# Behavioural addiction: an issue for everybody?

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**Abstract**

For many people the concept of addiction involves taking drugs. Therefore it is perhaps unsurprising that most official definitions concentrate on drug ingestion. Despite such definitions, there is now a growing movement which views a number of behaviours as potentially addictive, including many behaviours which do not involve the ingestion of a drug. But do behavioural addictions really exist? Answers this question by examining the various commonalities (psychological, sociological and cultural) between excessive behaviours (behavioural and chemical) and by drawing on the author's own work into fruit-machine addiction. Concludes that addictions are not just restricted to drug-ingestion behaviours and that evidence is growing that excessive behaviours of all types do seem to have many commonalities.

Employee Counselling Today: The Journal of Workplace Learning
Volume 8 · Number 3 · 1996 · pp. 19–25
 · ISSN 0955-8217

## Introduction

For many people the concept of addiction involves taking of drugs (e.g. Rachlin, 1990; Walker, 1989). Therefore it is perhaps unsurprising that most official definitions concentrate on drug ingestion. This is highlighted by the following definitions:

> Addiction is the compulsive uncontrolled use of habit-forming drugs (*Webster's New International Dictionary*, 3rd edition).
> An addict is a person addicted to a habit, especially one dependent on a (specified) drug (*Concise Oxford Dictionary*).
> An addict is one who habitually uses and has an uncontrollable craving for an addictive drug (*Webster's New International Dictionary*, 3rd edition).
> Addiction is a state of periodic or chronic intoxication produced by repeated consumption of a drug, natural or synthetic (World Health Organization).

Despite such definitions, there is now a growing movement (e.g. Miller, 1980; Orford, 1985) which views a number of behaviours as potentially addictive, including many behaviours which do not involve the ingestion of a drug. These include behaviours diverse as gambling (Griffiths, 1995), overeating (Orford, 1985), sex (Carnes, 1983), exercise (Glasser, 1976), computer game playing (Griffiths, 1993a), pair bonding (Peele and Brodsky,1975), wealth acquisition (Slater, 1980) and even Rubik's Cube (Alexander, 1981)! Such diversity has led to new all-encompassing definitions of what constitutes addictive behaviour. One such definition is that of Marlatt *et al.* (1988, p. 224) who define addictive behaviour as:

> … a repetitive habit pattern that increases the risk of disease and/or associated personal and social problems. Addictive behaviours are often experienced subjectively as "loss of control" – the behaviour contrives to occur despite volitional attempts to abstain or moderate use. These habit patterns are typically characterized by immediate gratification (short-term reward), often coupled with delayed deleterious effects (long-term costs). Attempts to change an addictive behaviour (via treatment or self-initiation) are typically marked with high relapse rates.

Most people have their own idea or some common-sense intuitive component about what "addiction" constitutes but actually trying to define it becomes difficult. Defining "addiction" is rather like defining a "mountain" or "tree", i.e. there is no single set of criteria that can ever be necessary or sufficient

Employee Counselling Today: The Journal of Workplace Learning
Volume 8 · Number 3 · 1996 · 19–25

to define all instances. In essence, the whole is easier to recognize than the parts. The way of determining whether non-chemical (i.e. behaviourial) addictions are addictive in a non-metaphorical sense is to compare them against clinical criteria for other established drug-ingested addictions. This method of making behavioural excesses more clinically identifiable has been proposed for behavioural addictions such as "television addiction" (McIlwraith *et al.*, 1991) and "amusement machine addiction" (Griffiths, 1991a; 1992). Further to this, authors such as Carnes (1991) and Brown (1993) have postulated that addictions consist of a number of common components. Carnes (1991) outlined what he called the ten "signs of addiction":

(1) a pattern of out-of-control behaviour;
(2) severe consequences due to behaviour;
(3) inability to stop behaviour despite adverse consequences;
(4) persistent pursuit of self-destructive or high risk behaviour;
(5) ongoing desire or effort to limit behaviour;
(6) uses behaviour as a coping strategy;
(7) increased amounts of behaviour because the current level of activity is no longer sufficient;
(8) severe mood changes around behaviour;
(9) inordinate amounts of time spent trying to engage in behaviour and recovering from it;
(10) important social, occupational and recreational activities are sacrificed or reduced because of behaviour.

These signs to a large extent are subsumed within the components outlined by Brown (1993). Brown's components are salience, euphoria, tolerance, withdrawal, conflict and relapse:

- *Salience*. This is when the particular activity becomes the most important activity in the person's life and dominates their thinking (preoccupations and cognitive distortions), feelings (cravings) and behaviour (deterioration of socialized behaviour). For instance, even if the person is not actually engaged in the behaviour they will be thinking about the next time they will be.
- *Euphoria*. This is the subjective experience that people report as a consequence of engaging in the particular activity (i.e. they experience a "buzz" or a "high").
- *Tolerance*: This is a process whereby increasing amounts of the particular activity are required to achieve the former effects. For instance, a gambler may have to gradually increase the size of the bet to experience a euphoric effect that was initially obtained by a much smaller bet.
- *Withdrawal symptoms*. These are unpleasant feeling states and/or physical effects which occur when the particular activity is discontinued or suddenly reduced, e.g. the shakes, moodiness, irritability, etc.
- *Conflict*. This refers to conflicts between the addict and those around them (interpersonal conflict) or from within the individual themselves (intrapsychic conflict) which are concerned with the particular activity. Continual choosing of short-term pleasure and relief leads to disregard of adverse consequences and long-term damage which in turn increases the apparent need for the addictive activity as a coping strategy.
- *Relapse and reinstatement*. This is the tendency for repeated reversions to earlier patterns of the particular activity to recur and for even the most extreme patterns, typical of the height of the addiction, to be quickly restored after many years of abstinence or control.

## Positive addictions?

Much of the preceding text suggests that addictions are purely negative, yet it could be argued that for some people there are many benefits of their addictions. If we were to write a list of possible addiction benefits, it may include some of the following:

- reliable changes of mood and subjective experience (e.g. escape);
- positive experience of pleasure, excitement, relaxation;
- disinhibition of behaviour (e.g. sex, aggression);
- coping strategy for all vulnerabilities (e.g. insults, injuries, social anxiety, fear, tension, etc.);
- simplifier of decisions as all related to one activity;
- maintainer of emotional distance (i.e. prevents people from getting close);
- strategy for threatening, rebelling, revenging, etc.;
- source of identity and/or meaning of life.

Employee Counselling Today: The Journal of Workplace Learning
Volume 8 · Number 3 · 1996 · 19–25

This list suggests that for the addict there are some genuine benefits, at least from their own perception. The idea that there are "positive addictions" is not new and was first forwarded by Glasser (1976). Glasser argued that activities such as jogging and transcendental meditation were positive addictions and were the kinds of activity that could be deliberately cultivated to wean addicts away from more harmful and sinister preoccupations. According to Glasser, positive addictions must be new rewarding activities such as exercise and relaxation which produce increased feelings of self-efficacy. However, it might be better to call some activities "mixed blessing addictions" (Brown, 1993), since even positive addictions might have some negative consequences. There is also the question of whether positive addictions are "addictions" at all. Glasser's (1976) own criteria for positive addictions have little resemblance to the signs or components of addictions outlined by Carnes (1991) and Brown (1993):

- must be non-competitive and needing about an hour a day;
- easy, so no mental effort is required;
- easy to be done alone, not dependent on people;
- believed to be having some value (physical, mental, spiritual);
- believed that if persisted in, some improvement will result;
- involve no self-criticism.

## Do behavioural addictions really exist?

This question will be answered by examining the various commonalities between excessive behaviours (behaviourial and chemical) and by drawing on this author's own work into "fruit machine addiction". Beginning with commonalities among excessive behaviours, it has been noted by a number of authors that there appear to be psychological, sociological and cultural commonalities between such behaviours. These will be briefly outlined in turn.

### Psychological commonalities

Donegan *et al.*,(1983) noted there are many psychological commonalities between drug-ingested behaviours, like drinking alcohol and non-drug ingested behaviours, like gambling. In brief, these commonalities are:

- the ability of the substance/activity to act as a reinforcer;
- acquired tolerance;
- physical dependence and withdrawal;
- affective contrast (euphoria/dysphoria);
- the capacity of the substance/activity to act as an unconditioned stimulus;
- capacity of states like arousal, stress and pain to influence use.

As you will have noticed, these commonalities are very similar to the addiction components outlined by Brown (1993).

### Sociological commonalities

Kandel and Maloff (1983) noted there are many sociological commonalities between excessive behaviours, although their commonalities tended to come from drug-ingested behaviours. These commonalities are:

- Association with youth (18-25 yrs) then a decline in use.
- Social meaning (e.g. adulthood, rebellion, testing limits, etc.).
- Similar social and developmental influences (e.g. parents, peers, etc.).
- Early introduction more likely leading to addiction.
- Lifestyle/attitudes of addicts tending to be similar (e.g. less conforming, truanting and lower school performance, weaker religious commitment, etc.).
- Contextual factors being of importance (e.g. drug taking in Vietnam (Robins *et al.*, 1975)).
- Commonalities in spontaneous termination (although there are differences).
- Addictions being higher/more problematic among certain groups (e.g. single, divorced, unemployed, etc.).
- Links with crime.

Further to the psychological and sociological commonalities, Walker and Lidz (1983) have noted cultural commonalities, such as excessive behaviours being problem inducing and undesirable, being prohibited at various times (for example, activities such as drinking alcohol and gambling), having "normative ambiguity" (in that some parts of the behaviour are encouraged but stigma results from their overenactment) and having self-help groups with similar 12-step philosophies (e.g. Alcoholics Anonymous, Gamblers Anonymous, Narcotics Anonymous, Overeaters Anonymous, Sexaholics Anonymous, etc.). Miller (1980) has also outlined other commonalities among addictive behaviours, such as the short-term benefits and long-term costs,

Employee Counselling Today: The Journal of Workplace Learning
Volume 8 · Number 3 · 1996 · 19–25

significant health risks, the lack of a single, simple, scientifically-satisfying model of etiology, the lack of a clear treatment model (alcoholics go to AA, heroin addicts undergo methadone maintenance, overeaters go on crash diets and smokers undergo hypnosis or use nicotine gum) and reciprocity (i.e. pattern changes in addiction, especially in cross-addictions and with "triggers"). Further to this there have been reported similarities in neurochemistry (Chelton and Bonney, 1987; Sunderwirth and Milkman, 1991).

## Fruit machine addiction?

Fruit machine addiction is a behaviour that is particularly prevalent among male teenagers. An examination of the literature would appear to indicate that at least 65 per cent adolescents play fruit machines at some point during adolescence, that around 35 per cent of adolescents have played fruit machines in the last month and that around 5-10 per cent of adolescents are regular fruit machine players, i.e. playing at least once a week (Griffiths, 1991a; b). A number of studies have examined the incidence of pathological gambling in adolescence with results ranging from 0.5-6 per cent probable fruit machine addicts depending on the methodology and criteria for pathological gambling employed.

**'…many parents do not even realize they have a problem until their son or daughter has been in trouble with the police…'**

There is a problem with the identification of fruit machine addiction because there is no observable sign or symptom like other addictions (e.g. alcoholism, heroin addiction, etc.). Although there have been some reports of a personality change in fruit machine addicts (e.g. Griffiths, 1990; Moody, 1987), many parents may attribute the change to adolescence itself. It is quite often the case that many parents do not even realize they have a problem until their son or daughter have been in trouble with the police. Despite the problems of identification and diagnosis of fruit machine addiction there is now an abundant literature which indicates that fruit machines are addictive. Using empirical evidence in addition to case study material, it will be argued that there is evidence that fruit machines are addictive, fulfilling each of Brown's (1993) addiction component characteristics:

- *Salience*. There is no doubt that for some individuals fruit machine playing is the most important thing in that person's life. There are many studies which highlight that for a small minority of individuals, fruit machine playing is a high frequency activity (i.e. played at least once a day) and that even when they are not actually playing them they are thinking about the next time they do (Fisher, 1993; Griffiths, 1990; Huxley and Carroll, 1992). Quotes from ex-fruit machine addicts in a study by Griffiths (1993b) highlight the case:

  > If I wasn't actually gambling I was spending the rest of my time working out clever little schemes to obtain money to feed my habit. These two activities literally took up all my time.
  >
  > Gamble, gamble, gamble your life away … you might as well have put it down the drain. You've got to face the truth that you're having a love affair, and it's with a machine whose lights flash, takes your money and kills your soul.
  >
  > During four or five years of compulsive gambling I think I missed about six or seven days of playing fruit machines – keeping in mind that about four or five of those days were Christmas days where it was impossible to gain access to a gambling machine … As you have probably gathered, I ate, slept and breathed gambling machines … I couldn't even find time to spend with the people I loved … The machines were more important than anything or anyone else. All I can remember is living in a trance for four years … as if I'd been drunk the whole time.

- *Euphoria*. There are now many studies which have reported that fruit machine playing is an exciting and arousing activity. These have included both subjective self-reports from interviews and questionnaires (Dickerson and Adcock, 1987; Griffiths, 1990) and objective experimental studies which have measured heart rate as an indicator of arousal (Brown, 1993; Griffiths, 1993c; Leary and Dickerson, 1985). A typical retrospective self-report from Griffiths (1993b) highlights the case:

  > I would always be looking forward tremendously to playing machines and I couldn't get them fast enough. During play I always got this kind of feeling – being "high" or "stoned" would be the best way of describing it. I was very often uncontrollable in my excitable actions, like a five-year-old at Christmastime.

Employee Counselling Today: The Journal of Workplace Learning
Volume 8 · Number 3 · 1996 · 19–25

There are also self-reports of excitement from gamblers while playing on the machine. For instance, in one study by Griffiths (1994) in which players thought aloud continuously while playing, reported things like:

> 60p! I'm in the money/I'll take it, I'll take it … That was quite exciting (Subject 4).
> Tremendous … it's getting quite exciting now, isn't it? … I'm getting quite excited by this "Fruitskill" – don't know what the hell it's doing though! (Subject 7).

- *Tolerance*. Again, there are now a number of studies reporting cases of fruit machine players who have to gamble more and more and with increasing amounts of money to get the desired arousal level that they once got gambling with lesser amounts of money:

  > The cheap stake machines become boring so you play another big (expensive stake) one this time, after all, you've just seen somebody win off the next machine next to it and they won four pounds.

  Most of the evidence is of a self-report nature as demonstrated in the quote above, from Griffiths (1993b). However, a study by Griffiths (1993c) found that both regular and non-regular fruit machine players' heart-rates increased significantly during the playing period by approximately 22 beats per minute. However, the interesting finding was that after playing fruit machines, regular players' heart rates started to decrease at once, whereas non-regular players' heart rates did not change significantly. In terms of an addictive model of fruit machine playing, both regular and non-regular players get a "high" physiologically when playing, but the non-regular players stay "higher" for longer, meaning they do not have to play as fast or as often to induce the arousal peaks. Regular players, in contrast, could be seen as becoming more tolerant to the playing "highs", meaning they have to play either faster or more often to experience the initially desired effect. It was argued that the study could be viewed as the first study to show an objective measure of tolerance in fruit machine playing.
- *Withdrawal*. A number of studies have indicated that fruit machine addicts who cease playing on the machines experience "withdrawal" effects, such as irritability and moodiness (e.g. Griffiths, 1990). However, all of the evidence is self-report only and consequences such as "irritability" and "moodiness" may not in themselves be considered *bona fide* withdrawal effects by some people. This is perhaps one addictive component where more research is needed to confirm the existence of an identifiable withdrawal syndrome in fruit machine addicts.
- *Conflict*. There is much evidence in the literature that fruit machine addiction causes interpersonal conflict, although there is perhaps less evidence for intra-psychic conflict. (This is perhaps because many fruit machine addicts do not admit they have a problem – even to themselves). In addition to case studies showing parent-child conflict (Griffiths, 1991c; 1993d), there is evidence showing teacher-pupil conflict (Griffiths, 1990; Moran, 1987). A typical parent-child conflict situation is reported by Griffiths (1993d) concerning "David" (a fruit machine addict) and his parents:

  > David's parents were considering divorce because they had so many arguments. David's mother felt the rows were upsetting David and driving him out of the house into the arcades to play on the machines. It was a vicious circle. David was driving his parents into arguments which led them to be worried and unhappy which drove David into the arcades which led to more arguments, and so on.

- *Relapse*. Relapse is a common occurrence among fruit machine addicts. There are now numerous reports in the literature demonstrating that fruit machine addicts often return to their addictive pattern of playing after controlled periods of abstinence. Typical case study example quotes again come from a study by Griffiths (1993b):

  > I normally started playing when I was depressed. The first time I gave up (fruit machines), I was doing well until I split up with my girlfriend which triggered me off again.
  > … then came a series of family rows … I returned to the machines full time. Whenever I felt depressed or maybe rejected, the urge to play the machines became even bigger … I needed to counteract it by gambling.

- *Miscellaneous negative consequences*. Like other addictive behaviours, fruit machine addiction causes the individual to engage in negative and self-destructive behaviours, behaviours such as truanting, in order to play the machines (Griffiths, 1990; Huff

Employee Counselling Today: The Journal of Workplace Learning
Volume 8 · Number 3 · 1996 · 19–25

and Collinson, 1987; Leeds Polytechnic, 1989; Moran, 1987; NHTPC, 1988), stealing to fund machine playing (Barham and Cormell, 1987; Griffiths, 1990; Moran, 1987; Spectrum Children's Trust, 1988), getting into trouble with teachers and/or parents over their machine playing (Griffiths, 1990; Moran, 1987), borrowing or the using of lunch money to play the machines (Griffiths, 1990; NHTPC, 1988; Rands and Hooper, 1990), poor schoolwork (Griffiths, 1990; Moran, 1987) and in some cases aggressive behaviour (Griffiths, 1990; Moran, 1987).

From the brief preceding overview it would appear that fruit machine addiction is a *bona fide* addiction – although evidence for genuine withdrawal symptoms may be considered lacking. Further to this, there is a small body of evidence (Griffiths, 1991c) that there may be at least two types of addicted fruit machine player. The first type appears to be addicted to the fruit machine itself (a "primary addiction") and plays to test their skill, to get social rewards and most of all for excitement, i.e. plays fruit machines for their arousing properties. The second type appears to play machines as a form of escapism, where the machine is possibly an "electronic friend", i.e. plays for their tranquillizing properties. This is what could be termed a "secondary addiction" in that the player uses the machines to escape the primary problem (e.g. broken home, physical disability, relationship breakup, etc.). If the primary problem is resolved the excessive playing disappears.

## Concluding remarks

Hopefully what this article has demonstrated is that addictions are not just restricted to drug-ingested behaviours and that evidence is growing that excessive behaviours of all types do seem to have many commonalities. Such commonalities may have implications not only for treatment of such behaviours, but also for how the general public perceive such behaviours. Behavioural addictions do exist, and should be treated no differently from more established (chemical) addictions. The educating of people from all walks of life about the potential addictiveness in any activites that provide constant and immediate rewards is something to be actively encouraged.

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