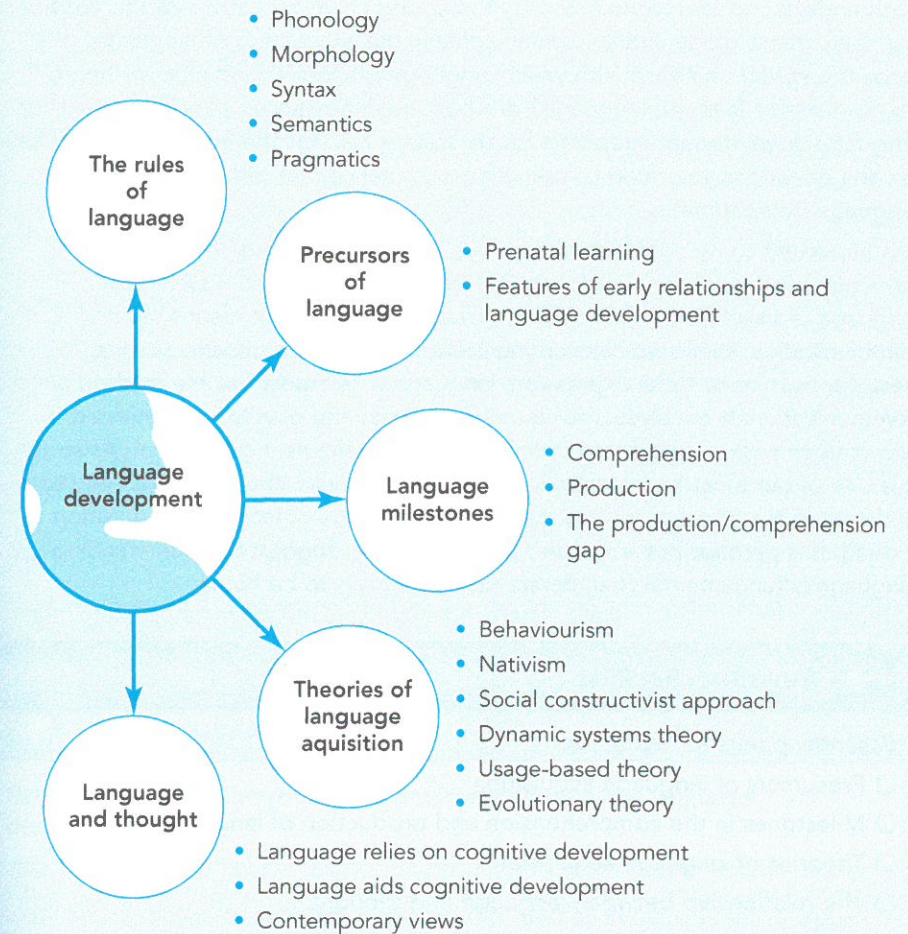


Language development



A printable version of this topic map is available from
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Introduction

Language is a central part of human intelligence. As a student of psychology, it is important that you understand how and when language is acquired and what social, cognitive and neurological factors underpin early language development. You might also ask yourself how these different aspects of development are linked. For example, what is the relationship between cognitive and language processes?

In addition to a basic understanding of the rules and structure of language, you need to know what the milestones of language acquisition are in order to appreciate the remarkable speed with which the complexities of language are both understood and reproduced by the young child. You also need to consider the roles that biology and experience play in the acquisition of language. Does the speed and ease with which language is acquired indicate an innate mechanism for learning language? or does the importance of social context for language development support a much greater role for the environment? These are the questions you need to ask when considering the different theories of language development.

It is important to recognise that language is not synonymous with speech; language can be spoken, but it can also be written or signed. Essentially, language is a system of symbols that provides an important means of communication. While we can communicate through other means, such as gesture, posture or facial expression, language is our most flexible method of communication. It enables us to describe the past and plan for the future. It allows us to pass on ideas, tradition and values to the next generation. As such, it is one of our most important cultural and social tools. You therefore need to understand the social as well as the cognitive aspects of language acquisition. Indeed, it is perhaps not surprising that it has been suggested understanding language is fundamental to understanding what it is to be human.

→ Revision checklist

Essential points to revise are:

- Precursors of language acquisition
- Milestones in the comprehension and production of language
- Theories of language acquisition
- The relationship between language and thought

Assessment advice

- Tasks related to language development often refer to some of the fundamental issues in developmental psychology described in Chapter 1.
- The issue of whether language is innate or learnt continues to occupy both linguists and psychologists. While it is generally accepted that both nature and nurture play a role in language acquisition, the extent to which each matters and the specific role each plays is debated by contemporary theorists. These include Steven Pinker, who takes an evolutionary stance, and Michael Tomasello, who argues that language learning is based on usage (sometimes called a social-pragmatic approach).
- When answering questions about the origins of language, it is important to ensure that you are able to support your answer with reference to both empirical evidence and theoretical argument. It is easy to fall into the trap of simply describing and comparing both approaches. The good student will recognise that this is not sufficient and a critical, evaluative, evidence-based response is required.
- Another common question concerns the relationship between cognition and language. Does the acquisition of language promote our cognitive skills or do we need symbolic thinking in order to acquire language? Is there another common process or function that underpins both language and cognitive development?
- Given the important relationship between cognition and language on the one hand and language and social development on the other, a good student will consider material on cognitive development and early relationships when answering a question on language development in order to demonstrate synthesis of understanding.

Sample question

Could you answer this question? Below is a typical essay question that could arise on this topic.



Sample question

Essay

Critically evaluate the role of the environment in early language development.

Guidelines on answering this question are included at the end of this chapter, whilst further guidance on tackling other exam questions can be found on the companion website at: www.pearsoned.co.uk/psychologyexpress

The rules of language

Phonology: the sound system of a language. Includes the sounds used and rules about how they are combined. A *phoneme* is the smallest sound unit in a language. For example, 'cat' has three phonemes: /c/ /a/ /t/.

Morphology: the rule system that governs how words are formed in a language. *Morphemes* are the smallest sound units that have meaning. For example, 'girl' is one morpheme – it cannot be broken down further and still have meaning.

Syntax: the ways words are combined to form acceptable phrases and sentences. Word order can change meaning in language – for example, 'David drove the car' has a different meaning from 'The car drove David'.

Semantics: the meanings of words and sentences. Semantic restrictions affect the ways words can be used in sentences. For example, the following sentence is syntactically correct, but semantically wrong: 'The bike talked John into going for a ride'. The sentence violates our semantic knowledge that bikes cannot talk.

Pragmatics: the system of using appropriate conversation – knowing how to use language effectively in context. For example, turn-taking in conversation; school-aged children addressing the teacher 'Ben Smith' by his title and second name 'Mr Smith', rather than by his first name, 'Ben'.

Precursors of language acquisition

Prenatal learning

- Hearing develops at around the sixth month prenatally and the foetus responds to sounds.
- The recognition of, and preference for, their mother's voice shown by neonates is thought to be a learnt response based on prenatal experience.
- Research studies have also shown that neonates can recognise either music or prose they have been exposed to prenatally, suggesting prenatal learning of 'acoustic cues' (the patterns of speech and language).
- This skill is the precursor to developing an understanding of what words mean; the ability to recognise and remember speech sounds; and to segment words from the speech stream – in other words, to identify where words begin and end from the flow of sounds people make when they speak.
- Prenatal linguistic experience therefore provides a sensory and perceptual bridge into postnatal life so that newborn infants:
 - have already learnt to identify their native language
 - can recognise different speech patterns within that language – for example, they can differentiate 'happy talk' from other patterns of speech (Mastropieri & Turkewitz, 1999).

- this prenatal learning is thought to influence infants' responsiveness to speech and voices, which in turn provides a foundation for later language acquisition.

Features of early relationships and language development

In addition to providing a basis for social and emotional development, early relationships also have a role to play in the development of cognitive functioning and, in particular, the acquisition of language. There are particular features of early relationship that have been noted as being important precursors to language development.

Child-directed speech

This is a distinctive speech pattern that uses a lot of repetition, simplified short utterances, raised pitch and exaggerated expression (see Table 5.1). This form of speech has also been called 'baby-talk' and 'motherese' (Matychuk, 2005). These adaptations are shown not only by parents but also by women who have not had children (Snow, 1972), fathers (Berko Gleason, 1973) and even four-year-old children (Shatz and Gelman, 1973). This type of speech is very widespread and has been identified in a range of cultures including:

- the !Kung Bushmen of the Kalahari
- forest-dwellers in the Cameroons
- the Yanomami of the Amazon Basin
- the Eipo of New Guinea (Fernald, 1989).

However, it is not a universal feature of language and in cultures where it is not used language development follows the same progress although more slowly (Lieven, 1994), suggesting that such speech is useful but not essential for language development. Child-directed speech is thought to make language learning easier because:

- it simplifies language (Thiessen, Hill, & Saffron, 2005)
- it is more effective than standard speech in getting an infant's attention
- it is preferred by infants (Singh, Morgan, & Best, 2002).

Table 5.1 Features of child-directed speech

Phonological characteristics	Semantic characteristics
<ul style="list-style-type: none"> • Higher pitch • Exaggerated and more varied intonation • Lengthened vowels • Clear enunciation 	<ul style="list-style-type: none"> • Limited range of vocabulary • 'Baby-talk' words • More words with concrete referents

Meshing

This describes the smoothly integrated interactions seen when two people get on well together, with each person's contribution to the interaction fitting in with the other's. This feature is particularly evident in conversations where one partner waits until the other has finished speaking, picks up the signals that they have finished, then gives their input, while their conversational partner takes their turn in the listening role, waiting for their turn to speak to come round again and so on. In the 1970s, observations of mother-child interactions during infant feeding (breast or bottle) demonstrated that both the baby's and the mother's behaviour are closely meshed (Kaye & Brazelton, 1971):

- human infants feed with a 'burst-pause' rhythm, in which they suck for a while, then pause for a few seconds before starting to suck again
- mothers usually synchronise their own behaviour to this rhythm from the very first feed
- mothers speak to or jiggle their baby during a pause rather than while the baby is feeding.

Mothers typically say that jiggling 'wakes up' their baby and helps to keep them sucking. However, the evidence suggests jiggling actually lengthens the pause and inhibits sucking behaviours, which only recommence once the jiggling stops (Kaye & Brazelton, 1971). Once the mother stops jiggling, the baby is more likely to start a new burst of sucking.

Synchronised turn-taking behaviour

This is a 'conversation-like' interaction between mother and child, often referred to as a pseudo-dialogue. The mother's response is both predictable and contingent on the child's behaviour and, as such, is believed to provide the child's first experiences of relatedness, by showing how their behaviour has meaning and is responded to by the other. The infant learns that interactions with others can be predictable and they can play an active part within the relationship. Turn-taking behaviour includes the feeding behaviours described above, as well other parent-child interactions such as peek-a-boo (Kaye & Fogel, 1980). Initially controlled by the adult, these turn-taking episodes are progressively driven by the infant and their own active, appropriately timed, inputs. In this way pseudo-dialogue gradually metamorphoses into 'proto-dialogue', still without the meaningful language content that will come later, but with a clearly defined turn-taking framework.

Joint attention formats

The mother creates simplified and stereotyped sequences of actions with objects. Mothers structure interactions with their infant so that knowledge about what can be done and how to do it can be transmitted. Initially, such interactions may only involve the carer and child. Gradually, however, other objects are introduced into the interactions. For example, building blocks into

a tower or using a spoon for feeding. Sequences are repeated over and over, which enables the infant to learn how to re-enact the sequence alone. According to Bruner (1975; 1983; 1993) because these shared sequences are also talked about, this provides the foundation for the development of language. Bruner argues that the social context of language is very important for the infant because people generally talk to them about familiar events and objects. Evidence that the first words to be understood by an infant are typically the child's own name, the names of other family members and the names of familiar objects such as clock, drink and teddy, supports this view (Harris et al., 1995a).

Infants' vocalisations

Crying, babbling and cooing are all recognised as important precursors to speech (see Table 5.2). Gestures such as pointing, waving and nodding are also seen in the pre-linguistic child and, as well as providing tools for communicating, may aid the development of language (Harris et al., 1995a).

Table 5.2 Developmental sequence of pre-linguistic communication skills

Age	Method of communication
Birth	Crying
1-2 months	Cooing begins
6 months	Babbling begins
8-12 months	Use of gestures begins

Key term

Joint attention: refers to the complex of social skills through which partners in an interaction incorporate a common referent in their exchange. Pointing to an object or following another's gaze are among common non-verbal ways of achieving joint attention. Once language is acquired, words can perform the same function. Joint attention is also thought to be important for relationship formation as it helps individuals to develop awareness of each other's thoughts and feelings and reach a state of mutual understanding and awareness referred to as *intersubjectivity*. Intersubjectivity develops initially through joint attention, which focuses on referents such as facial expressions and gestures but will later incorporate the verbal communications of the child and others. Thus language development is both embedded in developing relationships as well as instrumental in the development of relationships. There is some evidence that increasing joint attention can improve language acquisition in cases of atypical development such as autism where language development is delayed. Evidence to support this is described in the key study provided in this chapter.

KEY STUDY**Aldred et al. (2004). A new social communication intervention for children with autism: Pilot randomised controlled treatment study suggesting effectiveness**

Interventions that focus on the psychosocial aspects of development form the core of autism treatments in the UK. Interventions often target aspects of social communication such as joint attention; however, the evidence for effectiveness of such interventions is limited. This UK-based study used a randomised control trial (RCT) design to test a social communication intervention for the treatment of autism. RCT – in which participants are randomly assigned to either the intervention or the control group – is accepted as the gold standard for evaluating the effectiveness of interventions. The intervention in this study involved parents of children with autism undertaking a 12-month training programme to learn how to use a technique called adapted communication. This technique focuses on joint attention, parental sensitivity and responsiveness to the child. The results of the trial demonstrated statistically significant improvement for children in the intervention group in terms of a range of skills, including expressive language, when compared with the control group. These findings are important because they provide sound evidence that interventions using joint attention can be effective for increasing language use in children with autism. In addition, the use of the RCT method provides a model for future research that aims to increase the evidence-base in this area.

Aldred, C., Green, J., & Adams, C. (2004). A new social communication intervention for children with autism: Pilot randomised controlled treatment study suggesting effectiveness. *Journal of Child Psychology and Psychiatry*, 45, 1420–1430.

Further reading Precursors of language development

Topic	Key reading
Prenatal learning	Krueger, C., Holditch-Davis, D., Quint, S., & DeCasper, A. (2004). Recurring auditory experience in the 28- to 34-week-old fetus. <i>Infant Behavior and Development</i> , 27, 537–543.
Turn-taking/social relationships	Ratner, N., & Bruner, J. (1978). Games, social exchange and the acquisition of language. <i>Journal of Child Language</i> , 5, 391–401. Available online at: http://web.media.mit.edu/~jorkin/generals/papers/33_ratner_bruner.pdf

Test your knowledge

- 5.1 What are the five rules of language?
- 5.2 How does prenatal linguistic experience seem to influence later language development?
- 5.3 Describe the relevance of child-directed speech, meshing, turn-taking and joint action to language acquisition.

? Sample question**Information provider**

Design a webpage for new parents that gives them advice on how to use play and one-to-one interactions with their baby to promote good language development.

Language milestones**Comprehension**

- Most infants begin to comprehend their first words when they are around 8 months old, and the total number of words understood grows slowly up to about 12 months of age when there is a sudden increase in vocabulary size (Fenson et al., 1994).
- Harris et al. (1995b) found that the age at which infants first showed signs of understanding the names of objects was ten months and this development was highly correlated with the development of pointing.
 - This close relationship between the development of pointing and understanding object names suggests that these are closely linked processes with a common origin.
 - Pointing has an important role to play in ensuring joint attention during joint action formats. For example, when reading picture books with their carers, joint attention to individual objects is maintained through pointing. This suggests a role for social factors in language development.
 - Evidence that blind children produce significantly fewer words for discrete objects than sighted infants (Norgate, 1997) lends further support to the importance of pointing for acquiring object names.
- Changes in sound recognition may also be important for this development.
 - The neonate is born with the ability to recognise acoustic cues and can make distinctions between phonemes in any language (Kuhl et al., 2006).
 - Between the ages of 6 and 12 months they become better at perceiving the changes in sound in their native language, gradually losing the ability to detect differences that are not important. For example, the sounds *r* and *l* are important in spoken English, distinguishing words such as *rake* and *lake*. No such sound distinction exists in Japanese. Iverson et al. (2003) demonstrated that six-month-old infants from English-speaking homes could detect the change from *ra* to *la* and gradually improved in detecting this change over the following few months. In contrast, infants from Japanese-speaking homes were as good as the infants from English-speaking homes at 6 months, but by 12 months had lost this ability.

5 • Language development

- It is likely that this recognition of distinct sounds and speech patterns develops over the first year of life into recognition and comprehension of words.
- Understanding of language also begins around the same time that this change from universal linguist to language-specific listener occurs.

Production

- Language production develops after comprehension.
- Precocious talkers may produce their first word as early as nine or ten months, but many children do not produce their first word until well into their second year.
- There is some evidence to support the idea that social interactions and adult responsiveness play an important role in language development (Tamis-LeMonda, Bornstein, & Baumwell, 2001).
- First words are limited in number and *over-extension* and *under-extension* are both commonly seen in the use of first words (Woodward & Markman, 1998).
- Infants express various meanings by simply altering the intonation of a single word. For example, 'Milk' could mean, 'I want my milk', 'Where is the milk?' and even 'I've spilt my milk!' Interpretation relies on the contexts in which they are uttered and, in the absence of environmental cues (such as spilt milk), carers may not always get the meaning right first time. These single-word sentences are known as *holophrases*.
- Word production increases gradually until around the end of the second year, when there is a vocabulary spurt (Bloom, Lifter, & Broughton, 1985). At around the same time, a qualitative change in language use can be seen as infants begin to use two-word phrases.
- Two-word utterances, or *telegraphic* speech, provides a more effective means of communication and is a universal feature of language development (Boysson-Bardies, 1999). However, the child still has to rely heavily on gesture, intonation and context for conveying meaning.
- Class work by Slobin (1972) identified a range of functions for these telegraphic utterances, as demonstrated in Table 5.3.

Table 5.3 Functions of early telegraphic utterances

Utterance	Function
See doggie	Identification
Book there	Location
More milk	Repetition
All gone	Non-existence
My candy	Possession
Big car	Attribution
Mama walk	Agent action
Where ball?	Question

- Once the telegraphic speech stage has been reached, young children move rapidly from producing two-word utterances to creating three-, four- and five-word combinations and so begin the transition from simple to complex sentences (Bloom, 1998).
- Utterances also become more grammatical and the transition from early word combinations to full-blown grammar is rapid. By the time children reach their fourth birthday, they have mastered an impressive range of grammatical devices, seemingly assimilating the structures of their native language without explicit instruction or correction (Brown & Hanlon, 1970). This is often cited as evidence for language acquisition being driven by an innate process.

The production/comprehension gap

- One reason for the lag between comprehension and production of language is that changes in the anatomy of the vocal tract are necessary for the production of the complex range of movements that speech requires.
 - At birth the infant vocal tract is very different from that of an adult. It is designed to enable strong, piston-like movements, which are essential for sucking.
 - The infant's *larynx* is positioned high up so that the epiglottis nearly touches the soft palate at the back of the mouth.
 - The tongue is large in relation to the size of the mouth, nearly filling the oral cavity, while the *pharynx* is very short compared to that of an adult, allowing little room for manipulation of the back part of the tongue.
 - Once sucking becomes less of a priority, at around four months of age, the vocal tract gradually takes on a more adult form.
- This physical change is accompanied by neural maturation of the related motor areas in the brain.
- Together these physical and neurological developments provide infants with control over the fine motor movements that are essential for producing the full range of speech sounds.
- There is evidence that production of sign language follows a similar sequence to the acquisition of spoken language, but the first word is seen two–three months earlier (Bonvillian, Orlansky, & Novack, 1983). The earlier development of signing may link to the reliance on gross motor skills, which develop sooner than the fine motor skills needed for speech.

Example of application of theory: the case of baby sign

The earlier acquisition of signing has led to increasing interest in teaching signing to babies (see www.babysign.co.uk for more information). There is some evidence that signing speeds up rather than hinders the speech process (Acredolo & Goodwyn, 1998), and the links to gesture and object labelling are clear. However, one question to ask is whether signing per se speeds language acquisition or whether this reflects an increase in parental responsiveness.

CRITICAL FOCUS

The vocabulary spurt

Read the article by Nazzi and Bertoncini (2003), which tries to account for the vocabulary spurt that occurs at around 18 months of age. Now answer the following questions.

- How do the authors attempt to explain the sudden increase in language learning at 18 months?
- To what extent does the evidence they present support this view? What are the disadvantages of using patterns of atypical development as evidence?

Nazzi and Bertoncini suggest that before the age of 18 months infants are not acquiring words which have meaning, but, rather, sounds they use to label objects. If this is true, what do you think might be the implications for infant comprehension of language? Does this view negate the impact on social factors for language development or do you think it makes them even more pertinent?

Nazzi, T. & Bertoncini, J. (2003). Before and after the vocabulary spurt: Two modes of word acquisition? *Developmental Science*, 6(2), 136–142. Available online at: <http://lpp.psych.univ-paris5.fr/pdf/1381.pdf>.

Further reading Language milestones

Topic	Key reading
Social interactions	Tamis-LeMonda, C. S., Bornstein, M. H., & Baumwell, L. (2001). Maternal responsiveness and children's achievement of language milestones. <i>Child Development</i> , 72(3), 748–767.
Sign language	Bonvillian, J. D., Orlansky, M. D., & Novack, L. L. (1983). Developmental milestones: Sign language acquisition and motor development. <i>Child Development</i> , 54, 1435–1445.
Developmental delay	Leung, A. K. C., & Kao, C. P. (1999). Evaluation and management of the child with speech delay. American Academy of Family Physicians. Family Physician Website. Available online at: www.aafp.org/afp/990600ap/3121.html
Gestures and spoken language development	Iverson, J. M., & Goldin-Meadow, S. (2005). Gesture paves the way for language development. <i>Psychological Science</i> , 16(5), 367–371.

Test your knowledge

- 5.4 At what age do infants begin to understand spoken language?
- 5.5 What factors affect the emergence of language comprehension?
- 5.6 At what age does the production of language develop?
- 5.7 What are the main milestones of language production?
- 5.8 Why does production of language lag behind language comprehension?

Answers to these questions can be found on the companion website at:

www.pearsoned.co.uk/psychologyexpress

? Sample question

Essay

Describe the main milestones of language acquisition. What factors influence this development?

? Sample question

Problem-based learning

Christopher is concerned that his son Peter, who is 18 months of age, can only say 3 or 4 real words. He seems to prefer to use gestures and signs to communicate his needs. Christopher is concerned that his son is showing language delay because of an over-reliance on the baby signing that he was taught at a local mother and baby group. This is causing friction between the parents as Peter's mother, Jill, believes that the signing has really helped her communicate with her son and Christopher is worrying over nothing. What advice would you give to Christopher and Jill? Should Jill stop signing as Christopher believes or is he worrying over nothing? Remember to support your answer with evidence from the literature.

Theories of language acquisition

One of the predominant debates in theories of language development concern the question 'Is language innate or learnt'? Traditionally, the debate has been between behaviourists such as Watson and nativists such as Chomsky.

Behaviourism

- States that language is learnt through a process of reinforcement and imitation.
- As the infant babbles, it happens to say 'dada'. This is interpreted by the mother as the baby trying to say 'daddy'. Hugs, kisses and praise given to the child reinforce this behaviour, making it more likely that the sound will be repeated.
- Gradually the infant will learn to associate a particular sound with an object or person.
- They have begun to learn how to label objects and what was initially meaningless babbling has become meaningful language.
- In addition, children are said to learn through imitating the sounds made by others.
- For example, during play a mother may use the word 'teddy' to her child, while giving them the teddy.
- Gradually the child learns the association between the word and the object and tries to imitate the sounds made by the mother, which results in reinforcement, repetition, etc.

Nativism

- Argues that this is too simple an explanation for what is essentially a complex behaviour.
- In particular, learning theory cannot explain how children are able to construct novel sentences or the ease with which children learn the rules of grammar.
- There is evidence, for example, that parents do not reinforce or explicitly correct syntax or other grammatical errors (Brown, 1973).
- Chomsky argues that there must therefore be an innate mechanism for learning language. He calls this the *language acquisition device* (LAD).

Most contemporary theories of language development tend to be less extreme. Both sides have modified their position, so that nativists recognise the environment has a role to play in language acquisition and environmentalists accept imitation and reinforcement are insufficient to explain the child's entry into the complex world of language.

Social constructivist approach

- J. S. Bruner's theory provides a good example of an interactional framework for thinking about language development.
- He maintains that while there *may* be a LAD as suggested by Chomsky, there must also be a *language acquisition support system* (LASS).
- In this support system he is referring to the features of early relationships described above.
- Parents and other carers (unknowingly) provide ritualised scenarios – the ritual of having a bath, eating a meal, getting dressed or playing a game – in which the phases of interaction are rapidly recognised and predicted by the infant. It is within these social contexts that the child first becomes aware of the way in which language is used.
- The utterances of the carer are themselves ritualised and accompany the activity in predictable and comprehensible ways.
- Gradually, the child moves from a passive to an active position, taking over the movements of the care-giver and, eventually, the language as well.
- Bruner cites the example of a well-known childhood game, peek-a-boo, in which the mother, or other carer, disappears and then reappears. Through this ritual, which at first may be accompanied by simple noises or 'bye-bye', ... hello' and later by lengthier commentaries, the child is both learning about separation and return and being offered a context within which language, charged with emotive content, may be acquired.
- It is this reciprocal and affective nature of language that Bruner suggests Chomsky neglects to consider.

Dynamic systems theory

The importance of shared activities for language development is supported by current research (for example, Liebal et al., 2009) and theorists from different schools now agree that the social context plays an important role in language development.

- Dynamic systems theorists (for example, Evans, 2006; Gershkoff-Stowe & Thelen, 2004) would agree with Bruner's proposition that features of the social environment are important for language development.
- They would also concur with the idea that development happens as a result of an interaction between this environment and the child's innate predispositions.
- However, they would disagree with the idea that there is an innate language-specific mechanism; according to this theory, language emerges from the same general processes as all other behaviours.
- In this way, language and cognitive development are linked rather than separate processes.

Usage-based theory

Tomasello (2006) also sees the social context as important for language development.

- However, he argues that the essence of language is its symbolic dimension, not its grammatical construction.
- Language is learnt as a specific tool for conversation and communication.
- Concrete words are learnt initially, with no grammatical rules at all.
- All the child has is a collection of useful concrete speech units, which form the basic building blocks of language.
- Gradually the ability to construct longer and more complex utterances emerges.
- Initially children do not possess the fully abstract categories and schemas of adult grammar. Children construct these abstractions only gradually and in piecemeal fashion.
- According to Tomasello, children construct their language using the following general cognitive processes:
 - intention-reading (for example, joint attention), by which they attempt to understand the communicative significance of an utterance
 - pattern-finding (categorisation, schema formation), by which they are able to create the more abstract dimensions of linguistic competence.

This implies that language development follows on from the development of our thinking processes.

Evolutionary theory

According to Pinker (1994), Chomsky is correct in saying that language is an innate faculty of mind, albeit one that has evolved by natural selection as a Darwinian adaptation for communication.

- The ability to acquire language is therefore hard-wired into our system.
- Pinker does, however, guard against extreme determinism, noting that even though we have evolved a specialisation for grammar, language itself must be shared if it is to be an effective means of communication, so the specifics of a language (such as vocabulary and pragmatics) must be learnt.

Key terms

LAD: according to Chomsky, the LAD is an innate mechanism by which children are able to construct the grammar of their native language. Through the LAD the child is hard-wired to recognise the grammar of whatever language they are exposed to in infancy. This LAD matures over time, allowing the child to use increasingly complex language. According to Chomsky, there are certain rules of grammar that all languages have in common. He calls these rules *universal grammar* (UG). Such rules include structures such as the use of past, present and future; designation of categories such as nouns and verbs. These implicit rules are 'known' by children from birth. However, the more complex and specific rules of a given language are learnt through experience: the speech children hear is filtered by the LAD, which extracts language regularities (such as adding 'ed' to a verb for the past tense) in order to construct language rules, thereby providing children with the guidelines needed to communicate in their native tongue.

LASS: according to Bruner, language development takes place in a social context, which includes parents and carers. The concept of the LASS refers to this social context and encompasses all the techniques used by adults to give a meaning to language, so making it easier for children to acquire.

Further reading Key developmental theories

Topic	Key reading
Evolutionary theory	Pinker, S., & Jackendoff, R. (2005). The faculty of language: What's special about it? <i>Cognition</i> , 95, 201–236. Available online at: http://pinker.wjh.harvard.edu/articles/papers/2005_03_Pinker_Jackendoff.pdf
Usage-based theory	Tomasello, M. (2006). Acquiring linguistic constructions. In D. Kuhn & R. Siegler (Eds.), <i>Handbook of child psychology: Vol.2: Cognition, perception and language</i> (5th ed., pp. 255–298). New York: Wiley. Chapter available online at: http://email.eva.mpg.de/~tomas/pdf/tomasello_HoCP2005.pdf

Test your knowledge

- 5.9 How is language acquired according to behaviourist theory?
- 5.10 What is Chomsky's LAD?
- 5.11 What are the main factors involved in language acquisition according to Bruner?
- 5.12 What is a dynamic systems theory of language development?
- 5.13 To what extent does usage-based theory rely on cognitive mechanisms for language development?
- 5.14 What is the evolutionary perspective on language acquisition?

Answers to these questions can be found on the companion website at: www.pearsoned.co.uk/psychologyexpress

? Sample question

Essay

Critically discuss the advantages of interactionist approaches to language development.

Language and thought

The link between thought and language development deserves some consideration. This is another classic debate in psychology: Does language merely reflect thought or do we need to be able to think (for instance, categorise, understand concepts, etc.) before language can develop? The traditional arguments are as follows.

Language relies on cognitive development

Piaget claimed that although language and thought are closely related, language depends on thought for its development. Language is not possible until children are capable of symbolic thought; they have to understand that one thing can stand for another before they can use words to represent objects, events and relationships. He based this claim on a range of evidence, including development in infancy, in which fundamental principles of thought (for example, understanding concepts) are displayed well before language, and the simultaneous emergence of language and other processes explored later in this book, such as *symbolic play*, which suggests that language is just one of a number of outcomes of fundamental changes in cognitive ability.

Language aids cognitive development

In contrast, Vygotsky (1986) saw thought as dependent on language. According to Vygotsky, language is one of our most important cultural tools and the medium through which most, if not all, learning takes place. Mental operations are believed to be embodied in the structure of language and cognitive development results from the internalisation of language as follows.

- Initially thought and language develop as two separate systems.
- Before the age of about two years, children use words socially – that is, to communicate with others. Up to this point, the child's internal cognition is without language.
- At around two years of age, thought and language merge. The language that initially accompanied social interaction is internalised to give a language for thought. This internalised language can then guide the child's actions and thinking.

Vygotsky (1978) identified self-talk as a critical part of the child internalising previously external social speech. In early childhood, especially between the ages of three and four, children often talk out loud to themselves. Over time, this self-talk seems to disappear. Piaget (1923) called this self-talk *egocentric* speech and suggested it reflects some of the limitations of young children's cognitive skills (see Chapter 7). In contrast, Vygotsky argued that all speech, including self-talk, is 'social' and therefore does not disappear; it simply becomes internalised. He argued that to believe self-talk disappears would be like believing that children stop counting when they stop using their fingers to do so. Vygotsky alleged that even when internalised, self-talk continues to guide a child's actions. This idea is given some support by the way in which the conscious use of self-talk intensifies when children are presented with tasks of increasing difficulty. Perhaps you can even think of examples of adults using self-talk as an aid for learning?

Contemporary views

There is some evidence of related activity between cognitive and language development (Oates & Grayson, 2004) and some theorists still argue for a need to understand cognitive concepts before language can emerge (Gopnik & Meltzoff, 1997). However, it seems possible that language and cognition develop in a parallel but disassociated fashion (Cromer, 1987). Evidence in support of this view comes from studying atypical development – for example, deaf children with no language (verbal or signed) perform as well on problem-solving tasks as their same-age peers (Furth, 1973). Thus, while thought may eventually influence language and vice versa, the current view is that the development of language and cognition takes place in separate modules rather than in a single system.

Test your knowledge

- 5.15 How is cognitive development necessary for language acquisition according to Piaget?
- 5.16 Describe Vygotsky's theory of language internalisation.
- 5.17 How do contemporary views explain the interface between language and cognitive development?

Answers to these questions can be found on the companion website at:
www.pearsoned.co.uk/psychologyexpress

CRITICAL FOCUS

What is the relationship between language and thought?

Read the following newspaper article, which discusses the relationship between thought and language, using spatial knowledge as an exemplar. Does language shape our thoughts or is it the other way around? Available online at: www.guardian.co.uk/science/2002/may/16/languages.medicalscience

Now answer the following questions.

- To what extent do you think the research cited provides good evidence in support of the idea that thought shapes language rather than the other way around?
- Can all of the findings presented be explained in terms of differences in social context?
- Which developmental theorists does this call to mind?

Social context is cited by a number of theorists as having a role in cognitive and language development, including Tomasello, Bruner and Vygotsky. In comparison, Piaget placed little emphasis on this issue. Indeed it is an important criticism of his theory, as you will see in Chapter 7 when you study cognitive development.

Chapter summary – pulling it all together

- ➔ Can you tick all the points from the revision checklist at the beginning of this chapter?
- ➔ Attempt the sample question from the beginning of this chapter using the answer guidelines below.
- ➔ Go to the companion website at www.pearsoned.co.uk/psychologyexpress to access more revision support online, including interactive quizzes, flashcards, You be the marker exercises as well as answer guidance for the Test your knowledge and Sample questions from this chapter.

Answer guidelines



Sample question

Essay

Critically evaluate the role of the environment in early language development.

Approaching the question

Your answer should aim to provide an analysis of the different features of the environment that may impact on language development. You should consider both theoretical and empirical evidence to support your answer.

Important points to include

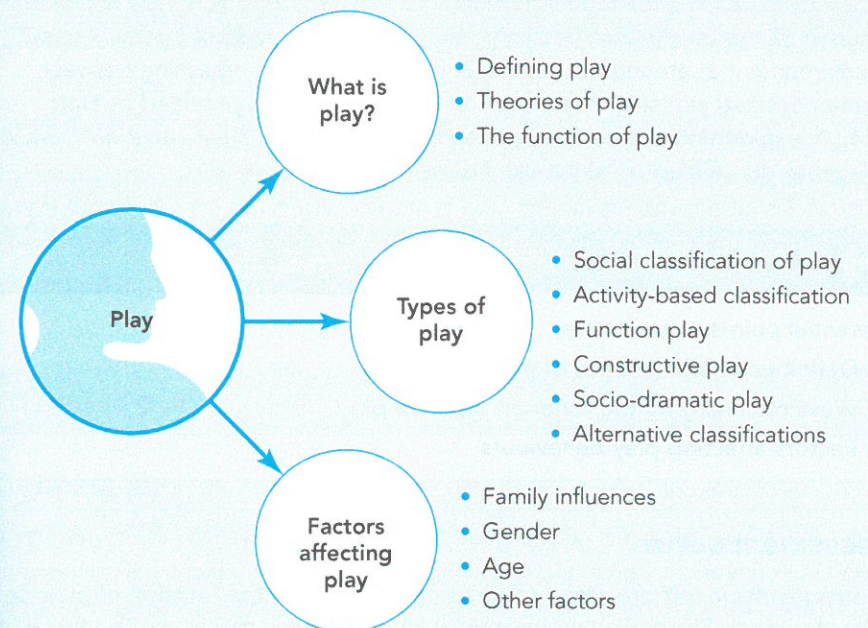
- Begin by outlining the opposing theoretical approaches to language acquisition – that is, biological, environmental, interactionist.
- Discuss the ways in which the majority of contemporary theories acknowledge both biological and environmental factors in language development, but how the relative contributions of each are still contested.
- Discuss some of the different types of environmental features of relevance. For example:
 - prenatal environments
 - joint action formats
 - meshing
 - child-directed speech.
- Discuss possible biological limitations on language development, such as motor skills and physiological development.
- For each you will need to:
 - discuss the theoretical rationale for each feature
 - provide empirical evidence in support/against these features
 - evaluate the evidence.

Make your answer stand out

It is really easy to fall into the trap of either simply describing the opposing nature–nurture arguments or focusing solely on environmental factors. A good answer will take a critical stance, evaluating the theoretical propositions as well as the available evidence. Linking your evaluation to what you know about other areas of development, such as cognitive and social development, will demonstrate your ability to synthesise the information you have learnt. Including prenatal environments will also show the ability to think creatively. Evaluating the methodological approaches of any research studies cited will also make your answer stand out. You might also consider including more global theories of development (for example, dynamic systems, bio-ecological models) to help frame your answer.

6

Play



A printable version of this topic map is available from www.pearsoned.co.uk/psychologyexpress