Nicotine, tobacco and addiction

SIR — For many people, the concept of addiction involves taking of drugs[1]; most official definitions of addiction include drug ingestion. Despite such definitions, there are many potentially addictive behaviours that do not involve drug ingestion, for example gambling, overeating, sex, exercise, computer-game playing, the Internet, pair bonding and work[2,3]. Such diversity has led to all-encompassing definitions of what constitutes addictive behaviour. Trying to define 'addiction' is rather like defining a 'mountain' or 'tree' in that there is no single set of criteria that can ever be necessary or sufficient to define all instances. In essence, the whole is easier to recognize than the parts. Here I suggest six components that in my view need to be fulfilled if a behaviour is to be defined as 'addictive'.

Salience: when the particular activity becomes the most important activity in people's lives and dominates their thinking (preoccupations and cognitive distortions), feelings (cravings) and behaviour (deterioration of socialized behaviour). For instance, even if they are not actually engaged in the behaviour, they will be thinking about the next time they will be.

Mood modification: subjective experiences that people report as a consequence of engaging in the particular activity and can be seen as a coping strategy (they experience an arousing 'buzz' or a 'high' or a paradoxically tranquillizing feel of 'escape' or 'numbing').

Tolerance: a process whereby increasing amounts of the particular activity are required to achieve the former effects. For instance, a gambler may have gradually to increase the size of the bet to experience a euphoric effect that was initially obtained by a much smaller bet.

Withdrawal symptoms: unpleasant feeling states and/or physical effects that occur when the particular activity is discontinued or suddenly reduced, for example 'the shakes', moodiness or irritability.

Conflict: conflicts between addicts and those around them (interpersonal conflict) or from within the individual (intrapsychic conflict) that are concerned with the particular activity.

Relapse: the tendency for repeated reversions to earlier patterns of the particular activity to recur and for even the most extreme patterns typical of the height of the addiction to be quickly restored after many years of abstinence or control.

I believe that explanations for addiction must come from a biopsychosocial approach, in that 'addiction' arises from a combination of biological predisposition, social environment and psychological constitution. To many, this goes without saying, but others present oversimplistic and parsimonious explanations. Behaviorial addictions *do* exist, and should be treated no differently from the better-known chemically based addictions.

Mark Griffiths
Psychology Division,
Nottingham Trent University,
Nottingham NG1 4BU, UK

1. Rachlin, H. *Psychol. Sci.* **1**, 294–297 (1990).
2. Miller, W. R. *The Addictive Behaviors* (Pergamon, Oxford, 1980).
3. Orford, J. *Excessive Appetites: A Psychological View of the Addictions* (Wiley, Chichester, 1985).

SIR — Although there is little doubt that cigarette smoking is hazardous to health and that nicotine plays a major role in reinforcing this behaviour[1], we believe that certain effects of nicotine itself need to be dissociated from tobacco and other drugs of abuse.

Despite recent findings[2] demonstrating common neuropharmacological and neuroanatomical similarities between the effects of nicotine and other drugs of abuse, there are some important differences. For example, nicotine is typically devoid of the profound euphoric and perceptual effects offered by many drugs of abuse, and there is little evidence that the habitual consumption of nicotine (via tobacco) causes depression or psychosis[3].