

# Picture imperfect

Men find unpleasant images more appealing than women do. NEIL MARTIN

THE success of men's magazines such as *Bizarre*, with their eccentric, stomach-turning photographs of mutilation or drunken gents with delicately applied shaving foam and vegetables about their person, suggests that men find generally offensive photographs quite appealing. This general impression is confirmed in a study by David Rawlings



(University of Melbourne), who examined whether a person's sex or personality predicted their liking of pleasant or unpleasant paintings and photographs.

Rawlings administered a battery of personality tests, including the Eysenck Personality Inventory, to 188 undergraduates. He also asked them to rate pleasant and unpleasant photographs and similarly affective examples of representational and abstract art, for example Renoir's *The Umbrellas* and Picasso's *The Bathers* (pleasant), and Botticelli's *Nastagio's Story* and Kahlo's *A Few Little Pricks* (unpleasant).

Those scoring high on a sensation-seeking measure liked the unpleasant pictures and photographs more than did those scoring low on the measure. High-scoring psychoticism people also preferred these pictures more than did low-scoring ones. However, when sex was taken into account, these personality differences almost evaporated. Men found all



categories of unpleasant stimuli to be significantly more pleasant than did women. The lowest likeability scores were for the photographs, suggesting a greater impact of a 'real', as opposed to 'aesthetic', stimulus.

Rawlings, D. (2003). Personality and correlates of liking for 'unpleasant' paintings and photographs. *Personality and Individual Differences*, 34, 395-410.

## Behind the seen

Does context aid visual processing for both recognition and action? AMANDA ALBON

VISION feels effortless, but there is more going on behind the scenes than we consciously experience. Consider the case of recognising your pen on a desk and pointing at it. It may not surprise you that when you identify your pen, you use information about the context it is in (e.g. other objects on your desk). Yet it is surprising that when you point at it, you do not need any contextual information. Do we really ignore the visual scene when pointing at something? Yann Coello and colleagues (Université Charles de Gaulle) have now examined this counterintuitive finding.

It is thought that when we recognise an object, we

represent the surrounding space in a 'cognitive' spatial map that includes contextual information. But, when we respond by action, we use a 'sensorimotor' spatial map that represents only where an object is in relation to ourselves and not to objects around it.

The induced Roelofs effect (IRE) visual illusion provides supporting evidence. The IRE involves a circle presented in the centre of a rectangular frame. When the frame is shifted, observers erroneously perceive that the circle has moved rather than the frame. It has been shown that the IRE affects verbal responses (e.g. saying whether the circle is in the same position) but not motor responses (e.g. pointing

to the circle), indicating that the context of the frame is important only for verbal responses.

Yann Coello's group, however, questioned whether this finding arises because it has only been tested using left-right frame shifts and not in a near-far (depth) dimension. Eight adults were presented with computer displays of the IRE illusion where the frames shifted in one or other dimension. They performed either a verbal or a pointing task with hands obscured so that movement was not visually guided.

Strikingly, the researchers found that the IRE effect applied to both motor and verbal responses when the IRE

shifted in the near-far dimension. The IRE still affected verbal but not motor responses when the frame shifted in the left-right dimension. Their findings indicate that when the spatial dimension is also considered it appears that we do indeed use contextual information when we point to an object. Depth may have a special status in visual processing for action.

Coello, Y., Richaud, S., Magne, P. & Rossetti, Y. (2003). Vision for spatial perception and vision for action: A dissociation between left-right and near-far dimensions. *Neuropsychologia*, 41, 622-633.

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# A cause of dyslexia?

Investigating deficits in the cerebellum. NEIL MARTIN

**T**HE past decade has seen a profusion of studies linking irregular brain structure or function to reading disorders such as developmental dyslexia. A new line of research has focused on a separate CNS structure, the cerebellum: its anatomy and activity appear to be markedly different in people with developmental dyslexia. But is this irregularity a meaningful symptom or cause of the disorder, or simply an artefact?

Dorothy Bishop (Oxford University) and Alan Beaton (Swansea University) debate this question in a recent issue of *Cortex*. The cerebellum is most well understood as the region that contributes to motor function and balance. Recent research, however, also implicates it in a variety of non-motor functions such as reading, speech perception and even emotional expression. Beaton reviews a sizeable number of hypotheses about

the causes of dyslexia, including one suggesting that the disorder represents a failure to perform a skill automatically (rather than consciously). The original authors of this hypothesis argue that this failure in automaticity is linked to the integrity (or otherwise) of the cerebellum.

On the surface, there seems to be some evidence for this association. A recent experiment using MRI correlated brain structure with reading performance in dyslexic children who had poor reading skill but superior verbal intelligence. Mark Eckert and his colleagues at the Universities of Florida and Washington found that a right-sided reduction in the front of the cerebellum correctly predicted over 72 per cent of children with dyslexia; that is, the reduction in the region was correlated with poor reading. According to the authors, this and other studies show that 'the cerebellum is one of the most

consistent locations for structural differences between dyslexic and control participants in imaging studies'. The consistency is important because many other regions also show irregularity in dyslexic participants in imaging studies.

Rae *et al.* (2002) had found that the side of the cerebellum that controlled the writing hand was less well developed in dyslexic adults than controls. However, as Bishop argues, the development of the cerebellum depends on the degree of experience a person has with writing: a child with literacy problems is less likely to pick up a pen and use it frequently. Consequently, the cerebellum does not show the same strength of development seen in individuals who have a history of well-practised writing.

This alternative interpretation suggests that the irregularity in the cerebellum is not due to dysfunctional development related to a reading disorder but simply to a lack of practice in writing (which affected how the cerebellum developed). 'If we find a cerebellar abnormality in dyslexia,' Bishop cautions, 'the temptation is to assume it is instrumental in producing reading difficulties. However, the cerebellum shows considerable plasticity, and can be influenced by, as well as influence, cognitive and behavioural deficits.'

Beaton, A.A. (2002). Dyslexia and the cerebellar deficit hypothesis. *Cortex*, 38, 479–490.

Bishop, D.V.M. (2002). Cerebellar abnormalities in developmental dyslexia: Cause, correlate or consequence? *Cortex*, 38, 491–498.

Eckert, M.A., Leonard, C.M., Richards, T.L., Aylward, E.H., Thomson, J. & Berninger, V.W. (2003). Anatomical correlates of dyslexia: Frontal and cerebellar findings. *Brain*, 126, 482–494.

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Rae, C., Harasty, J.A., Dzendrowskyj, T.E., Talcott, J.B., Simpson, J.M., Blamire *et al.* (2002). Cerebellar morphology in developmental dyslexia. *Neuropsychologia*, 40, 1285–1292.

## THE WEB IS MIGHTIER THAN THE PEN?

NEIL MARTIN *on a study comparing internet and paper measures.*

**R**ESearchers are making increased use of the internet as a medium for collecting data. Many universities and research groups now conduct online experiments, allowing quick data collection and large samples. Web research also seems to have greater advantages over paper-and-pencil (PP) versions of tests in that the error rate is lower (electronic responses are more legible than written ones) and the response/take-up rate is higher. There is evidence that internet participants leave out more items on test inventories and choose the extreme ends of responding more often, but this evidence is mixed.

To evaluate the equivalence of the two media systematically, Frances Annie Pettitt from York University, Canada, uploaded five personality measures online, requesting visitors to complete it, and randomly mailed the measures to a group of Americans and Canadians or gave the measures to undergraduates to complete.

When Pettitt looked at the degree of excessive agreement with items (agreeing

with statements that are contradictory), extreme responses and non-completed items, there was no difference found between the two media. However, a statistically greater number of uncodeable responses were found for the PP medium, suggesting an advantage for the internet format.

The author cautions, however, that while this and other studies show the benefits and advantages of web-based experiments, there will be variants. 'The few measures in this research were nonintrusive and were not a representative sample of all possible measures,' she acknowledges. 'And just because this WWW data generalised to PP data does not mean that all research using the WWW is generalizable to non-WWW procedures.'

Pettitt, F.A. (2002). A comparison of World-Wide Web and paper-and-pencil personality questionnaires. *Behaviour Research Methods, Instruments and Computers*, 34, 50–54.

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