

## 4 Method

### 4.1 Sample

Participants in this study were young adults ( $N=160$ ,  $M = 22.9$  years,  $SD = 1.73$ , 20 - 25 years). Their addresses were provided by a commercial marketing research institute (Schmiedl Marktforschung GmbH, Berlin).

Participants were contacted by telephone by the author and members of the wisdom project. They were informed that the study investigated person perception and that they would watch videos and evaluate persons. Of the 199 addresses provided by the marketing research institute 160 subjects could be recruited successfully. Eighteen of the non-recruited subjects were recruited but did not keep their appointment for the study. The remaining 21 participants could not be contacted or refused to participate. Participants received Euro 15 for their participation in one session (90 minutes).

The sample was stratified by gender and education. 50 percent of the participants were women. The recruitment firm was instructed to provide at least 40 % of addresses of persons who had not completed the highest school track. On average, participants had 11.7 years ( $SD = 1.6$ , range = 8 - 13) of formal school education. Altogether, 57.5% had completed the highest school track, 40 % had completed the medium school track and 2.5 % had completed the lowest school track. Most participants were German (96 %). Ninety-eight percent were single.

Sixty-four percent of all participants were currently engaged in formal education (students: 41%, apprenticeship students: 23%, high-school students: 11%). About a fourth of the sample (23.1 %) worked part-time (7.5 %) or full-time (15.6%). Eight percent were unemployed or house-keepers and the remaining four percent were in their military service year.

Participants were randomly assigned to the 16 experimental conditions. It was, however, ensured that women and men with higher and lower education level were equally distributed across experimental conditions. Hence, in each experimental condition were 5 men and 5 women, of whom 6 persons had completed higher education and 4 persons lower education.

#### 4.2 Study Design

This study uses an experimental person perception paradigm. The first set of predictions addresses the role of prototypic wisdom-relevant characteristics in the attribution of wisdom to an advisor. Three personal characteristics of the advice-giver were experimentally manipulated: (a) Level of the advice-giver's *wisdom-related knowledge* reflected in the advice given (high vs. low levels of wisdom-related knowledge), (b) the empathic quality of the advice-giver's *listening behavior* (positive, empathic listening behavior vs. negative, non-empathic listening behavior), and (c) the chronological *age of the advice-giver* (younger vs. older). Both male and female advice-givers were included in the study.

A *between-subjects design* was used because judging different advice-givers might alter the perceiver's frame of reference. Participants should, however, evaluate the wisdom of the advice-giver by comparing this person's appearance and performance to their *ideal* conception of wisdom rather than to other advice-givers' appearance and performance.

The second set of predictions addresses the processes involved in forming an impression of a target's wisdom. A fourth between-subjects factor in the design was the *cueing of the wisdom concept*. Half of the participants received the additional instruction to think about wisdom and wise persons for 2 minutes prior to viewing the stimulus material (see Table 4).

The effect of *increased experience with an advice-giver (repeated exposure)* on wisdom attributions was investigated as a within-subjects factor. All participants viewed the stimulus material four times and provided evaluations of the advice-giver's wisdom after the first and after the fourth trial.

Table 4

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*Instruction for Wisdom Cueing (German Version)*


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Bevor wir Ihnen den Film zeigen, denken Sie bitte im Stillen über „Weisheit“ und „weise Personen“ nach.

Sie haben dazu 2 Minuten Zeit.

Was gehört für Sie zu „Weisheit“ ?

Was sind typische Eigenschaften und Verhaltensweisen „weiser Personen“ ?

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In sum, the design of the study included four between-subjects factors (*age of target, listening behavior, level of wisdom-related knowledge, and wisdom cueing*) and one within-subjects factor (*repeated exposure*). Participants were randomly assigned to the 16 experimental conditions. Women and men with higher and lower education level were equally distributed across experimental conditions.

#### 4.3 Stimulus Material

The stimulus material for the study consisted of two parts: (1) A *silent video* showing an interaction between the advice-giver and an advice-seeker and (2) a *written advice text* introduced as the beginning of a response of the advice-giver to the advice-seeker's life problem. In the video, age and nonverbal listening behavior of the advice-giver were experimentally manipulated by using younger and older actors who were instructed to listen either in an empathic and positive way or non-empathically, negatively. A video-based approach was chosen to increase external validity of the experiment. Using videos allowed us to show nonverbal cues of listening behavior and age in the visually prominent way in which they usually occur (rather than in the form of verbal descriptions of behaviors). The written text was designed to reflect the advice-giver's level of wisdom-related knowledge.

The stimulus material was tested in two pilot studies to empirically examine whether the intended experimental manipulations were successful. The results of the two pilot studies are summarized for each manipulated factor separately.

#### 4.3.1 Level of the Advice-Giver's Wisdom-Related Knowledge

*Materials.* The advice-giver's level of wisdom-related knowledge was manipulated in the form of a written advice text. Written texts were used instead of a spoken monologue to ensure that the same stimulus material could be used for all advice-givers and for both listening conditions. Moreover, wisdom-related knowledge has been investigated in the past using verbal think-aloud protocols (see Staudinger et al., 1994). Therefore, a written presentation of wisdom-related knowledge seemed to be appropriate.

Two advice texts were constructed: One text reflected a high level of wisdom-related knowledge and the other a low level of wisdom-related knowledge. The responses were constructed by the author and the project leaders of the Berlin Wisdom Project Prof. Paul B. Baltes and Prof. Ute Kunzmann . The responses were developed based on the *Manual for Wisdom-Related Knowledge* (Staudinger et al., 1994) to explicitly reflect either a high or a low level of wisdom-related knowledge. The life-problem was not specified in the response and hence, the texts were constructed in such a way that they could generally be applied to all wisdom-related life problems.

The texts were very short (111 words) and were introduced to the participants as an extract from the advice-giver's response. Table 5 shows the responses. The written response of the advice-giver was presented after each participant saw a video

Table 5

*High and Low Wise Response Texts (German Version)*High level of wisdom-related knowledge:

„Ich kann mir vorstellen, dass Du Dich überfordert fühlst und nicht so richtig weißt, was Du machen sollst. Ich glaube, es gibt viele Möglichkeiten, mit dem Problem umzugehen. Meistens gibt es einen Weg, auch wenn man ihn zunächst nicht unbedingt sieht. Und es gibt ein paar Dinge, die man tun kann, um eine gute Lösung zu finden. Vielleicht hilft es Dir beispielsweise, mit einem Deiner Freunde darüber zu sprechen oder mit jemandem, der eine ähnliche Situation schon mal erlebt hat. Manchmal ist es auch gut, nicht sofort etwas zu tun, sondern sich ein bisschen Zeit zu nehmen, um darüber nachzudenken. Wir können gern zusammen überlegen, was die ersten Schritte sein könnten...“

Low level of wisdom-related knowledge:

„Ich kann mir vorstellen, dass Du Dich jetzt erstmal ein bisschen zusammenreißen musst. Was soll man sonst machen? Man muss da eben einfach irgendwie durch. Letztendlich ist es meistens so, dass man nichts ändern kann. Das habe ich schon so oft erlebt. Wenn man erstmal in einer solchen Situation ist, dann gibt es nicht viel, was man tun kann. Man ist da ganz auf sich allein gestellt. Es bringt auch nichts, sich darüber viele Gedanken zu machen. Das ändert ja doch nichts an der Situation. Du solltest mit Deinen Eltern sprechen und das tun, was sie Dir sagen. Das ist der einzig richtige Weg. Ich würde das an Deiner Stelle tun...“

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of an advice-giver interacting with an advice-seeker. Presentation time of the texts was 30 seconds. It was decided to set the time of presentation because participants should be exposed to the video and to the text equally long.

*Manipulation Check of the Level of Wisdom-Related Knowledge.* The response texts were rated according to the five Berlin Wisdom Criteria by 10 trained raters (see

Staudinger et al., 1994, for details of the coding procedure). As intended, the text reflecting a wiser piece of advice was rated with a mean wisdom score of 5.7 reflecting a high level of wisdom-related knowledge (Wisdom Scale: 1 to 7), whereas the low-wisdom text was rated with a mean wisdom score of 1.5 reflecting a low level of wisdom-related knowledge.

To obtain lay persons' evaluations of the level of wisdom-related knowledge of the responses, the response texts were rated in a pilot study. Participants of Pilot Study 1 ( $N = 80$ ,  $M = 22.35$  years,  $SD = 1.71$ , *Range*: 20 - 25 years) evaluated the texts on three indicators of wisdom (*helpful*, *good advice*, and *wise*) and on three dimensions on which the texts should be comparable (*comprehensibility*, *abstractness*, *social desirability*). The three items indicating wisdom were used to construct the *Level of Wisdom Scale* which showed very high internal consistency ( $M = SD = \alpha = .93$ ). The rating format of the items consisted of 11-point bipolar scales (Scale 0-10; see Appendix A for outline of the Pilot Study). The order of texts was balanced across participants. A repeated analyses of variances with the between subjects-factor *order of presentation* and *wisdom texts* as a within-subjects factor performed on the dependent variable *Level of Wisdom Scale* showed that *order of presentation* had a significant influence on the evaluation of the wisdom level of the texts (see Appendix B). Therefore, the analyses reported below are based only on the evaluation of the first text that participants rated.

A univariate analysis of variances was computed for the indicator „*Level of Wisdom Scale*” with wisdom level of the text as a between-subjects factor. The wiser text ( $M = 5.54$ ,  $SD = 2.23$ ) was perceived to be wiser than the less wise text ( $M = 2.93$ ,  $SD = 2.44$ ;  $F(1, 78) = 24.84$ ,  $p < .001$ ;  $\eta^2 = .24$ ).

The stimulus texts were constructed to be similar in text characteristics independent of wisdom (i.e., *comprehensibility* and *concreteness*). In addition, the less wise text should not be perceived as socially undesirable (see Appendix B, Table B3 for intercorrelations). Because the texts should be comparable on each of these factors, three univariate analyses of variances were computed (see Huberty & Morris, 1989). The two response texts were comparable with respect to their *comprehensibility* ( $F(1, 78) = .01$ ,  $p = .92$ ;  $\eta^2 = .00$ ) and *concreteness* ( $F(1, 78) = 3.04$ ,  $p = .09$ ;  $\eta^2 = .04$ ). The texts did also not differ significantly in their perceived *social desirability* ( $F(1, 78) = 3.76$ ,  $p = .06$ ;  $\eta^2 = .05$ ). The mean of 6.36 (on an 11-point-scale) for the low wisdom text indicates that the low wisdom text was not perceived as undesirable (see Appendix B, Table B2 for mean differences and standard deviations).

#### 4.3.2 Quality of the Advice-Giver's Nonverbal Listening Behavior

The advisor's nonverbal listening behavior was shown in a short video. In the video, a young woman portrayed by a professional actress<sup>6</sup>, talks about a difficult

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<sup>6</sup> The advice-seeker was played by a 21 years old student of acting in her last term. She was recruited by the author based on a recommendation by a professor of speech education from the University of



life-problem while the advice-giver listens silently. To ensure that participants would attend to the behavior of the listener and not be distracted by the speech of the advice-seeker, the video was shown without sound. The videos lasted 30-35 seconds.<sup>7</sup>

The actress playing the advice-seeker was instructed to lean forward and not to change her body posture. She was shown in profile. Her head movements and gaze behavior were standardized for all targets and both positive and negative listening behavior. The actress was instructed to speak the text of the life-problem with an emotional tone that reflected worry, sadness, and helplessness. The videos were presented to participants as silent videos to enable participants to imagine a life-problem that they considered to be severe. This decision was based on the idea that participants should focus on the advice-giver's behavior rather than on the advice-seeker's story.

The roles of the advice-givers were played by lay actors. The nonverbal behaviors indicative of empathic listening were derived from empirical studies on nonverbal communication, warmth, and rapport (see Chapter 2.2). Specifically, empathic listening behavior was characterized by frequent eye contact (100% of

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Arts, Berlin. A professional actress was recruited because of the special demand of the task to show the same behavior with 20 different targets in repeated takes and different listening behavior conditions. A woman was searched because it was assumed that a woman showing distressed emotions would be less ambiguous than a man might be (see Hall, 1984; Hall & Briton, 1993). Her age was chosen to match the participants' age.

<sup>7</sup> The sequence of 30 seconds was selected from the entire video (mean duration = 85 sec). The same sequence was used for all videos (across targets and listening behavior conditions).

entire time), concerned and interested facial expressions, nods, and forward trunk lean. Non-empathic listening behavior was expressed through rare nods and rare eye contact (only if the speaker looked up), unconcerned and bored facial expressions, backward trunk lean, and away behavior (drinking water; see Appendix C for details of the instructions to lay actors).

*Selection of Advice-Givers Based on the Quality of Their Listening Behavior: Pilot Studies 1 and 2.* Two pilot studies were conducted to empirically select four older and four younger advice-givers based on the quality of listening behavior (see Appendix A for details of the Pilot Studies).

The videos of 20 lay actors (5 older and five younger men and women) were used to empirically select eight actors (2 advice-givers per age-group and gender) based on the quality of their listening behavior in both the empathic and non-empathic listening conditions. Specifically, selection was based on two criteria: (1) a high score on the *Good Listening Scale* in the empathic listening conditions (above 6.5 on an 11-point Likert-Scale) and (2) a low score on the *Good Listening Scale* in the non-empathic listening condition (below 3.5).

In Pilot Study 1 ( $N = 80$ ,  $M = 22.35$  years,  $SD = 1.71$ ,  $Range: 20 - 25$  years) the videos of twenty advice-givers (10 older and 10 younger, see subsequent section on age of advice-givers) were evaluated regarding the quality of their listening behavior. The design of Pilot Study 1 was a between-subjects design with *quality of listening*

*behavior* and *age of advisor* as between-subjects factors. Each participant rated 10 advice-givers on bipolar adjective scales (Scales 0-10). The order of advice-givers was balanced in a way that 2 participants rated each of the 40 videos (10 advice-givers by 2 age-groups by 2 listening conditions) as the first one. The *Good Listening Scale* was developed using 6 items: *a good listener, attentive, interested, empathetic, concerned, and understanding* (see Appendix A for the questionnaire-format). The 6-item *Good Listening Scale* showed a high internal consistency (Cronbach's  $\alpha = .97$ )<sup>8</sup>.

The sequence in which advice-givers were rated was balanced in a way that each video was evaluated by two participants as their first video (and also as their last video). A repeated multivariate analysis of variances revealed strong order effects ( $F(9, 68) = 4.69, p < .001; \eta^2 = .38$ ) indicating that across video presentation positions judgments of good listening increased (see Appendix B). Therefore, only evaluations of the first video each participant evaluated were used for the selection of advice-givers. Two participants evaluated each of the 40 videos as the first one.<sup>9</sup>

A second pilot study was conducted to obtain two more evaluations for those 12 advice-givers (i.e. 24 videos) that showed satisfying evaluations of their listening behavior in the first study. A score on the *Good Listening Scale* (Scale: 0-10) above 6.5 was seen as satisfying for the videos that showed empathic listening behavior. For

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<sup>8</sup> The internal consistency reported here refers to the final data-set including participants of Pilot Study 1 and of Pilot Study 2. For participants of Pilot Study 1 only the data for the first advice-giver rated were used.

<sup>9</sup> One video was evaluated by only one participant and one video was evaluated by three participants due to an error in the programming.

the videos that reflected non-empathic, negative listening behavior a *Good Listening Scale* score below 3.5 was sufficient.

Each of the 24 videos was evaluated by  $n = 2$  participants in Pilot Study 2 ( $N = 48$ ,  $M = 22.35$  years,  $SD = 1.71$ , *Range*: 20 - 25 years). For the final selection of the lay actors, the data of Pilot Study 1 and 2 were combined. For Pilot Study 1 only the results of the video that was rated first are used (see Appendix A for details of the Pilot Studies).

The goal of the pilot studies was to select two advice-givers per age group and gender. Table 6 gives an overview of the means for the *Good Listening Scale* for each advice-giver in the empathic and the non-empathic listening condition. At least two advice-givers per age-group and gender matched the criterion of a mean score of the *Good Listening Scale* above 6.5 in the empathic videos and below 3.5 for the non-empathic videos. Two advice-givers (Old Man 5 and Young Woman 3) showed very low *Good Listening* scores (below 1) for their non-empathic videos and were therefore not considered as suitable targets. In each age group, the targets that met the criteria best were selected for the experiment.

Table 6  
*Judged Quality of Listening Behavior*

Target	Listening Behavior						Stepwise procedure to identify best targets
	Empathic			Non-empathic			
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	
<b>Old Men</b>							
OM 1	8.68	1.36	4	3.10	2.94	3	
OM 2	8.04	1.30	4	1.36	1.17	4	
OM 3	7.54	1.39	4	2.71	1.68	4	Removed after Pilot 2
OM 4	7.29	.81	2	<b>5.93</b>	2.73	2	Removed after Pilot 1
OM 5	7.00	.40	2	<b>.07</b>	.10	2	Removed after Pilot 1
<b>Old Women</b>							
OF 1	9.00	0.31	4	2.29	.91	4	
OF 2	8.04	1.14	4	1.89	1.45	4	
OF 3	7.21	1.77	4	<b>3.71</b>	1.86	4	Removed after Pilot 2
OF 4	<b>6.21</b>	3.73	2	2.86	2.00	3	Removed after Pilot 1
OF 5	<b>5.43</b>	3.43	2	3.86	3.84	2	Removed after Pilot 1
<b>Young Men</b>							
YM 1	9.07	1.28	4	1.04	.36	4	
YM 2	7.82	1.53	4	2.68	1.99	4	
YM 3	<b>6.50</b>	2.29	4	2.61	1.88	4	Removed after Pilot 2
YM 4	<b>5.00</b>	1.81	2	3.50	1.31	2	Removed after Pilot 1
YM 5	<b>4.86</b>	1.21	2	1.71	2.22	2	Removed after Pilot 1
<b>Young Women</b>							
YF 1	8.14	2.08	4	1.93	1.86	4	
YF 2	7.11	1.66	4	3.04	.68	4	
YF 3	7.54	2.41	4	<b>.54</b>	.55	4	Removed after Pilot 2
YF 4	<b>6.36</b>	.30	2	<b>5.71</b>	3.64	2	Removed after Pilot 1
YF 5	<b>2.57</b>	2.02	2	2.00	2.42	2	Removed after Pilot 1

*Note.* Bold numbers indicate cases that did not match the set criteria.

#### 4.3.3 Age of Advice-Giver

The advisor was played by lay-actors. They were contacted through a governmental casting agency. From the data base of the casting agency 10 older (60-

67 years) and 10 younger (25-31 years) men and women were selected based on a photo (five per gender). They were selected in a group discussion of the wisdom-project. Selection criteria were: (1) Average attractiveness, (2) no atypical characteristics (e.g., no long haired men, no piercing, no extravagant styling or hair cuts), and (3) no beards (men).

*Manipulation Check of the Advice-Giver's Age.* In the pilot studies, participants estimated the age of the advice-givers to ensure that the older and younger lay actors were perceived as distinct in age. In addition, several personality variables were assessed to investigate whether the older and younger advice-givers were perceived as comparable in their personality.

Participants estimated the age of the advice-givers ( $M_{old} = 56.38$ ,  $SD_{old} = 8.70$ ;  $M_{young} = 26.16$ ;  $SD_{young} = 3.93$ ). Table 7 gives an overview of the advice-giver's actual and estimated ages. Most of the older advice-givers were perceived to be younger than they actually were. Older and younger targets were, however, clearly perceived to be distinct regarding their age ( $F(1,62) = 319.25$ ,  $p < .001$ ,  $\eta^2 = .84$ ).

Table 7  
*Actual and Estimated Age of Advice-Givers*

Target	Actual Age	Estimated age		N	Stepwise procedure to identify best targets
		M	SD		
Old Men					
OM 1	67.2	51.1	10.7	7	
OM 2	64.5	60.5	8.3	8	
OM 3	66.6	62.0	6.5	8	Removed after Pilot 2
OM 4	65.3	67.5	7.1	4	Removed after Pilot 1
OM 5	63.6	65.0	8.6	4	Removed after Pilot 1
Old Women					
OF 1	61.3	54.3	4.8	8	
OF 2	60.8	59.0	3.1	8	
OF 3	61.1	56.0	5.9	8	Removed after Pilot 2
OF 4	66.7	59.0	5.9	5	Removed after Pilot 1
OF 5	62.2	46.0	3.4	4	Removed after Pilot 1
Young Men					
YM 1	25.7	26.0	4.0	8	
YM 2	26.9	25.3	1.9	8	
YM 3	28.6	28.1	3.1	8	Removed after Pilot 2
YM 4	27.2	31.5	10.4	4	Removed after Pilot 1
YM 5	31.2	32.8	1.7	4	Removed after Pilot 1
Young Women					
YF 1	28.1	26.5	4.5	8	
YF 2	28.2	26.9	5.1	8	
YF 3	28.1	30.3	7.5	8	Removed after Pilot 2
YF 4	29.0	34.0	6.3	4	Removed after Pilot 1
YF 5	27.9	34.8	7.4	4	Removed after Pilot 1

*Note.* Age in years.

Table 8  
*Quality of Listening Behavior of Younger and Older Targets*

Video Listening Condition	Age of Advice-Giver					
	Younger			Older		
	M	SD	N	M	SD	N
Empathic Listening	8.04	1.66	16	8.44	1.08	16
Non-empathic Listening	2.17	1.49	16	2.10	1.60	15

*Comparability of Older and Younger Advice-Givers' Listening Behavior.* Older and younger advice-givers should not only be comparable with respect to their personality characteristics but also with respect to the quality of their empathic and non-empathic listening behavior (see Table 8). A two factorial (age-group by listening condition) univariate analysis of variances was performed on *Good Listening Scale* as the dependent variable.<sup>10</sup> Older and younger advice-givers did not differ in the quality of their listening behavior ( $F(1, 59) = .19, p = .66; \eta^2 = .00$ , see Table 8). In addition, no interaction between age-group and listening condition ( $F(1, 59) = .41, p = .52; \eta^2 = .01$ ) was found. The older and younger targets were comparable with respect to the quality of their listening behavior.<sup>11</sup>

*Comparability of Older and Younger Advice-Givers' Personality Characteristics.* The most difficult task in the development was to ensure that older and younger advice-givers differ in their age, but not in other relevant personality characteristics. The

<sup>10</sup> This analysis included only the eight advice-givers whose videos were used in the study.

<sup>11</sup> The advice-giver's gender did not influence the perceived quality of listening behavior.



second goal of the pilot studies was to ensure that older and younger advice-givers were perceived to be comparable with regard to appearance and personality variables. The advice-giver's videos were rated in Pilot Study 1 and Pilot Study 2<sup>12</sup> on the following dimensions: (a) NEO personality characteristics, (b) attractiveness, (c) intellectual competence, (d) warmth, (e) general life competence, (f) social acceptability (see Appendix A for an overview of the items used). The bipolar item pairs were rated on 11 point scales (Scale: 0 – 10, see Appendix A, Table A1 for an overview of the item format used).

Two-factorial univariate analyses of variances were used to assess the comparability of the selected four older and four younger advice-givers in the empathic and non-empathic listening videos (see Huberty & Morris, 1989). Because only the first trial ratings were used, the total sample size (Pilot Study 1 and 2) for these analyses was  $N = 63$  ( $M = 22.28$  years,  $SD = 1.69$ , *Range*: 20 - 25 years; see Appendix A for a detailed description of the sample).

The older and younger advice-givers were comparable with regard to 4 of the *NEO personality characteristics*: „balanced“ ( $F(1, 59) = 1.32, p = .26; \eta^2 = .02$ ), „outgoing“ ( $F(1, 59) = 1.28, p = .26; \eta^2 = .02$ ), „friendly“ ( $F(1, 59) = .20, p = .66; \eta^2 = .00$ ), and „open for new things“ ( $F(1, 59) = .00, p = .98; \eta^2 = .00$ ). They were also perceived to be comparable in their *intellectual competence*: „intelligent“ ( $F(1, 59) = 0.39, p = .54$ ;

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<sup>12</sup> The reported analyses refer only to advice-givers selected for the final experiment. Results are based only on first advice-givers evaluated in Pilot Study 1 and advice-givers evaluated in Pilot Study 2

$\eta^2 = .01$ ), „educated” ( $F(1, 59) = 0.36, p = .55; \eta^2 = .01$ ). Older and younger advice-givers were perceived to be similar in their *warmth* and *social competence*: „warm” ( $F(1, 59) = .25, p = .62; \eta^2 = .00$ ), and „well able to deal with people” ( $F(1, 59) = .26, p = .61; \eta^2 = .00$ ). They were seen as being equally *dominant* ( $F(1, 59) = 3.42, p = .07; \eta^2 = .06$ ). Both older and younger advice-givers were comparable regarding their *social acceptance*: „average” ( $F(1, 59) = 0.18, p = .68; \eta^2 = .00$ ), and „interesting” ( $F(1, 59) = .06, p = .81; \eta^2 = .00$ ) and they were *liked* equally well: „sympathetic” ( $F(1, 59) = .30, p = .58; \eta^2 = .00$ ). It should be noted that for all variables apart from „dominant” and „average” the ratings for the advice-givers differed between the empathic and non-empathic listening condition: Advice-giver’s who listened in an empathic way were judged more favorably than advice-givers in the non-empathic listening condition (see Appendix B, Table B4 for means and standard deviations for all variables). One interaction effect was found for *distanced* ( $F(1, 59) = 7.64, p < .01; \eta^2 = .12$ ). In the empathic listening condition, older advice-givers were perceived as less distanced than younger advice-givers ( $t = -2.33, df = 30, p < .05$ ).

Younger and older advice-givers were perceived to differ in their *attractiveness* and *general life competence*. Older advice-givers were seen as being less „good-looking” than younger advice-givers ( $F(1, 59) = 5.09, p < .05; \eta^2 = .08$ ). In terms of general life competence, older advice-givers were rated higher on „somebody who masters his/her life” ( $F(1, 59) = 4.95, p < .05; \eta^2 = .08$ ) and were also seen as being more

„self-assertive“ ( $F(1, 59) = 7.22, p < .01; \eta^2 = .11$ ) than younger advice-givers. Older advice-givers were also seen as being more „reliable“ than younger advice-givers ( $F(1, 59) = 8.20, p < .01; \eta^2 = .12$ ). These findings have to be taken into account when interpreting the results of the experiment (see Chapter 6).

#### 4.3.4 Wisdom Cueing

A second goal of this study is to investigate social cognitive processes, such as the role of prior activated knowledge on attributions of wisdom. Half of the participants received the instruction to „think about wisdom and wise persons for two minutes“ before encoding the stimulus material (see Table 4).

Participants were asked to think about wisdom and wise persons before they saw the video and read the response. The wisdom cueing instruction was used in those trials in which participants evaluated the advisors (before the first and before

Table 9  
*Overview of Experiment*

Wisdom Cueing Condition	No Wisdom Cueing
Practice-Task (Computer)	
General Instruction	
Thinking about Wisdom (2 min)	
1. Presentation of Stimulus Material (Video and Text)	
Attribution of Wisdom (T1)	
2. Presentation of Stimulus Material (Video and Text)	
3. Presentation of Stimulus Material (Video and Text)	
Thinking about Wisdom (2 min)	
4. Presentation of Stimulus Material (Video and Text)	
Attribution of Wisdom (T2)	

the last exposure to the stimulus material, see Table 9). Participants were instructed to think about wisdom and wise persons for two minutes. The same instruction to think about wisdom and wise persons was used in an earlier study by Glück and Baltes (2005). The time was limited to ensure that every participant in the *wisdom cueing* condition had the same chance to activate his/ her knowledge. Participants in the *no-activation* condition received no instruction.

#### 4.3.5 Repeated Exposure

A second aspect of impression formation that was investigated in the present study is the effect of repeated exposure (i.e., extended experience with an advice-giver) on attributions of wisdom. Table 9 provides an overview of the experiment procedure. Participants saw the stimulus material four times and provided evaluations of the advice-giver's wisdom after the first and after the fourth exposure to the stimulus material.

Repeated exposure was used to facilitate the processing of the material and to „simulate“ the interaction history with a person (see Baltes & Goulet, 1971; Lindenberger & Baltes, 1995). Based on work of Cacioppo and Petty (1979) who found that agreement to messages increased from 1 to three exposures, but decreased

after five exposures, four exposures to the stimulus material were used in the present study.<sup>13</sup>

#### 4.4 Measures

##### 4.4.1 *Wisdom Attribution Questionnaire*

The present study investigates attributions of wisdom to an advice-giver. Based on results of previous empirical studies on implicit theories of wisdom a *Wisdom Attribution Questionnaire* was developed (see Table 10). The correlation between the first and second wisdom assessment was very high ( $r = .84, p < .001$ ).

An initial set of 50 items that were selected from studies on implicit theories of wisdom was used (see Appendix D). The original pool of 50 items was used in exploratory factor analyses to explore whether the items reflected different facets of wisdom. A set of exploratory factor analyses was performed (see Appendix D for details). All factor analyses were performed using principal axis factoring. At first, an exploratory factor analyses with the criterion of an Eigenvalue greater than 1 (without rotation) was performed (Factor Analysis 1). Seven factors were extracted in the initial solution.

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<sup>13</sup> In a pilot study, no difference between participants who were exposed to the response texts three versus four times was found. Because of the complexity of the stimulus material, four exposures were therefore used to ensure that participants would have the chance to process the stimulus material effectively.

Table 10  
*Descriptive Statistics for Wisdom Attribution Questionnaire*

Outcome	<i>M</i>	<i>SD</i>	<i>N</i>
Wisdom Attribution Questionnaire (T1)	2.63	.38	160
Wisdom Attribution Questionnaire (T2)	2.52	1.49	160

*Note.* <sup>a</sup>(Scale 0-6), <sup>b</sup>(Scale 0-10)

Examination of the Scree-plot (see Appendix D, Figure D1), however, revealed that there was a very strong first factor (Eigenvalue = 26.31) that accounted for 51 percent of the variance. A second factor (Eigenvalue = 2.88) accounted for additional 5 percent of the variance. The second factor analysis (Factor Analysis 2) was computed extracting two orthogonal factors. The factor loadings indicated that all items loading on the second factor had higher loadings on the first factor than on the second factor. A third factor analysis (Factor Analysis 3) was performed that allowed the two factors to be correlated. Results indicated that the two factors were correlated very highly ( $r = .68$ ) also reflected in the fact that items loading on the second factor had high loadings on the first factor too.

Because of the high correlation between the two factors, a first factor-solution assuming a strong general factor in the wisdom concept was seen as being appropriate for the purpose of this study. The Wisdom Attribution Questionnaire was constructed based on the first extracted factor (Factor Analysis 1). The 20 items

Table 11

*Wisdom Attribution Questionnaire (Items and Factor Loadings)*

Item (English)	Item (German)	Factor loadings
Aware (H&C)	macht sich Dinge bewusst	.77
Interesting to talk with (H&C)	interessanter Gesprächspartner	.77
Thoughtful/ thinks a great deal (H&C)	denkt viel	.77
Says things that are worth listening to (H&C)	sagt Dinge, die anzuhören sich lohnt	.77
Understands/ evaluates information (H&C)	verstehet und bewertet Informationen richtig	.82
Sees the essence of situations (H&C)	sieht das Wesentliche einer Situation	.78
Knows when to give/not to give advice (H&C)	weiss, wann man Rat gibt und wann nicht	.81
Can deal with uncertainty (SMSSB)	kann mit unsicheren Situationen umgehen	.80
Can deal with difficult interpersonal situations (SMSSB)	kommt gut mit schwierigen zwischenmenschlichen Situationen zurecht	.81
Provides valuable insights in difficult life matters (SMSSB)	äußert bei schwierigen Lebensfragen wertvolle Einsichten	.84
Understands the life of others (SMSSB)	verstehet das Leben anderer	.83
Knows humankind (SMSSB)	besitzt Menschenkenntnis	.79
Good advice-giver (H&C)	ist ein guter Ratgeber	.75
Can correctly evaluate others (SMSSB, modified)	kann andere richtig einschätzen	.80
attaches importance to ideas (S)	findet Ideen und Gedanken wichtig	.79
is able to see through things (S)	durchschaut die Dinge	.80
Knows much about difficult life-circumstances (SMSSB, modified)	weiss viel über schwierige Lebenssituationen	.76
Can empathize with difficult life-problems (SMSSB)	kann sich in schwierige Lebensprobleme einfühlen	.85
comprehends the nature of human existence (e.g., vulnerability, emotionality) (SMSSB)	begreift die Natur menschlicher Existenz (z.B. Verletzlichkeit, Emotionalität)	.78
observant/perceptive (H&C, S)	ist ein guter Beobachter	.79

Note. H&C (Holliday & Chandler, 1986), SMSSB (Staudinger, et al. 1998), S (Sternberg, 1985)

with the highest loadings on the first factor were used.<sup>14</sup> All 20 items had a factor loading higher than 0.75. These items were used in a subsequent exploratory factor analysis that revealed a clear one-factor solution that accounted for 64 percent of the variance (see Appendix D, Factor analysis 4). Table 11 provides an overview of the final items. The internal consistency of the WAQ was very high (Cronbach's  $\alpha = .97$ ). The correlation between the first and the second wisdom assessment was also very high  $r = .84$ .

#### 4.4.2 Perception of Experimental Conditions Questionnaire

*Perceived Consistency of Advice-Giver's Behavior.* A single item assessed to what extent the advice-giver's behavior was perceived as being consistent: „The response fitted the person.“ A seven-point Likert scale was used ranging from 0 (= does not apply at all) to 6 (= applies fully). Table 12 shows means and standard deviations.

*Perceived Importance of Advisor's Characteristics on Attributions.* Participants were explicitly asked to indicate how important each of the presented stimuli for their attributions of wisdom to the advice-givers was. Specifically, they were asked to rate the *importance of the advisor's age* („For my judgment, the age of the listener was important“), the *importance of the video* („For my judgment, the video of the listener

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<sup>14</sup> The factor structure was replicated for the second wisdom assessment. The first factor accounted for 61 percent of the variance. One item („is a good listener“) failed to be among the 20 highest loading items. The item „is a good advisor“ was therefore used for both scales because it met the selection criteria for both measurement occasions better.



Table 12  
*Perception of Experimental Conditions Questionnaire*

Variable	Mean	SD	Scale	Wording of items
Perceived consistency of advisor's behavior	3.55	1.95	0 – 6	Die Antwort passte zu der Person.
Importance of advisor's characteristics				
Importance of age	2.75	2.02	0 – 6	Für meine Beurteilung war das Alter der zuhörenden Person wichtig.
Importance of video	4.64	1.42	0 – 6	Für meine Beurteilung war der Film mit der zuhörenden Person wichtig.
Importance of response	4.66	1.46	0 – 6	Für meine Beurteilung war die Antwort der zuhörenden Person wichtig.

was important"), and the *importance of the response* („For my judgment, the response of the listener was important"). Again, the response format consisted of a 7-point Likert scale that ranged from 0 = 'does not apply at all' to 6 'applies fully' (see Table 12 for means and standard deviations, see Appendix E, Table E2 for intercorrelations).

#### 4.5 Procedure

Participants came into the laboratory at the Max Planck Institute for Human Development for one session. Each session lasted 90 minutes. Up to five participants were tested simultaneously. Each participant sat at an individual computer. Sessions were lead by the author. Five Macintosh i-books were used to show the stimulus material (videos and texts) and present the questionnaires.

The session started with the experiment. After agreeing on participation participants were introduced to the computer procedure and the response format of the questionnaires. Half of all participants received the instruction to think about wisdom and wise persons whereas the other half was just exposed to the stimulus material. Participants were instructed to watch the video carefully and read the advice-givers' response carefully. The stimulus material was shown four times. After the first and the fourth exposure to the stimulus material (video and response text) participants evaluated the advice-giver's wisdom.

In the remainder of the session, participants answered questions about the experiment and a demographic questionnaire. Several self-report questionnaires and cognitive tasks were administered, but not used in the present study. The completeness of participants' responses was checked after each questionnaire. After the session participants received Euro 15 for their participation and were informed about the purpose of the study.

#### 4.6 Data Preparation

The wisdom-rating and personality questionnaires were administered by computer and filled-out by participants by selecting the appropriate response using a mouse. The questionnaires were programmed by the author using the database program „Filemaker“. All data were imported into SPSS. The data of the Raven's Advanced Progressive Matrices Test were entered by hand and imported into SPSS.

All analyses were done using SPSS. Because the completeness of the data was checked after each task (but not during the experiment), there are very few missing data (0.23 %).