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You can't set off until you know where to go

ROSALIND RIDLEY *describes her study into delayed movement initiation in Parkinson's disease.*

PATIENTS with Parkinson's disease (PD) sometimes find it difficult to start a movement even though, at other times, movements occur easily. Repetitive movements, such as walking in an empty corridor, may be easier than making minor adjustments to avoid other pedestrians. Work with monkeys suggests that this may result from the patient's difficulty in setting up the mental representation (map in the mind) of the place to which the limb has to be moved, rather than in generating the effort required to make a movement.

Parkinsonian patients have lost a substantial amount of the neurotransmitter dopamine from a pathway that projects from the brainstem to more anterior areas of the brain. In animals this pathway can be selectively destroyed on one side of the brain using a neurotoxin, to produce a model of PD. A monkey with this unilateral lesion can live with other monkeys, feed itself and move around the cage with no difficulty. However, when it turns round it will almost always turns towards the lesioned side (away from the 'bad' side) and will rarely use the arm opposite the side on which the lesion was made (the 'bad' arm) to make the skilled movements necessary to pick up food.

A recent experiment has shown an interesting result. Monkeys were allowed to reach through perspex slots, which constrained them, into the 'good' or 'bad' side of space with either arm. They showed no impairment in the time taken to initiate a movement with the 'bad' arm reaching into 'good' space; and they showed as big an impairment in initiating a movement with the 'good' arm as with the 'bad' arm when reaching into 'bad' space. This implies that the unilateral dopamine lesion has resulted in a loss of the mental coordinates of the destination of the intended movement in that half of the brain.

This suggests that a major problem in initiating movements in PD is the difficulty in setting up the mental map of where the movement should go. This kind of experiment is best done in animals, since the analysis depends on restricting the dopamine loss to one side of the brain. PD patients may be expected to have difficulty setting up the mental map on both sides of the brain, but strategies designed to help them attend to the target of a movement may help them reach towards it.

Milton, A.L., Marshall, J.W.B., Cummings, R.M., Baker, H.F. & Ridley, R.M. (in press). Dissociation of hemi-spatial and hemi-motor impairments in a unilateral primate model of Parkinson's disease. *Behavioural Brain Research.*

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NUMBER'S UP FOR STUDENT ATHLETES

Sport's similarity to traditional combat leads to adaptive advantages for modern-day competitors. **DANIEL FARRELLY**

THE rewards of sporting excellence have long been recognised – great health, the thrill of victory and possibly hero worship – but there may be a further bonus in the form of a greater number of sexual partners thanks to an evolved preference among humans for such competitors.

Charlotte Faurie and her colleagues at the University of Montpellier claim that traits that are necessary for sporting ability (speed, strength and endurance) are also necessary for other physical competitions (such as fighting) that are common among all human societies. They suggest that the qualities that underlie such traits have been important factors in the evolution of human mate choice. In their study Faurie and her colleagues looked at how an individual's sporting achievements affect the number of sexual partners they have. Students at three French universities were asked to fill in a questionnaire relating to their sporting achievements, physical condition (as measured by their body mass index) and number of opposite-sex sexual partners in the previous year.

The participants' results were then separated into two groups according to sporting achievement, those involved in high-level competitive sport (SP) and those who weren't (non-SP). It was found that individuals in the SP group did report significantly more sexual partners than those in the non-SP group. Also there was a difference within the SP group, with those at higher levels of sporting achievement reporting more sexual partners than those competing at a lower level. Interestingly, these results were stronger in males than in females.

However, the authors wisely express caution when interpreting these results. Access to potential mates may possibly vary between the SP and non-SP groups, which could falsely influence the results. Also, the reliance on people's self-reports of number of sexual partners can be problematic (Morris, 1993).

To conclude, the authors suggest that another human quality, handedness, could also have evolved due to the benefits it confers from traditional physical competition, and the increased mating opportunities that follow.

Faurie, C., Pontier, D. & Raymond, M. (2004). Student athletes claim to have more sexual partners than other students. *Evolution and Human Behavior, 25,* 1–8.

Reference
Morris, M. (1993). Telling tales explains the discrepancy in sexual partner reports. *Nature, 365,* 437–440.

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Philip Wolmuth (reportdigital.co.uk)

Soldier blue

Should returning troops be offered psychological debriefing? **Samantha Hardingham**

AS troops return from the distressing events in Iraq, should the government, and the military, prepare for the possible psychological consequences of their mission and provide adequate debriefing?

A timely study, from King's College Hospital, asked British military personnel who had served on peacekeeping missions for their views on talking about their experiences, and whether they believed there was a need for psychological debriefing sessions on their return. They also completed the General Health Questionnaire and the Post Traumatic Stress Disorder Checklist.

It appeared that the troops did agree with talking about their experiences, with over 63 per cent saying they had discussed their missions.

Furthermore, talking about experiences was associated with lower distress levels.

This discussion was more likely to take place within existing social networks, for instance with peers, spouses and partners. Only a small number of personnel sought formal support, possibly owing to the stigma of receiving psychological help that tends to exist in the military. However there was a strong association between high distress and seeking professional support.

Age also appeared to affect views – fewer of the older participants believed that formal debriefing was necessary, again possibly a result of the 'stiff-upper-lip' philosophy. While older personnel were more likely to turn to peers and military colleagues, younger personnel

were willing to consider psychological debriefing.

Finally, men were seen to talk with their wife or partner, while women were more inclined to discuss their experiences with other members of their family.

The study would clearly benefit from further specific research and development. But what implications can these findings have for the current troops? The clear message is that personnel do want to discuss their experiences. The authors call for an acceptance that formal debriefing would

be beneficial for some, if not all, and suggest promoting community and family networks in the military to maintain this vital form of support.

Greenberg, N., Thomas, S.L., Iversen, A., Unwin, C., Hull, L. & Wessely, S. (2003). Do military peacekeepers want to talk about their experiences? Perceived psychological support of UK military peacekeepers on return from deployment. *Journal of Mental Health, 12*, 565–573.

■ *Samantha Hardingham is an assistant psychologist in Nottingham.*

FINDING THEIR FEET

Babies start using their feet to explore the world before they use their hands. That's according to James Galloway and Esther Thelen at the Universities of Indiana and Delaware, USA.

Six babies first used their feet to touch toys dangled in front of them when they were on average just under 12 weeks old, compared with first using their hands at nearly 16 weeks. The babies' foot contact wasn't accidental – when the toys were absent, the babies' feet spent significantly less time in the toy-dangling area. This finding was confirmed in a second experiment with 10 infants, in which the toy-to-limb distance (4 inches) was standardised for each baby.

These observations directly violate the classic 'cephalocaudal rule', which states that infant movement control progresses from

head to toe. They also contradict the idea that in the first months of life, the legs only move in a reflexive, non-purposeful fashion. The authors argue that 'the finding that young infants repeatedly aimed their feet to contact the toy suggests the use of supraspinal [i.e. brain] centers for purposeful control much earlier than traditionally envisioned'.

Galloway, J.C. & Thelen, E. (2004). Feet first: Object exploration in young infants. *Infant Behaviour and Development, 27*, 107–112.

Journal weblink:
www.sciencedirect.com/science/journal/01636383

Syllabus advice: Piaget noticed his baby son used his leg to kick a toy. See Piaget, J. (1952). *The origins of intelligence in children*. New York: International Universities Press. See cognitive development modules (e.g. Edexcel, AQA spec B).