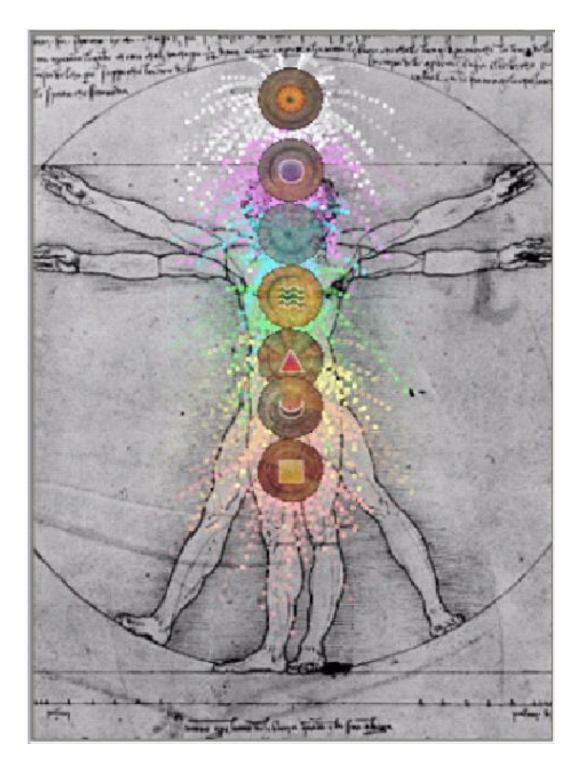
THE MAJOR CHAKRAS AND THEIR PETALS

A TECHNICAL OVERVIEW

WIM BORSBOOM



1. Introduction

Based on Hindu religion, tradition and culture, and supported by ancient (800 B.C.E and on) Sanskrit literature from India, it is generally accepted by those who through their involvement in meditation, yoga, reiki, etc. have acquired a more oriental or alternative view on what the human being in essence is, that there are seven major chakras within the human aura - or to say it differently, 'seven subtle energy centers within the etheric human bio-energy field'. In the current literature that deals with the human aura and chakras, expressions like 'bio-energy field' and 'energy centers' are often used in conjunction with words like 'aura' and the Sanskrit term 'chakras'. (Fig. 1, 2 and 3.) Much of this oriental knowledge was brought to the West in early 1900 C.E. by people such as Sir John Woodroffe ¹ http://en.wikipedia.org/wiki/Sir_John_Woodroffe

and the founders of the Theosophical Society ². <u>http://en.wikipedia.org/wiki/Theosophical_Society</u>

The main purpose of this part of the book is not to provide 'yet another overview' of what chakras are, as there are many excellent writings on this already.

Instead - as the significance for each chakra to have a specific number of petals is not generally known - the focus will be on the technical reasons why the chakras hold within themselves the specific number of petals that they are traditionally reported to contain.

Also, this piece will not deal with the tradition that has assigned specific Sanskrit characters, animal symbols, sounds, etc. to each chakra and its individual petals. Again, there is excellent literature available that deals with that.

Note on chakra names

Traditionally the names used to identify chakras come from Sanskrit, but there is a New Age consensus in the use of English names for the chakras. I will mainly use the English nomenclature.



their Chakra	r currently assigned colors, and their traditional Hindu colors. Petals / Segments Color (current) Tradition	Color (current)	Traditional Color
Crown Chakra	960 or 972 or 1000	Violet or White	
Brow Chakra	2 or 96	Indigo or Violet	Luminescent Blue or White
Throat Chakra	16	Blue	Smokey Purple
Heart Chakra	12	Green	Smokey Green or Grey
Solar Plexus Chakra	10	Yellow	
Sacral Chakra	6	Orange	Light Blue
Root Chakra	4	Red	Yellow

Chakra	Glands / Organs	Element
Crown Chakra	Pineal Gland or Pituitary Gland or None	
Brow Chakra	Pituitary and / or Pineal Gland	
Throat Chakra	Thyroid Gland	Ether / Space
Heart Chakra	Thymus Gland / Heart / Lungs	Air
Solar Plexus Chakra	Digestive System Glands	Fire
Sacral Chakra	Ovaries / Testes	Water
Root Chakra	Adrenals	Earth

2. Overview of Data

Chakra	Nr. of Petals	Nervous System Nerve Pairs In Relation to Vertebrae	In Relation to Vertebrae
Crown Chakra Central Lotus (1)	960 1000 12 (!)	12 Cranial nerves (f)	
Brow Chakra	2 or 96	1 Optic Nerve (!)	
Throat Chakra	16	8	C1,C2,C3,C4,C5,C6,C7,T1
Heart Chakra	12	6	T2,T3,T4,T5,T6,T7
Solar Plexus Chakra	10	5	T8,T9,T10,T11,T12
Sacral Chakra	9	m	L1,L2,L3
Root Chakra	4	6	L4,L5

3. How Many Chakras Actually?

I consider that each individual nerve ending is actually not an end. The way I see it is that each nerve end is actually the tiniest chakra radiating bio-energy. Clusters of these tiny chakric nerve ends form our nervous plexi (see Fig. 8), and it is these nervous plexi that in Yoga literature are identified as the major chakras. The bio-energy that radiates from the chakras altogether forms our auric bio-energy field or aura.

As said above, in yogic traditions, it is generally accepted that there are seven major chakras within the subtle human energy body - our auric bio-energy field.



Listed from the top down:

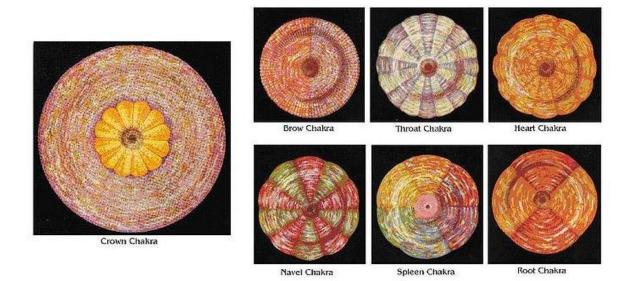
Fig. 3

It has to be noted though that the earliest Sanskrit sources (the most ancient *Upanishads*) ³ <u>http://en.wikipedia.org/wiki/Upanishads</u> list only four chakras, while the *Yogatattva Upanishad* (*sloka* 83-101) lists just five while describing them as being interrelated with the five elements: earth, water, fire, air, space.

Over time, less ancient sources have added two or three major chakras to the original list, while contemporary New Age writers have added a plethora of minor ones. In this chapter, one more (though lesser known) chakra will be introduced.

The following illustration (Fig. 4) shows the seven main chakras as seen and depicted (amongst others) by C.W. Leadbeater ^{4.}

http://en.wikipedia.org/wiki/C.W. Leadbeater of the Theosophical Society



5 Fig. 4 The Seven Main Chakras Depictions - according to what is seen by clairvoyants such as Leadbeater, Borsboom et al. Sometimes observed as flat and rotating, sometimes funnellike, the colored energies spiraling in or outwards Colors - The type and mix of colors can vary according to the spiritual, mental/intellectual, vocational, emotional, volitional, creative, physical and psycho-somatic characteristics of each individual. Petals - Note the basket-weave undulations within the petals (the divisions). Striations from the centre outwards in the Brow and Crown Chakras. Twelve Petaled Lotus - at the centre of the Crown Chakra. Rotations - To the clairvoyant the chakras appear to rotate either clock- or counter-clock wise at varying rates depending on the characteriscoiics of the individual. (C.W. Leadbeater's "The Chakras, 1927")

4. An Additional Chakra?

In general and starting from the Root Chakra upwards, the usually reported petal count for the above listed chakras (also see Fig. 4) runs as follows:

In order to help us discover and understand the mathematical rational behind the above sequence properly (as well as the various and sometimes varying chakra petal counts) one additional but lesser known chakra will have to be brought in.

4.1 Color

Before we do that though, let's get a little deeper into the color designations of the 7 main chakras. According to current New Age tradition and starting from the Root Chakra, their colors are red, orange, yellow, green, blue, indigo and violet.



In this color wheel, notice especially the presence of *magenta* between red and violet. Also notice *turquoise* between blue and green.

There is a problem with that though.

Usually, when the color spectrum is discussed, one color tends to get overlooked, magenta.

In technical discussions on the use of colors for printing or electronic color displays, this one color, magenta (the one missing from the popular listing of rainbow colors) always turns up.

- Printing uses for its colors primary subtractive pigmentation colors: magenta, yellow and cyan.
- Red, green and blue are its secondary subtractive colors and are the result of mixing the primary subtractive ones.
- Electronic LCD display (e.g. flat computer monitors) uses for its colors the secondary additive colors red, green and blue.
- Magenta, yellow and cyan are its primary additive colors and result from the mix of the secondary additive ones.



Notice again how in this color wheel, magenta appears between red and violet.

It is curious that magenta seems to have escaped a designation in the sequence of the main chakras.

Could it be that there is a missing chakra that can be designated that color?

4.2 Numbers

When we look at the sequence of petal numbers at the beginning of this section 4, it is not hard suppose and discover that that sequence would be more complete if it started with the number 2.

If that were the case the sequence would begin as follows:

2, 4, 6, 10

which numbers happen to be the first four prime numbers (1, 2, 3, 5) multiplied by two.

Could it be that there is a chakra with just two segments?

4.3 The Coccyx Chakra

It so happens that there **is** an additional (but lesser known) chakra; it is just below the Root Chakra, situated at the very end of the tailbone or coccyx. This Coccyx Chakra contains just two petals, and is characterized by two hues of the color magenta.

The picture below (Fig. 4a) is an attempt to depict how this chakra is clairvoyantly seen.

Sometimes it can be seen as a formation with two horizontal segments or petals, but it can also be observed as showing a more dynamic horizontal yin / yang like formation.



Fig. 4a Coccyx Chakra Notice the horizontal division and the two magenta like hues.

5. The Number of Petals for each Chakra

The relationship between the number of chakra petals and the human body is much more fundamental - *physically concrete* - than it is generally assumed to be. Often only a symbolic value is given to the petal counts, especially when discussed in relation to the Sanskrit characters that are traditionally assigned to the chakras and their petals.

It will become evident in what follows that the petal count for each chakra is related to certain specific groupings of vertebrae and certain specific groupings of nerve pairs in the peripheral nervous system (PNS) that emanate from the spinal column through the vertebrae.

Early yogic investigators of the chakras (who either depicted or enumerated the chakra petals) were not only intuitive or clairvoyant but also used anatomical practices to find a correlation between what they saw intuitively and what they discovered through their physical anatomical research.

Terms like *sushumna*, *ida* and *pingala* that often appear in texts dealing with yoga, chakras or *kundalini* are not only dealing with esoteric subtle energy notions but also point concretely at physical structures found in the human body in a spectrum ranging from the more physical or gross to the more spiritual or subtle.

6. Considerations affecting the Number of Chakra Petals

As previously stated, the main purpose of this treatment of the chakras is to show how the number of chakra petals is not just 'some number' but rather that number is specifically related to and depending on a series of physical internal components within the human body, e.g. its skeletal and peripheral nervous system parts as well as some specific physical structures within the brain.

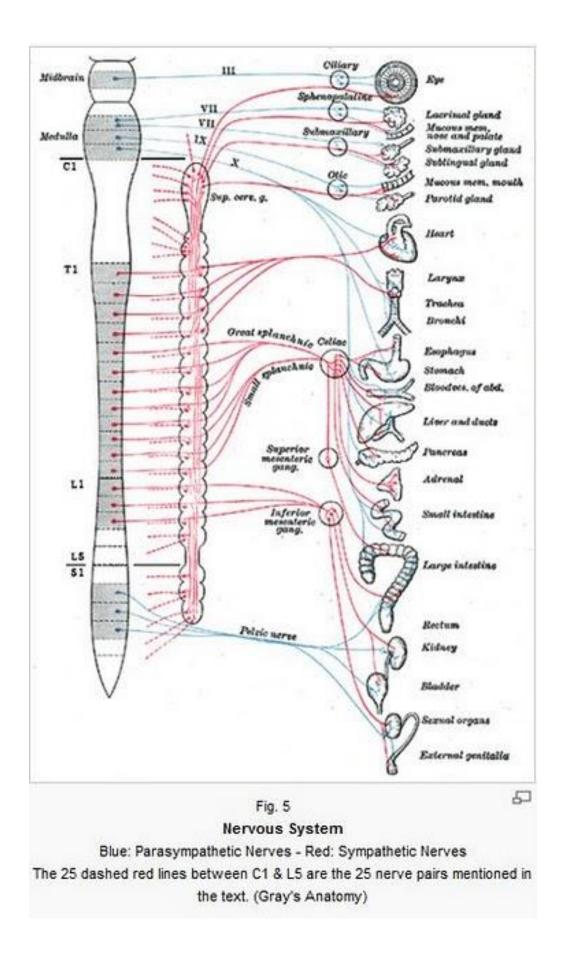
6.1 The Link between the Lower Chakras and the Sympathetic Nerves

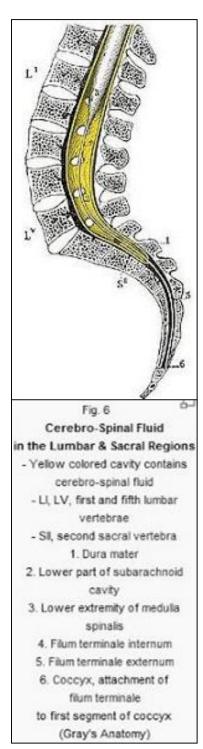
To identify the various physical structures in this section, check:

- 1. Fig. 5, left, the white and gray areas: the spinal column.
- 2. Fig. 5, middle: red dotted lines connecting to grouped solid red lines indicate nerve / organ linkages.
- 3. Fig. 5, right, the groupings of nerve pairs in the autonomic nervous system serving the various organs and glands.
- 4. Figs. 5, 9 and Table 5, the traditional groupings of spinal column vertebrae: C1- C7 (cranial), T1-T12 (thorax), L1-L5 (lumbar), S1-S5 (sacral)
- 5. Fig. 9 The pituitary and pineal glands situated within the brain.
- 6. Fig. 11. The two hemispheres of the brain, the meninges around and the ventricles within the brain containing cerebral spinal fluid (CFS).
- 7. Figs. 13a and 13b, the brain's Ventricles
- 8. Fig. 15, the 12 cranial nerve pairs (I to XII).

A clairvoyant observer envisages chakras as energy fields that resemble rotating color wheels, (Fig. 4) somewhat funnel or vortex-like. They may look like segmented wheels, as they seem to be separated by a number of spokes.

'The Chakras' by Leadbeater is considered to be a classic book on this topic. In it the chakras are depicted as segmented, spoked or striated color wheels, the segments of which according to tradition are called petals.





Leadbeater identifies the basket pattern weave between the petals weave in terms of an energetic dynamic flow and uses the term 'undulations'.

Appellations such as 'colored undulations', 'striated rotating energy disks' or 'circular concentric interference wave patterns' describe the way these segmented chakras are seen by clairvoyants much more accurately than the word petals.

Except for the Crown Chakra, literature in general agrees on the number of petals or segments for each chakra. In her book 'Wheels of Life' Anodea Judith lists the following for the number of Crown (Sahasrar) Chakra petals:

'Some say 960, some say 1,000 [...] 960 is the mathematical equivalent of the first five chakras together (4+6+10+12+16) multiplied by the two petals of chakra six, times ten.'

In addition to explaining the reason for the specific number of petals that each chakra can be observed to contain, this chapter also addresses the reason for the discrepancy between the number of petals for the Crown chakra as reported in various differing older ('The Chakras', 1927) and newer ('Wheels of Life', 1999) writings, e.g. 960 / 972 vs. 1,000.

In order to understand this discrepancy, it will prove to be worthwhile to recognize the earlier mentioned additional chakra, the Coccyx Chakra. This chakra is situated just below the Root Chakra at the tip of the coccyx. It is linked to the 'filum terminale' nerve. (See the small nrs. 5 and 6 in Fig. 6.)

When this additional chakra is taken into account, the reason for the difference between the Crown Chakra petal counts of 960 vs. 1,000 will be become clear. This will be discussed in detail in the text following the table below.

Generally and as listed already above, the petal counts runs from 4 to 6 then 10, 12, 16, 96 and 1000.

In addition to explaining the reason for the specific number of petals that each chakra can be observed to contain, I will describe the reason for the discrepancy between the number of petals for the Brow (2 vs. 96) and the Crown Chakra (960 vs. 1000) as reported in various differing older and newer writings. Table 4In his book 'The Chakras' Leadbeater shows an illustration in which the five lower chakras are related to various nervous plexi that are part of the central nervous system.

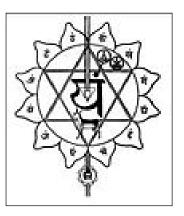


Fig.7 Heart Chakra with 12 petals

As already mentioned, in order to understand this discrepancy it will prove to be significant to include the Coccyx Chakra. When that is done the reason for the difference between the Crown Chakra petal counts of 960 vs. 1000 will become clear.

Keeping that in mind, we can - for the five lower chakras - come to an understanding of the relationship between:

- the number of petals, segments or undulations of those chakras,
- the number of vertebrae that each particular chakra appears to be linked to,
- the number of nerves (in pairs) emanating from the particular groupings of vertebrae.

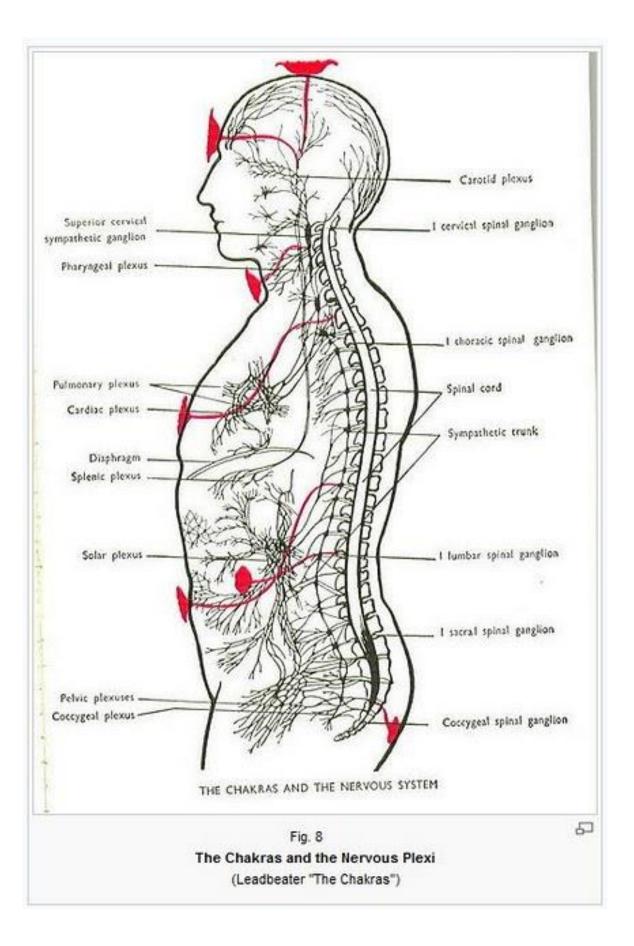
According to traditional descriptions the human spine consists of 24 vertebrae, and that 24 nerve pairs (48 nerves) emanate from those 24 vertebrae.

In modern anatomy it is observed that 25 nerve pairs are found instead of 24. The difference between the older count (24 nerve pairs) and the current count (25 nerve pairs) might very well explain the discrepancy in the Crown Chakra's numbers of petals that are either reported as being 960 or 1000. This will be covered again in more detail later on.

When the number of petals of the five commonly accepted lower chakras (not including the extra Coccyx Chakra) are added up, one comes to a total of 48 petals (4+6+10+12+16=48). It is interesting that this number corresponds to the 48 nerves as they are identified in older anatomy sources.

Chakra	Petals	Color (Fig. 7)	Glands	Element	Phase State
Crown (Sahasrara)	960, 972 (960 +12) or 1000	Violet	Pineal	1	1
Brow or 3rd Eye (Ajna)	96 (2 main lobes of 48 each)	Indigo	Pituitary	1	1
Throat (Vishuddha)	16	Cyan	Thyroid	Space	1
Heart (Anahata)	12	Green	Thymus	Air	Gaseous
Solar Plexus or Navel (Manipura)	10	Yellow	Digestive System glands	Fire	Plasmic
Sacral (Swadhisthana)	6	Orange	Ovaries or Testes	Water	Liquid
Root or Base (Muladhara)	4	Red	Adrenals	Earth	Solid
Соссух	2	Magenta	Coccygeal glomus	1	1

Table 4



When the Coccyx Chakra (consisting of two petals) is included, one counts 50 petals. This quantity corresponds to the current count of 50 nerves, the 25 nerve pairs that emanate from the spinal vertebrae.

The lower chakras thus appear to be directly related to the nerve pairs that emanate from the spinal column. Their petal count corresponds - although not exactly - to the current convention of anatomical identification and numbering of the vertebrae and nerve pairs:

Conventional Vertebrae Grouping	Conventional Vertebrae Numbering
Cervical	C1, C2, C3, C4, C5, C6, C7
Thoracic	T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12
Lumbar	L1, L2, L3, L4, L5
Sacral (sacrum and coccyx)	S1, S2, S3, S4, S5

Table 5

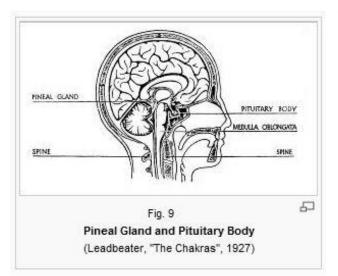
The arrangement for the chakras (including the additional Coccyx Chakra) that are directly related to the spinal column and CNS nerve pairs emanating from it, is as follows:

Chakra	Nr. of Petals	Nr. of Nerve pairs	Revised Vertebrae Grouping
Throat	16	8	C1, C2, C3, C4, C5, C6, C7, T1
Heart	12	6	T2, T3, T4, T5, T6, T7
Solar Plexus	10	5	T8, T9, T10, T11, T12
Sacral	6	3	L1, L2, L3
Root	4	2	L4, L5
Соссух	2	1	S5
Total	50	25	1

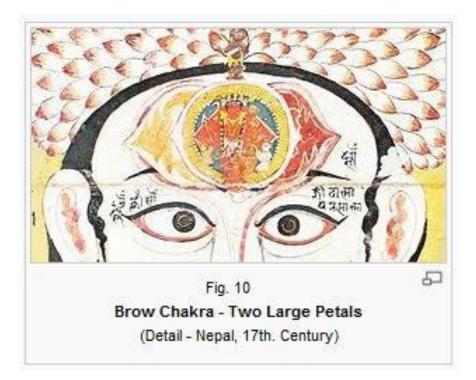
Table 6

When we look at an anatomy chart (usually displayed on a wall in a doctor's or chiropractor's office) depicting the vertebrae and their nerve pairs, it can be demonstrated that the division as described in the list above makes as much sense (or more) as the current convention of vertebrae number designation.

6.2 The Brow and Crown Chakras and their Link to the Brain Hemispheres, Pituitary and Pineal Glands



Whereas the lower chakras are directly related to the spine, it should be noted that the Brow and Crown Chakras do not have a direct spinal column connection. Instead, according to most literature, they are directly linked to two glands: the pituitary and the pineal gland (hypophysis and epiphysis) embedded in the brain. (Fig. 9)



Notice the small striations inside the yellow center circle that surrounds the chakra deity.

The Brow Chakra is linked to the pituitary gland which consists of two parts, the anterior and the posterior lobes. This two lobed feature of the pituitary gland - or alternatively - the two hemispheres of the brain (which this chakra is also reported to be influenced by) may account for the fact that in many illustrations the Brow chakra is depicted containing two large petals. (Fig. 10, 10a and 11.

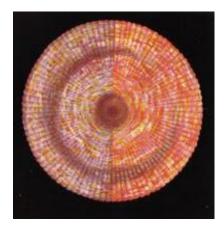
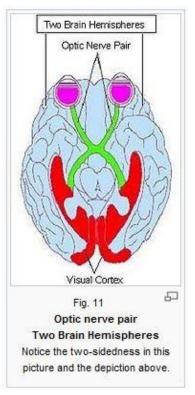


Fig. 10a Brow Chakra (Notice the 96 striations)

In my view it is this two-fold nature of the brain that accounts for the doubling of the total number of petals of the five lower chakras, as their accumulated energy reaches the Brow Chakra thus producing the traditional 96 (2x48) petals of the Brow Chakra.

This is clearly depicted by Leadbeater: two vertical semi-circles containing 48 striations or undulations each, adding up to 96 petals altogether. (Fig. 10a)

We can thus conclude that some 'yogis-of-old' had found that the human body contained 24 spinal nerve pairs that were intricately connected to the brain's two



hemispheres, thus showing up as 960 petals in their depictions and descriptions of the Crown Chakra: 2x48x10=960.

Some other 'yogis-of-old' must have known, as we know now, that there were 25 nerve pairs involved, hence 2x50x10, or one thousand petals for the Crown chakra. (Fig.12)

No wonder this chakra is also called: 'The Thousand Petalled Lotus'



Fig. 12 The Crown Chakra or Thousand Petalled Lotus

In most chakra literature, chakras are described as subtle energy centers processing and transmitting subtle vibrational energies.

The chakra pictures found in Leadbeater's 'The Chakras' show this vibrational energy as concentric undulations or interwoven energy waves.

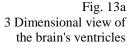
Keeping that in the mind's eye, one can envisage that the energetic wave packets, as they acquire and build up more energy while moving up from the lower chakras up the spinal chord to the highest chakra, that they affect the total energy of the Crown Chakra around or, according to most writings, above the head - but still within the subtle energy field that surrounds the human body.

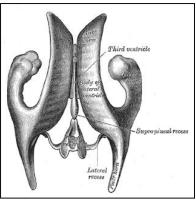
6.3 The Coccyx and Crown Chakras and their effect on Cerebro-Spinal Fluid in the Spine and the Brain Ventricles

The brain contains within it a number of cerebro-spinal fluid (CSF) containing cavities - the brain's ventricles. (Figs. 13a and 13b) They contain the same fluid that flows through the spine's inner core as well as through the meninges around the brain.

Using a specific subtle pumping mechanism generated from the very bottom tip of the spine, this cerebro-spinal fluid circulates from the tip of the spine (location of the Coccyx Chakra) to the top of the head (location of the Crown Chakra) through: (http://www.healtouch.com/csft/csf.html)

- the central spinal canal,
- the outermost layer of the spinal chord,
- the meninges that surround the brain,
- the ventricles inside the brain.





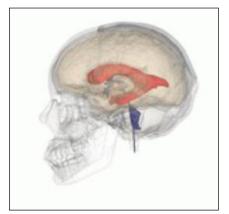
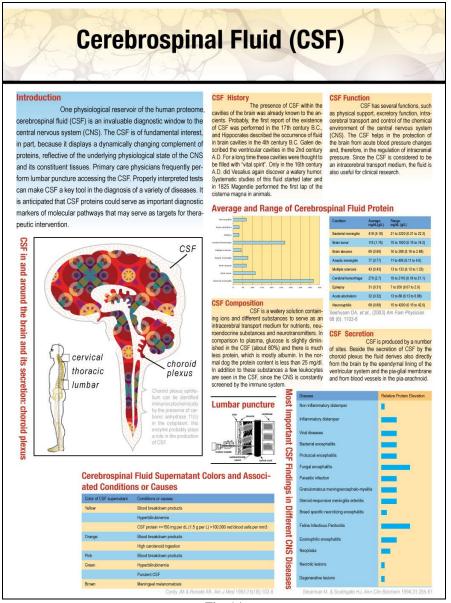


Fig. 13b The brain's ventricles

Cerebro-Spinal Fluid - according to current histology texts - leaks out from the ventricles and the spinal chord either to be absorbed by the blood or to 'bathe' the nerves by a process that is currently not well understood ⁵. <u>http://en.wikipedia.org/wiki/Cerebrospinal_fluid</u>

6.4 Cerebro-Spinal Fluid and Amrita Nadi





The combined vibrational energy from the six or seven chakras (48 or 50 petals) below the Crown Chakra may well get its vibrational strength multiplied ten-fold by means of the CSF filled ventricles (it is not clear yet though what the dynamics are behind this ten-foldness) thus producing either the 960 (2x48x10) or the 1000 (2x50x10) petals as they can be observed in the Crown Chakra and as they are depicted in Leadbeater's book.

In ancient yoga literature (Hatha Yoga Pradipika) this fluid, when highly energized through Yogic practices or under the influence of the Kundalini Process, is identified as Amrita, Soma or Nectar; the energetic channel through which it circulates is called the Amrita Nadi.

6.5 The Crown Chakra and the Twelve Cranial Nerve Pairs

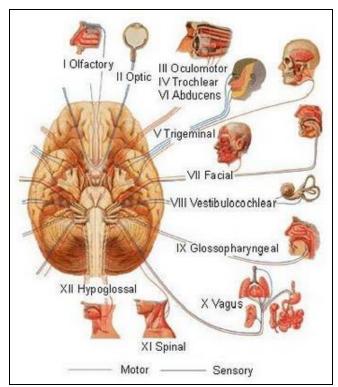


Fig. 15 The Twelve Cranial Nerve Pairs

The Crown Chakra can be observed clairvoyantly (and is often depicted that way, see center of Fig. 12) with an additional twelve lobed flower-like formation at its center. This may account for the additional 12 petals that, when added to the 960, make up the 972 petals that the Crown Chakra is sometimes reported to contain (Leadbeater). In turn this 12 lobed center contains another striated circular formation. It may be possible to interpret these lobed and striated formations as representing the 12 major cranial nerve pairs that are found to exist within the brain. (Fig. 15)

6.6 The significance of 'One thousand twenty four'

In Table 1, 3, 4 and the above sub-sections it was shown and discussed that the total number of chakra petals as related to the main nerve pairs plus the coccygeal nerve pair is 1000. When we now add the 12 cranial nerve pairs (which show up as 12 paired lobes within the crown chakra) we get to a total of 1024.

'One thousand twenty four... That is a very interesting number, as it shows up in the string of numbers: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, etc

In my view this sequence is connected to the cell division just after fertilization of the female ovum. The cells multiply exactly that way. It is possible that each one of those earliest 1024 cells developed a structure that is still present in the main nerves of our nervous system and is also represented by the subtle energies that are active in all the chakras and culminate in the 'glory' of the Crown Chakra.

7. Additional Illustrations

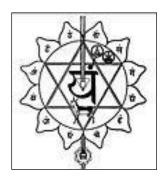


Fig. 16 Traditional Depiction of the Heart or 'Anahata Chakra' (Notice the Sanskrit Characters, Animal and Geometric Symbols)



Fig. 17 Ancient Indus Valley Seal (2.5 x 2.5 cm)

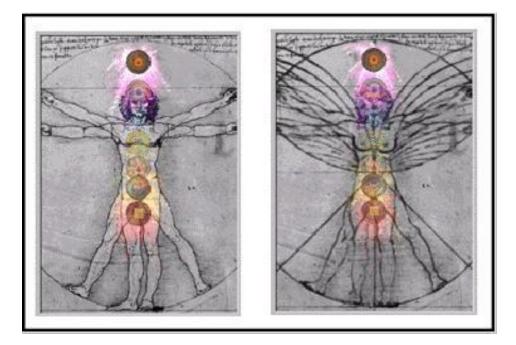


Fig. 18 'Vitruvian Couple' Showing computer generated chakra energy intensities (After Leonardo Da Vinci)

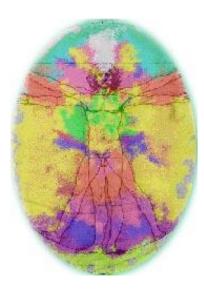


Fig. 19 'Vitruvian Man' Computer generated intensities of auric energy field (After Leonardo Da Vinci)

8. Book and Website Links

The Chakras, Charles Leadbeater (1927) <u>http://www.amazon.com/Chakras-Quest-Book-Charles-</u> Leadbeater/dp/0835604225/ref=sr_1_1?ie=UTF8&;s=books&;gid=1257208820&;sr=8-1

Chakras, Energy Centers of Transformation, Harish Johari (1987). <u>http://www.amazon.com/Chakras-Centers-Transformation-Harish-</u> Johari/dp/0892817607/ref=sr 1 1?ie=UTF8&;s=books&;gid=1257209168&;sr=8-1

Web link (Good traditional source overall, note the section on cauda & cauda equina / filum terminale) <u>http://www.yoga-age.com/modern/kun4.html</u>

9. Reference Literature and Notes

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Notes:

¹<u>http://en.wikipedia.org/wiki/Sir John Woodroffe</u>

² <u>http://en.wikipedia.org/wiki/Theosophical_Society</u>

³ <u>http://en.wikipedia.org/wiki/Upanishads</u>

⁴ http://en.wikipedia.org/wiki/C.W. Leadbeater

⁵ <u>http://en.wikipedia.org/wiki/Cerebrospinal_fluid</u>