

necessary cause for psychosis. This formulation is erroneous and was used, in exactly the same words, many years ago when prospective studies in the UK established the aetiological role of tobacco in lung cancer. In an elementary textbook on statistics, Schwartz (1999) explains that this error arises from the faulty use of the term 'cause', which applies to the domain of certainty, whereas in the domain of uncertainty (i.e. of illness) the definition of a causal factor is that it provokes an increase in risk, as perfectly demonstrated by the authors. One wonders why they make this elementary error. It is unlikely to be due to psychological resistance, as was the case with tobacco smokers at that time. Perhaps they believe that schizophrenia (or psychosis) is a known disease entity, as defined according to international systems of classification (DSM-IV, ICD-10) which, unfortunately, continue to exclude substance use from their diagnostic criteria.

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Child sexual abuse and substance use disorders: role of psychiatric comorbidity

We read with interest the paper by Spataro *et al* (2004) considering associations between child sexual abuse and subsequent psychopathology using a prospective cohort design. This study clearly indicates a positive association between child sexual abuse and a range of mental disorders, although not substance use disorders. We think that the authors make an important point in their discussion that this latter absence of an association might be at least partly due to their methodology for assessing psychiatric outcome. They implemented a diagnostic hierarchy in such a way that when substance use problems were accompanied by other psychiatric disorders, these comorbid conditions were counted and not the substance use.

It is important for the reader to know that substantial comorbidity between substance use disorders and other psychiatric

disorders is consistently reported (e.g. Kessler *et al*, 1997a). Thus, one could suggest that this prospective study does not demonstrate an association between child sexual abuse and more pure forms of substance use disorders. This would be in line with other findings suggesting a lack of association between childhood trauma (including child sexual abuse) and pure substance use disorders, but a strong relationship between childhood trauma and psychiatric comorbidity in substance use disorders (Kessler *et al*, 1997b; de Graaf *et al*, 2002).

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Insulin-like growth factors, insulin resistance and schizophrenia

Abel (Abel, 2004) speculates that imprinting of the gene for insulin-like growth factor-II (IGF-II) as well as other genes may be one pathway through which environmental exposures influence the risk of schizophrenia. We too have hypothesised that factors influencing the growth-hormone-IGF axis may contribute to the well-recognised associations of pre-adult exposures with schizophrenia (Gunnell & Holly, 2004).

We feel that evidence for a direct role of IGF-I is more compelling than that for IGF-II (whose biological functions are poorly understood). Possible pathways for an association with IGF-I lie not only in its role in neurodevelopment but also through its role in neuroprotection following brain damage (e.g. following birth asphyxia, head injury or meningitis) (Gluckman *et al*, 1998). Insulin-like growth factors exert powerful

anti-apoptotic actions and low levels may reduce the survival probability of damaged cells. The influence of IGF-I may extend beyond foetal life as low IGF-I is associated with low birth weight, reduced childhood growth and low body mass index, which are, in turn, associated with the development of psychosis (Wahlbeck *et al*, 2001; Gunnell *et al*, 2003). It is therefore possible that low IGF-I levels not only impair neurodevelopment but also render individuals more susceptible to neurodevelopmental insults such as traumatic brain injury and hypoxic brain damage (Gunnell & Holly, 2004).

Several lines of direct and indirect evidence support a possible role of IGF-I in the aetiology of schizophrenia (Gunnell & Holly, 2004). Intriguing indirect evidence for the role of IGF-I, as Abel points out, comes from the observation that low levels protect against a range of different cancers (Renehan *et al*, 2004) and individuals with psychosis, and their families, appear to be at reduced risk of some malignancies. This may well reflect shared genetic influences on IGF levels influencing susceptibility to both schizophrenia and cancer. Evidence for aetiological associations of IGF-II with cancer risk are less consistent than those for IGF-I. A further indirect line of evidence comes from current concern that insulin resistance may both be more common in people with schizophrenia and be precipitated by antipsychotic medication. Prospective studies indicate that low IGF-I levels are associated with the development of insulin resistance (Sandhu *et al*, 2002). We speculate that the co-occurrence of insulin resistance and psychosis may in part arise through the shared susceptibility of both these disorders associated with low IGF-I levels.

Evaluation of the possible role of the IGF-system in schizophrenia might not only further our understanding of the aetiology of this disorder but also give insights into its prevention and the reduction of comorbidities such as insulin resistance.

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Pharmaceutical influence and psychiatrists: an introspection

The Monday afternoon journal club brings us all together from the several community centres in the trust. Today, unexpectedly, the drug rep is not on time and the meeting has begun without lunch. Most of us are restless. It is difficult to listen when you are hungry. I catch myself looking out of the window, but I am also looking at the entrance to the room from the corner of my eye. Where is this drug rep anyway?

Gilbody *et al* (2004) have elaborated very topical concerns about the growing influence of direct-to-consumer advertising of psychotropic medications. In this movement, greater empowerment of consumer choice is used as a catch-phrase and, more importantly, the clinicians who oppose it stand accused of ‘guarding professional territory’ (Bonaccorso & Sturchio, 2002). But to begin tracing this debate to its ethical roots, we ought to pause and first consider the merits of clinician-targeted advertising.

The editorial rightly states that \$2.5 billion was spent in the year 2000 on direct-to-consumer advertising in the USA. However, this was a small fraction of the massive \$15.7 billion spent on drug promotion as a whole (Rosenthal *et al*, 2002; Wolfe, 2002). Budgets for the same have increased exponentially over the past few years (Wolfe, 2002). With the introduction of the newer, more expensive atypical antipsychotics and selective serotonin reuptake inhibitors, this is particularly so in psychiatry. Since advertising in professional

journals seems to be fairly static (as demonstrated by brief inspection of the number of drug advertisements in the *Journal* in any given month over the past decade), it can only be assumed that the bulk of this finance caters toward sponsoring conferences, hotel stays, lunches and other ‘promotional’ activities aimed at the clinician writing the prescriptions.

Such practice seems to be woven into the very fabric of the medical profession in general, and psychiatry in particular. Yet what evidence is there to suggest that this culture of happy symbiosis is beneficial to our patients?

Several studies have been done recently that investigate the possible changes in prescription patterns as a result of aggressive consumer-directed advertising. Surprisingly, on the other hand, there is very scant research indeed to elucidate the association of our prescription patterns and the influence of any concurrent clinician-directed advertising. Of the little evidence available, most suggests a worse scenario (Wang *et al*, 1999). Is there a professional bias that explains this paucity of interest?

Before riding our moral high horse and being outraged at the blurring of boundaries as the pharmaceutical industry makes independent forays into the public domain, should we not consider what boundaries we set big business when it entered our own fold? I imagine it would be difficult for a clinician who writes with a drug company pen, on a drug company pad, which he takes out of his drug company bag, to tell his patient not to invest much faith in drug company advertisements. On how many occasions do clinicians turn down offers by pharmaceutical companies to fund their attendance at conferences, flights abroad, hotel stays, social banquets, gifts? The list is long, and there is no such thing as a free lunch.

Meanwhile, in my own little way, I wait for the drug rep. The doctor presenting the paper rambles on. ‘An intention to treat analysis would have been more appropriate to validate this particular therapy,’ I think to myself. But at the same time I wonder, ‘I hope it’s the pretty lady from the risperidone company. She brings those lovely sandwiches from Marks & Spencer’.

Declaration of interest

I regularly attend the twice-weekly journal clubs and case conferences at my centre,

during which lunch is sponsored by pharmaceutical companies.

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Defining delusion

The clear definition of primary delusions helpfully provided by Owen *et al* (2004) includes both that one comes to believe new things (change in meaning) and arrives at such beliefs in a new way (transformation of experience). This requirement for a transformation of experience seems to me to require an abnormal mental mechanism that is permitted in a rationalist account of delusions. The distinction between primary and secondary delusions is one that eludes many authors (e.g. Hales *et al*, 1999: pp.432–434) in addition to myself and Professors van Os and Delespaul. We would differ I suppose in that while they view all delusions as secondary, I think those that do not share the mechanism of primary delusions are not really delusions at all.

Wernicke’s work on aphasia suggested that mental functions were localised, but this is quite a separate issue from whether their mechanism is modular. This is evident in Wernicke’s description of mental pathology as a ‘loosening up of the firm network of association’ (Jaspers, 1963: p. 536). Such an empiricist account of mental pathology is surely incompatible with modularity as proposed by the rationalist philosopher Fodor.

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