organic brain syndrome was more likely. By February 1998 it was clear that he had a receptive and expressive dysphasia and right extensor plantar response. Thyroid function, B12 and folate, an autoimmune screen, protein electrophoresis, serum copper, serum caeruloplasmin, heavy metal screen, porphyrin screen, IgA antibodies to gliadin, serological tests for *Treponema* and human immunodeficiency virus tests were all normal. Protein in CSF was mildly raised at 0.62 g/l and contained 2 white cells/mm³. Oligoclonal bands and CSF 14-3-3 protein were negative. Repeat EEG demonstrated a left hemispheric slow wave focus, cranial MRI showed atrophy of the whole of the left hemisphere, and a SPECT perfusion scan demonstrated marked underperfusion of the posterior temporoparietal cortex on the left. A tonsillar biopsy for protease resistant PrP was negative. The open reading frame of the prion protein gene demonstrated no mutations. The codon 129 genotype was valine homozygous.

By October 1998 he was dependent on his wife for dressing, toileting, and feeding. He was mute with eyelid apraxia, generalised myoclonus, marked primitive reflexes with Gegenhalten tone in the limbs, and bilateral extensor plantar responses. In March 1999 he was in a state of akinetic mutism and died in August 1999. Necropsy disclosed cerebral atrophy, and neuropathological studies showed a spongiform encephalopathy which was most marked in the basal ganglia, with widespread neuronal loss and gliosis. No amyloid plaques were identified. Immunocytochemistry showed a positive reaction in a reticular and perineuronal distribution in the cerebral cortex and the cerebellum, but no PrP plaques were present. Immunocytochemistry for PrP on lymphoid tissue in the spleen and appendix was negative. Western blot analysis of frozen cerebral tissue showed a PrP^{RES} type 1 pattern.³

Early age of onset, protracted psychiatric prodrome, and duration of illness distinguish variant CJD clinically from sporadic CJD. Two possible explanations arise for the case described. Firstly, the case represents sporadic CJD, of which there have only been two cases younger than 30 in the United Kingdom since 1970.⁴ Neuropathological review of these two earlier cases has found changes in the brain consistent with sporadic CJD; full clinical and genetic data are not available on these cases, but neither showed evidence of PrP^{RES} accumulation in lymphoid tissues. The lack of characteristic neuropathology of vCJD in the brain, the absence of detectable PrP in the tonsil appendix and spleen, together with a PrP^{RES} type 1 pattern in the cerebral cortex all provide supportive evidence for this being a case of sporadic CJD, similar to the other rare cases occurring in valine homozygotes with a type 1 PrP^{RES}.³ A less likely explanation is that this case may represent bovine spongiform encephalopathy (BSE) infection in a valine homozygous person without the characteristic pattern of PrP glycosylation occurring in BSE and related disorders in animals and humans.⁵ This case emphasises the importance of detailed clinical, neuropathological, genetic, and biochemical studies in all cases of suspected CJD, particularly in young people with a valine homozygous or heterozygous codon 129 PrP genotype. Further investigation of such cases by strain typing studies may be required to establish their relation to the BSE agent.

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Multiple sclerosis treatment trial precipitates divorce

We have noted an unusually high rate of divorce among participants in a recent small treatment trial of multiple sclerosis.¹ Of the 29 patients in the study, 19 were married at entry. During the 18 months of follow up, six patients (31%) became involved in divorce proceedings. In four of these, the unaffected spouse left the marriage for another partner. There was a transient breakdown in one other marriage, which did not lead to divorce, after an extramarital affair by the unaffected partner. Since the study ended, there has been one further divorce after an affair by the unaffected spouse. Those patients who became divorced were not distinguishable by their disability, the efficacy of their treatment, or the duration of their disease or marriage.

The divorce rate in this study, equivalent to an annual rate of 21% of married couples, is considerably greater than the annual divorce rate in the United Kingdom for age and sex matched married couples of 2.4%-3.1%.² Physical disability due to any cause is a risk factor for divorce³ and multiple sclerosis is no exception.⁴ However, this effect is not sufficient explanation to account for the exceptionally high divorce rate seen during this study. In one Australian study, the most severely disabled patients with multiple sclerosis were four times more likely to have been divorced than the less disabled; but even among the most disabled the prevalence of divorce was only 13%-18% of all prevalent patients.⁵ We suggest that participation in a treatment trial indirectly precipitates divorce, by exposing marital dissatisfaction in the unaffected spouse. One possible explanation may be that trial participation focuses attention on the affected spouse's disability. Alternatively, perhaps the frequent attentions of an interested medical team during a trial relieve the unaffected partner of a sense of responsibility towards his or her spouse. Another

interpretation might be that recruitment to therapeutic trials is biased towards those patients who perceive a greater degree of dissatisfaction with their personal situation. To the best of our knowledge, in no previous treatment trial in multiple sclerosis, nor indeed of any other disease, has such a high rate of divorce been noted.

In the light of these findings it may be prudent to make patients and their spouses (or partners) aware, during the recruitment interviews for clinical trials, of the strains which participation may expose in their relationship.

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Allodynia: a sensory analogue of motor mirror neurons in a hyperaesthetic patient reporting instantaneous discomfort to another's perceived sudden minor injury?

Parietal injury may affect spatial cognition in at least three ways: right sided damage may cause left inattention (unilateral neglect), whereby the patient ignores or fails to attend to objects or events on the contralateral (left) side of extrapersonal space¹; in a rare extension of this disorder, the patient may also experience the presence (often fluctuating) of an additional, supernumerary or phantom limb²—for example, a further arm at the midline in addition to a normal one on the right, and a paralysed, neglected, or "missing" one on the left. Finally, in the Gerstmann syndrome there may be, after left parietal damage, simultaneously, left-right disorientation, acalculia, agraphia, and problems with finger (or other body part) localisation or identification. Conversely, with amputation or loss (even congenital) of a limb in an otherwise healthy individual, a phantom limb may be experienced,³ with the vivid hallucinatory experience of the continued presence of that limb; parietal mechanisms have again been invoked.

The parietal cortex interconnects with the ventral premotor cortex which, as area F5 in monkeys, contains neurons that discharge both when an animal grasps or manipulates objects, and when it sees another individual making similar actions.⁴ These "mirror neurons" seem to represent a system that matches observed events to similar, internally generated actions, and thus forms a link, as the authors note, between observer and actor.