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嗜好と嗜癮の神経科学  
—「好き」から「やみつき」へ—

廣中直行<sup>1,2</sup>

**Neuroscience of Preference and Addiction:  
From Hedonic “Liking” to Compulsive “Wanting”**

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**Abstract**

Scientific research on pleasant emotions has not progressed well as compared with unpleasant emotions like fear or anger. However, recently, the need to study pleasant emotions is increasing because they are closely related to an improvement in our quality of life. In this paper, we review neuroscientific research on hedonistic impact (“liking”) and motivation or desire (“wanting”). As for the neural substrates of pleasant emotions, the medial forebrain bundle is considered to be important. It originates from the ventral tegmentum area in the midbrain and projects to the nucleus accumbens, a part of the limbic system. This neural pathway responds to various kinds of rewarding stimuli and modifies our behavior to receive more of them. The neurotransmitter dopamine plays an important role for such motivation. A continuous expectation of coming rewards is critical to maintain dopamine release from the nucleus accumbens. The dynamics of dopamine release seems to be well accounted for by the models of the learning theory in psychology and/or the marginal utility theory in economics. When we actually decide to take something, the decision making is in process. The specific brain region, the orbitofrontal cortex, is known to be deeply implicated in decision making. Dysfunction of this region leads to impulsive choices, which then focuses on short-term hedonistic rewards and neglects long-term loss. It is apparent that so many brain regions are working together as a system to optimize our behavior to increase chances for getting rewards. This system is essential for our survival, but sometimes a malfunction leads us to pathological states like addiction. To avoid this condition, a long-term future perspective and symbiotic relationships with others are important. The impact of pleasant emotions to construct symbiosis in society would be an important future research topic.

**Key words:** liking, wanting, medial forebrain bundle, dopamine, decision making.