

A2
LEVEL

Psychology

the student's
textbook



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The psychology of addictive behaviour

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You are expected to develop knowledge, understanding and critical thinking in relation to the topic of Addictive Behaviour.

This includes applying knowledge and understanding of research methods, approaches, issues and debates where appropriate. You must also show an appreciation of the relationship between research, policy and practices in applying psychology in everyday life.

WHAT YOU NEED TO KNOW

MODELS OF ADDICTIVE BEHAVIOUR

- Biological, cognitive and learning models of addiction, including explanations for initiation, maintenance and relapse
- Explanations for specific addictions, including smoking and gambling

FACTORS AFFECTING ADDICTIVE BEHAVIOUR

- Vulnerability to addiction including self-esteem, attributions for addiction and social context of addiction
- The role of media in addictive behaviour

REDUCING ADDICTIVE BEHAVIOUR

- Models of prevention, including theory of reasoned action and theory of planned behaviour
- Types of intervention, including biological, psychological, public health interventions and legislation, and their effectiveness

THE PSYCHOLOGY OF ADDICTIVE BEHAVIOUR

INTRODUCTION

The term 'addiction' derives from the Latin word 'addicere', meaning 'to sentence'. Just as someone might be sentenced to prison, so too might the person be sentenced to an addiction. In recent years the term 'addiction' has come to refer to a range of behaviours associated not only with alcohol and drug dependence but also with food, exercise, gambling and even relationships with others.

Addiction has become a very serious social problem that afflicts many millions of people and touches the lives of everyone they know. Take a look around the area where you live. You will quickly see how available many of the facilities for addictive behaviour are. These include bookmakers, where gambling is possible on any number of events – ranging from football results through horse-racing to things that you might not expect, such as whether it will snow on Christmas Day. The National Lottery has provided an easy way to gamble, with many people buying far more than one ticket on each occasion. Other establishments that may well attract people with addictions include newsagents (where tobacco, containing nicotine – one of the most addictive substances known – can be easily bought), or off-licences, pubs and supermarkets that can provide access to cheap alcohol. Access to drugs may be a little harder to see, but it is clear that the use of illegal drugs is very widespread indeed. Research published in 2002 found that, within the UK alone, around 1 in 3 of the adult population had taken an illegal drug at some time, with 12% of adults reporting use in the last year. For 18-24 year-olds, the corresponding figures were 50% and 29% respectively (Drugscope, 2002).



You need to know about two addictive behaviours in particular. Whilst there are opportunities to talk about others, make sure that you really know about smoking and gambling.

DIAGNOSING ADDICTION – SMOKING

Smoking is a form of drug addiction, the active component of tobacco being nicotine. The most recent edition of the Diagnostic and Statistical Manual (DSM-IV-R) refers to drug dependence as: 'a cluster of cognitive, behavioural, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems'.

The criteria used within DSM-IV-R to identify dependence on a substance include the following:

- » the individual develops tolerance: much larger doses of drug are needed to achieve a given effect
- » efforts by the individual to reduce or control his/her substance use are unsuccessful
- » the substance is often taken in larger amounts or over a longer period than the individual intended
- » the individual devotes a lot of time to making sure he/she has access to the substance
- » and important social, occupational, or recreational activities are reduced or given up as a result of substance use.

Tobacco dependence is more prevalent than dependence on any other substance of abuse (Anthony et al, 1994). The popularity of tobacco spread rapidly from Columbus' trading with the native American Indians in the 16th century. It did not take long for sailors and merchants to imitate the smoking of rolled leaves of tobacco and to experience, as the Indians did, the increased craving for it.

The threat to health that smoking poses has been documented convincingly throughout the world since the mid 1960s. Among the medical problems associated with, and almost certainly caused or made worse by, long-term cigarette smoking are lung cancer, emphysema, cancer of the larynx and oesophagus and a number of cardiovascular diseases.

One of the many statistics on the health hazards of smoking is the estimate that 30-35 year olds, smoking 2 packs a day (that's 40 or more cigarettes), have a mortality rate twice that of non-smokers. Further, it has been predicted that by 2020 tobacco will have become the largest single health problem worldwide, causing approximately 8.4 million deaths annually (Murray & Lopez 1997). Despite this wealth of evidence, the number of people that quit remains low even though there are several medical treatments available to help users give up the habit (Haas et al 2004).

DIAGNOSING ADDICTION – GAMBLING

It was not until 1980 that the DSM defined a gambling disorder – called pathological gambling (PG). To be diagnosed with PG a person must meet at least 5 of the following criteria.

- » is preoccupied with gambling (e.g. preoccupied with reliving past gambling experiences, or planning the next venture, or thinking of ways to get money with which to gamble)
- » needs to gamble with increasing amounts of money in order to achieve the desired excitement
- » has made repeated unsuccessful efforts to control, cut back, or stop gambling
- » is restless or irritable when attempting to cut down or stop gambling
- » gambles as a way of escaping from problems or of relieving a dysphoric mood (e.g. feelings of helplessness, guilt, anxiety, depression)
- » after losing money gambling, often returns another day in order to get even ('chasing' one's losses)
- » lies to family members, therapist, or others to conceal the extent of involvement with gambling
- » has committed illegal acts, such as forgery, fraud, theft or embezzlement, in order to finance gambling
- » has jeopardised or lost a significant relationship, job, or educational or career opportunity because of gambling
- » relies on others to provide money to relieve a desperate financial situation caused by gambling.

It's very clear from these criteria that pathological gambling really can be understood to be an addiction comparable in many ways to the addictions with which we are, perhaps, more familiar. Gambling is a very common recreational behaviour. A large number of adults gamble, and most do so without encountering any significant psychological problems. Nonetheless, gambling problems have been estimated as affecting as many as 5% of the adult population – with certain groups such as young adults, people with mental health disorders and those in prison having much higher rates (Shaffer et al 1999). Given the increased availability of legalised gambling and its popularity over the past few decades, more research on the health impacts of specific levels of gambling behaviour is now being undertaken.

MODELS OF ADDICTIVE BEHAVIOUR

There are a number of biological and psychological explanations for addiction. Each of these explanations takes a different view of how addictions to, for example, smoking or gambling are initiated, how they are maintained and how addicts often relapse into their addictions. In the following sections we will examine biological, cognitive and social-learning models that attempt to explain addictions to smoking and gambling. It is important to note, however, that addictions are complex behaviours that rarely have their origins in a single explanation. Any reasonable understanding of an addiction requires a broad multi-disciplinary approach, involving a combination of biological, psychological and social explanations.

THE BIOLOGICAL MODEL

The *physical dependence theory* suggests that people become addicted because doing without the item or behaviour to which they are addicted is so unpleasant. An important concept associated with physical dependence theory is 'tolerance'. As a person continues to smoke he/she becomes *tolerant*, and needs to engage in the activity more and more to maintain the positive feeling it gives. Stopping the activity may well result in unpleasant side-effects of *withdrawal*.



Warning! You need to know about the **biological model of addiction** and how it is applied to initiation, maintenance and relapse for both smoking and gambling. Unless you are organised (like this chapter is organised!) you could get confused. So, first we explain what the biological model is, then we apply it to initiation, maintenance and relapse of smoking; and then to initiation, maintenance and relapse of gambling.

Withdrawal is where a person stops engaging in his/her addictive behaviour and experiences a range of unpleasant physical symptoms which can include shaking, sweating and other aches and pains. Other physical symptoms may include an increased heart-rate and raised blood pressure. More serious withdrawal symptoms could also

include hallucinations, bouts of confusion and even seizures.

The process of withdrawal from the addictive behaviour is called *detoxification*, and can be carried out with or without the support of a number of specialist organisations and facilities. This support can be psychological and encouraging, but it may also be medical. If a person is experiencing the more serious withdrawal symptoms, including visual hallucinations and seizures, then medical support may well be required.

The process of detoxification frequently takes place in a rehabilitation clinic, often shortened to 'rehab'. It is true to say that detoxification, withdrawal and rehab are most associated with the type of addictive behaviours we see commonly covered by the media, particularly people's (usually celebrities') dependence on alcohol and other drugs. However, other very common addictions – such as those to nicotine and gambling – can also generate withdrawal symptoms; and those suffering an addiction to these behaviours may well benefit from the skilled support rehab is able to offer.



Remember, this is psychology in action. You may need to apply your knowledge in the exam rather than write an essay, so don't just learn this stuff rote-like, really try to understand how psychology is being applied. It is something you are going to have to do yourself.

According to the *positive reward theory*, addiction occurs because the feelings we get from engaging in the activity, be it smoking or gambling, are perceived to be so pleasant and rewarding. Many smokers will tell you that their first experience of smoking is not pleasant at all. In fact the first experience of inhaling hot smoke from a cigarette often causes people to choke and cough, or worse! Gambling, however, often generates an almost immediate feeling of excitement and a fast, some might say 'safe', buzz.

Consider the experiences felt by someone placing a small bet on a horse race. As the race approaches the gambler may sense an increased heart rate, a slow, but noticeable quickening of the breath and finally a surge of adrenaline. Gamblers will tell you that this feeling of excitement is extremely compelling, just as those who engage in dangerous sports,

such as base-jumping or cliff-diving, will confirm that their activity generates a natural 'high'.

Even if the excitement is followed by disappointment when the chosen horse does not win, the gambler has still been rewarded with the feeling of excitement associated with the bet, and the anticipation and event of the race itself. Engaging in the activity has provided a positive reward; and this, as the theory of operant conditioning predicts, will make it more likely that the behaviour will occur again.

ANIMALS DO IT TOO



THE HARDEST PART IS ADMITTING YOU HAVE A PROBLEM.

It's worth noting before we go on that although we are concerned mainly with addictive behaviours such as smoking and gambling by humans, self-administration of addictive substances by wild animals is well-documented. For example, elephants and other animals have been observed becoming repeatedly intoxicated by eating the fruit of the marula tree; baboons consume tobacco in the wild; and intoxicating mushrooms are eaten by cattle, reindeer and rabbits. These observations suggest that addictive behaviour is widespread amongst many animals, not just humans.

SMOKING – THE BIOLOGICAL MODEL

Initiation

Forshaw (2002) indicates that the initiation of smoking behaviour may well be driven by a combination of pressures, including biological, social,

cultural and environmental pressures. For some people, smoking is a pleasurable accompaniment to their relaxing activities, often in the pub with friends, or in other social groups. For others it is a necessary aid to coping with challenging and stressful situations. There is, however, evidence that the reason people take up smoking in the first place may well be something to do with their genetics. For example, Lerman et al (1999) have shown that people with a particular gene are less likely to take up smoking than those without it. The gene, called SLC6A3-9, works in the dopamine system. Dopamine will be discussed in more detail later in this chapter.

Maintenance

Whatever the reason for starting smoking, the reason for continuing the behaviour, according to the biological model, is *chemical addiction*. Quite why smokers become addicted can be explained in this model by the role nicotine plays. There is clear evidence that the nicotine within tobacco is an extremely addictive drug producing significant changes in how our brain functions.

Nicotine regulation model

Shachter (1977) asserts that the physical dependence theory is relevant to smokers. In the nicotine regulation model, he argues that smokers continue to smoke to maintain nicotine in the body at a level high enough to avoid any negative withdrawal symptoms. In his research he compared how many cigarettes different smokers needed to consume each week. Some of his participants were given cigarettes with a low nicotine content, and some, cigarettes with a high nicotine content. Those with the low-nicotine cigarettes smoked more than those with the high-nicotine cigarettes, just as would be predicted by the nicotine regulation model. The higher nicotine content allowed smokers to reach the level of nicotine required with fewer cigarettes. The result was clearest with heavy smokers: they smoked, on average, 25% more low-nicotine cigarettes than high-nicotine cigarettes.

The reward system

Earlier, we mentioned that Lerman et al (1999) showed that those carrying a particular gene were less likely to take up smoking, and we noted that this gene worked in the dopamine system in the brain. Sabol et al (1999) went on to show that this gene (SLC6A3-9) was extremely important in enhancing people's ability to stop smoking, and that those not carrying it were more likely to

remain as smokers, maintaining their addictive smoking behaviour.

Dopamine is a naturally occurring chemical in the brain. It is a neurotransmitter responsible for communication in different parts of the brain, including the so-called reward system. Biologically, nicotine has been shown to increase dopamine release within the brain reward system, therefore providing us with a positive feeling. Maintaining addictive smoking behaviour continues to provide the smoker with this positive feeling. Injections of drugs that block the action of dopamine in the brain have been shown to reduce the reward nicotine provides. Animal research by Corrigall and Coen (1991) showed that it is possible to train rats to self-administer nicotine through implants directly into the reward-centres of their brain, to provide themselves with positive feelings. Injecting the rats with a drug that prevents dopamine release decreases this nicotine self-administration.



The reward centre in the brain

It has also been found that nicotine enhances the reward value of other stimuli. You can think of nicotine as an amplifier, making the reward gained from other things that much greater. Self-stimulation procedures can be used to show this. A small electrical stimulation of the brain's reward centres can generate a positive feeling, and research has shown that rats can be trained to self-administer these small electrical charges. Nicotine has been shown to enhance the reward value of such electrical stimulation. This means that rats who receive nicotine need lower electrical stimulation to experience the same level of reward. (Harrison et al, 2002). When the exposure to nicotine is stopped, and the rats experience withdrawal, the self-stimulation increases. This indicates that the rats require higher current intensities to perceive the stimulation as rewarding when not exposed to

nicotine (Epping-Jordan et al 1998). It follows that people maintain their addictive smoking behaviour because it makes other behaviours seem that much more enjoyable. If smoking were stopped, other activities would need to be that much more exciting to compensate for the removal of the nicotine.

Relapse

As mentioned earlier, a physical dependence on a drug such as nicotine can mean a quite high tolerance. Stopping long-term use of smoking at high tolerance levels can result in severe withdrawal symptoms. It is clear that the unpleasant feelings of withdrawal can be avoided if the person relapses and resumes the addictive behaviour.

Lerman et al (2007) have shown that smokers who are deprived of nicotine during withdrawal show increased activity in certain parts of their brain. In their study, Lerman et al used a scanner to measure blood flow in the brain. They tested regular smokers just after a cigarette, and then after a single night where the smokers abstained from their habit. The results showed that after the night without smoking there was an increased blood flow to parts of the brain concerned with attention, memory and also reward. They concluded that these parts of the brain become particularly active when the person is craving a cigarette. The researchers also suggested that some people are more prone than others to cravings because of changes in brain chemistry. This research is useful in knowing what it is that encourages an ex-smoker to relapse, and why some people are more likely to relapse than others.

GAMBLING – THE BIOLOGICAL MODEL

Initiation

As with smoking, quite why people take up gambling in the first place is likely to be explained in terms of a combination of social, environmental and also biological factors. The biological explanation of the initiation of problem gambling behaviour is closely tied to the physical response gambling generates in the body of those that gamble. This can be explained in terms of the positive reward theory. As we described earlier, a bet can be followed by a period of anticipation where the body responds and prepares itself for the event with an increased heart rate, and a flow of adrenaline. Adrenaline is part of the natural fight-or-flight response of the body, and release of this hormone is a normal and healthy reaction to an acute stressor. However, there is considerable evidence that the burst of energy associated

with its release is highly addictive. This positive reward of adrenaline need not come only from an anticipation of a race, or event upon which the person has placed money. An immediate response can come from something as simple as placing money into a slot machine. So, the initiation of a gambling addiction is directly related to this positive reward of an adrenaline 'rush' which occurs with gambling behaviour. For a gambler, to gain the positive feeling again is very easy – it is enough simply to place another bet, or slide another coin into the fruit-machine.

Bergh et al (1997) say that there is a link between pathological gambling, the reward-system, genetics and impulsive behaviour. Comings et al (1996) for example showed that there is evidence from genetic studies that pathological gamblers are more likely to carry a gene called D2A1 than those who do not engage in this problem behaviour. On this basis, it could well be that some people are born more likely to become problem gamblers than others.

There is also interesting evidence from Rugle and Melamed (1993). They showed that electroencephalogram (EEG) patterns of problem gamblers were similar to those of children with attention deficit hyperactivity disorder. This suggests that those with a gambling problem show similar brain activity to children who have trouble controlling their attention and behaviour. All of this research suggests a possible biological basis, or at least a biological weakness, as being responsible for initiating addictive gambling behaviour.

Maintenance

Several studies have provided evidence for similarities between problem gambling and other addictions such as smoking. Wray and Dickerson (1981) reported that gamblers who are prevented from gambling often report changes that resemble withdrawal symptoms. Although these symptoms may not be as intense as those following sustained smoking behaviour, they are still withdrawal symptoms, and as such they are highly influential in determining whether a gambler maintains his/her behaviour. Avoiding withdrawal symptoms is simple: keep gambling and they will not appear. Similarly, Orford et al (1996) compared alcoholics and problem gamblers. The two groups reported similar levels of perceived strength of addictions, even though problem gamblers reported less intense withdrawal and less dependence.

Some investigations have examined how brain activities differ in individuals with a gambling

addiction compared to those without. One study used functional magnetic resonance imaging (fMRI) which shows how blood flow in the brain changes when people experience different emotions and stimuli. Potenza et al (2003) investigated urge or craving states in men diagnosed with pathological gambling disorder. When viewing gambling tapes, and just before they began to feel an emotional response, the gamblers showed different blood flow in their brains when compared to non-gamblers. These differences were not observed during viewing of videotapes with happy or sad situations, so it must have been something to do with the fact that the tapes were concerned with gambling. An addiction to gambling could have something to do with an inability to control behaviour. The results of Potenza et al are consistent with those from studies of people who lack control in other behavioural areas, including aggression (New et al 2002) and decision-making (Bechara 2003). It seems likely, then, that the parts of the brain responsible for dealing with control of decision-making are involved in addictive gambling behaviour.

Relapse

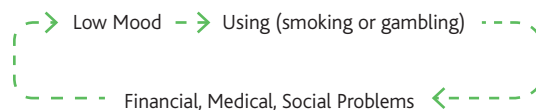
Just as with other addictive behaviours such as smoking, relapse into gambling behaviour can be explained from a biological perspective. We have already seen that those with gambling addictions experience similar, if milder, withdrawal symptoms to those felt by people addicted to drugs such as nicotine. In many ways, it is easy to stop the withdrawal symptoms by re-engaging in the addictive behaviour. If, once the behaviour is stopped, the gambler feels anxious and experiences an increased heart-rate and raised blood pressure and even mild tremors and sweating, then placing a bet may remove these withdrawal feelings.

Ciarrochi et al (1987) note another point that is relevant here. Those addicted to gambling often have other problems such as addictions to alcohol or even shopping. It has been reported that, when giving up gambling, people may switch attention to another of their addictive behaviours. Similarly, when that behaviour becomes too much of a problem in their lives, they may switch back to gambling, as a means of maintaining the positive feelings received from engaging in one or other of the addictive behaviours.

THE COGNITIVE MODEL

Cognition is thinking. The cognitive model, then, indicates that people initiate and maintain

addictive behaviour, and may relapse into that behaviour, because of the way they think. According to Beck et al (2001), the cognitive model of addiction indicates that addicts find themselves in a 'vicious circle', as shown in the diagram below.



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A low mood can be relieved by engaging in the addictive behaviour. This in turn leads to financial, social or medical problems which in turn lead to low mood, and the circle begins all over again.

There are three important issues that help to clarify cognitive explanations of smoking and gambling. These are coping, expectancy, and self-efficacy.

COPING

A key idea in the cognitive model of addiction is that people engage in addictive behaviours to cope with stress in their lives. In terms of addiction, coping is thought to fulfil three major functions.

1. **Mood regulation.** Addictive behaviours can be used to increase positive mood and reduce negative mood.
2. **Performance enhancement.** The addictive behaviour may make the person feel alert or more able to perform certain tasks.
3. **Distraction.** The behaviour may serve to distract the addict from less-pleasant life experiences.

Quite how these functions operate depends on the addictive behaviour.

EXPECTANCY

The concept of expectancy has received a great deal of attention with respect to addiction. For example, significant expectation effects have been found to be associated with why and how often we engage in an addictive behaviour. If people engaging in an addictive behaviour expect their actions

to have negative consequences, then they are less likely to engage in that behaviour. For instance, Hansen et al (1991) found that those who abuse alcohol are likely to be people who perceive fewer negative consequences, while those who expect strong negative effects (perhaps on moral or religious grounds) are less likely to engage in the addictive behaviour.

Expectancy effects are also associated with the experience of the addictive behaviours themselves. Researchers have shown that expectancies about the effect of an addictive behaviour can sometimes have more of an influence upon the addict's experience than the actual changes it produces! It seems that what we expect to happen when engaged in the behaviour influences us even more than the behaviour itself. For instance, users of a hallucinogenic drug may have a good or bad trip depending upon their mood and expectations before taking it and how they interpret the symptoms of their experience as they occur.

On a similar note, expectancies do not have to be accurate in order for them to motivate our behaviour. For example, individuals may consume alcohol in part because they think (expect) that alcohol increases sexual arousal, when in fact it has just the opposite physiological effect (Crowe & George 1989).

SELF-EFFICACY

Bandura (1997) says that self-efficacy refers to 'beliefs in one's capabilities to organise and execute the courses of action required to produce given attainments'. What this means is that self-efficacy refers to our beliefs in ourselves, and whether we believe that we are capable of dealing with the effects of a particular behaviour. According to self-efficacy theory, thought processes that are under our own control, particularly self-efficacy beliefs, also play an important role in determining human behaviour. The idea is that self-efficacy influences the decisions people make, the goals they pursue, the effort they expend to achieve them, how long they will persevere when confronted with obstacles and the likelihood that specified goals will be achieved (Bandura 1999). Self-efficacy is thought to play a very important role in whether or not we start engaging in addictive behaviours and whether we believe we can do anything about the addictive behaviour once it is established.

SMOKING – THE COGNITIVE MODEL

The three factors described earlier (coping, expectancy and self-efficacy) are all relevant to smoking

behaviour. Each has a role to play in the cognitive description of how smoking is initiated, how it is maintained and how it might return after a period of abstinence.

Initiation

Whether smoking behaviour begins or not can be described in terms of *expectancy*. Smokers' expectancies regarding the effect of tobacco may be wide-ranging. They may think that smoking reduces stress and negative feelings. They may believe that it makes them look attractive to the opposite sex, or that it will facilitate social interactions, relieve a craving for nicotine, control appetite and weight gain and so on. All of these expectancies may motivate smoking behaviour regardless of whether they reflect reality. It is enough that the smoker *believes* that they are true.

In terms of coping, performance enhancement may explain why someone takes up smoking. It could be that people begin to smoke because they are having a hard time concentrating for some reason. Perhaps they are having to work long hours. Smoking can help people concentrate with increased attentional focus and enhanced performance of well-learned behaviours (Heishman 1999). Once the difficult period is over, and the stress has passed, the person is left with an addiction to smoking. It could be that people begin to smoke because they are bored, and it relieves their mood (Brandon & Baker 1991).

One reason that nicotine produces significant addictive effects is that people who smoke experience positive effects, including mild euphoria and mildly enhanced cognition. These positive subjective effects motivate further nicotine use (Kenny & Markou 2001).

Finally we can consider self-efficacy as a reason for initiating the addictive behaviour. It could be that smokers know that the habit is dangerous and addictive but they believe that they are able to control the behaviour and any problems that may arise from it.

Maintenance

The maintenance of smoking behaviour can be addressed with reference to Beck et al's 'vicious circle' of addiction. The person may be unhappy, or may have difficulty concentrating in their stressful life. For this reason they engage in smoking behaviour. The addictive behaviour is initiated. This in turn leads to possible medical problems associated with smoking. It may also result in financial difficulties. Say, for example, a pack of

20 cigarettes costs approximately £7. A two pack a day person will spend almost £100 a week on cigarettes. That's £400 a month. This is a lot of money that could be better spent on food, rent or family. The smoker may also experience social problems. Many people regard smoking as socially unacceptable, and the law now bans smoking in enclosed spaces such as offices, pubs and clubs. Persons with this addiction may not feel able to visit such places any more, and if they do their behaviour there is heavily influenced by their need to leave the building to smoke. All of these things may result in a negative mood, and so the cycle continues.

The functions of coping may also explain why people maintain their addictive behaviour. It may be that people continue to smoke because the nicotine really does allow them to concentrate for longer, or engage in repetitive tasks without getting unduly bored.

Self-efficacy is also an issue in the maintenance of smoking behaviour. In the initiation of smoking behaviour people may feel that they are capable of coping with the negative effects of smoking. It could be that once smoking behaviour has been initiated, they feel unable to cope with the withdrawal procedure associated with smoking and so they do not give up.

It is also worth noting that expectancies are important here. The smoker may expect the withdrawal experience to be extremely unpleasant, and this expectancy informs their self-efficacy. It may well be that some people find that it is relatively easy to stop smoking, whereas others find it extremely difficult. Expectancies are likely to influence whether someone continues to smoke or not. If all smokers expected it to be easy to give up then perhaps they would!

Relapse

Coping, expectancy and self-efficacy can all explain why a smoker may relapse. In terms of coping, the negative feelings of the withdrawal period can be relieved almost immediately by taking another cigarette. The symptoms of withdrawal include attention lapse, and smoking provides an immediate route to performance enhancement in this respect. Finally, the withdrawal process may well make the smoker feel extremely unwell, and even self-conscious. The symptoms may be obvious both to the person attempting to give up and to those around him or her. This is likely to make the person feel even more self-conscious. It is possible that a return to smoking is the easiest and most immediate way to escape from this feeling. It is also possible that self-efficacy is an issue in the cognitive explanation of relapse into smoking. It may be that relapsed smokers feel that, if they have given up once, they are able to do it again any time they want. Their reasoning is that a return to smoking will not be permanent as they have the experience of having given up previously.

GAMBLING – THE COGNITIVE MODEL

Gambling can also be approached from a cognitive perspective. Sharpe and Tarrier (1993) propose that the physiological effects of gambling, including excitement and a natural 'high' or buzz, come about because of cognitive influences. In their theory, whilst gambling is initiated by operant conditioning, the excitement generated by gambling, and occasional wins, encourages further gambling. If gambling continues, cognitive mechanisms become more important in maintaining the behaviour. The way that gamblers think about their own behaviour and interpret their experiences is key to understanding how this addictive behaviour is sustained.

MARLATT'S RELAPSE MODEL

According to Marlatt (1985), the cause of a relapse into the addictive behaviour is the presence of a 'high risk situation' which threatens an individual's sense of control and increases the risk of relapse. To avoid relapse, whether into smoking or gambling, the individual must carry out a coping response, which in turn produces an increase in self-efficacy. If a coping response is not used, the individual experiences a decrease in self-efficacy (they feel more out of control) and an increase in the expected positive outcome of engaging in the behaviour, be it smoking or gambling. These positive outcome expectancies are experienced as 'cravings' for the substance, and they lead to the initial re-use of the substance, referred to as a 'lapse'. The lapse, in turn, leads to a mismatch, called 'cognitive dissonance' ('I stopped smoking, and yet I smoked'). This also makes the person feel guilty and encourages the opinion that the failure and weakness is all their fault. These reactions then increase the likelihood of additional substance use, or full 'relapse'.

Initiation

Gambling behaviour may begin because it provides the person with positive feelings, particularly if the gambling is successful. Positive feelings generate positive thoughts and, once created, these thoughts may be extremely difficult to change. The experiences associated with gambling (the buzz of excitement, the environment etc) can provide the gambler with similarly enhanced positive feelings, further strengthening existing positive cognitions about gambling. Finally, just as with smoking, gambling may provide the gambler with a means of reducing boredom.

Maintenance

The maintenance of gambling behaviour can be described with reference to Beck et al's 'vicious circle'. Once initiated, gambling may provide the person with a method of improving his or her mood. The nature of gambling is such that people tend not to win all the time. Most gamblers lose money rather than win, and so they may very well find themselves in financial difficulties. This in turn leads to negative mood, which the pathological gambler escapes by gambling. They have entered the circle.

The functions of coping may also explain why people continue to gamble. It may be that they do so because the experience of excitement, and the possibility of the occasional win, makes them feel good. These events encourage gamblers to interpret their behaviour positively.

In terms of self-efficacy, gambling may be maintained because people do not see it as a problem at all. Many people gamble and do not realise it, such as those that play the National Lottery. It could also be that the perceived positive effects of not gambling are not great enough to make someone wish to stop. To put it another way, the withdrawal symptoms of gambling are not as serious as those from giving up smoking. That being the case, the person may not feel that there is any point in giving up as they really can stop at any time, since the physical effects of giving up are relatively easy to cope with.

Expectancy is extremely important here. The perceived benefits of gambling can be huge. Stories of people winning millions of pounds on the lottery, and hundreds of thousands of pounds betting on horse racing, are in the newspapers frequently. It follows that the gambler sees the possibility that their actions will be life-changing: occasional wins will support these expectancies, so the gambler continues to gamble.

Relapse

In simple terms, the withdrawal effects from gambling may not be too serious. The gambler may not experience any feelings of illness and when compared with other addictions, the withdrawal symptoms can be very mild. The consequences of relapse are seen as being simply that the gambler returns to the possibility of winning money. Since the withdrawal may be comparatively painless, gamblers may feel that they can stop at any time. Moreover, as the gambler may feel able to stop easily, a relapse is not seen as too much of a problem. Similarly, the life the gambler leads without gambling may seem extremely dull to them. Relapse may happen because it reduces this boredom.

THE LEARNING MODEL

The learning model of addiction says that we can explain addictive behaviours in terms of learning theory. The types of learning in question here are classical conditioning and operant conditioning.

Social learning is also very important. Social learning theory is most associated with Albert Bandura who showed that children learn by observing others. Someone who is reinforced for their behaviour is more likely to be imitated. This is an example of *vicarious reinforcement* – a reinforcement which is received indirectly by observing another person being reinforced. Bandura said that we model our behaviour on that of someone we admire, or relate to in some way. For example, boys are more likely to model their behaviour on men, and girls on women. This issue is further explored later when we consider the role of the media in addictive behaviour.



Warning! You need to know about the learning model of addiction and how it is applied to initiation, maintenance and relapse for both smoking and gambling. Unless you are organised (like this chapter is organised!) you could get confused. So, first we explain what the learning model is, then we apply it to initiation, maintenance and relapse of smoking; and then to initiation, maintenance and relapse of gambling.

THE CUE-REACTIVITY THEORY

Research shows that when presented with a variety of cues associated with their problem behaviour, addicts show a distinct pattern of physiological and behavioural responses. In effect, addicts

CLASSICAL CONDITIONING

This explanation of learning says that people and non-human animals learn because of the associations they make. The initial research was carried out by Pavlov. He demonstrated that dogs salivated to the sound of a bell because they 'associated' the sound with the presentation of food. Each time the dogs heard the bell, food was presented. Eventually, the bell itself could make them salivate. Salivation is a reflex action and requires no thought. It is a response to a stimulus. Here, the response is to an unusual stimulus. It is a conditioned reflex. A similar relationship can be said to happen in the learning of attachments. For instance, the caregiver acts caringly towards the child. This is called the **unconditioned stimulus (UCS)**. In response to this, the infant feels content. The feeling of contentment is called the **unconditioned response (UCR)**. After a while, and after the UCS has been presented a number of times, making the child feel content, the infant learns to associate feeling content with the actions of the caregiver. Classical conditioning can be regarded as a three-stage process, and can be summarised as follows:

STAGE 1

Pre-conditioning

The caregiver's actions (unconditioned stimulus – UCS) produce a feeling of contentment in the child (unconditioned response – UCR).

STAGE 2

Conditioning

The caring behaviour is presented over and over again, making the infant feel content each time. The infant begins to associate the feeling with the stimulus.

STAGE 3

Post-conditioning

The feeling of contentment has been learned (conditioned). It is a 'conditioned response – CR' to the now 'conditioned stimulus – CS' (the caring behaviour).

OPERANT CONDITIONING



In operant conditioning, we are said to learn because we are either rewarded for our behaviour, or the way we feel, or punished for it. If we do something and it makes us feel happy, then that behaviour is reinforced. We are more likely to do it again. If we do something and it makes us feel unhappy, or uncomfortable (such as putting a hand in a candle flame) then our behaviour will not be reinforced. In operant conditioning we talk about the unpleasant result of an action (the finger in the flame example) as punishment.

react to things associated with their addiction in similar ways to how they react to the object of the addictive behaviour. In the case of smoking these items might include lighters or matches, boxes of cigarettes and ashtrays. In the case of gambling they might include betting-slips, betting shops and pages of newspapers displaying gambling odds. According to cue-reactivity theory, the mechanism underlying this behaviour is classical conditioning. Pavlov showed that a dog can be made to salivate to the sound of a bell once the bell has been paired with food. In addictive behaviour the experience of the craving is paired with the presence of the items associated with the behaviour. These paraphernalia are therefore able to elicit conditioned responses even in the absence of actual smoking or gambling behaviour (Carter & Tiffany 1999). Addiction-related cues acting as conditioned stimuli are therefore thought to play an important role in the emergence and maintenance of addictive behaviours (Tiffany 1995).

SMOKING – THE LEARNING MODEL

Initiation

Smoking behaviour may begin because the person starts to associate the experiences of smoking with desirable outcomes or rewards. For instance, consider the issue of peer pressure. Friends and colleagues may encourage a person to take a cigarette: taunting, making fun and name-calling will not stop until they do so, and the person may feel embarrassed. This in turn reduces their feeling of self-worth. Accepting the cigarette and taking up smoking allows them access to a social network, reduces or even eliminates the teasing or bullying and consequently makes them feel much happier. The new smoker associates the cigarettes with this positive feeling, reinforcing the link between smoking and feeling good.

A smoker may receive satisfaction from handling the pack, removing the cigarette, tapping one end against a firm surface to compress the tobacco more tightly, lighting the cigarette, and taking

puffs at regular intervals. Such social and psychological factors are not to be overlooked in attempts to understand why people continue to smoke.

Maintenance

The pressures that people feel to take up smoking in the first place remain prevalent during their smoking life. The people they mix with are often themselves smokers. Giving up smoking makes it difficult to be around these people if the smoker is to stay away from cigarettes to reduce the craving they have for nicotine. The act of smoking can also become a highly ritualised habit – the routines described above are something many smokers find compelling and hard to resist.

At certain times the act of smoking, not just the addiction to the nicotine, forms an important part of the day. For instance, many smokers will tell you that they would give up – except for the cigarettes after a meal that they feel aid their digestion. In these situations smokers have associated the smoking process with a belief that the cigarette is improving their digestion. Many associate smoking with appetite reduction, and so the craving for food is replaced with the craving for nicotine.

If smoking no longer provides the positive feelings that it once did, then the relationship between the smoking and the desirable feelings begins to be extinguished. If this happens the smoker may be in a position to give up.

Relapse

The cue-reactivity paradigm is important here. Because smokers often link the materials associated with their addictive behaviour with the act of smoking itself, seeing or handling a lighter or a packet of cigarettes is enough to generate the craving for the nicotine. It may be that just seeing someone else smoking is enough to bring on familiar cravings for a cigarette. Since smoking is extremely prevalent in our society these pressures are there for everyone, including ex-smokers, to see. The pressures to return to their addictive behaviours are all around smokers every day, and it is not hard to imagine how difficult it is for those giving up cigarettes to avoid the things that tempt them back to their old habit.

GAMBLING – THE LEARNING MODEL

Initiation

In terms of the learning model, the start of gambling behaviour can be explained similarly to the start of smoking or any other addictive behaviour. Initially, the person may see others winning on slot machines or even on the lottery. Their

expectations of the win may drive them to place their first bet, begin playing the lottery, or using slot machines. Once they have started, the excitement they experience is associated with the whole gambling process, reinforcing the positive feelings that gambling produces. This may be further reinforced by the occasional win, especially if there are early ‘successes’. The gambler becomes addicted to the behaviour as this process continues.

Maintenance

The gambler continues the addictive behaviour because the rewards they receive, be they monetary (from winning) or physical (from the excitement of gambling), are reliable and relatively easy to come by. Placing a bet provides the encouragement and reward to continue gambling. This constant association of excitement with gambling reinforces the relationship between the two. Gamblers don’t win *all* the time of course, but this only makes the compulsion to gamble stronger. This is because gambling provides a *partial reinforcement*, a schedule of reinforcement which produces very persistent learned behaviours. It may seem counter-intuitive, but it is in fact the infrequency of winning that maintains gambling behaviour. If gamblers were to win every time they bet, then the urge to gamble would not be as strong. For example, imagine the situation where putting 10 pence into a fruit machine would result in a 10 pence win each time. This would soon become tedious. However, fruit machines only occasionally pay out but (and this is important) they *will* reward a player with a win *at some point in the future*. Gamblers then are rewarded for their behaviour at fairly random intervals, and this means that they can go for a long time without winning and still have their urge to gamble undiminished.

In order for the gambling behaviour to be extinguished, it must be *consistently* associated with negative or neutral feelings. Given the many temptations and easy opportunities to gamble, this means that problem gambling is a very difficult thing to treat.

Relapse

Returning to gambling after a period of abstinence can be explained in terms of the cue-reactivity paradigm. The material associated with gambling is all around us, particularly with the easy way which people can now play the National Lottery, and not just by the usual selection of six numbers, but also the multitude of scratch cards available. Fruit machines are in many public places, and the internet is filled with on-line casinos and other

opportunities to gamble. Gamblers attempting to give up the habit are surrounded by reminders of their addictive behaviour, and temptations to give in to the urge to gamble are everywhere. In terms of the cue-reactivity paradigm these reminders can be sufficient to generate the feelings associated with gambling, including the anticipation and the memory of the excitement associated with the behaviour, and a relapse may be the result.

FACTORS AFFECTING ADDICTIVE BEHAVIOUR

VULNERABILITY TO ADDICTION

The models of addictive behaviour all offer a different view of why people take up the behaviour in the first place, why it is maintained and why, after a period of abstinence from the behaviour, people return to it. While each of the models explains, in its own way, how the behaviour may be initiated, they do not explain why some people may be more vulnerable than others to the draw of addictive behaviours. Why is it that some people never take up smoking at all, never even trying a cigarette let alone maintaining a 20 a day habit for years on end? Why is it that some people can happily play the National Lottery once a month without becoming addicted, whereas others are particularly vulnerable to the perceived rewards of gambling? These people find it difficult to pass a fruit machine without playing, and constantly seek outlets for their gambling addiction. It seems that some are more vulnerable than others to addictive behaviours, and here we discuss three possible issues affecting this vulnerability; self-esteem, attributions for addiction and the social context in which the addictive behaviour takes place.



Psychology in Action is all about applying knowledge. We are encouraging you to think this way by applying theory (self-esteem, attribution, social context) to smoking and gambling addictions. It's good to start thinking this way – it is how you get the best marks in the exam!

SELF-ESTEEM

Self-esteem can be defined as a person's overall opinion of his or her worth. People with low self-esteem may regard themselves as worthless, or at least, not worth very much. They may feel incompetent, or out of control in some way. This can influence their emotions, making them feel a sense of despair, anxiety and shame. Self-esteem is a characteristic of our personality. Just as some people feel strong and confident, others feel weak, and unable to control what is going on around them. Other terms you may encounter that relate to this concept include self-respect, self-worth and self-regard. When these are low, then the person's self-esteem is said to be low.

Reaction to criticism

One reason we may suffer with low self-esteem is that other people's opinions of us or our behaviours may be negative. For instance, we may feel positive about ourselves if people congratulate us on our behaviour or performance. If we take examinations and do well then the feedback we receive from others around us, or the exam board, may make us feel good. On the other hand, if we do not do so well we may be criticised for not working hard enough, or letting ourselves down in some way. The result of this criticism may be a reduction in our feeling of self-worth.

Perceived ability to succeed

Those with low self-esteem are in a very unfortunate position as they see the possibility to achieve, to move away from their current positions in life, as very low or non-existent. They regard themselves as unable to change the things around them and see failure as the only likely result when faced with a difficulty. Some people regard tasks as challenges, but those with low self-esteem regard them as extremely intimidating and so doubt their abilities to overcome them. They are quick to say that they cannot do something, exhibiting what may be regarded as a negative attitude to an obstacle in their way.

SELF-ESTEEM IN SMOKING AND GAMBLING

A person suffering with low self-esteem may be particularly vulnerable to peer pressure, an extremely important influence in whether someone dabbles in an addictive behaviour such as smoking or gambling. For instance, if there is a social group that considers smoking as central to being a member, then access to that group will require a person to initiate smoking behaviour. Those with low self-esteem may be particularly

vulnerable to this sort of pressure. They may see membership of the social group as rewarding, something that gives them a feeling of belonging. This belonging may well improve their feeling of self-worth. Here it is 'expectancy' of how the initiation of the addictive behaviour may change the way they feel about themselves that is driving them.

In terms of gambling, the person may regard the reward of winning money as a way to enable them to feel better about themselves. They can buy more fashionable clothes, perhaps a prestigious car. They can eat out more, see the latest movies or shows, spend time travelling and living a more glamorous life. Those with low self-esteem may see gambling as a way out of what they perceive to be a predicament of some kind – a dead-end existence that is making them feel unhappy. If only they had some more money they could really do something about their lives.

Once the person begins the addictive behaviour the feeling of self-esteem remains important. Both gambling and smoking are behaviours that receive criticism from society in general. The law has made it very clear that smoking is unacceptable, and smokers may be criticised daily for their habit. For those with low self-esteem, criticism is unlikely to spur them on to giving up their addictive behaviour: rather, it is likely to make them feel worse.

The same applies in terms of gambling. This addictive behaviour more often than not results in gamblers losing much or all of their money. They may be criticised for what others perceive as a selfish habit in which they prefer to spend time alone, risking money on chances of gain rather than being with family, using their money for more important things such as bills, or a household. Such criticism may deepen their sense of low self-worth.

As we have learned, those who suffer from low self-worth feel that obstacles are not challenges at all: they are regarded as extremely intimidating and as being probably insurmountable. Criticising a smoker or gambler who already suffers with low self-esteem is likely to make them feel even more worthless – and as such, even less likely to believe that they can overcome the huge difficulty of giving up their addictive behaviour. It is for this reason that those with low self-esteem are particularly vulnerable to maintaining these behaviours, as confidence and will-power are not available to help to overcome them.

ATTRIBUTIONS FOR ADDICTION

The study of attribution in psychology looks at how people explain things and how they seek causes for events. The theory was put forward by Kelley (1967) and relates not only to why we think all sorts of external things happen, but also to why we think our own behaviours 'happen'.

Here's an example. Students may be asked why they did not pass the examination. They may respond in a number of different ways. They may say 'I didn't pass because the exam was too hard'. This is an 'external' attribution, meaning that the failure was not their fault – maybe it is the fault of the examiner, who set the questions.

They may also have responded that they did not pass the examination 'because they were too stupid to be able to'. This is an example of an 'internal' attribution. They are blaming their own inadequacies for their failure, and so it was all their fault that they did not pass.

In terms of addiction, attribution theory relates to the concept of 'control'. If things are beyond our control then we cannot be blamed for their happening. If our addiction is beyond our control then the behaviour is not our fault. If we regard something as being beyond our control we are making an external attribution. If, on the other hand, we consider ourselves as being entirely responsible for the addiction, and the reason we maintain the addiction is that we believe we are weak in some way, then we have internalised the reason or cause – we have made an internal attribution for the event.



The best ways to show your knowledge of attribution theory is to give examples of it in action - remember you need to be able to apply your knowledge like this in the in this exam! To help you get started, the following tables are examples of how attribution might be applied to smoking and gambling.

ATTRIBUTIONS FOR SMOKING AND GAMBLING BEHAVIOUR

A basic understanding of attribution theory can be used to explain why some people are more vulnerable to engaging in addictive behaviours than others. Smoking and gambling are good examples of these. Consider the responses to the following questions:

Attributions for smoking behaviour

'Why did you start smoking?'

External attribution

Your response to this may be that you were under a lot of pressure from people in school to try a cigarette. This is an external attribution because you were somehow forced to begin smoking because the pressure to do so was so great. You regard your initial smoking behaviour as being beyond your control.

Internal attribution

You may have replied that you started smoking because you couldn't help it, you have no will-power and you always give in to things like that. This is an internal attribution because you explain your smoking behaviour as being entirely your own fault. You regard taking up smoking as being an issue of control and in your case you were too weak.

'Why do you maintain your smoking habit?'

External attribution

You may respond that you maintain your smoking habit because society makes it clear that we need to be thin, and you believe smoking somehow suppresses our appetite. You smoke because you have to be accepted in society. Here you blame your continued smoking behaviour on the norms of society and a belief, rightly or wrongly, that smoking will help you stay thin. The cause for your addictive behaviour is beyond your control. It is somehow not your fault that you have to smoke: it is society's fault.

Internal attribution

You may have responded that you continue to smoke because you are frightened of giving up. If you give up all your friends will leave you, and you will have to deal with horrible withdrawal symptoms. You are just not brave enough to stop. Here you are blaming your continued behaviour on your lack of bravery. It is all your fault that you do not stop: if you were braver then you would feel able to give up. As it is, you are unable to stop, and so you maintain your behaviour.

'You had stopped: why did you relapse and return to smoking?'

External attribution

You respond that the pressures of life just got too much and forced you back into your habit. If life had been less stressful you would not have relapsed. Your reason for the relapse is external. You regard the pressures of life as beyond your control and if things around you had just been different, a little easier, you would not have returned to your habit.

Internal attribution

You could have said that it was just that you are hopeless. You have no will power at all. You are weak and just a bit useless. This is clearly an internal attribution. If you were less hopeless and had more will-power then you would have been able to remain away from cigarettes. As it is, you were just too weak. It is all your fault that you returned to your habit.

Attributions for gambling behaviour

Reasons for gambling can also be internally or externally attributed.

'Why did you start gambling?'

External attribution

Your answer may be something like 'No one told me it was addictive; if they had done I would not have started'. It's not your fault that you gamble because you were never told by doctors or professionals that it was addictive. If you had been you would never have started. Others are being blamed for not telling you the possible costs of gambling.

Internal attributions

It could be that you reply to this question by saying that you really liked the excitement of watching the drums on the fruit machine roll around. You found it great fun. You loved it in fact. You are blaming your initial gambling behaviour on your enjoyment of playing fruit machines. If you had found it boring you might not have engaged in gambling in the first place.

'Why do you maintain your gambling behaviour?'**External attribution**

You may respond that you continue to gamble because it is not your fault that you can't give up. You see reminders of your habit in every newsagent in the form of the Lottery, and it seems that every street corner has a betting shop. If there were no lottery and if betting shops were banned then you would give up. You are blaming your continued gambling on factors beyond your control, namely the presence of betting shops and the National Lottery.

Internal attribution

Your answer to this may be that you continue to gamble because you are unable to give up, as you have no will-power at all. If you were stronger then you could stop. This internal attribution clearly indicates that you continue to gamble because you feel that you are too weak to stop.

'You had stopped: why did you relapse and return to gambling?'**External attribution**

You may say that you needed some money to pay your rent and because of your past as a gambling addict the bank would not lend you any money. You had to live somewhere, and so the only way to get the money was to gamble. It is not your fault that the bank was not willing to help you. Your relapse is due to others, not you. If the bank had helped you, you would not have been forced back to the betting shop.

Internal attribution

Your answer may be that you just couldn't help it. You craved the lights of the fruit machines and the sounds of the race-track and just gave in. Your attribution is internal. You feel that your relapse is your own fault, and you were not strong enough to resist your cravings.

THE SOCIAL CONTEXT OF ADDICTION

It is very important to consider the social context surrounding the addictive behaviour, since the pressures upon a person's behaviour can depend on their environment (Anthony & Chen 2004). For instance, extremely wealthy people may be able to afford help to control their addiction, in the form of regular and costly visits to rehabilitation clinics, whereas these resources may not be available to those with a lower income. However, the role of social context in addictive behaviours can be much subtler than this.



Smoking and gambling are by no means the only addictive behaviours, and there are times when it is useful to refer to other addictive behaviours in order to illustrate or explain what you mean. For this reason we have mentioned things like cocaine addiction, just in order to get a point across or explain something. Remember though, if the exam question explicitly mentions smoking or gambling, then you know what you must write about in your answer.

more likely to relapse into addictive behaviour. It is also true to say that other types of experiences, such as being a member of a warm close family with low stress, may actually protect a person and reduce the risk of becoming addicted or relapsing. Events as different as sexual abuse, harassment, combat-stress, occupational stress, marriage dissatisfaction, and physical traumas have all been linked to addictive behaviours. In particular, there is evidence that bad childhood experiences play an important role in susceptibility in this area. Turner et al (2002) indicate that with gambling, for instance, early experiences of attention deficit hyperactivity disorder may be present. They also indicate that many problem gamblers endured unpleasant life experiences the year before they began their gambling behaviour. The same report indicates that those from higher income families are less likely to gamble and those with a lower level of education are more likely to gamble.

ROLE OF PARENTS

Goddard (1990) carried out a longitudinal study investigating the elements of a child's world that might predict whether they began smoking or not. The main finding is that if parents smoke then children are more likely to smoke (Lader & Matheson 1991). Further research showed that the parents' attitude to smoking was very important (Murray et al 1984). If children perceived their parents as being very anti-smoking they were up

LIFE EXPERIENCES

Certain life experiences can make an individual more vulnerable to developing an addiction or

to 7 times less likely to smoke. There is also evidence of gambling behaviour being related to the behaviour of parents. Wardle et al (2007) report, in the UK National Gambling Prevalence Survey, that problem gamblers are more likely to have had parents who gambled regularly.

SOCIAL ENVIRONMENTAL CUES

We have already seen that through conditioning and cue-reactivity theory, addicts react to things (cues) as though they were the objects of addiction. This also applies to social and environmental cues. Immediate environmental cues that would not otherwise be linked to addictive behaviours can acquire, through their association with gambling or smoking, the ability to trigger addictive behaviour. This can happen even after long periods of abstinence. For example, Volkow et al (2006) demonstrated that cocaine addicts watching a video showing cocaine cues (i.e. things associated with cocaine use) experience increases in the transmission of dopamine in the brain (a chemical involved in reward). This can be related to other addictive behaviours such as smoking or gambling. If it is possible to understand the social environment associated with these addictions then we may be able to help addicts stop and stay away from their addictions.

The relationship between environmental cues and gambling was shown by Sharpe and Terrier (1993) who measured gamblers' perceived arousal (as skin conductivity) when watching a video of a poker machine. The more aroused or excited they were, the more they perspired and this lowered the resistance across the skin. The researchers showed that interrupting the video interrupted the increase in the gamblers' excitement, indicating that the environmental cue in the video was very important in this regard.

PEER PRESSURE

A great deal of behaviour is directly influenced by peers – that is, one's equals or age mates. Whilst the greatest influence of peers is felt during childhood and adolescence, they continue to exert an influence throughout our lives. Peers are an important source of information about acceptable behaviours and values. The groups with which people most associate or identify themselves (the peer group) are important in determining whether they take up smoking or gambling, since peer groups will contain individuals with similar interests, aspirations or attitudes towards the addictive behaviours. Indeed, it is often the case that people with addictive behaviours place some of the blame

for their own behaviour on the influence of their peers.

According to the 'life cycle' theory of addiction, peer influence is a crucial factor in determining whether a person becomes addicted. With this theory, a person encounters a problem that they have difficulty dealing with. Addictive behaviour somehow makes the problem easier to endure, and it is this sense of 'release' from the pressure that encourages the person to return to the behaviour. Before long the person is addicted: basically, the addictive behaviour – to smoking, illegal substance or whatever – is adopted as the solution to the problem. Peers are key because they can either help the person to deal with the initial problem, so easing the difficulty, or add to it by being a pro-addiction influence.

ROLE OF THE MEDIA IN ADDICTIVE BEHAVIOURS



We all watch a bit of TV and we all think we know something about how such media influence our lives. This gives us the false impression that we know more than we really do, and often our response is to offer anecdote and personal opinion. Don't! Such responses in exams are not 'psychologically informed' and won't get marks. Be sure to embed psychology if you want your answer to be taken seriously.

The increased importance of the mass media in our society has had an impact on opinions about addictive behaviours as well as on how often the behaviours themselves occur. In recent years, the increased use of the internet and television, increased sales of celebrity magazines and development of popular culture have meant that we are now bombarded with images that may influence our behaviours (in both a positive and negative way) with respect to addiction. Celebrity 'endorsement' of certain lifestyles is particularly relevant in influencing addictive behaviour amongst young people, who are often most vulnerable to the cult of celebrity and the perceived glamour that goes along with it.

In the past, advertising for cigarettes and other nicotine-based products has portrayed the user as cool, sophisticated, independent, popular, physically attractive and fit. These are all concepts that teenagers, and those with low self esteem,

THE TOBACCO BAN



Since 1991, the European Union has banned all tobacco advertising on TV. In the UK, this ban was extended in 2005 to all other media, including the internet, and newspapers: tobacco sponsorship of large sporting events was also banned. In addition to this, cigarette packets began to carry stark warnings of the dangers of engaging in this addictive behaviour.

are likely to aspire to. Bandura's social learning theory indicates that we may model our behaviour on that of someone whom we respect, or would like to be like, or who is an authority. The media can act as a source of this 'observational learning' by providing models which teenagers may seek to copy. It follows that exposure to media messages about addictive behaviours can provide direct reinforcement for whether or not a person takes part in those behaviours.

NEGATIVE EFFECTS OF THE MEDIA

It is claimed that much of what the media contain is what people want to watch. It seems that many people are interested in celebrity and so the media will naturally report the behaviour of a person if that report will help them sell their newspaper, or encourage people to tune in to their television programme. It is often the case that the media report problems that a celebrity is having with addiction, and how the law deals with this behaviour can form an important part of the report. The International Narcotics Control Board (INCB) have highlighted this issue. Young people are quick to pick up on messages from the media of celebrity addiction going unpunished.

They often react to the perceived leniency in dealing with such offenders by engaging in the addictive behaviour themselves. The INCB suggest that this raises questions about the fairness of the justice system and could undermine wider social efforts at reducing the demand for drugs (INCB, 2008).

Smoking

Strasburger (1995) reports that, despite tobacco adverts having been banned in America in 1971, up until the early 1990s tobacco was the most heavily advertised consumer product in the US. Much of this advertising is what he calls 'passive' or 'inadvertent', (for example brand logos on sports shirts or racing cars, specifically targeting young people). Whilst the practice of tobacco 'product placement' (manufacturers paying to have their products feature in movies) has, under

government pressure, reduced significantly since the early 1990s, smoking is still an addictive behaviour frequently seen in movies.

Movies are a mass medium, designed to reach a large audience, and they deliver billions of impressions of smoking to adolescents each year. Hazan et al (1994) showed that since 1960 the top grossing films have shown their stars light up cigarettes at three times the rate of American adults. A recent study by Sargent et al (2007) using a national US adolescent sample, demonstrated that exposure to smoking in movies predicted the risk of the observer becoming an established smoker. The research shows that exposure to movies can influence smokers' responsiveness to tobacco. This can be called the 'movie exposure effect' and it is independent of other risk factors for smoking (Distefan et al 2004). Are adolescents particularly sensitive in this way?

A longitudinal study by Hanewinkel and Sargent (2008) showed a clear 'dose-response' effect between viewing smoking in movies and rates of adolescent initiation of smoking.

They also demonstrated a correlation between the type of films being watched and smoking behaviour, with adolescents who watched films rated PG or R being 66% more likely to smoke than those who did not. It does not necessarily mean that the films *caused* those that watched them to smoke, but the result does suggest that the adolescents that watch these films are likely to engage in smoking behaviour, and it is in these films that more obvious smoking is permitted.

Gambling

The Responsible Gaming Council of Canada (2007) reported that 3.9% of adolescents in a sample of 15-17 year olds could be classed as problem gamblers. A further 8.9% could be described as 'at risk'. Clearly the problem is one worth taking very seriously. Korn and Reynolds (2008) reported the impacts of commercial gambling advertising on young people, using Canada as an example. They indicated that there were over 120,000 gambling

outlets in Canada, ranging from slot machines to race-tracks, and including casinos and lottery ticket dispensers. Their research, using interviews and questionnaires, revealed that the interviewees were each able to recall one gambling marketing campaign; that they regarded gambling advertisements as influential; and that they felt that the advertisements were funny, showed 'cool' people, and indicated possibilities of financial gain – all things that are likely to be attractive to young people or those with low self-esteem.



The research went on to show that at-risk gamblers were extremely sensitive to gambling advertising, further exacerbating their problem. The key points from the work were that those interviewed were aware of, and had good understandings of, the prevalence and potential severity of gambling addictions. They felt that advertising 'normalised' gambling, making it feel like a regular, perfectly natural behaviour. The potential risks associated with such an attitude are highlighted by the fact that the interviewees were largely unaware of regulations governing the advertising of gambling. Other research, such as that of Hyung-Seok et al (2007), suggests that it is the nature of the gambling advertising that causes the problems, and that advertising that depicts gambling positively can, perhaps unsurprisingly, encourage people to engage in the behaviour, which may in time lead to the damaging effects we associate with problem gambling.

The negative effects of the media are thought to be magnified by the influence of peers. The Committee for Advertising Practice for example, who regulate advertising in the United Kingdom, recognise the influence of peer pressure on gambling. They regard the matter as so important that they have included a specific reference to it in their guidelines for gambling advertising in the UK. It states that:

'Advertisements for gambling must neither suggest peer pressure to gamble nor disparage abstention.'

POSITIVE EFFECTS OF THE MEDIA

The media can have a positive impact upon attitudes to addictive behaviours such as smoking and gambling. Studies have highlighted the role that mass media can play in reducing various addictive behaviours.



This is often overlooked – media can be good! Exam answers look so much better when they contain a balance of views. It is easy to criticise the media as a negative influence but much more effective to balance that with a view of the positive effects of media.

Smoking

Since the 1950s, the portrayal of smoking on television has steadily decreased. For example, Signorielli (1990) reports that US TV characters were nine times more likely to smoke in 1964 than in 1982. At the same time the incidence of smoking in society has decreased, and although we can't jump to the conclusion that the reduction in TV smoking caused this change, it is likely that it made some contribution. Signorielli also points out that whilst TV is now much less likely to show smoking, it is no more likely to show characters taking an explicit anti-smoking stance.

Many studies have investigated the impact of anti-smoking media campaigns. Friend and Levy (2002) reviewed the impact of such campaigns in the United States. They showed that well-funded and implemented mass-media campaigns targeted at the general population, combined with a comprehensive tobacco control programme, are associated with reduced smoking rates amongst both adults and youths. Whilst youth-oriented media campaigns have shown more mixed results, the campaigns do nevertheless indicate a strong potential to influence underage smoking rates. Wakefield et al (2003) demonstrated that the media can help shape and reflect the social values of audiences about smoking whilst providing new information about the habit, such as its associated health risks. More recently, Klein et al (2005) concluded that, in adolescents at least, anti-smoking campaigns combined with telephone help services really can inform people, and help them work towards changing their behaviour. They also concluded that using media, such as the internet, can be a

very effective way of communicating with young people for this purpose.

Gambling

Gambling advertising is becoming more and more obvious in our media. Of particular note is the huge increase in gambling online, including bingo, casino games, poker and sports betting. In addition, mobile gambling is increasingly available. Gambling is, it seems, no further away than a click of a mouse or the press of a button on a mobile phone.

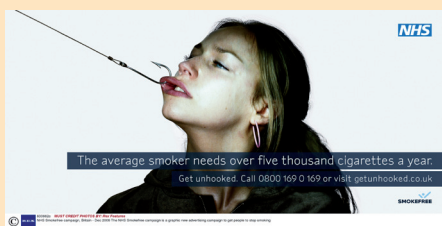
Just as with media campaigns on smoking, there is evidence to suggest, in the case of gambling, too, that it is the *nature* of the advertising that influences people's behaviour. Meserlian and Derevensky (2007) looked at the possibility of using 'social marketing' as a strategy for gambling prevention among adolescents. They concluded that using marketing campaigns with emotional messages, with real-life, engaging stories that showed the negative effects of gambling, could successfully raise people's awareness of the issues of problem gambling, and campaigns structured like this were recommended by the participants in the sample they used in their study. Their study raised the issue of perceptions of 'judgemental' campaigns. Just being told 'don't do it!' was regarded as likely to be unsuccessful, as adolescents would react badly to the perceived judgemental nature of the campaign. They recommend an approach that raises awareness, rather than telling people what

to do. Hyung-Seok et al (2007) showed that if the media representation of gambling was negative, then the effect was to influence attitudes and behaviour accordingly, i.e. viewers began to see gambling more negatively.

REDUCING ADDICTIVE BEHAVIOUR

Society regards addiction to smoking and gambling as unacceptable and as such we must consider how we might reduce these behaviours. The law can be used to make certain activities difficult (by banning them or taxing them to make them expensive) but psychology provides us with various models that can be used to describe how addictive behaviours can be reduced. Two of these are the theory of reasoned action and the theory of planned behaviour. One factor we must consider is the role of social cognition and how attitudes can influence addictive behaviours. It is acknowledged that people's behaviour in social situations is often greatly influenced by social factors (e.g. the opinions and expectations of others). The theories of reasoned action (TRA) and planned behaviour (TPB) provide a general framework which helps us to understand the relationship between attitudes

MEDIA CAMPAIGNS



Media campaigns have a long history. They have been used to inform the public of the dangers of many things, from smoking and heroin abuse to marijuana. One of the very earliest uses of the media to help inform and change people's involvement in a risky behaviour was a 1920s campaign on venereal disease. Lashley and Watson (1922) concluded that the campaign was good at informing people of the facts, but not so effective in changing their attitudes and behaviour. Giovino (2003) agreed, concluding that hugely expensive campaigns often have very

little impact on people's behaviour. Randolph and Viswath (2004) say that this failure of many campaigns to change people's attitudes just highlights the need for careful psychological investigation into how people make and change their opinions and behaviours. This area of applied psychology finds its roots in the study of 'social influence'. This branch of psychology says that whether we alter our behaviour can depend on a number of things. It may not be, as Bandura described, direct observation of people that informs our decisions. Possibly, our decisions are based on such things as our understandings of whether people desire to be viewed in a positive light by others, our understanding of social norms, and how important these things are to us.

In contrast to these negative opinions about the ability of advertising to change people's attitudes and behaviour, some research on campaigns associated with smoking behaviour, including that of Wakefield et al (2003) and Klein et al (2005), indicates that the media *can* be used effectively to help people change their behaviours, particularly when combined with follow-up services such as quit-lines and other telephone support.

and behaviour, and to see how this understanding might be used to reduce addictive behaviour.



This is where psychology really gets into action. You need to know about TRA and TPB, including description and evaluation. But what you really really need to be able to do is apply them. For example, how could they be used to prevent gambling or smoking? What do these models tell us about how attempts to reduce addictive behaviour could be made more effective? How can they explain why some attempts to reduce these behaviours have been unsuccessful?

THEORY OF REASONED ACTION (TRA)

Developed by Azjen and Fishbein (1967), this theory attempts to explain the relationships between our attitudes to things (e.g. smoking and gambling) and our behaviours (e.g. whether we smoke or gamble).

The TRA can be summarised in four simple steps.

(1) ATTITUDE – As we go through life we accumulate beliefs about things. Some of these beliefs influence our attitude to behaviours such as smoking and gambling. These are called our *salient beliefs*. If the salient beliefs are positive, we feel positive about the behaviour, and we are said to have a positive attitude towards it.

(2) SUBJECTIVE NORMS – These are the norms that others use to evaluate the behaviours, in this case smoking and gambling.

(3) INTENTION – This is the likelihood that the person will actually carry out the behaviour. If a person has a high intention to smoke then the likelihood that he will do so is high.

(4) BEHAVIOUR – This is where intention is translated into action. Here the behaviour is the act of smoking or gambling.

APPLYING THE THEORY OF REASONED ACTION

The TRA can be applied to any number of actions and behaviours. The flow through attitude, norms, intention and behaviour for smoking might be summarised as follows:

1. Attitude

'In my opinion there is nothing wrong with smoking. Loads of my friends smoke, and none of them are ill from it.'

2. Subjective Norm

'I bet all the boring teachers and adults wouldn't want me to smoke.'

3. Intention

'I'd like to try a cigarette.'

4. Behaviour

The person begins to smoke.

In terms of gambling, the steps through the TRA might be summarised as follows:

1. Attitude

'Gambling is a quick and easy way of making loads of money.'

2. Subjective Norm

'They all play the lottery: that's just a form of gambling. It's perfectly normal.'

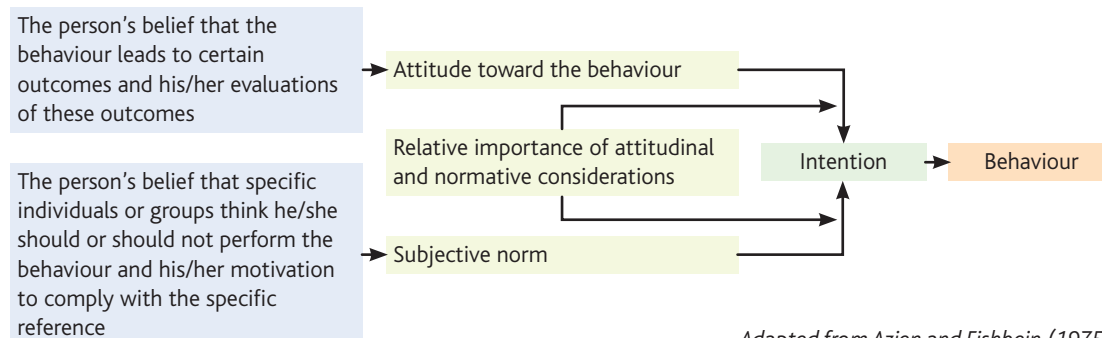
3. Intention

'I wouldn't mind a gamble: it looks like fun.'

4. Behaviour

The person begins to gamble.

THE THEORY OF REASONED ACTION



Adapted from Azjen and Fishbein (1975)

THEORY OF PLANNED BEHAVIOUR (TPB)

Azjen (1988) updated the TRA to include the possibility that not all actions and behaviours are completely under our control, and that people's perception of control is very important in our understanding of their behaviour. The TPB is very similar to the TRA except for the addition of 'control beliefs' – these are beliefs about factors that may help carry out the behaviour, or get in the way of carrying it out.

APPLYING THE THEORY OF PLANNED BEHAVIOUR

Just like the TRA, the TPB can be applied to any number of actions and behaviours. The flow through the TPB for smoking might be summarised as follows:

1. Attitude

'In my opinion there is nothing wrong with smoking. Loads of my friends smoke, and none of them are ill from it.'

2. Subjective Norm

'I bet all the boring teachers and adults wouldn't want me to smoke.'

3. Intention

'I'd like to try a cigarette.'

4. Control

'It's my decision: I can make it for myself. I am completely in control of my actions.'

5. Behaviour

The person begins to smoke.

In terms of gambling, the steps through the TPB might be summarised as follows:

1. Attitude

'Gambling is a quick and easy way of making loads of money.'

2. Subjective Norm

'They all play the lottery: that's just a form of gambling. It's perfectly normal.'

3. Intention

'I wouldn't mind a gamble: it looks like fun.'

4. Control

'No one is forcing me to do this: I am making my own decision. I am fully in control of my actions.'

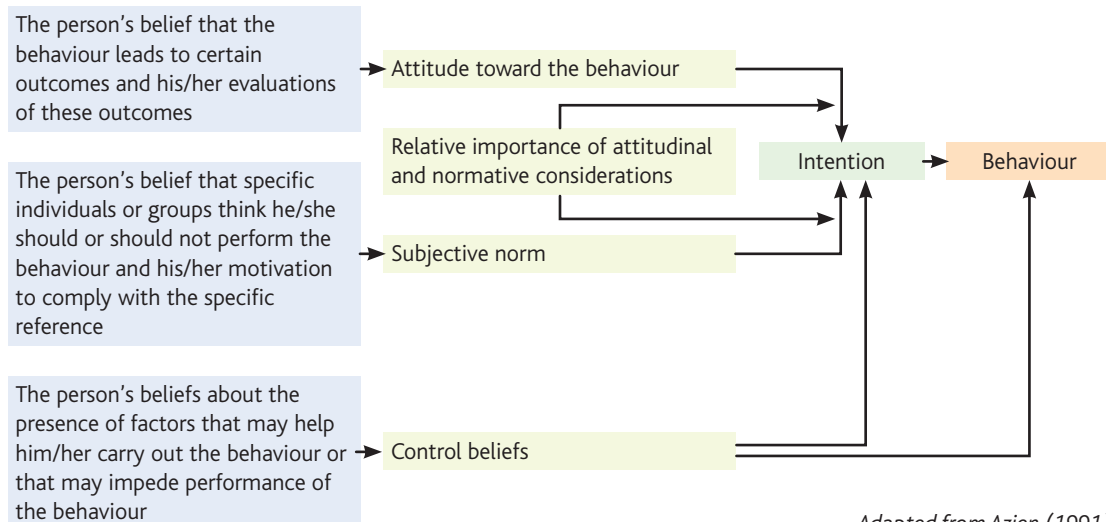
5. Behaviour

The person begins to gamble.

APPLICATIONS OF TRB AND TPB

Using our knowledge of the TPB and TRA we can see that altering people's beliefs, attitudes and understanding of social norms, the social norms themselves and people's perception of whether they are in control of their behaviour, can all alter the incidence of the behaviour itself. For instance, if a person feels powerless to resist a behaviour then that behaviour is more likely to occur. Putting schemes in place that provide the person with support to resist in the first place, or support to remain away from their addictive behaviour once they have managed to stop it, may help reduce the incidence of such behaviour. Similarly, since it is experience and knowledge that give us our beliefs and norms in the first place, education and

THE THEORY OF PLANNED BEHAVIOUR



Adapted from Azjen (1991)

information services can play a very important role in influencing the formation of these beliefs. The TPB and TRA provide us with a way of looking at the mechanisms behind a behaviour and the influences upon it. This knowledge can help us modify the behaviour itself.

Both the TRA and TPB have been applied to a number of addictive behaviours. The potential of TPB for predicting the use and misuse of alcohol among school children was investigated by Marcoux and Shope (1997). The TRA and TPB were compared in their abilities to predict people's *intention* to drink alcohol, which was shown to be an extremely important factor in whether they took up the habit. Another important issue was peer pressure. Finally, the normative belief of parents was found to be significant. Students with parents who were very strict on alcohol use were less likely to use it. Issues such as reducing availability, decreasing peer pressure and encouraging parents to have discussions with their children about addictive behaviours and getting involved in prevention programmes are highlighted by this research.

Cigarette smoking in different groups of teenagers in the United States was investigated by Hanson (2005). Attitude, subjective norm and perceived behavioural control all predicted smoking intentions in African-Americans. Attitude and perceived behavioural control were predictive of smoking in Puerto Rican and non-white Hispanic teenage girls. It is clear, then, that the behaviours of different groups of people are influenced by different factors.

LIMITATIONS OF TRA AND TPB

Despite the wide application of the TRA and TPB, these theories have been criticised. The most common criticisms are:

1. Not always a role for all aspects of the models

In some studies there seems to be no role for subjective norms, while some show no role for perceived behavioural control, and some show no role for attitudes in determining behaviour (Ogden 2004). It could be that these components of the models, although present, may not feature in all behavioural processes.

2. Behaviour measured by self-reports

Ogden (2004) goes on to indicate that behaviour in studies using the TPB and TRA is more often than not measured using self-report, rather than more objective measures. Self-report may suffer from a lack of accuracy and may be biased.

3. Are participants really acting as they say?

Ogden (2004) concludes by suggesting that asking participants about their thought processes after the event may only change the way that they are expressing themselves, the way they are thinking, at the time they are questioned. The questioning may not directly identify how someone was actually thinking in the first place that drove them to complete the action.

TYPES OF INTERVENTION

Support, to help an individual to stay away from addictive behaviours like gambling and smoking, can take many forms. These may include medical assistance to help with their cravings once they have stopped the activity; or psychological assistance in the form of support and counselling. On the other hand, intervention may have a wider focus than the individual, with public health interventions and legal restrictions imposed to help society reduce addictive activities.



There are four types of intervention described here – make sure you learn them all, but also remember that you may have to comment on how effective each one is.

BIOLOGICAL INTERVENTIONS

There have been a variety of biologically-based approaches designed primarily to change the way addictive behaviours are experienced. People who design medicines are trying to find ways to prevent people from experiencing the pleasant 'high' associated with the addictive behaviour; or to find alternative substances that have some of the positive effects without their addictive properties.

Providing an alternative 'treatment' – agonist substitution

One method used in the treatment of substance addiction is called *agonist substitution*: this involves providing the person with a safer drug that is chemically similar to the addictive drug. The best known of these approaches is treatment of heroin addiction with methadone, but agonist substitution is also available for nicotine addiction. Like heroin, methadone is a very potent drug. Methadone programmes administer the drug in the form of a liquid, which the patient must drink in the presence of supervising personnel. Taking the drug orally means that the opiate level in the brain rises slowly and does not produce a high, in the way an

AGONIST SUBSTITUTION IN SMOKING – NICOTINE GUM AND PATCHES

Addiction to cigarette smoking is also treated using an agonist substitution method where the alternative, safer drug is provided to patients in the form of nicotine gum or a nicotine patch. Both methods maintain a sufficiently high level of nicotine in the brain to decrease a person's craving for nicotine in the form of cigarettes. Once the habit of smoking has subsided, the dose in the gum or the patch is gradually reduced over a period of several months to help the person give up cigarettes. In general, nicotine replacement via gum or a patch is successful in helping people to stop smoking, although both methods work best when used in combination with supportive psychological therapies such as cognitive behavioural therapy (Hughes 1993).

injection of heroin would. The effect of methadone is extremely long-lasting, which means that if the drug user injects heroin while still under the influence of methadone it will have very little effect.

Zack et al (2003) have shown that the effects of gambling in the brain are very similar to the effects a psycho-stimulant such as amphetamine may have. They have successfully shown that a dose of amphetamine given to problem gamblers can stimulate their motivation to gamble. They go on to indicate that an agonist that targets the action of these drugs may well be useful in helping gamblers control their motivations to gamble.

Agonist substitution does have its critics. For instance, research suggests that some people who use methadone as a substitute for heroin really do benefit but they may actually become dependent upon methadone, possibly even for the rest of their lives (O'Brien 1996). It follows that substituting nicotine agonist for nicotine may leave ex-smokers smoke-free, but the now ex-smoker may have become dependent on the agonist itself.

Providing an alternative drug – antagonist substitution

A second biological method used in the treatment of substance addiction involves *antagonist* treatments, where drugs are given that block or counter the effects of the drug that the person is addicted to. The most frequently prescribed antagonist drug is called *naltrexone*. This works by blocking the action of neurochemicals that provide the person with rewarding feelings when they take the drug.

Antagonist substitution is available for nicotine addiction as well as for a range of other addictive behaviours. It is a particularly effective treatment for alcohol addiction. O'Brien et al (1996) reported the results of two programmes using naltrexone along with more traditional behavioural treatments. In both programmes it was found that administration of naltrexone significantly improved the likelihood of success, decreasing the participants' craving for alcohol and increasing the number of participants who managed to abstain

from alcohol. Naltrexone has also been shown to be effective in reducing the gambling behaviour of problem gamblers (Hollander et al 2000).

Immunotherapy – drug immunization

An interesting approach to managing addictive behaviour is suggested by a study by Carrera et al (1995), who managed to stimulate rats' immune systems to develop antibodies to cocaine. Antibodies are an important part of the immune system that help prevent infection, and their properties can be used for purposes of immunisation, for example from measles, mumps, rubella and malaria. In their approach, Carrera et al generated antibodies in the bloodstream that bound with molecules of cocaine and stopped them from crossing into the brain. As a consequence, these 'cocaine-immunised' rats were less sensitive to the effects of cocaine, and the levels of cocaine in the brains of these animals were lower after an injection of cocaine than in non-immunised rats.

Since this study was carried out, animal studies with vaccines against cocaine, heroin, methamphetamine and nicotine have all been undertaken, and several human trials for vaccines for cocaine and nicotine have taken place (Kosten and Owens 2005). The results of these animal studies and human trials are very promising, and more extensive human trials are in progress. Theoretically, at least, treatment of addictions with immunotherapy should interfere only with the action of an abused drug and not with the normal operations of people's reinforcement mechanisms that allow them to feel happy for other reasons. Thus, the treatment should not decrease their ability to experience normal pleasurable situations. This technique is not just of use for drugs such as cocaine. In 2003, Janda identified a technique for stimulating the immune system to rid itself of nicotine. Immunotherapy for something as prevalent as smoking addiction may not be far away!

PSYCHOLOGICAL INTERVENTIONS

A number of psychological treatments have been developed for helping people with addictions.

Each approach is designed to address certain aspects of drug addiction and its consequences for the individual, their family and society in general.

Cognitive behaviour therapy (CBT)

CBT is a psychological technique used in the treatment of many kinds of psychological problems. For instance, it may be employed when someone feels anxious about flying, or when someone is suffering with mild depression. Essentially the goals of CBT are that the client is helped to think differently about the object or behaviour that causes them difficulty. Smoking and drinking are both behaviours that people may seek psychological help to overcome. In both cases the addict may be helped to change their thoughts and beliefs about their addictive behaviours, with the aim of helping them stay away from such behaviours in the future. The elements and principles of CBT appear in a number of strategies designed to help those with addictive behaviours, including *relapse prevention*, *the matrix model* and *addiction counselling*.

Relapse prevention

Relapse prevention is a cognitive-behavioural therapy that was originally developed for the treatment of problem drinking, and adapted later for cocaine addicts. Hajek et al (2005) have identified it as useful in helping people remain off cigarettes once they have managed to give up, and Echeburua et al (2000) have noted its value in helping pathological gamblers. Cognitive-behavioural strategies are based on the theory that learning and thinking processes play a very important role in the development of maladaptive behaviours – those behaviours that can cause the individual harm. During therapy, individuals learn to identify and correct problem behaviours.

Relapse prevention encompasses several cognitive-behavioural strategies that help the person stay away from their problem behaviour, as well as providing support for people who experience relapse. For instance, the relapse prevention approach to the treatment of cocaine addiction consists of a collection of strategies intended to enhance self-control. Hajek et al (2005) indicate that self-control in those in danger of relapse in smoking might be most necessary in counteracting the urge to seek out cigarettes. The techniques used include exploring the positive and negative consequences of continued use, and self-monitoring to recognise drug cravings early on. They might also be used to help the person recognise the situations where there may be a high risk of relapse. Such situations, for smokers, may be particularly

stressful times; or, for gamblers, periods of great excitement involving sporting activities. Once these high-risk situations have been identified, coping strategies can be learned. Anticipating the problems addicts are likely to meet and helping them develop effective coping strategies is a key element of this approach. Research indicates that the skills individuals learn through relapse prevention therapy remain after the completion of treatment. In one study, most people receiving this cognitive-behavioural therapy maintained the gains they made in treatment throughout the following year (Carroll et al 1994).

The matrix model

The matrix model provides a framework for engaging those with problem behaviours in treatment and helping them stop and stay away from their addiction. The approach is eclectic, including elements related to the prevention of relapse, as well as to family and group therapies, drug education, and also self-help techniques. A number of studies have demonstrated that addicts treated with the matrix model demonstrate significant reductions in drug and alcohol use and improvements in psychological indicators, including feelings of self-worth and positive outlook. (Huber et al 1997). Clients learn about issues critical to their addiction and relapse, receive support from a trained therapist, become familiar with self-help programmes and, if appropriate, are monitored for drug use by urine testing. Education programmes for family members affected by the addiction are also included. The therapist's role is as teacher and coach, building and maintaining a positive, encouraging relationship with the patient and using that relationship as a powerful means of reinforcing positive behaviour change. The interaction between the therapist and the client is not confrontational or parental in any way. Therapists are trained to conduct treatment sessions in a manner that really develops the client's self-esteem, dignity, and self-worth. A positive relationship between client and therapist is vital to ensuring that the client remains in therapy.

Addiction counselling

Individualised addiction counselling focuses directly on reducing or stopping the addictive behaviour. Addicts are encouraged to attend sessions regularly, as often as once or twice a week. Related areas in the addict's life – such as their job, and any possible illegal activity, as well as their relationships with their families, friends and other associates – are also addressed.

Through its focus on short-term behavioural goals, individualised addiction counselling helps the client develop coping strategies and tools for abstaining from and staying away from their addictive behaviour. The addiction counsellor can refer the addict to doctors and other professionals for supplementary medical, psychiatric, employment and other services if these are needed.

Addiction counselling can be very effective. In a study that compared heroin addicts receiving only methadone to those receiving methadone coupled with counselling, individuals who received only methadone showed very little success in reducing opiate use. The addition of counselling produced significantly more improvement (McLellan et al 1988). When medical/psychiatric, employment, and family services were added, outcomes improved even further (McLellan et al 1993).

Hazel et al (2006) assessed the effectiveness of a telephone addiction counselling service set up to help those who were trying to stop smoking. Their results showed that the line was effective in helping people to give up, but it was not terribly effective in protecting people from relapsing. Reid et al (1999) concluded that a dedicated help line can be very useful for assisting people to give up smoking, if used in combination with other therapies, including biological therapies such as nicotine patches, as long as the client is motivated to give up. Bryant-Jefferies (2005) has indicated that careful addiction counselling can be extremely effective in helping those with gambling problems. In summary, it seems that the effectiveness of addiction counselling depends at least in part on the type of addiction being treated. It is nevertheless clear that, overall, it remains a useful tool in the fight against addiction.

Motivational enhancement therapy

Addicts are often poorly motivated to seek treatment for their behaviour. Motivational enhancement therapy is a counselling approach for encouraging behaviour change by helping to motivate addicts to become involved in their treatment. This approach employs strategies to bring about fast and internally motivated change in the addict, rather than guiding the client step-by-step through the recovery process. This therapy consists of an initial assessment session, followed by two to four individual treatment sessions with a therapist. The first treatment session focuses on providing feedback from the initial assessment session to stimulate discussion regarding drug use and to bring about self-motivational statements.

Motivational interviewing principles are used to strengthen motivation and build a plan for change. Coping strategies for high-risk situations, such as periods when the addict would normally engage in drug taking, are suggested and discussed. In the sessions that follow, the therapist carefully monitors any changes; reviews and alters strategies being used to help the addict give up; and continues to encourage commitment to change or sustained abstinence from the problem drug. This approach has been used successfully with alcoholics and with marijuana-dependent individuals (Stephens et al 1994).

PUBLIC HEALTH INTERVENTIONS

Drugs: the law

Most countries have laws to license and control addictive behaviours. These behaviours are of many kinds. Legislation may thus address a wide range of issues, from determining the punishments available for heroin use, to specifying where fruit machines may be placed (to exclude them from fast food shops, for example, where young people might otherwise be drawn into gambling). Typically though, such legislation covers any or all of the opiates (including heroin), amphetamines, (including speed) cannabinoids (including skunk and other forms of marijuana), cocaine, barbiturates (such as sleeping tablets and other tranquilisers), hallucinogens (such as LSD) and a variety of more modern synthetic drugs.

Using legislation to classify a substance is a common way of identifying how dangerous the substance is considered to be. The current drug classifications are summarised in the table on page 28. It is clear that legislation is important in the control of these substances, with the toughest punishments being the possibility of an unlimited fine and life imprisonment.

The classification and de-classification of substances under such legislation is not only related to the 'addictiveness' of the drug in question. The substances covered often have very different addictive properties. Some are highly likely to cause physical dependency, whilst others rarely cause any form of compulsive need. Typically, nicotine (in the form of tobacco) is hardly regulated at all, although it is well known as one of the most addictive substances ever discovered! You'll certainly not find it in the drug-classification table even though it is known to cause serious medical problems and untold misery to those having to deal with the addiction.

		Possession:	Dealing:
Class A	Ecstasy, LSD, heroin, cocaine, crack, magic mushrooms, amphetamines (if prepared for injection).	Up to seven years in prison or an unlimited fine or both.	Up to life in prison or an unlimited fine or both.
Class B	Amphetamines, Methylphenidate (Ritalin), Pholcodine.	Up to five years in prison or an unlimited fine or both.	Up to 14 years in prison or an unlimited fine or both.
Class C	Cannabis, tranquillisers, some painkillers, Gamma hydroxybutyrate (GHB), Ketamine.	Up to two years in prison or an unlimited fine or both.	Up to 14 years in prison or an unlimited fine or both.

Classes of drugs and their legal implications. Source: The Home Office, (2008)

Occasionally legislation changes, to de-classify or re-classify a substance. This often depends on public pressure or new evidence from research that shows that the substance is more or less dangerous than was previously thought. Whether the addictive behaviour in question is socially acceptable plays an important role. Nicotine has been used in the UK for over 300 years, and as such it is part of the fabric of this society. It takes time, and a concerted effort, to alter public perceptions about a drug that has been so widely available for such a long time.

The smoking ban

In recent years, each nation of the United Kingdom has brought in a total ban on smoking in enclosed public spaces. In Scotland the law came into effect in March 2006, in Wales and Northern Ireland in April 2007 and finally in England in July 2007. What has been the impact of these bans on health, and nicotine use, in the UK?

- » Researchers at the University of Dundee found significant improvements in the health of bar staff in the two months following the ban. They tested bar workers' lung function a month before the ban came in, and again two months after it had been introduced. The proportion showing symptoms related to passive smoking fell from more than 80% to less than 50%, with reduced levels of nicotine in the blood and improvements in lung function of as much as 10% (Menzies et al 2006).
- » A 2007 study of the effect of the ban in Scotland showed that there had been a 17% year-on-year drop in hospital admissions for heart attack since the ban was introduced in March 2006 (Pell et al 2008).
- » An analysis of the saliva of 39 non-smoking workers before and after the Scottish smoking

ban came into force found a 75% fall in cotinine, which is a by-product of nicotine and is a good indicator of how much cigarette smoke has entered the body (Semple et al 2007).

Smoke-free laws may also help smokers to quit. In places where some smoking restrictions already existed before the new laws came into force, as in the UK, the introduction of the law is estimated to have significantly reduced smoking rates. Smoking rates were estimated to be declining in England by 0.4% per year, but there is evidence that in the first year of the smoking ban this rate accelerated to 1%, over twice as fast as before. Almost half of all smokers tried to quit in 2007 and approximately 8% of smokers reported that the new law prompted them to make an attempt to quit (West 2008). Stop-smoking services also saw a 12% increase in the number of people able to quit for at least four weeks in the three months before the ban, compared to the figure for the same three months in 2006, the year before the ban came in. The number of people setting a quit date in the two months immediately following the introduction of the smoking ban was also higher than in the same two months in previous years (NHS Statistics 2007).

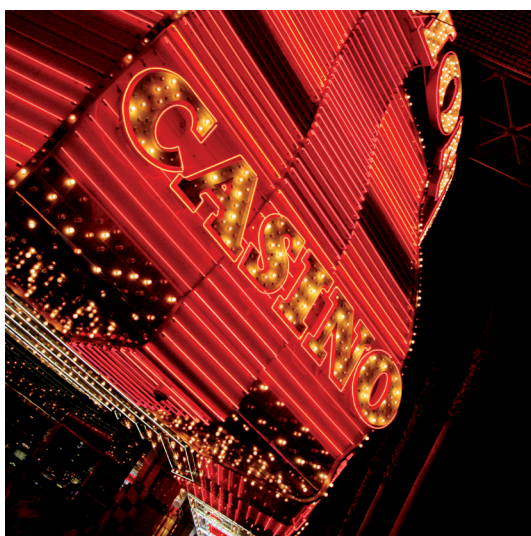
Not being able to smoke while in enclosed public places may help those smokers who have quit not to resume smoking. Amongst smokers in the Irish Republic who quit after the ban took effect there in March 2004, 80% reported that the law had helped them quit and 88% reported that it had helped them to remain as non-smokers (Fong et al 2006).

Gambling

In 2007, The Gambling Act became law in the UK. With the exception of the National Lottery, and spread betting (which are separately regulated)

the Act applies to all commercial activities that might be regarded as gambling, from casinos to online betting organisations. It is clear that the scale of the task for those applying the law is huge. The media, the internet and also more traditional outlets for gambling such as betting shops, offer, between them, constant encouragement to participate in this potentially addictive behaviour.

Evidence of how a change in legislation can influence the prevalence of gambling can be seen in recent alterations to the law, that were to permit the construction of so-called 'super casinos' in the UK. These were to be casinos in the style of those found in the gambling capital of the world, Las Vegas.



Legislation allowing these casinos was passed, and towns around the country successfully applied for the chance to build them. However, before building had even begun, the law was changed, removing the right to build the casinos and replacing it with the possibility of multiple smaller gambling establishments. In Manchester, for instance, the council indicated that the revised legislation, denying them the possibility of a new super casino, would cost the city up to 3500 jobs. The government however felt that a huge venue of this kind would not be appropriate, even if many jobs would result from it. Although legislation is one way of controlling access to gambling, governments must take economic considerations into account when making their decisions. Addictive behaviours produce many millions of pounds of government revenue, for example from taxes on tobacco, alcohol and betting.

There is also the issue of urban regeneration to consider. The attraction of gambling is such that the presence of a large casino in an economically deprived town can have an extraordinary impact, drawing gamblers in from miles around to spend their money, not only on gambling itself, but also on, for example, hotels and restaurants. The problem is, of course, that gambling may well have negative effects. It may encourage addiction, increase poverty and hardship among gamblers themselves, and cause misery for many who are associated with them. In framing legislation the government must weigh up the costs and benefits of allowing the increased development of casinos across the country.

The Gambling Act states that gambling is only allowed in the UK if specifically permitted by licence. If you want to run a gambling organisation, or use facilities that allow people to gamble, you must have a permit, or a licence to do so. If you do not have such permission you may be prosecuted and may face fines or imprisonment. The Act introduced a special regulator, the Gambling Commission, to oversee the implementation of the law, and supervise gambling businesses and the licensing of premises. However, gambling in private is outside the scope of the legislation. For instance, a private game of poker is permitted, and you may also play for things other than money. Private gambling is highly prevalent: it is not included in official government figures on gambling, and even if there was the will to act against it, it is hard to see how any kind of legislation would be effective.

The Gambling Act relates to the effect gambling may have on individuals and society when it refers to possible illegal activity linked to gambling. The Act requires the Gambling Commission to ensure that there is no link between gambling and crime or disorder. The law also notes that gambling presents a risk to children and what it describes as 'vulnerable adults'. These two groups of people are protected in several ways: firstly, as has been suggested earlier, by strictly controlling where gambling machines may be located; and secondly, by making it illegal for anyone under 18 to gamble. Moreover, it is an offence for any adult to encourage or entice someone under the age of 18 to gamble, and if adults do this they can face legal action.

PUBLIC HEALTH INTERVENTIONS

Public health interventions aim to encourage populations and individuals in activities and strategies

for the improvement of health and prevention of disease. Public health interventions are not new, although it could be argued that Government has become more engaged in such activities in recent years than ever before. One of the earliest public health interventions in the UK was probably the Sanitary Act of 1866 which made local authorities responsible for supplying water and disposing of household waste and sewage, thereby helping to prevent many diseases. In 1949 a law was passed making it compulsory to pasteurise milk, eliminating several thousand deaths a year that had been caused by bovine tuberculosis contracted through raw milk. Many more public health interventions have followed, which have cleaned air, discouraged drink-driving, enforced the wearing of seat-belts in motor vehicles and controlled the range of additives in our food.

The most recent Government statement on public health, however, was in 2004. This established the convention that the government should make a health intervention if an organisation's or an individual's actions were harming others. This has led to a number of recent health interventions, such as a ban on junk food advertising during children's television, and voluntary food labelling regulations. Probably the highest profile initiative, however, has been the drive to reduce smoking and tobacco-related harm. Smoking is, after all, the leading cause of preventable death, and costs the Health Service billions of pounds a year.

In much of the United Kingdom this guidance is produced by NICE (The National Institute for Health and Clinical Excellence). The Institute produces two types of guidance: public health intervention guidance (specific single measures, such as the guidance to GPs on the advice they should give patients for particular health issues) and public health programme guidance (broad strategies, for example encouraging sensible alcohol consumption). Evidence for the effectiveness of these public interventions is not as clear as we might hope. Research shows that whilst public health interventions can be very effective indeed at stopping or reducing behaviours in particular ways, people may change their behaviour to compensate for the intervention. Gornall et al (1993) for instance showed that a workplace ban on smoking was effective in stopping that specific behaviour, but it had other more negative effects. In their study, smokers in the New South Wales Ambulance service in Australia were questioned over 6 weeks following the introduction of a smoking ban at their place of work. The results showed

that the participants *reported* less smoking both during work and at home, but blood tests revealed that they may well have been compensating for non-smoking in work by smoking more outside work hours. The results also showed that the participants experienced an increase in craving and also stress levels.

Ogden (2000) reports other research into the effectiveness of public health interventions. She says that increasing the price of something, like cigarettes or alcohol, may well help people, particularly children and adolescents, stop taking up the addictive behaviour in the first place. She says that an increase in the expense of smoking or drinking may make the perceived cost of the behaviour greater than the perceived benefits. Ogden goes on to predict that the UK smoking ban may well promote a reduction in smoking. However, she warns that, just because people are not allowed to smoke in public places, this does not mean that they will not increase their smoking elsewhere to compensate, as happened in Gornall et al's study of Australian ambulance service workers.

Whilst there is a downward trend in smoking, this trend is not evenly distributed. For instance, whereas adult male smoking is significantly reducing, the same cannot be said of adolescent female smoking, which actually shows signs of increasing. Research consistently finds that people who begin smoking early in life are more likely to experience nicotine dependence as adults. Adolescence is also the time in life when an individual is most likely to begin smoking. Interventions focused on young people may therefore have the greatest long term impact on smoking-related health problems.

Recent genetic research suggests that such interventions may one day be made more effective as it becomes possible to identify genetically high-risk individuals. Weiss et al (2008) studied 2,827 long-term smokers. They found that some individuals have genes which make them more prone to nicotine addiction in adulthood if they began smoking before the age of 17. Individuals with the same genetic variation who did not start smoking until 17 or later did not have an increased risk of long-term addiction. The implication is that there is potential in the future for developing methods of identifying particular sub-groups of young individuals who are especially at risk of nicotine addiction.

Public health interventions might also be made more effective by recognising the social context of smoking. Research by Fowler and Christakis

(2008) suggests that smokers who successfully quit tend to give up in groups rather than as isolated individuals. From data gathered as part of a large-scale longitudinal study on cardiovascular health, they found that whilst in 1971 smokers mixed equally with non-smokers in social situations, by 2000 smokers were being marginalised and tended to form separate clusters. The research also found that the closer the relationships between individuals in these clusters, the more influence one person who quits would have on the others. For example, a friend quitting decreased the chances of smoking in others by 36 per cent, whilst a husband or wife who quit would decrease spouse smoking by 67 per cent. Importantly, geographical distance was irrelevant – the key factor was the closeness of the relationship. Education also appeared an important factor. This research clearly has implications for the effectiveness of public health interventions in changing addictive behaviours.

A key finding from this study was that a quitter working in a small firm would decrease the smoking in co-workers by 34 per cent, whilst the change in large firms was insignificant. NICE has in fact recognised the workplace as a key target area for reducing smoking. Employers are not legally obliged to help their employees stop smoking, though the ban on public smoking has made it more difficult for people to smoke at work. Smoking is not allowed in enclosed places, including vehicles used for work; nor is it permitted to

set aside an enclosed room for smokers. Failure to comply with these regulations is an offence.

NICE provides employers with extensive guidance and support on how to encourage their employees to give up smoking. This ranges from information about access to local stop smoking support to on-site counselling and guidance. Employers are encouraged to support staff by allowing them to attend cessation services without losing pay. Employers are also reminded that the health improvements associated with stopping smoking would benefit companies through reduced sickness and absence, and increased productivity.

A word of caution about public health interventions was sounded by Albarracin et al (2009). They found that weight loss campaigns promoting exercise actually had the effect of encouraging people to eat more! In their study, participants who viewed exercise ads ate one third more than participants exposed to posters with other types of message. This indicates that some campaigns which on the face of it present a clear message might have negative consequences by encouraging the opposite behaviour to that which is desired.