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Psychological gerontology in Germany: recent findings and social implications

HANS-WERNER WAHL* and ANDREAS KRUSE†

ABSTRACT
This review paper has two major aims, first to synthesise recent research findings and conceptual developments in the field of psychological gerontology in Germany and in German language publications, and secondly, to argue that the field's research findings deserve greater attention, for both their substance and their relevance to social policy. The review focuses on three major fields of psychological gerontology: (1) cognitive development in old age; (2) personality development in old age; and (3) social relationships in old age. It highlights the major findings generated by German scholars since the 1990s. Although numerous and diverse, a common thread is the move away from a focus on the limitations and decrements of later life, and increased attention to the continuing capacities and developmental achievements of older people. The discussion elaborates the view that there is considerable merit in considering the broader social implications of these results. In conclusion, and from a general rather than disciplinary perspective, it is argued that there is a strong need for gero-psychological research to be designed and interpreted with explicit attention to the cultural and social contexts in which the subjects live.

KEY WORDS – psychological gerontology, cognitive ageing, personality development, social relations, old age, social implications.

Introduction

It is sometimes asked whether culture and society are a major concern for psychologists or, put another way, whether the scientific discipline of psychology is by nature international. Also, it is sometimes argued that cultural factors influence specific individual psychological scores, but that the processes under study are independent of place and societal influences. This review of the recent findings of psychological gerontology in Germany is informed by a different perspective, for the authors believe

* German Centre for Research on Ageing at the University of Heidelberg, Germany.
† Institute of Gerontology, University of Heidelberg, Germany.

that contemporary psychological gerontology is mistaken in failing to take into account cultural influences on both the subject's priorities and approaches and on the phenomena that we study. One of the objectives of this review is to show that an appreciation of cultural and social factors makes an important contribution to the understanding of the psychology of later life.

As a consequence of the well documented and continuing demographic trends and projections for western societies, the potentials and the limits of personal development in old age have been attracting increasing interest. In the domain of psychology, not least due to these social transformations, many developmental psychologists are expanding their research interests beyond child development and have started to analyse developmental processes across the whole life span. It is important to note, however, that in Germany psychologists began to study life-long development in the 1920s and 1930s (Bühler 1933; Bühler and Masarik 1969; Kruse in press; Lehr 1995; Thomae 1987). This early work was particularly inspired by a psycho-biographical approach, which proceeded from the insight that developmental psychologists must not content themselves with the reconstruction of sequences of objective events, tasks or challenges (Kruse 2000; Lehr 1980, 1986; Lewin 1951; Spranger 1913; Stern and Stern 1909; Thomae 1951, 1952). This research premise continues to be important for many German developmental and personality psychologists (for overviews see Thomae 1996, and Kruse, in press).

Among the cultural influences on the phenomena of study themselves, German re-unification has been particularly important. The integration since 1989 of the collapsed planned economy into a social market economy, the ideological confrontation between Marxist-Leninism and capitalism, the inevitable processes of social differentiation, and particularly increasing unemployment in the former German Democratic Republic (GDR), have all raised serious and enduring problems. These have had a considerable impact not only on individual ageing processes but also on the priorities of German research into ageing. As a consequence, understanding and overcoming the differences in attitudes, values and needs in the two former divisions of Germany, and improving mutual tolerance and promoting the equality of opportunity, have been priority aims for German social and behavioural scientists. Describing and analysing differences between Eastern and Western Germany has become a standard task in gerontological research. At the same time, reflection on the causes of such differences has stimulated other areas of gerontological research, for example, the observed differences in the two regions' physical and institutional environments have encouraged gerontological eco-psychological research, while recognition of differences in the allocation of

duties and responsibilities within families has enriched research on gender stereotypes and on sex roles and differences. Studies of the migration of many young adults from Eastern to Western Germany has inspired research on older people's social networks and social integration, while analyses of the increasing number of older people who are experiencing unemployment, particularly in the former GDR, has stimulated research on 'productivity' in old age.

Another important research stream, which links coping and psychological resilience, likewise reflects Germany's historical context. War guilt, wartime propaganda and war crime are perceived to impose particular obligations on German scientists. As a consequence, addressing the atrocities of war and post-traumatic stress symptoms following combat exposure have had low priority, and research on war veterans similar to that conducted in the United States or United Kingdom has not developed in Germany. Instead, and understandably, German research on post-traumatic stress following the Second World War has almost exclusively focused on the fate of the victims of Nazi persecution. The simple fact that some of the perpetrators are still alive, thereby increasing the risk of re-traumatisation (Schmitt and Kruse 1998), might explain German researchers' preference for models that conceptualise coping with psychological trauma as a lifelong process, with contemporary solutions never containing a prediction of future adjustment (Kruse and Schmitt 2000).

Finally, the specific features of the German social security system have had an impact on older people's status. The overwhelming majority of German adults belong to compulsory health insurance and pension schemes. Since the German health insurance system traditionally guarantees adequate treatment regardless of paid contributions, and since pension levels rise with employment earnings, the social welfare arrangements produce continuity of income in old age (Mayer and Wagner 1996). As a consequence, poverty is a problem for a dwindling number of older people (Wagner *et al.* 1996). Among those aged 65 years and older, the proportion depending on social assistance benefits is lower than in any other age group. The German social security system is however very expensive. Companies are obliged to meet half the costs of their employees' social security contributions. Since the level of individual contributions depends on the ratio of employed to retired persons, a major public debate is under way about the reform of the German social security system, not least as a way of maintaining the nation's economic competitiveness. In this context, estimating the costs associated with sociodemographic change takes on great importance. German psychological gerontologists have insisted, however, that when estimating the potential

costs of socio-demographic change, one must also take into account the potential benefits, and this stance has encouraged research on life competencies and on the productivity or potential of older people (Baltes and Montada 1996; Kruse 2002).

Driven by these general insights, this review paper has two broad goals. First, it seeks to communicate to an international audience the main findings of German geropsychology research published in and since the 1990s, mostly in the German language.[1] Second, the paper seeks to address the broader social implications of the findings by addressing three major themes about ageing and older people in society: (1) cognitive development; (2) personality development; and (3) social relations.

Cognitive development in old age and older people in society

Research concerned with the ageing mind is probably the classic field of psychological gerontology, for it has critical implications for individuals as well as a broader social perspective. From an individual perspective, the availability of cognitive resources has a major impact on the course and outcome of 'good' ageing. In particular, remaining capable of managing as independently as possible the basic skills of day-to-day living, such as dressing, eating, shopping or banking, is strongly dependent on cognitive capacity (see Margret Baltes *et al.* 1999). Seen from a broader social perspective, cognitive functioning provides a necessary if not sufficient basis for participation in major realms of social and intergenerational life, such as caring for grandchildren, making use of the diversity of cultural resources of communities, or exerting the right to vote.

Having said this, it is important to note that during the 1970s and early 1980s, much geropsychological work on cognitive development was driven by the assumption that a simple deficit model of cognitive development, the dominant perspective in the 1950s and 1960s, was inadequate and had to be replaced by the 'competence view' of the older person. Most characteristic of this trend was a *gestalt* switch, by which the (remaining) cognitive and behavioural resources of an ageing individual (and not his or her losses) were brought to the foreground of the influences on his or her functioning. Since the 1990s, however, conceptions of cognitive development in the international literature as well as in Germany have adopted a more differentiated perspective, based on the attempt to synthesise the strengths and weaknesses (or gains and losses) of the ageing mind into a single conceptual and empirical picture.

One manifestation of this trend is the widespread application of a two-component model of intellectual development, which has attracted considerable research in German geropsychology (*e.g.* Paul Baltes 1990). By distinguishing the *mechanics* from the *pragmatics* of human intelligence, this model focuses on the respective impacts of biological (mechanical) and socio-cultural (pragmatic) factors on intellectual performance, with the assumption that as a person ages, the former are much more likely to decline than the latter. A major consequence of this view has been the emergence during the 1990s of research into previously neglected topics of intellectual pragmatics. Another facet of the gain-loss dynamic in the cognitive array is echoed in the differentiation between the 'third' and 'fourth' ages, which also emerged during the 1990s as a critical typology in geropsychology research (*e.g.* Baltes and Smith 1999). It challenged the prevalent psychological concepts about changes in mechanical and pragmatic mental functioning from early old age (from 65 to 80 years) to the 'oldest old'.

The structure and course of human intelligence at old and very old ages

At the beginning of the 1990s, our understanding of the structure and course of intelligence in the *oldest old* was rudimentary and mostly based on studies with small samples. Against this background, the Berlin Aging Study (BASE) has contributed many new insights.[2] On the one hand, the findings pointed to a multi-dimensional structure of cognitive functioning among very old people, with a cluster of three functions representing the mechanics of intelligence (reasoning, perceptual speed and memory), and a cluster of two functions representing its pragmatics (fluency and knowledge). On the other hand, patterns of co-variance nevertheless supported the assumption that a general (latent) cognitive ability factor underlies the continuing and manifest diversity of cognitive skills among very old people. This finding supports the assumption of a general ageing process that operates on the biological level and increasingly affects the whole scope of intellectual functions as people approach and enter the 'fourth' age.

As regards the course of intellectual functioning in later life, the Bonn Longitudinal Study of Ageing (BOLSA), from its observations over 19 years, clearly demonstrated a considerable decline in mechanical functions but much stability in pragmatic functions during the 'third' age. The finding was repeatedly corroborated and elaborated (Lehr and Thomae 1987; Rott 1993; Rudinger and Rietz 1995). By contrast, the BASE findings, from a sample that included many very old people, indicated significant decrements in both mechanical and pragmatic performance,

but with pronounced variability and a tendency for the mechanical functions to decline more than the pragmatic. BASE sought to explain cognitive trajectories in late and very late life by using a large multi-factor data set that ranged from indicators of biological ageing (such as sensory functions represented by robust measures of vision, hearing, and balance and gait), to socio-structural indicators (such as education and income). The finding of a strong connection between sensory and cognitive functioning in very old age, first reported in a BASE subsample by Lindenberger and Baltes (1994), has attracted much attention (Wahl, Tesch-Römer and Rott 2000). Later work has confirmed this result for the whole BASE sample and revealed that a strong association cannot be observed in young and middle-aged adults (Baltes and Lindenberger 1997). Furthermore, the relationship between sensory measures and mechanical intelligence components proved to be much stronger than that with socio-structural variables, which played a more prominent role in pragmatic functions (Lindenberger and Baltes 1997).

Furthermore, while Lindenberger and Reischies's (1999) comparison of people with high and low socio-structural resources found mean differences in cognitive functioning of about one standard deviation, the age-related decline trajectories were almost identical in both groups. Additional evidence concerning the role of the socio-cultural context in cognitive outcomes even in early old age stems from the Interdisciplinary Study on Adult Development (ILSE) (Martin *et al.* 2000). This indicated that among 62–64 year old women, differences in cognitive performance between West and East Germans (to the advantage of the latter), could best be explained by differences in their professional life: the significantly higher professional involvement of women in the former GDR probably operated as a training factor (Oswald, Rupprecht and Hagen 1997; see also Rupprecht 2000).

Regarding the pragmatics of intelligence, wisdom is arguably one of the most complex concepts in the field of intellectual functioning. Work arising from the research unit of Paul Baltes at the Max Planck Institute for Human Development in Berlin, and the precursor work of Dittmann-Kohli (1984), Sowarka (1989) and Staudinger (1989), suggested that the concept could be operationalised with five wisdom-related criteria: factual and procedural knowledge about life, the life-span context, the relativism of values, and the recognition and management of uncertainty. Among the major findings of these studies has been one of no relationship between wisdom-related performance as indicated by these categories and age ($r = -0.07$). This supports the hypothesis of a tendency in old age towards stability of this major component of cognitive pragmatics, and also suggests that old age *per se* is not a sufficient condition for wisdom.

Of interest from a social relations perspective have been the findings on 'interactive minds', that is the arrangements that enable the exchange of wisdom-related ideas and strategies in the experimental setting. Although the operation of interactive minds generally led to better wisdom-related performance, it proved to be more helpful for older than younger people (Staudinger and Baltes 1996).

Research on other facets of the pragmatics of cognitive functioning, *i.e.* expertise and everyday problem solving, was guided by the idea that acquiring in-depth knowledge in a certain domain may offer protection against an age-related 'natural' decline in cognitive performance. Knopf, Preussler and Stefanek's (1995) research on this hypothesis demonstrated that expertise in one of the most popular German card games, *Skat*, is associated with better performance in the working memory capacity of older persons. Similarly, Krampe (1994) and Krampe and Ericsson (1996) found no age-related decline in the expertise of professional pianists, while this was the case in a comparison group of amateur musicians. Furthermore, using a planning task of pronounced similarity with the everyday world, Martin and Ewert (1997) found no clear age effects but effective compensatory strategies in older adults which improved 'normal' performance in these tasks. By comparing image-related memory performance in old versus young professional illustrators, however, it has been shown that even when approaching the limits of possible performance, age effects are not eliminated (Lindenberger 1991; Lindenberger, Kliegl and Baltes 1992).

Age differences in memory functioning

'Memory' has been the second dominant theme of cognitive ageing research in Germany that has attracted worldwide attention (*e.g.* Kliegl and Mayr 1997). Knopf's (1987) concept of 'meta-memory' has been very influential in this field. He found that ageing was closely associated with increased pessimism about memory performance: expectations increasingly fell short of objective ability. Although the contents of meta-memory probably do not account for the full range of age differences that have been addressed in the research (described further below), they nevertheless reflect factors that may have special importance in the everyday memory-relevant situations faced by older people, *e.g.* motivation and perceived efficacy.

Other research in the German-speaking countries has focused on the basic processes of encoding. Fleischmann (1989) studied 522 people aged 57–96 years who underwent a broad assessment test battery for diverse memory functions. The analysis confirmed a three-fold memory model

that differentiated between: primary memory (short-term storage), secondary memory (long-term storage), and an attention and speed factor. Age differences were greatest for secondary memory, while in the oldest normal (*i.e.* not cognitively impaired) subjects, the secondary and the attention/speed component seemed to merge. Bäckman (1984) had found similar non-verbal performance in old and young subjects for the memory required for actions. When Knopf (1995) searched for other memory performances unrelated to age, instead of replicating this result he found that older subjects performed consistently lower in this memory task. Similarly, the hypothesis of equal performance levels between old and young subjects in prospective memory, *e.g.* remembering the exertion required for a future behavioural act, was not supported in Martin and Schumann-Hengsteler's (1996) study, but no age effects have been observed in tasks closely related to everyday life, *e.g.* learning a shopping list (Ewert and Martin 1993).

Experimental work using 'testing-the-limits' approaches, another characteristic of memory research in Germany during the late 1980s and 1990s, are among the most rigorous tests for age differences in memory functioning. On the assumption that young people can draw on higher reserve capacity, the underlying theoretical idea is that learning and performance differences between older and younger persons should be most pronounced with maximal performance. Paul Baltes and Kliegl not only found strong support for this hypothesis, but also demonstrated that while older adults can achieve substantial gains after very intensive training, they are unable to attain the performance level reached by younger subjects with the same training (Baltes and Kliegl 1992; Kliegl and Baltes 1991). Confirmation of the more limited reserve and processing capacity in old age arose from work based on dual tasks: for example, memory performance on a second task when walking is significantly lower among older adults than younger subjects (Lindenberger, Marsiske and Baltes 2000).

Social implications of research on cognitive ageing

From a socio-cultural perspective, the major societal challenge of the understanding developed by cognitive ageing research in Germany during the 1990s is arguably that there is a much higher risk of loss of mechanical and pragmatic cognitive resources in old, and particularly very old, age than at any other age. This observation is important, assuming that such competencies are a major prerequisite to act on rational grounds in social and political tasks, as in shopping, driving and voting. The collective findings also tend to support the view that the ageing mind does not operate in a 'psychological vacuum', but is influenced by both biological

and cultural factors. Moreover, the research suggests that the availability of greater socio-economic resources (normally generated much earlier in life) has limited impact on the decline in cognitive functioning in very old age.

Furthermore, specific skills in the pragmatic domain of older people's cognitive competencies are of critical social relevance in several respects. Most importantly, recent findings support the view that the life-long development of such specific cognitive competencies (as with quite rare 'wise' individuals, highly skilled professionals, and expert planners of their day-to-day affairs) is not subject to age-related decline, so long as older people are confronted with 'normal', not testing-the-limits, demands. More generally, the findings support the view that several kinds of expertise acquired across the life span are fully available in old age: it is age-based employment arrangements that prevent their application in productive professional contexts. It has therefore been shown that the cognitive and social resource dimensions of older people's human capital tends to be under-used or even ignored in many modern societies.

Finally, one should note that memory is among the major resources of 'normal' day-to-day life. This understanding will have rising significance given the spread of the 'information society'. A commonplace example is the increasing use of PIN numbers. Regardless of age, customers are expected to use such numbers appropriately, but PIN numbers entail a memory requirement and therefore prompt real or perceived memory problems, which if substituted by a written note create a security risk. Another example is the telephone-based and cognitive resource demanding menu-systems that are now frequently used to order goods or receive services. In sum, the repeated demonstration of age-related memory deficits in recent empirical work, and current rapid changes in consumption transactions, *e.g.* the demise of interactions with a real person in a bank, supports the view that today's and tomorrow's older people may be increasingly disadvantaged in accessing key social resources.

Personality development in old age and ageing in society

Modern welfare states have become increasingly concerned with the psychological situations of their citizens as an important micro-level of analysis. To describe an extreme scenario, what would be the consequences if a large proportion of the populace, namely old and very old people, were shown to be rather rigid in their self- and world-views, no longer capable of adapting to new circumstances, dominated by a negative conception of their capacities, and unable to undertake psychological development? In

such a society, it seems likely that there would be a low priority for investment in a responsive and supportive culture for old age, and in developing creative options for older people to maintain and promote their social productivity. The contrary scenario, in which the older person is dynamic, capable of preserving self-consistency and high positive affect, and proactively exerting new development potential, would be associated with quite different challenges for society, of how best to use older people's individual and social resources in ways that support and enhance their competencies and individual development in post-professional life.

From the perspective of society, it is worth noting that geropsychological research on personality development in German-speaking countries during the 1970s and 1980s tended to neglect processes of change and was dominated by an assumption of pronounced stability. During the 1990s, however, changing conceptions of personality development arose from the new studies including BASE, and expectations about development and its controllability for the self and other people were refined. The refined conceptions not only reflected objective reality, *i.e.* the occurrence of gains and losses in the ageing process, but also recognised that an individual's expectations, plans and self-evaluations manifested the need for self-consistency and self-enhancement, *i.e.* to protect self-efficacy and to sustain the motivations required for planning and action. Furthermore, the contributions of the 1990s included the discovery of plasticity and self-regulation as key concepts in the study of personality development. New theoretical approaches, as introduced by Thomae, Brandtstädter, Heckhausen, Filipp and Staudinger, have accentuated the self as a major (though not the sole) agency of development. This research has therefore challenged the predominant trait conception of personality of the 1970s and early 1980s, which neglected the possibility of growth in later adulthood, and emphasised regressive processes and the inevitable 'fate' of old age.

The dynamics of the ageing personality

Among the major and now classic concepts that have elaborated our understanding of the dynamics of the ageing personality is Thomae's (1996) argument that 'cognitive restructuring' is the major challenge of old age. The main explanation for this need lies in the fact that old age is the life period in which the limits of action capacity, planning, and goal pursuit become most evident. In this regard, a major finding of BOLSA (Lehr and Thomae 1987) is of an interplay in later life between cognitive restructuring and continuity – the latter Thomae (1996) called 'reaction forms'. This interplay can be observed among the young-old (Rudinger,

Rietz and Schiffhorst 1997), the old-old (Schüßler and Schüßler 1992; Thomae 1996), and even centenarians (Rott 1999). This research has demonstrated that cognitive restructuring is expressed in evaluation processes or, more specifically, in the regulation of individuals' aspirations, in the revision of personally meaningful goals, and in individuals' changed time perspectives. On the last, BOLSA provided no evidence of marked age-related change. Instead, its analysis of the subjects' plans and future goals found considerable inter- and intra-individual variability in time perspectives, and that these were influenced more by biographical and social influences and by subjective evaluations of the current life situation than by chronological age (Fisseni 1995).

Brandtstädter and associates' basic premise, which derived from Thomae's view, is that a major challenge of ageing is to reconcile the increasing discrepancies between action goals and action possibilities that arise from diverse internal and external causes (*e.g.* Brandtstädter and Greve 1992; Brandtstädter and Wentura 1995). These scholars see the major burdens of growing older as decreasing physiological and health resources, the increasing difficulty of finding others with similar life experiences to interact with, the societal tendency to exclude older people from socially integrative activities, and the insight that personally meaningful goals cannot be attained during one's remaining years.

Awareness of these losses and limitations might be expected to produce negative emotions and increase the prevalence of depression in old age, but both epidemiological and psychological data support the contrary view, of high subjective wellbeing and no increase in the prevalence of depression. This supports the proposition that resources are available to cope effectively with adverse events and losses. The 'two-process' model of coping argues that the interplay between action-oriented assimilation (the tendencies to concentrate on the positive, make downward social comparisons, or 'change the world') and the scaling back of personal goals (the tendency to 'change oneself') are both important components of protective or accommodative processes. In the life-span perspective, assimilation processes (operationalised as tenacious goal pursuit) are seen as adaptive in young and middle adulthood, while the accommodation processes (operationalised as flexible goal adjustment) are increasingly important in the later years. This hypothesis has found strong empirical support in Brandtstädter and colleagues' influential research (Brandtstädter and Renner 1990; Brandtstädter, Wentura and Rothermund 1999), and in other empirical work that has focused on older people with high basic care needs (Kruse and Schmitt 1995, 1998a).

A third family of concepts that has deepened our understanding of personality adaptation processes, in this case promulgated collaboratively

by developmental psychologists from the German-speaking countries and the United States, has been based on the 'Life-span theory of control'. Developed by Heckhausen and colleagues (Heckhausen 1997, 1999; Heckhausen and Schulz 1995), this approach has many similarities with that of Brandtstädter and his colleagues, but operates in a control framework and has taken various empirical directions. It began with another highly regarded study of normative developmental knowledge. By contrasting young, middle-aged and older adults, Heckhausen, Dixon and Baltes (1989) found that conceptions of human development were similar among the three age groups, and that there was a convergent expectation of more loss and less gain in old age. It was confirmed that all three age groups have the normative knowledge component (belief) that increasing age brings less control over developmental outcomes.

The life-span theory of control posits the primacy of the control processes that aim to change the outside world in accordance with an individual's own goals and needs ('primary control'). It also assumes, however, that as people age it becomes increasingly necessary to change and adapt one's self ('secondary control') to maintain the highest possible level of primary control. Empirical evidence supports the central prediction of this theory, and indicates a decrease in primary and an increase in secondary control as people age, and has demonstrated the expected associations with developmental outcomes such as different dimensions of wellbeing (*e.g.* Heckhausen 1997). Control theory has also contributed to the understanding of a major social and political 'natural experiment', namely German re-unification, and points to differential cohort responses to the social transformation (Heckhausen 1994; Diewald, Huinink and Heckhausen 1996). In particular, the findings suggest that men and women in their fifties, being too old for major employment changes, too young for retirement and with an unusually high risk of unemployment, may be labelled the 'losers' of re-unification. Their own psychological processes of primary and secondary control were unable to prevent significant losses in the self-evaluation of their lives. In contrast, younger as well as older people were clearly more able to use primary and secondary control strategies to adapt to the unusual and extreme challenges associated with re-unification.

As a final comment on research into the 'life-span theory of control', recent empirical work has focused on social comparisons and their potential in sustaining the ageing self. On the one hand, Heckhausen and Krüger (1993) and Wrosch and Heckhausen (1996) have underlined the association between increasing age and a widening perceptual discrepancy between the self and others of a similar age: the older the individual, the greater the expectation of more gains and fewer losses for themselves than

for others. This self-enhancing tendency, which partly derives from downward social comparisons, was not observed in younger adults. On the other hand, longitudinal research by Filipp and colleagues (Filipp and Ferring 1998; Filipp *et al.* 1997) has produced a more differentiated picture, in which socially downward comparisons operate for the health domain, whereas lateral comparisons predominate for other life domains. As Filipp and Ferring (1998) have argued, there may be several explanations for this finding, including the preferred tendency to draw on consensus information ('I am as good as others'), the self-enhancing value of lateral comparisons, and a social norm that one should not be pretentious (or claim superiority) that suppresses downward comparisons.

Subjective wellbeing, the ageing self and psychological resilience

Data from BASE (Smith *et al.* 1999) confirm that psychological wellbeing tends to remain relatively stable in later life and through the transition from the 'third' to the 'fourth' age, although a multi-dimensional approach to this construct reveals the need for differentiation. Smith and his co-workers used the BASE interdisciplinary data set to confirm that objective variables (such as physical illnesses, financial situation, and social network size) have only indirect effects on subjective wellbeing, whereas the way in which individuals evaluate such processes is of crucial importance in explaining this major developmental outcome. Using ILSE data, Rietz and Rudinger (2000) found broadly comparable results in the young old (aged 61–63 years) and middle-aged (aged 41–43 years), but subjective health was of only minor importance in these groups, while other variables (primarily the evaluation of individuals' socio-economic circumstances) were of greatest relevance. M. Martin (2000) was also able to show, using structural equation modelling of the ILSE data, that social as well as cognitive resources moderated the impact of stress on subjective wellbeing from health threats, living arrangements and financial problems, and that the coping was comparable in middle-aged and young old individuals.

Concepts such as self and self-definition probably reflect the core of the older person's personality even more than subjective wellbeing. In this regard, it is worth noting that Pinquart (1997, 1998) has conducted an extensive meta-analysis of available research on the self in old age. Among his findings are that: (1) only low correlations exist between global and domain-specific self-evaluations, and between various domain-specific self-evaluations; (2) global self-evaluations tend to remain positive from middle adulthood to old and very old age, while domain-specific self-evaluations tend to fall as people age; and (3) various social attributes strengthen

positive self-evaluations, such as health, everyday competence, social integration and living in a private household.

Freund and Smith (1997) and Freund (1995) analysed semi-structured verbal data evoked by the question, 'Who am I?' Their findings confirmed the multi-faceted structure of the self even in very old age, and the predominance of activity-related contents, although health-related referents gained importance from the 'third' to the 'fourth' age. Most importantly, positive self-evaluations still played the major role in the oldest old, but the ratio of positive to negative self-descriptions decreased, and there was a decreasing number of salient self domains (or 'multiple selves'). Limits of adaptation were observed, for even a rich 'self structure' – the number of available self domains – could not protect against the psychological burden of severe chronic conditions.

One's subjectively perceived age may be regarded as a very specific aspect of the ageing self. Filipp and associates (Filipp and Ferring 1989; Filipp, Ferring and Klauer 1989) demonstrated in their longitudinal study that systematic under-estimates of one's age accompany the transition to old age. Subjective age also explained a considerable amount of the variation in several psychological outcomes. Personal meaning structure is also related to the self in terms of content and outcomes. Dittmann-Kohli (1995) interpreted the responses of young, middle-aged and older people to open-ended completion sentences about various life domains and situations. Her findings suggest that as people age, they redefine their hopes, fears, pleasures and sorrows. For instance, and as might be expected, in old age the body increasingly becomes the preferred object of self-reflection, which is seldom the case in young adults.

The findings generated by research on Thomae's personality theory, on the 'two-process model of coping', on the 'life-span theory of control', on social comparisons and on the ageing self have provided converging evidence of the presence of powerful protective mechanisms that maintain relatively high wellbeing, positive emotions and a positive self-conception in old age. The concept of 'psychological resilience' was suggested by Staudinger, Marsiske and Baltes (1995) as a promising theoretical perspective for understanding these protective processes. Resilience is defined by these scholars as a specific expression of plasticity in old age, one that particularly emphasises the potential for maintaining and regaining a 'normal' level of functioning. It becomes critical in life situations characterised by developmental risks and losses. Using BASE data, Staudinger and Fleeson (1996) were able to confirm that among old and very old people with severe chronic conditions, their positive and negative emotions were strongly associated with their coping processes, while chronological age played only a minor role. In addition, life investments in

the health domain (by drawing from other life domains) attenuated the impact of illness on subjective wellbeing.

This finding accords with the model of 'selective optimisation with compensation' that Baltes and Baltes (1990) proposed as a meta-model for adaptation through life to old age. The effect of protective processes becomes weaker when confronted by very severe illness, however, indicating that there are natural limits to resilience in extreme life situations and thus generally to psychological plasticity (see Heuft, Kruse and Radebold 2000; Kruse and Schmitt 1998a; Kruse, Schmitt and Re 1999; Staudinger and Freund 1998; Wahl *et al.* 1999). Results from the so-called 'Eldermen study' (Schneider *et al.* 1999, 2000; Heuft, Kruse and Radebold 2000) indicate that exposure to stress in early life phases predicts psychological health in old age. Using objective and subjective ratings of stress, it was shown that the number of life phases rated by experts as particularly stressful is associated with psychiatric disorders and the need for psychotherapeutic treatment, even when the life events were not perceived as stressful by the subjects who subsequently became patients. Furthermore, combining objective and subjective measures increased the explained variance in psychological health, so the Eldermen study findings support the hypothesis that lifelong development contributes to the possibilities and limits of coping processes, *i.e.* resilience versus vulnerability in old age.

Finally, from a quite different and historically unique perspective, Kruse and Schmitt's (1998b, 2000; Schmitt, Kruse and Re 1999) study based on 180 (former) Jewish emigrants and 68 concentration camp prisoners also elucidated processes of psychological resilience. In particular, the data indicated that resilience must not be equated with self-enhancing perceptual distortions, but rather seen as an ongoing and active process, which for this group was based on a strong personal commitment engendered by surviving the Holocaust, that encourages the enrichment of one's own biography with meaning and a task-oriented future perspective.

Social implications of research on the ageing personality

German research findings suggest that low wellbeing and negative self-evaluations among old and very old people are probably not characteristic in advanced industrial societies, rather that the psychological potential to deal reasonably successfully with the losses associated with individual ageing is strong and multi-faceted. People have the potential to create 'fall-back positions', even in response to severe and hard-to-manage situations. Obviously, this is good news for societies anticipating a substantial increase of the older population. It implies, for example, that older

people should simply be treated like other adults, as having on average adequate cognitive functioning and being capable of self-responsibility and the goal-directed development of their own welfare trajectory. Or, to put it another way, in principle there is nothing about the older person's personality and capabilities that necessitates social (policy) intervention. This view does not exclude the need to provide the basic support and care in terms of money and services that is required for a substantial subgroup of older people and which represents a major task for the welfare state.

The weaker role of socio-economic factors in explaining variations in wellbeing among old and very old people, as compared to the middle-aged, might be interpreted as manifesting the achievement of modern welfare systems in providing financial security to older citizens. Alternatively it could be that in very old age such influences are secondary in comparison to the overwhelming role of chronic illness and functional losses. Another important insight, supported by the data on psychological adaptation, is that psychic processes are incapable of fully overcoming older people's past and present extreme life circumstances. There are limits to psychological resilience in old age, especially with respect to severe health threats or very bad earlier life experiences. It is also important to note that psychological adaptation in middle age might be even more restricted by socio-economic disadvantage. As has been shown, for people in their fifties in the Eastern German federal states faced with the threat of unemployment shortly after reunification, the adaptational strategy of rebalancing primary and secondary control was inadequate. More generally, in modern welfare states, the availability of financial resources continues to influence wellbeing in middle age, and cannot be completely overridden by subjective evaluations and psychological adaptation processes.

Social relations in old age and ageing in society

Until the late 1980s, a decrease in an older person's social network was equated with a deficit in emotionally satisfying social interactions, and with the decreased ability to establish and maintain personally satisfying contacts. While the predominant sociological theories disagreed about whether older people should try to remain active or to disengage from social roles and obligations, reduced social contacts in old age were generally seen as unfavourable and disadvantageous for social integration and participation. The revised conception of the 1990s is analogous to that described for personality development. Age-related changes in social relationships are no longer conceptualised as primarily reflecting normative

developmental losses or age-stratification in society. Moreover, the older individual is no longer perceived as a passive victim of unfavourable circumstances, but rather as capable of exerting change in their social environment and upon her or his development. The perspective of 'socio-emotional selectivity theory' (Carstensen 1993) argues that changes in social networks can be observed in all phases of the life span, and that they are driven by change in the subjective meaningfulness and desirability of contacts with specific social partners, and by age-related change in the structure of motivation, *e.g.* from the need for more information during early life, to the need for more intimacy in old age. Research conceptions concerned with social relations in the 1990s also adopted a broader perspective on social exchange processes in intergenerational relationships. Geropsychology has increasingly recognised that older people not only receive support from intergenerational relationships, but that they also have much to give. This perspective is closely connected with a revision of the concept of 'productivity', that has extended the initial predominantly economic construction to incorporate non-material dimensions of social exchange, especially the potential impact of intergenerational contacts on the information (knowledge), emotions and motivation of younger people.

Regulation of social relations in later life in quantitative and qualitative terms

Among the most interesting findings about social relations in later life is the evidence for the active shaping of social relations in old age as predicted by the socio-emotional selectivity theory. Following an exploratory study with a small sample (Lang and Tesch-Römer 1993), Lang and Carstensen (1994) used a sub-sample of 156 BASE participants to address the theory's central prediction, that old and particularly very old people select their social network members according to emotional closeness. A major and theoretically consistent finding was that objective social network size in the 'fourth' age is significantly smaller than in the 'third' age, while both age groups have a similar number of emotionally very close persons, as operationalised by Kahn and Antonucci's (1980) measure. Lang and Carstensen's study not only showed that old and very old persons without a spouse and children were able to maintain emotionally close social relationships, but also that more close relationships are necessary among older people for them to maintain a feeling of social integration.

In another study, Lang and Margret Baltes (1997) investigated the relations between social contacts, competence in everyday functioning, and the general evaluation of autonomy. Where high functioning in everyday activities was reported, the frequency of social activities was positively

correlated with higher subjective autonomy, but an age influence also intervened. Among those in their 'fourth' age, a high number of social contacts was associated with *low* subjective autonomy, but among those in the 'third' age there was no association. The interpretation was that the selective reduction of social contacts in very old age is a compensatory mechanism, that allows for more investment in the maintenance of everyday functioning. Personality variables such as extraversion, openness and neuroticism were also found to correlate with the objective size of the social network, although less strongly than the emotional closeness of their social relationships, while marital status also played a role (the presence of a core family associated positively with the closeness of the relationships). Furthermore, self-efficacy as a major personality dimension among older people is related to their evaluation of their social interactions (Lang, Featherman and Nesselroade 1997).

Past research on the relationship between social relations and subjective wellbeing generally emphasised the positive effects of social relationships. Schneider (1995) has questioned this presumption, and found no association between the mere availability of social contacts and subjective wellbeing, although a positive effect was observed with their perceived closeness. There are even negative effects from social relationships in old and very old age, as with the over-protectiveness that reinforces dependency behaviour. Margret Baltes and associates suggested the existence of a 'Dependency support script' in both institutional settings and domestic and family care settings (M. M. Baltes and Wahl 1992, 1996; Wahl 1991; Wahl and Baltes 1990). Another potentially negative experience is the absence of reciprocation, which might be especially likely in later life. Investigating this possibility, Minnemann (1994) drew on Antonucci and colleagues' theoretical propositions (*e.g.* Antonucci and Akiyama 1987) but was unable to confirm the expectation that social investments provided and received in earlier periods of the life span (and stored in a 'support bank') have little importance in the evaluation of older people's current social relationships. Instead, it was observed that older people suffering from severe basic care needs typically adopted a strategy which partially compensated for asymmetry or lack of reciprocity in some social relationships (characteristically those involving care-givers) by investing and 'giving' as much as possible in other relationships.

Finally on 'productivity' in old age, some findings from BASE (Schütze and Lang 1996; Wagner, Schütze and Lang 1999) have supplemented our knowledge of the 'give and take' of older people's social relationships by showing that many old and even very old people provide instrumental support (22 %), emotional support (55 %) or both (14 %) to others. Borchers and Miera (1993) found that about 20 per cent of people aged 60 or more

years were actively involved in the care of grandchildren. Schubert's (1992) investigation in rural Germany found that a similar percentage of those aged 50 or more years were caring for older people. Although there was an age-related decrease of the 'carer rate', it was 17.6 per cent among those aged 70–79 years and still 10.9 per cent among those aged 80 years and older. Inter-generational financial transfers, particularly from older to younger people, were found to be substantial by both BASE (Wagner *et al.* 1996) and the 'Alterssurvey' (Kohli and Künemund 2000). About one third of BASE participants had financially supported their children during the preceding year. Turning to voluntary engagement, the findings of a multi-country project reported by Kohli and Künemund (1997) showed that continuing in paid employment involvement beyond 65 years of age did not correlate inversely with voluntary work. Only 3.3 per cent of German older people remain in the labour force, while the proportion engaged in voluntary activities is 12.4 per cent, but in the United States, 11.4 per cent of those aged 65 years and over are in the labour force, but 30.6 per cent are also voluntarily active.

Social relations in old age: partnership, sexuality, divorce and becoming a care recipient

In a study of long-term married couples, Fooken (1990, 1995) considered a range of partnership variables such as the amount of relationship-related reflexivity, the perception of emotional closeness versus distance, the capability to deal with conflict, happiness, dominance, and the gender-related divison of day-to-day activities. Based on an integrative view of these partnership characteristics, Fooken identified the existence of three clusters of relationship quality: 'melted' intimacy; interdependence and autonomy; and non-intimate asymmetry. Fooken's results suggest that these clusters should not be regarded as static entities, but are better perceived as relationship-related, time specific, and subject to continuing change. She identified the following four trajectories of late-life partnership dynamics: (1) maintained asymmetry ultimately leading to emotional distance; (2) attained autonomy and interdependency; (3) continuing task orientation in the partnership coupled with reciprocal empathy; and (4) strongly maintained reciprocal relatedness and 'melting'. She also found no evidence of an association between sexual intimacy and partnership quality in old age, but on the other hand showed that evidence of reflections about sexuality in the partnership's biography was predictive of the perceived quality of the relationship.

Sexuality in old age has seldom been studied in German-speaking countries, feeding a tendency to draw rather uncritically on findings

generated in other countries, particularly the United States, where this theme has recently attracted considerable attention. Another problem associated with this taboo theme of psychological gerontology has been the tendency to accentuate men's sexuality more than women's. As a rare exception, Sydow (1992, 1993, 1995) conducted semi-structured interviews with 91 women born between 1895 and 1936. While 53 per cent reported themselves to be sexually active, 65 per cent described themselves as being only slightly sexually interested, confirming the well-known 'interest-activity gap'. Currently, the most representative data on the sexual behaviour of older people are from a study of 766 people aged 61–92 years in western Germany by Unger and Brähler (1998). About one third reported being sexually active during the year before assessment. The strongest predictor of sexual activity was the availability of a spouse. A closer look at those living with a partner revealed that about two-thirds of 61–70 year olds were sexually active, and about one-third of those aged 70 years and more. No differences were observed when these results were compared with those of an earlier survey of older people living in eastern Germany.

The divorce rate in marriages of 25 and more years has considerably increased during the last 25 years in Germany and is now about nine per cent (Fooken 1996), but the subject has received almost no attention. Fooken (2000) has provided some initial findings on divorce in later life from a study that administered semi-structured interviews and psychometric measures to 105 subjects (45 male, 60 female) with at least one child and who were born in 1930 (n = 25), 1940 (n = 44) and 1950 (n = 36). Fooken's research points to the importance of two critical life-events on the timing of divorce, the empty nest experience and the death of parents. The associations were however rather weak and there were cohort-specific differences, *e.g.* those who no longer lived with their children in the earlier cohorts tended to divorce after a longer interval than the later (younger) cohorts. Using cluster-analysis of retrospectively-assessed variables on family planning issues, the perceived quality of family relationships and the family 'climate', Fooken distinguished four types of family constellations that preceded divorce: (1) happy parents and harmonious families (reported by 19 males and 15 females); (2) 'normal' families with good and bad times and average scores on all dimensions (16 males and 31 females); (3) deserted and unhappy mothers (14 females and 2 males); and (4) uninterested fathers (10 males).

A final important subject in the dynamics of social relations in old age is the experience of becoming a permanent care recipient. The fact that such care is offered mainly by members of an individual's informal social network naturally led to research on the psychosocial challenges faced by informal carers, which began quite early in the German-speaking

countries (Bruder *et al.* 1981). In accordance with the findings from many other countries, spouses and daughters most likely to provide for basic care needs (Halsig 1995, 1998), and many devote considerable time to care. Between one-third (subjects from western Germany) and nearly half (subjects from eastern Germany) of care-givers are involved in 'round the clock' care, often characterised by unpredictable demands. In addition to financial, employment-related and family problems, about one-third of care-givers reported major body-related and emotional burdens. While Gunzelmann, Adler and Wilz (1997) found no association between the experienced burden of family members and the basic care needs of the demented relative for whom they provided care, care-providing spouses revealed higher physical and psychological strain symptoms than other family care-givers. The explanation might partly lie in the challenges brought by a spouse with dementia: the need to redefine completely the partnership after a long history of shared 'normal' emotional and instrumental exchange. Zank and Schacke (1998) showed that among care-givers there was no association between their psychosocial strain and wellbeing and whether or not the person they cared for received day care. They also showed, however, that care-givers tended to have misguided expectations about the treatment potential and philosophy of the day-care centres. They believed, for example, that their relatives' dementia would disrupt the treatment or service, although these centres specialised in the patient group.

Kühnert (1991) described various potential conflicts between informal and professional care providers in nursing homes, and concluded that involving informal carers in institutional settings should not be regarded as necessarily or normally advantageous. Finally, several research projects have addressed the taboo theme of abuse in informal care relationships (Halsig 1998; Stuhlmann and Kretschmar 1995). This has led to the insight that a complex interplay of variables (from biographical experiences and personality factors to the tendency to concentrate care in the hands of one person) has to be considered, and that in extreme conditions both the informal carer and the care recipient are at risk of giving and receiving aggressive and negative behaviour.

Social implications of research on social relations in old age

Today's older people appear more capable than any before of proactively organising their social participation in diverse family and community networks in ways which are consistent with their life-goals and prevalent social motivations. Seen from this perspective, the empirical support in Germany for Carstensen's (1993) 'Socio-emotional selectivity theory'

supports the view that the current cohort of older people is typically capable of dealing independently (without the need for state intervention) with the central aspects of their (social) lives. This generalisation should not however be used as a basis for discounting the need for local service provision to meet the needs of the many older people who lack independent competence.

Other recent research has emphasised the heterogeneity and pluralism of social relationships in old age as in every other period of adult life. Thus, one of the key messages for society as a whole and for policy-makers in particular is that the long established dichotomy between 'disengagement' and 'activity' has simply become irrelevant for today's elders. Furthermore, it is important to note that studies of social relationships and inter-personal interchange have increasingly shown substantial 'social productivity', as with informal caring, socio-emotional support and financial contributions to relatives, particularly children and grandchildren. This insight is supported by many empirical findings, which show that even the oldest people take part in intergenerational exchange and reciprocity.

Research on partnership issues, sexuality and divorce amongst older people undoubtedly reveals age-related changes and distinctive strategies in old age towards the maintenance and development of intimate social relationships. Such findings may also be interpreted as a sort of 'normalisation' of the conceptualisation of older people's social and inter-personal lives, the tasks, challenges and capabilities of which are increasingly seen as little different from those of other adult ages. Finally, there is one step in the development of an individual's social relationships that is most characteristic if not entirely confined to old and especially very old age: becoming a permanent care recipient. Research on this transition has exposed the duality of the social relationships that follow. On the one hand, informal (and typically family) help represents a major resource in social, emotional and economic capital terms for coping with the severe care needs of old and very old individuals. On the other hand, there are risks involved in these very special interactions, both to the technical quality of the care, and in damaging and unacceptable forms of conflict, as when violence ensues. Both society and social policy must therefore resolve the challenge of having simultaneously to nurture and 'control' informal and formal care.

Conclusions

We began this review with the assumption that geropsychology always operates in a social and cultural setting and that its findings simultaneously impact on its settings. Against this general background, one conclusion

from our review is that the psycho-biographical approach, typical of German theorising in developmental psychology, continues to be very influential. The approach has two major premises, that ageing should be seen as a lifelong process, so that understanding development in the early phases of life is a prerequisite for understanding life situations and developmental processes in old age, and that ageing processes should be seen as a product of both objective developmental contexts and their subjective representation: objective states predict only a proportion of possible psychological changes, and subjective influences moderate the relationship between objective states and developmental outcomes.

In relation to cognitive development, the first premise is evinced in theoretical conceptions such as life competencies, wisdom and human capital. The second premise is most apparent in research on the relationship between competence and performance. Research undertaken on metamemory illustrates these points well, and Thomae's theory of personality development is a paradigm for the two premises. This theory served explicitly as a conceptual organisation for the Interdisciplinary Longitudinal Study on Ageing, the central aim of which was to identify the predictors of successful ageing in middle and older adulthood. The Eldermen Study and the study of Holocaust survivors exemplify the prevalence of lifelong developmental perspectives in German research on coping. Indeed, the relationship between objective events and processes and subjective representations is at the core of all the theoretical models on coping and resilience that have been described. On the development of social relationships, decreases in the number of network partners have been traced back to lifelong selection processes. Moreover, focusing on the changing personal motives and functions of social relationships, on processes of optimisation and compensation, and on the differentiation of positive and negative aspects of social exchange, amounts to an emphasis upon the importance of subjective representations. Similarly, the cited studies on marital relationships and divorce explicitly proceed from a psycho-biographical approach.

From the empirical research reported in this review, it is obvious that cultural contexts significantly influence ageing processes. Referring to cognitive development, the distinctions between cognitive mechanics and pragmatics, and between the 'third' and 'fourth' age, explicitly reflect the notion that human development is influenced by both genetics and culture, or nature and nurture, with culture allowing for specific gains that might be used to compensate for biological-physiological losses. Similarly, concepts like practical intelligence, life competencies, wisdom or human capital point to the social contexts that influence which strategies and knowledge systems might be acquired by people of different ages.

The social context, particularly the needs, values, attitudes and beliefs of younger people, define the degree to which specific strategies and knowledge systems might serve older people seeking to lead a 'productive' life. The relationships between memory performance, control beliefs and attribution processes also illustrate the roles of attitudes towards older people and beliefs about old age and ageing. There is impressive evidence that at least some decline in old age is primarily due to social myths and not to changes in memory capacity.

In relation to personality development, life satisfaction, subjective wellbeing and control have been shown to depend on processes of self-regulation. Social comparison processes have been conceptualised as essential for older people to achieve self-assessment, self-improvement and self-enhancement. The interactions between personal and social factors in determining individual constellations of risks and resources have attracted much attention in recent German coping and resilience research. As an example, the effectiveness of assimilative coping in older people suffering from chronic disease has been shown to depend much on the individual's institutional environment. Analyses of the Interdisciplinary Longitudinal Study of Adulthood show that the relationship between health and stress is moderated by social resources. Similarly, a study of self-regulation processes in older people points to significant cohort differences in the effectiveness of primary and secondary control processes. As a result of German re-unification, older people from the former GDR have fewer resources for coping with significant losses in their life perspective than those from western Germany. Finally, with respect to the development of social relationships, older people's contacts deserve to be conceptualised in terms of the changing opportunities that exist in a given social and material world to meet personal needs and motives.

Overall we believe that there is a great need for geropsychological research to be viewed in its cultural and societal contexts. This will not only promote a better understanding of the research evidence, but also spread the recognition that its implications are far from confined to the individual and micro-level of analysis, but instead are capable of richly informing social and political decision-making. We hope that this review will encourage the appreciation and application of the unusually substantial contribution to social gerontological understanding that has been made by psychological gerontology.

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NOTES

1 It therefore complements a recent review of German social gerontology research by Scharf (2001).
2 For a comprehensive overview, see Baltes and Mayer (1999). BASE studied a sample of 516 people aged 70–103 years stratified by age and gender (Lindenberger and Baltes 1995; Smith and Baltes 1999).

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Address for correspondence:
Hans-Werner Wahl, German Centre for Research on Ageing, University of Heidelberg, Bergheimer Str. 20, D-69115 Heidelberg, Germany.
e-mail: wahl@dzfa.uni-heidelberg.de

Andreas Kruse, Institute of Gerontology, University of Heidelberg, Bergheimer Str. 20, D-69115 Heidelberg, Germany.
e-mail: andreas.kruse@urz.uni-heidelberg.de