



## KEY SKILLS COMMUNICATION

Level 3 - Autism

[KSC3J3]

# Source Booklet

28 January 2003

- This booklet contains source material for the Level 3 Communication test, January 2003
  - The test questions will be based on this material
  - You must hand in this Source Booklet at the end of the test, along with your Question Paper and Answer Booklet
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The Level 3 Communication test will assess your ability to:

- select and read material that contains the required information
- identify accurately, and compare, the lines of reasoning and main points from the text and images
- synthesise the key information in a form that is relevant to the purpose
- select and use a form and style of writing that is appropriate to the purpose and subject matter
- organise relevant information clearly and coherently, using specialist vocabulary when appropriate
- ensure text is legible and spelling, grammar and punctuation are accurate so that meaning is clear

**Y**our brain, with its billions of neurones, is more powerful than the mightiest supercomputer. So why do you have so much trouble multiplying 573 by 617? And why can't you remember where you left the car keys? According to Australian scientists, the fault lies with our higher-level thinking which blots out a whole range of skills we would otherwise be able to use.

Some people – known as autistic savants – have no problem with lightning calculations. They can work out what day of the week any given date falls on in an instant. Others draw architecturally accurate pictures from memory after a single glance, or repeat a tune note-perfect.

The character portrayed by Dustin Hoffman in *Rain Man* was based on a number of real savants. These skills are rare among autistic people, but the question is why they occur at all. Is this a kind of compensation mechanism, or something more complex?

There are competing theories of autism, but it is generally accepted that, while autistic people perceive the details of the world, they do not make connections and grasp it as a whole. They lack “global processing”.

If you were shown a scene with some trees and a row of houses, your attention would be grabbed if smoke and flames were billowing out of one window. This is the most memorable feature and if you were to describe the scene, that is what you would concentrate on.

An autistic viewer might be struck equally by every single detail. The smoke and flames

might be no more noteworthy than an unusual arrangement of roof tiles. It seems the autistic brain does not have an editor, so every bit of information is presented to the conscious mind. This is why autistic people tend to find new situations overwhelming.

Autism occurs in varying degrees. At the mildest end are people with Asperger's Syndrome. They tend to be punctual, meticulous and often completely absorbed in a hobby such as model trains or computer programming. They have good memories and powers of concentration, but tend to be awkward in social situations whose unwritten rules they find incomprehensible.

Difficulties with communication are a consistent feature of autism, although there is some evidence that autistic people may be able to communicate better with each other than with non-autistics. At the extreme end of the autistic spectrum are those who never learn to speak. They fail to develop what psychologists call a “theory of mind” – the understanding that other people have thoughts and feelings. They may not even be able to recognise the shifting patterns of light around them as other human faces. This leaves the profoundly autistic locked in their own world, remote from contact with others.

Early theories of autism considered it to be a mental illness related to schizophrenia. It is now recognised as a neurological condition in which a crucial part of the brain fails to develop.

According to Allan Snyder and John Mitchell of the Centre for the Mind at the University of Canberra, this is what allows savant skills to emerge. They believe that all of us have the

# Brain Power

David Hambling  
**The Guardian**  
Thursday May 17, 2001



On the road: Dustin Hoffman (left) with Tom Cruise. The character played by Hoffman in the film “*Rain Man*” was based on a number of real autistic savants.

ability to see and remember the world in detail, but that the information is filtered out by high-level processes before it is allowed to reach our conscious mind. Autistic types may not get the big picture, but they can tap into brain functions like unconscious calculation and eidetic (photographic) memory.

An alternative theory of autism suggests that the features of autism, such as the appreciation of fine detail, are developed as an alternative to central coherence. According to this view, savant skills are developed in isolated brain areas, and there is no equivalent in the non-autistic brain.

# Autistic Savant

Written by Stephen M. Edelson, Ph.D. Center for the Study of Autism, Salem, Oregon

THE autistic savant is one of the most fascinating cognitive phenomena in psychology. "Autistic Savant" refers to individuals with autism who have extraordinary skills not exhibited by most persons. Historically, individuals with these exceptional skills were called 'idiot savants', a French term meaning unlearned (idiot) skill (savant). In a 1978 article in *Psychology Today*, Dr. Bernard Rimland introduced a more appropriate term 'autistic savant', which is the current label.

There are many forms of savant abilities. The most common forms involve mathematical calculations, memory feats, artistic abilities, and musical abilities. A mathematical ability which many autistic individuals display is calendar memory. They could be asked a question like: 'What day of the week was May 22, 1961?' and they can determine the answer within seconds – Monday. Others can multiply and divide large numbers in their head and can also calculate square roots and prime numbers without much hesitation.

Examples of some memory feats include: remembering everything about presidents (birth/death, term in office, names

and birth dates of family members, cabinet members, etc.), memorizing the U.S. highway system, and remembering everyone's birth date, even after meeting the person once and not seeing him/her for 20 years.

Some autistic individuals with savant abilities are incredible artists. Dr. Rimland's son, Mark, is quickly establishing himself as an excellent watercolor artist. A child named Nadia drew beautiful pictures of horses, and her drawings have been compared to those of Rembrandt. Interestingly, she lost her drawing abilities when she started to learn to speak. Another artist with autism, Richard Wawro, who was described in an issue of *Reader's Digest*, is virtually blind and draws in crayons.

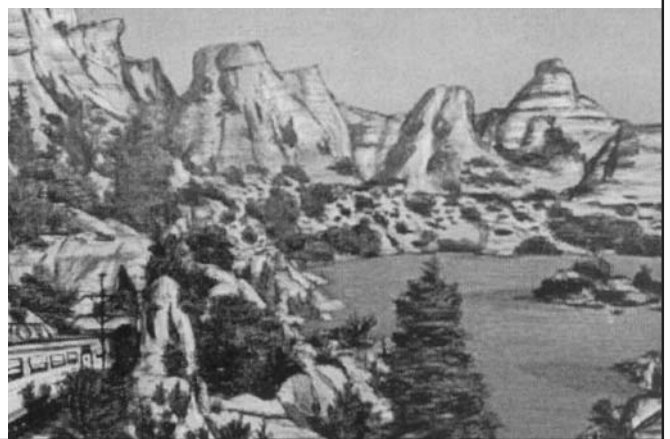
Music is another common savant ability. Many performers with autism have perfect pitch and also have a great memory for music. In some cases, a person can hear a classical piece once and play it back in its entirety. Tim Baley is a concert pianist and the piano player for Hi Hopes, a musical group of singers and performers with autism and/or mental retardation.

Hi Hopes played at the Los Angeles autism conference a few years ago and have even played at the White House.

The movie *Rain Man* exposed millions of people to autism as well as the autistic savant phenomenon. (Unfortunately, some people now have the impression that all autistic individuals have these abilities.) In the movie, Raymond displayed a great memory for ball player statistics, memorized parts of the telephone book, and counted cards in Las Vegas.

The reason why some autistic individuals have savant abilities is not known. There are many theories, but there is no evidence to support any of them. For example, Dr. Rimland speculates that these individuals have incredible concentration abilities and can focus their complete attention to a specific area of interest. Admittedly, researchers in psychology feel that we will never truly understand memory and cognition until we understand the autistic savant.

*Drawings By Richard Wawro*



# Social Behaviour in Autism

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One of the most characteristic symptoms of autism is a dysfunction in social behaviour. Numerous reports written by parents and researchers have described this problem, and it is thought by many to be the key defining feature of autism. The social problems can be classified into three categories: socially avoidant, socially indifferent, and socially awkward.

**SOCIALLY AVOIDANT.** These individuals avoid virtually all forms of social interaction. The most common response is tantruming and/or 'running away' when someone tries to interact with him/her. As infants, some are described as 'arching their back' from a care-giver to avoid contact.

For many years, it was thought that this type of reaction to their social environment indicated that autistic individuals did not like or were fearful of people. Another theory, which is based on interviews with autistic adults, suggests that the problem may be due to hypersensitivity to certain sensory stimuli. For example, some state that a parent's voice hurt their ears; some describe the smell of their parents' perfume or cologne as offensive, and others describe pain when being touched or held.

**SOCIALLY INDIFFERENT.** Individuals who are described as 'socially indifferent' do not seek social interaction with others (unless they want something), nor do they actively avoid social situations. They do not seem to mind being with people; but at the same time, they do not mind being by themselves. It is thought that this type of social behaviour is common in the majority of autistic individuals. One theory is that autistic individuals do not obtain 'biochemical' pleasure from being with people. Research by Professor Jaak Panksepp at Bowling Green State University in Ohio has shown that beta-endorphins, opiate-like substances in the brain, are released in animals during social behaviour. Additionally, there is evidence that the beta-endorphin levels in autistic individuals are elevated so they do not need to rely on social interaction for pleasure. Some research on the drug, naltrexone, which blocks the action of beta-endorphins, has shown that it increases social behaviour.

**SOCIALLY AWKWARD.** These individuals may try very hard to have friends, but they cannot keep them. This problem is common among those with Asperger's Syndrome. One reason for their failure to make enduring social relationships with others may be the lack of reciprocity in their interactions, since their conversations often revolve around themselves and are self-centred. Furthermore, they do not learn social skills and social taboos by observing others, and they often lack common sense when making social decisions.

Recent research has shown that many autistic individuals do not realise that other people have their own thoughts, plans, and points of view. They also appear to have difficulty understanding other people's beliefs, attitudes, and emotions. As a result, they may not be able to anticipate what others will say or do in various social situations. This has been termed as a lack of 'theory of mind.'

