From Imaging we came and to Imaging we shall return…

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We have twelve pairs or cranial nerves. Out of these 12, seven innervate the eye. Of these seven cranial nerves that go to the eye, the optic nerve and optic apparatus occupy the largest volume within the brain (retina, optic nerve, optic chiasm, optic tract, geniculate body, optic radiations, primary visual cortex). In old French anatomy books, the whole thalamus is not named thalamus; it is named "La couche optique"!! All this to say that we have all the biological prerequisites needed to fully use our optic abilities to see, to watch, to regard, and hopefully to understand what we see and watch.

Functional stereotactic surgery as a technique is the marriage between imaging and geometry, and a proper imaging is the condition sine qua non for a stereotactic procedure. In fact, the main advances in functional stereotactic surgery have been and will continue to be imaging, imaging and…imaging: structural imaging, functional imaging, fiber tracts imaging, and beyond. Imaging has even "provided" new brain targets for new indications in functional neurosurgery.

And yet, despite the richness of biological means enabling us to see (our cranial nerves and visual cortex) despite the expanding methods enabling visualisation, and their sophistications, there are people who either do not use these methods, or people who see but do not look, who look but do not see, who look and see but do not understand what they see or what they look at, and people who use surrogates to visualisation, instead of proper visualisation. The literature on functional stereotactic neurosurgery is full of examples about the above.

Each functional stereotactic procedure starts by imaging the target aimed at. The targeting accuracy of each such procedure is ultimately confirmed by…imaging, be it imaging of the location of the stereotactic ablative lesion or imaging of the location of the DBS electrode.

The saga of functional stereotactic surgery can thus be summarised as follow:

From imaging it came and to imaging it shall return.

MARWAN HARIZ BIO:

Marwan Hariz received the Baccalauréat in Beirut (Lebanon), then studied medicine in Reims (France) and in Umeå (Sweden). He trained in neurosurgery in Umeå with Lauri Laitinen as main mentor. He obtained a PhD in 1990 in stereotactic neurosurgery. In 2002, he was recruited as Professor to the United Kingdom's first Chair of Functional Neurosurgery at the National Hospital for Neurology and Neurosurgery, and the University College London Institute of Neurology, Queen Square (London, UK), where he contributed to the establishment of a multidisciplinary clinical-academic Unit of Functional Neurosurgery. His main interests are in stereotactic brain imaging and in surgery for movement disorders and psychiatric illness, as well as in critical appraisal of published literature in these areas.

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