



## Explaining Autism

This Factsheet summarises the definition, symptoms and explanations of autism. These are explored from three broad perspectives which focus on genetic, environmental or cognitive explanations. The factsheet includes exam guidance and the worksheet gives you the opportunity to apply what you have learned to exam style questions. Words in bold are explained in the glossary.

### The examiner will expect you to be able to:

- Define autism
- Describe the main symptoms of autism
- Provide and evaluate genetic explanations for autism
- Provide and evaluate environmental explanations for autism
- Provide and evaluate cognitive explanations for autism

### A. Autism

Autism is a developmental disorder. Symptoms are usually observed during the first three years of life and diagnosed during childhood. Individuals diagnosed with autism tend to experience difficulties in three main areas: communication, behaviour and social interaction.

#### 1. Communication symptoms can include:

- Delayed speech or complete lack of speech
- Difficulty maintaining conversation
- Repetitive language (including **echolalia**)
- Difficulty understanding humour
- Tendency to take things literally
- Difficulty using and understanding non-verbal communication

#### 2. Social symptoms can include:

- Failure to form friendships with same age peers
- Preference for solo activities
- Lack of imaginative play
- Lack of empathy
- Difficulty in turn-taking or sharing
- Poor understanding of moods and feelings

#### 3. Behavioural symptoms can include:

- A need for familiar routine
- Resistance to change
- An obsessional interest in particular toys or topics
- Sensitivity to particular tastes, smells and sounds
- Unusual body movements or 'tics'
- Hyperactivity or self-injurious behaviour when distressed



Autism Society of America

### B. Biological explanations for autism

- There is evidence to suggest that autism is **genetic**. Children or siblings of an individual diagnosed with autism are more likely to be autistic and twins are even more likely to both be autistic (or both be non-autistic). Furthermore, twin studies (e.g. Folstein and Rutter, 1977) have found a much higher concordance for autism in identical twins compared to non-identical twins. However, a single 'autism gene' has not been identified and it is therefore likely that genetics may suggest a **predisposition** towards developing autism rather than a definite determinant.
- Another biological explanation for autism concerns the **neurology** of the brain. Some studies have found that the brains of children who are diagnosed with autism undergo rapid growth between the ages of one and two years and that some areas of the brain remain larger than usual. There is also biological evidence to suggest that a malfunction of particular neurotransmitters in the brain is a cause of autism.



**Exam Hint:-** There is always a pay-off between breadth and depth in questions asking for explanations. If more than one explanation is used (wider breadth) then a less detailed description (less depth) is required. If you focus on one explanation (narrower breadth) then a fuller description (more depth) is required.

Evaluation of biological explanations for autism:

- **Nature and nurture:** Some psychologists argue that similarities observed in families could be the result of learnt behaviour rather than inherited disorders.
- **Cause and effect:** It is unclear whether differences in brain structure and function cause autism, or are caused by autism, or are caused by something else and exist alongside autism.

**Exam Hint:** Evaluation of explanations can include therapeutic implications. For example, the effectiveness of biological therapies might be used to make inferences about the biological causes of autism. Comparing and contrasting (biological) explanations to alternative (environmental or cognitive) explanations is also a creditworthy method of evaluation.

### C. Environmental explanations for autism

- Environmental explanations for autism tend to focus on parenting styles and relationships. They include the **'refrigerator mother'** and **'rejecting parents'** hypotheses and the **'approach-avoidance theory'**.
- The **refrigerator mother** hypothesis was proposed by Leo Kanner in the 1940s. He attributed autism to poor mother-infant attachment which, he said, was due to a lack of maternal warmth.
- Bruno Bettelheim developed this theory in the 1950s and 1960s. He popularized the idea that autism was caused by parents who were cold and distant towards their children. Bettelheim's theory became known as the **rejecting parent** hypothesis.
- In the 1970s, Niko Tinbergen proposed the **approach-avoidance** explanation for autism based on observational studies of animals and non-autistic children. It was suggested that autistic children experience a conflict of emotions between their fear of and desire for social contact. Tinbergen suggested that this results in over-arousal, a lack of social bonding and other autistic traits. It was suggested that the lack of a sensitive approach *towards* the child can strengthen these traits.

Evaluation of environmental explanations for autism:

- **Cause and effect:** The lack of attachment observed between parents and their autistic children could be due to a lack of warmth or social reciprocity in the children rather than the parents.
- **Reductionism:** Both Kanner and Bettelheim appeared to ignore the fact that children diagnosed with autism had unaffected siblings who were exposed to the same styles of parenting yet showed no autistic traits.
- **Application:** It could be questioned how far findings from animal studies and those involving non-autistic children can be applied to autism due to biological and social differences.

### D. Cognitive explanations for autism

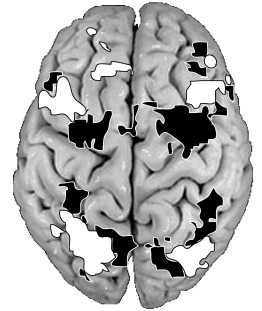
- Cognitive explanations for autism suggest that the disorder is caused by faulty cognitive processes. These hypotheses include **theory of mind**, **central coherence deficit** and **failure of executive functioning**.
- **Theory of mind (ToM)** is the ability to read and understand feeling states in oneself and others. People with autism often have difficulty with this type of processing. Studies have shown that particular areas of the brain are active in ToM and that this part of the brain is inactive in autism, suggesting a link between cognitive function and autism.
- The theory of a **central coherence deficit** suggests that people with autism tend to process information in a very narrow or focused way and are unable to process the 'big picture'. This theory perhaps explains why those with autism may have a particular talent.
- The **failure of executive functioning** hypothesis proposes that autism is caused by a dysfunction of the **central executive** component of working memory.

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Different areas of the brain are active in autism (white) and a control group (black)

Evaluation of cognitive explanations for autism:

- **Cause and effect:** It is unclear whether differences in cognitive functioning between people with autism and control participants suggest cause or effect. It may be more accurate to say that there is a correlation between particular cognitive functions and autism.
- **Research evidence:** The theory of mind explanation is supported by studies, such as the **Sally-Anne test**, but refuted by other studies which suggest that people with autism only encounter difficulties in processing more complex social emotions. Executive function is difficult to measure. Failure of executive function has not been found in young autistic children. Some studies suggest that executive function improves in adolescent autism.



**Exam Hint:-** Evaluation of explanations for autism could include reference to research evidence. However, avoid detailed descriptions of studies. The examiner is looking for answers which are discursive and use research to support an argument or evaluative point. Remember that marks are given for the way you use research evidence rather than for memorising names, dates and lengthy descriptions of methodology.

### Example Exam Question

*Outline and evaluate one or more explanations for autism.*

Examiner feedback: Excellent answers provide a detailed and accurate description of at least one explanation for autism which shows sound knowledge and understanding. Discussion is balanced, with appropriate analysis. Evidence is used to support the argument. Evaluative comment is presented in the context of the discussion as a whole. The answer is well focused, organised and mostly relevant with little, if any, misunderstanding.

### Glossary

- Approach-avoidance theory:** Environmental explanation for autism proposed by Tinbergen.
- Central coherence deficit:** Cognitive explanation for autism.
- Central executive:** Component of working memory which has an organizational/attention function.
- Echolalia:** Mindless repetition of words or phrases which have been heard.
- Failure of executive functioning:** Cognitive explanation for autism.
- Genetic:** Biological traits inherited by offspring from parents.
- Neurology:** To do with the study of the structure and function of the nervous system.
- Predisposition:** Likelihood or sensitivity towards developing a particular disease, disorder or trait.
- Refrigerator mother:** Environmental explanation for autism proposed by Kanner.
- Rejecting parents hypothesis:** Environmental explanation for autism proposed by Bettelheim.
- Sally-Anne test:** Method used to test theory of mind in children designed by Baron-Cohen.
- Theory of mind:** Cognitive explanation for autism.

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**Worksheet: Explaining Autism**

Name \_\_\_\_\_

1. Describe two or more communication symptoms of autism.

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2. Describe two or more behavioural and/or social symptoms of autism.

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3. Provide one biological explanation for autism and one criticism for this explanation.

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4. Provide one environmental explanation for autism and one criticism for this explanation.

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5. Provide one cognitive explanation for autism and one criticism for this explanation.

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6. Outline ways in which the nature-nurture debate can be applied to explanations for autism.

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