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Personality and Memory in Old Age

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ABSTRACT

We examined the impact of personality on episodic memory performance in a sample of 287 healthy adults aged 68–95 years. Extraversion and neuroticism were assessed with a standardized personality inventory. Episodic memory was assessed with an everyday task. Results from regression analyses controlling for the effects of age, gender, and education show that higher extraversion and lower neuroticism are associated with higher episodic memory performance. In addition, the strength of the correlations between neuroticism and episodic memory declined with increasing age in a male sub-sample, revealing an interaction between age and neuroticism.

Episodic memory varies across individuals, and this variability increases with age while performance decreases (Christensen et al., 1994; Morse, 1993; Salthouse, 1991; Verhaeghen & Salthouse, 1997). Much work has been invested in understanding the mechanisms underlying inter-individual differences and age-related changes in these differences. In one approach, focussing on basic processing components, cognitive resources such as speed or working memory capacity were identified as mediators of the relationship between aging and remembering (Graf & Uttl, 1995; Salthouse, 1991). In another approach, inspired by a life span perspective on human development, contextual factors such as health, education and lifestyle have been identified as mediators of individual differences in age-related memory decline (Baltes, 1987; Schaie, 1996). In a similar way, personality factors might contribute to the increasing variability of episodic memory performance in later adulthood. The relationship between memory and personality remains relatively obscure. Only a few prior investigations have focused on this relationship, and even fewer have examined how it holds up in old age. In order to fill this gap, the present study investigates the impact of two personality characteristics – extraversion and neuroticism – on inter-individual differences in age-related declines in episodic memory.

Extraversion – related to sociability and impulsivity – describes individuals who orient their behavior and experience towards the outer world. Research in younger adults has identified behavioral differences between extraverts and introverts and found an advantage for extraverts on verbal learning and memory tasks, and an advantage for introverts on vigilance tasks (Eysenck & Eysenck, 1985; Matthews & Deary, 1998). In older age, individuals typically experience less social stimulation (e.g., because of the loss of work-related social interactions). An extraverted orientation could compensate for this loss by providing for new stimulation (cf. selective optimization, Baltes & Graf, 1997). Therefore, it seems possible that extraversion is instrumental in preserving episodic memory performance in old age.

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Age is also associated with a decline in sensory functions (Lindenberger & Baltes, 1994). An extraverted orientation could compensate for this decline by providing sensory stimulation through an outgoing, stimulation-seeking attitude. If extraversion serves as a buffer in the trajectory of age-related decline in episodic memory in a similar way as an active lifestyle (Schaie, 1996), we expect a stronger relationship between memory performance and extraversion in old old adults (e.g., >80 years of age) than in young old adults (e.g., 60–70 years of age).

It is also possible, however, that older adults experience fewer challenges due to withdrawal from major roles, and thus the impact of introversion for maintaining cognitive performance could increase in old age (Gold & Arbuckle, 1990). Introverts are less dependent on social stimulation and are therefore less affected by a decrease in social stimulation. Consequently, a change in the direction of the relationship between extraversion and episodic memory would be expected.

Neuroticism – which is highly correlated with anxiety – describes individuals who are easily worried and who are more likely to experience negative affect and somatic complaints. In young adults, a higher level of neuroticism tends to improve performance on easy tasks, but it has a detrimental effect on performance when the task is more demanding (Eysenck & Eysenck, 1985; Mueller, 1992). Negative affect and the greater self-preoccupation of neurotic individuals (who may use attentional capacity for worry-related instead of task-related thoughts) may have a distracting influence on episodic memory (Gold & Arbuckle, 1990). In older adults, higher neuroticism might be even more detrimental, because a neuroticism-related reduction in processing resources is combined with an age-related decline in processing resources. This would result in an interaction between neuroticism and age on episodic memory performance. On the other hand, it might well be that the expression of neuroticism changes in old age. While in young old persons worry-related thoughts are unnecessary and might take away capacity, worries become more appropriate (e.g., about health issues, consequences of a misstep, etc.) in old old persons and somatic complaints become strongly related to actual health problems. As a result, old old individuals would score higher on neuroticism because they worry more about realistic threats. If true, neuroticism is not measured properly and, as a result, a reduction of the negative correlation between neuroticism and episodic memory would be expected.

Only a few prior studies have focused on the relation between these personality factors and episodic memory in old age. Arbuckle, Gold, Andres, Schwartzman, and Chaikelson (1992) studied 326 male World War II veterans aged 57–81 years. Personality was measured with the Eysenck Personality Inventory (EPI; Eysenck & Eysenck, 1968), and episodic memory was measured with a story recognition task, word list free- and cued recall tests. The pattern of correlations between episodic memory and personality was different for extraversion and neuroticism. Free recall and cued recall performance correlated positively with extraversion, with correlations between $r = .04$ and $r = .12$, while story recognition correlated negatively, $r = -.10$. By contrast, all measures of episodic memory were negatively correlated with neuroticism, with correlations between $r = -.18$ and $r = -.05$.

Hultsch, Hertzog, Small, and Dixon (1999) found a similar pattern in a sample of 236 men and women aged 55–86 years. They used the NEO Personality Inventory (NEO-PI; Costa & McCrae, 1985) to assess personality, and the episodic memory tests consisted of word recall and story recall. They found a positive correlation between extraversion and word recall, $r = .03$, and a negative correlation between extraversion and story recall, $r = -.07$. The correlations between neuroticism and the memory measures were consistently negative, $r = -.13$ and $r = -.05$, respectively.

Additionally, in a meta-analysis including subjects across the whole adult age span, Ackerman and Heggestad (1997) found small but consistent positive relationships between extraversion and a variety of intelligence factors, one of them labeled as learning and memory, $r = .05$. They also found consistent negative relationships between two factors related to neuroticism – test anxiety and stress reaction – and intelligence factors, and a correlation of $r = -.22$ and $r = -.06$, respectively, with the learning and memory factor.

In summary, correlations between personality and episodic memory were low and some were not even significant. However, overall the pattern is consistent. Neuroticism was negatively correlated with all the episodic memory tasks. Extraversion was consistently positively correlated with tests requiring the recall of word lists. Because the correlations between personality and memory are small, it will be difficult to determine a change in the relationship between episodic memory and personality as a function of age, even if there was one.

However, the effects of individual differences on experimental memory tests might be underestimated for several reasons. First, the laboratory setting might suppress the expression of personality differences. In order to minimize error variance, the test situation is kept as constant as possible. However, personality differences might be expressed only when the situation allows some degrees of freedom, for example, the opportunity for interactions. Therefore, we chose a social test situation, which involved the interaction between the participant and the experimenter. Each participant was tested individually and responded verbally to the experimenter. We hypothesized that such an interactive face-to-face test situation would enhance ecological validity by providing a context that allows personality to influence behavior. More precisely, we expected a beneficial effect for extraverts, and an adverse effect for neurotics on memory performance.

Second, to assess memory the materials are standardized in order to minimize inter-individual differences in the preference of such materials. Usually, in an episodic memory test, participants are presented with unrelated wordlists. However, this might also obscure the relationship between personality and memory because individual differences might be expressed stronger when there is a possibility for preferences. For this study, we therefore chose different types of materials, that is, pictures, words, numbers, patterns, etc., to allow for individual differences in the preference of materials. However, these materials were chosen in a way to balance the expression of individual differences and scorer reliability.

Further, many tasks that are used in laboratory studies of memory lack ecological validity. This might also reduce their sensitivity to individual differences in personality. To enhance validity we chose an everyday task as a study task in which subjects had to find differences between two scenes, which at first glance looked identical. This kind of task can be found on entertainment pages of journals and newspapers and has an intrinsic appeal, which challenges curiosity. To summarize, we hypothesized that an interactive test situation with an appealing study task and multifaceted test materials would create an environment that amplifies the expression of personality differences on episodic memory.

In this study – situated within a large longitudinal interdisciplinary project on autonomy, health and well-being in the elderly (Perrig-Chiello, Perrig, Stähelin, Krebs, & Ehrsam, 1996) – we focused on the relationship between personality factors and episodic memory with the goal to demonstrate reliable relationships between personality and episodic memory. While previous studies reported data about these relationships in older adults, we investigated whether these relationships change across old age. Our sample consisting of 287 participants aged 68–95 years was suitable for this purpose.

METHOD

Participants

Participants were originally recruited among employees of three major chemical companies in Basle, Switzerland, for a biomedical longitudinal study (Widmer, Stähelin, Nissen, & da Silva, 1981). More than 6,400 healthy volunteers participated in this study, the Basle Prospective Study, over a period of more than 20 years. The current project, the interdisciplinary study on aging (IDA), is a follow-up study for which subjects from the original sample were recruited if they conformed to two criteria. First, they had to be at least 65 years old and second, they had to live independently (i.e., not in an institution) in the area of Basle. From 2,959 men and 809 women who confirmed to this restriction, 848 persons were randomly selected and invited to participate in the study. They were informed that they would be required to travel to the test site, the Geriatric University Clinic of Basle, independently. A total of 442 persons aged 65–94 years agreed to participate in the initial wave of the IDA-study. Three hundred and thirty five persons were re-tested 2 years

Table 1. Demographic Characteristics: Age, Education, Marital Status and Subjective Health.

		N (men)	*N* (women)
Age	68–72	61	42
	73–78	69	32
	79–85	68	15
Education	Non-skilled	20%	42%
	Skilled	53%	49%
	Academic	27%	9%
Marital status	Single	2%	51%
	Married	78%	19%
	Divorced	4%	13%
	Widowed	16%	17%
Subjective health	Good	82%	86%
	Moderate	15%	11%
	Poor	3%	2%

later. The data reported in this paper originate from this second wave. A telephone inquiry revealed that the main reasons for attrition were illness (44%), death (21%), and absence from home/travel in the scheduled test period (16%). For 287 participants (198 men and 89 women) aged 68–95 years, complete data sets were available for the purpose of this study.

Demographic data are presented in Table 1. It is evident that men are over-represented in this study, which reflects the fact that more men than women were employed in the chemical industry. Three educational levels were recorded (1 = non-skilled blue-collar workers, 2 = skilled blue- and white-collar workers, and 3 = college and university graduates). Thirty nine men and 37 women belonged to the first category, 105 men and 44 women to the second category, and 54 men and 8 women to the third category (see Table 1). These data reflect a higher education level in the male than in the female sub-sample. From the data about marital status presented in Table 1, it can be seen that the sample consisted of a high proportion of single women and of married men. As further indicated in Table 1, most of the participants (83%) rated their health as good and only 3% indicated a poor health. Overall there was an age-related decrease in subjective health ratings ($r = .18$, $p < .05$). More socio-demographic information about the sample can be found in Perrig-Chiello, Stähelin, and Perrig (1999).

Materials and Measures

Episodic Memory

Memory performance was assessed with a computerized test, which was developed in our laboratory (Perrig et al., 1994). This 30-min procedure contains different memory tests that were used before in different quasi-experimental studies to investigate memory performance over the life span (Perrig & Perrig-Chiello, 1993), in biopsychological research (Perrig, Perrig-Chiello, & Stähelin, 1997), and in research on reliability of memory measures (Meier & Perrig, 2000). In the present study, we concentrate on episodic memory, measured by a free recall test and a recognition test.

For the study task 15 objects from the material of Snodgrass and Vanderwart (1980) were selected and additional elements (words, numbers, patterns, fragmented objects) were used to construct a complex scene. This scene was copied on the same screen, one on the left side and one on the right side. In the left side scene 18 small parts were removed. For the recognition test the 15 objects from the study task and an additional 15 objects from the same material were required. These objects were used to create a matrix of 5×6 objects in which the objects were randomly positioned. Free recall was measured as proportion of correctly recalled objects. The discrimination score *Pr*, derived from the two-high threshold model (Snodgrass & Corwin, 1988), was calculated as a measure of performance in the recognition test.

Personality

Personality was assessed with the two main sub-scales *extraversion* and *neuroticism* from the Freiburger Personality-Inventory (FPI; Fahrenberg & Selg, 1970) which is one of the most used personality tests in German speaking countries. The scales can be considered equivalent to the corresponding scales from the MPI or EPI and their psychometric properties are well established (Fahrenberg, Bruegner, Foerster, & Kaeppler, 1999; Fahrenberg, Hampel, & Selg, 1989; Fahrenberg & Selg, 1970).

Procedure

The memory performance of all participants was tested individually. In the study phase, the experimenter showed the participants a picture on the computer screen, which contained two nearly identical scenes. The scene on the left side differed from the one on the right side on 18 details. The participants were asked to find as many of these differences as possible and to show them to the experimenter. They were also instructed to study the scene in such a way that they could recall it later. After 3 min the picture disappeared. After a filled retention interval of about 25 min memory was tested. In the free recall test, participants were asked to tell the experimenter every detail they remembered from the initial scene. Immediately afterwards a recognition test was administered. Fifteen objects from

the initial scene as well as 15 similar items were presented together on the computer screen. Participants were asked to identify those objects that had been presented in the initial study scene. Since performance of all participants had been tested already 2 years earlier with the same instrument, it was possible to calculate the stability of memory performance.

At the end of the test session, participants received an envelope including the personality questionnaire. They were asked to complete the questionnaire at home and send it back in the addressed and stamped envelope. The return rate was 87%.[1] From these persons, 88 participants had completed the personality questionnaire already in a previous wave 24 years ago, which allowed assessing long-term stability of personality.

Analyses

First, we analyzed the stability of the memory measures (across 2 years) and the personality scales (across 24 years). Second, a correlational approach was used to determine the relationships between memory, personality, age, gender, and education. Third, stepwise regression analyses were conducted with memory performance as the criterion variable. In a first step, age, education, and gender were entered as predictors. In a second step, neuroticism and extraversion were added. Finally, the interaction terms, age × neuroticism and age × extraversion, were entered into the regression models. For all statistical analyses an alpha level of 0.05 was used.

RESULTS

Table 2 provides a description of the memory and personality measures. The stability scores indicate considerable consistency of individual differences for episodic memory measures over 2 years, $r = .61$ for free recall and $r = .48$ for recognition, and for personality factors over 24 years, $r = .60$ for extraversion and $r = .60$ for neuroticism. Moreover, for those participants who completed the personality questionnaire already 24 years ago extraversion scores were highly stable, $t(87) = .18$, $p > .05$, with mean scores of 5.04 for the first test occasion and 5.22 for the latter test occasion, respectively. However, there was a significant decrease in neuroticism, $t(87) = 4.49$, $p < .01$, with mean scores of 5.48 for the first and 4.27 for the latter test occasion, respectively.

In Table 3, the correlations of all variables are presented. As expected, the episodic memory measures were significantly inter-correlated, $r = .57$, and highly correlated with age, with $r = -.44$ for free recall and $r = -.36$ for recognition. Neither extraversion nor neuroticism was correlated with age. There was a significant relationship between gender and episodic memory, $r = .16$ for free recall and $r = .26$ for recognition, indicating that women performed better in the memory tests than men, but no gender relations were found with both personality factors. Additionally, higher education was associated with higher performance in free recall, $r = .21$, but not in recognition, $r = .08$. Higher education was also associated with higher extraversion and with lower neuroticism, $r = .21$ and $r = -.14$, respectively.[2] Finally, there were positive correlations between episodic memory and extraversion, $r = .22$ for free recall and $r = .14$ for recognition, negative correlations between episodic memory and neuroticism, $r = -.16$ for free recall and $r = -.23$ for recognition, but there was no significant correlation between extraversion and neuroticism.

Given the inter-correlations between these variables hierarchical multiple regression analyses were computed to investigate the contribution of neuroticism and extraversion to episodic and semantic memory after controlling the effects of age, gender and education.

Table 4 shows the unstandardized and standardized beta-coefficients for the hierarchic regression analyses of age, gender, education, neuroticism, and extraversion on free recall and recognition, respectively. Within blocks of predictors, vari-

[1]There were significant differences in age, free recall and episodic memory performance between the group of participants who returned the personality inventory and the group who did not return the personality inventory. The composition of the two groups did not differ with respect to gender and education.

[2]It might be argued that an academic achievement measure – as a surrogate of intelligence – might be stronger related to personality. However, the WAIS vocabulary test which was also included in our test-battery, yielded similar correlations with the personality variables (i.e., $r = .10$ for extraversion and $r = -.18$ for neuroticism).

Table 2. Means, Standard Deviations, Minima (Min) and Maxima (Max) for Memory and Personality Measures.

Measure	*M*	*SD*	Min	Max	Stability
Free recall	0.29	0.14	0	0.78	.61[a]
Recognition	7.42	3.92	−3	15	.48[a]
FPI extraversion	5.14	2.45	0	12	.60[b]
FPI neuroticism	4.33	2.81	0	12	.60[b]

Note. Free recall is measured as proportion of correctly recalled items. Recognition is measured as *Pr* according to the two-high threshold model.
[a]Stability coefficient over 2 years ($N = 287$).
[b]Stability coefficients over 24 years ($N = 88$).

Table 3. Correlations and Inter-correlations Between Predictor and Criterion Variables.

	(1)	(2)	(3)	(4)	(5)	(6)
Age	1					
Gender[†]	−0.21**	1				
Education	−0.13*	−0.27**	1			
Free recall	−0.44**	0.16*	0.21**	1		
Recognition	−0.36**	0.26**	0.08	0.57**	1	
FPI extraversion	−0.05	−0.01	0.21**	0.22**	0.14*	1
FPI neuroticism	0.07	−0.05	−0.14*	−0.16*	−0.23**	−0.04

Note. [†]Coding: 1 = male, 2 = female.
*$p < .05$, **$p < .01$.

Table 4. Summary of Hierarchical Regression Analyses for Variables Predicting Episodic Memory Performance.

	Free recall			Recognition		
Predictors	*B*	*SE B*	β	*B*	*SE B*	β
Step 1						
Age	−.01	.00	−.39**	−.20	.04	−.30**
Gender	.04	.02	.13*	1.89	.49	.22**
Education	.04	.01	.20*	.59	.32	.10
Step 2						
Age	−.01	.00	−.39**	−.19	.04	−.29**
Gender	.04	.02	.12*	1.71	.48	.20**
Education	.03	.01	.15*	2.9	.33	.05
Extraversion	.01	.00	.16**	.18	.09	.11*
Neuroticism	.00	.00	−.10[†]	−.26	.07	−.18**

Note. Free recall: $R^2 = .24$ for Step 1; $\Delta R^2 = .03$ ($F(2, 281) = 6.7$, $p < .01$) for Step 2.
Recognition: $R^2 = .17$ for Step 1; $\Delta R^2 = .05$ ($F(2, 281) = 8.03$, $p < .01$) for Step 2.
[†]$p = .06$, *$p < .05$, **$p < .01$.

ables were entered simultaneously. For the free recall test, 24% of the variance could be explained by age, education and gender. Considering extraversion and neuroticism in Step 2 lead to an additional increase of 3.2% of explained variance. Therefore, 13.3% of the explained variance can be attributed to the influence of the personality factors. However, while extraversion made a highly significant contribution to the prediction of free recall performance ($p < .01$), the influ-

ence of neuroticism was only marginally significant ($p = .06$).

For the recognition test, 17% of the variance could be explained by age, education, and gender. Considering the personality factors in Step 2 lead to an additional increase of 5% of explained variance. Therefore, 22.7% of the explained variance in recognition can be attributed to the influence of the personality factors. Extraversion as well as neuroticism made significant contributions to the prediction of recognition memory.

In an additional step, we also included the age × personality interactions into the regression models. However, none of these interaction terms lead to a substantial increase in explained variance. Therefore, the regression models presented in Table 4 can be considered as the most parsimonious solutions. However, it might be possible that an interaction did not show up in the regression analyses due to lack of statistical power. In a further analysis, we used a different approach to investigate the question whether the influence of extraversion and neuroticism on episodic memory performance changes in old age.

Follow-up Analysis

In a follow-up analysis, we compared the correlations between personality and episodic memory in different age groups. In order to increase the homogeneity of the sample we selected only the male participants for this analysis. The male sample was split into three different age groups all consisting approximately of the same number of subjects (cf. Table 1). The young old group consisted of 61 participants in the age of 68–72 years, the intermediate old group consisted of 69 participants in the age of 73–78 years, and the old old group consisted of 68 participants in the age of 79–95 years. The results showed consistent correlations between extraversion and free recall with $r = .21$, $r = .25$, and $r = .26$. Statistically, these correlations did not differ across age groups. The correlations between extraversion and recognition showed a similar pattern with $r = .21$, $r = .10$, and $r = .16$. Again, these correlations were not statistically different.

Neuroticism was correlated with free recall performance with $r = -.36$ in the young old group, $r = -.21$ in the intermediate old group, and $r = -.14$ in the old old group. The correlation between neuroticism and recognition showed a similar pattern with $r = -.29$, $r = -.12$, and $r = .03$. A directed comparison of the correlations between neuroticism and free recall in the young old group and the old old group almost reached significance ($p = .09$), and the same comparison of the correlations between neuroticism and recognition was significant ($p < .05$). This pattern of lower correlations between neuroticism and episodic memory performance with older age indicates an interaction between age and neuroticism in episodic memory performance.

DISCUSSION

The purpose of this study was (a) to examine the contribution of extraversion and neuroticism to the explanation of episodic memory variability in old age, and (b) to determine whether this contribution changes across old age. In general, we expected higher extraversion and lower neuroticism to be related to higher memory performance. Consistent with our expectation extraversion was associated with higher and neuroticism was associated with lower episodic memory performance. Our results replicate previous research (Arbuckle et al., 1992; Hultsch, Hertzog, Small, & Dixon, 1999) and extend its generality to old age. The effect-size of the memory-personality relationships was larger in our study than in prior work, and we assume that the use of multifaceted test materials, an everyday study task and a social testing situation was responsible for this boost.

To address the question whether the relationship between personality and episodic memory increases in old age, the age × personality interaction was entered into the regression analyses. These analyses revealed no increase in explained variability in memory performance, suggesting no change in the contribution of personality to individual differences in episodic memory in old age. However, in a follow-up analysis with the male sub-sample we found a decrease of the correlations between episodic memory and neuroticism across age, revealing an interaction between age and neuroticism.

A possible explanation for the decrease in the strength of the relationship between neuroticism and episodic memory is that the expression of neuroticism changes in very old age. Neuroticism scales are intended to measure the experience of worries and complaints. In younger age, individuals who score high on this dimension are worrying and suffering more than they realistically need to. In very old age, this might not be the case anymore, that is, old adults scoring high on neuroticism might be more worried for good reasons.[3] Therefore, an increase in worries could be functional to an adequate evaluation of the situation. However, if higher neuroticism scores arise as a consequence of an increase in worries about real threats, it is likely that the relationship between neuroticism and episodic memory performance decreases. Such an interpretation has important implications for the assessment of personality in old age. In fact, the personality scales and inventories are standardized in younger adults and norms are usually available only up to the age of 60–65 years. It seems necessary to extend the existing norms to older age groups. Probably, it will be even necessary to adjust the items within the scales.

We can only speculate whether these changes in the functionality of neuroticism might be gender-related, because in our study the sample size of females was too small to consider separately. However, it might be that socialization of men is characterized by a special emphasis on performance in general and on cognitive efficiency in particular. For young old men higher memory performance might be more crucial for mastery of life than for old old men because they are efficiency-oriented and have high demands on their cognitive functioning resulting in high personal commitment. The deteriorating memory performance might be experienced as a central threat of their personal integrity and cognitive competence. Therefore, success and failure might be related to neuroticism. However, this relationship might change in old age. For old old men, the ongoing memory decline might have led to an adaptation of the aspiration level or they have found another coping strategy (Perrig-Chiello, Perrig, & Stähelin, 2000). Future research is necessary to determine whether this interpretation holds.

The follow-up analysis with the male subsample revealed no differences in the pattern of correlations between extraversion and episodic memory across age. Therefore, our results provide no support for the hypothesis that extraversion compensates for age-related memory decline. In contrast, the underlying mechanisms seem to be stable across the adult life span.

Overall – and in line with previous research – our results indicate that the relationships between memory and personality are small, but consistent. These relationships are characterized by a high stability that holds across the adult life span and persists into old age. Nevertheless, it is possible that changes in the functionality of specific personality traits are associated with changes in the personality-memory relationship. This is indicated by our findings of a decrease in correlations between neuroticism and episodic memory. It is also possible that critical life-events have a stronger influence on measures of personality in old age. Future research is necessary to determine the impact of such events on the relationship between memory and personality.

In general, considering the contribution of individual differences in personality is a valuable approach for the explanation of inter-individual differences in episodic memory. Integrating personality, contextual variables, and basic processing components might be a promising avenue to understand more about inter-individual differences in remembering in old age. It will be interesting to see whether the variance that can be explained by personality factors is unique or whether it is shared with other variables. So far, in separate studies, processing speed, processing capacity, health, lifestyle, education, gender, depression, extraversion, and neuroticism have been demonstrated to be significant contributors to the explanation of higher episodic memory performance (Graf & Uttl, 1995; Hultsch et al.,

[3]It is noteworthy that, although there was a significant decrease in neuroticism across 24 years (within subjects), neuroticism slightly increased across old age (between cohorts). Therefore, the lower correlations cannot be due to restricted range (i.e., floor effects) in the personality scale.

1999; Luszcz, Bryan, & Kent, 1997; Salthouse, 1991). Future, larger scale studies are necessary to study the interdependence of these predictors and to test more complex models.

In conclusion, even if the relationship between personality and memory has not been studied extensively, these relationships exist and can be brought forward when adequate measures are used. Our study indicated that there is a change in the relation between neuroticism and episodic memory across age. However, the presented results are cross-sectional and provide only a snapshot of the relationship between memory and personality in old age. Longitudinal studies are necessary to learn more on the trajectory of the relationship between personality and memory across the adult life span.

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