lexical" and "stipulative" forms of definition (see Robinson, 1950). Lexical definitions are those that are essentially "dictionary" definitions. They are historically documented and based on current and prior usage. The truthvalue of a lexical definition is one that can be determined in a straightforward fashion, merely by reference to original source material. Stipulative definitions are those that are proposed by the individual who chooses to use a word to mean a particular concept. As such, there is no way to determine the truthvalue of a stipulative definition. The value of the stipulative definition is instead determined by other indicators, such as its consistency in a wider network of other constructs. Why provide a short discourse on definition here? The answer lies in the need to relate two

different concepts that rely on different kinds of definitions. For expertise, we can rely on a lexical definition, but for intelligence, it is largely impossible to provide a coherent discussion without a stipulative definition.

Expertise

The lexical definition of expertise is both straightforward and useful for the current discussion. "Expertise" refers to having the skill of an expert. An expert, according to the *Oxford English Dictionary* (Oxford University Press, 1971), is someone who is experienced, and who has been "trained by experience or practice, skilled" (p. 930). The term "expert" has been used since Chaucer's time, and current usage is generally consistent with usage over the past 600 years. The foundation for expertise, then, is the notion that one has a skill or skills, and that they are obtained through practice or other experiences. The one addition that should be provided here is that in modern usage, expertise need not be limited to skills that involve a significant physical component (such as