11 - Synaesthesia

Synaesthesia:

© SPMM Course Reflex hallucinations: These are hallucinations in one modality provoked reflexively by a stimulus in another modality e.g. seeing an angel whenever listening to music. They are similar to functional hallucinations in that there is a stimulus, which is perceived normally, followed by a hallucinatory perception – only difference being the modality of stimulus and perception being same in functional while different in reflex hallucinations.It is important to differentiate synesthesia from reflex hallucinations in EMIs. In synesthesia it is the music that is seen – the stimulus and object of perception remain the same albeit in different modalities - the patient does not claim that she could see Jesus or angel. Also the perceptions are simple, unformed and non-bizarre in synesthesia e.g colours; in reflex hallucination these are formed voices, vivid images like angels etc. The stimulus –perception sequence is usually completed before hallucination occurs in reflex hallucination – 'I heard the music and then came the angel'; in synesthesia music itself is seen as colour – the experiences are simultaneous. Synaesthesia: It was Francis Galton (1880) who first reported the condition called synaesthesia. He noticed that a certain number of people in the general population, who are otherwise completely normal, seemed to have a certain peculiarity: they experience sensations in multiple modalities in response to stimulation of one modality. The phenomenon of perceiving a stimulus of one modality in a different modality (may be single or multiple modalities) is called synesthesia. E.g. tasting the music, hearing colours and smelling voices. It is not a hallucination as the perceived object has an appropriate stimulus. The original stimulus is usually perceived in appropriate modality too when the cross modality perception occurs (syn – joint, simultaneous). It is common in females 4:1 to 6:1, runs in families and colour-number synesthesia is the most common form. It is thought to be due to extensive cross wiring between multimodal association regions in some people, probably due to failed selective pruning. Several pieces of evidence support the notion that indeed synesthetic experience has a neural basis:

1. There is a remarkable consistency of associations (e.g., sound–color associations) over time. For example, Baron-Cohen et al. found a consistency of 92% of color–sound associations after 1 year in 13 synesthetic subjects but only a 37% consistency (after 1 week) in a control group.
2. There is evidence that synesthesia can be acquired in the course of neurological illnesses such as multiple sclerosis, temporal arteritis, tumors to the sella region, and others.
3. Synesthetic experiences can be induced by ingestion of drugs such as mescaline.
4. There appear to be differences between nonsynesthetes and synesthetes in measures of cerebral blood flow.

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