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## The Limbic System and Christian Sanctification

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## The Limbic System and Christian Sanctification

### Abstract

"Even when our limbic system conveys strong motivations to act in a particular way, we still have the ability and responsibility to think and act in a manner that pleases God."

Posting about the complexity of the human brain from *In All Things* - an online journal for critical reflection on faith, culture, art, and every ordinary-yet-graced square inch of God's creation.

<https://inallthings.org/the-limbic-system-and-christian-sanctification/>

### Keywords

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### Comments

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# in things

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## The Limbic System and Christian Sanctification

Tony Jelsma

The human brain is an amazingly complex organ. Despite its complexity, we know quite a bit about the functions of its different regions. For example, we know that we make decisions in the prefrontal cortex and that individuals suffering from ADHD have abnormalities in this region. We also know that the image we see with our eyes is reproduced in the occipital lobe, located at the back of the brain. We even know the part of this lobe that is involved in facial recognition (the author and neurologist Oliver Sacks suffered from prosopagnosia, the socially awkward inability to recognize faces). Multiple regions of the brain are involved in planning, coordinating, and even remembering movements. Of course, neuroanatomy is more complicated than this explanation, but we have made much progress in assigning particular functions to particular brain regions.

One intriguing collection of structures is the limbic system. Whereas many parts of the brain individually carry out a specific function, the limbic system is a set of structures that *collectively* regulate our actions. The limbic system is responsible for motivated behaviors. Motivated behaviors are actions that we consciously do because there is some kind of motivation to do them. We categorize four types of such behaviors—we eat when we are hungry, flee when afraid, fight when angry, and engage in sexual activity when aroused. In all these cases, we make a conscious decision to engage in such an activity, but we also have the ability to refrain, for example, when it is not appropriate to engage in such activity.

The components of the limbic system work in concert, yet each part contributes in its own way. These components are part of not only the limbic system, but also other functions of the body. Nevertheless, the individual functions of these components help us understand better what the limbic system does as a whole. For example, the amygdala is responsible for the emotional aspect of such behaviors, including the emotional component of memories. People with damaged amygdalas can remember things but the emotional component of those memories is lost. The hippocampus performs many functions, including memory consolidation. This region is susceptible to excessive stress, which affects our ability to form long-term memories (which is why cramming for an exam is not helpful for learning). The cingulate gyrus is part of the cerebral cortex, which deals with the conscious brain functions, and it is responsible for the conscious aspect of these motivated behaviors. The hypothalamus is the control center for many subconscious actions of the brain, including the autonomic nervous system. Finally, the nucleus accumbens plays an important role in reward, pleasure, and addiction. From this description of the various parts, we can see that the limbic system involves an interplay between the conscious and subconscious, between those responses we can control and those we cannot.

When describing the limbic system to my anatomy class, I am struck that these motivated behaviors are often associated with the ethical aspect of our choice to engage in an action. This association does not mean that all motivated behaviors are sinful. The limbic system is part of the created structure of our brains and serves important functions. Indeed, we can eat, deal with threats, and express ourselves sexually, all to God's glory! Nevertheless, the limbic system is particularly associated with the ethical and sinful aspect of our behavior.

Many functions of our brain do not have an ethical component. It is not a sin to be blind, have memory loss, be mistaken about reality, or to be unable to control our movements (although sinful actions like substance abuse may lead to such conditions). On the other hand, our sinful actions with regard to others *do* involve the limbic system when they manifest our lack of self-control over these urges. The drives themselves are not wrong; the question is whether we channel them in a way that honors God or not. A quick scan of the second table of the Ten Commandments gives examples. We commit adultery because we do not properly control our sexual desires. We commit murder (or hate our brother, Matthew 5:22) because we cannot control our thoughts and actions towards others. We give false testimony, out of either fear or anger, rather than accept

the consequences of speaking truthfully. The tenth commandment, you shall not covet, forbids a disobedient anger towards God for his providential ordering of things. Moreover, Paul lists the consequences of rejecting God in Galatians 5:19ff: sexual immorality, impurity, debauchery, idolatry, witchcraft, hatred, discord, jealousy, rage, selfish ambition, dissensions, factions, envy, drunkenness, orgies—all have emotional and motivational components.

By contrast, many times Scripture encourages the self-control that we need to fight against these temptations. The emotions we feel are real, and I would argue that the drives behind them are not sinful. God created us with those drives. However, we need to develop healthy habits of thought (Romans 12:2) and shun thought patterns that cause us to dwell on, and subsequently, to act on sinful desires. This progression towards sinful actions is described in James 1:14-15, “... each one is tempted when, by his own evil desire, he is dragged away and enticed. Then, after desire has conceived, it gives birth to sin; and sin, when it is full-grown, gives birth to death” (2 Corinthians 10:5). Instead, we must take captive every thought to make it obedient to Christ. When our faith is challenged, can we speak boldly in defense of the gospel (Acts 4:13)? Moreover, we may cultivate sexual expression in a loving physical relationship with our spouse. We can use food in a variety of ways to show hospitality or to feed the hungry.

In his time on earth, Jesus Christ was a model of how to deal with difficult circumstances. In every way, he was tempted just as we are, yet without sin (Hebrews 4:15). At the beginning of his ministry, Jesus went without food for forty days. Despite his hunger, he resisted the devil’s temptation to eat for the wrong reason. Jesus clearly demonstrated anger on multiple occasions but expressed those emotions in a God-honoring way—such as in the clearing of the temple. In addition, Jesus associated with people of ill repute on many occasions but never committed sexual sin. Finally, despite his intense anguish and dread at Gethsemane, Jesus did not run away but went through with his plan to suffer and die for the sins of his people. Through the working of the Holy Spirit, we too need to develop the mind of Christ (1 Corinthians 2).

In summary, the brain contains a variety of regions, which regulate conscious and subconscious actions. Some are sensory, others process this information, and still others direct our responses. While such a description makes our brains seem mechanical, we actually have considerable control over our actions. We weigh the information we receive and decide whether and how to respond. Even when our

limbic system conveys strong motivations to act in a particular way, we still have the ability and responsibility to think and act in a manner that pleases God. Cultivating this ability is part of our sanctification.