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Debussy and Neuroscience

Debussy's *Pelléas et Mélisande*, like many of his works, turned a new page in the history of music. Themes and motifs expressed in operas before this work were generally much more definitive. Operas were much more structured and organized. The themes used in *Pelléas et Mélisande* are not irrefutably descriptive as in the then very popular style of Wagner. Debussy's themes are more suggestive and evocative and used in a deeper way to invoke a feeling in the listener rather than help the listener understand the story or be able to make assumptions as to what events will follow. This seemingly unorganized and complex style of writing defined many of Debussy's works around the turn of the century. Unlike the popular styles of the time, Debussy was constructing musical themes that corresponded more with thoughts and memories rather than specific events or characters.

According to a New York University neuroscientist, Joe LeDoux, a memory is a physical thing found somewhere within one's brain. A memory is made up of a string of proteins. Whenever one is remembering a memory, the brain actually reconstructs this string of proteins that make up that specific memory as opposed to the popular belief that a memory is stored somewhere in your brain and is brought up to the front whenever it is being remembered.¹ For this reason, a memory will never be exactly the same. Each time it is being remembered or "brought up to the front", the memory will be changed in some way whether it be a tiny detail or the difference between walking a dog in the rain and sailing a boat through a pit of lava. This idea of memories relates to Debussy's use of themes in that his themes are not just sitting idle somewhere waiting to be brought back up into action. Debussy once said that music should "try and render successive impulses and moods as they occur, rather than make laborious efforts to follow a symphonic development which is laid down in advance". He achieves this by never completely repeating a theme but implies parts of a previous theme to sometimes only slightly evoke a memory. This reoccurring musical idea that is brought up is mutated into something completely new yet still has remnants of a true past event much like the reconstruction of a memory in the human brain.

One example of these themes is one that shows up within the first minute of the piece and appears several times in some form throughout the opera. This theme, found for the first time at measure five of the opening piece, seems to always suggest the fate of the characters. It is used as a foreshadowing device. It usually reappears towards the end of a scene for this reason. It closes the first act as well as the first scene of the second act right after Mélisande drops her ring into the fountain. It is also noticeable in the horns during the third act when Golaud strikes Pelléas down. This theme is also commonly brought up in most interludes throughout the opera. Sometimes this theme is barely even noticeable and only the rhythm is borrowed in its reincarnations. These reincarnations

¹ Taken from show #304 of the WNYC radio show, Radiolab, titled *Memory and Forgetting* aired on June 8th, 2007.

are meant only to subtly remind the listener as to what has happened but show it in a new light. It is never exactly the same and prominent enough to call so much attention to it that the listener is able to pinpoint exactly where it had come from and what exactly it means.

Like many of Debussy's works, *Pelléas et Mélisande* is written in a stream of conscious-like style. It is always moving forward and never recalling the past exactly how it had happened. Time is given little importance in the music. The focus is always on what is happening at that given moment. Debussy's way of using themes in *Pelléas et Mélisande* gives the music an omnipresent temporal character as if it exists everywhere all at the same time. His music works much like thought or even language. As a person is telling a story, they will often mention events that happened earlier in the story they are telling. It is not necessary to repeat part of the story word for word, but add just enough to let help the listener better understand. It is the same for the listener. Someone could jump into a conversation that had already been taking place before they were involved and be able to piece together what it is the other person is talking about based on little clues given by the person speaking. The process of piecing together clues from the past while at the same time focusing intently on what is happening at that given moment is the way the brain works out problems and comes to a conclusion. Debussy had the ability to convert that same process into music. However, he was not alone in his way of incorporating these ideas of thought and music into his art whether intentionally or unintentionally. Many artists and writers were also dealing with the subject on some level around the same time period. Marcel Proust, Paul Cezanne, and Igor Stravinsky all dealt with ideas of thoughts and memories that preceded scientific discoveries by years.²

Debussy's *Pelléas et Mélisande* is without a doubt a deep and thoughtful work of art. His ability to portray emotion through harmony and texture as well as his approach to style continues to be influential on composers after his time. It could be inferred from *Pelléas et Mélisande* that through the work of Debussy, music was free to flow like the inner working of the human consciousness. Thanks to Claude Debussy's work on this and similar compositions, the art form of music was advanced into a new era; music unbound from tradition to freely interprets imagination.

² Names and examples borrowed from Jonah Lehrer's book *Proust Was a Neuroscientist*.