

Methods of diffusion-weighted and functional magnetic resonance imaging investigated in the human brain at ultra-high-field

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PROPOSITIONS

1. Diffusion tensor imaging correctly models orientations of myelinated nerve fibers where their pattern is sufficiently simple.
2. Fractional anisotropy and mean diffusivity are well correlated to microarchitectural aspects such as fiber dispersion and myelination in post-mortem tissue.
3. At ultra-high field strength, seen stimulus orientations can be robustly decoded from fMRI data even in small subdivisions of the visual cortex.
4. Orientation decodability in fMRI data can only partly be attributed to the exploitation of the radial bias.
5. Timing neuronal correlates of finger taps does not reveal anything about free will. Free will is a deeply philosophical concept, independent of sequencing in the brain.
6. The same holds for consciousness. Measuring correlates of an “I am conscious” statement has nothing to do with the conscious experience itself. Calling this philosophical hairsplitting does not help.
7. Murphy’s law of coding: *The parts of your code you will still need in the future are the uncommented ones.*
8. Science is a wonderful thing as long as you don’t have to make a living from it. *Albert Einstein*