Wisdom in Context

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Abstract

Philosophers and psychological scientists converge on the idea that wisdom involves certain aspects of thinking (e.g., intellectual humility, recognition of uncertainty and change, consideration of the broader context at hand and perspectives of others, integration of these perspectives/compromise) enabling application of knowledge to life challenges. How does wise thinking change across various contexts people encounter in their lives? Empirical evidence indicates that people's ability to think wisely varies dramatically across experiential contexts they encounter over the lifespan. Moreover, wise thinking varies from one situation to another, with self-focused contexts inhibiting wise thinking. Experiments can show ways to buffer reasoning against bias in cases where self-interests are unavoidable. Specifically, an ego-decentering cognitive mindset enables wise thinking about personally meaningful issues. It appears that experiential, situational and cultural factors are even more powerful in shaping wisdom than previously imagined. Focus on such contextual factors can shed new light on the processes underlying wise thought and its development, helps to integrate different approaches to studying wisdom and have implications for measurement and development of wisdom-enhancing interventions.

Keywords: Wisdom, Reasoning, Self, Social conflict, Adult development, Culture

Wisdom in Context

For millennia, wisdom has been considered one of the most cherished human qualities (Lambert, 1960). The notion of wisdom has played a central role in pedagogy and the understanding of individual development. For instance, the U.S. Department of Education refers to wisdom as a central goal of "character education," providing grants to state and local education agencies to achieve that purpose (U.S. Department of Education, 2005). Wisdom has also played a central role in the myriad of popular science books, which claim to provide insight into this mysterious, cherished quality. Despite the long-standing enthusiasm, scientists have only recently begun to evaluate how contextual factors influence the malleability of wise thought (Staudinger & Glück, 2011). The present review explores these factors, drawing on evidence from recent experiments, diary studies, and cross-cultural investigations. Together, this evidence suggests that attention to context is instrumental for the advancement of psychological wisdom scholarship and development of empirically-grounded interventions aiming to promote wisdom-related processes in schools, work-setting and in daily life.

The Meaning of Context

Contextual factors can play a critical role for understanding of cognitive (e.g., Neisser, 1982; Yeh & Barsalou, 2006), cultural (e.g., Markus & Kitayama, 1991; Oishi & Graham, 2010; Shweder & Sullivan, 1993), developmental (Bronfenbrenner, 1977; Vygotsky, 1960), and social phenomena (e.g., Lewin, 1936; E. R. Smith & Semin, 2007). For instance, the *experiential* context can impact the phenomenon through age-related experiences or specific socialization experiences in school and professional settings. The *situational* context (e.g., task relevance, stressors, and mindsets) can explain how certain skills or abilities translate into observable performance (cf. Sophian, 1997). Moreover, on the macro-level, the *cultural* context can provide

the normative framework impacting the meaning, function, and expression of a psychological characteristic (Grossmann & Na, 2014; Kitayama, Mesquita, & Karasawa, 2006; Norenzayan & Heine, 2005). Notably, at least since Vygotsky, Lewin, Bronfenbrenner, and Neisser, these contexts have been viewed within larger systems framework of mutual co-dependence – i.e. the situational context is embedded within experiential context, and both of them are embedded in a larger socio-cultural context.

Prodigious work by early wisdom theorists suggests that the study of wisdom may similarly benefit from systematic analysis of such contextual factors (Baltes & Staudinger, 1993; Staudinger, 1996; Staudinger, Kessler, & Doerner, 2006). Only in the last decade, however, has empirical scholarship started to provide clear insights into the role of experiential, situational, and cultural factors for expression of wisdom. The present paper aims to systematically review this empirical scholarship, providing novel insights for the theory, measurement, and promotion of wise thought in daily life. Before reviewing this body of research, the next section introduces major paradigms for studying wisdom-related characteristics in psychology.

Lay Beliefs about Wisdom

In lay terms, wisdom can mean many things, ranging from knowledge drawn from traumatic life experiences to intellect, to rationality (Staudinger & Glück, 2011). To gauge how people view wisdom, scholars have initially examined folk theories by asking individuals to evaluate what adjectives or short statements they associated with wisdom (e.g., Bluck & Glück, 2005; Clayton & Birren, 1980; Holliday & Chandler, 1986; Sternberg, 1985). For instance, Sternberg (1985) has identified some overlap in people's intuitions about wisdom, intelligence, and (to smaller extent) creativity, yet also observed some differences: Wise people were perceived to be equally capable of problem solving and reasoning as intelligent people; however,

wise people were uniquely associated with the notion of sagacity -- i.e. knowing when to listen to others, flexible dealing with people, consideration of long and short-term consequences. Moreover, wise people were perceived as reflective and capable of integrating ideas in a context of lives they live in,[1] whereas creative people were viewed as impulsive free-spirits, who try to go after what others believe to be impossible (Sternberg, 1985). Research on lay beliefs about wisdom suggest some variability in how wisdom is defined across age groups (e.g., Clayton & Birren, 1980), professions (e.g., Sternberg, 1985), cultures (e.g., Takahashi & Bordia, 2000; S.-Y. Yang, 2001; for a review, see Grossmann & Kung, in press), and situations (Glück, Bluck, Baron, & McAdams, 2005). This research foreshadows the argument concerning contextual variability in expression of wise thinking (also see Staudinger, 1996).

Wise Thinking

Life experiences are often uncertain. Such uncertainties are present when prospecting on the future, considering why things happened in the past and when trying to gain insight into the contingencies of the here and now. Various situations can elicit uncertainty, including conflicts between immediate and long-term interests, conflicts between different intrapersonal, interpersonal, and/or extra-personal (i.e. group-centric) interests in people's lives (Gardner, 2007; Sternberg, 1998), or ethical and professional dilemma (Gardner, Csikszentmihalyi, & Damon, 2001). Mastery in handling such uncertainties appears to be an epitome of wisdom (e.g., Brugman, 2006; Meacham, 1990), yet what does such mastery entail?

Intellectual roots. Neo-Piagetian scholars (e.g., Basseches, 1980; Kegan, 1982; Kramer, 1983; Labouvie-Vief & Blanchard-Fields, 1982; Perry, Jr., 1970; Riegel, 1973; Sinnott, 1989) were among the first to explore this question. The work by these scholars concerned management of complex, "ill-defined" socio-emotional problems (cf. Schraw, Dunkle, &

Bendixen, 1995; Vervaeke & Ferraro, 2013), providing a foundation for many subsequent

models of wisdom (e.g., Arlin, 1990, 1993; Kallio, 2015; Kitchener & Brenner, 1990; Kramer,

2000; Pascual-Leone, 1990). According to Piaget, development concludes in adolescence with

mastery of formal operations -- i.e. symbolic rules and procedures such as propositional logic

(Inhelder & Piaget, 1958). In contrast, neo-Piagetian scholars viewed the development of formal

operations as insufficient for solving complex, ill-defined problems of adult life (Schraw et al.,

1995). They proposed a set of "post-formal" cognitions developing further into adulthood, from

absolutist beliefs to a relativistic perspective on life events and a dialectical integration of

different problem-related concerns (for a review, see Kallio, 2015). For instance, Basseches

(1984) formulated a set of 24 schemata enabling the transition to dialectical cognitions, which

include recognition of one's limits of knowledge, recognition of change[2], awareness of context,

perspective flexibility and the attempt to integrate different perspectives together. These meta-

cognitive strategies allow for a bigger picture view on a social issue or dilemma, enabling people

to work through uncertainty-provoking challenges in their lives.

In parallel to the Neo-Piagetian scholarship, another key intellectual root of the

contemporary wisdom scholarship includes Erikson's theory of identity development (Erikson,

1984). Erikson conceptualized wisdom as a form of personal maturation developed through

mastery of uncertainties involved in the later-life crisis of integrity (i.e. acceptance of life lived)

versus despair (about paths not taken in life). Erikson's and other similar psychoanalytic theories

(e.g., Jung, 1965) pose that such self-development could be achieved through the process of

transcending the limitations of personal boundaries and integration of seemingly opposite

desires. Subsequently, empirical scholars have applied Erikson's ideas when measuring of

developmental maturation (e.g., Ryff & Heincke, 1983; Ryff & Keyes, 1995) and wisdom-

related personality characteristics (e.g., Helson & Wink, 1987; Wink & Helson, 1997). It is noteworthy that, in spite of different theoretical assumptions, Neo-Piagetian and self-development perspectives on wisdom share a great deal in common. Both frameworks emphasize mastery of uncertainties concerning life challenges. In both cases, such mastery involves the process of integrating seemingly opposite perspectives and recognizing and transcending self-limitations. Indeed, some models of adult development, such as Loevinger's model of ego-development (Hy & Loevinger, 2014), explicitly aimed at combining ideas on cognitive development to scholarship on adult maturation (Staudinger & Glück, 2011).

Wisdom is more than knowledge: Contemporary scholarship. Situated in the socio-emotional setting of real-world problems, neo-Piagetian and Eriksonian ideas have appeared in a range of contemporary models of wisdom (e.g., Ardelt, 1997; Baltes & Smith, 2008; Clayton, 1982; Mickler & Staudinger, 2008; Sternberg, 1998, for reviews, see Bangen et al., 2013; Birren & Svensson, 2005). For instance, Baltes and Staudinger (for reviews, see Baltes & Smith, 2008; Baltes & Staudinger, 2000) defined wisdom as "expert knowledge system dealing with the conduct and understanding of life " (Baltes & Smith, 2008, p. 58). According to Baltes and colleagues, such expertise entails declarative and procedural knowledge in reflecting on difficult life situations (or one's autobiographical experiences; Mickler & Staudinger, 2008) and certain characteristics of thinking, including an awareness of the varied contexts of life and how they relate and change over time, the recognition that values and life goals differ between individuals and groups, and an acknowledgment of the uncertainties of life, together with ways to manage those uncertainties.[3] Ardelt (1997, 2003) considered wisdom to be the integration of deeper insight into generally known facts, reflective ability on one's limitations, and empathic/benevolent perspective-taking. Sternberg's balance theory (1998) characterized

wisdom through consideration of and integration (or balance) of conflicting intrapersonal, interpersonal, and extrapersonal interests, over the long and short terms, under the guidance of positive ethical values, and a context-sensitive management of the situation at hand. Levenson and colleagues (Levenson, Jennings, Aldwin, & Shiraishi, 2005) conceptualized wisdom as a developmental process towards integration between differences aspects of the self, concluding with the "dissolution of (self-based) obstacles to empathy, understanding, and integrity" (Levenson et al., 2005, p. 129). Moreover, Vervaeke (Vervaeke & Ferraro, 2013) conceptualized wisdom as an ability to show critical insight when solving social problems, guided by the idea of "relevance realization" – i.e. flexible selection of and integration of information so as to enable actions promoting good life.[4]

Despite variability in scope and theoretical assumptions of these conceptual models of wisdom, they share in common their consideration of certain facets of cognition[5]. By drawing on theoretical roots in the Neo-Piagetian and Eriksonian scholarship, as well as more recent scholarship by Baltes, Sternberg, and other eminent scholars (for a review, see Sternberg & Jordan, 2005), my colleagues and I synthesized such facets of cognition in a framework of wise thinking (e.g., Grossmann et al., 2010; Grossmann, Na, Varnum, Kitayama, & Nisbett, 2013). They include (a) intellectual humility or recognition of limits of own knowledge, (b) appreciation of perspectives broader than the issue at hand, (c) sensitivity to the possibility of change in social relations, and (d) compromise or integration of different opinions (see Figure 1).

-- insert Figure 1 about here --

Measuring wise thinking. How does one measure wisdom-related characteristics? Proposed operationalizations range from questionnaire-based self-assessments of reflective, benevolent, and insight-related qualities (Ardelt, 2003; Glück et al., 2013; Levenson et al., 2005;

Webster, 2003) to content-analysis of stream of thought essays in reflections on autobiographic (Glück et al., 2005; Mickler & Staudinger, 2008) or social events (Baltes & Smith, 2008; Baltes & Staudinger, 2000). For instance, Sternberg (1998) proposed to measure wisdom by examining the quality of solutions to fictitious scenarios depicting difficult life problems vis-à-vis experts' ratings. Baltes and colleagues instructed participants to read brief descriptions of fictitious difficult life problems, such as those when a friend tells you on the phone that he wants to commit suicide, and to think out loud about them. Participants' responses to what should be done in the face of such problems were subsequently rated by independent coders on 7-point scales concerning wisdom-related expression on district categories (Baltes & Smith, 2008; Mickler & Staudinger, 2008). Similarly, my research group presented participants with content-rich fictitious newspaper articles describing societal dilemmas (e.g., intergroup conflict in an unknown African country) or real conflicts borrowed from the column of the late advice columnist Abigail van Buren (Grossmann et al., 2010; 2012; 2013), such as the following dilemma:

>Dear Abby:
>My husband, "Ralph," has one sister, "Dawn," and one brother, "Curt." Their parents died six years ago, within months of each other. Ever since, Dawn has once a year mentioned buying a headstone for their parents. I'm all for it, but Dawn is determined to spend a bundle on it, and she expects her brothers to help foot the bill. She recently told me she had put $2,000 aside to pay for it. Recently Dawn called to announce that she had gone ahead, selected the design, written the epitaph and ordered the headstone. Now she expects Curt and Ralph to pay "their share" back to her. She said she went ahead and ordered it on her own because she has been feeling guilty all these years that her parents didn't have one. I feel that since Dawn did this all by herself, her brothers shouldn't have to pay her anything. I know that if Curt and Ralph don't pay her back, they'll never hear the end of it, and neither will I.

After participant finishes reading descriptions of such dilemmas, the interviewer asks participants to think out loud about the dilemma, with their reflection guided via concrete prompts from the interviewer: "What do you think will happen after the event you read about?" "Why do you think it will happen this way?" and 'What do you think should be done?" with

participants' reflections content-analyzed for various aspects of wise thinking (see Table 1 for example responses to the Dear Abby story).

-- insert Table 1 about here --

Relationship to germane constructs and well-being. Empirical work shows that facets of wise thinking tend to converge on a single second-order latent factor (Grossmann & Kross, 2014; Grossmann et al., 2013; Kunzmann & Baltes, 2003). Wise thinking shows a modest positive relationship to crystallized intelligence (e.g., Grossmann et al., 2013; Staudinger, Lopez, & Baltes, 1997; Staudinger, Maciel, Smith, & Baltes, 1998), openness (Kunzmann & Baltes, 2003; Levenson et al., 2005; Mickler & Staudinger, 2008) and agreeableness (Brienza, Kung, Santos, Bobocel, & Grossmann, 2016; Huynh, Oakes, Shay, & McGregor, 2016; Levenson et al., 2005), and a negative relationship to neuroticism (e.g., Webster, Westerhof, & Bohlmeijer, 2014). Indeed, in one study only 14% of the variance in wise thinking was accounted by typical measures of intelligence and personality (Staudinger et al., 1998). The small association between wise thinking and these germane constructs suggests that wise thinking involves some unique processes at the intersection of intelligence, personality, and prosocial motivations (Staudinger et al., 1997).

Moreover, consistent with the philosophical contention that wisdom is oriented towards promoting a good life (e.g., Kekes, 1995; Tiberius, 2008; Vervaeke & Ferraro, 2013), empirical studies have demonstrated that wise reasoning is positively related to aspects of psychological well-being that reflect eudaimonic virtues (e.g., cooperative intentions, contribution to others, growth; Grossmann, Brienza, & Bobocel, 2016; Huynh, Oakes, et al., 2016; Kunzmann & Baltes, 2003; Wink & Staudinger, 2016), interpersonal well-being (Grossmann et al., 2013), reports of elevated experience (e.g., interest or inspiration; Kunzmann & Baltes, 2003), as well

as rich and balance emotional life and superior emotion regulation (Grossmann, Gerlach, &
Denissen, 2016). Empirical studies also converge on an inverse relationship between wisdom and
negative affect (Ardelt, 2003; Grossmann et al., 2013; Kunzmann & Baltes, 2003; Webster et al.,
2014). The relationship between wise thinking and positive affect and life satisfaction is less
clear, fluctuating across samples and research paradigms (cf., Ardelt, 2003; Baltes, Staudinger,
Maercker, & Smith, 1995; Bergsma & Ardelt, 2012; Brugman, 2000; Levenson et al., 2005;
Mickler & Staudinger, 2008). It appears that wise thinking can orient the individual toward
eudaimonic processes and superior emotion regulation abilities. These abilities may, in turn,
promote a balance between positive and negative experiences rather than the sole pursuit of
happiness (also see Staudinger & Glück, 2011).

Experiential Contexts: Life domains, Professional Experiences, and Adversity

In lay terms, wisdom is frequently associated with the development of maturity in
adulthood (Bluck & Glück, 2005). It is, therefore, not surprising that the first evidence about the
contextual nature of wise thought comes from the early empirical studies concerning facilitative
experiential contexts such as those involving age-contingent or professional experiences (cf.
Baltes & Staudinger, 1993).

Age-contingent experiences. Developmental psychologists like Erikson (1968) have
pointed out that each "stage" of life corresponds to unique tasks and challenges the person is
likely to experience. For instance, younger age is often characterized as a time of exploration and
older age as a time of accommodating losses and finding meaning in life lived (e.g., Carstensen,
Isaacowitz, & Charles, 1999). Notably, skills and practices acquired through experience at a
younger life stage may not be optimal for the later life stage and vice versa. Moreover, such
skills and practices may become less accessible when the context changes, reflecting the ongoing

dynamic of gains and losses over lifespan (Baltes, 1987; Labouvie-Vief, 1982). Some scholars applied this idea to the study of wise thinking, proposing that expression of wise thinking may depend on the relevance of the problem to a particular age group. This hypothesis was indirectly tested in a series of studies varying the age of the protagonist in the otherwise identical scenario participants reflected on (J. Smith & Baltes, 1990; J. Smith, Staudinger, & Baltes, 1994; Staudinger, Smith, & Baltes, 1992). In these studies, researchers observed that younger adults expressed greater wisdom in reflections on scenarios involving a younger (vs. older) protagonist, whereas the reverse was true for older adults (also see Pasupathi, Staudinger, & Baltes, 2001, for age-relevance effects among younger adults but not adolescents).

Recently, Thomas and Kunzmann (2014) tested the role of task-relevance directly, by comparing performance of younger and older adults on tasks that were a priori selected to be age-neutral or particularly relevant to younger adults. Instead of changing the age of protagonist in the story, researchers created distinct scenarios targeting age-appropriate experiential contexts. In the age-neutral task, participants reflected on a story describing a suicide-announcing phone call from a friend. Based on the earlier theoretical and empirical work suggesting greater salience of intimacy-related conflicts among younger vs. older adults (e.g., Birditt, Fingerman, & Almeida, 2005; Erikson, 1968), the younger-age normative task involved participants reading a story depicting marital conflicts. To increase ecological validity, researchers also developed video-based marital conflict tasks, depicting couples discussing their prolonged marital disputes. Consistent with earlier work, Thomas and Kunzmann (2014) observed younger adults being more likely to reason wisely when reflecting on the age-relevant marital conflict stories and videos vs. the age-neutral story, whereas researchers observed no differences between tasks among older adults. Also, younger adults reported greater severity of marital conflicts in their

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lives as well as greater willingness to actively engage in such conflicts, which in turn mediated the age effect on wise thinking about marital conflicts. The latter observation provides further support to the idea that age-appropriate experiential contexts shape the likelihood of showing wisdom in reflections on social dilemmas.

Professional experiences. Staudinger, Smith, and Baltes (1992) surveyed a group of clinical psychologists (who frequently encounter people's life challenges in their job) and an age- and education-matched control group. When prompted to reflect on a scenario concerning life review of a fictitious person, clinical psychologists were more likely to recognize the change in the person's roles and goals over her lifespan, as well as acknowledge cultural and individual relativism in values, goals, and priorities[6]. Subsequent work replicated this finding on larger samples, using different scenarios (Staudinger et al., 1998). This research dovetails with more recent studies by Yang (2014), who investigated the relationship between leadership experience and several components of wise thinking. In qualitative analyses of semi-structured interviews, Yang observed that professionals nominated for their superior leadership were likely to mention such aspects of wise thought as the integration of different opinions and perspectives – more than 87% of the leader nominees did so. In a longitudinal follow-up study with higher education professionals, Yang (2014; Study 2) examined changes in self-reported leadership development and wise thought over time. Results indicated significant positive shifts in both qualities over the period of 8 months. Moreover, the increases in leadership learning were strongly associated with increases in components of wise thought. Together, these studies suggest that professionals, whose job creates an experiential context of frequent experience with life or work dilemmas, are more likely to reason wisely. At the same time, further research is needed to examine how professional experiences impact performance on non-fictitious scenarios, and whether the

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longitudinal relationship between leadership experience and wise thought is unique to professionals in leadership positions (vs. control groups) and can be replicated when using non-self-report measures of leadership experience.

Adverse experiences. A common stereotype of a wise individual involves the idea of mastering quandaries of life (Weststrate & Glück, in press). Indeed, transformational experiences with life adversities have been often theorized to create a context affording development of wisdom (e.g., Staudinger et al., 2006). Preliminary observational evidence to this point comes from the study of wisdom nominees – i.e. individuals nominated for their wisdom by others (Baltes et al., 1995), whose biographies appear to reveal a range of *Grenzerfahrungen* (German for "border experiences") associated with living in the time of Hitler's dictatorship during World War II (e.g., immigration, participation in the resistance) (Staudinger, 1999). Similarly, in a recent study of large community sample of U.S. Americans, analyses of interviews about the most stressful event from the last 10 years revealed that ¾ of the sample reported that the adverse life event afforded them an opportunity for wisdom or lesson learned (Sutin, Costa, Wethington, & Eaton, 2010). Consistent with such ethnographic observations, frequency of experiencing adversity has been empirically linked to greater expression of wise thinking in reflections on personal life (Mickler & Staudinger, 2008). However, this relationship does not appear to be linear: whereas moderate frequency of adverse experiences been associated with wiser thought, high frequency of such experiences was associated with lower wisdom, suggesting that traumatic life events do not uniformly promote greater wisdom.

Frequency of adversity may not be the only factor in explaining growth (vs. decline) in wise thought. Post-traumatic growth — i.e. positive psychological change experienced as a result of the struggle with highly challenging life circumstances — may depend on a range of factors,

including personality characteristics (e.g., Damian & Roberts, 2014; Sutin et al., 2010), as well as the way people approach situations in their lives during (Blalock, Calton, & Kashdan, 2014) and after the traumatic experience (Glück & Bluck, 2013; Jones, Brown, Serfass, & Sherman, 2014). Notably, much prior work on post-traumatic growth has relied on cross-sectional data concerning retrospective self-reports (Jayawickreme & Blackie, 2014), with few studies employing longitudinal designs, daily diary methods, and experimental designs (Blalock et al., 2014). Such methods allow researchers to explore how experiential contexts translate into daily, situation-sensitive changes in cognition and behavior (Baltes & Staudinger, 1996; Blackie & Jayawickreme, 2014). Fortunately, a number of recent studies started to employ daily diary and experimental methods to study *situational* contexts enabling and inhibiting wise thought. I will turn to the review of these body of literature next.

The Power of the Situation: Variability in Wise Thinking

Over the lifespan, people encounter different situations. How variable is wise thinking across such situations? Anecdotally, many wisdom exemplars, from Solomon to Mother Theresa, appear to have shown inconsistencies in the level of wisdom across their lives (Ardelt, 2004; Grossmann & Kross, 2014; Sternberg, 2013). Recently, psychological scientists provided empirical support for this observation. Through newspaper and radio calls in the Austrian province of Carinthia, researchers asked anyone who knew a particularly wise person to nominate that person to the project team (self-nominations were not accepted) (Glück et al., 2015). Subsequently, on different days, wisdom nominees were interviewed about challenging experiences from their past, with responses analyzed for various aspects of wise thought. Results indicated a large degree of reliability across different aspects of wise thinking, $r = .70$, yet only a modest degree of convergence in nominees' responses across interview days, $r = .30$.

Intra-individual variability. People vary dramatically in their likelihood of utilizing wise thought from one situation to the next (Grossmann, Gerlach, et al., 2016). Researchers asked a group of adults to fill out a 9-day diary. For each day, participants completed an online diary. The diary included probes instructing them to reflect on the most significant challenge of the day such as interpersonal conflicts, stressful situations at work or other daily annoyances, and questions tapping into participants' likelihood of utilizing wise thought when reflecting on the incident (Grossmann, Gerlach, et al., 2016). Subsequently, researchers examined the correlations between scores reported on different days. On average, researchers observed a modest zero-order correlation between wise thought scores across all dairy days, $r = .20$. This observation is not inconsistent with the notion of an underlying latent trait. This is because traits can be represented as distributions of personality states, with states representing momentary expressions of the trait (e.g., Fleeson, 2001). To examine trait-related consistency in a relevant construct, personality psychologists examine the stability of the mean of the distribution (i.e. average across states). Conversely, within-person variability concerns the variability around individuals' means. Thus, the average level of stability from one daily experience to another is expected to be rather low. However, assuming an underlying trait structure, the degree of stability is supposed to improve when examining aggregated scores across days. Indeed, when scholars averaged wisdom-related responses across odd vs. even days, the level of association improved to the moderate range, $r = .48$, speaking to a degree of stability similar to personality constructs (Fleeson, 2001). To zero-in on the question of stability vs. variability of wise thought, researchers also calculated *between-person* scores, by averaging participant's scores across diary days, and *within-person* scores – i.e. daily deviations from the individual average scores across all diary days. By plotting the density distribution of these scores, one can compare the amount

of within-person variability to a typical between-person variation. As Figure 2 indicates, participants showed at least as much, if not more, variability in the degree of wise thinking *within* the same person across different situations (i.e. intra-person variability) than *between* people when averaged across their diary days (i.e. between-person variability). This pattern of results held for the second-order latent factor of wise thinking, as well as the first-order components of intellectual humility, outsider's perspective, and compromise, which fed into the second-order latent factor.

-- insert Figure 2 about here --

The observation of cross-situational variability and stability in wise thinking dovetails with some earlier work. Staudinger, Lopez, and Baltes (1997) examined wisdom expression across three task capturing different situations (suicide problem, meaning-of life problem, family problem), simultaneously obtaining participants' scores on 33 individual difference measures. Task-specific scores showed a substantial amount of unique variance (26-56%), when accounting for individual different measures and wisdom scores on other two tasks, suggesting situation-specific effects. At the same time, between 7 and 25% of the task-specific variance was accounted by wisdom scores on other tasks, suggesting some degree of stability. Notably, the stability estimates of wise thinking in this work could be biased for two reasons. First, the reported analysis was performed on averages across both knowledge and cognition-focused categories of wisdom,[3] making it difficult to evaluate the degree of stability vs. variability in wise thinking per se. Second, same coders scored each participant across three tasks, potentially introducing common method variance.

Within-person variability in personality states such as extraversion or neuroticism can be predicted from certain situational attributes (Fleeson, 2007; Fleeson & Jayawickreme, 2015;

Fleeson & Noftle, 2008), reflecting the fit between the situation and a certain trait-specific behavioral signature (Fournier, Moskowitz, & Zuroff, 2009; Furr, 2009; Mischel, Shoda, & Mendoza-Denton, 2002). It appears that one's degree of wise thinking and its effects for well-being depend on situational contingencies as well. Participants in the diary study discussed above reported more intellectual humility when reflecting on situations involving other people as compared to non-social situations (Grossmann, Gerlach et al., 2016). Moreover, researchers observed a greater number of state- (as compared to trait-) level associations between wise thought and socio-emotional features of its nomological network. These associations included focus on the bigger picture, more complex emotional representation, less reactivity to adverse events, adaptive emotion regulation, and greater forgiveness. Notably, the associations between wise thought, emotion and forgiveness were only evident on the within-person (rather than between-person) level of analysis.

At this point, more work is needed to understand the exact processes contributing to cross-situational variability in wise thought. For instance, it is possible that situations involving other people call for more wisdom than non-social ones. It is also possible that situations involving other people can promote less focus on the self as compared to non-social situations.

Overall, the observation of cross-situational variability in wise thinking is consistent with the general insights from classic social psychological experiments concerning the power of the situation in the classic "Good Samaritan" study (Darley & Batson, 1973), in which researchers tested helping behavior among seminary students. Even though knowledge of the virtue of prosociality (preparing a talk about the Good Samaritan parable) and dispositional orientation did not impact seminary students' prosocial behavior towards a stranger, situational contingencies did: Students who were in a hurry exhibited less virtuous behavior than students who had time.

Using an experimental approach, in recent studies researchers also started to uncover systematic situational variability in wise thinking. I will review such studies next.

Wise thinking varies across situations. Experimental evidence suggests that greater self-focus contributes to their systematic cross-situational variability in wise reasoning. In one earlier study, Staudinger and Baltes (1996) instructed participants either to think about an interpersonal dilemma on their own (in the same way they typically think about social problems) or to consider what other peoppple whose opinion they value might say about this dilemma. Participants in the others'-opinions condition showed a greater level of such aspects of wisdom-related reasoning as intellectual humility and recognition of uncertainty and change as compared to participants in the think-alone condition. In this work, however, consideration of other people's opinion was confounded with the amount of deliberation time (Staudinger & Baltes, 1996; Table 4), with the latter driving the effects of condition on wise thinking.

More recently, Grossmann and Kross (2014, Studies 1-3; ; Huynh, Oakes, et al., 2016) asked participants to reflect on hypothetical transgressions concerning infidelity and trust betrayal. Participants were randomly assigned either to reflect on a transgression concerning a close friend or a transgression concerning them personally. Subsequently, participants were asked to describe their thoughts about the future development of the relationship. Their descriptions were guided by questions about aspects of wise reasoning such as recognition of limits of their knowledge, consideration of uncertainty and change in ways the relationship might unfold, consideration of different perspectives on the event, and search for a compromise.

As Figure 3 indicates, the effect of the situation (friend- vs. self-centered) in the scenario was pronounced for every aspect of wise reasoning, showing a greater tendency to reason wisely about a conflict of a close friend than a conflict involving the self. This work provides

experimental evidence for situational variability of wise thinking. These results further suggest that wise thinking is often characterized by an asymmetry such that people are more likely to show a greater ability to reason wisely about problems of other people compared to personal problems, consistent with theoretical argument that *general* wisdom, which concerns reflections on others, tends to be conceptually distinct from *personal* wisdom, which concerns reflections on the self (cf. Mickler & Staudinger, 2008; Staudinger, 2013)[7]. Also, these results suggest that the capacity to reason wisely is often higher than expected based on decisions people make about their lives.

--insert Figure 3 about here--

Convergent evidence from other areas of research. The observation of variability in wise reasoning across personal vs. non-personal contexts dovetails with research across several fields of psychology. In the domain of judgment and decision-making, people show an optimistic bias in predictions concerning them personally (cf. planning fallacy; Kahneman & Tversky, 1973), however this bias dissipates when making predictions concerning other people (Buehler, Griffin, & Ross, 1995, 1994; Epley & Dunning, 2000; Koehler & Poon, 2006; MacDonald & Ross, 1999). When making self-predictions, people focus on their current intentions, which leads people to underestimate the impact of other factors on their behavior (Koehler & Poon, 2006; also see Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). In contrast, when making predictions for others, people are more likely to consider past relevant experiences and base-rate information when generating their predictions (Buehler et al., 1995; Epley & Dunning, 2000).

Similarly, self-other asymmetry in wise reasoning is conceptually related to research on perspective-taking failures as a driver of conflict-proneness and poor conflict outcomes (e.g., R.

Robinson, Keltner, Ward, & Ross, 1995; Ross & Ward, 1995). According to the "naïve realism"

account of social conflict outcomes (Ross & Ward, 1995), the failure to recognize intersubjective

differences in representations of the issue at hand (e.g., personal vs. another person's

representation) promotes interpersonal misunderstanding and social conflict. Notably, aspects of

wise reasoning such as intellectual humility or recognition of uncertainty and change appear to

be diametrically opposite to the characterization of naïve realism in social psychological

literature. Indeed, wise reasoning has been in turn linked with greater openness to others'

viewpoints (Kross & Grossmann, 2012) and relational well-being (Grossmann et al., 2013).

Related to this work on "naïve realism," in the domain of social perception, research

indicates asymmetries between self-perceptions and perceptions of other people. Specifically,

people tend to show a "bias blindspot": Viewing others as more susceptible to cognitive and

motivational biases (Pronin, 2008; Pronin, Gilovich, & Ross, 2004; Pronin, Lin, & Ross, 2002;

West, Meserve, & Stanovich, 2012). Research on bias blindspot suggests that the self-other

asymmetry in social perception is partially driven by attaching greater credibility to their ability

to gain insights when reflecting on the self (cf. introspection illusion; Pronin & Kugler, 2007).

Moreover, similar to the relative independence of wise reasoning from cognitive abilities

(Grossmann et al., 2013) and rational thinking (Brienza et al., 2016; Staudinger et al., 1997),

susceptibility to bias blindspot is independent from one's cognitive abilities and rational thinking

dispositions (West et al., 2012).

The self and the cultural context. Why are people less likely to reason wisely when

reflecting on personal scenarios (vs. scenarios involving a friend)? Studies from social and

cultural psychology help shed light on this question. When reflecting on a difficult personal

situation, one is more likely to process information from the first-person perspective. In contrast,

when reflecting on a difficult situation of a friend, one likely adopts a third-person, observer perspective (e.g., Searle, 1995; Wilson, 2002). From the first-person viewpoint, one is more likely to process information in a "hot" fashion, focusing on the concrete, focal features of the environment (Kross, Ayduk, & Mischel, 2005). In contrast, from the third-person viewpoint one remains on the level of "cold", abstract mental representations, with an access to a wide range of meaning structures, such as schemas (Markus, 1977), possible selves (Cross & Markus, 1991; Markus & Nurius, 1986), and narrative structures (McAdams, 2001; Neisser, 1994). Thus, from the third-person (compared to first-person) viewpoint, people are more apt to define that event in relation to its broader context (Kross & Ayduk, 2011; Libby & Eibach, 2011).

First-person focus may be particularly detrimental for wise thinking when the experience is threatening.[8] Social contexts in which one feels threatened lead to reflexive defensiveness at the expense of other people in one's environment (Jonas et al., 2014, for a review). Perception of self-threat can lead to maladaptive and anti-social extremes (Hayes, Ward, & McGregor, 2016; Jonas et al., 2014; McGregor, Nash, Mann, & Phills, 2010), narrower thinking (van Steenbergen, Band, & Hommel, 2011; Wachtel, 1968), and poorer judgment and performance (e.g., Mano, 1992; Pham, 2007; Simon, 1987). All these tendencies are antithetical to wise thought, suggesting that some contexts can decrease one's likelihood of reasoning wisely. The notion of threat-contingent response may also shed light on how age-appropriate experiential contexts impact wise thinking (Thomas & Kunzmann, 2014). Given that older adults are less likely to encounter (and less open to engage with) interpersonal conflicts (Birditt et al., 2005; Carstensen et al., 1999), they may experience greater uncertainty and possibly even threat-related distress when facing such conflicts, resulting in less wise response compared to younger adults.

Notably, cross-cultural studies indicate that situations typically perceived as threatening to the self in the West (e.g., negative feedback) do not necessarily result in biased reasoning (Hoshino-Browne et al., 2005) or anti-social reasoning and behavior in China or Japan (Brockner & Chen, 1996; Kashima, Halloran, Yuki, & Kashima, 2004). According to cultural psychologists, these differences are rooted in fundamental differences in self-concepts in the West as compared to other parts of the world, including South Korea, China, and Japan (Markus & Kitayama, 1991). One type of self-concept views the self as independent and distinct from one's social environment, whereas another type of self-concept views the self as interdependent with significant others, constructed through interpersonal relations. Viewing the self as independent and separate from social environment is more common in the U.S. than in Japan, and such interdependent self may be less vulnerable to types of self-threat previously examined by social psychologists in the West (Heine & Lehman, 1997; Kimel, Grossmann, & Kitayama, 2012; Lehman, Chiu, & Schaller, 2004).

Preliminary work starts to suggest that cross-cultural differences in self-concept appear to have consequences for wise reasoning: Younger Japanese reason in a wiser fashion (i.e. exhibit more intellectual humility, recognition of uncertainty and change, consider others' perspectives and search for a compromise) about interpersonal conflicts concerning other people as compared to younger Americans (Grossmann et al., 2012). Similarly, older cohorts of Americans, who have a less independent self-concept compared to cohorts of younger Americans (e.g., Grossmann & Varnum, 2015; Twenge, Campbell, & Gentile, 2012, 2013; Twenge, Konrath, Foster, Campbell, & Bushman, 2008), show wiser reasoning about interpersonal conflicts concerning other people (Grossmann et al., 2010). In contrast, there appears to be no difference between the age groups of Americans when reflecting on personal scenarios (Grossmann &

Kross, 2014; Study 3), suggesting that cultural differences in wise reasoning are situationally-variable (non-personal vs. personal context) as well. At this point, it is not clear whether possible cultural differences in wise reasoning depend on specific socialization and education practices (cf. Imada, 2012; Midgley, Anderman, & Hicks, 1995), differences in social structure (e.g., Gelfand, 2012; Gelfand et al., 2011; Schug, Yuki, Horikawa, & Takemura, 2009), preferred conflict management strategies (Ohbuchi & Atsumi, 2010; Ohbuchi & Takahashi, 1994) or some combination of these processes. It is also not clear how such cross-cultural differences generalize beyond U.S.-Japanese comparisons. Nevertheless, together these results paint a consistent picture that contexts promoting a focus on the self as independent from others inhibit one's ability to reason wisely.

Ego-decentering Cognitive Mindset Emulates Wisdom-enhancing Contexts

Attention to contextual factors can also shed light on the question of how wise thought can be enhanced. Self-focused situations are often unavoidable; people regularly make decisions about situations in which they have personal stakes (e.g., business negotiations, health-related decisions, or relationship transactions). Though one may not always be able to change type of situation, it is possible to perceive the situation-contingent experiences from different vantage points. For instance, in a classic example provided by William James (1890), the self can be construed as the "I", representing an experiential "ego"-focus, or it can be construed as the "me", representing an observer focus. By adopting the observer perspective on the self as "me," one can gain access to conceptual knowledge similar to how one reflects on other-focused situations (e.g., Damasio, 1994; Libby & Eibach, 2011; Searle, 1995; Wilson, 2002). By transcending one's experience-focused self-interests (Kross & Ayduk, 2011), it is, therefore, possible to boost one's ability to think wisely. Indeed, a long tradition in philosophical scholarship has

emphasized the role of cultivating a frame of mind (or a mindset) that enables such shift. For instance, Plato and Aristotle suggested focusing on ideal truths and essential virtues (vs. momentary self-interests). The skeptic tradition in Ancient Greece philosophy highlighted the role of suspending partiality in judgment concerning social matters as a way to obtain greater insight into social issues (Sextus Empiricus, 2000). Similarly, Taoist scholar Zhuangzi emphasized the virtue of stepping beyond individual points of view (Watson, 2003). Moreover, in the modern scholarship, abstaining from reflexive reactions to protect one's immediate self-interests (or decentering) has been discussed as a feature of mindfulness (e.g., Garland, Farb, Goldin, & Fredrickson, 2015), as well as within the framework of the selfless self (i.e. an interdependent self oriented towards one's environment vs. self-centered concerns) as a determinant of "authentic-durable happiness" (Dambrun & Ricard, 2011). Drawing from the James' example above, for the sake of consistency, I will refer to it as "ego-decentering" to symbolize the shift away from the experiential ego concerns. As reviewed below, such ego-decentering can be achieved through different means, including visual, spatial, temporal, or linguistic self-distancing.

Benefits of ego-decentering reflection. Empirical studies in the fields of clinical and social psychology have started to shed light on these long-standing philosophical propositions about the role of ego-decentering for psychological processes. Ego-decentering reflection on past experiences results in lower emotional distress (Grossmann & Kross, 2010; Gruber, Harvey, & Johnson, 2009; Kross & Ayduk, 2011), improves judgment and performance (Correll, Spencer, & Zanna, 2004; Crocker, Niiya, & Mischkowski, 2008; Lydon & Zanna, 1990), and attenuates the maladaptive and antisocial extremes that anxious circumstances can cause (Cohen & Sherman, 2014; Jonas & Fischer, 2006; McGregor, Zanna, Holmes, & Spencer, 2001;

Mikulincer, Florian, & Hirschberger, 2003; Schumann, McGregor, Nash, & Ross, 2014).

Similarly, ego-decentering in the context of mindfulness training enhances awareness of

emotions, behavior, and environmental events (Brown & Ryan, 2003; Garland et al., 2015).

Ego-decentering boosts wise thinking. In the last 20 years, researchers have also begun

to examine whether an ego-decentering mindset emulates wisdom-enhancing contexts. In one of

the first studies, researchers instructed participants to imagine sitting on a cloud and considering

the customs of various countries as they flew over them (Böhmig-Krumhaar, Staudinger, &

Baltes, 2002). This instruction led participants to a greater appreciation of broader contexts and

relativism in one's values on a separate task.

More recently, researchers examined whether self-transcendence emulates wisdom-

enhancing contexts directly, using ego-decentering instructions (e.g., viewing events from a "fly

on the wall" vantage point; Kross & Ayduk, 2011). Kross and Grossmann (2012) performed two

experiments to test the capacity of ego-decentering for enhancing wise thinking directly. One of

these experiments involved graduating college seniors reflecting on their job prospects during the

peak of the recent economic recession. They were asked to imagine either their career unfolding

"as if you were a distant observer" (ego-decentering condition) or imagine the events unfolding

"before your own eyes as if you were right there" (egocentric condition). Participants in the

"distant observer" condition displayed higher scores of wisdom-related reasoning (intellectual

humility and recognition of change) than participants in the control condition. In the second

experiment, a week before the 2008 U.S. presidential election, American college students

reflected on polarized political issues (e.g., abortion, War in Iraq). Participants were randomly

assigned to either adopt the perspective of an Icelandic citizen living in Iceland (ego-decentering

condition) or a U.S. citizen residing in the U.S. (egocentric condition). Again, participants in the

ego-decentering condition showed a greater ability to reason wisely (recognition of the limits of one's knowledge and recognition of change) about the future development of the social issues they cared about compared to participants in the self-immersed condition.

Two other experiments further indicated that ego-decentering can similarly boost wise reasoning in the domain of close relationship conflicts (Grossmann & Kross, 2014; Studies 2-3). Each study involved a 2 x 2 experiment: In addition to manipulating personal relevance (friend- vs. self-relevant), this study manipulated the perspective, randomly assigning participants to use either third-person pronouns [ego-decentering condition] or first-person pronouns [egocentric condition] when reflecting on the scenario. Reflections on personal problems from an egocentric perspective resulted in less wise thinking as compared to reflecting on friend's problems. However, reflections on a personal problem from an ego-decentering perspective resulted in significantly greater wisdom than reflection on a person problem from an egocentric perspective, and statistically indistinguishable from reflections on a friend's problem. Further planned contrasts indicates that ego-decentering significantly attenuated the self-other asymmetry, enabling individuals to get closer to their actual potential in wise reasoning. This observation suggests that ego-decentering instructions can alter the perception of the situation—from exclusively self-focused to inter-personally-oriented, recreating wisdom-enhancing contexts in one's mind.

Experiments reviewed so far have employed hypothetical scenarios. Recent work also suggests that the effects of ego-decentering on wise thinking extend from fictitious scenarios to concrete interpersonal events such as current unresolved interpersonal conflict involving friend or one′s partner (Grossmann, Oakes, Gerlach, & Denissen, 2016). In one of the experiments, romantic couples in a long-term relationship were instructed to either visualize the unresolved

conflict through the eyes of an outsider [ego-decentering condition] or their own eyes [egocentric condition]. A 10-minute discussion session with the partner followed after which participants were asked to reflect independently on the incident again, and write down their stream of thought about it. Couples in the ego-decentering condition were significantly more likely to employ aspects of wise reasoning in their stream of thought essays (recognition of others' perspectives, and search for a compromise) than couples in the egocentric condition. Subsequent experiments manipulated ego-decentering via first- vs. third-person pronoun use (Grossmann, Oakes, et al., 2016; Studies 2-3) or via future- vs. present-oriented viewpoint (Huynh, Yang, & Grossmann, 2016) when reflecting on unresolved conflicts with friends. In each study, ego-decentering promoted greater intellectual humility, bigger picture insight into the conflict and recognition of change. The latter observations suggests that ego-decentering effects on wise thinking cannot be explained via a conceptual overlap between the manipulation and the operationalization of wise thinking. Though ego-decentering does promote greater focus on others, it also enables a bigger picture, conceptual view of the experience, affording recognition of intellectual humility and change. Overall, it appears that ego-decentering instructions boosted participants' ability to reason wisely across fictitious and real interpersonal events, as well as across interpersonal and societal conflicts.

Downstream effects of an ego-decentering mindset. Finally, ego-decentering mindset appears to have adaptive downstream effects. McGregor and Holmes (1999; Study 4) asked participants to take the perspective of an unbiased reporter [ego-decentering condition] or their personal lawyer [egocentric condition]. Participants were asked to write down a few details of a particular interpersonal conflict with a friend during the past few months that made them feel "hurt, upset or angered." Eight weeks later, researchers called participants to inquire about their

feelings. Participants in the ego-decentering condition reporting feeling less upset than participants in the egocentric condition.

Ego-decentering mindset and wise reasoning also influence how deliberation impacts cooperation in social dilemma games (e.g., public goods games; Kelley et al., 2003). Empirical evidence concerning the role of deliberation for cooperation has been inconclusive. Some studies have suggested that deliberation promotes cooperation (e.g., Fiedler, Glöckner, Nicklisch, & Dickert, 2013). Others suggest that deliberation results in less prosocial tendencies (Rand, Greene, & Nowak, 2012), in part because it leads to greater uncertainty and decision conflict between prosocial and entirely self-interested goals (Ariely & Norton, 2011; Evans, Dillon, & Rand, 2015) in social dilemmas (Kelley et al., 2003). To reconcile these different perspectives, I have proposed that the way deliberation impacts cooperation depends on their ability to adopt an ego-decentered mindset during the deliberation or whether people utilize wise reasoning, with wise reasoning helping to manage decision conflicts between selfish and cooperative goals. In one study (Grossmann, Brienza, et al., 2016), participants were instructed to use 3rd-person pronouns [ego-decentering condition] or 1st-person pronouns [egocentric condition] when making a decision about contribution into a shared pool in a public goods game. Type of instructions moderated the effect of deliberation time on cooperation: Whereas greater deliberation time was associated with less cooperation among participants in the egocentric condition, there was no significant relationship between deliberation time and cooperation among participants in the ego-decentering condition. In another study (Grossmann, Brienza et al., 2016), participants were assigned to either take extra time or to make a spontaneous decision. Same participants reported on their tendency to reason wisely about a recent interpersonal conflict in their lives. Wise reasoning moderated the impact of experimentally manipulated

deliberation time on cooperation: Whereas instructions to take extra time reduced cooperation among participants indifferent to wise reasoning, instructions to take extra time (vs. act spontaneously) promoted *greater* cooperation among participants who utilize wise reasoning in their lives.

Implications and Future Directions

At the onset of the empirical scholarship on wisdom, scholars pointed out that awareness of social contexts may play a role in understanding how wisdom develops (Baltes & Staudinger, 1996). Following this suggestion, the last two decades of empirical research have demonstrated the exact nature how social contextual factors impact the expression of wise thought. Empirically-grounded insights about the variability in wise thinking across experiential and situational contexts lead to several theoretical, methodological and practical implications.

Theoretical implications

Trait versus state wisdom. The variability in wise thinking across a range of social and cultural contexts suggests that wise thinking is best conceptualized within a systemic-ecological framework of various contingencies (e.g., life history, type of situation, culture) influencing thoughts, feelings, and behaviors. Attention to such contextual factors can dramatically enrich theorizing about wisdom-related processes and how they can be enhanced. For instance, research so far has identified that conditions promoting greater self-focus tend to inhibit one's ability for wise thinking, whereas ego-decentering mindsets facilitate wise thinking.

A systemic-ecological framework for wise thought can also help to integrate different epistemological perspectives on the nature of wisdom. As Staudinger and Glück (Staudinger & Glück, 2011) pointed out, there is a "controversy among wisdom researchers about the definition of wisdom" (p. 236). Whereas some scholars conceptualize wisdom as a personality trait (e.g.,

Ardelt, 2003; Levenson et al., 2005; Webster, 2003), others explore focused on the situation-specific expression of wise thought (e.g., Baltes & Smith, 2008; Baltes & Staudinger, 2000; Grossmann et al., 2010, 2013). From the context-sensitive perspective, these conceptual models of wisdom can be easily integrated into an interdependent multi-level framework: The trait of wisdom can be conceptualized as a distribution of situation-specific expressions of the construct (cf. Fleeson, 2001).

Insights from the context-sensitive approach allow evaluating the degree of stability vs. variability in wisdom compared to established personality constructs. For instance, when examining the daily diary data of wise thought (Grossmann, Gerlach et al., 2016), the percentage of within-person (vs. between-person) variance in wise thought ranges from 94% for consideration of others' perspectives to 66% for self-transcendent vantage point (average of 81%). In comparison, the meta-analysis of 15 experience-sampling studies of the Big Five (Fleeson & Gallagher, 2009) indicates that personality varies between 78% and 49% within a person, with the highest degree of variability in extraversion and conscientiousness, and lowest for intellect (average of 65%). This observation suggests that wise thought has a stable trait-like component, though of somewhat smaller magnitude than the Big Five personality dimensions. At the same time, these results should be interpreted with caution and need further replication. Research on psychometric properties of wise thinking is still in its infancy as compared to the long tradition of psychometric scholarship on the Big Five personality dimensions. Thus, it is possible that trait-stability of wise thinking is underestimated due to use of less established psychometric instruments.

Given the substantial within-person variability in wisdom, it appears useful to consider trait- and state-focused approaches to wisdom as complementary and interdependent. This

insight dovetails with the recent arguments concerning the classic distinction between competence and performance (cf. Chomsky, 1965): Whereas the trait-style approach claims to examine the abstract level of latent competence in wisdom, situation-specific approaches to wisdom tend to emphasize the performance aspects of wise thought (e.g., Baltes & Staudinger, 2000). Notably, as recently pointed out by McClelland and colleagues (McClelland et al., 2010), "the fundamental nature of cognitive processing is shaped by the performance characteristics of the underlying mechanism, and approaches that abstract away from such information run a serious risk of missing critical aspects of the problem under consideration" (p. 354). McClelland et al. specifically referred to the neuronal characteristics of a performance in a given situation, and contrasted them with abstract competence-based models of cognition, which may be insufficient for developing theories about the functioning of the human thought. After all, empirical scientists study the expression of psychological characteristics and do not have tools to directly measure the underlying, latent competences. Thus, discussion of trait-style competencies alone, without consideration of situation-specific affordances enabling expression of such traits may be contra-productive. Rather, consistent with the present argument, McClelland and colleagues point out that a fuller understanding of cognition and its development can benefit from the utility of studying dynamics between various physical and cognitive states, which enable explaining mechanisms that give rise to cognitive processes. A density model of cognitive competence (or latent trait) as a distribution of situation-specific performances (or states; cf. Fleeson, 2001) discussed by Grossmann, Gerlach et al. (2016) is an example for how such dynamics can be studied in the domain of wise thinking.

Wisdom exemplars. Instead of defining wisdom explicitly, some scholars study exemplars – i.e. individuals nominated for their wisdom (e.g., Baltes et al., 1995; Glück et al.,

2005; Weststrate, Ferrari, & Ardelt, 2016; S.-Y. Yang, 2008). This approach aims to understand behaviors and underlying motivations that shape perceptions of people such as Confucius, Gandhi, Eleanor Roosevelt, Mother Theresa or Nelson Mandela (Bluck & Glück, 2004; Glück et al., 2005; Paulhus, Wehr, Harms, & Strasser, 2002; Weststrate et al., 2016). In addition to the exploration of lay beliefs about wisdom through such exemplars (e.g., Weststrate et al., 2016), researchers have studied exemplar's autobiographical narratives (e.g., Glück et al., 2005), or tested exemplar's performance on tasks reflecting wisdom-related judgment (Glück et al., 2015). Epistemologically, study of wisdom exemplars enabled the understanding what cognitive and behavioral processes make up wisdom.

Notably, the utility of exemplars goes beyond understanding people's lay beliefs about the wisdom construct. For millennia, life stories of sages such as Confucius, Buddha, Solomon, or Jesus have been used as tools to teach wisdom (e.g., Zagzebski, 2015). The educational value of wisdom exemplars is present in contemporary educational writings as well (Sternberg, 2010): Exemplars' life stories have a potential to communicate particular ethical lessons, communicate the virtue of resilience and teach prosocial orientation beyond self-interests. Central to teaching wisdom through exemplars is the feeling of admiration (Algoe & Haidt, 2009; Schindler, Zink, Windrich, & Menninghaus, 2013), which provokes reflection on exemplar's actions and inspires to learn from and emulate them (Bai, 2014; Onu, Kessler, & Smith, 2016; Schindler, Paech, & Löwenbrück, 2015; Zagzebski, 2015).

The exemplar-driven approach to wisdom also benefits from the context-sensitive perspective discussed above. The study of wisdom exemplars requires the ability to consider different perspectives on exemplar's life, their goals, motivations, and aspirations and how they change over time – in short, the whole range of cognitive processes attributed to wise thinking.

For instance, evaluation of exemplars' actions as "wise" requires recognition of the cultural-historical context – i.e. how culture and time have shaped exemplar's behavior and its valuation (Staudinger, 1996). Moreover, attribution of exemplary status to a remarkable individual also involves an appraisal of that person's actions as admirable (Zagzebski, 2010). To experience admiration, one has to appraise the situational context underlying exemplar's behavior (Schindler et al., 2013), particularly intentions and motivations driving exemplars towards an action in a difficult situation. Without sensitivity to cultural-historical, experiential, and situational contexts, it would be difficult to draw wisdom-related lessons from exemplars' lives.

Methodological implications. Observation of variability in wise thought across situational contexts also has methodological implications. If one is interested in evaluating people's general wisdom-related tendency, single-shot abstract measurements of wisdom-related qualities (Ardelt, 2003; Levenson et al., 2005; Webster, 2003) may be insufficient. According to the contemporary standards in research on individual differences in personality (Fleeson & Noftle, 2008, 2012; Mischel et al., 2002), one needs to examine people across different contexts or states to draw inferences about the reliability of general tendencies (i.e. traits). Given the substantial degree of intra-individual variability in wise thinking about daily hassles and interpersonal challenges (Grossmann, Gerlach, et al., 2016) from one situation to the next, assessing wisdom-related characteristic once may be a highly unreliable estimate of a general wisdom-related tendency. To assess trait-level wisdom in the domain of daily challenges, one would need to average across multiple state-level observations. Such state-level observations can be obtained either in the form of narrative tasks (e.g., Baltes & Staudinger, 2000; Grossmann et al., 2010) or via state-level scales of wise thinking (e.g., Brienza et al., 2016; Grossmann, Gerlach, et al., 2016; Grossmann & Kross, 2014). Drawing from the insights about the average

inter-day reliability of wise thought in reflections on daily hassles and interpersonal challenges (r = .20; Grossmann, Gerlach et al., 2016), one can also estimate how many such observations are needed to obtain a reliable estimate of wise thinking in this context. Specifically, based on the Spearman-Brown prediction formula, one would require at least 9 repeated observations to get an estimate of a general wisdom-related tendency about daily hassles and interpersonal challenges that would be considered reliable according to the current conventions (α = .70). Notably, little is known about the reliability of wisdom-related qualities in other contexts (e.g., reasoning about positive experiences), which provide an important avenue for future research.

Practical implications. Greater appreciation of contextual factors can shed new light on effective teaching of wisdom in schools, and strategies for promotion of wisdom in daily life. As discussed above, understanding of contextual factors is fundamental for drawing lessons from wisdom exemplars. Moreover, application of knowledge learned from such lessons to problems encountered in one's life can benefits from wise thinking, too. As educational psychologists pointed out, availability of meta-cognitive processes similar to wise thought are critical for the avoidance of "inert knowledge" in the context of problem solving (Billing, 2007; Renkl, Mandl, & Gruber, 1996). Therefore, by understanding what contexts enable wise thinking, educators may create environments that can be more effective in teaching wisdom at school (Sternberg, 2010) or at work (Gardner et al., 2001).

Research conducted so far suggests that contexts cultivating an ego-decentering mindset can be effective for enhancing wisdom in everyday life. However, such contexts appear to be relatively rare in the typical work and school setting in the modern world. The rapidly changing occupational environment over the past few decades as well as the unpredictable economy has led to an increasing job insecurity and other uncertainties, particularly among the working class

(Sverke, Hellgren, & Näswall, 2002). Facing occupational insecurity, people can become more prone to reflexive egocentrism (Wegner & Giuliano, 1980) and threat reactivity (Jonas et al., 2014), inhibiting wise thinking. Concurrently, the white-collar occupational environment of the middle-class has been promoting an independent self-direction (Schooler, 2007; Schooler, Mulatu, & Oates, 2004), with downstream effects for greater individualism and egocentrism (Grossmann & Varnum, 2015; Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012; Stephens, Markus, & Townsend, 2007). Individualist, self-focused goals (e.g., for popularity or immediate rewards) can results in a zero-sum construal of the work setting, arousing conflict (Fitzsimons & Finkel, 2013).

How to sustain wisdom in the context of modern occupational and educational demands? Though speculative, it is possible that group-oriented environments promoting interdependence through common goals orientation and shared responsibilities (Kelley & Thibaut, 1978) can shift the focus away from the self-interested concerns. In educational settings, such environments can be instantiated through collaborative learning and use of collaboration-facilitating educational technology. Interdependent environments can also be created through structural means, by placing individuals into advisor-advisee relationship dyads. Unless reputational concerns are at stake, adopting an advisory role may be a powerful tool for promoting an ego-decentered mindset and wise thinking. Moreover, another family of strategies may involve creating task-specific reminders, prompting people to take a step back from their habitual viewpoint (e.g., "What would Buddha/Jesus/Moses do?"), take some time off, or adopt a third-person language (Grossmann & Kross, 2014) before responding to a task calling for wisdom. In addition to general reminders, one may also train individuals in event-contingent responding to stressful work situations (e.g., if I am stressed, I do X).

Another practical implication concerns the *evaluation* of wisdom-related characteristics. Situations in which one is personally involved may lead to very different wisdom-related processes than situations mainly concerning a colleague, a friend, or a stranger (Grossmann & Kross, 2014; Staudinger, 2013). Thus, a priori specifying of evaluative contexts appears critical for any scholar or practitioner seeking development of standardized wisdom evaluation instruments. The latter insight is also relevant when assessing the effectiveness of wisdom-related interventions, suggesting that such assessments require an understanding of the context in which professionals administer the intervention.

Future research. A context-sensitive approach to wise thought also leads to novel questions. *What are the long-term effects of wisdom-enhancing cognitive training and are there habituation effects?* So far, most of the evidence on wise thinking comes from single-shot experiments; longitudinal studies on wisdom are still missing (Staudinger & Glück, 2011), preventing conclusive evaluation how contexts of adversity or unique professional experience may impact the development of wise thought (Jayawickreme & Blackie, 2014). *Do affective processes interfere with or enable wiser thinking?* When examining specific social contexts, it is possible that wise thought benefits from emotional down-regulation (Gross, 2015). It is equally possible that wise thought benefits from a more differentiated emotional experience (Grossmann, Huynh, & Ellsworth, 2015; Lindquist & Barrett, 2010; Quoidbach et al., 2014). Indeed, recent work suggests that inter- and intra-individual differences in wise thinking are positively associated with more differentiated emotional experience (Grossmann, Gerlach et al., 2016). Future experimental work is needed to identify the directionality of this association. Focus on how wise thought unfolds in concrete situations enables researchers to examine the *neurophysiological correlates of wiser thought*, including visceral functioning (Grossmann,

Sahdra, & Ciarrochi, 2016) and functioning of prefrontal cortical regions (Meeks & Jeste, 2009).

By exploring the relationship of wise thinking to human neurobiology, researchers will be able to

situate wise thinking within a systemic framework of social, cognitive, and neurophysiological

processes (Staudinger & Glück, 2011). Moreover, insights about the context-sensitive nature of

wise thinking can also shed new light on how wise thinking unfolds in the domain of *intra-and*

inter-group processes, as well as the relationship of wise thinking to concrete, prosocial

outcomes. I describe each of these directions next.

  Wise thinking in groups and organizations. Despite growing interest in wisdom in the

fields of organizational psychology and management (e.g., Hurst, 2012; McKenna, Rooney, &

Kenworthy, 2013), little is known about wise thinking concerning groups. However, there are

several notable parallels of the existing work on wise thinking and past work on group processes.

  Similar to individual's failure to reason wisely when facing self-threats, when groups

face outside threats, they tend to focus internally, emphasizing intragroup relationships and

decreasing intergroup ties (Sherif, Harvey, White, Hood, & Sherif, 1961). Groups may exert

pressure upon their members to act in a uniform fashion to reach a collective goal: steady

pressure increases in parallel to the magnitude of the threat to the group (e.g., Festinger,

Schachter, & Black, 1950; Schachter, 1951). Wise thinking in organizations seems context-

dependent, too, with reduced ability of organizations to show wisdom when facing crises and

organizational threats. Decision-making in the case of organizational threats is often

characterized by a preference for information search that is confirming rather than disconfirming

one's initial position (Staw, Sandelands, & Dutton, 1981), and favoring information of reduced

cognitive complexity (Starbuck, Greve, & Hedberg, 1978; Suedfeld & Tetlock, 1977) – both

processes that on the organizational level seem to be diametrically opposed to the aspects of wise

reasoning. Finding ways to boost wise thinking under these circumstances may provide a fruitful avenue for future work.

In the domain of inter-group relations, wise reasoning may play a critical role when reduction of intergroup hostility is desirable. Models of conflict resolution emphasize the importance of balancing between concerns for the in-group and concerns for others (cf. "dual concern model"; De Dreu & Van Vianen, 2001), elements of which involve consideration of others' perspectives (Galinsky, Maddux, Gilin, & White, 2008) and consideration whether integration of different concerns in the form of a compromise may be possible. More generally, context-sensitive processing of information is critical for analysis and management of inter-group conflicts (Deutsch, Coleman, & Marcus, 2011; Rahim, 2015).

Wise thinking and "optimal" outcomes. Wise thinking may not necessary result in wise action (Staudinger et al., 2006). By studying wise thinking in the context of individual and situational contingencies, one may gain a better understanding of the conditions under which wise thinking may promote "optimal" or prosocial outcomes. For instance, a successful application of wise thinking in everyday life may require formulating a set of if-then strategies for how to implement wisdom-related intentions into actions (e.g. "Whenever situation X arises, I will look for additional information about the issue at hand, and will inquire others about their perspectives on it") (Gollwitzer, 1999; Gollwitzer & Brandstätter, 1997).

Notably, not all situations may equally benefit from all aspects of wise thinking. Demands for wise thinking may also change over time of engaging with the situation. For instance, in well-structured situations typical of legal court proceedings or economic transactions, prolonged search for additional case-relevant evidence or consideration of various alternatives can be suboptimal (e.g., Ellsworth, 2005; Hastie, 2001). Under these circumstances,

after initial, wisdom-enabled realization about the contingencies of the situation, a wise response may involve avoiding prolonged deliberation (Vervaeke & Ferraro, 2013).

Conclusion

As Sternberg once pointed out, "information processing in and of itself is not wise or unwise. Its degree of wisdom depends on the fit of a wise solution to its context" (1998, p. 353). Along similar lines, earlier research paradigms on wisdom theorized how the meaning and function of wisdom operated within the larger socio-cultural context (Baltes & Staudinger, 1996). The present review builds on these insights, highlighting the critical role of contextual factors in understanding how wisdom manifests and develops. Recent empirical findings from cognitive, developmental, social, and personality psychology cumulatively suggest that people's ability to reason wisely varies dramatically across experiential and situational contexts. Understanding the role of such contextual factors offers unique insights into understanding how wisdom unfolds in daily life, and how it can be enhanced and taught.

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Table 1.

Example Responses for the "Dear Abby" Story Varying in Wise Thinking

Low Score	High Score
Intellectual Humility / Recognition of Limits of Own Knowledge	
I think the guys probably end up putting their share in. But they won't ever, or she will never hear the end of it either. Where she's afraid she won't hear the end of it if they don't pay. So I am sure they have hard feelings about it, but I am sure at the end they will break down and help pay for it.	Dawn apparently is impatient to get this done, and the others have been dragging it out for six years or at least nothing's been done for six years. *It doesn't say how much she finally decided would be the price.* [...] *I don't know that that's how it happened*, just that that seems the reasonable way for them to go about it. *It really depends on the personalities of the people involved, which I don't know*.
Recognition of Others' Perspectives / Broader Contexts than the Issue at Hand	
I can imagine that it was a sour relationship afterward because let's just say that Kurt and Ralph decided not to go ahead and pay for the headstone. Then it is going to create a gap of communication between her sister and her brothers. If the gravestone was just as important to them then it wouldn't have been a problem about them getting the money in the beginning.	*Somebody might believe* that we need to honor parents like this. *Another person might think* there isn't anything that needs to be done. Or *another person might not have* the financial means to do anything. Or it could also mean that *it might not be important to the brothers*. It often happens that *people have different perspectives on situations important to them*.
Recognition of Uncertainty and Change	
I don't think there is much going on here. I am pretty sure she ended up paying for it by herself and she probably bugs them about it now. Because if they wanted to help they would have already given her money, I think. I don't think there really is an outcome.	*Many things* can happen as this *situation unfolds*. The brothers might have reimbursed the sister and then there was resentment on the wife's part. Or there could have been resentment for all three. Or the brothers could have refused to pay and she may have accepted it. Or maybe one brother would have paid.
Integration of Different Opinions / Preference for Compromise	
They probably didn't have the money; otherwise they would have done it sooner. And Dawn is going to be stuck with a bill period. She should be stuck with a bill if she went ahead without their okay. I think she footed the bill herself and so she was bitter toward her brothers after that, which she shouldn't be. She took it upon herself.	I would think there would probably be *some compromise* reached, that Kurt and Ralph realize that *it's important to have some kind of headstone*, and *although Dawn went ahead and ordered it without them confirming that they'd pitch in, they would probably pitch in somehow*, even if not what she wanted ideally. But hopefully, there was some kind of contribution.

Note. Italics added for emphasis.

Figure 1. Illustration of several commonly-used wisdom-related cognitions in the modern psychological wisdom scholarship. For further details, see Grossmann et al. (2010, 2013)
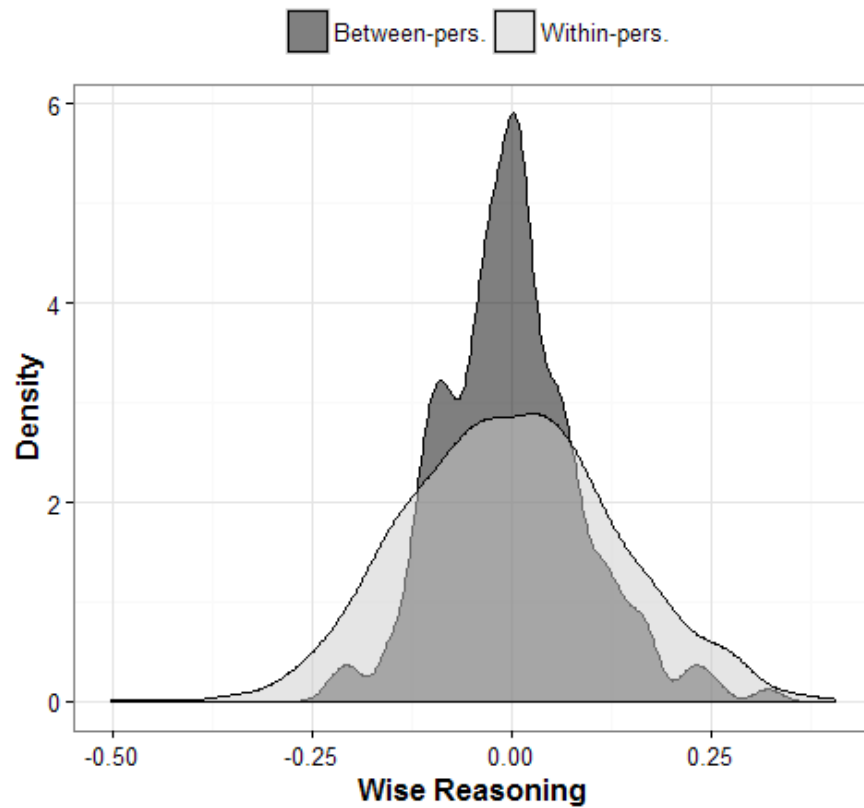
Figure 2. Probability density function (Fleeson, 2001), representing variability of wise reasoning in reflections on challenges across 9 diary days. Wise reasoning – estimates of a second-order latent factor from a structural equation model, in which intellectual humility/uncertainty, outsider's perspective, and recognition of compromise represent first-order factors. Between-person - distribution of between-person averages of wise reasoning across diary days. Within-person – distribution of daily deviations from the individual average of wise reasoning. Adopted from Grossmann, Gerlach et al. (2016).
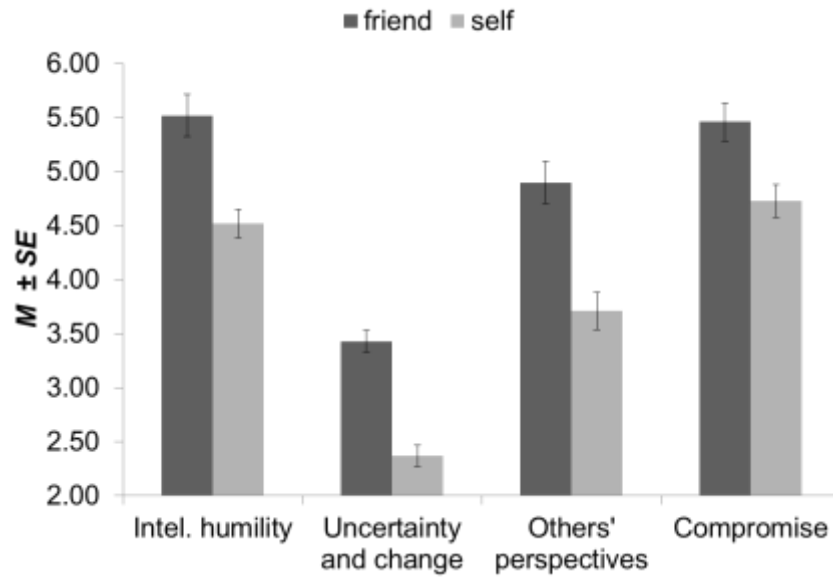
Figure 3. Effects of a situation (friend- vs. self-centered) on wise reasoning about a social conflict on 1-"not at all" to 7-"very much" scale. Adopted from Grossmann & Kross (2014).

<center>**Footnotes**</center>

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[1] Many psychological models of wisdom use the notion of "context-sensitivity" to characterize the main feature of wise thought (for a review, see Staudinger & Glück, 2011). At the same time, "context" can also refer to a range of factors promoting or inhibiting one's expression of wisdom (e.g., Baltes & Staudinger, 1993). Notably, this heterogeneous use of the term "context" reflects different levels of analysis. Theoretically, one's ability to be context-sensitive can vary from one context to another. That is, a person who is context-sensitive in situation A may not necessarily show a large degree of context-sensitivity in situation B.

[2] The notion of "recognition of change" advocated by developmental scholars like Basseches (1984) was later introduced to the domain of cross-cultural psychology as "dialectical thinking" (Peng & Nisbett, 1999) or "holistic cognition" (Nisbett, Peng, Choi, & Norenzayan, 2001). Specifically, Peng & Nisbett (1999) discussed how the lay beliefs of the Chinese might be more aligned with the notion of dialectical thinking than the lay beliefs of U.S. Americans. Moreover, Nisbett and colleagues observed greater context-sensitivity in attention and memory recall among Chinese and Japanese, and greater context-independence in the same cognitive processes among U.S. Americans (Nisbett, Peng, Choi, & Norenzayan, 2001). There is some overlap between these constructs and the notion of wise thinking discussed in the present paper. Each construct involves facets concerning sensitivity to contextual information. At the same time, cross-cultural studies mainly concerned basic cognitive processing (attention, memory, general predictions of change), whereas wisdom scholarship has concerned reflections on highly complex interpersonal issues. See Grossmann (in press) for further information about the similarities and differences in the concept of dialectical thinking in philosophy, developmental psychology and cross-cultural research.

[3] Baltes and colleagues (e.g., Baltes & Smith, 2008; Baltes & Staudinger, 2000) characterized their findings as capturing "wisdom-related knowledge." Hereby, scholars used the term "knowledge" liberally, averaging stream of thought scores concerning factual knowledge, knowledge about strategies to handle the situation participants reflected on, as well as three (meta)-cognitive categories guiding participants' reflections. The aim of the present review is to evaluate results pertinent to wise thinking, i.e. cognitions common across various definitions of wisdom. Therefore, when discussing findings from Baltes' research group, I explicitly refer to the cognition-related scores, recalculated from the existing data in respective publications.

[4] Wisdom scholars (Ardelt, 2004; Baltes & Kunzmann, 2004; Baltes & Smith, 2008; Baltes & Staudinger, 2000; Jeste et al., 2010; Sternberg, 1998; Vervaeke & Ferraro, 2013) further differentiate wisdom from general knowledge: Wisdom involves insight into what knowledge to use and what knowledge to omit in a given situation.

[5] Like other scholars (e.g., Vervaeke & Ferraro, 2013), I define cognition broadly, including thinking, reasoning, meta-cognition, and a range of appraisals implicated in social and emotional processing of information.

[6] The only exception to the latter pattern concerned older control group reflecting on the version of the dilemma concerning an "older" target. This group showed a similarly high level of relativism as clinical psychologists. Notably, clinical psychologists in this study did not significantly differ from the control group in recognition of uncertainty and indeterminacy of life. Instead, the data indicated greater uncertainty among the older as compared to younger control group, suggesting a role of age-related experiences.

[7] Staudinger (2013) foreshadowed the later established observation of differences in wise thinking about self vs. other-oriented concerns (Grossmann & Kross, 2014; Huynh, Oakes, et al.,

2016) by pointing out that performance on the measure of personal wisdom appears to be lower than performance by the same participants on the measure of general wisdom. Notably, several methodological considerations make it hard to draw clear inferences about this observation. First, "personal" wisdom method instructed participants to reflect on their past experiences from the perspective on a self as a friend, whereas such instructions were not provided in the general wisdom method. Second, each method evaluated participants on distinct, albeit related, aspects of wise thought, making a direct comparison of results impossible.

[8] Personal situations tend to be more self-relevant than situations involving others. Does it mean that self-relevance detriments one's ability to think wisely? Such is not necessarily the case. Indeed, there is a range of examples about contexts under which self-relevance of a task can boost cognitive performance (e.g., Levy, 2003; Shih, Ambady, Richeson, Fujita, & Gray, 2002). For instance, self-relevance can enhance performance on analytic tasks, showing that Brazilian street children and Californian grocery shoppers are more likely to solve computational problems when problems are framed as relevant to these groups (Carraher, Carraher, & Schliemann, 1985; Murtaugh, 1985, respectively) (also see Ceci & Roazzi, 1994). It is possible that by presenting tasks in a familiar context, scholars and practitioners can boost individual motivation and subsequent performance, as compared to presenting tasks in a de-contextualized fashion, which may act as a threat due to non-familiarity. Similarly, an emotionally-involving / threatening personal context is likely to create the perception of the task as difficult and risky, motivating individual to defend their self-worth at the expense of wise, integrative thinking (also see Dambrun & Ricard, 2011).