

Adolescence and Adulthood

10



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- Social and emotional development

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Learning Objectives

By the end of this chapter you should appreciate that:

- the journey from adolescence through adulthood involves considerable individual variation;
- psychological development involves physical, sensory, cognitive, social and emotional processes, and the interactions among them;
- although adolescence is a time of new discoveries and attainments, it is by no means the end of development;
- there is some evidence of broad patterns of adult development (perhaps even stages), yet there is also evidence of diversity;
- some abilities diminish with age, while others increase.

INTRODUCTION

Development is a lifelong affair, which does not stop when we reach adulthood. Try this thought experiment. Whatever your current age, imagine yourself ten years from now. Will your life have progressed? Will you have attained any goals? What state will your body be in, and how will you feel about it? Where will you be living? Will your cognitive and occupational skills have improved and broadened, or started to slow down? Do you anticipate changes in your financial status? Will you have gained/retained/replaced a partner? How will you adjust to new responsibilities (at work, at home)? Will your leisure activities differ? Will you have had children/seen existing children grow up and leave home? Would you expect other people to regard and treat you differently from the ways they do now? What changes in the larger world (technological, political, economic) might affect you in a decade's time?

If ten years ahead is an awesome prospect, imagine yourself 20, 30 or more years from now and repeat the exercise.

Did you find this an easy or difficult task? Is your life course planned and your intention to follow it unshakeable, or do you see it as open to

the decisions of others, or governed by pure chance? Do you look forward to change (and ageing), or does the prospect unnerve you?

It soon becomes clear when we contemplate our own futures that change is inevitable. But to what extent is development in adulthood due to intrinsic, fundamental changes in the organism, to accumulating experiences in complex environments, or to social and community pressures to adapt? Is change continuous and gradual, or is it marked by major transitions? You will notice that these are similar issues to those questions we considered in chapter 9.

In this chapter, we follow developments beyond childhood, beginning with adolescence and then moving into the phases of adulthood – early, middle and late.

Although there are many aspects to development during adolescence and adulthood, and wide individual variation in circumstances and achievements, the core issues, psychologically speaking, continue to revolve around the themes covered in chapter 9. So, once again, we will follow each phase of development from physical, cognitive and social perspectives.

ADOLESCENCE

It is difficult to decide exactly when adolescence begins or ends, as both boundaries are subject to individual variation. Is a person an adolescent when he or she reaches a particular age – say, the teens? Some people at this age are already relatively mature sexually, whereas others are still pre-pubertal. Intellectual maturity can vary just as widely.

And when is adolescence complete – at the end of the teens, at 21, or later? Some people have adult responsibilities – perhaps a job and family – by their late teens, while others can be found skateboarding around university campuses, free of commitments and still quite unsure of where they are heading in life, into their mid 20s.

For these reasons, psychologists working on adolescence tend to define the period broadly, as a time of transition between childhood and adulthood, acknowledging that the timing and pace of development is subject to considerable variation.

PHYSICAL DEVELOPMENT

Through most of childhood, people grow at a fairly steady pace – about 5–10 cm and 2–3 kg per annum. But with the beginnings of adolescence, most individuals undergo another radical change, often called a growth spurt. In girls, this typically occurs at around age 10 to 13; in boys, it occurs between 12 and 15. Growth is quite rapid compared to earlier in the lifespan – a girl may add around 9 kg in a year, and boys around 11 kg (Tanner, 1962). Remember the tadpole in chapter 9? The transformations of puberty – as the developing body commences the changes that allow it in turn to contribute to the reproductive process – are almost as radical.

Secondary sexual characteristics

A particularly important physical change during puberty is the emergence of secondary sexual characteristics. In girls, this means an increase in subcutaneous fat and rounding of the body, the beginnings of breasts and, towards the end of the spurt, pubic hair and the menarche (the first period). In boys, the penis, testes and scrotum begin to enlarge, pubic hair appears, the voice begins to deepen, and muscles grow and strengthen. At around 13 to 14, most boys experience ejaculations or nocturnal emissions (wet dreams). Underlying all of these external changes, there are important hormonal developments, due to the increased production of oestrogen (in girls) and androgen (in boys). Young people are now heading towards their mature size and form, but the pace of development varies markedly across individuals.

These developmental changes are important from a psychological perspective, because they affect the young person's sense of self and relations with others (Brooks-Gunn & Paikoff, 1992; Durkin, 1995). Unlike the tadpole, human adolescents are very much consciously aware of the changes they are undergoing. The emergence of the secondary sexual characteristics prompts them to think of themselves as young adults, and to change their appearance and activities accordingly.



Figure 10.1

During puberty, secondary sexual characteristics, such as facial hair in males, begin to emerge.

The effects of variation

Variations in the pace of development lead to complex outcomes. In some respects, those who mature early tend to have an advantage in that they are seen – and treated – as more adult-like. Some young people, especially males, gain from this, developing greater popularity and confidence that can endure into adult life (Jones & Bayley, 1950). In contrast, late maturers may experience some insecurities as they compare themselves with their peers who are ahead of them in the prized achievement of growing up (Alsaker, 1992).

But there can be drawbacks to early maturation, too. For example, some early maturing boys are drawn into activities (like truancy or delinquency) that get them into trouble with parents, teachers and other authorities (Ge et al., 2001). Some early maturing girls report higher levels of psychosomatic distress during their teens. This is perhaps because their earlier involvement in activities such as dating and other people's expectations of them to behave as adults lead to pressures they are not yet equipped to handle (Ge, Conger & Elder, 1996; Graber et al., 1997).

COGNITIVE DEVELOPMENT

Less immediately visible is an intellectual growth spurt during this period (Andrich & Styles, 1994). The young person is becoming capable of thinking about the world, and dealing with the challenges it presents in new and more powerful ways.

The period of formal operations

In Piaget's view, the cognitive advances of middle childhood (the concrete operational period) are limited because they can only be applied to relatively accessible problems, i.e. tasks concerned

period of formal operations the last of Piaget's stages of intellectual development, when thought is no longer dependent on concrete operations tied to immediately present objects and actions, but is based on reasoning about abstract propositions and the evaluation of alternative possible outcomes

with the physical 'here and now', or easily imagined scenarios (see chapter 9). During adolescence, many individuals progress beyond this limitation, and are able to deal with more abstract cognitive tasks. Piaget calls this (the final stage in his model) the *period of formal operations*.

Once again, Piaget and his collaborators studied this phase of development in great detail (Inhelder & Piaget, 1958). They set a number of tasks for children and adolescents, designed to illuminate changes in their reasoning processes. In one task, participants were presented with a set of pendulums, with objects of different weights suspended from strings of different lengths (figure 10.2). The task was to determine what influences the speed with which the pendulum swings: is it the weight of the object, the length of the string, the height from which the object is dropped, the speed with which it is pushed, or some combination of factors?

Children still in the concrete operational stage set about the task rather haphazardly. They tried guessing and random combinations of actions but were unable to isolate the effects of a single factor. Adolescents (aged 14–15) who had reached formal operations worked in a much more systematic fashion. They tested the effects of varying a factor (e.g. length of string) while holding the other factors constant (e.g. using the same weight for each trial), keeping track of the different manipulations and possibilities. In due course, they came up with the correct answer. (What do you think? Test your own formal operational reasoning. The answer is given on p. 222.)

Another problem devised by Inhelder and Piaget (1958) was a chemistry task, which involved creating a yellow solution from five unidentified liquids, each initially in its own test tube. Some combinations of colours achieved this outcome, and others removed it. How would you set about finding which combinations work, and then how to make the colour disappear?

Concrete operational children favoured a trial-and-error approach: they kept trying random mixtures. Some children never worked it out, some hit occasionally on a combination that worked but were not sure exactly how they had done it, or how to reverse the process (i.e. make the colour disappear). The formal operational thinkers were much more systematic. They contemplated the range of possible combinations, formulated hypotheses, and tested them sequentially; they also kept a record of the combinations they had tried and the outcomes.

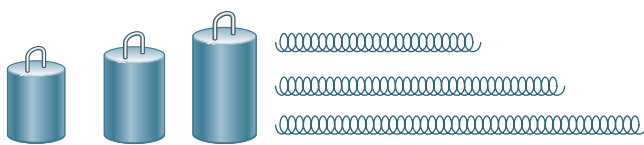


Figure 10.2

Materials for the pendulum task.

In these (and many other) tasks, formal operational thinkers demonstrate not simply that they are systematic and able to keep track of their attempts, but that they are able to formulate abstract hypotheses about possible outcomes. They are able to conceive of different propositions about the same set of factors, and to work out means of testing them to achieve a resolution.

Formal operational thought is not restricted to tackling science education puzzles. Again, from a Piagetian perspective, the important point is that this higher level of reasoning enables young people to deal with many aspects of the world more profoundly. They now have access to more abstract ideas and principles, and some become very interested in the principles governing the broader social environment. For example, many adolescents develop an interest in political issues, human rights, feminism, the environment or spiritual matters (Klaczynski, 2000) – all concerns that reflect their ability to conceive of alternatives to the present reality. This is a time of 'great ideals' (Piaget & Inhelder, 1966).

Piaget challenged

Although most developmental psychologists would agree that adolescent thought reflects important advances beyond childhood, not all agree with Piagetians about the nature of the changes, and not all of the evidence is consistent with the theory.

For example, large-scale studies have reported that only small proportions of adolescents perform sufficiently well to meet the criteria for formal operational reasoning (Neimark, 1975; Shayer, Kuchemann & Wylam, 1976). The comprehensiveness of Piagetian theory is in doubt if it fails to characterize a majority.

Contemporary researchers agree with Piaget that cognitive development does proceed during the adolescent years, but they disagree with him about the patterns and processes entailed (Byrnes, 2003; Klaczynski, 2000). During this period, young people show improved abilities in several areas, including deductive and inductive inferences, objective thinking, mathematical operations and decision making (Byrnes, 2003). But the developmental evidence does not support the Piagetian assumption of domain-general transitions (see chapter 9).

For example, participants' scores on different reasoning tests do not correlate highly during adolescence, and there are greater age differences on some tests than on others (Csapo, 1997). If a general improvement were underway, we would expect to find comparable and simultaneous improvements across cognitive domains. Instead, adolescents appear to function better in cognitive tasks where they have an existing strong knowledge base (Byrnes, 2003) or have received specific training designed to accelerate performance (Iqbal & Shayer, 2000).

These findings lead many researchers to favour domain-specific models of cognitive development in adolescence. According to such models, developmental progress depends at least in part on the cognitive opportunities, tasks and challenges to which adolescents are exposed (Byrnes, 2003).

Alternative accounts of adolescent reasoning have been advanced more recently, drawing upon information-processing theories, and arguing that what really underpins development in

adolescence is not so much changes in formal logical skills as changes in processing capacity or efficiency – such as improved memory skills or attention span (see Keating, 1990). These capacities may also be linked to ongoing neural developments, as there is now substantial evidence that the frontal lobes continue to develop during adolescence (Byrnes, 2003).

SOCIAL AND EMOTIONAL DEVELOPMENT

The adolescent's social world is changing fast. The changes reflect the biological and cognitive developments summarized above, as well as new opportunities and the impact of other people's expectations.

Gender and sexual development

During adolescence, gender becomes of much more central importance for most individuals. The biological changes discussed above make gender all the more salient – to the adolescent and to others.

One consequence is that societies' expectations about gender-appropriate behaviour are brought home more powerfully than ever before. During childhood, cross-sex interests are tolerated to some extent in girls (although, as we have seen in chapter 9, this is less the case for boys). But in adolescence, parents and peers tend to provide stronger messages about acceptable and unacceptable behaviour – there is a narrowing of the gender 'pathways' as we move closer to our adult roles (figure 10.3; Archer, 1992). In some cultures, the sexes are increasingly segregated in adolescence, although in others (such as many Western societies) many adolescents are particularly keen to socialize with the opposite sex.

In societies that do allow for mixed gender interactions in adolescence, a number of factors bear on young people's sexual development. Increased hormonal levels are associated with heightened interest in sex in both boys and girls. For boys, this tends to lead to involvement in sexual activity (though much of this is solitary), while girls tend to be more influenced by social factors, such as parental attitudes and friends' sexual behaviour (Crockett, Raffaelli & Moilanen, 2003; Katchadourian, 1990). Whatever the specific influences and motivations, the outcome is that a lot of adolescents have apparently experienced sexual relations. For example, in America, about two-thirds of 12th graders (16- to 17-year-olds) report having had sexual intercourse (Crockett et al., 2003) – although this figure may be somewhat inflated by peer pressure.

The importance of peers

There is no doubt that peers are very important to adolescents. During this phase of the lifespan, people spend increasing amounts of time in the company of their peers (Brown & Klute, 2003; Collins & Laursen, 2000) and increasingly focus on peer relations as crucial to their sense of identity (Pugh & Hart, 1999).



Figure 10.3

Adolescents become interested in adult appearance. There is a narrowing of gender 'pathways' and an increased interest in sex.

You are probably aware of strong popular assumptions about the effects of peers on adolescents. Peers are often regarded as a potentially harmful influence, leading impressionable teenagers into dangerous experimentation (e.g. with drugs and sex), dereliction of responsibilities (e.g. schoolwork) and hostility to adults and adult society. Peer values are often assumed to be the antithesis of parental values. But were these your own experiences?

Certainly, friends' behaviour does tend to be correlated with adolescents' choices and actions in many areas (Durkin, 1995). But, as you already know from reading chapter 2, correlation does not equal causation. In fact, we *choose* our friends – and adolescents tend to choose friends who have similar interests. If you are a smoker, you probably will not choose to hang out most of the time with the sports crowd. More generally, adolescents themselves report that, although they are subjected to peer pressures sometimes, they do not generally experience this as a major influence on their behaviour or as something that they find particularly difficult to handle (du Bois-Reymond & Ravesloot, 1994; Lightfoot, 1992).

Furthermore, perceived peer influence tends to vary across different domains of life. It is quite strong with regard to appearance (e.g. hairstyle, clothing) and socializing (e.g. dating, finding out

Research close-up 1

Studying adolescent development: What a bedroom wall can reveal

The research issue

Have you ever experienced an attraction to a movie star? Pinned a poster of a rock hero above your bed? Dreamed of a date with your idol? If you have, you are not unique. These are quite common experiences in adolescence. Some teenagers even describe themselves as 'in love' with these glamorous but remote characters, whom they will probably never meet. Some report jealousies about their idols' on-screen and real-life relationships. What developmental psychological processes are involved in the adornment of a bedroom wall?

To find out, Rachel Karniol (2001) studied 13- and 15-year-old girls' reasons for hanging posters of media stars in their bedrooms. Karniol reasoned that girls at this age are subject to conflicting pressures as their sexuality emerges. On the one hand, they are maturing physically and developing emotional needs for attachments. But on the other hand, boys of the same age tend to be less mature because they have entered the growth spurt later. Furthermore, there are strong societal values that limit the expression of sexuality in young females.

Karniol hypothesized that posters of their idols provided these young teenagers with convenient but safe love objects, providing a transition into sexuality that precedes their physical relationships with boys. At the stage when girls are still ambivalent about sex, Karniol expected that they would prefer idols with relatively feminine features (for example, relatively large eyes, heart-shaped face, small jaw, petite nose), such as Leonardo Di Caprio, Brad Pitt or Nick Carter of the Backroom Boys, to hyper-masculine stars, such as Arnold Schwarzenegger, or Sylvester Stallone. She also hypothesized that posters would serve a social function – something to talk about with other girls.

Design and procedure

Fifty teenage girls completed questionnaires about their favourite stars, including whether they had posters of them on their bedroom wall (and, if so, how many). Examples of questionnaire items include:

Do you look for information about the star in newspapers and magazines?

How excited are you when you think of the star?

What percentage of your conversations with your friends is devoted to talking about the star?

How jealous are you of the women that the star has relations with in movies or performances?

How jealous are you of the women the star has relations with in real life?

Results and implications

All but one of the participants indicated that she did have an idol, and about 40 per cent hung posters of their favourite(s) on their bedroom wall. Most of the idols were males.

Consistent with Karniol's hypothesis that the bedroom wall is a location for the safe love object, the girls who did not yet have or want boyfriends tended to favour male stars with feminine features, whereas those who were already dating all chose more masculine looking stars. The girls who were already dating also reported becoming more excited when thinking about their favourite stars and being jealous of their stars' screen or real relationships. Presumably these girls (whose sexuality was more advanced than that of the girls who favoured more feminine-looking stars) experienced vicarious sexual involvement with their heroes.

The results also showed a positive correlation between the number of posters a girl displayed of her favourite star and the amount of time she spent talking to friends about him – consistent with the hypothesis that the posters do serve a social function.

While Karniol's study was limited in sample size and gender, it yields intriguing preliminary findings. The findings indicate that the seemingly mundane aspects of everyday life can be valuable sources of information to the psychologist, and may reveal patterns in our thought processes and behaviour that are not obvious on first sight.

From these findings, what would you predict about the posters on teenage boys' bedroom walls?

Karniol, R., 2001, 'Adolescent females' idolization of male media stars as a transition into sexuality', *Sex Roles*, 44, 61–77.



Figure 10.4

Parents are often the earliest models for smoking and, more surprisingly, they are often the first to offer adolescents the opportunity to try cigarettes for themselves.

where it is cool to be seen), but peer pressure is less influential when it comes to moral values, antisocial behaviour and career decisions (Brown, 1999). And when they do try to exert influence, peers are not invariably aiming to promote bad habits: for example, peers often try actively to dissuade their friends from smoking (Paavola, Vartiainen & Puska, 2001).

Rather than peers providing the antithesis of parental influences, research suggests that the relationship is more complex. In early adolescence, some patterns of adolescent behaviour (such as drug use) tend to show a greater association with parental than peer practices (Bush, Weinfurt & Iannotti, 1994). Parents are often the first models in terms of drug use (smoking, drinking and other substances) and often the first to offer the young person an opportunity to try (Bush et al., 1994; Engels et al., 1994).

Older adolescents perceive peer influence in matters of drug use as greater than parental influence (Bush et al., 1994). But this perception may not take into account that, by this age,

individuals tend to have already chosen their peers. Evidence suggests that an adolescent's choice of peers is itself influenced by his parents (i.e. the parents encourage or discourage particular friendships) and that the impact of friends' behaviour is moderated by parental guidance (Blanton, Gibbons, Gerrard et al., 1997; Mounst & Steinberg, 1995). So peers are important, but not omnipotent.

As you can see in table 10.1, the 'peer pressure' issue is not the only aspect of adolescent development about which there are strong folklore beliefs that are not actually borne out by the research evidence. These discrepancies remind us once again that 'common sense' does not always provide a reliable basis for psychological analysis.

EARLY ADULTHOOD

It makes sense to divide adulthood into three broad phases: early (from approximately 18 to 40 years of age), middle (41–65), and late (66+). Clearly, this is only a rough breakdown, and there are substantial differences within each phase, but it does serve as a preliminary framework for the study of the largest period of human development – our adult lives.

By the time we reach early adulthood, we have spent a long time developing. Like the young frog hopping to a new pond, the young person setting up a first home is physically and mentally transformed from the infant first presented to his or her parents.

Just as it is difficult to determine precisely when adolescence begins and ends, determining exactly when adulthood commences proves elusive. There are some rough formal markers, such as reaching a particular birthday, gaining the vote or becoming eligible to join the military services, but these markers vary across and within societies. Other criteria, such as gaining financial autonomy, getting married or establishing a home, are met by different people at widely differing ages, if at all. In fact, no single event in and of itself establishes an individual as 'adult' in all areas of his or her life.

Table 10.1 Myths and realities of adolescence.

<i>Myth</i>	<i>Reality</i>
Adolescence is a period of storm and stress	Only a minority of adolescents experience serious psychological disturbances
There is a huge 'generation gap' between adolescents and their parents	Most adolescents continue to value their parents as companions and as sources of advice
Adolescents are dominated by peer pressure	Adolescents tend not to rate peer pressure as a major problem and feel able to resist it
Adolescents are dominated by television viewing	Adolescents spend less time in front of the television than other age groups
Adolescents are irresponsible	Many adolescents undertake substantial responsibilities at home, at school and at work
Adolescents are reckless drug takers	Most adolescents experiment with legal and illegal drugs, but for the majority this is a short-lived experimentation that does not lead to dependency
Adolescents are all the same	This is patently not true: adolescence covers a large developmental period, and there are enormous individual differences among people in this age group as in others

This is part of the challenge of studying adult development. Not only are the boundaries difficult to identify, but the experiences are widely varied too.

PHYSICAL DEVELOPMENT

Early adulthood is, for most people, the time of peak physical capacity. The body reaches full height by the late teens, and physical strength increases into the late 20s and early 30s (Whitbourne, 2001). Manual agility and coordination, and sensory capacities such as vision and hearing, are also at their peak.

But change is imminent, even in these basic capacities. Some decline in the perception of high-pitched tones is found by the late 20s (Whitbourne, 2001), and manual dexterity begins to reduce in the mid 30s.

In general, people in early adulthood feel robust and energetic, although it is not unusual to see fluctuations around deadlines and exam periods! On the other hand, people in this age group are also legally able to use damaging substances, such as alcohol and tobacco, and many can obtain access to illegal stimulants or narcotics. Young adults also have increasing responsibility for organizing their own eating habits and exercise regimes. Not surprisingly, the health status and prospects of young adults are dependent more than ever before on their own behavioural choices.

COGNITIVE DEVELOPMENT

By the end of adolescence, most people are capable of the levels of reasoning that we would expect for normal functioning in adult society. Although there are wide individual differences in attainment, most young adults are able to deal with cognitive tasks in a more abstract way than before, and to attain solutions to problems by comparing possible explanations.

Does this mean that cognitive development has reached a plateau? Many investigators of adult cognition think not.

Riegel's theory of postformal thought

Riegel (1975) proposed that adult experiences expose us to a new level of cognitive challenge – the discovery of dialectical (opposing) forces. In other words, we find that many aspects of our environment can manifest contradictory features. This is especially so in the human environment. For example, someone we love can be warm and generous at times, but on other occasions the same person can be self-centred and aloof. Are they generous or selfish, affectionate or remote?

There are many other contexts in which we experience contradictory information about a person, group or organization, or we encounter strongly differing points of view on the same issue. There may be no absolute resolution of the conflicts. We simply have to integrate our understanding into a more complex picture. Life, we discover, is often ambiguous and complicated. Riegel

argued that achieving the intellectual ability to deal with the contradictions that confront us in our everyday life requires progress to a fifth stage of reasoning – the stage of dialectical operations, now more commonly called postformal thought.

Research into *postformal reasoning* indicates that development continues well into adulthood (Sinnott, 1998). Research participants are often presented with problems relating to complex topics (e.g. in science, education, religion, politics or personal relationships) and encouraged to provide and justify decisions. Their reasoning is coded and categorized into stages.

postformal reasoning a level of thought beyond Piaget's period of formal operations, characterized by the understanding that there may be multiple perspectives on a problem and that solutions may be context-dependent

Kramer's three stages

Kramer (1983, 1989) proposed that people progress through three broad stages: *absolutist*, *relativist* and *dialectical*. In early adulthood, many people are in the absolutist phase: they are capable of addressing many problems, but they tend to believe that all problems have a correct answer. For example, a young person might commence university study believing that it will be a matter of learning facts and procedures, that the lecturers know everything and will tell you what is right and wrong.

absolutist reasoning that assumes there is always a single, clear answer to a given problem

relativist reasoning in which the individual has become aware that there are often different perspectives on any given issue, and that the 'correct' answer may depend on the context

dialectical reasoning in which competing positions are integrated and synthesis achieved

People in the relativist stage have become aware that there are often different perspectives on any given issue, and that the 'correct' answer may depend on the context. Students now appreciate that there are many theories and much conflicting evidence – but awareness of the diversity of perspectives can lead them to assume that very little is dependable. So, for example, your lecturer could spring a new theory on you at any time, and could herself be wrong.

There is evidence that the undergraduate experience (where one is regularly dealing with conflicting theories and ideas) can facilitate the development of relativist thinking (Benack & Basseches, 1989). If the idea of relativism seems strange at this stage, make a note to return to this chapter towards the end of your degree!

Eventually, in the dialectical phase, people become able to integrate competing positions and achieve synthesis. They can understand why there are diverse views, and they can appreciate that the overall progress and contributions of their chosen discipline derives from efforts to resolve its internal

contradictions. Basseches (1984) found that this type of reasoning is more characteristic of people studying at higher degree level or of university staff. Although aspects of dialectical reasoning can be found in adults in their 20s and 30s, Kramer's (1989) research led her to the conclusion that this stage is only fully realized in late adulthood.

Measuring intelligence

Other approaches to the investigation of intellectual development in adulthood are grounded in the psychometric tradition (see chapter 13). By applying standardized IQ tests, researchers have sought to discover whether there are age-related differences in intelligence during adulthood.

There are many different ways to measure intelligence. K. Warner Schaie and his colleagues have conducted major longitudinal studies of the evolution of primary mental abilities among several thousand adult Americans (Schaie, 1996, 2000). They focused on five primary abilities:

1. numeric facility
2. verbal recall
3. verbal ability
4. inductive reasoning
5. spatial orientation

Figure 10.5 presents a summary of scores on the five tests as a function of age. For the moment, note the data for early adulthood (up to age 40). As you can see, there are modest gains on most of the tests during the participants' 20s and 30s. Whether we measure this in terms of performance on the qualitative reasoning tasks favoured by investigators in the postformal thought school, or in terms of more traditional psychometric techniques, it appears that intelligence is still increasing well into adulthood.

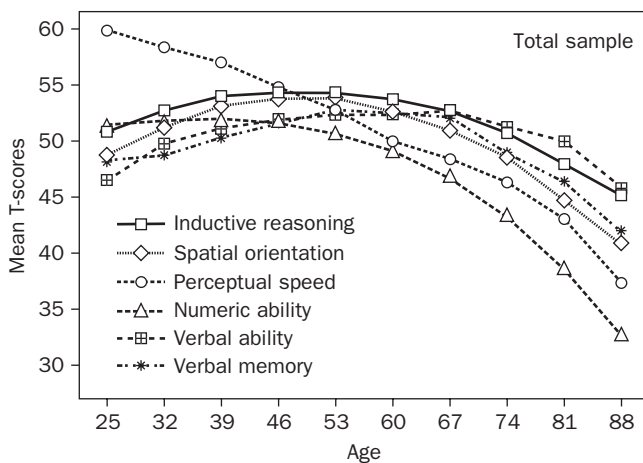


Figure 10.5

Longitudinal patterns of cognitive abilities. Source: Schaie (1996).

Pioneer

K. Warner Schaie (1928–) was born in Germany and moved to the US in the 1930s. He is now the Evan Pugh Professor of Human Development and Psychology and Director of the Gerontology Center at the Pennsylvania State University. His doctoral research into cognitive flexibility led to the initiation, in 1956, of the Seattle Longitudinal Study. This large-scale study tracks the mental abilities of people of different age groups every seven years, which enables Schaie and colleagues to chart individual differences in cognitive ageing across the lifespan, examining the influence of health, demographic, personality and environmental factors. The study, which still continues today, has also led to important investigations of family similarity in cognition and cognitive training effects in older adults. The participating families are now being followed into a third generation.

It seems, therefore, that this important dimension of human development certainly does not cease at the end of adolescence.

SOCIAL AND EMOTIONAL DEVELOPMENT

Young adults face some formidable developmental tasks. Many people at the beginning of this stage are concerned with launching a career. They may be studying to gain the critical qualifications, or training at the entry level of an organization. Some will not be so lucky. In many countries, youth unemployment rates have been very high during the last century and appear set to continue.

Studying, employment and unemployment each presents its stresses. At the same time, young adults tend to be finding their way through the world of romance, which can also lead to stress and anguish. All of this happens alongside changes in relationships with parents, and the increasing expectation that the young person will take responsibility for her own life – including, perhaps, a shift to a new home.

It would be an unusual person indeed who proceeded through these developmental tasks without at least occasionally wondering who she is, or who she is becoming, and how she is faring compared to her peers. For most people, facing these issues brings a range of emotional reactions.

A stage model for personal development

Several different theories have been put forward to account for personal development during early adulthood. From a psychoanalytic perspective, Erikson and Erikson (1997) see the dominant focus of this stage as the development of intimacy – the ability to love and trust another person.

Levinson (1978) extended some of Erikson's ideas, but drew also on social psychological theory to explain the relationship

between the developing individual and the demands of society. He emphasized the social role requirements at different life stages, and the interaction between personal growth and relationships. He maintained that all normally developing adults progress through the same stages in the same sequence, and at roughly the same pace.

Early adulthood begins with the sub-stage of early adult transition (approximately 17–22 years), in which young people

Dream Levinson's term for an individual's vision of his life goals, formed around 17 to 22 years of age and contributing to the motivation for subsequent personal development

are working towards autonomy from their parents and formulating a 'Dream' of what they hope to become in life. The Dream is important because it guides their efforts and choices in both the occupational and personal

spheres. Do you have your own Dream, or did you have one during this phase of life, and how does/did it relate to your current occupation and plans?

The next sub-stage is the period of entering the adult world (22–28), and is organized around forging a pathway at work and attaining a special personal relationship.

This is followed by the 'age 30' transition (28–33), in which people undergo a moderate degree of self-questioning – reviewing their Dream, the choices they have made and the problems in their lives.

The rest of this decade (33–40) is the 'settling down' period, when people have usually found their niche in life and are striving to consolidate their professional and domestic roles – they are basically getting their lives in order.

Levinson arrived at his account on the basis of a series of intense individual interviews with a group of American men in mid-life. Although they came from a variety of backgrounds and had a range of careers and family histories, similar patterns appeared to emerge. Although Levinson's original sample was relatively limited, subsequent work has shown that the model fits

Pioneer

Erik Erikson (1902–94) was born in Germany. His biological father, a Dane, abandoned Erik's mother before their child was born. When Erik was aged about three she married the family doctor, who happened to be Jewish. Erik was raised as a Jew, but his ethnicity was mixed – like his biological father, he was blond and blue-eyed. With the rise of Nazism in Europe, Erik moved to Boston, where he adopted the surname Erikson and took up a position at the Harvard Medical School. One of his early and most influential books, *Childhood and Society* (1950), contains an analysis of Adolph Hitler, wide-ranging discussions of America (including Native Americans) and the framework of his version of psychoanalytic theory. This combination of topics encapsulates his interests in the impact of culture on personality development.



Figure 10.6

The period of entering the adult world (22–28) is partly organized around the world of work.

many American women reasonably well, too (Levinson, 1996; Roberts & Newton, 1987).

Intimacy – are you secure, anxious or avoidant?

According to developmental models such as Erikson's and Levinson's, young adults are developing a sense of personal identity along with a need for closeness to others. They have also progressed through the biological developments of adolescence, and are now fully matured sexual beings. Not surprisingly, finding and developing relationships with an intimate partner, or series of partners, becomes a priority for many young adults.

Interestingly, there are strong similarities in the ways people develop early relationships with caregivers during infancy and intimate adult relationships later on. This would not surprise John Bowlby (1988), who saw the initial attachment relationship as providing the crucial foundation of much later development (see chapter 9).

Clearly, as adults we form attachments to other people and, just as in infancy, these relationships are intensely emotional. Just as in infancy, our adult attachments motivate us to seek proximity to the person we feel we need, to engage in extensive eye contact, to hold – and, just as in infancy, we tend to become distressed at separation. Some social psychologists (Mickelson, Kessler & Shaver, 1997; Shaver & Clark, 1996) have gone further, to argue that the types of attachments we form as adults can be classified using the framework Ainsworth and others developed to account for infant attachments – namely, 'secure', 'anxious/ambivalent' and 'avoidant' (see chapter 9).

'Securely' attached lovers find intimate relationships comfortable and rewarding. They trust their partner and feel confident of his or her commitment. 'Anxious/ambivalent' lovers experience uncertainty in their relationships. Sometimes, they fret that their

Everyday Psychology

The development of the university student

Consider some of the developmental tasks that you have already faced as a university student. You got past Day One (and not everyone does), so you have made a start on determining the 'goodness of fit' (Lerner, 1995) – the extent to which a person's characteristics and behaviour are compatible with the demands of a life situation. We know you have the intellectual capacity to profit from the experience (you passed the entry test, and not everyone does), but you also have to decide how you feel about the new institution and people surrounding you. Will you stick around? Not everyone does.

Whether you are an 'on time' (young) or a 'late entry' (mature) student, you will experience rapid changes in your identity, skills, values and personal relationships during the university years. The contents of the course you elected to study may change your ways of looking at the world, and have fundamental consequences for your reasoning style. At university, you are going to learn a lot about your work habits. Money matters may become more salient than ever before. You might well be dealing with issues such as relocation and the impact that has on personal attachments (e.g. issues of homesickness and missing family members are very common among first-year university students). And your future role as an autonomous adult member of the workforce may loom large.

You will be an unusual student if you do not experience some heightening of anxiety and stress levels at key times (such as exams or the arrival of bank statements). Moreover, recent reports indicate that about 30 per cent of university students find themselves overwhelmed by academic demands (Montgomery & Côté, 2003). You might change your political beliefs – or acquire political beliefs for the first time (Pascarella & Terenzini, 1991). You are likely to have to handle issues related to drugs, especially alcohol (Park, 2004), and concerning sexual activity.

So, in a very real sense, at university you are living out a developmental psychology field study!

Developmental psychologists have investigated most of the issues mentioned above. Montgomery and Côté (2003) provide an excellent review of the findings, which indicate that going to university has substantial and long-term developmental consequences.

The research also raises a controversial question. Are you going to change at university holistically (i.e. in a domain-general sense) or only in particular aspects (i.e. a domain-specific sense)? For example, we would expect some cognitive benefits from receiving an advanced education, and the evidence does show that most students make cognitive gains during their university years. But what about other aspects of life – dealing with people, developing a more mature and complex sense of self, or moral reasoning capacity? Here, the evidence is more mixed, but some researchers have reported greater changes in self-concept, personal adjustment and psychological wellbeing in university students than in age-matched peers. Changes in political and moral thinking are quite common at university, too.

In areas such as general personality development, though, it is less clear that all students undergo significant changes. Some findings indicate that mature age students are more likely to experience more personality/ego changes at university than younger students. This may be because people who already have considerable experience of the world and of themselves perceive the opportunities and stimulation of university in a different way. In this context, the challenges of university life may therefore be more personally salient and more powerful for them (Manners & Durkin, 2000).

The extent to which you experience domain-general or domain-specific changes over your next few years at university will depend at least in part on who you are – your background, your current stage of personal development, your coping style and what you are prepared to put into your education.

Finally, when all of this is over and you are maybe qualified as a psychologist, you might consider becoming a clinical or counselling psychologist specializing in student concerns. Psychological support services are an important feature of any higher education institution, and they represent one way in which psychologists can and do make a difference to society. Furthermore, becoming involved in worthwhile activities such as this may well also create a feeling of 'generativity' about your life and its developmental course (i.e. you feel that you have contributed usefully to subsequent generations).

Montgomery, M.J., & Côté, J.E., 2003, 'College as a transition to adulthood' in G.R. Adams & M.D. Berzonsky (eds), *Blackwell Handbook of Adolescence*, Oxford: Blackwell.

partner does not love them enough and might leave, and they may respond to this anxiety by putting pressure on the partner, running the risk of causing the very outcome they fear. 'Avoidant' lovers find getting close to others uncomfortable, find it difficult to trust others, and are reluctant to commit themselves fully to a relationship.

Shaver and colleagues found that the proportions of adults who fall into these types is very similar to those of infant attach-

ments, with (approximately) 59 per cent secure, 11 per cent anxious/ambivalent and 25 per cent avoidant (Mickelson et al., 1997). Other research indicates that adults who fall into these different categories recall their childhood relationships with their parents in ways that are consistent with these patterns. So, 'secure' individuals report relaxed and loving parents, 'anxious/ambivalent' people feel their parents were over-controlling, and the 'avoidant' adults reported lower levels of communication

and emotional support from their parents (Rothbard & Shaver, 1994).

Students make for interesting participants in attachment research, because many are dealing with the issues of finding and maintaining relationships at the time the study takes place. In an Australian study, Feeney, Noller and Patty (1993) investigated the romantic relationships of heterosexual students of different attachment types. They found that the relationships of 'secure' individuals tended to be more stable and loving, while those of 'anxious/ambivalent' people were less enduring and more numerous. 'Avoidant' individuals tended to be more accepting of casual sex, presumably because they are less interested in maintaining commitments to others.

MIDDLE ADULTHOOD

Once again, it is difficult to define this phase of life precisely. The variety of human life courses means that individuals can be in very different stages of their personal development at the age point (i.e. turning 40) that we have taken as a rough measure of entry to middle age.

PHYSICAL DEVELOPMENT

During mid-life, people experience a range of external and internal physical changes. External changes include the appearance of grey hair and hair thinning, increases in facial wrinkles, and a tendency to put on weight around the waist or lower body. Internal changes include reductions in the efficiency of the cardiovascular, respiratory and nervous systems (Whitbourne, 2001).

There are changes to the sensory capacities, too. One of the most noticeable for most middle-aged people is the onset of *presbyopia* – a condition of farsightedness due to progressive changes in the shape of the lens of the eye (Glasser & Campbell, 1998). This leads to difficulty in reading small print – you may notice people of this age holding printed matter further away than a younger reader does (figure 10.7). Hearing, particularly sensitivity to higher frequency sounds, is also prone to weaken during middle age (Brant & Fozard, 1990; Wiley et al., 1998).

menopause the time in a woman's life when menstruation becomes less regular and then ceases

This is the time when women experience the *menopause* – the cessation of menstruation. Many women suffer some level of physical and psychological discomfort as a result, such as hot flushes, mood changes, loss of libido and insomnia. But the intensity of these symptoms varies considerably among individuals (Leiblum, 1991; Notman, 1998), and menopausal status is not a strong predictor of psychological distress (Avis, 1999; Becker et al., 2001). There is some evidence that the physical symptoms associated with menopause vary across some cultures (Avis et al., 2001). This may reflect variations in diet and/or social expectations about the nature of the menopause.

LEADING domestic power producer Huadian Power International Corp. set a lower-than-expected price range for its initial public offering (IPO), facing a drop in local shares Thursday to near six-year lows.

Huadian said it would be offering yuan-denominated A shares at 2.30 yuan to 2.52 yuan a share, below the 2.50 yuan to 3 yuan range market participants had forecast earlier this week.

The IPO is China's first since regulators suspended new share offerings in late August last year to revise pricing rules.

The price range underscores concerns that the new rules would lead to weaker share prices, as more supply of stock comes in and new offerings are priced lower than they would have been under the old practice.

Prior to the new rules, IPO prices were already approved by China's securities regulator and set by the time a company issued its prospectus.

The key Shanghai Composite Index fell 1.1 percent to end at 1204.39 Thursday after hitting a low of 1199.17, the lowest level since May 1999.

"The market sentiment is

now very fragile," said Zhou Ji, an analyst at Haitong Securities in Shanghai.

Concerns about market liquidity being squeezed were heightened by news the China Securities Regulatory Commission had approved Baoshan Iron & Steel Co.'s plan to offer additional A shares.

"Even with ample funds on hand, players were reluctant to enter the market, fearing there may be more declines ahead," said Grace Lin, an analyst at CSC International Holding in Shanghai.

In Hong Kong, the H shares of Huadian, which were listed there six years ago, ended flat at HK\$2.30.

Huadian's IPO price range, the first of the new two-step pricing process that went into effect this year for IPOs in China, was finalized just after midnight Wednesday, and 77 institutional investors participated in its price discovery, a person involved in the deal said Thursday.

Based on the set price range, Huadian would raise between 1.76 billion (US\$212.56 million) yuan and 1.93 billion yuan, assuming all 785 million shares

on offer are sold; is scheduled for

The lowest ask in by the 77 investors was 1.90 yuan a share, respect to a statement by China Intern Corp., the lead Huadian's offer

Among the 30 three were Qu Institutional 11 36 fund main accounted for the of participants.

ages, 14 financial eight investment up the remainder

Huadian's pre IPO price range ings, would be 14.5 times, CICI 2004 financial re have yet to be re

A listing date 1 shares to trade 1 Stock Exchange; set after the IP Several analyst reporting there could occur in before the Feb. 9 holidays.

Figure 10.7

Text as it appears to a middle-aged adult with presbyopia. If you notice an adult at this stage of life holding printed matter further away in order to read it, this is the most likely explanation.

As at other stages of the lifespan, physical changes are closely interwoven with psychological changes. Signs of ageing prompt many people to review their lives (see below) and some begin to feel dissatisfied with their bodies. In a large sample of middle-aged and older Swiss women, for example, Allaz, Bernstein, Rouget et al. (1998) found that a majority expressed dissatisfaction about their weight and many had dieted to control it, even though their weight fell within the normal range.

Individuals' own behavioural choices can moderate the effects of biological changes. For example, menopausal women who take regular aerobic exercise report more positive moods and less somatic discomfort than non-exercising peers (Slaven & Lee, 1997). The reactions and support of partners can also influence women's experience of menopause (Leiblum, 1991).

COGNITIVE DEVELOPMENT

In terms of primary mental abilities, Schaie's (1996) data depict mid-life as a relatively stable period (see figure 10.5). In fact, on most measures, middle-aged adults perform as well as or slightly better than younger adults. Schaie did find a decline in numeric skill, and other researchers have obtained evidence of a modest decrease in reaction time (Wielgos & Cunningham, 1999) and a reduction in conscious processing efficiency (Titov & Knight, 1997) during this period. However, in terms of psychometric measures of intellectual functioning, middle-aged people perform well overall.

Life skills

There are some tasks on which middle-aged adults tend to fare worse than young adults. For example, Denney and Palmer (1981) gave people between the ages of 20 and 80 a traditional problem-solving test – a game of ‘Twenty Questions’. (The goal is to identify an object known to the tester by asking a series of indirect questions about it: ‘Is it a plant?’ ‘Can you eat it?’ etc.) The older people got, the worse they did.

But this could well be because this type of test was more familiar to the younger participants, who were therefore likely to do better. This interpretation of the findings is perhaps borne out by another series of tests administered by Denney and Palmer. These ‘real world’ tests related to practical applications of reasoning, such as how to deal with faulty purchases, flooding in the basement, or a child returning late from school. On these practical tests, middle-aged people scored significantly higher than young adults. In other research, Denney and Pearce (1989) found that the number of solutions people generate in response to everyday practical problems peaks in middle age.

Emotion and clear thinking

Researchers who focus on qualitative developments in adult reasoning have found evidence of continuing development through the lifespan. The progression through absolutist, relativist and dialectical reasoning may continue for decades (Kramer, 1989). Some researchers argue that there is an important reorganization of thinking in middle adulthood, as people achieve an integration of information-processing and emotional self-regulation (Labouvie-Vief, 1999).

A good illustration is provided by Blanchard-Fields (1986). She tested adolescents, young adults and middle-aged adults on three hypothetical problems, each involving a conflict of perspectives. One problem concerned competing historical accounts of a civil war, with different historians taking different sides. Another problem concerned a dispute over a proposed visit to grandparents, with parents in favour of the visit and their adolescent children against. The third problem concerned a pregnancy dilemma, with the female and male taking different views over whether to terminate. The participants’ task was to explain the conflict in each case.

Blanchard-Fields analysed the quality of the participants’ reasoning. She found that the middle-aged adults performed at a higher level than each of the younger groups. The younger participants tended to take sides, especially in the emotionally engaging ‘visit’ and ‘pregnancy’ problems, leading to distorted, one-sided accounts. The middle-aged participants were more likely to try to understand why each party felt the way they did, and to provide more balanced descriptions, taking all perspectives into account. In other words, it seemed that the younger participants tended to be swayed by their own emotions about the conflicts, while the middle-aged participants appeared to integrate emotional understanding with other problem-solving skills.

SOCIAL AND EMOTIONAL DEVELOPMENT

Each phase of life brings new challenges, and for many people mid-life brings a multiplicity of them – from all quarters. By this time, people’s histories are very varied. In their personal and occupational lives, many different options may have been chosen and many different events and circumstances will have affected their progress. So can we pin down any particular patterns of social and emotional development associated with middle age? Despite this variety in individuals’ personal background, some lifespan developmentalists maintain that we can.

The ‘mid-life crisis’ . . .

Erikson (1980) saw middle age as a period when adults have to face a conflict between *generativity* and *stagnation*. Generativity – the process of making a contribution to the next generation – can be realized in a variety of ways through personal (family) or career attainments that provide a basis for others to progress. For example, a businessperson in mid-life might find satisfaction in her professional achievements to date and in the scope now to pass on skills to younger colleagues. Another person might find a sense of generativity through having reared children that she is proud of and who are now entering the adult world well equipped to meet challenges. A ‘link between the generations’, maintained Erikson, is ‘as indispensable for the renewal of the adult generation’s own life as it is for the next generation’ (1980, p. 215).

Stagnation is the opposing feeling of having achieved relatively little and of having little to offer to the next generation. Some people in mid-life, for example, conclude that they have not met the family or occupational goals that once motivated them. Some respond to this sense of ‘standing still’ with a period of self-absorption, and an acute awareness that time is limited.

Individuals are likely to experience both types of feeling – generativity and stagnation – and the core developmental process of mid-life, according to Erikson, is the resolution of this conflict. Those who resolve it successfully attain a sense of care (about both the present and the future), and those who fail to do so develop a sense of reactivity (i.e. they turn away from society and have little interest in contributing to it).

Recent research has supported Erikson’s claims that generativity is positively associated with subjective well-being in middle-aged people, while a preoccupation with ageing (‘time running out’) is negatively associated with well-being (Ackerman, Zuroff & Mostkovitz, 2000; Stewart, Ostrove & Helson, 2001).

Levinson (1978) also depicts mid-life as a period of inner conflict. Recall that Levinson saw the period from approximately 33 to 40 as the ‘settling down’ period (see above). But settling

generativity the feeling in mid-life that one has made or is making a contribution to the next generation

stagnation the feeling experienced by some individuals in mid-life that they have achieved relatively little and have little to offer to the next generation



Figure 10.8

Erikson argued for the importance of a 'link between the generations', enabling the older generation to contribute skills and knowledge to younger people – a process known as generativity.

down is not the end of the story. Levinson found that most of his interviewees next underwent a major new phase, during a period of mid-life transition (40–45). Many of the men he interviewed reported that this was a time of personal crisis. They began to review their lives, asking themselves what they had achieved and where they were heading. Many wondered whether their personal and career struggles had been worthwhile, and some contemplated or underwent radical changes in direction (changing career paths, divorcing). Although Levinson's sample was all male, other research indicates that many women report similar periods of reassessment during middle age (Koski & Steinberg, 1990; Waskel & Phelps, 1995).

These kinds of reassessment are popularly associated with the notion of the 'mid-life crisis'. The visible signs of aging, changes in the family structure as children become adolescents or young adults, and frustrations in the workplace may all serve to remind the middle-aged person that life is passing by – and this might precipitate a personal 'crisis'. Levinson argued that this is a normative process, and that successful adult development beyond mid-life requires facing up to and resolving the crisis.

. . . debunking the myth

Appealing as the idea may seem (and much as newspaper writers and TV dramatists relish it), subsequent research shows that it is an oversimplification to assume that everybody undergoes a mid-life crisis. For example:

1. Periods of turbulence and self-doubt can be experienced by adults of most ages (Soldz & Vaillant, 1999), and some individuals – especially those who score highly on measures of neuroticism (see chapter 14) – may be prone to develop crises at any age (Kruger, 1994).
2. In larger samples than Levinson's (1978), only a minority of middle-aged people feel they have experienced a crisis (Shek, 1996; Wethington, 2000).
3. Substantial proportions of middle-aged people report better mental health and self-esteem during this phase of life than ever before (Jones & Meredith, 2000; McQuaide, 1998).

The mid-life crisis therefore does not appear to be as widespread as once thought, and there is no guarantee that you will have any more (or less) crises during your middle years than in other phases of your life.

But there is no doubt that there are many pressures on middle-aged people (Lachman & James, 1997). Some of these pressures relate to domestic and family life, and others to the world of work. For many middle-aged people, there are new parenting challenges as their children reach adolescence or early adulthood. At a time when adults are becoming aware of their own physical decline, their children may be gaining the attractions of youth. Often, these demands coincide with increasing anxieties about and responsibilities towards the older generation (Belsky, 1997; Cavanaugh, 1998). For some middle-aged people, usually women, looking after both their own children and their aging parents can cause 'caregiving pile-up' – an experience of overload due to too many competing demands (Doress-Waters, 1994).

As in earlier phases of life, the quality of a person's attachment to his or her partner has important implications for adjustment, personal satisfaction and dealing with life stresses (Diehl et al., 1998; Fraley & Shaver, 1998; Fuller & Fincham, 1995; Kirkpatrick & Hazan, 1994). For example, in a longitudinal study of middle-aged people, Kirkpatrick and Hazan found that those with secure relationship attachment styles were less likely to experience a break-up of their partnership.

LATE ADULTHOOD

Late adulthood is perhaps the most difficult of all to define precisely – mainly because there is very wide individual variation in the physical, cognitive and social processes of aging.

PHYSICAL DEVELOPMENT

In late adulthood, external physical changes include changes in the skin (wrinkling, loss of elasticity), loss of subcutaneous fat, thinning of the hair, and changes in general posture due to the loss of collagen between the spinal vertebrae (Cavanaugh, 1997; Whitbourne, 2001). There are also many internal changes, less apparent to the onlooker but important to the functioning of the aging individual. These include changes to the cardiovascular

system and loss of cardiac muscle strength, decline in muscle mass and reductions in the efficiency of the respiratory, digestive and urinary systems (Whitbourne, 2001).

But, although physical change is inevitable, the timing and extent are highly variable (and, to some degree, influenced by the behavioural choices and lifestyle of the individual). For example, aging of the skin is affected by exposure to sunlight, physical strength and fitness decline less in people who exercise regularly, and the well-being of the digestive system is influenced by diet and drug use (Whitbourne, 2001).

Physical and sensory capacities, so important in our earliest encounters with the world (see chapter 9), also tend to decline with age. Manual dexterity is reduced (Francis & Spirduso, 2000), and the visual system becomes less effective (Glasser & Campbell, 1998). The older person's pupils become smaller, and the lens of the eye becomes less transparent (and so less sensitive to weak lights, and less able to adapt to darkness) and less able to accommodate. Hearing, taste, olfaction and touch all become less sensitive during later adulthood (Marsh, 1996; Whitbourne, 2001).



Figure 10.9

Although physical change with age is inevitable, physical strength and fitness decline less in people who exercise regularly.

If perceptual abilities were so vital at the outset of life, what are the psychological consequences of beginning to lose them? Imagine becoming less able to listen to music, experiencing difficulties in attending to conversations, or finding that food and drink seem less interesting. Research indicates that our physical senses remain important at this end of the lifespan, too. There is a strong connection between sensory functioning and intelligence in old age (Baltes & Lindenberger, 1997). Gradual deficits in hearing can affect older people's ability to process speech in the context of other noise, which in turn affects how easily they interact with other people.

Certainly, the decline of abilities that were once taken for granted can lead to a reduced sense of competence for the older person (Whitbourne, 2001). And the curtailment of activities that were previously enjoyed can affect people's assessment of their quality of life. But, once again, the extent of the impact of biological decline varies from person to person, and is influenced by both the rate of change and the individual's coping skills (which are, in turn, influenced by personality and social circumstances).

COGNITIVE DEVELOPMENT

Does intellectual capacity decrease with age?

Let us return again to Schaie's data on primary mental abilities across the lifespan (figure 10.5). Look at the average performance of 67-year-olds compared to adults in mid-life, and you will see evidence of some decline. At this stage it is not particularly dramatic, but our eyes are drawn to the right of the figure, where we see more marked reductions in the performance of people in their 70s and 80s. It seems that by the mid 60s, the downward trend is set.

But take another look. If we compare the performance of the 67-year-olds with the 25-year-olds, it turns out that they are very similar on three of the measures, and only slightly poorer on two of them. On average, people in their mid 60s are performing on these tests at roughly the same level as those in their mid 20s.

Schaie's and other research (Powell, 1994; Rabbitt et al., 2001) also shows that while there is variation between age groups on some measures of intellectual performance, there is also great variation within groups – and this variation within groups increases with age (figure 10.10).

Older people do tend to perform less well than younger adults on tasks dependent upon reaction time and processing speed (Bashore, Rindderinkof & van der Molen, 1997; Rabbitt, 1996). Some researchers have also reported that older adults perform less well on Piagetian-type tasks measuring formal operations (Denney, 1984).

But these differences do not necessarily support the conclusion that intellectual capacity in the elderly is pervasively inadequate. Intelligent behaviour in everyday life typically involves several capacities, and people may be able to compensate for reductions in one ability (such as processing speed) by placing greater weight on another (such as judgements based on experience).

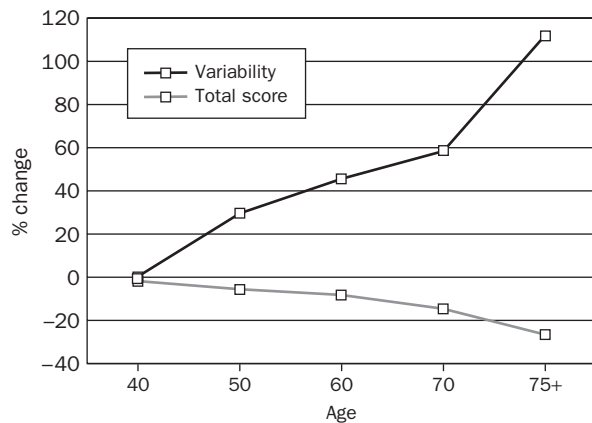


Figure 10.10

Variance within age groups on tests of cognitive function. Source: Powell (1994).

Pioneer

Patrick Rabbitt (1934–) was born in India but spent the majority of his working life in the UK, studying at Cambridge University and working predominantly at the Universities of Oxford and Manchester, where he established an Age & Cognitive Performance Research Unit (funded by the Medical Research Council). Rabbitt developed a large longitudinal cohort, shared between Manchester and Newcastle. He has published widely and influentially, and has been especially interested in the source of inter-individual ability in adult development and ageing (focusing on issues such as speed of intellectual processing and IQ).

Another myth debunked

Many of the studies that point to age-related differences are based on different cohorts – that is, groups of people who were born at different times, and experienced different educational systems (see Baltes, 1987). Some studies compare young adults at university with older adults drawn from the broader community, which confounds education with age. Hooper, Hooper and Colbert (1985) addressed this issue by comparing students of different age groups, and found that older participants' (aged 61–80) performance on formal reasoning tasks was comparable to those of the young people.

Returning to figure 10.5 once more, it is tempting to interpret the declining slope from the 70s to 80s as confirming an inevitable and irreversible decline in performance. But suppose we intervened by providing training to show (or remind) older people how to perform the kinds of tasks being tested? Schaie and Willis and their colleagues have done exactly this – with impressive

results! In a number of studies, they have found that older people's performance can be significantly improved by training, and that these benefits endure (Schaie & Willis, 1986; Willis & Nesselroade, 1990). Even reaction time can be improved in the elderly, as Goldstein et al. (1987) demonstrated by the imaginative technique of training a group of older people on video games.

SOCIAL AND EMOTIONAL DEVELOPMENT

Theorists such as Erikson and Erikson (1997) and Levinson (1978) regarded late adulthood as another major stage of adult development.

Erikson and Erikson again saw the individual as facing a conflict – this time between integrity and despair. They maintained that as people realize they are coming towards the end of their life, they reminisce about their past and review how they feel about themselves. Have I met life's challenges successfully/achieved goals that I value/contributed to the wellbeing of those I care about? Or have I failed to realize my potential/wasted time in pointless work or futile relationships/been a burden to others? Erikson and Erikson believed that individuals who arrive at a predominantly positive view (i.e. regarding their life as integrated and successful) experience a more contented late adulthood.

Levinson saw the period from approximately 60 to 65 as the late adult transition, when the individual has to deal with intrinsic changes in capacity and performance, as well as changes in relations with others and in society's expectations. One of the key aspects of many people's adult life – their job – is now approaching its end, or has already concluded. All of these changes pose challenges.

How do older people cope with the demands of ageing and their changing social status? Not surprisingly, the answer is that there is considerable variation.

Relations with others

As in all other parts of the lifespan, relationships are important to the older person's adjustment (Johnson, 2001). For some people, the marital relationship may become more rewarding during old age. Some research has found that satisfaction with marriage tends to be rated higher in retired people than in middle-aged adults (Orbuch, House, Mero & Webster, 1996).

This may be partly because older married people tend to be those whose marriages have been successful (i.e. they have stayed together because they were satisfied with the relationship). But it could also be because partners now provide each other with a degree of companionship and support that may not always have been so apparent or so appreciated in busier earlier years, when many other types of relationship were competing with the person's time. On the other hand, it may be that older people of today grew up in times when marriages were expected to last, and so their more positive ratings may reflect a more traditional determination to 'see things through' (Norris, Snyder & Rice, 1997).

Other social roles – such as grandparenting or great-grandparenting – are also enjoyed by many older people, and allow them to feel that they contribute to their family and to a new generation (Barer, 2001; Smith, 1995). Sibling relationships often become particularly important (Cicirelli, 1995) – by this stage, our most long-lasting relationships are usually those with our brothers and sisters. And the many positive benefits of friendships (see chapter 9) remain at least as important in the later years as they are earlier in the lifespan (Antonucci, 2001).

Overall, when asked to identify the most important considerations affecting quality of life, older people consistently place personal relationships and social networks high on their lists (Antonucci, 2001).

Successful ageing

Although there are losses and declines with age, we have already seen that many people respond to them adaptively – one of the remarkable characteristics of human beings throughout the lifespan is our resilience (Baltes & Mayer, 1999). For example, there is little evidence among older people of a direct link between physical decline and psychological problems such as depression (Lenze et al., 2001; Penninx, Guralnik, Simonsick et al., 1998; Shmueli-Dulitzki & Rovner, 1997). Many older people adjust well to the changes associated with ageing, and report high levels of enjoyment of life in their later years (Penninx et al., 1998).

What factors promote successful aging? In many respects, this is one of the final developmental issues facing us all. In recent years, lifespan developmental psychologists have begun to provide valuable insights. As you might expect, social support and social networks emerge as primary considerations: people with better levels of social support from family and friends tend to enjoy better physical and mental health in the later years (Antonucci, 1994; Johnson, 2001; Lang & Baltes, 1997; Pearlin & Skaff, 1998).

Paul and Mary Baltes and their colleagues have investigated the processes of successful aging among participants in the large-scale Berlin Aging Study (Baltes & Lindenberger, 1997; Baltes & Mayer, 1999; Marsiske et al., 1995). They have proposed a model of 'selective optimization with compensation', according to which people face problems associated with aging by finding ways to handle cognitive tasks that minimize their dependency on their declining biological capacities.

A concrete example is provided in a study of younger and older golfers conducted by Over and Thomas (1995). The younger players (average age 34 years) were stronger than the older (average age 62 years), and they had better vision, so they had the advantage when it came to driving off and striving for distance. But the older golfers had certain advantages of their own: they were less prone to be affected by negative emotions and cognitions about the game, they were better able to prepare mentally, and they were more cautious. The two age groups in fact performed to the same handicap level, but did so via different combinations of abilities.

The older golfers were apparently exploiting the fact that there are some areas of intellectual performance that improve with



Figure 10.11

Although there are losses and declines with age, many people respond to them adaptively; indeed, many older people adjust well to the changes associated with ageing, and report high levels of enjoyment of life in their later years.

age. Such improvements are usually connected with pragmatic reasoning rather than with mechanical/motor abilities. For example, researchers have found that older people show evidence of increasingly complex reasoning about interpersonal issues, life planning and moral dilemmas (Pratt, Golding & Kerig, 1987), and they perform better than younger adults with respect to oral narrative production (Pratt & Norris, 1994).

The good news for aspirant psychologists is that a professional life involved in cognitively challenging and stimulating work appears to promote the prospects for successful aging. Indeed, Hogan (2000) points out that there are over 30 former presidents of the American Psychological Association who have lived into their 90s, often continuing their work and enjoying social and leisure activities until very late in life.

Research close-up 2

Perceptions of ageing and the will to live

The research issue

At the beginning of this chapter, you thought about your own attitudes towards ageing. Think carefully about your answers – they may predict how long you will live.

Life is a biological process, but its course, quality and duration are influenced by psychological factors. Among these factors are the expectations and beliefs that we hold about ageing. If you expect ageing to be a largely negative process, then there is a reasonable chance that – for you – it will be.

The importance of perceptions and stereotypes of ageing was demonstrated in an intriguing longitudinal study by Becca Levy, Martin Slade, Suzanne Kunkel and Stanislav Kasl (2002).

To appreciate the magnitude of their investigation, we need to travel back to 1975, to the small town of Oxford, Ohio. At that time, another researcher, Robert Atchley of Miami University, set up the Ohio Longitudinal Study of Aging and Retirement (OLSAR).

Design and procedure

All Oxford citizens aged 50 or over were invited to take part in OLSAR, and almost 80 per cent agreed to do so. Participants provided demographic details (age, gender, socioeconomic status), and then completed a number of measures, including general health, as well as a scale measuring their 'self-perceptions of ageing' and another measuring their 'will to live'.

The 'self-perceptions of ageing' scale had five items, including:

Things keep getting worse as I get older.

I have as much pep as I did last year.

As I get older, things are better than/worse than/the same as I thought they would be.

Respondents received one point for every answer that indicated a positive attitude towards ageing (e.g. saying 'No' to 'Things keep getting worse' and 'Yes' to 'I have as much pep as I did'). Total scores on this scale could therefore range from 0 to 5, with a higher score indicating that the respondent had a more positive self-perception of ageing.

The 'will to live' measure employed the 'semantic differential' method. Participants were given a series of adjectives, paired to form opposite ends of a seven-point scale (e.g. empty–full, hopeless–hopeful, worthless–worthy), and asked to check one box that 'best describes what you think about your life in retirement'. Consider, for example, the responses of Persons A and B. What can we conclude about their respective feelings about what retirement has in store for them?

Person A

Empty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Full
Hopeless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Hopeful
Worthless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worthy

Person B

Empty	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Full
Hopeless	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hopeful
Worthless	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Worthy

Now we move forward to 1998. At this point, Levy and colleagues were able to collect some additional, very important data on the original OLSAR participants – how long they had actually lived.

Levy et al. examined the survival rates of the original OLSAR participants as a function of 'self-perceptions of ageing' scores. They achieved this by splitting the sample into two groups – those individuals whose scores fell above the sample's mean score on this scale, and those that fell below the mean score.

Results and implications

The results are quite striking (figure 10.12), suggesting that the benefits of having a positive outlook on ageing can be enormous. Levy et al. point out, for comparison, that the extra lifespan to be won from a regular exercise programme is approximately 1–3 years.

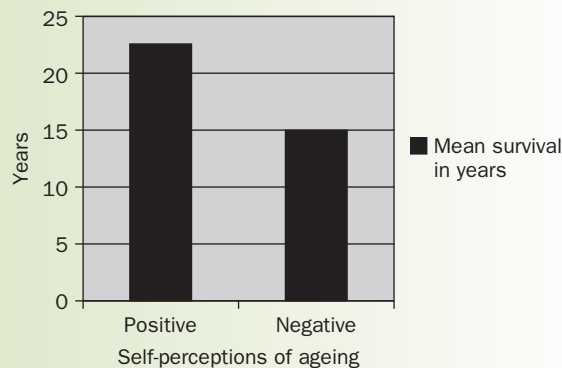


Figure 10.12

Mean survival in years of middle-aged participants as a function of positive vs. negative perceptions of ageing. Source: Based on Levy et al. (2002).

What could be going on to bring about this apparent leap from people's mental outlook to their physical wellbeing? The researchers suggest that an important intervening variable is the 'will to live'. In further statistical analyses, Levy et al. showed that controlling statistically for scores on the 'will to live' scale reduced the relationship between 'self-perceptions of ageing' and survival.

So the implications of these findings are that Person A (above) who regards his or her latter years as empty, hopeless and worthless, is not going to relish the latter part of her life. Person B, in contrast, sees life as full, hopeful and worthy – for him or her, every day is worth getting up for. In short, it seems that if people have a positive outlook on what getting older involves, they are more likely to look forward to the remainder of their lives, and to respond to change with energy and optimism.

Levy et al. believe that their study carries two crucial messages: 'The discouraging one is that negative self-expectation can diminish life expectancy; the encouraging one is that positive self-perceptions can prolong life expectancy' (p. 268). Do we know from this study whether a positive outlook on ageing extends life, a negative outlook shortens life, or are both processes operating together? Drawing on the arguments about methodology in Chapter 2, how could we test a hypothesis about these possible effects?

Levy, B.R., Slade, M.D., Kunkel, S.R., & Kasl, S.V., 2002, 'Longevity increased by positive self-perceptions of aging', *Journal of Personality and Social Psychology*, 83, 261–70.

FINAL THOUGHTS

In chapter 9 we considered our own developmental past: how did we get to become who we are today, with the social and cognitive competencies we take for granted? In this chapter, we have moved into our developmental present and future. As adults, we are still developing and will continue to develop throughout the remainder of our lives. As in childhood, much depends on the opportunities, guidance and challenges that we encounter along the way.

How much of our personal development is given by nature and how much by experience? There is evidence that both contribute extensively. We have seen, for example, that during adolescence cognitive competencies continue to develop. These changes may be underpinned by biological developments in the brain and information-processing capacities, but they also appear to depend crucially on what we experience, the knowledge bases that become available to us, and the kinds of education we enter.

Is change gradual, or stage-like? We have seen that some lifespan developmentalists believe there are predictable stages of adulthood through which each of us passes on a predictable time course. Others regard development as more domain specific, with each domain involving its own structures and principles. Lifespan developmentalists also take into account that many of the factors influencing an adult's development are less predictable, such as the characteristics of our social and occupational world, or random events, accidents and opportunities.

Development interacts with just about every psychological topic, so whatever human psychological capacity you study, bear in mind that it is likely to have developed through childhood and will continue to change through adulthood. Our understanding of developmental issues is fundamental to an understanding of ourselves.

Summary

- The journey from adolescence through adulthood involves many changes and adjustments, and entails considerable individual variation from one person to another.
- Psychological development involves physical, sensory, cognitive, social and emotional processes, and the interactions among these. For example, the age at which a person enters puberty can have implications for their personality which can extend all the way through their lives.
- Although adolescence is a time of new discoveries and new attainments, it is by no means the end of development. Indeed, according to some theorists, there are stages of potential adult psychological development which some of us may never attain.
- There is some evidence of broad patterns of adult development (perhaps even stages), yet there is also evidence of diversity and the potential to affect our own development by the life choices that we make.
- Some abilities diminish with age, while others increase; successful aging appears to involve skilful re-balancing of the resources and opportunities available to us, such that we learn to make the most of our strengths at the same time as coping with our limitations.

REVISION QUESTIONS

1. What individual variations occur during the journey from adolescence through to adulthood?
2. Discuss the physical, sensory, cognitive, social and emotional processes (and the interactions among them) that occur during psychological development.
3. Does adolescence represent the end of individual development? (In formulating your response to this question, draw upon the issues raised in this chapter.)
4. Consider the contrast between the established patterns of adult development and patterns of inter-individual diversity.
5. Which abilities diminish with age and which, if any, improve?
6. What are the consequences of individual differences in the pace of pubertal development?
7. Do university students have longer adolescences than their peers who enter the workforce early?
8. What are the benefits of becoming capable of formal operational reasoning?
9. Do adults develop in stages?
10. Romantic movies tell us that couples live happily ever after. Does it matter what attachment style the individuals have?
11. Is there really such a thing as the 'mid-life crisis'?
12. Does cognitive functioning change in early adulthood?
13. Does cognitive functioning change in late adulthood?

FURTHER READING

Cavanaugh, J.C. (1998). *Adult Development and Aging*. Pacific Grove, CA: Brooks/Cole.

An excellent textbook, covering most aspects of adult psychological development in a clear and thoughtful style.

Erikson, E.H., & Erikson, J.M. (1997). *The Life Cycle Completed*. New York: Norton.

One of the major accounts of Erikson's theory of the stages of adult development, extended in this book to consider development in very old age.

Pratt, M.W., & Norris, J.E. (1994). *The Social Psychology of Aging*. Oxford: Blackwell.

A rich account of developments in social reasoning and communication in later life.

Schaie, K.W. (1996). *Intellectual Development in Adulthood: The Seattle Longitudinal Study*. New York: Cambridge University Press.
A detailed research report, and a very readable account of some of the key psychological changes of adulthood.

Skinner, B.F., & Vaughan, M.E. (1983). *Enjoy Old Age: A Program of Self-management*. New York: Norton.
A practical guidebook on how to ensure positive reinforcement, productive activity and rewarding social relationships in old age.

Whitbourne, S.K. (2001). *Adult Development and Aging: Biopsychosocial Perspectives*. New York: John Wiley & Sons.
Combines laboratory and applied perspectives on successful aging, covering biological, social, cognitive and personality factors.

Answer to the pendulum problem on p. 205

It is the length of the string that determines the speed of the pendulum swing.

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