

Psychology in the coffee shop

THIS drug permeates every level of society. Around the world people are gathering mornings, lunchtimes and afternoons for the consumption of the stimulant in brown, socially acceptable, liquid form. People drive, work and play under the influence. It's found in factories, hospitals and even schools. It's caffeine, of course. The chances are that you, reading this, are either about to have a cup of tea or coffee, or have just had a cup. The seeming ubiquity of the drug has not stopped further growth in coffee culture. The coffee shop has enjoyed a recent surge in popularity, repopulating the high streets of the UK, making us all familiar with the difference between a latte and an espresso, a cappuccino and a frappuccino. In the 1990s global sales of coffee leapt from \$30 bn to \$50 bn. (Although, we should note, the money received by growers dropped from \$12 bn to \$8 bn; see www.oxfam.org.uk.)

Coffee contains the stimulant caffeine, which has neurophysiological and cognitive effects, but buying and drinking a cup of coffee happens within a wider social context. The resurgence of coffee shop culture might have major civic, social and interpersonal consequences far beyond just meaning that I can get a nice cup of Java pretty much anywhere I want.

That feel...

So what is in your cuppa, and how does it work? Tea and coffee both contain caffeine. By weight tea contains more caffeine, but when prepared into drink form coffee will usually have a higher concentration. Tea also contains a small but significant amount of theophylline. Theophylline is an isomer of caffeine and has similar stimulant properties, but is also known to increase the area of the lungs used in oxygen absorption.

Caffeine is exceptionally permeable. It has no trouble passing the blood-brain barrier. Within an hour of drinking a cup of coffee there is probably caffeine in every cell of your body, and traces to be found in all your body fluids.

The best theory for caffeine action is adenosine blockade theory (Dunwiddie & Masino, 2001). Adenosine is a neurotransmitter associated with mood depression, inhibition of gastric secretion, slowing of the heartbeat and general lowering of neural activity. It is involved



TOM STAFFORD, the winner in the postgraduate category, investigates the coffee break.

in many secondary messenger systems at the synapse. Caffeine blocks adenosine receptors and hence lessens the action of adenosine, increasing the rate of spontaneous firing, elevating mood, blood pressure, heart rate and gastric activity. The elevation of blood pressure caused by caffeine consumption has been shown to increase pain tolerance (Keogh & Gerke, 2001). This is just one of the many effects of caffeine consumption that are relevant to psychiatrists and doctors (Paton & Beer, 2001).

the ritualisation of beverage preparation that is found among caffeine users, and is found to some extent among users of all drugs. Just as preparation of heroin for injection is done with reverential care, so many coffee or tea drinkers insist on their preferred method of brewing with a precision bordering on fanaticism. Sparks fly if you combine tea, teapot, cup, milk and water in the wrong way in the presence of the tea-connoisseur. The issue of how and when to plunge the cafetiere is the subject of many rival theories among serious coffee drinkers.

Other indicators of conditioning-based obsession combined with addiction among coffee drinkers are choosiness, time and effort spent acquiring a fix, and investment in elaborate paraphernalia. The reinforcing effects of caffeine establish the ritual in the wider context of daily routine, making the problem of quitting more than just overcoming the obstacle of physical addiction to the drug. Hence decaf.

Simply put, caffeine is addictive and many people are motivated to maintain their consumption to avoid aversive withdrawal symptoms, rather than for the positive side-effects (Schuh & Griffiths, 1997). Although caffeine has potential as a drug of abuse, the low cost and widespread availability of coffee mean that most people can learn to effectively manage their habit for maximum benefit to themselves, balancing the effects of caffeine to dovetail with their work demands and mood requirements (Weinberg & Bealer, 2001). Indeed, one review recently declared that 'regular caffeine usage appears to be beneficial, with higher users having better mental functioning' (Smith, 2002, p.1243).

'Creative lighter fluid'

The cognitive benefits of coffee are so well feted in popular culture that it is not necessary to eulogise them here. Suffice to say that the cup of coffee is inextricably linked with images of intellectual endeavour. From the iconic image of the

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Our love affair with coffee has implications for a range of psychologists

Caffeine has also been shown to affect dopamine (Garrett & Griffiths, 1997). This puts it in a class with the stimulants whose action is based primarily on dopamine (e.g. amphetamine and cocaine). The action of caffeine is comparable to, but less strong and more subtle than, the action of these two drugs.

Reward, reinforcement and ritual

Dopamine is strongly associated with subjective feelings of reward and heavily implicated with the physiology of reinforcement, via receptors in the nucleus accumbens (Robbins & Everitt, 1996). We can assume that like other reinforcers coffee will strengthen the behaviours that precede consumption. This might explain

café-philosopher to the brown-ring stains on essays and air of near panic that settles on a department if the coffee lounge is shut unexpectedly.

The essayist Floyd Maxwell declared coffee 'creative lighter fluid', and there's a saying among mathematicians that 'a mathematician is a device for turning coffee into theorems'. The experimental investigation of the cognitive effects of caffeine stretches from Holck (1933), who found that coffee enhances ability to solve chess problems, to recent investigations of the interaction of caffeine and personality type. Early results (discussed in Weinberg & Bealer, 2001) suggesting that extraverts might receive more cognitive benefit from caffeine than introverts, possibly because they are harder to over-arouse, have not been confirmed (Liguori *et al.*, 1999).

Small worlds, social grooming and distributed cognitions

Many drugs seem to have a synergistic relationship with social interaction. Social situations are based around and encourage drug use, while drug use seems to enhance the pleasure we derive from social interactions. Caffeine is no exception. Coffee provides an excuse for – and a spur to – our need for social interaction.

As geographical hubs of social interaction, coffee shops provide an opportunity to recognise the small world nature of society (Milgram, 1967). A 'small world' is one in which any pair of individuals can be connected via a surprisingly small degree of separation (Watts & Strogatz, 1998). It is small-world effects that we are recognising when we realise that we went to school with the neighbour of the person we have just met on the train, or similar. Kleinfeld (2002) has questioned whether social networks really do have small-world properties, or whether we have a bias towards seeing the world in terms of small worlds, a bias that makes the world seem more comprehensible and comfortable. Regardless of where the truth lies in this matter, Kleinfeld's paper points to the desire we have to *create* small worlds. This helps explain the success of café-chains such as Starbucks, an otherwise unremarkable multinational that sells itself as offering a 'third place outside work and home'. Maybe as social capital declines (Putnam, 2000) so we are willing to pay more to reclaim the semblance of the community we are losing.

Coffee shops and lounges provide a spatial bottleneck in our daily routines,

increasing the probability that we will encounter those we know loosely, as well as those we know well. The connections we have to people outside of our immediate circle of friends and family, although they form a small proportion of our social links, provide the crucial glue to bind a network into a coherently linked whole. This is 'the strength of weak ties' (Granovetter, cited in Gladwell, 2000).

The café is a hive of gossip, which has social grooming functions (Dunbar, 1997). We use gossip to establish and maintain our connection within a group, as well as for mere information transfer. So, by providing a space for the regular, but unplanned, interaction of community members, coffee shops play a role in creating social networks, and thus in turn in encouraging civic values (Cohen *et al.*, 2001).

Coffee shops, as meeting places, also foster the spread of information. This occurs informally, as an inevitable result of gossip and socialising, and via the availability of notice boards, which can provide a riotously democratic forum, advertising everything from evening classes and political meetings to pet-minding services. As information passes through a social network, which no individual has a complete map of, so coffee shops become part of a system of distributed cognition

(Hutchins, 1991), a place that allows collective decisions and collective memory retrievable (Wegner *et al.*, 1991; Weldon, 2001). As people meet, in pairs or groups, the collective experience of the community is retrieved and exchanged. The network of individuals influence and are influenced. The behaviours and norms that come to be adopted – whether over grand political issues or, for example, over what to do locally about plans for a new bypass – are the reflection of this ongoing, interactive, collective cognition.

The role of 17th century coffee shops in creating a civic space and a commensurate sense of 'public opinion', and the importance of that for the growth of democracy, has been discussed by historians (Habermas, 1989). In the 21st century we might hope that the resurgence of the coffee shop will be followed by a comparable resurgence of civic values and participatory democracy.

Just as caffeine permeates every corner of society, and, once drunk, every cell of our bodies, so the effects of caffeine are found at all the levels of description that psychologists are concerned with – neurophysiological, cognitive, clinical and social.

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