

Clarification of the Healing Mechanism in Color Therapy

The Operating Mechanism of Color Information Elements

Research relating to the actuating mechanism of colors' biological information units used in color therapy is still in the early stage. There have been some explanations in this regard, but here we will summarize its theoretical basis with a working hypothesis from the combined viewpoints of physical, bio-informatical and bio-functional focuses.

First, let us probe into the physio-chemical characteristics of colors, their connection with biological species as organisms beyond physio-chemical categories, and sort out , while studying advanced scientific writings, especially elements connected with information fields and knowledge related to the human body and vital functions.

Colors have their inherent wave lengths and characteristics that reflect light of specific wave lengths---this has been explained many times. In physics, light is electromagnetic radiation with the dual nature of electric and magnetic fields. This radiation, because of fluctuation, has the nature of moving. If we presume that colors are materials that can restore light wave lengths' information and fluctuation information which show particles' nature, we must take on a new viewpoint in our understanding of them.

The reflection of light, or light fluctuation, has the special nature of giving rise to an interference phenomenon. The reflection of electrons also makes rise a photo-electronic effect, so that when photons, or light granules, hit the surface of a material, that surface's electron is flicked outside. In other words, photons collide with electrons of a material's surface and electrons springing out as a result are that color's light.

The Operation of Color Elements from the Viewpoint of Physics

We have observed that by mere contact of colors on specific places of the skin, or by pasting on colors to maintain that contact, various pains, infections, inflammations and abnormalities can be healed. Furthermore, even structural deformities from functional abnormalities, nodules and neoplasms can be repaired and wiped out. The colors used for these are a mere 0.5 mm in size.

What is the mechanism that makes it possible for such small color units to adjust a body's functionality? What kind of power is contained within that color which leads to the effect of healing someone's body? Is it simply that colors possess the power to lead to such effects? What kind of structure and functionality does the body have to respond to the stimulus of such weak colors in that way?

In the version of 21st century life science and standard medicine, this is an unknown field, it seems. So we need to begin an interdisciplinary research that will raise a new paradigm with our accumulated knowledge of colors gained by experience. Color therapy is the fluctuation of a form of energy

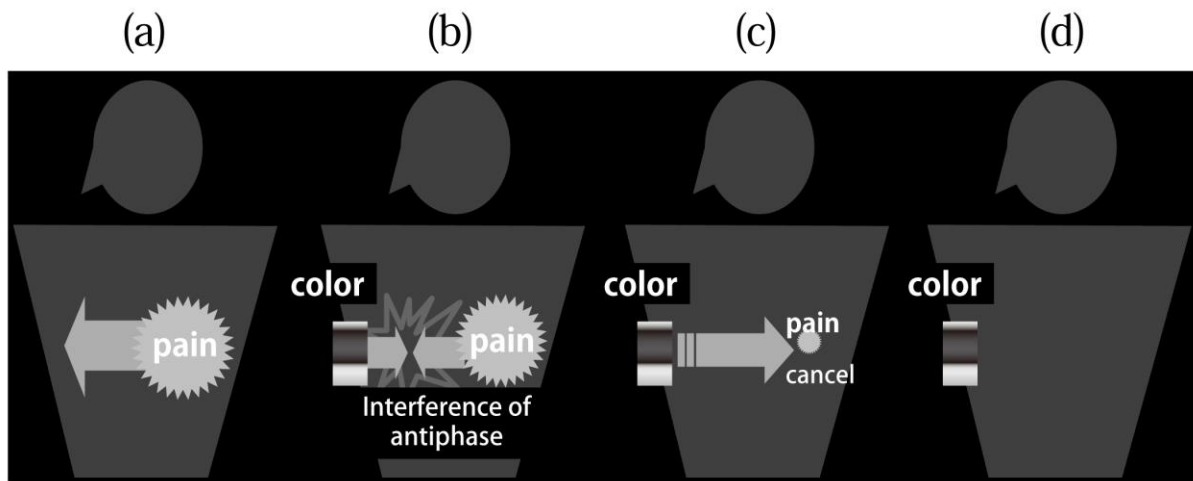
containing inherent frequencies of vibrations. It is a method of treating diseases using the numbers of modulated waves within colors based on an understanding of wave lengths. It is a fact that all objects including the human body radiate electromagnetic waves of specific wave lengths. As the physicist Max Planck made clear, the radiation of all electromagnetic waves including light radiation, is made up of light quantum called photons .

The human body is made up of 60 trillion cells, and each of the body tissues, organs, cells, bio-connected substances and so on, have a multi-layered structure. On various biological system levels, extremely strong and weak electromagnetic waves are being emanated—Vladimir Grbic called them bio-photons.

Bio-photons are related to the number of cycles of light— each cell has an inherent number of cycles. All living cells, tissues, organs and objects have their fixed number of vibrating cycles. We will take the premise that through some biochemical transformation arisen in the body by infection, these cells, tissues, or organ’s number of cycles of fluctuation will emit abnormal wave lengths. Thus we can conclude that all diseases after all have inherent fluctuation cycles.

This writer has set up the following working hypothesis to explain the operating mechanism of color therapy from the point of view of physics. By pasting onto the skin’s contact response point the specific colors of abnormal cells’ wave lengths emitted by deformation of disease, and lengths of their phase and antiphase, the operation of inviting interference will begin in the body. When interference is incited by wave lengths emitted from the abnormal place (tissues, disease focus, pathogen and so on), the deformed wave lengths are destroyed and recover to normal wave lengths, causing the diseased condition to be healed.

Chart of the healing mechanism of color therapy’s phase-antiphase interference



(a) pain, disease condition (b) pasting colors on skin (c) pain, disease easing (d) pain disappears, healing condition

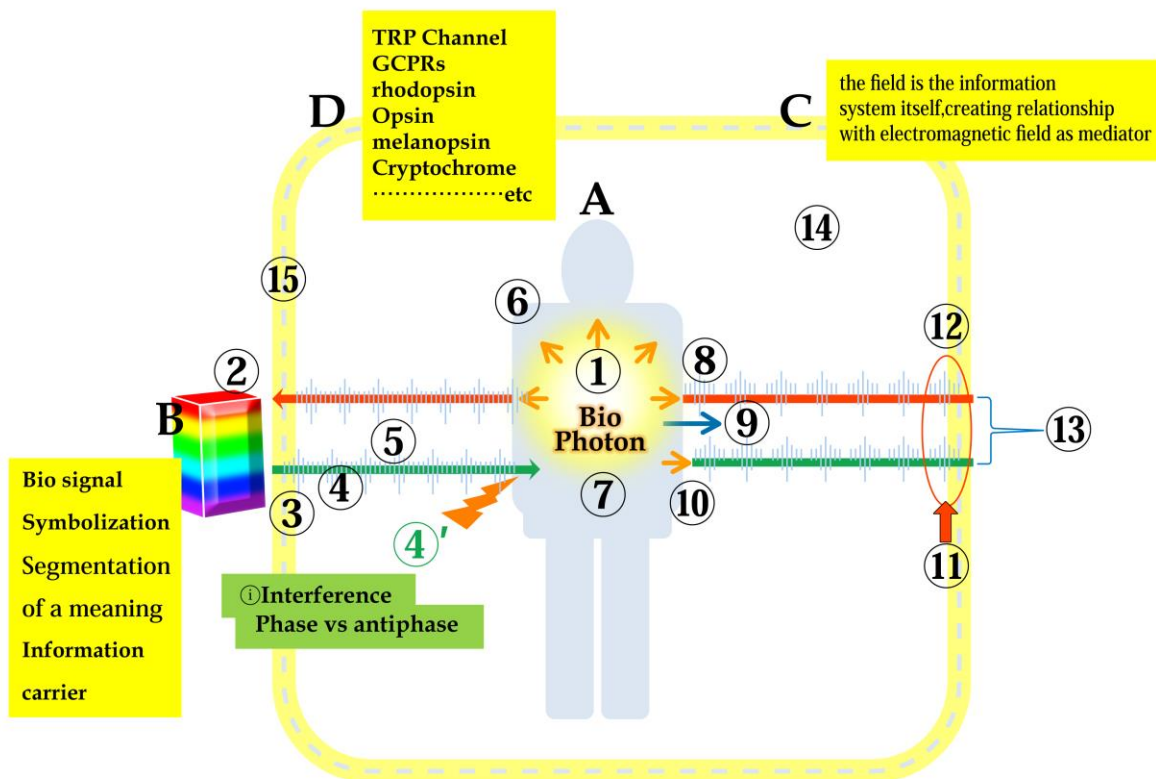
from this writer’s thesis, “Clinical Results of Deforming Knee Arthritis after Applied Color Therapy”.

Self-organized Function of a Living Body that mediated Information and Field

How do our skins receive the information of color life information chips? From the viewpoint of evolutionary biology, all types of living things are accomplishing special evolution in relation to the sensitivity to light and color information. Other than the pyramidal and stem cells which are visual organs, there are now known to exist over 100 types of photo receptor proteins which respond to light. As a working hypothesis these are explained in the chart as functions of a body recognizing colors.

The body belongs to an autonomous decentralized system. In order for it to feel outer light and color energy information and infer the processing mechanism, we can first think of that large autonomous system as the body's particular premise. That autonomous decentralized system is a theory of Waseda University's Professor Kinji Mori, who got a hint from distinguishing functions of the body in molecular biology.

Schematic diagram of life order generation by color information units that mediated between environmental response of a body and the field



A.living body B.Bio-color chip C.Body electro-potential field

D.Light driven protein, photoreceptor

1 bio-photon with abnormal signals

2 color units as antenna, invite bio-photon waves selectively

- 3 bio-photon waves that contacted color units reflect, modulated by specific color wave lengths
- 4 modulated bio-photon waves from color units interfere with the body's abnormal part (disease focus)
- 4' interference phase vs antiphase 5 perturbation
- 6 body's environmental response mechanism – color wave length information C and D mediated to create operating information
- 7 entrainment 8 rhythm coherence syntony 9 Self-catalyst 10 self organized order
- 11 temporal coding 12 phase shift
- 13 order formed (recovery from abnormal to normal condition) 14 parameter of order
- 15 good setting poor setting

(Color Life Information Science Research Center, diagram by Junroku Lee)

Satoshi Ayuzawa in his research paper, "The Theory of Biological Communication and Related Clinical Applications" explains, "the autonomous decentralized system does not possess a governing body that synthesizes the whole system, but each element that constitutes it (individual sub-systems) acts autonomously while mutual cooperation or concurrent working tasks as a whole are achieved".

In other words, the autonomous decentralized system contains many elements that act autonomously and each through mutual action creates one order. It is a system that when environmental or purpose changes arise, changes mutual cooperation and methods to make a new order.

Another characteristic of a life body is that it has self-discipline. The cells, body tissue and so on that make up a multi-celled society of more than 270 kinds of cells are each mediating in differentiations and organizing 60 trillion individual cells, which are there for a person's life activities. But if you take another point of view, each cell can be said to be an existence of a cell itself in the cycle of "birth, old age, sickness and death". These individual cells make up the body of "myself" to fulfill life activities and are necessarily equipped with an information system.

The autonomous decentralized system is the biological body's emergence system—entraining information transformed into color wave length information, it puts forth its own catalyst and makes new order as a result of self organization. The autonomous organization, a concept propounded by Stuart Alan Kauffman, is one of our own self organizations of natural phenomena extracted from an individual body of crystal grown in a supersaturated solution, or a construction of nerve circuits arisen as a central neurological system from our thoughts and learning.

Ilya Prigogine put forth a theory of dissipative structure in his work, "Order from Chaos", regarding non-equilibrium open systems like organisms related to autonomous organizations, and changes in climate in the natural world. Besides this we cannot overlook the concept of the "field" that is composed of information communication. The concept of "field" Dr. Shimizu advocated in his works "The Thought Behind 'Field'" (Tokyo University Press, 2003), "Life and the Place" (NTT Publishers, 1992), "Life Re-captured" (Chuo Korinsha, 1990) is explained as a place to create information mechanisms and related forms, a self-catalytic effect from understanding meaning of information, and related to a body's order generating mechanism.

The dictionary meaning of "field" is a broad place, space, or in engineering terms, a world—something with physical quantity affecting something in another place, or the space in a state to receive an effect.

The basis of argument for the operational hypothesis concerning color action on the living body is the result of considering the above enumerated characteristics possessed by a life form, and above all, our decades of research and experience at our clinics.

To summarize the main points, color information has the body's magnetic field or the skin as its "field", which is the place with common information, and generates a relationship of colors and body. The light regulatory proteins that respond to the stimulus of light and color within keratinocytes of color and skin, and the fluctuations of the collection of autonomous elements of photo-receptor proteins within adjacent cells, by generating a rhythmic moving time order, generate an order between single and whole bodies.

Wave lengths of colors cause to form an aligned relationship with the rhythm emitted by skin cells, the dynamics of which work by spreading from one part to the entrainment of the autonomous decentralized system, or becoming synchronous, so functional abnormality is repaired.

Thus, the "field" is information and the very process of creating relationships; color treatment's operating mechanism lies in the fact that wave length information of substances contained in colors directly cause interference so that functional and even temperamental disorders are restored.

The Skin's Function as Place, Field

If the skin were to be completely spread out, it would be 1.6 square meters broad and weigh about 3 kg. Because of this it is called the body's largest organ. Further, it is a bordering organ that divides the outer from the inner parts.

However, according to recent studies, the skin goes way beyond wrapping the entire body like a bag; it is a defense organ protecting the body and plays the role of an interface, directing information communication within and without the body. That is to say, it is a protective wall directing the body's defense as well as a thin brain that is revealed to the outer world.

The way of understanding the skin's function is thus in the process of changing. Being a field, it also responds to stimulus from outside the body as a large outer receptor, and carries the duty of a high sensitivity monitor, adjusting strained activities within the body. Living beings, especially people, unify various kinds of information of the outer world through the skin, which supports and adjusts our inner environment. By the medium of touch, the skin makes possible non-verbal communication, and various manifestations of the skin are used in diagnosis and treatments.

These various functionalities of the skin are carried out by keratinocytes which, like the brain, produce many physiologically active substances and have receptors that can receive complex information. Moreover, they produce adrenaline, cortisol, adrenal cortex stimulating hormone (ACTH), β endorphin, substance P and so on, such chemical transmission substances, 20th century scholars have made clear. It has been observed that when the epidermis receives pressured stimulus, acid nitrogen (NO) is generated. Furthermore, TRP type channels (transient receptor potential channels) and ATP receptor (adenosine triphosphate receptor), NMDA receptor (directs learning and memory with the brain's hippocampus), dopamine receptor, GABA receptor and so on have also been discovered in epidermal cells. Not only that, it also senses light and sound. Because of these facts, the skin is said to be a brain.

The Skin's Ability to Know Colors

In the mid 1800's the existence of stem and pyramidal cells was discovered, and since then for 2 centuries, anatomists thought only visual cells (light receptors) could detect light. However, in the early 1990's Russell Foster of Oxford University proposed it was possible that visual cells within unconfirmed kinds of retina responded to light, and were sending completely different messages to the brain. This was a great development unimaginable to scholars. It was ascertained that light could be sensed by parts of the body other than just the visual organ, the eyes. It had been known that animals could sense light with their eyes but at the end of the 20th century there were scholars who knew those eyes could be used other than just for seeing, for example, light stimulus could adjust the body's rhythm.

Protein visual substances that sense light exist in quantity and types in the brain, skin and organs of animals and people. In the scientific world attention has continued on the possibility that mammals perceive light in places other than the eyes. That the protein of these visual substances in the brain and internal organs really perceive light information is a very important discovery.

These proteins, by combining with vitamin A derivatives in the body, are excellent things which are repeatedly being recycled in the body and reused. Animals use these substances like a light switch by which they manage vital reactions and behavior according to light.

A study to prove the skin's light stimulus sensing faculty was conducted by Dr. Mitsuhiro Denda of the CREST Research Center of the Japan Scientific Technology Agency. In Dr. Denda's book "The Startling Skin" (Kodansha 2015) is recorded the result of observations on whether or not opsins of blue, green, red, rhodopsins by antibody stainings exist in the skin.

This opsin protein is one which responds to light and dark in the retina, that is to say, the three primary colors. According to Dr. Denda's results, rhodopsin exists facing the surface from the skin's center,

while red and green opsins are in the deepest part of the skin, and the blue is over the upper and mid-epidermis. This observation confirmed that there is a light receptor mechanism in the skin.

Dr. Denda, in order to confirm this skin function system, broke down the keratinocyte barrier, illuminated the red, blue, green and white lights, and observed the speed of functional recovery. As a result, red's recovery speed was fast, the blue weaker. The conversion mechanism in electric signals by stimulus of light receptors, they say, is by a combination of transducin and phosphodiesterase (PDE). If this medicine which obstructs enzymes is applied before examining red light, the effect of promoting barrier functional recovery would be nil.

We may presume from the above research results that the skin has the faculty to perceive light just as the retina does, and transmit it to the nerves. This fact will certainly help to clarify color therapy's action mechanism, Dr. Koichi Yasuda of the Color Diagnosis-Treatment Research Group proposed.

The Skin as a Field and the Body's Environmental Response Capacity

A living body is always taking in environmental energy and information, releasing what has been taken in, creating meaning from that and acting out life activities with various behaviors.

Constancy in the world of life is the obtaining of energy in an environment or the possibility of getting information through an object's environmental response. That is to say, energy is composed of intake of food and discharge of metabolites, information is mainly perceived; but in the case of humans, in perception there are things one can be aware of and those hard to be made aware of. Vision and hearing can easily be verbalized but smell and touch are harder to describe so at times not easily realized. But here what receives the sense of touch is the skin.

Furthermore, it is possible that there is in the skin a large flow of information difficult to be conscious of. That is the skin's sensitivity includes machine-like receptacles like the Golgi body receptor, Pacinian corpuscle, Meissner's corpuscle, Ruffini's corpuscle, not only information like pain and itchiness. The skin has not only made a border between the environment and the body, responding to environmental changes, but also is sending various signals. It has recently been reported that those signals have an intimate connection with the immunity and central nerve systems. Hence we may speculate that the flow of information in the skin is having great effect on the entire body.

To apply color life information chips to the body takes as a premise the skin as a mediating field. Just by pasting a small piece of color 0.5mm in size on to the skin, the working of a treatment can be observed. What this writer learned from the experience of this type of treatment is that the skin not only acts as an information-receiving antenna, but also as a messenger tower transmitting information signals.

The skin is an organ forming the surface of the body. As an interface of inner and outer body, an environment that enwraps the body, it receives various information while transmitting stimulus (information) signals to the inner, and forms the backbone of the body's information system, responding to environmental changes. Even in recent researches new discoveries about the skin's faculties are

continuing. The skin can perceive, has colors it likes and dislikes, they say. Moreover, it has ability like a battery, and is a high-sensibility electric sensor.