

Olfactory Perception and Emotional Arousal

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Olfactory perceptions are an interesting part of our lives and play an important role in our quality of life. Many of us may take our sense of smell for granted. There is a strong connection between flavor and smell (Shepherd, 2006). This could explain why foods taste bad or seem to have no taste when you have a cold. Smell also contributes to taste aversion (Capaldi, Hunter, & Privitera, 2004). An example of this would be when you eat something that makes you sick, and then in the future when you smell that substance you may start to get sick and avoid eating it. Many of us smell our food to check if it is spoiled. This supports the theory that hedonic responses, or likes and dislikes, to certain odors are learned through emotional associations (Herz, Beland, Hellerstein, 2004). It's possible that when smelling something, we try to match it to a previous smell which is associated with an emotion that helps us decide to approach or decline the stimuli based on the pleasantness of the emotion (Stevenson & Boakes, 2003). In a recent study, it was found that subjects responded faster to unpleasant odors rather than pleasant ones and subjects responded faster to food odors rather than nonfood odors (Boesveldt, Frasnelli, Gordon, & Lundström, 2010). This illustrates the use of the olfactory system as a means of protection against certain dangers. It is interesting to note that cultural learning may give meaning to odors that one has not had an emotional encounter with. For instance, you don't have to be in a building that is on fire to know that the smell of smoke could mean your life is in danger.

Our sense of smell is useful for many other reasons. Wine tasters, bakers and chefs may rely heavily on their sense of smell to do their jobs. Sometimes we smell things and vivid memories or images come to mind (Tomiczek, & Stevenson, 2009).

It is important to note that there is no way to predict what kind of association an individual has with a certain odor. I find the smell of diesel exhaust pleasant, perhaps because my father was a truck driver. However, someone else may find the same odor unpleasant due to a different association. Some smells may have a high percentage of individuals with generally the same associations attached to them. For example, rose oil and vanilla are usually found to be pleasant odors (Kenneth, 1923). This may also be the basis for aromatherapy, which is the use of odors to positively affect moods and emotions. In aromatherapy, it is believed that certain odors, like lavender, may produce a calming effect in some people. Conversely, a person wearing the same perfume or cologne of a loved one may walk by and excite you. This illustrates the powerful connection of odors to emotions.

Emotional arousal is defined as an increase in heart rate above metabolic demand (Myrtek, Frölich, Fichtler & Brügger, 2000). The minimal condition of body processes to survive, i.e. resting pulse, is called metabolic demand. Mostly all emotions except anger result in an increase in heart rate (Alaoui-Ismaili, Robin, Rada, Dittmar, & Vernet-Maury, 1997). Therefore, it is my hypothesis that the olfactory perception of rose and vanilla will invoke emotional arousal.

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