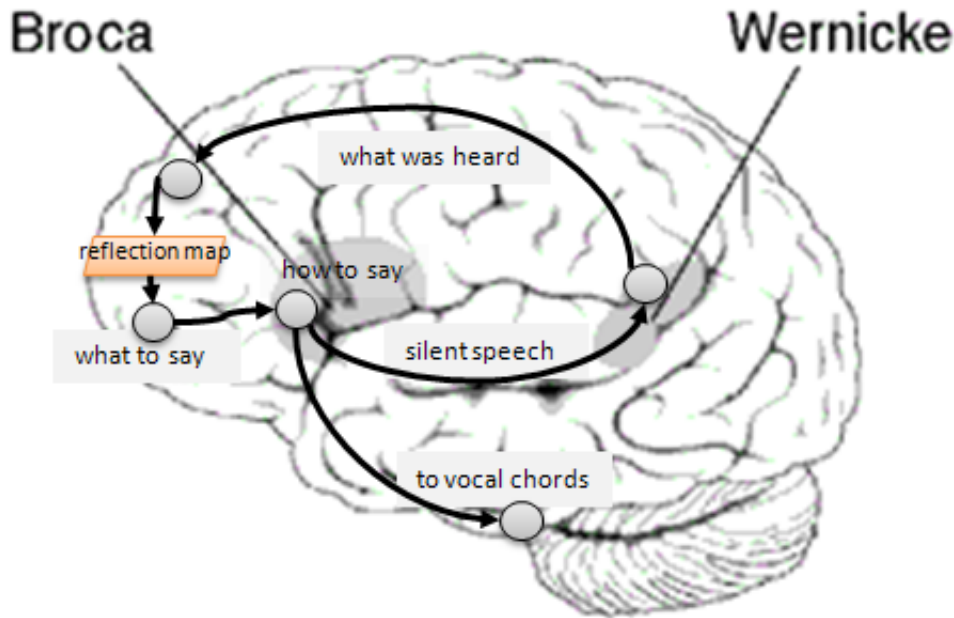


# Listening to the inner voice

December 5 2013, by John Hewitt



Inner Speech Loops. Credit: faculty.washington.edu

(Medical Xpress)—Perhaps the most controversial book ever written in the field of psychology, was Julian Jaynes' mid-seventies classic, "The Origin of Consciousness in the Breakdown of the Bicameral Mind." In it, Jaynes reaches the stunning conclusion that the seemingly all-pervasive and demanding gods of the ancients, were not just whimsical personifications of inanimate objects like the sun or moon, nor anthropomorphizations of the various beasts, real and mythical, but rather the culturally-barren inner voices of bilaterally-symmetric brains not yet fully connected, nor conscious, in the way we are today.

In his view, all people of the day would have "heard voices", similar to the schizophrenic. They would have been experienced as a hallucinations of sorts, coming from outside themselves as the unignorable voices of gods, rather than as commands originating from the other side of the [brain](#). After a long hiatus, the study the inner voice, and the larger mental baggage that comes along with having one, has returned to the fore. Vaughan Bell, a researcher from King's College in London, recently published an insightful call to arms in *PLOS Biology* for psychologists and neurobiologists to create a new understanding of these phenomena.

A coherent inner narrative in synch with our actions, is something most of us take for granted. Yet not everyone can take such possession. The congenitally deaf, for example, may later acquire auditory and communicative function through the use of cochlear implants. However, their inner experiences of sound-powered word, which they acquire through the reattribution of percepts of a previous gestural or visual nature, is something not typically shared or appreciated at the level of the larger public. A similar lack of comprehension at the research community level exists regarding those with physically intact senses, but with some other mental process gone awry. We may note with familiarity the shuffling and muttering of a homeless schizophrenic, yet have no systematic way to comprehend their intuitions, no matter how deluded they may appear.

Bell notes that current neurocognitive theories tend to ignore how those who hear voices first acquire what he describes as "internalized social actors." In addition to live social interactions, "offline" social interaction with an internal model of those individuals holding significant power in our lives would seem like a handy feature to have. We can readily imagine entirely non-pathological situations where such a model would be of benefit. A young child cut from a school basketball team which they worked hard to make, may be temporally devastated, but hardly

traumatized. If they renew their efforts to make the team the next year and practice each day in their backyard, they might imagine the coach who cut them watching their every shot with a critical eye. While this hallucinated guidance would be entirely benign, if the person they imagine is instead an abusive parent or classmate, the internal model might eventually take on a more sinister nature.

It would seem that at least in some individuals, the internal model seems able to get the upper hand, particularly when that hand is forced. We might imagine a school child tasked with the tedium of a seemingly endless recitation—saying the rosary beads, for example, in the catholic school days of yore. The familiar "Hail Mary, full of Grace....." might, after so many repetitions, transform in the mind into something else, despite the earnestness of the professor of faith. "Hail Mary, full of ....." might instead be completed with a different choice word that intrudes from another collective in the brain despite the alarmed child's efforts to suppress it. In the situation where this is vocalized externally, completely out of control as in full blown Tourette's syndrome, the child now has a problem.

The idea that separate voices represent separate hemispheres may be a good starting point, but it can readily be dispatched as far as being the whole story. Auditory [hallucinations](#) can take the form of multiple social actors, clearly outnumbering our hemispheres, and all with different tones, personalities, and persistence of identity. Attempts have been made to localize brain activity to a particular narrative using EEG recording, or to elicit a hallucination using magnetic stimulation. While the occasional inciteful anecdote may be gleaned from these kinds of investigations, we should not expect much fine detail to ever be had from them. The cortical area known as the [temporoparietal junction](#) routinely emerges as a favorite among brain imagers because of its geometric location at the pinnacle of the major fold in the brain. Unfortunately, until there exists a large scale minimally damaging

[recording technology](#) we are probably going to have to content ourselves with looking closer at what subjects have to say about their own [auditory hallucinations](#), than what their brains might have to say.

As children we learn to talk by talking to ourselves. Unless marooned on an island, we tend to abandon this behavior in polite company for fear of stigmatization, among other things. If the line between normalcy and pathology for hearing voices, or even talking to them, (so long as they do not command undesirable physical actions), is drawn with a greater acceptance for normalcy, a clearer understanding of the inner voice might be sooner in hand.

**More information:** Bell V (2013) A Community of One: Social Cognition and Auditory Verbal Hallucinations. *PLoS Biol* 11(12): e1001723. [DOI: 10.1371/journal.pbio.1001723](https://doi.org/10.1371/journal.pbio.1001723)

## Abstract

Auditory verbal hallucinations have attracted a great deal of scientific interest, but despite the fact that they are fundamentally a social experience—in essence, a form of hallucinated communication—current theories remain firmly rooted in an individualistic account and have largely avoided engagement with social cognition. Nevertheless, there is mounting evidence for the role of social cognitive and social neurocognitive processes in auditory verbal hallucinations, and, consequently, it is proposed that problems with the internalisation of social models may be key to the experience.

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