6. Perception

Perception is the process of transferring physical stimulation into psychological information. Air pressure strikes the ear-drum and we hear a noise.

Disorders of perception, occur in the absence of stimuli (most commonly an auditory hallucination). Accordingly, it can be argued that hallucinations have nothing to do with perception. But, there is insufficient knowledge and interest at present to alter the conventional system of classification.

A case can be made, however, for adding depersonalization and delusional mood to the phenomena under the heading of perception.

Depersonalization and derealization

Depersonalization involves an alteration in the perception or experience of the self, in which the usual sense of one’s own reality is temporarily lost or changed. This manifests as a feeling of detachment, or being an outside observer of one’s mental processes or body, or of feeling like an automaton or as if in a dream. Patients may report that their movements or appearance in the mirror seem to be lifeless or subtly changed. However, there is a lack of the delusional intensity found in delusions of control or somatic delusions.

Derealization is an alteration in the perception of one’s surroundings so that the reality of the external world is lost—the world may appear two dimensional as a stage set, sizes and shapes may be perceived as changed and others may appear mechanical or puppet like. The terms micropsia and macropsia have been applied when things appear smaller or larger than expected.

Suggested wording when seeking the phenomenon is offered by Wing et al. (1974)—‘Have you had the feeling that things around you are unreal?’

Both derealization and depersonalization are unpleasant experiences. Interestingly, they are said to be similar in many ways to certain intoxicated states, which are experienced as pleasurable. The difference may be one of autonomy—perhaps if the altered state is intentionally produced by the individual, he or she interprets it as pleasurable.
Depersonalization and derealization may represent a ‘normal’ response to conditions of exhaustion and emotional shock. They may occur in a range of neurological, toxic and metabolic disorders. They may appear as an isolated psychiatric disorder under the designation depersonalization disorder, or as a feature of a wide range of psychiatric disorders including schizophrenia and mood, somatoform, anxiety and personality disorders.

**Delusional mood**

Delusional mood is present when a patient feels that familiar surroundings have changed in a puzzling way which may be difficult or impossible to describe, but which seems to be especially significant/threatening. The patient may simply say that he/she cannot understand what is going on. This symptom is often the prelude to the formation of a delusion.

Suggested wording when seeking the phenomenon is given by Wing *et al.* (1974)—‘Do you ever get the feeling that something odd is going on which you cannot explain?’.

This symptom is not described in detail in recent USA textbooks, although some describe ‘perplexity’, which is the same or a similar phenomenon.

Clinical experience is that this is a useful and not uncommon observation in early schizophrenia. Clinically, this can be a difficult to differentiate from depersonalization/derealization.

Delusional mood, especially if suspicion is developing, suggests early schizophrenia. The term is generally not applied outside schizophrenia.

**Heightened perception**

Heightened perception is present when sounds seem unnaturally clear, loud or intense, colors appear more brilliant or beautiful, details of the environment seem to stand out in a particularly interesting way, or any sensation is experienced exceptionally vividly. Once the experience has passed, the subject may find it difficult to remember or describe.

This experience is reported in organic conditions, including drug use and temporal lobe epilepsy, and in the psychoses, schizophrenia and mania.
Changed perception

Changed perception includes changes in shape or size or change in the appearance of people. The changes occur while the individual is watching.

Changed perceptions may be difficult to differentiate from derealization. However, in changed perception there is more change with time, and may be interesting, pleasant or frightening, while derealization is usually more stable and continuously, moderately unpleasant.

Changed perceptions may occur more commonly than is generally recognized. It is possible that when some psychotic individuals are difficult to engage in conversation, they are attending to continuously changing perception. As with heightened perception, patients find remembering or describing the phenomenon difficult, once it has ceased.

The diagnostic implications are as for heightened perceptions.

Hallucinations

Hallucinations are false sensory perceptions not associated with external stimuli. Hallucinations suggest psychosis only when there is impaired reality testing. A secondary delusional interpretation may develop from the hallucinatory experience.

Hallucinations may be experienced as being inside or outside the patient - existing in the external world.

The term pseudo-hallucination has been defined a number of ways; Wing et al. (1974) used the term for auditory hallucinations which are experienced occurring inside the head. They were thought to have less pathological significance than external hallucinations, but this has not been proven, and the term is not recommended.

Examiners are sometimes reluctant to ask patients about the existence of hallucinations, concerned this may damage the patient-clinician relationship. There should be no such concerns and the clinician should proceed in a confident and professional manner. Just as the patient who presents to the GP with a lump in the base of the neck accepts a per rectum examination, so a patient presenting to a mental health clinician accepts examination of unexpected areas.
If uncomfortable the clinician may say something like —‘You’ve had some stressful experiences. When people experience a lot of stress, they sometimes hear voices or other noises, or see things that they can’t explain. Have you ever had anything like that, at all?’.

Alternatively, we can borrow from the researchers doing community mental health surveys who ask, ‘Now, I would like to ask you some routine questions that we ask everyone. Do you ever seem to hear noises or voices when there is no one about?’

This is a routine part of the psychiatric assessment. The clinician may feel a little awkward in the early part of training, and while some hallucinating patients may deny hallucinations with feigned irritation at the question, many who have not spoken of this experience will be glad of the opportunity to do so.

The following is a list of terms used to describe hallucinations. They are not mutually exclusive or arranged in any particular order.

**Non-pathological hallucinations**
Hallucinations may occur in circumstances where there is no significant psychopathology. Hypnogogic hallucinations occur when individuals are passing from the awake to the sleeping state. They usually take the form of the name being called and may cause the patient to leave bed to investigate. Hypnopompic hallucinations are less common, they occur as the individual is passing from the sleeping to the waking state.

Hallucinations, often visual but also auditory, may accompany exhaustion and sleep deprivation, in which case they may be the result of dreaming extending into the waking state.

Bereaved people may have visual or auditory hallucinations of the deceased person. This is most common in the early stages of bereavement. Persistence of, or distress from, such phenomena calls for psychiatric examination.

**Verbal auditory hallucinations**
One or more voices may be heard. (Figures 65 & 66.) They may come from inside or outside the head. They may speak in unison, conduct a conversation between themselves, or address the patient. They are usually
heard as speaking but they may be heard as singing. Voices rarely speak in complete sentences - they usually say only a few disjointed words in a single utterance. While the content/meaning of the hallucinated words may have immediate meaning for the patient, more frequently they do not. Patients find great difficulty in repeating their auditory hallucinations verbatim. This is probably because hallucinations are generally reduced while the patient is in conversation and as many hallucinations make little sense, those heard earlier are difficult to remember.

It can be useful to sit quietly with the patient for a minute or two, and have him/her report verbatim, any hallucinations experienced. This process has mixed success, and even with this strategy, and with continuous hallucinations, it may be difficult to get an accurate account of the contents of the hallucination. “Look, it is important to know what the voices are really saying. Can we just sit together for a couple of minutes without talking. You listen for any voices, I’ll just sit here, and you tell me exactly what they say.”

Even where the hallucination is in the form of two voices ‘conversing’, the voices do not conduct a sensible, extended conversation as one might hear on a crossed telephone line. Also, patients are rarely able to have a conversation with their hallucinations. In the rare instances when a patient is able to have some form of conversation with voices, this usually has the form of a very brief ‘yes it is—no it isn’t’ interchange.

On close examination of claims that the patient has lengthy and meaningful conversations with hallucinations, two possibilities need to be considered, 1) this is not a case of psychosis but a dissociative state (see next section), and 2) this interchange involves an admixture of hallucinations an delusions, with the patient reporting their delusions as if they are hallucinations.

While few, if any, patients have actual conversations with their delusions, patients with chronic unpleasant hallucinations frequently curse and shout at their delusions. This is usually conducted in private, often in the patient’s bedroom, is a sign of distress and is worrying to staff.

Patient may ‘recognize’ the voice, having heard it before, either first hand or via the media. It may be that the patient has never heard the voice before, but still believes he/she ‘knows’ to whom it belongs, even though the voice has made no statement on the matter. Patients may ‘know’ that an
hallucinated voice is that of God, Jesus, the Devil or even a person about whom they had no former knowledge. Thus, such ‘knowing’ suggests the existence of a delusion. A rough, husky, unpleasant voice is often assumed to be the Devil or a dangerous individual such as “The Leader of a Bikie Gang”.

The voice or voices may be heard speaking about the patient and therefore referring to the patient in the third person. They may comment on his or her thoughts or actions, or two or more voices may discuss the patient (meaning they make some brief poorly integrated comments).

Figure 65. This note was placed under the office door of the current author by a high functioning middle-aged woman who did not want to be in hospital. She claimed not to experience any psychiatric problems, and clinically, there was little to suggest psychotic phenomena. However, this note indicates that she was hallucinating (by night, at least). Either she was insightless about the nature of her hallucinations or she was consciously denying them.
Figure 66. This letter to the current author stands in stark contrast to the previous case. This was a young man with schizophrenia who was greatly distressed by his symptoms and desperate for help. He has not been treated by the current author for some years, and was in the care of Dr. Jeff Self at the time this letter arrived. It contains a host of psychopathology. The suffering this man is experiencing is compelling. For current purposes, we will focus on hallucinatory phenomena. He states that the voices are “Real Bad” and this leads him to wish to be dead. He also writes about “having sex with the visions I can feel in my pillows”. It was never clear weather he had some form of tactile hallucination or whether he was reporting delusional phenomena.

Voices may instruct or command the patient to perform an act. Figure 67) Usually this is a trivial act such as making a cup of tea, but it may be to injure self or others. It is important for medico-legal and clinical reasons to know whether a patient is inclined to comply with command hallucinations.
or not, and what are the consequences when he/she does not. When a command is first given, the voice is usually spoken, perhaps with a hint of insistence. For some patients, when command hallucinations are ignored, there are no consequences, the command is not repeated, or may be repeated essentially in the same manner, but the patient is able to continue with their usual activities. In some cases, when commands are ignored they are repeated with much insistence, perhaps shouted and with terms of abuse attached.

Generally, patients do not like complying with command hallucinations, perhaps because to do so weakens their sense of autonomy. However, it is very distressing to be subjected to raised, abusive voices. A common response of patients is to comply with the trivial commands such as, ‘look out of the window’, and to resist the uncomfortable or dangerous ones such as, ‘jump out of the window’.

Command hallucinations are not a major factor in homicide compared to drunkenness or the important motive of jealousy. Almost without exception, patients find command hallucinations to injure themselves or others to be distressing. Should such hallucinations begin, most patients present for medical assistance. Individuals who do not have command hallucinations sometimes claim to have them. These are generally individuals who wish to threaten others or to avoid responsibility for an act they have performed.
Figure 67. In the text, the statement is made that while patients may give in to command hallucinations when they are of a trivial nature (i.e., “Make a cup of tea”), but generally resist destructive or dangerous commands. But there are no certainties in psychiatry, and here a man eventually complied with constant commands to chop his arm off.

Dissociative hallucinations which arise in non-psychotic conditions are dealt with in a following section. Verbal auditory hallucinations of the type described above are most often features schizophrenia or psychotic mood disorder (severe depression of mania) and less commonly, organic disorders or conditions.

**Non-verbal auditory hallucinations**

The patient hears noises other than words. Examples include clicking, buzzing, muttering or mumbling. Muttering or mumbling are included under this heading if actual words cannot be discerned. Music is a rare but well reported non-verbal hallucinatory experience.

One patient frequently heard ‘the clicking noise of a computer’. There was no evidence of a delusion and it was concluded that he was experiencing a non-verbal auditory hallucination.
These phenomena are common in delirium. Clinical experience is that they are common in early schizophrenia. As the disorder progresses there is often a reduction of non-verbal auditory hallucinations and an increase in verbal auditory hallucinations.

**Visual hallucinations**

Visual hallucinations may be unformed (such as flashes of light), partially formed (grey indistinct figures) or fully formed (every detail of an individual or a setting can be “seen”). (Figures 68 & 69.) Only generalizations can be made.

Flashes or light or something quickly moving in the corner of the room are often of organic origin - ocular or central nervous system disorders. However, in Charles Bonnet Syndrome, due to severe visual loss, the hallucinations may be detailed faces and cartoon characters, often of small dimensions (“Lilliput hallucinations”).

Fully formed visual hallucination (such as a coach and horses coming through the wall) may occur in schizophrenia, but are rare, and are reported in organic states including - upper brainstem or temporal cortex disorders. Thus, appropriate investigations should be considered.

Clinical experience is that a surprising number of patients with schizophrenia have visual hallucinations, often of figures (often grey partially formed, but sometimes fully formed figures) standing to one side of the field of view. Cutting (1990) states visual hallucination occur in 15% of people with schizophrenia - it seems we don’t ask about them as often as we should.

*Figure 68. In the clinical experience of the current author, people with schizophrenia quite often have visual hallucinations. These are often*
overlooked, perhaps because they are fleeting grey figures, and the auditory hallucinations are more constant and distressing. Here the patient mentions some kind of “back and grey” hallucination, but immediately passes on to, “The voices scream at me”.

Figure 69. The visual hallucinations of schizophrenia, nevertheless, can be fully detailed. This young man suffering schizophrenia describes seeing a missile “as plain as I see you”. He then goes on to mention seeing his deceased brother on a wharf – he gives fine detail, “his fishing line was jumping like mad”. An interesting debate might be had as to whether these were hallucinations, as these things were “seen” when the patient had his eyes closed. In the opinion of the current author, it makes no difference whether his eyes were open or closed. In sensory deprivation studies, hallucinations are not uncommon. Thus, when this patient closed his eyes he was probably more vulnerable to hallucinations.

Tactile and somatic hallucinations
Tactile hallucinations are the experience of being touched or of something (almost invariably said to be insects) crawling under the skin (formication). (Figure 70)

These hallucinations are usually features of organic psychoses, particularly drug induced or withdrawal states. The sensation of being touched is a rare but possible feature of schizophrenia.
Somatic hallucinations are the sensation of things happening inside the body, such as organs moving from one part of the body to another. These are rare. They are often accompanied by delusional explanations and occur in schizophrenia.

Figure 70. This piece comes from a letter by an unknown female who suffered psychosis (probably schizophrenia). Figure 66 mentions her visual and auditory hallucinations. Here, she is describing hallucinated pain, to the back of her head when I use enough soap and water, I can’t sit stand or lay in the room for too long – they give torture pain to make me jump. The area for baby making is paining and the area needs an operation. I don’t know the

Gustatory and olfactory hallucinations
Hallucinations of taste and smell occur in organic disorders, most commonly in epilepsy.

However, hallucinations of smell have been reported in schizophrenia and major depressive disorder. It can be difficult to distinguish these phenomena from the delusion. For example, it is unclear whether the old person living in a housing department block who is claiming to be exposed to toxic gas, or
the severely depressed individual who claims to be emitting a foul smell, is deluded or hallucinating.

**Mood-congruent and incongruent verbal hallucinations**

Verbal hallucinations may be a feature of depressed or elevated mood. In the case of elevated mood the hallucination may assert the patient has exceptional beauty, intelligence or other qualities—‘Go to the palace, they will make you king’ (Wing *et al.*, 1974). In the case of depressed mood the hallucinations may be derogatory or persecutory or may suggest or command suicide.

A complication is that in acute, severe mood disorder, on rare occasions, hallucinations may occur which bear no apparent relationship to mood, such as, a voice commenting, ‘She put on hat’. Such phenomena are recorded as auditory, verbal hallucinations, and as mood disorder is believed to be present it is worth adding the qualifier, ‘mood incongruent’.

Hallucinations are a feature of severe, but not moderate or mild mood disorder. Hallucinations suggesting suicide in a setting of mild mood disorder may be a dissociative phenomenon.

If a person presents with hallucinations for the first time in middle life or later, even though they appear to have some depression which could, perhaps, explain matters, organic disorders such as space-occupying lesions must be excluded.

**Dissociative hallucinations**

The term ‘dissociative’ hallucination is not descriptive of the hallucination, but suggests a general diagnostic area. These hallucinations occur in non-psychotic individuals. (Dissociative disorders refers to those psychological disorders characterized by a breakdown in the usual integration functions of consciousness, that is memory, perception of the self and sensory experience – depersonalization and derealization, mentioned above, may be included under this heading.)

This type of hallucination occur in two main circumstances. First, where the individual is a member of a subcultural group which sanctions such experiences – in these circumstances, the hallucination is usually in a religious or quasi-religious setting and the individual is in a dissociative state.
Second, dissociative hallucinations may occur where the individual does not belong to such a group. In these circumstance the hallucination occurs in a state of clear consciousness and motivating factors can be determined. Dissociative hallucinations may also occur in a setting of exhaustion and great danger.

Unlike other verbal auditory hallucinations, those experiencing dissociative hallucinations can hold a conversation (a series of questions and answers) with the voice of a person, ghost or god. There may be associated visual, olfactory or tactile hallucinations.

Where this experience is sanctioned by the subculture to which the individual belongs, dissociative hallucinations may be regarded as a non-pathological hallucination.

Dissociative hallucinations have been observed in suggestible histrionic personality type, conversion disorder and factitious disorder. Visual, olfactory or tactile hallucinations may suggests temporal lobe epilepsy, and appropriate investigations should be considered. Malingering is also to be considered.

**Alcoholic hallucinosis**
Various types of hallucinations may occur as a result of chronic alcohol abuse. This occurs in clear consciousness, and is distinct from the withdrawal state.

Most commonly, these take auditory form. They are often unpleasant – rough voices shouting abuse.

This condition occurs in individuals who have taken large amounts of alcohol over many years. Often there has been cessation or a reduction in consumption, but onset can occur during drinking bouts. Insight may be anywhere from absent to complete.

**Illusions**
Illusions are misperceptions of stimuli. They are usually transitory and the individual can be corrected when attention is drawn to the mistake.

Illusions may occur in clouded consciousness, such as in delirium tremens,
in which case objects such as creases in bed covers may be perceived as snakes, insects or other forms or animals.

Illusions may also occur in aroused individuals without organic disorders or significant psychopathology, as in the case of a person walking in a dangerous location who misperceives a bush as a crouched attacker. Illusions appear to be very rare in non-organic psychiatric disorders.
7. Intelligence

The assessment of intelligence in the psychiatric examination is optional. However, if an accurate assessment can be made, like personality, we have additional clues about the capacity of the individual to respond to situations – and the more resources (intellectual, in the current context) the patient can muster, the better.

A brief consideration of the topic is offered. It should be possible to form an opinion as to whether the intelligence (at least with respect to word use is below average, average, or above average.

Intelligence has proven so difficult to define, that many have resorted to the non-definition, ‘Intelligence is that which intelligence tests measure’ (Reber, 1985). A useful definition was offered by Fish (Hamilton, 1974), ‘the ability to think and act rationally and logically’.

Intelligence can be conceptualized, not as a single entity, but a composite of related entities. For example, Binet, the inventor of the intelligence test, believed that intelligent behavior depended on reasoning, imagination, insight, judgment and adaptability. Rifkin (1991) casts the net even more broadly, ‘Intellectual functioning includes memory, judgment, abstract thought, arithmetic calculations, and similar functions’.

While a definition has remained elusive, a range of intelligence tests has been developed. These are reliable and the capacities of individuals within a population fit normal distribution curves. Where there is a need for a formal assessment of intelligence, a trained person should conduct a standardized test.

Intelligence tests were used to stratify people in educational and vocational settings for much of the twentieth century. The concept of intelligence continues to have theoretical and practical implications, but recently the view has formed that intelligence has received unjustified importance, while ‘motivation’ and/or ‘will’ have received insufficient emphasis, in attempts to predict capacity of individuals to perform and achieve in particular fields. The corollary is that people with very high intelligence test scores may still have personalities which render them unable to cooperate with others and thereby unable to achieve as expected.
In our own educational and vocational lives most of us have encountered people we consider to be more, and others we consider to be less, intelligent than ourselves. In daily life we make this judgment based on the speed at which people grasp what we are saying, their ability to have ‘good ideas’ and their ability to read, spell, debate and achieve high marks on scholastic and practical tests.

In the psychiatric assessment, we may get some potentially useful pointers to intelligence from the personal history.

The personal history tells us something of scholastic achievement and vocational success, and may give some evidence of the ability to solve problems and generate ideas. We need to consider such information in the light of personality type, interests and the energy expended. For school performance to be a marker of intelligence, the individual needs to have been interested, engaged and provided with opportunities.

At interview, there is in vivo information, the speed of thinking, ease with abstract concepts and verbal ability, the use of metaphor and particularly the vocabulary, may provide indicators (remembering to take education and life experience into account). There should be a reasonable correlation between the indicators from the past and those of the present. Caution is necessary.

As a rough guide, the clinician may ask the patient to tell him/her (the clinician) something about which the patient has knowledge. It does not matter if the clinician has knowledge of the topic or not. All patients have areas of interest. If necessary, the patient may be asked to explain how to negotiate the social services bureaucracy or make a cake, or to outline the alternative ways of getting from his/her residence to the clinic and which is one is preferred. The issue is that intelligence has much to do will the ability to manipulate symbols, words are symbols, and except for very particular cases, the individual with average intelligence should be able to give a verbal clear account of such a topic.

This raises the thorny question of the effect of schizophrenia on intelligence. Many years ago most held that schizophrenia did not impact on intelligence. However, if intelligence has to do with the ability to manipulate symbols, formal thought which impairs the ability to manipulate words, must be accepted as an indication of decreased intellectual ability, at least with words. It is now accepted that schizophrenia is usually associated with some
cognitive deficits. The point to be made is that while people suffering schizophrenia may carry some so defined deficits, they retain many abilities.

Authorities have described retardation and dementia in terms of the failure to develop, or the loss of, intellectual functions (Reber, 1985). Recently, however, these diagnostic criteria have been extended. DSM-IV mental retardation includes, in addition to significantly sub-average general intellectual functioning, significant limitations in adaptive functions (which are skills such as communication, self-care and work), while DSM-IV dementia includes memory impairments and at least one other cognitive deficit (such as apraxia, aphasia and agnosia).

If the intellectual capacity is assessed at interview as being less than expected from the history, it is necessary to consider the possibility of a dementing disorder (such as Alzheimer’s disease), brain trauma or other intracranial pathology, or a general medical condition (such as hypothyroidism). In addition to schizophrenia, mentioned above, research has demonstrated reduced intelligence test performance among those suffering major depressive disorder.

If the intellectual capacity is assessed at interview as being greater than expected from the history, exclude the possibility that the patient is mildly hypomanic, taking stimulants or exercising engaging personality skill.
8. Cognition

In psychology, the term ‘cognition’ has been used to mean thinking and the mental processes of knowing and becoming aware. Thus, it has been used to cover some of the areas already considered in this book (such as thinking).

In neurology and psychiatry, cognition has been used to mean the same as ‘higher cortical functions’, which includes memory, orientation, concentration, language (examined by tests of speaking, reading and writing) recognition of stimuli (examined by tests for agnosia) and performance of learned skilled movements (examined by tests for apraxia). Some neurologists also include mood, personality and other mental state phenomena under the heading of higher cortical functions but psychiatrists do not endorse those inclusions.

Tests are used to detect the presence of certain disorders. Formerly, tests of cognition were used to identify the ‘organic’ disorders, but this term is becoming less precise and the examiner needs to be aware of some subtleties.

The label organic was coined at a time when investigative technologies were crude by current standards. It was assumed that if no organic basis could be demonstrated with the technology of the day, none existed. The conditions excluded by this process were termed ‘functional’.

Genetic and imaging studies are now demonstrating the organic basis of many of what were called the functional disorders.

Cognitive testing is valuable in detecting some conditions which may present as psychiatric disorders but which require the services of other branches of medicine, for example, patients may present with a picture suggestive of schizophrenia or depression which is secondary to space occupying lesions, toxic, endocrine or metabolic abnormalities. In such circumstances, cognitive testing is likely to reveal deficits and indicate the need for further investigation and medical or surgical treatment.

Cognitive testing may unequivocally indicate an organic condition is present. However, without exception, the exact nature of the disorder will require additional, special investigations. Often, consultation with another medical specialist will be necessary. Neuropsychological testing
can confirm and extend knowledge of the cognitive deficits; it does no replace the psychiatric examination.

The psychiatric assessment can involve extensive cognitive testing. It may not be appropriate or necessary to complete the full gamut at the first interview. Cognitive testing involves a lot of questions. These may be construed as a threatening interrogation or an irritating, irrelevant waste of time. For example, in the case of a woman who presents with distress arising from domestic violence and who expects to be made a ‘scapegoat’, it is better for the male examiner to note that the delivery of the history and mental state examination suggest the patient is orientated and able to remember, concentrate and use language effectively, and for formal cognitive testing to be delayed (probably indefinitely).

In general, if memory, orientation, concentration and language are intact, recognition and performance of learned skilled movements will also be intact. Thus, the former may be regarded as a screening test for the latter. This system is not without risk as exceptions may occur and caution is necessary. However, it is economical of clinical time and is recommended.

The clinician should be capable of exploring the cognitive functions using a variety of tests and techniques. Frequently a patient is encountered who has already been assessed by others using the standard methods - this introduces the complication of learning effect and it may be necessary to go beyond the standard methods. Also, frequently, patient responses are equivocal, again raising the need for additional skills.

The Mini-Mental State Examination (MMSE) (Folstein et al., 1975) deserves special mention. This is a standardized, internationally recognized screening test of cognitive functions which is used by a wide range of medical and paramedical professionals. It examines orientation in some detail and then briefly touches on registration and recall, attention and concentration, language and constructional abilities. Brevity is its strength (allowing a wide breadth examination) and its weakness (not allowing in depth examination). Because of the learning effect it should not be repeatedly administered. Well administered, the MMSE gives an invaluable quantification of the cognitive functions. If this screening test indicates reason for concern, more extensive testing should be conducted. The ability
to administer the MMSE should not be regarded as sufficient cognitive testing skill for the clinician performing psychiatric assessments.

A ‘catastrophic reaction’ may occur when the cognitively impaired individual becomes aware of his/her deficits. This usually takes the form of sudden emotional distress, often with an angry outburst or crying. It may be triggered by a challenge thrown up by a normal life task, such as failure in operating a complicated television set, which the patient has formerly been able to operate. It may also occur clinically when testing is pursued relentlessly, in spite of the patient’s demonstrated failure. This may be unavoidable in some circumstances.

In ordinary clinical practice, however, it is sufficient to ask questions which the patient can answer, move on to more difficult material, and if the patient fails and gives any indication of annoyance or frustration, finish by returning to the level at which he or she is competent. This may be illustrated with an example from the testing of orientation in time. If, from the history and introductory conversation, it is assessed that the patient has some impairment, a reasonable question would be to ask the patient to name the month. If successfully answered, it is appropriate to ask for the day of the week. If the patient fails to answer this correctly, it is better not to go directly on to the date, but to then ask for the year. If the year is not successfully given, there are clearly problems with orientation in time. If the year is successfully answered, to confirm the earlier impression given by the failure with the day, it is now possible (after the recent success with the year) to go on to ask the day of the week again and the date.

**Memory**

Memory is the ability to revive past thoughts and sensory experiences. It includes three basic mental processes: registration (the ability to perceive, recognize and establish information in the central nervous system), retention (the ability to retain registered information) and recall (the ability to retrieve stored information at will).

Psychological and biological data support the existence of a short term memory store (STS) and a long-term memory store (LTS). The STS has limited capacity and holds information for brief periods. To learn information for longer periods, it must be transferred to the LTS, a system of essentially unlimited capacity, which can hold information
Short-term memory (which for this discussion includes what has been called immediate memory by some) has been defined as the reproduction, recognition or recall of perceived material within a period of up to 30 seconds after presentation.

For testing purposes, long-term memory can be split into two extremes: recent memory (events occurring during the past few hours or days); and remote (events occurring in past years).

There is discussion about whether short-term memory meets all the definitional criteria of memory - that is, in short-term tests the information is held in a manner which does not require the same process of recall as is required for long-term memory. This matter cannot be resolved here, but the relationship between STS and LTS remains important.

**Tests of memory**

During the psychiatric interview some information about memory will be available from the history and conversation of the patient. Memory tests are required for quantitative assessment. Three levels of memory are specifically tested.

The clinician is conducting a professional examination and should proceed confidently. There should be concern for the patient’s comfort and dignity, but these will not be offended by an examiner who proceeds in a courteous, professional manner.

Cognitive testing is better commenced after at least some more general conversation. The examiner should then say something like, ‘Thank you Mr X, I understand what you have been saying. I now need to test your memory’. Then proceed directly to, ‘I am going to give you three things which I want you to remember…’ or similar words, depending on the test the examiner wishes to give.

In practice, it is only a narrow band of mildly to moderately impaired individuals who find testing threatening and may object. The completely intact individual will understand the importance of the procedure and will not object if treated respectfully. Nor will the severely impaired individual
who does not have insight into his or her poor test performance. When a patient who has been treated respectfully refuses memory, or other cognitive testing, there is probably cognitive impairment.

**History and conversation**
Memory can be influenced by many factors. In addition to organic lesions, intoxication (the only indicator of which may be the smell of an intoxicant), inability to attend, emotional arousal, psychomotor retardation, thought disorder and motivation must be considered.

Patients should be able to give a clear account of their life from the remote to the recent past. Quite often, the examiner will have no information against which to test the patient’s account, but useful indicators can be gained, nevertheless.

The presenting complaint is important. Where memory function is of primary concern the patient may not be able to remember why she or he is present, or may offer poor memory as the reason for the presentation. Full details of any claimed memory loss and the associated affect displayed at that time are recorded. It may be necessary to distinguish loss of memory from loss of insight. Irrespective of insight, the patient should be able to give an account of the events of the days before and the day of the interview. For example, the patient should be able to give details of who arranged the interview, how the patient was conveyed from home or work, at what time did the patient depart home or work, time of arrival and how long the journey took. Thus, the history gives the opportunity for a real-life test of the recent memory.

Assessment of the remote memory may prove difficult. The examiner usually has no information against which to check the patient’s account, and with some conditions (Alzheimer’s disease for example) the patient may hide and deny memory difficulties. The internal consistency of the history, especially in the relating of the personal history, may give important indications. This is the matching of dates, ages and events when the patient is describing different aspects of past life. The names and current ages of children and siblings are often useful. Inconsistencies indicate difficulties with remote memory.
Short-term (immediate) memory
A common test is to ask the patient to repeat sequences of digits. Three digits are given first and the patient is asked to repeat them. If this is performed successfully, four digits are given and so on, until the patient makes mistakes. A normal person of average intelligence is usually able to repeat seven digits correctly. When mistakes begin, it is usual for the patient to be able to recall the first and the last digits. It is believed that the last are recalled because they remain in the STS, the first are recalled because they have been transferred into the LTS, and the middle digits are lost as they have been displaced from the STS by the last digits.

Another test is the ability to reverse digits. This is not recommended. There is no agreement on how many digits the normal individual is able to reverse, and it appears to depend more strongly than the forward digit test on the ability to concentrate.

Recent memory
Recent memory is the most recently formed long-term memory. The ability to create new long-term memories is essential for independent living.

An essential feature of tests is that after the test material is presented, other material is delivered so that the test material is displaced from the STS.

A common method is to test the patient’s ability to learn three or four unrelated words. Patients are advised that their memory should be tested, that they will be given some words to remember, and that later in the interview they will be asked to recall them. The words are said at the rate of about one word per second. The patient is asked to repeat them, to ensure that they have been registered properly. The interview then proceeds and the patient is distracted and must attend to other material. Some minutes later the patient is asked to recall the test words.

Some authors require patients to remember three, and others four words. In either case, the patient is expected to recall all words accurately. Other tests include giving the patient a name and address or a short story to remember.
Remote memory test
The clinician does not have extensive knowledge of the patient’s early life against which to compare answers to questions (i.e., “What was your first school?”).

Individual differences in intelligence and education make it difficult to know what questions on past world events it would be reasonable to ask. The date of birth is often available to the examiner. However, this is very highly learned material, it is among the last pieces of information to be lost and its retention does not exclude moderately advanced memory problems.

The names and dates of birth of the patient’s children may also be available, as might the mother’s maiden name, and these form reasonable questions. It is reasonable to ask the capital cities of Australia, England and USA, and the dates of the first and second world wars—taking care to take account of intelligence and education.

Another method is to ask the patient to name ten colors, ten animals, ten fruit and ten capital cities. The production of less than twenty items, in total, strongly suggests memory problems.

Loss of memory/amnesia—clinical pictures

Loss of memory of organic origin

Dementia
Dementia is a global deterioration in intellectual functioning, a central feature of which is loss of memory. It is usually of gradual onset, although it may follow sudden events such as head injury. In general, the more recently stored memories are lost first, and those stored long ago are lost last. However, this is a relative matter and the remote memory of patients with dementia is usually significantly impaired compared with that of non-demented persons of comparable age. There is also impairment in abstract thinking, judgment, other cortical functions and personality change.

In the psychiatric assessment, when dementia is considered, attention is paid to short-term and recent memory. Of these, special attention is paid to the assessment of recent memory, partly because this is technically easy, and partly because recent memory is evidence of the ability to form new long-term memories.
A wide range of diseases may result in dementia. The most common are the parenchymatous diseases of the brain, of which the most common is Alzheimer’s disease. Others include Pick’s disease and Huntington’s disease. Vascular disease is a common cause. Multiple sclerosis and Parkinson’s disease may also cause dementia, but in such conditions, any dementia may be overshadowed by the physical signs of the disease.

Infection is becoming an important cause because of HIV-related disorders; other infections include Creutzfeldt-Jacob disease, viral encephalitis, cryptococcal meningitis, neurosyphilis, cerebral tuberculosis and fungal meningitis. Metabolic diseases, deficiency states and drugs also need to be considered.

Amnestic disorder (Korsakoff’s psychosis/syndrome)
The amnestic disorder is characterized by memory loss (particularly recent and of short-term memory). The important test is for recent memory—the formation of new long-term memory is the major problem. In contrast to dementia, the other cognitive functions and the personality are relatively unimpaired. Lack of motivation and flat affect are common. Patients frequently lack insight or deny difficulties. Confabulation may occur in the early stages, but usually disappears over time.

Confabulation is a curious phenomenon. It occurs when a patient has no memory for a certain period or event and when asked about it, gives an account which (of course) is completely inaccurate. Quite often, the account is unbelievable—such as, “What did I do yesterday? I flew a plane to the North Pole to check on the penguins”. Confabulation does not always involve unbelievable events and the accounts become more mundane as the amnestic disorder abates.

One definition states that confabulation involves ‘untrue experiences which the patient believes’. As patients believe these accounts they may ‘recall’ them with conviction and arousal.

The most common cause of amnestic disorder is thiamine deficiency secondary to alcohol use—in which case onset may be gradual, or apparently rapidly if it arises out of an acute Wernicke’s encephalopathy. Head injury, cerebral neoplasm, carbon monoxide poisoning and herpes simplex encephalitis are other causes.
March 2019

**Loss of memory of psychological origin**

**Psychogenic amnesia**

In psychogenic amnesia the predominant disturbance is an episode of inability to recall important personal information, which is not due to an organic mental disorder. Onset is sudden (except in the case of multiple personality disorder) and is usually associated with some precipitating emotional trauma. The psychogenic amnesias are reversible.

Although discrete types are listed, the usual picture is a mixture of two or more. The clinical presentation is compounded by the combination of unconscious forgetting and active avoidance of painful material. Malingering must be excluded.

The memory and the understanding of the patient of his/her condition will vary with time and circumstances.

Several types have been described:

- **Localized**—loss of memory for a short period of time
- **Generalized**—loss of memory for the whole of life
- **Selective**—failure to recall some but not all events during a short period of time
- **Continuous**—forgetting each successive event as it occurs.

**Psychogenic fugue**

A rare condition in which there is unexpected travel away from the customary domicile, with inability to recall the past.

**Multiple personality disorder**

In this disorder there exists within the person, two or more distinct personalities, each with their own patterns of perceiving relating to and thinking about the environment. One is often unaware of another and there may be no memory of the experience of one by another.

**Confabulation**

Confabulation has been defined as the unconscious filling of gaps in memory by imaginary or untrue experiences that the patient believes, but which has no basis in fact. It has been discussed under Amnestic disorder, and the reader is encouraged to consult that entry.
Depersonalization and derealization
Depersonalization is described as an alteration in the perception or experience of the self, and derealization is an alteration in the perception of one’s surroundings such that the reality of the external world is lost. These are dealt with in more detail under the heading of Perception.

Déjà vu and Jamais vu
Déjà vu is the false feeling of visual recognition in which a new situation is incorrectly regarded as a repetition of a previous memory. Jamais vu is the false feeling of unfamiliarity with a real situation one has experienced.

Déjà vu and Jamais vu are not important mental state phenomena. Both are experienced from time to time by individuals without significant psychopathology. It is possible that they are experienced more commonly by patients with significant psychopathology.

Reduplicative phenomena
Patients may have the experience that they have been duplicated and are in two different places at the same time, or that the place they are in or other people around them have been duplicated. These conditions are difficult to distinguish from other memory and perceptual, non-psychotic and psychotic disorders.

The experience of being in two places at the same time is similar to out of body experiences described by individuals without serious psychopathology. The experience that places have been duplicated has been observed following head injury. Capgra’s syndrome is the experience that a person quite close to the patient has been replaced by a double—this is a psychotic disorder, most often seen in schizophrenia.

Orientation
Orientation in the psychiatric examination means the state of awareness of one’s relationships and surroundings in terms of time, place and person.

Insofar as disorientated people are frequently given orienting information by the environment (i.e., signs, clocks, newspapers) and other individuals, but remain disorientated, the condition has a memory component. Other important influences may be apraxia, agnosia and attentional difficulties.
Orientation in time
Orientation in time is the first dimension to be lost and the last to return. As with memory, it is the recent, more precise information which is lost first. The patient is asked to give the year, month, day of the week and date.

It is argued that patients in hospital have no need to be aware of, and few cues as to, the day of the week and the date. This needs to be taken into account, but the cognitively normal patient will, on most occasions, give the correct day of the week. This is particularly important if the patient is assessed at a clinic or ward round which is held on a weekday (busy days when the senior staff attend) and in answer, gives a weekend day (less busy days when the senior staff do not attend).

Even more recent and precise information is the time of day, and the same objections about the lack of cues do not apply, as patients take meals, and have access to clocks and the usual indicators.

Clinical experience is that disorientated patients often give answers that are inconsistent with the evidence. They may contend it is evening even when the sun is blazing through the window, and may not change their claim when this inconsistency is pointed out. When trying to help the patient with the time of day the examiner may ask which meals of the day the patient has eaten. This is a test of memory, but can be used this way in testing orientation - the disorientated patient may claim that it is late afternoon, but that breakfast has not yet been taken.

Orientation in place
The Mini-Mental State Exam (Folstein et al., 1975) contains some good questions on this topic. At the ‘big picture’ end, the questions are about identifying the city and the county. This may not be analogous to asking about the month and the year. It may be that the patient loses the month before the year, but the state before the city. If a patient knows the city, then knowing the county is a matter of memory, rather than orientation. This is a further example of the indistinct boundary between orientation and memory.

A reasonable place to start testing orientation in place/building. Going on from other questions the examiner can say something like, ‘Well, thank you for answering those questions, Mrs Z. Now, I would like to ask you, can you please tell me, the name of the city building we are now in?’ It is important to get the precise name of the building. If it is a small hospital or nursing
home some distance from the patient’s usual domicile, a generalization such as ‘Hospital’ is acceptable. In the case of a well known facility close to the usual domicile, an almost exact name can be expected. In either circumstance, it is reasonable to ask the patient, ‘Yes, you are quite right, this is a hospital. But, can you please tell me which hospital it is?’.

If the patient is not able to give the name of the building, or gives an incorrect answer it is important to determine whether they can benefit from present cues. If a patient answers that he/she in his/her own home, it is reasonable to say something like, ‘I’m not sure this is your house. Is this your furniture? There seem to be other people walking around. Are you sure this is your home?’.

For patients who say they do not know where they are, the same sort of questions as in the above paragraph should be asked. It is reasonable to say something like, ‘Mr Y, we are in a public building. It could be a police station, a railway station, a fire station or a hospital. Have a look around. Look at the beds and the people walking around. In which one of those places do you think we are?’.

If patients answer incorrectly or are unable to give an answer to the name of the building, it is recommended they be taken to a window and asked to identify any local landmarks or prominent buildings. They should then be asked if this helps them in working out their present location - ‘Yes, Ms D, that is the Police Station across the road, and that is Liverpool Street. So, where are we then? What is in Liverpool Street, across the road from the Police Station?’.

Patients who give the name of the facility/hospital correctly, should then be asked to name the ward. If this cannot be given, the patient should be asked what type of cases are treated on this ward. If there are difficulties with this question, ask the patient to look around, ‘You are right about this being a ward in the City Hospital. But, what type of ward is this? Have a look around - the patients don’t seem to be in bed here. Do you think this is a surgical ward where people are recovering from operations?’.

The answer to the question of what sort of ward the patient is in can be useful. Patients who do not know the nature of the ward to which they have
been admitted are suffering from cognitive loss, which usually means an ‘organic’ disorder.

Patients who lack insight into their disorder but know the nature of the ward to which they have been admitted may be suffering a functional disorder. This is a generalization and there are exceptions. (Not all organic conditions have associated cognitive loss and functional disorders can be so severe that the patient is unable to communicate an awareness of surroundings.)

**Orientation in person**

Orientation in person requires various abilities, including the capacity to recognize faces (prosopagnosia being agnosia for faces) and memory. Thus, failure in orientation in person is a general rather than specific indicator of pathology.

Under this heading the examiner is to assess patients’ ability to identify not only themselves, but others. A common mistake is to report only the patient’s ability to give his or her own name. This is over-learned information and one of the last pieces to be lost. Perhaps of more importance is the patient’s ability to identify others. In the history there may be accounts of the patient not recognizing his/her children (this is a common source of distress to the children of patients suffering from progressive dementing disorders).

To commence testing for orientation in person, ask the patient to identify him/herself. Then ask the patient to identify the examiner, who will have introduced himself/herself earlier (and may have been known from previous meetings) and to indicate the type of work the examiner performs. Patients may say that they have a poor head for names (poor memory). From the point of view of orientation in person, it is better to move to the examiners function, by saying something like, ‘Yes, I’m not much good on names myself. But we’ve been talking about different things for a few minutes, Mr X…Can you tell me what sort of work I do?’ This is a good, broad test of cognitive function.

When testing orientation in person it is often better to ask the patient to identify by name and occupation, any available nursing staff who have had dealing with the patient, or to ask what any patients who pass by might be doing there.
The identity of any available relatives should be tested. If any of the patient’s children are available, they should be brought into the office and the patient should be asked to give the offspring’s date of birth and position in the sib-ship. The patient may be asked to give the name of the spouse and the names of any children born to available relatives.

**Attention (concentration)**
Technically, a distinction can be made between attention and concentration, but this is subtle. ‘Concentration’ still appears as a heading in some mental state formats, but ‘attention’ is recommended.

Attention is a multifaceted mental function, but in general, it denotes the capacity of an individual to focus the mind on some aspect of the environment or the contents of the mind itself (Cutting, 1992).

Attention is understood in the context of consciousness. Consciousness is a state of awareness of the self and the environment. The experience of consciousness depends on attention, which has three components: intensity, selectivity and voluntary effort.

Intensity (tonic or basal arousal or activation) is a non-specific process, which prepares the organism to meet the challenges of the environment and depends on action of the reticular formation. Selectivity of attention brings certain aspects of the environment into focus. This may be both voluntary and involuntary. With voluntary selectivity, extraneous signals are suppressed, while with involuntary selectivity there is the startle or orienting response (when the organism meets a new stimulus) and the habituation response (the gradual diminution of responses to continued or repeated stimuli). Voluntary effort is also required, and this depends in large part, on fully functional frontal lobes (Horvath, 1991).

**Disorders of attention**
The disorder of attention can be classified as subtle or severe. This is a crude Classification - there is no standard quantification and categorization depends on experience and opinion.

**Subtle disorder of attention**
Many of the severe forms of the so-called ‘functional’ psychiatric disorders (depressive psychosis, mania, anxiety and schizophrenia) and some of the
less severe organic disorders (delirium, dementia and brain injury) show subtle disorders of attention.

**Severe disorder of attention**
Some of the most severe cases of the so-called ‘functional’ psychiatric disorders (especially the most severe cases of schizophrenia and depressive psychosis) and most cases of delirium, dementia and brain damage show severe disorder of attention.

**Tests of attention**
Rather than enter into a complicated explanation about the nature of attention and the need for yet another type of examination, it is better for the examine to continue on from the testing of memory without emphasizing the change in focus.

The arousal caused by the examination process may make the task of attending very difficult.

**History and conversation**
Patients often lack insight into their difficulties with attention. However, insight regarding such difficulties may be present and the experience is unpleasant. Patients are more often familiar with the word concentration, thus in talking with them, this word is recommended.

Poor attention may not be primarily due to disruption of attention mechanisms. Other symptoms which make it difficult for the patient to attend, include as distraction by hallucinations and delusions and loss of interest. These need to be considered. Nevertheless, poor attention, if present, is still reported – but with a note about possible confounding factors.

Where the attention difficulties are not complained of but is suspected (by the clinician), it is reasonable to ask, “Mr. X, how is your concentration at the moment. Are you able to watch a show on TV and concentrate all the way through?” It may be more appropriate to ask particular patients whether they are able to concentrate on reading the newspaper. “Can you follow articles straight through, or do you have to read some paragraphs a few times?”

Where there are marked difficulties with attention, this will be obvious
during conversation. The patient will be unable to give a clear account of the reasons for presentation, will wander off the topic and will be distracted by the external environment and thoughts. It may be difficult, initially, to distinguish the person with delirium from the person with schizophrenia and severe formal thought disorder.

**Subtraction**
A common test is to ask the patient to take seven from one hundred and keep subtracting seven from the answer. It is frequently stated that the time taken and the number of mistakes should be recorded, but there is no accepted limit on the number of mistakes and the amount of time allowed. As with other cognitive tasks, a written record of the performance should be made so that re-testing can provide a marker of progress.

Even without standardized rules, it is often possible to identify impaired ability. The patient may not even perform the first subtraction correctly. An impaired patient may subtract a number of times (with mistakes), then make some additions (of various amounts) and finally get lost and stop.

If the patient is of lower intelligence or has had little numerical education, it may be appropriate to give an easier task. Subtracting three from twenty down to zero is easier. Subtracting two from twenty is easier again. Finally, for certain individuals, a reasonable numerical task is to count back from twenty to zero, one at a time. It is important only that the task taxes the patient so that his/her ability to sustain attention can be evaluated.

**Reversing components**
Reversing a series of numbers is a commonly suggested test. The examiner reads the numbers to the patient slowly and clearly. Again, it is not clear what constitutes normal and pathological performances, and clinical judgments must be made.

Reversing the letters of a word is stated to be an alternative to the 100 minus 7 test in the MMSE (Folstein et al., 1975) for the non-numerically trained person. This is quite a reasonable test, but it is just as well to ask patients to perform the reversal of a series of numbers - in the reversing numbers test the patient is not asked to perform any numerical task, but simply rearrange the symbols. Perhaps it could be claimed that to the numerically naive individual, being faced with a task involving numbers may be especially arousing, which might unnecessarily detract
from the performance.

When testing the ability to spell a word backwards, the patient should be comfortable with the forward arrangement of the letters, so the examiner should first say the word, then spell it forward slowly—then, finally, ask the patient to reverse the letters.

Reversing the months of the year is another recommended test. The problems with this test are that some people learn this task as a rote skill at school and others do not—for those without this learning, reversing the months of the year is quite a difficult exercise. An easier and appropriate task might be is to reverse the days of the week. The problem may be that this task is too easy. A test recommended by the current author is to ask the patient to reverse the days of the week for a fortnight – here the test of concentration is not so much the days of the week (although these are surprisingly often incorrect) but whether the patient continues into the second week.

Other cognitive (higher cortical) functions

The following cognitive tests are appropriate in certain neuropsychiatric disorders.

Language
This is an area where psychiatric and neurological classifications duplicate and overlap to some extent. This in part arises out of the different history of the disciplines and the unsatisfactory division of disorders into functional and organic categories.

An outline of some neurological disorders and terminology gives a context for the tests of language.

Aphasia
Aphasia is defined as the loss or impairment of language caused by brain damage (Benson, 1992). Two important points immediately emerge. First, as aphasia includes ‘impairment’ it is not necessary to introduce the additional term dysphasia (meaning dysfunction of speech). Second, there is specific mention that this problem is the result of ‘brain damage’ - purposefully and traditionally, excluding the application of this term from use in the so-called ‘functional’ disorders.
Paraphasia is the production of unintentional syllables, words, or phrases during speech. However, paraphasia has also been defined as ‘partial aphasia’ (Dorland, 1914) thereby indicating a link with brain damage. Were it not for this link with brain damage, paraphasia could be used interchangeably with formal thought disorder, for that symptom undeniably manifests ‘unintentional syllables, words or phrases’. When utterances are transcribed onto paper, it is impossible to determine with certainty which are better classified as the examples of ‘disorders of the form of thought’ and which are better classified as ‘a paraphasia’. That is not to claim that these are the same phenomena with the same pathophysiology.

Types of aphasia

Broca’s aphasia
In Broca’s aphasia the output is sparse, effortful, dysarthric, dysprosodic, short-phrased and agrammatical. There is disturbance in repetition and naming. Comprehension is relatively preserved. The patient may be aware of, and frustrated by, the expressive difficulties. This form is associated with dominant frontal opercular involvement.

Wernicke’s aphasia
In Wernicke’s aphasia there is fluent verbal output with normal word count and phrase length and no effort or articulatory problems, but there is difficulty in word finding and frequent paraphasic substitution. There is striking disturbance of comprehension. Difficulty with repeating reflects the disturbance of comprehension. The patient may be unaware of these difficulties and frustrated by the failure of others to respond appropriately. This form is associated with lesions of the posterior superior temporal lobe of the dominant hemisphere.

Conduction aphasia
In conduction aphasia there is fluent verbal output and good ability to comprehend, but severe disturbance in repetition. Paraphasias are common. Writing is often abnormal. This form is frequently associated with lesions of the supramarginal gyrus.

Transcortical aphasia
The striking feature of transcortical aphasia is the preservation of repeating
in the presence of marked language impairment. There are sensory and motor forms of transcortical aphasia.

**Nominal aphasia**
In nominal aphasia the primary problem is with word finding. There are frequent pauses and a stumbling output. There may be reading and writing disturbance. Output may be fluent and comprehension good, but naming is significantly disturbed. This form commonly follows recovery from other types of aphasia.

**Dysarthria**
Dysarthria (speech disorder due to organic disorders of the speech organs or nervous system) is a mechanical problem. Aphasia is a disorder of the symbolic functions of speech. Dysarthria may coexist with aphasia, as in Broca’s aphasia, or alone, as in cerebellar damage or bulbar palsy. While dysarthria is not a form of aphasia, it is convenient to include it here.

**Testing aphasia**
Observations are made during introductory conversation and while the history is being given. If the possibility of an ‘organic’ disorder is raised, additional testing is appropriate. The following abilities may be tested.

**Mechanics of speech**
This is, in fact, a test of dysarthria, but the mechanism of speech must be checked before the examination of the ability to communicate meaning by speech. The patient is asked to produce the vowel ‘ah’ steadily for as long as possible, and to produce a string of consonants (‘puh-puh-puh…’). Tongue twisters may also be used. Any tongue twister will do, traditionally popular have been, ‘West Register Street’, and ‘Around the rugged rocks, the ragged rascals ran’.

**Comprehension**
When it is necessary to test comprehension, the examiner must be alert to the possibility that apraxia and agnosia may be complicating the case. The patient may be asked: ‘Close your eyes’, or given some information such as a short story and asked to repeat it in his or her own words.

Comprehension should be tested both verbally and in writing (mentioned again later).
Repetition
The patient is asked to repeat verbatim, short passages of normal speech.

Naming
The patient is asked to name objects on the examiner’s person or around the room, such as, watch, tie, pencil, pillow and chair.

Writing ability
The patient is given writing equipment and asked to write a sentence. The patient’s educational background must be taken into account. The patient may be embarrassed and claim not to be able to think of anything to write. In such circumstances the examiner can dictate a short sentence, or the patient can be asked to write his or her name and address.

Reading ability
The patient is asked to read a passage aloud. Note is taken not only of how well this task is performed, but also whether what was read was comprehended and could be acted upon—such as the MMSE written instruction ‘Close your eyes’.

Diagnostic implications of aphasia
Severe aphasia with many paraphasias may be difficult to distinguish from Schizophrenia with severe disorder of the form of thought.

Aphasia is, by definition, a symptom of organic disorder - the most common being vascular and space-occupying lesions. When aphasia is being considered, a full neurological examination and imaging is mandatory.

Other language disorders
The following conditions are rare. They are included here for the sake of completeness and because of they indicate the frailty of the ‘functional-organic’ distinction.

Amelodia (affective motor aprosodia)
Amelodia is characterized by flat, monotonous verbal output, decreased facial movement, and reduced use of gesture (Benson, 1992). It can be tested by having the patient hum a familiar tune such as Happy Birthday, a nursery rhyme, or the national anthem.

It has been described as the result of pathology (usually cerebrovascular
accident) of the right frontal opercular area. However, depressive disorder and schizophrenia have similar symptoms and need to be considered.

**Verbal dysdecorum**
In contrast to the above examples, in verbal dysdecorum, language is not defective. There is loss of control of the contents of verbal output. The patient speaks too freely, discusses improper topics, argues and is ‘otherwise disagreeable’ (Benson, 1992). There may or may not be physical impropriety.

It has been described as the result of right frontal pathology. However, hypomania has similar symptoms and would need to be considered.

**Skilled movement and apraxia**
Apraxia is a disorder of learned skilled movements not attributable to elementary sensory or motor dysfunction. Four types have been traditionally described and will be mentioned briefly.

**Ideomotor apraxia**
Ideomotor apraxia is the inability to perform single actions. Such actions may be performed automatically, as with shaking hands on meeting friends. Thus, the inability may only be revealed if the patient is asked to demonstrate actions or to imitate the actions of the examiner. In the testing situation the patient may be asked to wave good-bye, blow a kiss or demonstrate how to use a toothbrush.

It may result from disconnection of the language area from the motor area, such that the request is comprehended but the message cannot be relayed to the appropriate area (Rosen, 1991).

**Ideational apraxia**
Ideational apraxia is the inability to perform a series of actions because of difficulty with sequencing the movements. The ‘idea’ of the actions is disrupted. In the testing situation the patient may be given the materials and be asked to fold a piece of paper, place it in an envelope, and then seal, address and stamp the envelope.

Most commonly this is a feature of confusional states or severe dementia, but focal callosal, left parietal and biparietal lesions may produce the sign (Ovsiew, 1992).
**Constructional apraxia**

Constructional apraxia denotes difficulties with ‘constructions’ (Mueller and Fields, 1984). Recent authors avoid the term apraxia in this context, preferring ‘constructional problems’ (Howieson and Lezak, 1992).

In the testing situation the patient may be asked to copy a drawing on paper or an arrangement of blocks or sticks.

Posterior lesions of left or right hemisphere or diffuse brain damage may result in these problems.

A problem with existing constructional apraxia tests is that they are not easily conducted, special equipment is needed. However, Moo et al (2003) has produced an “Interlocking Finger Test”, which can be conducted with minimal disruption to the flow of the interview. (Figures 71-74.)
Dressing apraxia
Dressing apraxia is difficulty in orienting articles of clothing with reference to the body. In the testing situation the patient is requested to put on articles of clothing such as a dressing gown or coat. The task can be made more difficult by first turning one sleeve of the garment inside out.

It is seen in dementia and right parietal lobe lesions, but is probably most common in confusional/delirious states.

Recognition of stimuli and agnosia
Agnosia is the inability to recognize stimuli, which is not attributable to impaired sensory processing, intellectual functioning, or naming ability (Rosen, 1991). It is most frequently specific to one modality.

Visual object agnosia
Visual object agnosia is the inability to recognize a familiar object by sight. In the test situation the patient is asked to identify objects which make no noise, such as a pen, a coin and a bandage.
It is reported in left occipital lobe lesions.

**Agnosia for faces (prosopagnosia)**

Prospagnosia is the inability to recognize faces of people well known or newly introduced to the patient.

It is most frequently the result of bilateral lesions of the mesial occipitotemporal region.

**Tactile agnosia**

Tactile agnosia is the inability to recognize objects by touch. In the test situation the patient is asked to identify by touch, a key, a coin, a pen or a bandage.

It may result from unilateral or bilateral lesions.

**Auditory agnosia**

Auditory agnosia is the inability to recognize non-verbal acoustic stimuli. In the test situation the patient may be asked to identify the sound of keys jangling, water running from a tap, or the clapping of hands.

It is associated with unilateral or bilateral temporal lobe lesions.

**Spatial agnosia**

Spatial agnosias include disorders of spatial perception and loss of topographical memory (Rosen, 1991). It is probably wise to combine spatial agnosia and constructional apraxia under the heading ‘visuospatial function’ (Ovsiiew, 1992). In testing, patients may be asked to locate significant geographical locations on an unmarked map and orient themselves in space using the available cues.

It is associated with bilateral cortical lesions.

**Corporal agnosia and anosognosia**

Corporal agnosia is the inability to recognise parts of the body (one form of which is finger agnosia) or that a part of the body which is affected by disease (anosognosia).

Agnosia limited to finger identification may be found in left parietal lesions (in right-handed people), while anosognosia is associated with right parietal lesions.
9. Rapport

There is no widely accepted definition of rapport. In general, the term refers to a comfortable, unconstrained, mutually accepting interaction between two people. The essential feature of rapport, however, is the patient revealing his/her personal thoughts and feelings to the assessor/therapist. Good rapport makes this assessment and treatment easier, quicker and more complete.

Rapport exists between two people – both contribute. Both bring skills and attributes. And, both bring their own experiences and attitudes to the relationship, thus, the transference and counter-transference issues described in psychoanalytical theory play a part and must be given due consideration.

It is generally agreed that as long as the interviewer behaves in a respectful and professional manner, and give due consideration to his/her contribution to the relationship, the quality if the rapport which develops has diagnostic value.

Rapport at assessment and during treatment
Rapport at the assessment informs about diagnosis. In the psychotic disorders, it may be (apparently) unusually complete in mania, and difficult to establish in depression (because of lack of energy and self-preoccupation). It may be difficult to establish with the suspicious paranoid patient (in which case, attempts to establish rapport may be rejected), and difficult to establish with the individual with negative symptoms (where interest, interpersonal skills and the ability to experience pleasure are reduced).

In the non-psychotic disorders rapport is informative, as it advises about personality type, and developmental and educational experiences. Rapport is a particularly useful tool in the assessment of past trauma, both in childhood and subsequent periods.

Rapport is a powerful tool and marker of progress during therapy. In many situations the establishment of rapport is the beginning of therapy. A trusting, open relationship being the path back to healthy functioning. Psychiatry is a process of continuous assessment, the task is to use rapport as a therapeutic agent, and as a metric of progress.
Better-than-expected rapport

This is a little disheartening. When rapport between the patient and the clinician seems flawless, the clinician needs to be especially alert, as almost certainly, something is going wrong.

The gifted person
When better-than-expected rapport develops, consideration must be given to the possibility that one is dealing with an unusually gifted, confident person, well trained in interpersonal skills and free of mental disorder. But, such a person is unlikely to be seeking psychiatric assessment.

Mild mood elevation
One alternative may be that this individual is mildly mood elevated, and that this enables him/her to be confident, quick witted, charming, happy, flirtatious and smiling.

Personality disorder
Another possibility is that the patient has a histrionic personality traits and is, in fact, behaving in a dramatic, seductive and dependent manner.

Here the word seductive is used not in the sexual context (although that may also be the case) but in the context of persuasion away from principles of usual practice - the unusually long appointment, the discussion of mutual interests rather than the patient’s problems. Such a patient may appeal to our desire to be potent, such as —‘Well Doctor, you might not believe this but, I’ve never told this to anyone else before, but…’. It is wise not to believe that one is as special as one would like to be.

The early stages of the relationship with a person with a dependent personality disorder may go ‘well’, with the patient seeking advice from “the expert”, and deferring rather than debating.

Drug seeking behavior/malingering
Individuals seeking drugs for personal misuse or trade may attempt to establish an especially close ‘special patient’ relationship with the clinician. If this is achieved the individual may be able to make the clinician feel obligated and guilty if he/she is reluctant to help with some ‘special problem’.
Malingering people may be seeking compensation, escape from responsibility or access to inappropriate benefits. Malingering is an effective modus operandi honed by experience. Clinicians should avoid or proceed with caution.

**Poorer-than-expected rapport**

**Paranoid person**
It is often very difficult to establish good rapport with a paranoid person. This applies to an individual with a paranoid personality as well as a psychotic disorder. Things go better if the clinician takes particular care to be respectful and accurate in statements.

Paranoid people, by nature, are suspicious and emotionally cool to others. Another problem is that he/she has a delusion which he/she knows the clinician does not share. Better results may come from putting the delusional material aside, if possible, having the patient accept that his difficulties cause him some general ‘stress’, trying to establish a generally supportive relationship. Agreement that he/she is somewhat “stressed” might open the door to some useful medication. It is unlikely that a supportive relationship will be curative, but likely that it will lessen the patient’s burden.

**Schizoid person**
The schizoid individual has less interest than usual in, or need for, interpersonal relationships. It follows that rapport is difficult to establish, and if little need is felt, there is little need to work on a relationship.

**Avoidant person**
The avoidant person feels socially inadequate, is hypersensitive to, and fears social rejection. Such people are socially inhibited. Naturally, it may be difficult to establish good rapport with such a person. Nevertheless, the avoidant person may have the desire to engage in a relationship and good rapport may be possible, if the clinician provides undemanding, on-going reassurance and support.

**Schizophrenia**
People with schizophrenia have difficulty establishing rapport with others. At times they are paranoid. They may be schizoid and have less than the usual interest or need for interpersonal relationships. Further, the negative
symptoms make rapport even more problematic. There may be the loss of the ability to experience pleasure, lowered energy, poverty of thought and flat affect, and these disable as well as render such individuals less engaging company. Nevertheless, rapport can be established, with beneficial effects, and specialized psychotherapy is recommended.

**Depression**
It may also be difficult to establish good rapport with seriously depressed patients. They may have psychomotor retardation and be thinking and speaking slowly. Their faces may be unsmiling, voices monotone and they may lack energy. They may be preoccupied with their own problems and show no interest in the interview or interviewer.

A therapeutic relationship (which includes growing rapport) can be a central element in therapy, clearly demonstrated in those cases effectively treated by psychotherapy only.