

Seeing red -- in the number 7

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Hypnosis can induce synaesthetic experiences – where one sense triggers the involuntary use of another – according to a new study by UCL (University College London) researchers. The findings suggests that people with synaesthesia, contrary to popular belief, do not necessarily have extra connections in their brain; rather, their brains may simply do more 'cross talking' and this can be induced by changing inhibitory processes in the average brain.

People living with synaesthesia (known as synaesthetes) experience abnormal interactions between the senses. Digit-colour synaesthetes, for instance, will experience certain numbers in specific colours (for example, they might experience the number seven as red). A possible reason put forward for this phenomenon is the existence of extra connections between brain areas in synaesthetes, but the new study, published in the journal *Psychological Science*, suggests otherwise.

To explore the alternative theory of more cross talk (disinhibition) between brain areas in synaesthetes, Dr Roi Cohen Kadosh and colleagues used posthypnotic suggestion to show that people who are not synaesthetes can be induced to have synaesthetic experiences.

After inducing digit-colour synaesthesia, the volunteers reported similar experiences to those undergone by real synaesthetes in their everyday life. For example, one participant described seeing the numbers on car number plates in specific colours, while walking around under posthypnotic suggestion. Moreover, hypnotized participants failed trick tests which were also failed by real synaesthetes: in one test, when

subjects were hypnotized to experience seven as red, they could not detect the number when a black seven was presented on a red background.

Dr Roi Cohen Kadosh, UCL Institute of Cognitive Neuroscience, says: "Our study shows that posthypnotic suggestion can induce synaesthetic experiences in people, suggesting that extra brain connections are not needed to experience cross-sensory interactions and that it is more cross talk within the brain that causes these experiences. This takes us one step closer to understanding the causes of synaesthesia and abnormal cross-brain interactions."

Source: Association for Psychological Science

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