

Do Dogs Have Visual Dreams?

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It's a familiar scenario for us dog owners. You're on the sofa reading or watching TV and hear a grunt beside you. You look and discover your dog, yet again, twitching or paddling her paws while emitting soft growls, grunts, and barks. Sometimes she seems content and other times, frightened. Obviously, her brain is working overtime in her sleep, but is she really "seeing" images in her mind's eye the way we humans do when we dream, or is her brain simply firing random impulses through her body? And if she does actually see things in her dreams, what could it be? It's a fair question, given that we can't readily assume that other species share the same sensorial experiences that we do.



On a structural level, a dog's brain is similar to that of a human's. In fact, like humans, dogs go through two distinct stages of sleep REM and non-REM (or slow-wave). REM is the sleep state in which dreams occur. Humans when awakened from REM report having had a vivid dream. This is the first clue to how dogs dream. But what do they dream about?

Dogs have complex dreams. Like humans, dogs' dreams often review what they have learned or experienced during the course their day. Matthew Wilson, professor at MIT's Center for Learning and Memory, has demonstrated that this is not exclusive to dogs, either. Wilson ran a series of tests on rats, comparing their brain activity in both waking-state and sleep-state, then tested their ability to learn complex tasks. If a group of rats ran a maze all day, the researchers discovered, the same portions of the rats' brains stimulated by the maze would likely show activity later, as they slept. "The animal is certainly recalling the memories of those events as they occurred during the awake state, and it is doing so during the dream sleep," Wilson said, "and that's just what people do when they dream." This research has been used to argue, by the likes of psychology professor and neuropsychological researcher Stanley Coren, that all higher-intelligence animals possessing an analogous brain structure (similar to our own), such as dogs, dream in order, at least in part, to process information and streamline memories.

You might wonder, however, how this necessarily indicates that dogs dream visually. One answer lays in the pons, a special part of the brain stem that inhibits people and animals alike from physically enacting our dreams. Coren, an eminent neuroscientist who has studied and written about canines, states that in sleeping dogs where the pons is removed or deactivated, the dogs will move about. They act out specific behaviors, such as stalking imaginary prey, despite the fact that electrical recordings indicate they are in deep sleep. Even more fascinating, these dogs only began moving upon entering the stage of sleep associated with dreams: REM-state. It should be noted too that REM sleep utilizes the hippocampus and visual cortex, which are responsible for memory and imagery, respectively. So, yes, it is highly probable your dog is seeing a confusing jumble of images that knit neatly into a dream narrative as peculiar to her as yours is to you.

The next time your pooch snuggles beside you on the sofa, watch carefully. You don't need to be a neuroscientist to know what she dreams. Watch how her breathing slows into that slow, familiar rhythm, how she wiggles, whimpers and woofs. Like us, in dream a dog's life holds limitless possibilities. Yet, like us, the scenes and memories that she'll most likely dream depend on her lifestyle and personality. Coren wrote: "If it is true that dogs dream about what they do, then we must conclude that Great Danes only dream about sleeping."

By Christopher F. Lapinel

About the Author

Christopher F. Lapinel is an artist and freelance writer with work appearing in several publications. He is also the co-owner of a holistic dog-training service in San Diego. Lapinel holds a master's degree in creative writing from the University of St. Andrews and taught English at LaGuardia Community College.