There is not much debate about what determines a person's sex. Sex is physical, and people are born either male or female. However, there is more debate about what determines gender, as gender is psychological rather than physical. The Biological approach says that we are also born with our gender and that it is related to sex. However, not all psychologists agree with this approach.

LEARNING OBJECTIVES:

By the end of this topic, you should be able to:

1. Understand the key concepts of:
   - sex and gender
   - masculinity, femininity and androgyny.
2. Have insight into the Biological approach of gender development, including considering Psychodynamic approach as an alternative approach of gender development.
3. Demonstrate knowledge of Diamond & Sigmundson's case study of the castrated twin boy raised as a girl.
4. Show awareness of applications of research into sex and gender.

Key Concepts

SEX AND GENDER

In everyday life, the terms sex and gender are often used to mean the same thing. However, in psychology, they are very different concepts. Sex is a biological term which tells us whether someone is male or female. This is determined at conception, when sperm fertilizes an egg.

Sex

Sex is evident through characteristics present from birth such as genitals, for example the penis or vagina, and other characteristics which develop as a person gets older such as breasts or facial hair. Since these characteristics are fixed, a person's sex cannot change. Even people that undergo so-called 'sex change' operations have not really changed their sex. Their internal organs, such as the ovaries and brain will still be the same, and these also determine sex. For example, a person who has had a sex change, still has to have their original sex on their passport.

Gender is a psychological term and is more to do with how a person behaves or thinks. There are three main categories for gender: masculine, feminine and androgynous. Masculinity refers to typical male traits or roles – such as being aggressive, going out to work or playing football. Femininity refers to typical female traits or roles – such as being sensitive, staying home to care for children, or playing with dolls.

BUZZWORDS

Sex – A biological term that tells us whether an individual is male or female.

Gender – A psychological term that tells us whether an individual is masculine, feminine or androgynous.

Masculinity – A gender term associated with male traits/roles.

Femininity – A gender term associated with female traits/roles.

Androgyny – A type of gender where an individual shows high levels of both masculine and feminine traits.
Androgyny refers to both masculine and feminine traits and roles. An androgynous person is someone who displays many masculine behaviours and many feminine behaviours. There is some evidence that androgynous people are psychologically healthier than people that are just masculine or just feminine.

**ACTIVITY**

1.1 Complete the following task in groups of two or three.

a) Read the following traits. Put them into two categories – masculine or feminine traits. If there are traits that you think are neither particularly, you may decide to have a group of neutral traits too.

assertive    athletic    big-headed    bitchy

caring    competitive    considerate    creative
daring    flirtatious    forgiving    gossip

humorous    immature    intelligent    logical

patronising    shy    sly    sympathetic

Ask yourself the following questions. Did you agree on which traits were masculine and feminine? Which ones, if any, did you disagree on? Why did you disagree?

b) When you have sorted the traits, read the group of masculine traits. Decide how many of them describe you. If many apply to you, this would suggest you see yourself as masculine. Read the list of feminine traits. Decide how many of these describe you. If many apply to you, this would suggest that you see yourself as more feminine. If many traits in both groups apply to you, this would suggest you see yourself as androgynous.

**ACTIVITY**

1.2 Can you think of any evidence that shows that gender roles have changed over time? How convincing is this evidence? To what extent do you think an individual can change their own gender?

**ACTIVITY**

1.3 Read the following case and then answers the questions below.

‘Claire is a 4 year old girl who enjoys playing with train sets and helping her dad to service his car. Claire’s mother is concerned that her daughter is not very ‘lady-like’. Her mother thinks they should make a greater effort to bring up Claire to be more feminine. Claire’s father is not so bothered, and even argues that they cannot change the way Claire is. “It’s in her nature”, he says.’

a) Identify Claire’s sex.

b) Identify Claire’s gender.

c) State which parent believes in the biological approach to gender development.
Core theory

BIOLOGICAL THEORY

The Biological approach believes that an individual’s gender is decided at the same time as their sex is decided at conception. When a new foetus is formed, as part of its genetic make-up, it has two sex chromosomes. This pair of chromosomes decide whether it will be male or female. Biological approach also argues that they decide whether the individual will grow up to be masculine or feminine.

The sex chromosome pair associated with females is XX. The sex chromosome pair associated with males is XY. The chromosome pairs are labelled this way because of their shape.

Although it is very unusual, babies can be born with atypical (abnormal) sex chromosomes. For example, some baby boys have an extra X chromosome (XXY). Interestingly, such boys grow up to have more feminine traits as well as more female looking bodies. This shows that chromosomes can have a significant effect on gender.

Development of the foetus

Up to about six weeks into a pregnancy, a male and female foetus look the same. Their gonads (sexual organs) are no different. However, around the sixth week, the sex chromosomes begin to have an effect on the development of the gonads. The Y chromosome ‘switches on’ a hormone in the male foetus. This hormone makes the gonads develop into testes. Meanwhile, without this hormone, a female foetus’ gonads will automatically turn into ovaries.

Even within the womb, the testes and ovaries begin to produce different levels of sex hormones which affect gender development.

The effects of hormones

Testes produce high levels of testosterone. This hormone is said to affect the brain and behaviour of the child after it is born. For example, testosterone is thought to make boys more aggressive and to give them superior mathematical skills. Meanwhile, the ovaries produce high levels of oestrogen. It’s said that this hormone has different effects on the brain and behaviour. For example, oestrogen is thought to make girls more sensitive and to give them superior verbal skills.

The effects of hormones on gender-related behaviour can be seen in cases where individuals are injected with substances that affect hormone levels. For example, some female athletes have injected themselves with steroids to try and improve their sporting performance. These steroids increase levels of testosterone and as a consequence, they often report feeling more aggressive. Similarly, men undergoing sex change operations, use drugs to raise their oestrogen levels. There is evidence that this improves their verbal ability on tests. However, they actually do worse on tests of visual-spatial ability.

**HINT**

Some students get the sex hormones mixed up between males and females. Try to remember that ‘testosterone’ begins with ‘t’ as do the testes it comes from. Similarly ‘oestrogen’ begins with ‘o’ as do the ovaries it comes from.
Evaluating the Biological Approach

There are a number of criticisms of the Biological approach of gender development, including the following:

- **The Biological approach ignores the idea that gender roles may be learnt.** There is a lot of evidence that shows that families and communities socialise males and females differently. Perhaps this is why the two sexes end up with different gender roles. For example, boys are rewarded for being tough whereas girls are rewarded for being ‘lady-like’. Similarly, if a child behaves like the opposite sex, they are often punished by being ridiculed or shunned.

Instinctive behaviour and the Biological approach

The Biological approach believes that human behaviour is instinctive, and that instincts have developed to help us to survive and to reproduce. Therefore, the Biological approach says gender roles are instinctive. In the same way that males and females have physical differences that help them to reproduce (e.g. having a penis or a vagina), they also have psychological differences that help them to reproduce.

It also believes that males and females have evolved to have different levels of hormones which, in turn, affect their psychological characteristics. For example, females are more coy than males. This means they are more choosy about who they mate with. The approach is that because females only have about 400 eggs they can use to reproduce, they do not want to waste them on a poor mate. Males, meanwhile, produce millions of sperm per day so they are less choosy. They can afford to ‘waste’ them on a poor mate. This is why males are thought to be more promiscuous, ‘playing the field’ more.

Evolution may also explain why females appear naturally more caring and sensitive. Since they have to carry and then raise the young, as they are the ones who can breast feed, they need to be better equipped to deal with needy babies. Males, meanwhile, are more aggressive and competitive because they have to fight for the resources to provide for their partner and their children.

Finally, evolution may explain the different skills that males and females seem to naturally possess. For example, males’ superior visual-spatial skills may be necessary (or at least have been necessary) to help them to hunt e.g. to aim a spear, to find their way back home. Meanwhile, females’ superior communication skills may be necessary for teaching their young, or for sharing childcare with other mothers.

Evolution – A process where species adapt to their environment in order to be able to survive and reproduce.

**ACTIVITY**

Below is a flow diagram to summarise the stages of gender development according to the Biological approach.

Copy and complete the diagram by filling in the gaps.

- **MALE**
  - Feotus is conceived
  - With different sex hormones
  - __ chromosomes
  - At 6 weeks, gonads change
  - Gonads become __
  - Gonads produce hormones
  - Hormones affect the brain
  - Hormones affect behaviour
  - Main hormone is __
  - Brains better for certain skills e.g. __
  - Behaviour is more masculine e.g. __

- **FEMALE**
  - Feotus is conceived
  - With different sex hormones
  - __ chromosomes
  - At 6 weeks, gonads change
  - Gonads become __
  - Gonads produce hormones
  - Hormones affect the brain
  - Hormones affect behaviour
  - Main hormones are __
  - Brains better for certain skills e.g. __
  - Behaviour is more feminine e.g. __

**ACTIVITY**

Choose two masculine and two feminine traits from Activity 1.1 e.g. athletic (masculine), daring (masculine), flirtatious (feminine), sly (feminine).

For each trait, explain how evolution might explain why these traits are associated with one sex more than the other.

**BUZZWORDS**

Evolution – A process where species adapt to their environment in order to be able to survive and reproduce.

Sex and Gender 5
Revision

Revision Tools

“It is easy to mix up similar terms in this topic – like XX and XY chromosomes, and the Oedipus and Electra concepts. It helps me to colour code terms. So when I write down a definition of a female term (e.g. oestrogen), I put it on a pink post-it. And you’ve guessed it, when I write down a male term (e.g. testosterone), I use a blue post-it. It might be a bit stereotypical, but it helps me to remember which terms are associated with females, and which are associated with males.” Charlotte

“I thought the Diamond & Sigmundson case study of Bruce was really interesting so I went on the Internet to find out more about it. There was loads on it. However, my teacher said to be careful. Some of it is exaggerated or even made up. He reminded me that us psychology students need to stick to the facts. We need to make sure any additional information about a case comes from a reliable source.” Tom

Revision checklist

Draw up a table as shown below.

<table>
<thead>
<tr>
<th></th>
<th>MALES</th>
<th>FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOLOGICAL APPROACH</td>
<td>Have XY chromosomes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experience Electra complex.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete the table to summarise the Biological approach and the Psychodynamic approach of gender development.

For each approach, list what it says about males’ development and females’ development. Part of the table has been completed for you as an example.

Exam Preparation

1. From the options below, identify the male sex chromosomes.
   - XX
   - XY
   - YY [1]

2. Name the hormone associated with females. [1]

3. Outline what is meant by the Oedipus complex. [3]

4. Explain the difference between sex and gender. [3]

5. Describe and evaluate the Biological approach of gender development. [10]

Examiner’s Tip:
For 3 marks, you would need to make 3 separate points about this concept. If it was worth 2 marks, then 2 points would be enough.

Examiner’s Tip:
Question 4 requires a balanced answer. You need to say as much about ‘sex’ as you do about ‘gender’. You can assume that a description of each concept is worth 2 marks. However, to guarantee 3 marks, you need to demonstrate in some way how the concepts are different (or opposites of each other).
The Biological approach of gender development states that sex and gender are inter-related. Since sex is biologically determined by genetics, the approach believes the same is true of gender.

In terms of genetics, it is the sex chromosomes that decide a person’s sex and gender. XX gives a female baby who will grow up to be feminine and XY gives a male baby who will grow up to be masculine. This means that boys are instinctively more aggressive than girls, for example. On the other hand, girls are instinctively more sensitive than boys.

The Biological approach is supported by the Diamond & Sigmundson case study. This case study describes a boy who was castrated when he was young because he had lost his penis in a nasty accident. Because he did not look like a boy any more, a psychologist advised his parents to bring him up as a girl. However, this did not work because the ‘girl’ always felt like a boy inside. This shows we cannot change a person’s gender just by how we treat them. Gender is much more to do with biology.

However, in contrast to the above, there are cases where children have been successfully raised as the opposite sex. For example, where babies are born with ambiguous genitals so it is not clear what sex they are. Sometimes they are raised as the wrong sex but still adapt to their gender role.

Another problem for the Biological approach is the fact that some people do not behave as expected for their sex. If gender was just about chromosomes, then wouldn’t all men and all women just behave in more or less the same way? You can have two men, both with XY chromosomes, but one may be masculine and the other may be feminine.