

## THE MEMORY OF TREES

by Robert R. Rhodes

### The Science Advisor's Review for "IN ALABAMA"

A 1-Act Play by J. Lois Diamond

This play by J. Lois Diamond reminds me of an imagination game I would play with some close friend in high school – if I wanted her to be a closer friend. The game was about the future. I would ask her to close her eyes, and wake-dream of being in a forest... and to describe the forest. We would go on: she describes a body of water in the forest, a cup found in the forest, a home in the forest.... The forest, of course, was how she saw her own future: what her life was going to be like.

Recent neuroscience research using fMRI (functional Magnetic Resonance Imaging) has revealed that dreams decouple our brains from both sensory input and from high-level abstract contemplation: the original virtual reality computer rendering alternate futures for us – what has been found is that dreams reconstruct our inner models of the world, making them simpler and more aligned with reality. Dreams change what we believe and feel about our waking world.

So it is with the dreams of Juliette Hampton Morgan, the intrepid activist "In Alabama" – down deep she knows she is "sinking into the mud": that she may suffer the same persecution as the "colored people" whose right to equal treatment she champions; like John Lennon, she knows "they're gonna crucify me". She dreams of being lost in a forest ....

Recent research on trees (at the Universities of Aberdeen and Oregon) have shown that trees respond to environmental stimuli by movement (they're just slower than us) and changes in morphology (their growth). They communicate with each other while they compete for resources and cooperate with other trees of the same species, through an underground "plant internet" using the chemistry of fungi that live on their roots. Trees can discriminate between positive and negative experiences; we can call it "learning" (a process something like human memory), even remembering different human individuals as benign or hostile, and reacting accordingly.

**Under stress, trees can overwrite the genomes they inherited from their parents, reverting to the DNA of of their grand- or even great-grandparents: they have ancestral memory. And many of them outlast us.**

**Although the trees in this play appear only in dream sequences, the trees in Juliette's forest are communicating with her; and like the trees in J.R.R. Tolkien's novel *The Two Towers*, they may even take up the cause. Human arrogance has always assumed our dominance, but perhaps we should reconsider: the trees are listening.**