WORKING WITH CRAVING

According to Buddhist teaching, one of the two primary causes of Dukkha is craving; the accompanying cause is clinging, which will be the topic for the next talk. The Pali term for craving is *tanha*, which is literally translated as *thirst* or *hunger*; the implication of which in this context is that craving is a process that cannot be satisfied until the application of vipassana is skillfully applied. When a person is physically thirsty, there is insufficient water in the body and when enough water is consumed the thirst is quenched. The understanding that Buddhist teachings relates to a mental thirst, the hunger for a self that can’t ultimately be satisfied because of the misconception that there is an enduring self that can be fed enough experience to be “filled” with being.

Traditionally, tanha is divided into three areas of operation. Here is what Wikipedia writes about them:

* *Kāma-taṇhā* (sensual pleasures craving): craving for sense objects which provide pleasant feeling, or craving for sensory pleasures. Walpola Rahula states that taṇhā includes not only desire for sense-pleasures, wealth and power, but also "desire for, and attachment to, ideas and ideals, views, opinions, theories, conceptions and beliefs (dhamma-taṇhā)."
* *Bhava-taṇhā* (craving for being): craving to be something, to unite with an experience. This is ego-related, states Harvey, the seeking of certain identity and desire for certain type of rebirth eternally. Other scholars explain that this type of craving is driven by the wrong view of eternalism (eternal life) and about permanence.
* *Vibhava-taṇhā* (craving for non-existence): craving to not experience unpleasant things in the current or future life, such as unpleasant people or situations. This sort of craving may include attempts at suicide and self-annihilation, and this only results in further [rebirth](https://en.wikipedia.org/wiki/Rebirth_(Buddhism)) in a worse realm of existence. This type of craving, states Phra Thepyanmongkol, is driven by the wrong view of annihilationism, that there is no rebirth.

The second area, bhava-tanha, focuses on how personal identity is cultivated; I operate under the assumption that we experience the self through a series of recurring self-state organizations that arise and pass away several times a second; the process of clinging, to be discussed in more depth during the next talk, blends these moments together into the stream of consciousness.

The third area, vibhava-tanha, relies on the traditional Buddhist and Hindu belief in rebirth, which doesn’t seem relevant to me as I live a secular life. The experience of aversion creates a craving for the non-existence of a particular sequencing of unpleasant and reactive self-state organizations—the operation of bhava-tanha operates to avoid direct awareness of unpleasant feelings.

They can be associated with three root concepts associated with Dukkha: Greed (Kama, Sensual Desire), Hatred (Vibhava, Non-Being) and Ignorance (Bhava, Being/Becoming).

Craving manifests as an instinctive reaction to feelings, either pleasant or unpleasant. In modern terms, pleasant feeling craving is *affect approach* and unpleasant feeling craving is *affect avoidance*. *Affect* *is the reactive potency of a physical or emotional experience*.

Modern research presents support for how tanha operates, particularly in the process of addiction. One of the diagnostic criteria for addiction is the inability of an individual to control a surge of impulsive reactivity, affect approach, when presented with stimuli that are associated with acquiring and abusing a pleasant sensational experience. Typically, this involves a substance, but this can also involve a repetitive action such as gambling, sexual acting out, binge eating and the inability to avoid computer gaming, despite the demonstrable negative consequences of such behaviors.

A not-so-obvious aspect of addiction is that that the addictive acting out is more often than not a maladaptive attempt to manage an associated unpleasant self-state organization such as anxiety, more specifically PTSD, that is, affect avoidance. In the addiction counseling world these conditions are termed a “co-occurring disorder” and must be addressed to minimize the likelihood of addictive relapse.

Even though not all of us are afflicted by addiction, we live in a consumer culture that uses sophisticated means of conditioning us to buy a product, service or entertainment. Even though this is not technically an addiction it has created many problems for us personally, socially and environmentally. An interesting book on this subject is “When Society Becomes An Addict” by Anne Wilson Schaef.

NEUROLOGICAL UNDERPINNINGS OF TANHA

There’s a part of the brain called the limbic region and the functions originating in that area play a key role in how tanha is manifested. There are paired clusters of neuronal nuclei in each hemisphere of the brain within the limbic regions called amygdalae (amygdala is singular). An important function of these neurons is to interpret incoming stimuli: “Friend or foe, food or poison?”. The reactions to the stimuli travel through other neurons passing around and through the nucleus accumbens, another paired cluster of neural nuclei that initiate reactions to the signals from the amygdalae that activate behavior. This behavioral system plays a fundamental role in the addictive process. Research on the brains of trauma victims and addicted persons shows a reduce volume of the nucleus accumbens because the body adapts to the stimulation created by the amygdalae through reducing the number of receptors on the neurons in the nucleus accumbens. Here is an abbreviated excerpt from the Harvard Mental Health Letter, published in July, 2011, titled “How Addiction Hijacks The Brain”:

All drugs of abuse, from nicotine to heroin, cause a particularly powerful surge of dopamine in the nucleus accumbens. The likelihood that the use of a drug or participation in a rewarding activity will lead to addiction is directly linked to the speed with which it promotes dopamine release, the intensity of that release, and the reliability of that release…Dopamine not only contributes to the experience of pleasure, but also plays a role in learning and memory — two key elements in the transition from liking something to becoming addicted to it.

According to the current theory about addiction, dopamine interacts with another neurotransmitter, glutamate, to take over the brain's system of reward-related learning. This system has an important role in sustaining life because it links activities needed for human survival (such as eating and sex) with pleasure and reward. The reward circuit in the brain includes areas involved with motivation and memory as well as with pleasure. Addictive substances and behaviors stimulate the same circuit — and then overload it.

Repeated exposure to an addictive substance or behavior causes nerve cells in the nucleus accumbens and the prefrontal cortex (the area of the brain involved in planning and executing tasks) to communicate in a way that couples liking something with wanting it, in turn driving us to go after it. That is, this process motivates us to take action to seek out the source of pleasure.

***Tolerance and compulsion.*** Over time, the brain adapts in a way that actually makes the sought-after substance or activity less pleasurable.

In nature, rewards usually come only with time and effort. Addictive drugs and behaviors provide a shortcut, flooding the brain with dopamine and other neurotransmitters. Our brains do not have an easy way to withstand the onslaught.

Addictive drugs, for example, can release two to 10 times the amount of dopamine that natural rewards do, and they do it more quickly and more reliably. In a person who becomes addicted, brain receptors become overwhelmed. The brain responds by producing less dopamine or eliminating dopamine receptors — an adaptation similar to turning the volume down on a loudspeaker when noise becomes too loud.

As a result of these adaptations, dopamine has less impact on the brain's reward center. People who develop an addiction typically find that, in time, the desired substance no longer gives them as much pleasure. They have to take more of it to obtain the same dopamine "high" because their brains have adapted — an effect known as tolerance.

At this point, compulsion takes over. The pleasure associated with an addictive drug or behavior subsides — and yet the memory of the desired effect and the need to recreate it (the wanting) persists. It's as though the normal machinery of motivation is no longer functioning.

The learning process mentioned earlier also comes into play. The hippocampus and the amygdala store information about environmental cues associated with the desired substance, so that it can be located again. These memories help create a conditioned response — intense craving — whenever the person encounters those environmental cues.

Cravings contribute not only to addiction but to relapse after a hard-won sobriety. A person addicted to heroin may be in danger of relapse when he sees a hypodermic needle, for example, while another person might start to drink again after seeing a bottle of whiskey. Conditioned learning helps explain why people who develop an addiction risk relapse even after years of abstinence.

The learning curve of an addiction doesn’t exactly match tanha as described in Buddhist literature. We don’t experience the very powerful surges of dopamine when the mind creates Dukkha (distress and confusion—see the posting on Dukkha from January 30, 2020 for more information), but the learning process described above does operate on a less impactful scale. Over the course of a lifetime the operation of dopamine on the nucleus accumbens becomes habituated around reinforcing the misconception of and enduring and autonomous self (See the posting of January 23 on Anatta for more information).

This hijacking overwhelms the regulating function of the preorbital cortex, located in the front of the brain. This cluster of neuron nuclei send signals down to the limbic region to ‘reduce the signal strength’ emerging from the amygdalae. This reduces the amount of stimulation that travels to the nucleus accumbens and increases self-control.

HOW DOES MINDFULNESS OF BREATHING MEDITATION AFFECT TANHA?

Whenever the brain is stimulated, either through pleasant or unpleasant experience, the body reacts through increased activity. Simply put, adrenaline is injected into the bloodstream and activates various areas of the body including the parts of the brain associated with *upadana*, the Buddhist term translated as *clinging*, which will be discussed during the next meeting. This increased excitement can be understood as an underpinning of tanha. When attention is persistently focused on the breath to the exclusion of any thoughts that justify and amplify the craving, the amount of adrenaline in the blood metabolizes out and the system becomes less agitated. The subjective experience we notice during this process is increasing calmness and, because of an emphasis on carefully investigating the variety of sensations associated with breathing, there is an increase of mental alertness. Another key concept within Buddhism is *viraga* (vih-rah-gah)*,* translated as *dispassion*. As a result of repeatedly disregarding the urgently reactive demands of craving, the potency of the energy is diminished, and this reduced reactivity provides a significant benefit on the path to Awakening.

There is a technique suggested for recovering addicts called “urge surfing”—this involves being consciously aware of the impulsive reactivity that the dopamine surge creates but not reacting to it. The most simple and workable example of this is becoming aware of the intense demands of an itch without scratching it. The amygdalae send an alarm signal to the nucleus accumbens which activates towards the scratching behavior. The conscious decision to not scratch the itch and to disregard the demanding urgency and story justifying the scratching behavior strengthens the neural connections from the preorbital cortex to the amygdalae. This learning becomes strengthened by this decision and generalizes to other impulsive cravings that have more impactful results.

The cultivation and maturation of the mental training mindfulness of breathing provides, manifested as viraga, makes urge surfing more effective in a variety of ways beyond addiction, supporting a person’s ability to respond more adaptively to environmental stress wherever it might be experienced. The less generally anxious a person is, the more likely she or he is to develop the more spiritual benefits of this practice, along the lines of growth suggested in the Buddhist literature regarding Awakening.