Two recent and rather different events have got me thinking about the nature of pleasure. One was the almost miraculous sight, widely shared on social media, of a myosin protein dragging a ball of endorphins in the brain, captioned ‘You are looking at pleasure’. The idea that, in one sense at least, we can see pleasure on a neurological level is rather amazing.

The other event was rather different. This was the experience of a quite remarkable mango brulee from a certain Indian restaurant in Brighton. How can it be that experiences as different as intellectual wonder about an achievement in neuroscience and a particularly sugary dessert trigger such similar responses?

Matt Jarvis discusses psychological perspectives on the experience of pleasure

The neuroanatomy of pleasure

Common sense would suggest that the kind of pleasure we get from physical experiences like food and sex (these are known as fundamental pleasures) is quite different from that derived from higher-level experiences like art, music and intellectual simulation (higher-order pleasures). However, a review by Kringelbach (2010) concluded that actually there is considerable overlap between the brain mechanisms involved in fundamental and higher-order pleasures.

As far back as the 1950s, Olds and Milner believed they had isolated the brain’s pleasure centre when they stimulated a region called the Nucleus Accumbens in rats. When given the opportunity to stimulate their Nucleus Accumbens, rats compulsively did so. Modern research suggests that the relationship between brain structure and pleasure is more complex, with separate systems for liking, wanting and learning. The Nucleus Accumbens...
may in fact be more associated with the experience of wanting rather than liking, hence its role in addiction — the addict can desperately want the object of their addiction without actually liking it (Kringelbach and Berridge, 2010).

It appears that we can experience pleasure from such different sources because hedonic hotspots — small areas of brain that trigger pleasure responses — are distributed around the brain, including the more primitive structures that respond to fundamental pleasures, as well as in the cortex, which processes the kind of stimuli that trigger higher-level pleasure (Smith et al., 2010).

**The neurochemistry of pleasure**

There is some debate as to the role of different chemicals in the experience of pleasure, so be a bit wary of online sources that claim to offer too many firm facts here. It is likely though that the following play some role:

- **Endocannabinoids and endorphins.** Sometimes called ‘bliss chemicals’, these are chemically very similar to cannabis and heroin respectively. It is likely that these chemicals are responsible for the sense of wellbeing we experience after exercise.
- **Dopamine.** Sometimes called the ‘reward chemical’, this appears to be involved in the experience of achieving a goal. The high associated with drugs like cocaine and ecstasy is believed to involve high levels of dopamine.
- **Serotonin.** This is often and probably misleadingly called the ‘pleasure chemical’. Because serotonin has a number of neurological roles it is impossible to say what role it may have in pleasure, but it appears that some antidepressant drugs, exposure to bright light and psychological therapies designed to encourage positive thinking and goal-seeking behaviour all increase serotonin activity and improve mood.

**Biological reductionism**

It can be tempting to think that just because we are developing a better understanding of the neuroscience of pleasure, this makes other psychological perspectives less valid or useful. Actually the study of pleasure and the related idea of happiness are also flourishing in the fields of humanistic and positive psychology. Here we have some rich, abstract theoretical ideas about human experiences of pleasure that have tremendous personal meaning for individuals but which do not neatly map on to what we know about the brain. These are collectively called the eudaimonic theories and they share the belief that psychological wellbeing, experienced as pleasure or happiness, result from achievement or realising our individual potential. So concepts like peak experiences, purpose, transcendence and growth become key to understanding pleasure.

So was the mango brulee a peak experience, allowing me to transcend daily existence and giving my life purpose? Probably not, but it certainly hit a hedonic hotspot.

**Activity**

Read up about the neuroscience of pleasure and about eudaimonic theories. What do you think about these very different ways psychology can look at pleasure? If you are working in a group you could split into two camps and debate the relative usefulness of these two approaches.

**Weblinks**

Watch a video of a myosin protein dragging a ball of endorphins: [www.tinyurl.com/zxmbwu](http://www.tinyurl.com/zxmbwu)

*Psychology Today* article on ‘the chemicals of happiness’: [www.tinyurl.com/p4ncfbk](http://www.tinyurl.com/p4ncfbk)

Berridge and Kringelbach’s article on the brain’s pleasure systems: [www.tinyurl.com/j79tff9](http://www.tinyurl.com/j79tff9)

Find out more about our full range of magazines and online archives of back issues at [www.hoddereducation.co.uk/magazines](http://www.hoddereducation.co.uk/magazines)