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What is Developmental Psychology?

- What is normal development?
- Methods in the study of development
- Experiments in psychology
- Asking questions and forming hypotheses
- Ethical issues

Psychology is about people: their thoughts, feelings and behaviour; developmental psychology is concerned with exploring development and change in thoughts, feelings and behaviour across the lifespan. Most books on developmental psychology focus on the early years of life, because we expect children to change, and there is wide acceptance that what happens in the early part of life is crucially influential for later development, as the following sayings indicate.

> And the first step, as you know, is always what matters most, particularly when we are dealing with those who are young and tender.
>
> *Plato, 428–348 BC*

> Train up a child in the way he should go: and when he is old, he will not depart from it.
>
> *Bible, Proverbs 26:22*

> Give me a child for the first seven years and you may do what you like with him afterwards.
>
> *Attributed to the Jesuits; see Lean, 1903*

> The Child is father of the Man.
>
> *William Wordsworth, 1770–1850*

The essence of all these sayings is that the early years not only lay the foundations of the person; they also shape every aspect of that person, making him or her what he or she will become. There is a sense in which this is irrevocable, that it may be

difficult or impossible to alter someone once he or she has been formed in a particular way:

> But once a child's character has been spoiled by bad handling, which can be done in a few days, who can say that the damage is ever repaired?
>
> *John B. Watson, 1878–1958*

> As the twig is bent the tree's inclined.
>
> *Alexander Pope, 1688–1744*

> You cannot teach an old dog new tricks.
>
> *Old proverb*

However, in recent years books on adult or lifespan development have burgeoned. While there may be continuity across the lifespan, change can occur at any point in life as a result of a variety of different influences.

Biology is perhaps the most obvious agent of change, because we know we are programmed to mature at a particular rate: puberty is a period of great change which is timed by our *biological clock*, but even this event is shaped by environmental factors. Poor diet or excessive exercise, such as is seen in gymnasts, may delay puberty.

Our lives are also shaped by *social clocks* – expectations about when things should to occur in our own particular culture. Events such as when we start or leave school, marry and have children, engage in paid work or retire are all culturally defined. In fact, the influence of culture shapes our lives in a multitude of ways, from our ideologies and beliefs down to what may seem trivial day-to-day matters such as our body language – do we shake hands, hug or rub noses with a new acquaintance?

Finally, we all feel unique and we all have unique, non-shared experiences in life which change us in ways that are hard to predict. The death of a loved one, surviving a disaster or meeting a specific person at a particular point in time may all act as personal turning points that can, at any stage in life, make us different people. The task of the developmental psychologist is to try to understand how all these different influences may shape human development.

Studying development

Studying psychological development is a rather recent phenomenon, and the bulk of this work has been carried out since the beginning of the twentieth century. Before this period there was some recognition of the importance of the early years. The historian Philippe Aries (1962) claimed that the idea that childhood is an important and valuable period is probably only a couple of hundred years old.

Charles Darwin was one of the first to keep a detailed baby biography, a diary of one of his sons, Doddy, from birth, which he published in 'A biographical sketch

of an infant'. This was more than just notes on his son's behaviour. He also reflected on the possible reasons for what had occurred. In 1891 Stanley Hall published his 'Notes on the study of infants', and he recorded 'the contents of children's minds' by asking children numerous questions. Thus began the systematic study of infancy and childhood.

One of the advantages of studying psychological development is that it enables us to find out what is normal. Most of us like to consider that we are normal, average or fairly typical of people in general, and we can be surprised to discover that someone thinks or feels very differently from us.

Development psychology has provided data which show the range of behaviour, thoughts and feelings typical for any particular population, at any particular time. Thus it may show that thumb sucking, temper tantrums, nightmares and nail biting are all fairly normal at a certain age, because a high proportion of children show these patterns. So what might be viewed as problematic by new parents encountering these in their first child is seen quite differently when put in the context of children's behaviour in general.

Once we have established norms for development within a particular culture, we can then see how particular events may change or shape the individual. For example, we can compare different family structures (the nuclear family, the single parent family, the extended family and so on) to see how they may influence child development.

Development psychology enables us to assess the truth about a range of common assertions about people.

Leave her to cry – if you pick her up you'll only spoil her.

Children need their mothers more than anyone; a father can never provide the special care that a mother can.

There is no substitute for stable family life; children from broken homes are bound to suffer.

Boys are more boisterous and aggressive than girls: it's in their nature.

There is no harm in the occasional smack if a child has been naughty.

He's always been bad-tempered, you'll never change him.

Second children are always more competitive.

Children grow up too quickly these days; it's not good for them.

Childhood is the happiest time of life. Children don't have problems.

Developmental psychologists have devised methods which enable us to investigate the truth of these statements. This also means that we have a much better idea today of the conditions which foster optimum psychological growth and well-being, and if these are not present we also know what to do to compensate.

Developmental psychology has a key role to play if we are to understand ourselves and others better. Understanding the course of human life and the factors which shape the developing person is a cornerstone of psychology, but studying human development is not quite as straightforward as it may, at first, appear to be.

What is normal development?

We all have our own ideas about what people are like at different ages. Two-year-olds have a reputation for being 'terrible', young teenagers troublesome, and students in their late teens idealistic, politically active and so on. If one observes people at different ages it is easy to begin to link physical growth to various types of psychological change. Thus one can derive a picture of *age-related norms*, of what is normal for a given age. However, it has become apparent from research over the last century that the 'normal' course of growth has changed dramatically in a matter of decades.

The age at which puberty is reached is a good example. As boys and girls reach *puberty* (physical maturity), we generally expect psychological changes to accompany the physical changes that take place over some years: the period of adolescence. A growing interest in the opposite sex is the one obvious change, but we also expect a greater maturity of outlook to be linked to this stage. In the 1860s girls in the UK were on average aged 16 or more at menarche (the start of menstruation). For anyone studying development the natural conclusion might be that girls take about 16 years to reach physical maturity, the age when they can become mothers. However, during the past 140 years the age at menarche has dropped, and today it occurs on average at about 12½ years. So what has happened? How can a biological timetable speed up so rapidly in such a short period? After all, if this rate continued for just a few more centuries the ludicrous outcome would be menstruating newborns! It is not just the age of puberty that has changed: growth rates in two- to five-year-olds are markedly faster today, and full adult height is achieved much earlier than in previous decades and centuries.

The explanation put forward has been that greatly improved nutrition, general health and living conditions have accelerated the rate of growth. James Tanner argues that there is always a biological limit for accelerated development, and he believes that we are unlikely to see a continued decline in the age at menarche. Perhaps the social conditions of today are so much better than those of a century ago that it may be easier to explain by saying that poor diet and health impede and slow down growth, and that much of the Western world now has optimum conditions for children's growth and development.

But what are the implications of this for developmental psychologists? If physical and psychological development are linked then our picture of the 12-year-old girl of

today is quite different from that of only a century ago. The same applies to boys. In medieval Europe then the adult male was the size of the average 10- to 12-year-old American boy of today – we know this from the size of knights' armour (see Muuss). Yet although our notion of the age of adulthood has altered, it has certainly not kept pace with the accelerated growth rates discussed here. We may be shocked at the idea of a 12-year-old girl marrying and having a child, yet it is likely that a 16-year-old who did so a hundred years ago did not differ so greatly either physically or psychologically from a 12-year-old today.

To return to one of the functions of developmental psychology – to define age-related norms – we can see that age *per se* may not necessarily be a helpful guide. In underdeveloped countries of today menarche occurs much later than in developed countries, so we need to take social conditions into account if we are to explain human development. Let us now briefly explore how psychological research into development is carried out.

Methods in the Study of Development

Longitudinal and cross-sectional studies

The quickest way of answering the question 'how do people change as they get older?' is to do a *cross-sectional study*. To investigate how learning ability changes with age, for example, we might devise a series of learning tests and, in a controlled setting, invite groups of 10-, 20-, 30-, 40-, 50-, 60- and 70-year-olds to take the tests, allowing a specified time only. Our participants would be selected so that education, socioeconomic status and health would be matched across the age groups. The result of this study would be quite likely to show that people in their twenties have the greatest learning ability, and that as age increases a slight decline occurs initially and then more markedly in the upper age groups. So could we conclude from this that learning abilities decline after the age of 20? Let us leave this question unanswered while we contrast the cross-sectional study with the longitudinal study.

A *longitudinal study* is designed so that individuals are tested or assessed in some way at regular intervals over a period of their lives. In order to study learning ability a sample of individuals would be tested at, for instance, age 20, then tested again 10 years later at 30, and then again after a further 10 years in the final test at 40 years. Thus each participant would be tested three times over 20 years. In this study the three tests given to the participant would have to be similar, but they should not be identical or the experimenter might be accused of simply observing the practice effect (an improvement due merely to repeating the same task).

What results might be recorded after 20 years? Would they be the same as those found for the cross-sectional study? It might reveal a decline in the two last tests, but it is more likely to show little change with age, or even an increase in ability. So two procedures, apparently designed to answer the same question, give us quite different answers. Which one is right?

To put it simply: neither test is measuring age alone, and thus each has quite specific problems. Historical events affecting some or all the participants, as well as the individual life experiences unique to each participant, may have a greater impact on the characteristic being measured by the psychologist than age itself. Resolving these and other problems is complex, and the final chapter of this book considers Warner Schaie's solution.

Although developmental psychology is concerned with people throughout their lives, many of the research studies discussed in this book concentrate on explaining behaviour within a relatively limited time period. For example, chapter 2 on perception describes work that has looked at changes in olfactory or visual perception over a matter of days, weeks or months within the first year of life. Often when studying one such age group in detail psychologists use the experimental method.

Experiments in psychology

The essence of the experimental method is that the psychologists can investigate how some aspect of behaviour is changed by a given factor which is thought to influence it. To take an example, in 1960 Orvis Irwin investigated what effect reading to children had on their language development. He devised a simple experiment in which 24 children aged 13 months were read to by their mothers for 15–20 minutes a day until the age of 30 months. The mothers of a second group of 10 children, matched on the basis of their fathers' occupational status, received no instructions about special reading, but were treated otherwise exactly as the experimental group. It was common for a family's socioeconomic status to be defined by the husband's occupation; hence a woman's status was taken as that of her husband.

The first group, the *experimental group*, is the group exposed to the variable which the psychologist believes may influence language development. This variable is 'being read to', and the psychologist thus varies the amount of 'being read to' in the two groups. We call the variable that is being manipulated by the psychologists the *independent variable*, and the behaviour which it is thought to affect is the *dependent variable* – in this case language development. Language development was measured by recording the children's spontaneous speech (the types of sound made and their frequency) assessed at two-monthly intervals throughout the study. The children who were not exposed to the independent variable (being read to) formed what is called the *control group*. They provided a baseline with which the experimental group's language development could be compared.

Experiments allow us to infer a cause and effect relationship. Thus in Irwin's study we can see the effect of 'being read to' on language development; he found that being read to did accelerate language development, because the experimental group were soon ahead of the controls when measures of language development were compared. Consistent differences became evident from about 17 months. (See chapter 6 for further discussion of language development.)

Asking questions and forming hypotheses

Before embarking on a rigorously controlled experiment it is necessary to make sure that the questions asked are sensible ones not wildly at odds with common-sense views. It would be unwise not to make preliminary observations of the behaviour you are interested in or to observe children or adults in situations relevant to the type of question posed. For instance, in the above example young children would need to be observed in their first months and years, and some knowledge of how much exposure they had to books and being read to would have to be gleaned, before an experiment was devised. However, common sense varies. For instance:

> Rushing to pick up baby when she cries just encourages her to fuss more.

> Responding quickly to your baby's cries makes for a happier baby who cries less.

At different points in the last four decades both these views have been forcefully propounded, to the confusion of new parents. Psychologists interested in investigating the role of picking up in encouraging or discouraging crying would start by *observing* parents and infants to see whether clues could be found to the truth of either statement. From these observations a hypothesis would be generated:

> Responding quickly to infants' cries by picking them up reduces the total number of crying bouts in a given period, compared with infants who are left for some moments before being picked up.

Lynn Johnston, from *David We're Pregnant*, Cressrelles Publishing Co. Ltd, Malvern

This hypothesis is a prediction of what the psychologist thinks may happen.

The psychologist is now in a position to plan a controlled experiment in which babies, matched on a variety of variables such as age, socioeconomic factors and so on, are exposed to different treatment regimes varying in the interval between the onset of crying and being picked up.

If the research shows that babies picked up quickly over a given period start crying less often, then our hypothesis could be accepted. But if the babies picked up after a longer period start crying less overall then the hypothesis would have to be rejected. However, if there is no consistent pattern of results, or if some babies cried more often and some cried less often, the psychologist might conclude that the approach had been too simplistic. A different sort of hypothesis might be required, which could, for instance, take into account temperamental factors in the infants, or the parents' style of picking up.

Reading about this hypothetical experiment you may find yourself thinking 'I wouldn't dream of leaving a baby of mine to cry for ten minutes just for the sake of a psychological experiment.' This raises the important and very difficult question of ethics in research.

Ethical issues in research

Just because a psychologist comes up with an interesting hypothesis does not mean he or she is entitled to test it. There are many areas of human development which, for ethical reasons, we could not investigate experimentally. The British Psychological Society has detailed guidelines for researchers to help them plan their investigations which recognize that the rights of the human participants, and their welfare, are paramount. Although the degree of distress, pain or inconvenience might be considered minimal in relation to the benefits that would accrue if a given experiment were carried out, the people who volunteer to participate in it must always be free to drop out if they wish to, even if the ethical guidelines permit a particular area of study.

A number of topics that are not investigated in humans on ethical grounds have been explored in non-human animals. The importance of parents, and in particular of mothers, has been a question continually probed by psychologists, yet no experiment would be contemplated which involved taking a child from its mother for a prolonged period solely for experimental purposes. We have to rely for our data on this from naturally occurring situations in which children and parents are parted.

Nevertheless, among non-human animals Harry Harlow did investigate empirically how baby rhesus monkeys coped without their mothers (see chapter 3). Guidelines for animal experimentation are also available: the Society for the Study of Animal Behaviour issues guidelines for researchers, and the Home Office is the ultimate control for research in this area in the UK. Regulations are being tightened up continually, and many psychologists of today feel revulsion at some of the studies carried out in the past.

Thus in some important areas in human life we may never be able to be truly 'scientific' in our methods of investigation.

Other research methods

The experimental method is not always appropriate as a means of answering questions about behaviour. We cannot always manipulate the independent variable so that two groups of participants differ only in the presence or absence of this variable (or the amount of this variable).

The study of sex and gender is a case in point. Suppose we think that maleness is associated with certain characteristics and femaleness with others, and we believe that 'sex' hormones may be responsible for the differences observed, we cannot run an experiment in which male or female sex hormones are used as the independent variable on two otherwise identical groups. We all have a biological sex of one sort or the other – no one is neutral – so hormones have, from before birth, influenced our development. All that is possible is to correlate behaviour patterns with each sex (i.e. show an association between them), but this tells us nothing about *causal* differences. An example may explain this better. In Britain males are traditionally encouraged not to cry when they are hurt, upset or distressed. Observers, ignorant of this British characteristic, might thus correlate crying with femaleness and not crying with maleness. If they believed that biological sex played a causal role in this difference they might suggest that the adult human male is unable to cry – his hormones make crying impossible!

Used and interpreted correctly, *correlational studies* have an important place among the methods available to psychologists, and there are many other methods and techniques, which are explained in the final chapter. Methodology is often described by those new to psychology as uninteresting, and, although its place is fundamental in exploring developmental psychology, we propose to postpone further discussion until later and start by examples. Each chapter describes one particular area of interest and concern to developmental psychologists. Just how questions about behaviour, thoughts and feelings have been investigated will become clear. The importance of the methods available is often lost until we try to answer a particular question within psychology, so we shall now turn to some of those questions.

What next?

Let us start at the beginning. Our earlier years are widely viewed as laying the foundations of who and what we are, and experiences in the first few years may have long-lasting influence. So how do the foetus and newborn experience the world through their senses? Can they hear, see and smell as we adults can? If not, what sense can they make of the world? How soon does a baby recognize its mother? Do babies prefer some sorts of visual, olfactory and auditory stimulations over others? Psychologists are beginning to find some of the answers.

Recommended Reading

Berryman, J. C., Hargreaves, D. J., Howells, K. and Ockleford, E. (1997) *Psychology and You: An Informal Introduction*. Leicester: BPS Books. [See the introduction and chapter 12 for a discussion of 'what is psychology?' and methodology.]

Colman, A. M. (1999) *What is Psychology? The Inside Story*. London: Routledge. [Excellent book explaining what psychology is through numerous examples.]

Messer, D. and Dockrell, J. (eds) (1998) *Developmental Psychology: A Reader*. London: Arnold. [Most interesting collection of core articles, useful for the person who wants to delve more deeply into the topics covered in the chapters in this book.]

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