One can imagine two basic candidates for how \blockquote{our} sensory and motor control are realized: the representations at the personal magnetic sensory body and the representations on the magnetic flux tubes structures of Earth, the magnetic body of Mother Gaia. Quite a long time I saw the problem as the question \blockquote{Which of these options is correct?}.

If our sensory and motor representations were realized using magnetospheric representations alone, the consciousness of astronauts would differ in a dramatic manner from the ordinary wake-up consciousness. This is not the case so that personal magnetic bodies must give the basic contribution to our personal sensory representations and motor control if the basic approach is correct. Because of the sharing of mental images also the sensory and motor areas of the magnetic Mother Gaia making possible higher collective levels of consciousness should be however important for us and perhaps responsible for memory and imagination. Therefore is of importance to try to get some idea also about the magnetospheric representations.

\begin{enumerate}

\item The basic element hypothesis is that some kind of resonance mechanism is involved. The simplest possibility is that projector MEs (\blockquote{massless extremals topological counterparts of light rays} to the sensory canvas have length equal to the wavelength defined by the magnetic transition frequency. Also the TGD counterpart of Alfven resonance (magnetic flux tube as string) might be involved. In the simplest situation the length of the projector ME would be equal to the distance to the activated point of the magnetic flux tube structure involved. Also the intersections of the projector ME with magnetic flux tubes of Earth and some cavity resonance at larger space-time sheet, such as Schumann resonance, could help to amplify the signal. Representations which do not satisfy this condition could of course contribute to our

consciousness but
the contribution should be weak and masked by resonant
contributions.

The resonance idea has gained strong support from much later
developments
and a concreted realization in terms of cyclotron frequencies and
generalized Josephson frequencies has been proposed leading also to
a
concrete model for EEG as communications to the personal magnetic
body.

\item \blockquote{Personal} sensory and motor representations are
realized at the
personal magnetic flux tube structures by place coding: if the
thickness of
the magnetic flux tube increases linearly with the length
coordinate of
the flux tube resonance condition is satisfied all along it. A
similar
dependence is implied also by the homeopathic findings and by the
requirement that magnetic energy density per unit length is
constant.

\item Magnetospheric sensory and motor representations are realized
at the
magnetic body of Earth and correspond the personal consciousness of
Mother
Gaia. Also we can share part of her experience by fusion of the
mental
images. Magnetospheric representations could be responsible for the
transpersonal and third person components of our consciousness, and
also
for memories and even imagination. The weakening of Earth's
magnetic field
provides the fundamental distance coding via cyclotron frequency
scale,
which scales with distance as $1/r^3$ in the dipole approximation
holding
for small distances but differs radically from this behavior at
large
distances, in particular inside magnetic tail. In magnetospheric
case
resonance condition gives strong conditions on the representation
and can
be satisfied only inside plasma sphere.

\item There seems to be no upper bound for the size of the
super-conducting magnetic web providing the realization for the
self
hierarchy, and one can build precise quantitative models for this

hierarchy. For a Buddhist this vision does not come as a surprise but
challenges all cherished beliefs of brain scientist.

\end{enumerate}

In this chapter this vision is developed quantitatively. The vision about
magnetosphere as a living organism allows to develop the view about
sensory representations to a rather detailed level. The intringuing
observation that brain dynamics and iono- and magnetospheric physics seem
to have common characteristic time scales, can be understood in this
framework and even the mysterious 5 second time scale associated with
Comorosan effect finds a possible explanation.

As I wrote the first version of the chapter I was still at temporal
distance of 10
years from the ideas that TGD would give rise to a hierarchy of Planck
constants defining dark matter hierarchy and that flux tubes of magnetic
bodies carrying monopole flux would be also carriers of dark matter. These
new ideas make the view about magnetosphere as conscious entity more
precise: it is dark part of the magnetosphere which can be seen as
conscious entity.

A TGD based view about magnetosphere - or rather dark part of it (!) -
results as a by product and allows to topologize the phenomenological
but overall important notions of magnetohydrodynamics. In
magnetohydrodynamics magnetic field lines are treated as effective
super-conductors: in TGD Universe magnetic flux tubes {\it are}
super-conductors. Also Alfven waves cease to be a phenomenological
concept, and the super-conducting geodynamo model is free of the
difficulties of the standard model.

%\end{abstract}