**Altered States of Consciousness**

Through quantitative EEG brainmapping techniques it is possible to map and compare different states of consciousness. The below brainmaps display one normal and five altered states of consciousness.

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**BRAINMAPPING ALTERED STATES OF CONSCIOUSNESS**

QEEG data and brainmaps from four different studies of altered states of consciousness will be presented. A comparison will be made of QEEG changes during *Feeling Release, Kriya Yoga Meditation, Ayahuasca-induced Trance States* and *Sexual Orgasm*. In all four studies eight channels of EEG were recorded (Fp1, Fp2, T3, T4, T5, T6, O1, O2) and analysed for theta (4-8Hz), alpha (8-13Hz) and beta (13-20Hz) frequencies using portable, computerized equipment. Graphs and coloured brainmaps will be presented demonstrating similarities and differences between these four states.

In a study of intense *Feeling Release* in 20 neurotic patients at the PrimalCenter in Los Angeles large and statistically significant increases of both alpha and theta activity were found following feeling release therapy. The increase of alpha following therapy was usually higher in the right than in the left hemisphere and higher in the back than in the front part of the brain.

*Real-time brainmaps* showed high alpha/theta/delta amplitudes shooting up in various parts of the brain at the exact moment the patient regressed in therapy and dropped into an old feeling. This pattern was usually repeated many times during a session and the correlation between EEG changes and behaviour was consistently high. Colored brainmaps will be presented to demonstrate this phenomenon.

The *Tantric Kriya Yoga Meditation* is an ancient, powerful method for increasing the vital energy and expanding consciousness. Eleven teachers from Scandinavian Yoga and Meditation School in
Copenhagen – all experienced in this meditation – had their EEGs recorded before and after two hours of Kriya Yoga. We found large and statistically significant increases of both alpha and theta mean amplitudes following the meditation. Alpha amplitudes increased significantly more in the right than in the left hemisphere.

EEGs from 12 volunteers participating in a workshop in Brazil were recorded under field conditions (in the jungle) before and after a Shamanistic Ritual in which the psychoactive tea, Ayahuasca, was consumed. Following three doses of the tea, the subjects showed strong and statistically significant increases relative to baselines of both EEG alpha and theta mean amplitudes while beta amplitudes were unchanged. Besides group data, two cases will be presented with brainmaps to demonstrate huge increases of alpha and theta amplitudes under the influence of Ayahuasca.

EEGs were obtained from three volunteer subjects (two men and one woman) who all reached sexual climax and Orgasm through masturbation. A 54-year-old woman described her orgasm as intense, almost overwhelming, involving all parts of her body and mind. Initially high amplitude 7 Hz theta appeared in the right frontal lobe. Within eight minutes, high amplitude, rhythmic activity within all EEG frequency bands spread to the whole scalp for about 30 seconds during orgasm. Immediately following orgasm all electrical activity seized for approximately five seconds after which it returned to normal. Brainmaps from this case will also be presented demonstrating these phenomena in details.

In conclusion we found strong similarities such as increased alpha and theta amplitudes with an improved hemispheric balance between the altered states studied here.

**Brain Research in Golden City, India, January 2006**

An EEG brainmapping study of 12 participants in the 21-day process in Golden City in January 2006 was conducted by a research team consisting of:

- Erik Hoffmann, Research Director, New Brain-New World, Copenhagen
- Harald Kjellin, Professor, Stockholm University, Sweden
- Inger Spindler, Neurotherapist, New Brain-New World, Copenhagen

Quantitative EEG and Brainmaps were made of the 12 participants before and after the process in order to document changes in their brain functions. They were also interviewed before and after the course. Here is a brief summary of the results:
We analyzed 26 EEG variables and only found statistically significant changes in a few of these after the process. A solid finding was a strong tendency for the two brain hemispheres to function more symmetrically following the process. This balancing of the left and the right brain was most pronounced in the posterior (occipital-parietal) areas where this tendency toward symmetry was found in 11 out of the 12 subjects. In technical terms, the right/left mean ratio of Alpha waves (8-12Hz) during baseline with eyes closed changed for the group mean from 1.18 to 1.04 where 1.00 is absolute symmetry between the hemispheres.

**Improved Communication Between the Right and the Left Brain**

Another interesting finding was an increase of fast Gamma wave activity (25-42Hz) in the frontal lobes after the process. Since these measurements demanded some special equipment, we were only able to measure six out of the 12 subjects. However all six subjects showed substantial increases of Gamma activity in the prefrontal cortex. Actually the mean Gamma amplitudes increased from 10.5 to 15.8 microvolts with open eyes which is an increase of about 50%.

We believe that the changes we found following the 21-day process demonstrate improved brain functions. Better hemispheric symmetry reflects improved cooperation and communication between the right and the left brain, and the increased Gamma in the frontal area indicates an activation of what we call the 'New Brain' which is crucial for the awakening process and the oneness state.

With this small group of 12 people, we did not find any significant correlation between the scores from the questionnaire and the EEG data, except for one important variable. The two people who benefited the most from the 21-day process, according to the psychological evaluation, both had exceptionally high frontal Gamma levels. They were actually both considered to be in the awakened state.

The finding of increased Gamma in the frontal lobes seems to be very significant. Professor Richard Davidson, University of Wisconsin found in spiritually evolved Zen monks very high levels of Gamma activity in the frontal area. During deep meditation, on for example thankfulness, the Gamma level increased even further. Thus High Gamma levels, especially in the left prefrontal area of the brain, seem to be the trade mark of enlightenment (see above figure).
This 60 year old woman lost her daughter 4 months before the Process and suffered tremendous pain. Following the Process she came to terms with the pain and told us that the Divine Presence had saved her from going crazy. The pain is reflected in the brain by the high Alpha/Theta activity pushing on the ‘Old Brain’ (the Mind), while the Presence is reflected by the high Beta/Gamma in the left frontal lobe during eyes open.

### Nandan describes her awakening process in Golden City

My name is Nandan Santamaria. Last September, 2006, I lost my 36 year old daughter Disha who very sudden and unexpected died from ectopic pregnancy, which was misdiagnosed as Gastroenteritis and she was sent home from the hospital just with pain killers and muscle relaxants and died the same night from inner haemorrhages. This shock brought me into so much grief, pain, anger and despair, that I didn’t know how to go on with my life anymore, everything just felt dull and without any meaning.

When I was suddenly remembering my daughter Disha telling me about the 21-Days Oneness Retreat in the South of India and that she was very much pulled to do it and I felt very strongly, that this is what I need to do right now and so my husband booked it for us immediately.

In the Retreat first all the pain came up again, but then by staying with it and facing it fully, it started to transform into the longing for God or Presence, for that space deep inside me where Disha is always present. It felt like finding a new way of being with her and at the same time also finding my real Self. Like this I am learning now to much more recognize her presence rather than her absence.

This 21-Day-Oneness-Retreat was an incredible healing process for me. Yes, there is still pain and will probably always be, but the pain has a sweetness now through the acceptance, and the desperateness is gone, there is a lot of gratefulness and my heart is open again.

It was quite amazing for me to be able to see this transformation process reflected in these brainmap pictures. Incredible that this is possible, thank you.

Nandan