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| **Explanations for food preferences: Evolutionary explanation** | | | |
| **Explanations for food preferences: Evolutionary explanation AO1** | | | |
| **Preference for sweetness**  Food preferences are linked to sweet taste as it is a reliable signal of high energy food. Jacob Steiner (1977) placed sugar on the tongues of new born humans and observed positive facial expressions (such as upturned mouth corners). New borns can even distinguish between different sugars. Fructose is especially sweet and babies will consume large amounts of it if allowed. This makes a lot of sense in evolutionary terms. Fructose is a ‘fast-acting’ sugar providing energy quickly, and is present in ripe fruit, which would have been a favoured food for our distant ancestors. | | | |
| **Preference for salt**  Salts are essential for many cell functions in animals. A preference for salt taste appears in humans at around 4 months of age. Gillian Harris et al. (1990) found that infants between the ages of 16 and 25 weeks who had been breastfed preferred salted rather than unsalted cereal. Breast milk is low in salt, so this finding suggests that they had not learned a salt preference and that it is innate, even though it only appears months after birth. | | | |
| **Preference for fat**  High calorie foods, such as fat, were not often readily available to our evolutionary ancestors. So quickly learning to prefer foods which are high in calories would have carried a definite advantage because calories provide energy important for survival. As fat contains twice as many calories as the equivalent amount of protein or carbohydrate, a taste preference for fat is therefore the most efficient route to energy consumption. But this is not the only advantage of fat. It also contributes to palatability (making food taste pleasant) and appeals to our other senses, especially smell. | | | |
| **Neophobia**  Like most omnivores, humans have an innate willingness to eat new or unfamiliar foods. This food neophobia appears to be most pronounced in childhood, between the ages of about two and six years. Leanne Birch (1999) suggests that it appears at a time when children begin to explore their environments and may encounter foods independently of their parents’ guidance as to what is safe to eat and what isn’t. Therefore, because untried foods are potentially dangerous to health, neohobia is adaptive because it means we are less likely to consume substances that could cause us illness or even prove fatal. Neophobia diminishes once we learn that specific foods will not poison us or cause us to become ill. Once it has served its purpose it is no longer needed and gives way to a different evolutionary mechanism that encourages consumption of a more varied diet, giving us greater access to important nutrients. | | | |
| **Taste aversion**  According to Martin Seligman’s (1971) theory of biological preparedness, we acquire certain taste aversions or fears more quickly than others. These are generally to objects or situations that posed the greatest threats to our distant ancestors’ survival. Humans and other animals are therefore genetically hardwired to learn taste aversions that makes us less likely to eat food that has gone bad or is otherwise toxic.  An example of this was provided by John Garcia and Robert Koelling (1966) who classically conditioned rats to acquire a taste aversion to sweetened water after paring it with poison, but they were much less successful when they paired the water with electric shocked. On the other hand, an aversion to light and clicking sounds was easily conditioned in another group of rats when these were paired with electric shocks, but not paired with poison. The researchers explained these findings in terms of preparedness, an evolutionary mechanism. A taste aversion is much more likely to be the outcome of eating poisoned food rather than it is of encountering a light or a clicking sound. It is an adaptive response that aids survival.  Bitter compounds in food are usually a reliable warning sign of toxins or that the food has gone off, so it is beneficial to survival to be able to detect the compounds quickly. In his research with new born humans, Jacob Steiner (1977) found evidence of negative facial expressions (such as downturn of the corners of the mouth) in response to bitter tastes. This occurred before any learning of taste preference had taken place, strongly suggesting an innate mechanism at work. | | | |
| **Explanations for food preferences: Evolutionary explanations AO3** | | | |
| **Research support**  P: A strength of the evolutionary explanation for food preferences is that it is supported by research evidence into the link between stress and eating behaviour  E: Susan Torres et al (2008) reviewed relevant studies and concluded that humans have a marked tendency to prefer high fat foods during periods of stress.  E: These findings suggest that a preference for fat may have provided energy to fuel a more effective fight or flight response in stressful times. This preference was adaptive because it would have given our ancestors a survival advantage over those who did not have it.  L: This increases the credibility of the evolutionary explanation as there is research to back it up. | **Explaining the evolution of food preferences**  P: Another strength is that evolutions of food preference can be explained when looking at the adaptiveness of gut microbes. Researchers describe gut microbes as influencing their hosts behaviour in order to increase their own survival chances.  E: For example, Weerth et al (2013) found a link between infant colic and changes in gut macrobiotic. The pain of colic causes the baby to cry in distress, which leads parents to increase feeding. This means more nutrients are delivered to the baby’s gut, to the benefit of the microbes.  E: This means that the creation of colic by microbes is adaptive. The microbes may even manipulate taste preferences by altering the activity of receptors on the tongue.  L: This suggests that our distant ancestors’ food preferences were not for their benefit but to enhance the survival chances of the microbes that colonised their guts. | **Individual differences in taste aversion**  P: A limitation of the evolutionary explanation is that there are individual differences in taste aversion that evolutionary explanation cannot explain.  E: For example, Drewnowski et al (2001) found that people differ in their ability to detect the bitter tasting chemical PROP. Some people cannot taste it whereas others ae very sensitive to it and they avoid foods containing similar bitter compounds.  E: PROP insensitivity seems to be an inherited trait. It is difficult for an evolutionary theory to explain this inability to detect bitterness when it was apparently so important for our ancestors survival.  L: This suggests that the credibility of the evolutionary explanation is weakened as it is unable to explain all reasons behind food preferences. | **The role of culture**  P: Another limitation for evolutionary explanations for food preferences are that they ignore cultural influences  E: Cashdan (1998) says that culture plays a major role in determining which foods are accepted and rejected and also the role of ethnic identity.  E: For example someone brought up in a Jewish kosher household, would probably be repulsed by the idea of eating pork with a non-Jewish neighbour.  L: Food preferences seem to be a lot more difficult to change than other elements of a culture, such as style of dress etc. and the evolutionary explanation ignores this. |