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Acupuncture as Intervention in the Biological Information System (Channel Treatment and the X-signal System)

Acupuncture, a traditional medicine originating in China, has a long history as one of the oldest forms of medicine. In recent years, scholars all over the world are coming to a new understanding of the clinical value of acupuncture. Referring back to the classical Chinese texts to understand the practice of acupuncture, however, is not so practical since many of the terms and concepts presented are difficult to understand. Some Sinologists from the West say that there was no scientific method in ancient China in the Western sense. They regard Chinese medicine as a folk medicine with traces of shamanism, which applies a simple naturalistic philosophy that explains everything in terms of yin and yang and the five phases. Even if this were true, this does not change the fact that many excellent therapeutic methods were developed in ancient China.

In the middle ages, over twenty new technological innovations were introduced to the West from China including compasses, gunpowder, and astronomical instruments. In this same period only two new concepts were imported from the West into China. This may seem odd, but the social structure in ancient china was such that technology was not confined in the hands of a few specialists. Instead many craftsmen, artisans, and ‘doers’ in the lower strata of society acquired valuable experience through the practice of their craft and they were able to develop a high level of expertise without a formal education. Thus, valuable know-how was acquired by right-brain thinking and quite sophisticated systems and technologies were developed in this way.

In order to pass on this knowledge, various individuals compiled classical texts such as the Nei Jing and Nan Jing in the case of medicine. Yet these texts are hard to understand for people of this day because they are written in classical Chinese with many technical terms. The classics contain arcane jargon and they could be called cryptographs of sorts. We have to understand that these special terms are like a code. One day some genius may decode these special terms, just as Champollion deciphered the Rosetta stone. When this happens, many people will no doubt be amazed by the cultural legacy contained in these classics.

In this paper I would like to point out the essential points of acupuncture therapy which many people overlook. The gist of my hypothesis is as follows:

There is a primitive signal (information) system in our body, which has embryological roots, but this is masked by the more advanced and complex control (regulation) systems. Thus the original signal system is hard to find or see. This primitive system is able to detect and discriminate internal and external changes and plays a role in regulating the body by transmitting this information. This system serves as the modus operandi of acupuncture.

Some sixty years ago in Japan the channel treatment school clashed with the scientific school that believed acupuncture was primarily a method of stimulating the nervous system. The channel therapists tried to make others understand that acupuncture was much more than simple nerve stimulation therapy. But, if acupuncture is different from simple nerve stimulation, it must be explained just how it is different. My contention is that channel therapists use delicate techniques that stimulate this as yet unexplained signal system that I will call the X-signal system. Many things point to the existence of such a system. One of them is the implausibility, in the terms of neuro-physiology, of producing different effects by the almost identical stimulation of two points close to each other on the same dermatome. The following are some other reasons an X-signal system can be said to exist.

1. Very minute stimulation that cannot be regarded as nerve stimulation is often effective in channel therapy.
2. The agents of therapy and their reaction site cannot be explained in neurological terms.
3. The vertical correlations of points (the channel system) not understood by science can be applied with good therapeutic results.
4. The distribution of reactive points (acupuncture points) on the body shows a topological arrangement.
5. The body can be divided into eight distinct areas of reactivity (octants).

Every time acupuncture is performed, whether the acupuncturist is aware of it or not, the X-signal system invariably comes into play. Rendering a channel treatment does not mean that only the X-signal system and nothing else is affected. Naturally, a whole array of other physiological responses occurs at the same time. *The important consideration here is that there are great merits to deliberately influencing the X-signal system.*

My colleagues and I have a deep interest in this system and have studied it for many years, but regrettably most acupuncture research focuses on the effects of acupuncture as nerve stimulation and the existence of the X-signal system is considered. If this system is, in fact, deeply related to the effects of channel treatments, it is likely that the channel treatment school will remain outside the circle of scientific acupuncture for some time to come. It may well be that we will remain a small minority in the field of acupuncture, but *we can take pride in being a respected minority.*

Chapter 1 Evolution and the X-signal System

In 1984 Ernest Schoffeniels, a biochemistry professor at the University of Liege and one of the foremost biochemists of Europe, came to Tokyo for the Tenth International Life Science Congress. In his work, Schoffeniels attempts to clarify biological evolution and life's origins. On July 24, 1984, he gave an interesting lecture on the topic of "Generalizing Information Theory to Open Systems." His lecture left a deep impression on me. He used both the principle of thermodynamics and the information theory to explain the process of biological evolution and elucidate the nature of biological systems. He cited the work of Prigogine and his theory of dissipative structures as well as the theory of Eigen. He described how the evolution of biological organisms occurs in a fluctuating environment. In this lecture Schoffeniels summarized his conclusions as follows:

In recognizing that biological systems are cybernetic networks, the conclusion is reached that there are two main languages in biology – molecular and electrical. Since a molecule can be information, operations befalling it in a metabolic sequence are informational and enzyme catalysis is the executor of these operations. The problem of information transmission can now be presented as that of the generator of information, the encoder of information, the information channel, and the receptor of information. Additionally, one has to define the properties of the transducer whose effect is to transform one language into another, thus allowing for the tuning of the generator and the receptor. Two fundamental problems only partially answered are those of conservation and combination of biological information. Application of classical information theory to the calculation of the information content of biological systems is beset with contradictions. To understand the cause of these setbacks, it is useful to review the most important points of information theory, establishing relation so derived with classical thermodynamics. Then one must consider the problem from the angle of information accumulation in the course of time within the DNA, a true integration of different information received by biological structures. This leads us, derived from Prigogine's and Eigen's theories, to consider the evolution of biological structures in relation to a changing environment, and then to a deterministic mechanism of evolution. Thus, it is on the background of genetic information that systems develop which allow the interaction of an informational nature with the environment. Herein lies the importance of the generalization, epitomized in the feedback of organism-environment, that in an evolving environment an organism can only evolve.

A Japanese scholar, Dr. Minakata Kumakusu, is an eccentric genius knowledgeable in many areas. He is a specialist on mucus fungi. This fungi, or myxomycetes, like Dr. Minakata himself, have some very unique characteristics. Normally they exist independently as single-celled organisms, but when environmental conditions become unfavourable, these organisms join together and form a larger organism. This colony of cells forms a stem with spores at its apex that enables it to reproduce. How is it possible for these single-celled organisms to unite in this way? Although they have no nervous or hormonal system, it is possible that they possess some primitive signal system. Some manner of signal system enables this organism to act in concert with other cells. This indicates that even the most primitive organisms have complex control systems. This control system is contained in each cell as information encoded in the DNA. There exists what Schoffeniels calls a molecular language, or a mechanism for sending and receiving electrical signals.

Man is far more evolved than mucus fungi. During the process of evolution we have acquired many complex information systems or control systems. The information system in man is so highly developed that when we consider these systems we mostly think of the

nervous system and the endocrine system. But have the primitive and more simple control systems of our evolutionary ancestors really disappeared without a trace in us human beings?

Some scholars think that once information is encoded in DNA this information never disappears completely even though it may become buried by innumerable other information during the course of evolution. The conscious and unconscious realms of our minds are a good illustration of this. Our conscious minds can be compared to the 'explicit order' and our unconscious can be compared to the 'implicit order,' which contains a vast and fathomless amount of information since the big bang. We can neither understand nor measure the 'implicit order,' but we can be sure of its existence because of occasional 'flashback' experiences, which brings the existence of this order to our awareness.

We experience something like this in acupuncture from time to time when we apply a very subtle technique (stimulus) and it causes remarkable changes in a neurologically unrelated part of the body. Also the channel phenomenon gives us clues about another biological information system. Here I would like to restate my original hypothesis.

When life was not yet evolved the way we are, organisms did not possess a complex information system as we do now. Organisms had a primitive signal system that still remains in us as a rudimentary biological information system. The reason some of the more subtle techniques employed in acupuncture can be remarkably effective is because the X-signal system is being accessed in some way.

Chapter 2: Evidence of the X-signal System

In the practice of acupuncture with traditional approaches and techniques we often encounter phenomena that cannot be explained by present day neurophysiology. In these cases there are two possibilities. One is that our perception of what is actually taking place is mistaken, and the other is that we are coming up against some as yet unexplained phenomena. Is this the X-signal system which I have hypothesized, or just a product of our imagination? The answer to this question will probably become clear with future research, investigation, and critical examination. For now I would like to present a number of examples of unexplainable phenomena that seem to indicate the existence of the X-signal system.

1. Applying subtle influences to a point that could not possibly register as stimulus to the nervous system can affect other areas of the body. For example, placing the north pole of a magnet close to the large intestine point in the auricle causes a decrease in pressure sensitivity at the large intestine's source point (LI 4) on the same side. Reversing the magnet so that the south pole faces the same point in the auricle causes an increase in pressure pain at the same large intestine point.
2. Placing the north or south pole of a magnet close to the large intestine point of the auricle on the other side causes the opposite of the above mentioned reaction at the original large intestine source point.
3. Placing a piece of zinc on a proximal point along the large intestine channel and placing a piece of copper on a distal point of the same channel causes a decrease in pressure sensitivity at the large intestines source point. For this effect the two metals do not have to make wet contact as in a metal battery and the distance between the two contact points is irrelevant.
4. Selecting two points on the lung channel on one side and placing the two metals on a proximal and distal point, the order of placement of the metals to reduce pressure

sensitivity is reversed. That is, the copper must be placed on the proximal point and the zinc must be placed on the distal point.

5. The lung, large intestine, stomach, and spleen channels form a continuous circuit that is traditionally held to be a pathway of qi and blood. Placing copper randomly on one point 'up stream' on these channels and placing zinc on another point 'down stream' causes the same effect as above. This circuit of energy circulation can therefore be regarded as a functional set or system.
6. According to the classics, the channels all have five element points that begin from the distal ends of the limbs. Interestingly, the order of the five element points is wood, fire, earth, metal, and water for the yin channels and metal, water, wood, fire, and earth for the yang channels. Conducting a similar experiment as described above in item five, I found that there was a very important significance to the order of the five element points. The points belonging to the same element are in fact in an isophasal relationship to each other. Therefore placing zinc and copper on the points corresponding to the same element in channels of the same functional set reduces pressure sensitivity at LI-4 regardless of which point receives copper and which point receives zinc. In other words, placing copper on LI-11 on the right and zinc on ST-36 on the right has the same effect as placing zinc on LI-11 on the right and copper on ST-36 on the right.

Those scholars who think that the five elements are an outdated conception based on naturalistic philosophy often ignore the possibility that there may be some practical significance of the order of the above five element points. Even if the five phase principle is a product of naturalistic philosophy, the behaviour of these points described above indicates a 'topological' arrangement, and this has a very great significance since it could enable us to intentionally affect the biological information system.

7. The five element points are considered to be in a certain relationship. That is to say, wood, fire, earth, metal, and water, which is known as the creative or productive cycle. In this case, for the element of fire, wood is said to be the 'mother' and earth is said to be the 'son'. (Some believe that this relationship of the elements is purely imaginary and that it has no bearing on reality.) LI-4 is the source point of the large intestine channel that pertains to metal. LI-11, located on the lateral edge of the elbow crease, is the earth point of the large intestine channel, which also pertains to metal. Since earth is the mother element of metal, LI-11 is the mother or supplementation point of the large intestine channel. Likewise, LI-2, located on the radial side of the index finger just radial to the metacarpophalangeal joint, is the water point of the large intestine channel, which makes it the son or draining point. Many of practitioners who don't apply the five phase principle in their practice think that this treatment principle is not valid. Nevertheless, placing the positive pole of a 1.4 Volt battery on LI-11 and having the subject hold the negative end of the battery with one finger of the other hand causes pressure sensitivity to decrease at LI-4. Conversely, turning the battery upside down to reverse the poles in the same position causes an increase in pressure sensitivity. When this same test is done on LI-2, the effect is reversed so that contact with the negative pole decreases sensitivity at LI-4. and contact with the positive pole increases sensitivity. The electrical stimulation of the battery cannot be considered great enough to produce a neurological response since the resistance of the skin is such that not much more than one millivolt is actually conducted. Yet it is clear that the body is able to receive and discriminate such subtle stimulation at certain acupuncture points. If the order of the five element

points were in fact designated based on clinical experience with this degree of stimulation and response, it is a truly remarkable system.

8. Dr. R. Voll of Germany, in order to diagnose the condition of the channels and their corresponding organs, measures the D.C. resistance of the Jing well points, which are at the tips of the fingers and toes. Dr. Voll uses homeopathic remedies in his treatments and developed a method for using his electrical measurements to select the right remedy and dose, which he calls 'medikamententestung.' In his method, when the electrical measurements indicate an abnormality in some channel, he makes the patient hold in one hand a sample of a remedy known to be effective for problems of the associated organ and then takes another measurement. If the numerical values become normal, he assumes that the remedy is appropriate for the patient.
9. A similar phenomenon is reported in the application of the "bi-digital o ring test" developed by Dr. Y. Omura. In this test the patient forms a ring with the thumb and forefinger of his hand and holds them together as tightly as he can and the therapist tries to pull these fingers apart. This procedure is useful for locating organic diseases. The patient places a forefinger on the area in question and he makes the ring with his other hand and the therapist tests it. If there is pathology in that area, the patient's grip will be much weaker than usual. The therapist then gives the patient a sample of medication to hold in one had and tests the ring formed with the other hand. If the medication is beneficial for the patient, his grip is much stronger and he is able to withstand the therapist's efforts to pull the fingers apart. The biological signals affecting the gripping strength of the hand seem to work through the nervous system to cause a reflex effect.
10. If the LI-4 point is pressure sensitive on one side intradermal needles can be inserted to produce the following results:
 - a- Inserting upward at GV-14 does not decrease sensitivity at LI-4.
 - b- Inserting downward at GV-14 decreases sensitivity at LI-4.
 - c- Inserting upward at CV-6 decreases sensitivity at LI-4.
 - d- Inserting downward at CV-6 does not decrease sensitivity at LI-4.
 I discovered and reported this phenomenon some time back, but perhaps because it is such a mysterious and inexplicable phenomenon, no one else has chosen to investigate it. I postulate, nevertheless, that the stimulation of acupuncture points is received not only as a simple mechanical stimulation, but as sets of minute signals which can be finely discriminated by the body. It is therefore important that acupuncturists are able to distinguish such subtle differences, but this is a difficult problem. It is my belief that the traditional acupuncture techniques outlined in the classics were created with an awareness of this delicate signal system.
11. When the LI-4 point is pressure sensitive on one side, magnets can be placed on the auricular large intestine points or points on the exact opposite side of the auricle to have the following effects on pressure sensitivity:

	Magnet Pole	Magnet Placement	Pressure Sensitivity		
			Right LI-4	Left LI-4	
no change	no change	south	left LI point		
reduced	increased	north	opposite right LI	no	
change	no change	south	opposite right LI		
reduced	increased	north	opposite left LI		
reduced	increased	south	opposite left LI	no	
change	no change	Observing the effects of placing magnets on corresponding auricular points, it is clear that changes in pressure sensitivity at the right and left LI-4 points			

occur in an antagonistic fashion. In this method even if the sensitivity is reduced on one side, greater sensitivity is produced on the opposite as a compensating reaction. In acupuncture the right and left, top and bottom, and front and back halves of the body are distinguished as either yin or yang parts and these aspects are each considered to be in a contrastive relationship with the opposite aspects. These represent energetic relationships that can be utilized in treatments. If LI-4 on the right side is sensitive, this represents a repletion condition of the yang channels on the upper right half of the body. The opposite aspect of the body in terms of yin-yang relationships in this case is represented by the yin channels on the lower half of the body. Placing the south pole of a magnet on the medial aspect of the left leg (e.g. SP-3; the source point of the spleen channel) will effectively reduce the sensitivity at both LI-4 points. In this manner, balance is restored by applying a method that can hardly be considered as stimulation in the strict sense.

12. Kobei Akabane named the opposite effects on sensitivity on the right and left sides occurring with the application of polarized influences the “seesaw phenomenon.” However, such opposite effects occur in relation to the inferior-superior and anterior-posterior halves of the body. In the yin-yang concept of traditional Chinese medicine, the left, front, and top halves of the body are yang, and the right, back, and bottom halves of the body are yin. Based on the above observations I have formulated the following hypothesis:

- (a) Given the three structural yin and yang opposites of Chinese medicine, one can divide the body into eight sections, which each have their polar opposite. I have named these sections “octants.” The various effects on the sensitivity at LI-4 as discussed above occur in a manner suggestive of the polarity between these octants.
- (b) Professor Kentaro Takagi discovered a “pressure-perspiration reflex,” which suggests the existence of four sections or quadrants that show the opposite reaction. This phenomenon fits within the framework of the octants.
- (c) Assuming that the octants represent a physical area, the boundaries between the octants are as follows:

The sagittal plane across the anterior and posterior median lines (the ren and du channels).

The transverse plane at the level of the umbilicus (the dai channel). The frontal plane on the lateral median lines (the triple warmer and gallbladder channels on the lateral aspects and the spleen and pericardium channels on the medial aspects). Even such influences or subtle stimulation as listed above, which cannot be called stimulation in the physiological sense, seems to have a significant effect through our primitive information system. The effect on this information system seems to occur with polarizing influences, and therefore I have studied the *effects of various polarizing stimuli or ‘agents’* to shed light on the X-signal system.

Chapter 3 The Effects of Polarizing Stimulation

As explained before, acupuncture points are special receptors of stimulation, and they respond to sub-threshold stimulation that cannot be called stimulation in the normal physiological sense. Our studies indicate that acupuncture points respond to such minute stimuli or “agents” through a primitive information system (X-signal system). The acupuncture points are receptors for both gross and subtle stimulation, and the body is somehow able to distinguish between the two. When acupuncture stimulation affecting the nervous system is applied, the patient often reports some sensation in connection to the

needling. On the other hand, when subtle stimulation is applied, usually no sensation is felt. It is difficult to distinguish the nervous response and the subtle sub-threshold response that must occur simultaneously during most acupuncture stimulation. However, it is possible to apply polarizing stimulation or “agents” to acupuncture points, which can be demonstrated as having no effect on the nervous system. Thus limiting the effect to the property of the acupuncture point as a receptor of minute stimulation. Polarizing stimulation is very minute stimulation that can be used to map out and demonstrate the various characteristics of the X-signal system. Such stimulation can also be applied to perform the initial step in an acupuncture treatment (the general or root treatment), the aim of which is to restore the yin-yang balance by equalizing the body energetically in relation to its right-left, anterior-posterior, and inferior-superior aspects.

A large variety of polarizing stimulation can be described and each type has specific characteristics and effects. Some other polarities are implicit within our physical structure while polarizing stimulation described below has clearly demonstrable and repeatable effects. The gauge used for testing in each case is the increase or decrease in tension or pressure sensitivity at acupuncture points directly affected by the polarizing stimulation. It should be noted, that in testing the effects of such stimulation, one does not just check the decrease of sensitivity in the point but also the increase of sensitivity in the corresponding point is checked. In this manner the possibility of a purely psychological reaction is negated.

1. Polarity by the Direction of Stroking

Applying a light stroking pressure over the path of a channel can increase or decrease the reaction of the Mu point associated with that channel. For example, if there is pressure sensitivity at KI-11 on the right (bladder channel diagnostic area), stroking down the right lower leg from BL40 to BL-60 with the thumb or index finger will reduce the sensitivity at KI-11. It is clear that more than simple mechanical stimulation is at work with this type of polarizing stimulation since the effect depends on the finger used to do the stroking. The effect on KI-11 is reversed when the little finger is used to stroke the same line. This demonstrates that there is a certain polarity between the thumb and little finger and also that the mechanical stimulation of stroking with light pressure can serve as polarizing stimulation.

2. Polarity by the Direction of the Needle

I have found that needling a point on the median line can reduce the sensitivity of points on both sides of the body. So when LI-4 on the right side is pressure sensitive, inserting an intradermal needle at GV-14 in a downward direction will reduce the sensitivity at LI-4. Reinserting the same needle in an upward direction will cause the sensitivity to return. Inserting an intradermal needle at CV-6 in an upward direction will also reduce the sensitivity at LI-4, and inserting in a downward direction will cause the sensitivity to return. This demonstrates that the direction of needle insertion is of great importance and that the effects of needling are not limited to a neurological reaction.

Thus the direction of needle insertion has a polarizing influence. This is of particular interest because the classics of acupuncture mention supplementation and draining techniques based on the direction of needle insertion. In the acupuncture practiced in China today, very little attention is paid to the direction of needle insertion with regard to supplementation or draining. The majority of needling is done perpendicularly to insert very deeply. Deep insertion tends to provide greater stimulation to the nervous system and produces different effects than shallow insertion. The polarizing influence of opposite needling directions only becomes apparent when needles are inserted shallowly, as done with intradermal needles. Perhaps this was primarily how needles were employed in classical times since opposite effects of supplementation and draining were obtained by the direction of needle insertion.

There is another way to interpret the classical notion of needling with or against the flow of the channel for supplementation or draining. That is, by needling more than one point on a channel. For supplementation a point close to the origin is needled first and then consecutively points further down the channel are needled. For draining, a point far from the origin is needled first and then points closer to the origin are needled. Thus, in order to reduce pressure sensitivity at LI-4, one can drain the large intestine channel by shallowly needling LI-11 and successively needling LI-8, LI-6, and LI-2. To supplement the channel and increase the sensitivity, one can reverse the above order and begin needling at LI-2.

In this manner, both interpretations of the classical concept of supplementation and draining by the direction of needling can be applied as polarizing influence. The validity of classical concepts can be examined by using the above approach.

3. Polarity of Electrical Stimulation

As already mentioned in Chapter 2, stimulating the mother and son points of channels with a 1.5 Volt (AA) battery can cause an increase or decrease in pressure sensitive reactions at associated points. For example, if LI-4 is sensitive on the right side, holding the battery in the left hand with a finger over the negative end and touching the positive end to LI-11 on the right side will reduce sensitivity at LI-4 on the same side. Holding the battery in the same manner over LI-2, on the other hand, causes the sensitivity at LI-4 to increase. When the polarities of the battery are reversed and the negative end is made to contact LI-2, however, the sensitivity is reduced.

This demonstrates the opposite effects of even minute polarized electrical stimulation, and furthermore, that the mother (supplementation) point and son (draining) point of a channel have the opposite effect. Applying positive polarity to the mother point reduces the pressure sensitivity while applying negative polarity increases the sensitivity. Applying negative polarity to the son point reduces the sensitivity while applying positive polarity increases the sensitivity. This is about the significance of supplementation and draining, and the clinical application of supplementation points and draining points.

4. Polarity of Magnetic Fields

The same effects can be obtained in relation to pressure sensitive points when a magnet is used instead of a battery. The south pole of a magnet has the same effects as the negative end of a battery and the north pole has the same effects as the positive end. In another application of the polarizing effect of magnets, when there is pressure sensitivity at right ST-27 (the Manaka large intestine Mu point), placing the north pole of a magnet on LI-4 on the right side will reduce the sensitivity, while placing the south pole of a magnet on the same point will increase it.

5. Polarity by Location of Stimulation

In the test already mentioned in chapter 2, when LI-4 is sensitive on the right but not on the left, alternately contacting the north and south poles of magnets on the auricular large intestine points and the corresponding points on the opposite side of the auricle can either cause a decrease of sensitivity at LI-4 on the right and an increase on the left, or cause an increase on the right and a decrease on the left. This antagonistic effect demonstrates the influence of magnetic polarity as well as the role of the opposite halves of the body in reacting to polarized stimulation

6. Polarity by Contact with Different Metals

Placing two different metals against the skin at two points induces a minute current between the points of contact. Such 'two metal contact' produces a miniature battery effect as a potential forms between the more positive metal in terms of electrochemical activity (e.g., copper) and the more negative metal in terms of electrochemical activity (e.g., zinc). An example of the effects of 'two metal contact' is given in Chapter 2, using zinc and copper on points of the large intestine channel. Another example is when KI-16 (the Manaka kidney Mu point) on the left side is pressure sensitive, placing copper on a left distal point of the Kidney Channel and placing zinc on a left proximal point will reduce the sensitivity at KI-16 to increase. The same effects can be obtained by placing the north and south poles of two magnets simultaneously on proximal and distal points. The sensitivity decreases when the south pole is placed on the proximal point and increases when it is placed on the distal point of the channel. This phenomenon demonstrates another feature of the channels as receptors of polarized influenced, which relates to their direction of travel.

7. Polarity by Direction of Channel Energy Flow

The twelve regular channels form a circuit of energy flow that goes from the lung channel successively through to the liver channel and then returns to the lungs to repeat the cycle. The effects of the polarizing stimulation detailed above, demonstrates a tendency of unidirectional flow in the regular channels. There are smaller circuits of energy flow within the twelve regular channels that was mentioned in item 5 of chapter 2. The taiyin – yangming circuit is composed of the lung-large intestine and stomach-spleen channel confluences. The shaoyin-taiyang circuit is composed of the heart-small intestine and bladder-kidney channel confluences. The jueyin-shaoyang circuit is composed of the pericardium-triple heater and gallbladder-liver channel confluences.

A method of applying polarized stimulation to demonstrate the unidirectional energy flow of these circuits has been explained in the previous item. It mentioned four minor channel energy circuits that exist within the framework of the larger energy circulation cycle of the twelve channels. These smaller circuits can be compared to moebius strips. One very interesting aspect of these smaller circuits is that polarized stimulation can be applied to demonstrate the 'isophasal' properties of the five phase points which often has effects contradictory to the above mentioned principle of direction of channel energy flow (see item 6 of chapter 2).

It has already been mentioned that applying a positive polarity to the mother point reduces pressure sensitivity and that applying a negative polarity to the son point also has the same effect. The example given in item 3 was placing the positive end of a battery on LI-11 and the negative end on LI-2. Applying a positive and negative polarity to these points simultaneously simply increases the effect. Therefore, placing zinc on LI-2 and copper on LI-11 will reduce pressure sensitivity in a corresponding point regardless of the direction of channel energy flow (by which placing copper upstream and zinc downstream should reduce sensitivity). Reversing the polarizing stimulation and placing the copper on LI-2 and the zinc on LI-11 will cause the sensitivity of the corresponding point to increase.

Another demonstration of this contradictory phenomenon is placing copper and zinc on the mother and son points of the kidney channel. As stated in item 5, when K-16 is pressure sensitive, placing copper on a distal point or

placing zinc on a proximal point reduces the sensitivity. However, if zinc is placed on K-1 or copper is placed on K-7 the same reduction in pressure sensitivity is obtained. Another example clearly demonstrates the “isophasal” properties of five element points. When ST-27 (Manaka large intestine Mu point) is pressure sensitive, placing copper and zinc on the metal points of the stomach and large intestine channels, right ST-45 and left LI-1 reduces sensitivity at ST-27. It makes no difference which point receives copper or zinc; the sensitivity is reduced in both cases.

In the above manner, five phase points seem to possess independent properties above and beyond their place in the channel. These points seem to manifest certain properties over others according to how they are stimulated. I consider the properties of five phase points to be basically dependent on topological geometry. Based on my own theory of topological geometry of the body, we can choose any point on a channel and find its “isophasal” counterpoint on another channel. It seems that the ancient Chinese mapped out these “isophasal” points and correlated them by applying the five phase principle, which was popular at the time. This, however, is not the only way possible to describe such relationships. By careful examination of test results, we can begin to understand why the ancient Chinese applied the five phase principle to acupuncture the way they did.

8. Polarized Stimulation by Ion-pumping Cords

The Ion-pumping cord is a copper wire with a clip on each end, one of which has a germanium diode fixed on it so that electricity flows in one direction only. Connecting two shallowly inserted needles with an ion-pumping cord acts as a polarizing influence because a minute unidirectional electrical current is produced in which positive ions travel to the needle with the red clip and negative ions travel to the needle with the black clip.

9. Polarity by Rotation of on a Disk

Rotating a disk, two centimetres in diameter, over an acupuncture point has a polarizing influence on it. Clockwise and counter-clockwise rotations have the opposite effect so that one has positive polarity and the other negative. The following results can be obtained by attaching four small magnets on the corners of a one-centimetre square in the middle of the disk so the north poles face down:

When LI-4 on the right side is sensitive, the mother point and son point of the large intestine channel can be stimulated with the rotating disk. Clockwise rotation at LI-11 decreases the reaction and increases the reaction at LI-2 while counter-clockwise rotation at LI-11 increases the reaction and decreases the reaction at LI-2.

Thus it can be stated that clockwise rotation of a disc with the north pole of magnets facing down produces a positive polarity and counter-clockwise rotation produces a negative polarity. This effect applies on almost all acupuncture points of the body. There are, however, a few points for which the two polarities produce the same effect. These are points where several channels come together, such as SP-6 (meeting point of the three yin channels of the leg), GB-31 and GB-35 (meeting points of three yang channels of the leg), and TH-8 (meeting point of three yang channels of the arm). There are two other non-traditional points that exhibit this same property; one is two cun superior to SP-10 and the other is midway between PC-3 and PC-7. Rotating the disk over these points reduces the sensitivity in related points, regardless of the direction of rotation and which way the poles of the magnets face. It can be said that these “meeting points” are special points that are an exception to the rule of acupuncture point reactions to polarized stimulation. These points all lie on the dividing lines

of the body's octants, much like the ren and du channels. I have chosen to name the unique property of these points the "sanyinjiao characteristic."

10. Polarity by Frequency of stimulation

The application of low frequencies (50hz) of sound, light, electricity, tapping, or ion beam stimulation on most acupuncture points has the effect of reducing pressure sensitivity on the midline of the body, and similarly, the application of high frequency stimulation (50,000Hz) reduces pressure sensitivity on the lateral portion of the body. Stimulating points with the "sanyinjiao characteristic," however, has the opposite effect. That is, low frequency affects the lateral aspect and high frequency stimulation affects the median line.

Chapter 4 Application of Polarity in treatments

As suggested in the above discussion, the X-signal system is not only able to distinguish the amount or strength of stimulation, but it can discriminate its quality or polarity. I consider it useful to apply minute stimulation with a polarizing influence because traditionally acupuncture seems to have been a therapy for restoring polarity balance by examining the body in terms of two opposite aspects such as yin and yang, repletion and vacuity, or internal and external. In order to give such polarity treatments one must apply certain clinical principles in the selection of acupuncture points and the choice of needling techniques used. These principles, however, are difficult to understand for those who are not sufficiently experienced in acupuncture. Most researchers with a Western medical background lack an appreciation for the intricacies of this traditional approach. This could be because the methodologies of acupuncture and moxibustion have not been rationalized in scientific terms, but this is too complex a problem. Nevertheless, if a *rudimentary biological information system* that has been overlooked by modern medicine does exist, this hypothetical X-signal system should be the first object of investigation.

Considering the issue of the five phase points of traditional acupuncture for supplementation and draining (mother points and son points), the classical texts offer no clear explanation of why these points have the properties they do. The metaphors used to explain the effects of these points in some commentaries of the classics, such as "nourishing the mother nourishes the child," or "when the child is sick the mother also becomes weak," are far from satisfactory. However, if we apply positive stimulation to a five phase supplementation point and this has a positive effect and we apply the same stimulation on a draining point and it has a negative effect, we can say that these two points have the opposite effect. With experiments like this, we can begin to prove the polarity and antagonistic correlation between the supplementation and draining points.

Therefore the issue is whether polarized stimulation can produce opposite effects in certain points. We have clearly demonstrated the following things about supplementation points and draining points using a special ion beam device, which emits a polarized beam of energy:

- (1) The effect of applying the positive beam on a supplementation point is the same as applying the negative beam on a draining point.
- (2) The effect of applying the negative beam on a supplementation point is the same as applying the positive beam on a draining point.
- (3) Applying opposite polarities to a pair of supplementation and draining points at the same time produces a greater effect that is more long-lasting.

Thus the skillful combination of traditional methods of supplementation and draining is likely to have a greater effect. It is therefore evident that, *more than the supplementing or draining effect of the needling techniques themselves, the polarizing influenced picked up by the primitive signal system is what makes the difference. This is a very important point, since it means that even supplementation techniques can have a draining effect.*

Methods aimed at influencing the X-signal system produce results that are more reliable as I have demonstrated with experiments using the ion beam device.

The following is a brief explanation of this device:

In acupuncture anaesthesia, a pulse transmitter is used to apply electrical impulses to produce an analgesic effect. The two terminals, which are attached to needles, are two different polarities. One terminal produces a waveform with a positive bias (fig. 1-a) and the other terminal produces a waveform with a negative bias (fig. 1-b). Both these waveforms alternate between a square wave and a “saw-toothed” spike wave. The ion beam device we developed passes these impulses through a cylindrical coaxial conductor to generate polarized beams.

When the waveform with a positive bias (1-a) is passed through the central axis and that with a negative bias (1-b) is passed through the coaxial conductor, a positive beam with a minute stimulation effect is emitted from the end. When the wave form with a negative bias (1-b) is passed through the central axis and that with the positive bias (1-a) is passed through the coaxial conductor, a negative beam is emitted which has the opposite effect from the positive beam when applied on acupuncture points. The effect of the positive beam is equal to attaching the north pole of a magnet and effect of the negative beam is equal to attaching the south pole of a magnet.

The ion beam device is very convenient for studying the X-signal system. The effect of the positive and negative beams in increasing or reducing pressure sensitivity is very similar to acupuncture stimulation. This device is therefore an excellent tool for examining yin-yang imbalances and selecting the best point combinations to correct such imbalances.

1. In acupuncture, conditions of repletion and vacuity are balanced by performing supplementation and draining techniques. Supplementation means to make up for a vacuity and draining means to reduce repletion. There are a variety of methods employed for the purpose of supplementation and draining, but the following traditional methods are well known:
 - a. Supplementation and draining by timing insertion and withdrawal of the needling with patient’s breathing.
 - b. Supplementation and draining by direction of needling in relation to channel flow.
 - c. Supplementation and draining by use of five phase points.
 - d. Supplementation and draining by pressing or not pressing a point after needling.
 - e. Supplementation and draining by speed of needling.
 - f. Supplementation and draining by choice between acupuncture and moxibustion.
2. Herbalists often use the same terms supplementation and draining, but they mean something different than that understood by acupuncturists. For example, once a famous Japanese herbalist Kyushin Yumoto got in a heated debate with the renowned acupuncturist Bunshi Shiroda over this issue. Shiroda was a student of Takeshi Sawada who cured many cases of tuberculosis with moxibustion. Yumoto

maintained that one should not treat tuberculosis with moxibustion since it was a febrile disease.

3. Despite the varied approaches and opinions regarding the exact definition and application of supplementation and draining techniques, supplementation is generally intended to have the opposite effect from draining. It is too simplistic to think that the variety of methods for supplementation actually make up for the lack of qi and blood or ying and wei energies by acting directly on the points and channels which are vacuous. It seems more reasonable to assume that certain physiological changes are brought about through the X-signal system. It is conceivable that acupuncture and other specific stimulation on special points produce a localized or general change in the body's electromagnetic field. Based on the above assumption my colleague and I studied the application of polarizing stimulation in acupuncture. This was our approach to examining the effects various acupuncture procedures had on the X-signal system. The following "by products," or unexpected findings, were derived from our study:
 - a) By changing our angle of observation we were able to get a clearer understanding of the meaning behind various methods that were practiced as an unquestioned routine. For example, applying a positive stimulus to the mother point has the same effect as applying a negative stimulus to the son point, and applying the opposite polarities has the opposite effect. Thus it is possible to disperse with the mother point and to supplement with the son point. So we learned that supplementation and draining depends on the application of the correct polarizing stimulation as well as on the choice of points.
 - (b) This understanding enabled us to develop new approaches to treatment. For example, *when opposing polarities are applied to the mother point and son point at the same time, this can act either as supplementation or draining and the effect is much greater than when stimulating either of these points alone.* This is a clinical point selection principle that has not been mentioned by anyone else.
 - (c) We now have the means to test the validity of two conflicting theories. There are differing theories about the location of some points, such as that of LI-2. One theory places it just distal to the metatarso-phalangeal joint of the second digit while another theory places it distal to the proximal phalangeal joint. According to our study the former location is correct because it most effectively diminishes the pressure sensitivity in a related area. Up until now, when there were opposing theories, there was no practical means to prove either one and the discussion was limited to citing classical texts.
 - (d) The X-signal system provided the means to reinterpret the theory of the channels and their relationship to acupuncture points. Based on our examination of the X-signal system we can say that the acupuncture points are inseparable from the channels, and that the channels include countless 'extra' points along their course. The channels travel up and down, right and left, and front to back

to control the yin and yang aspects of the body. The many acupuncture points form a line, and the channel lines form a surface, and surface areas in turn form three-dimensional space to account for the entire body. In this way, each part of the biological structure is equivalent and inseparable from the whole. The theories of topology can thus be applied to acupuncture.

- (e) This understanding enabled us to formulate a simple treatment procedure. In our treatment system the energy in the yin and yang aspects of the body can be balanced by using the point selection principle described in item (b). *In this system the circadian rhythm and ten-day cycle of the channels are used to select open points and pairs of antipodal points on yin and yang channels of the arms and legs are stimulated. This system simplifies the general treatment considerably and reduces the need for localized and symptomatic treatments.*
- (f) Also it is now possible to perform “acupuncture treatments” without the use of needles. The use of polarizing agents such as the ion beam-device can be used to provide the general treatment so that the number of needles used in acupuncture treatments can be reduced substantially.

Chapter 5 From Minute Electromagnetic Phenomenon to Polarity Treatments

In the 1940's I developed a treatment for burns called ion-pumping. My hypothesis was that the severe pain in burns was the result of an accumulation of positive potassium ions in the burned area caused by the destruction of the cell membranes. I thought it might be beneficial to transfer the accumulated positive ions to other parts of the body. After experimenting with various ways of doing this, I arrived at the following method:

First the patient is laid on an insulated table and the negative lead of a Van de Graf generator is attached to him. Next the burned area is covered with thin metal foil. One end of a metal chain with a germanium diode is then attached to a distal part of the body. This method has been used in the United States and has gained acceptance.

Thinking that this method may also be useful for other conditions, I conducted further experiments and found other applications for ion pumping. In particular, the use of ion pumping cords to connect the master points of the eight extra channels showed the greatest potential. Ms. Kazuko Itaya took my eight extra channel ion-pumping method and developed it further. This method is effective for many conditions, but it poses certain problems in objective verification by electrical measurements because the amount of electricity involved is so minute. I called the therapeutic mechanism of ion-pumping “minute electrical phenomenon.” My understanding of this phenomenon is based on clinical experience, and there is no objective evidence of this, just as traditional principles of acupuncture and moxibustion have yet to be explained in scientific terms.

Once the Deutsche Gesellschaft Fur Akupunktur, one of the acupuncture associations in Germany, offered a prize for the best paper on the topic of the difference between the effects of gold needles and silver needles. I did some research on this subject and discovered that placing two different metals on the course of a channel produced certain effects according to the placement. I called this the two metal contact method. Developing this method opened my eyes to many other issues relating to “minute electrical phenomenon.” In retrospect, I can see that all these approaches were in some way related to the workings of the X-signal system.

It should be possible to get a fuller picture of the workings of the X-signal system by studying it more thoroughly and systematically.

There are, in fact, many methods employed in acupuncture and moxibustion as well as other types of therapies for treatment that cannot be regarded as stimulation in the classical sense. For example, the use of small magnetic pellets, magnetic bracelets, necklaces, and magnetic pillows is quite common in Japan. Other “therapeutic” practices include infusing bath water with negative ions, applying high voltage static electricity (with a device made by Bayaku Ju Kai), and wearing gold or copper bracelets and ankle bracelets. Also many methods employed in the past, with effects that go beyond mere superstition, such as holding bags of medicine, smelling bags of medicine, special earrings, and head bands, may have been in some way intended to stimulate the X-signal system. It is unfortunate that such methods of subtle stimulation are often promoted either commercially or superstitiously without a real knowledge of the operating mechanism of the X-signal system.

There are many things that have a subtle effect on the body as mentioned, and under the right conditions these can serve to correct conditions of physical imbalance and improve health. The effects of such stimulation cannot be explained as simply being a placebo effect. Among the various types of stimulation applied as a form of therapy, those with a polarizing effect are of special interest since they only have the desired effect when applied in certain ways. The fact that polarizing stimulation such as the use of magnets is effective under certain conditions and not under others helps disprove the contention that it is nothing more than a placebo. There are people who use magnets for therapy without giving any consideration to the polarity. Anton Mesmer, a German physician of the eighteenth century, was one person who used magnets in this manner. Applying the north and the south poles of a magnet selectively on points of the channel, however, makes it clear that there is a certain order and rule to correct application.

Therefore, when applying stimulation with a polarizing influence, it is possible to apply it without regard to the polarity and it is possible to apply it by distinguishing the polarities. The application of the same stimulation in each of the above cases has an entirely different meaning. When the polarity of the stimulation is to be utilized, the order and combination in application becomes very important. In this case, the desired effect can be obtained only if the method of application is correct. If the stimulation is applied incorrectly, it will not have the desired effect.

In order to understand the X-signal system we need to actively utilize the forms of stimulation that have a polarizing influence. I have sought the types of stimulation that have a very subtle effect. The main methods I have developed to date as a means of applying a subtle polarizing influence are as follows:

- (1) Two metal contact
- (2) Contact with the two poles of magnets
- (3) Energy beams projected from crystals such as quartz
- (4) Contact with two ends of copper wire with a diode attached
- (5) Polarized beams projected from the ion beam device
- (6) Polarized contact utilizing static electricity absorbers (metal rods with a capacitor-like device built in to absorb static electricity)

Among these methods, (5) and (6) are the most convenient and effective ones for use in a clinical setting. Methods such as those listed above can be called polarity therapy.

Chapter 6 How to Apply Polarity Therapy

As stated earlier, the most useful application of polarity therapy in acupuncture is at the root treatment, especially the balancing of yin and yang aspects of the body. In order to render this root treatment, we customarily perform the following diagnostic procedures.

1. Pulse Diagnosis

The first step is to obtain the pulse diagnosis on the six bilateral radial pulses. One must discriminate the relative strength and weakness of the pulses in each position at the superficial and deep levels. Traditionally, the vacuities and repletions in the twelve channels were decided in this way. When the pulse is generally weak and the differences are difficult to discriminate, one can stimulate a supplementation point according to the circadian rhythm of the channels to clarify the differences. Stimulating the mother point of the channel corresponding to the two-hour period just preceding the present one has a strong general supplementing effect. For example, at 10 am the stomach channel corresponds to the period preceding the present spleen period. The mother point of the stomach channel is ST-41, which is on the anterior aspect of the ankle joint. When a positive beam is applied on this point with the ion beam device, the pulse in all positions and levels becomes stronger. This makes it easier to discriminate the relative differences in pulse strength. I discovered this method while experimenting with the application of the ion beam device.

Pulse diagnosis has been an important diagnostic method since ancient times, but it has one shortcoming as a method of diagnosing the energy in the channels. In cases where the kidney or liver pulse is vacuous, there is no way of knowing which side of the body the channel is most vacuous on. Just knowing that the kidney or liver is vacuous in general is sufficient for administering herbal prescriptions, but in acupuncture the channels close to the skin surface are the object of treatment and the left-right difference is an important issue. The abdominal diagnosis that follows can augment this shortcoming of pulse diagnosis.

2. Abdominal Diagnosis

Among the variety of diagnostic approaches used in acupuncture, methods of classifying findings from a palpatory examination of the abdomen have been recorded in the classics of Chinese medicine. The diagnostic points for each channel on the anterior aspect of the body are designated as front Mu points. The lungs, large intestine, spleen, liver, gallbladder, and kidney channels all have bilateral Mu points. The heart, stomach, triple heater, small intestine, and bladder channels all have a single Mu point on the anterior median line. The classical texts do not list a Mu point for the pericardium channel, but more recently CV-17 has come to be regarded as the pericardium Mu point. I have made the following observations concerning the front Mu points in my clinical studies:

- (a) The traditional Mu points do not always provide a means of diagnosing the channels on the right and left sides.
- (b) I examined the relationship of Mu points or their corresponding channels by seeing whether stimulating the source point with the ion beam device reduced the pressure sensitivity at the Mu point of the same channel. Through this experiment, I found that many of the Mu points were not as closely associated with the channels as described in the classics. For example, when there is tenderness at ST-25, the large intestine Mu point, stimulation of LI-4 does not decrease sensitivity. However, stimulation of TH-4 does reduce the sensitivity. Thus, it is more practical to designate ST-25 as the triple heater Mu point.
- (c) There is no explanation of why the kidney Mu point (GB-25) is the only Mu point not located on the anterior aspect.

- (d) Having investigated these matter, I arrived at a new configuration of diagnostic points on the abdomen that I propose to be the most practical for clinical purposes (see Figure 2).

(I do not mean to belittle the importance of the traditional Mu points. I have found that the traditional Mu points have a direct relationship to the channels as described in the classics when the body is positioned in such a way as to stretch that particular channel. For example, if a person has tenderness at ST-25 in a position with the arms outstretched to affect the large intestine channel, stimulation of LI-4 with the ion beam device serves to reduce sensitivity at ST-25. With the patient in a supine position, however, the traditional Mu points do not retain this relationship.)

The following are the basic procedures and principles for examining the abdomen:

The patient should lie supine on the table with the knees straight. All accessories such as necklaces, earrings, watches, bracelets and rings must be removed in advance. All the limbs must be completely relaxed so as not to stretch or affect certain channels.

Abdominal diagnosis is often difficult and unreliable for patients who are overweight, very depleted, or heavily medicated (especially with psychotropic agents). Also, if the person palpating the abdomen is electrically grounded, the pressure sensitivity of the patient is not as marked.

The diagnostic approach in Oriental medicine known as abdominal diagnosis, which is applied especially in acupuncture, is not directly concerned with the pathology of internal organs as in Western medicine. It is, however, a very useful tool for assessing the body's energetic state, or the status of the X-signal system.

The following features of the abdomen should be taken into account when examining the abdomen to assess the energetic condition:

- a. The condition of the skin (the thickness, texture, colour, lustre, and presence of pigmentation)
- b. The condition of subcutaneous tissues (fatty deposits, oedema, and sensitivity to light pinching)
- c. The condition of muscle tissue (resiliency, hardness, and pressure sensitivity)
- d. Comparison of the reactions in quadrants of the abdomen (the four section of the abdomen created by drawing a vertical and horizontal line through the umbilicus)

The abdomen of a completely healthy individual has a smooth texture and even resiliency and is without pressure sensitive areas. I place special emphasis on the difference in sensitivity in points lying in the quadrants of top right, top left, bottom right and bottom left. The most effective way to reduce the pressure sensitivity at the tender points is to stimulate the channel in a yin-yang interior-exterior relationship (e.g., the lung and large intestine channels), the channel in a three yin three yang relationship (e.g., the lung and spleen relationship), or the antipodal channel (channel diametrically opposed in the sequence of the circadian cycle of channels (e.g., lung and bladder channels). In my clinical experience *stimulating the channel on the opposite side in terms of the eight octants has proven to be the quickest way for restoring the yin-yang balance and normalizing the condition of the abdomen.*

1. Diagnosis by palpation of the Gastrocnemius Muscle

In 1976, Hiroshi Miyawaki published the book "Rukogyo Setsu ni Yoru Shin Jyutsu" (Acupuncture Treatment Based on the Yin Yang and Six Element Theory). This book suggests an innovative acupuncture system providing a root treatment based on the circadian cycle of the channels. This system was originally developed by Osamu Honda from Asahikawa City in Japan, who himself was inspired by my work. This

system of acupuncture utilizes the palpation of pressure sensitivity in six areas on the gastrocnemius muscle as one diagnostic reference (see Figure 3.) In this system each area on the dorsal aspect of the gastrocnemius muscle corresponds to one pair of antipodal yin and yang channels that are diametrically opposed in the sequence of the circadian cycle of channels. These corresponding pairs of channels are as follows:

- | | |
|--------------------------------|-----------------------------|
| I. Spleen and triple heater | IV. Stomach and pericardium |
| II. Kidney and large intestine | V. Bladder and lung |
| III. Liver and small intestine | VI. Gallbladder and heart |

The six areas of the back of the calf are palpated with gentle pressure on both the right and left legs. The channels related to the most sensitive area are indicated for treatment. As a rule, points on the opposite side of the body in relation to the sensitive points are treated. The diagnosis on the six areas on the gastrocnemius muscle usually corresponds to the findings from abdominal palpation and pulse diagnosis. For example, if area III (liver and small intestine) is most sensitive, one often finds sensitivity at LV-14, especially on the right side, and the pulse will be abnormal at the liver position.

Miyawaki uses the Yuan source points and the Luo connecting points of the indicated channel pairs for his treatment, but I recommend the use of their respective supplementation and draining points (see Figure 4). This simple treatment will reduce the reactions on the abdomen, and the vacuous positions of the pulse will improve. Rendering this root treatment often brings relief from pain and we can see how the yin and yang aspects of the body as described in Chinese medicine are energetically interrelated as “vectors,” and represent fundamental polarities inherent in the X-signal system.

My method of polarity treatment to normalize sensitive areas on the gastrocnemius is very simple. It is most convenient to use the ion beam device, although the ion pumping cords can be used for the same effect. If, for example, area III (liver, small intestine) on the left leg were the most sensitive, my method of treatment would be as follows:

- (a) Apply a positive beam to the liver supplementation point (LV-8) on the right and apply a negative beam to the liver draining point (LV-2) on the right.
- (b) Apply a positive beam to the small intestine supplementation point (SI-3) on the right and apply a negative beam to the small intestine draining point (SI-8) on the right.
- (c) Occasionally the polarities in steps a and b need to be reversed to obtain the desired effect, but such a reversal occurs more often in step B.
- (d) The desired effect can usually be obtained by applying the ion beam for about 20 seconds. (More statistical analysis is required to determine the optimal duration of this stimulation.)
- (e) If the ion pumping cord is applied instead, the red clip is attached to a needle in the supplementation point and the black clip is attached to a needle in the corresponding draining point.

Conclusion

In the channel treatment school of Japanese acupuncture, delicate techniques are used to provide subtle stimulation affecting the biological information system. I have given this information system the provisional name of X-signal system. My hypothesis is that this

primitive signal system still exists and is functional in our bodies. The basic features of this system are as follows:

- (1) It reacts to very subtle stimulation.
- (2) It has specific input points and output points.
- (3) It is an interconnected system in which points connect to lines and lines to surfaces so as to form a functional structure that integrates the whole body.
- (4) This integrative structure operates under the holographic mode, which means that the entire structure is reflected in each and every part.

Scholars like Schoffeniels maintain that, during the course of evolution, the Homo Sapiens collectively received and retained a massive amount of information from the environment, and our development, rather than being coincidental as in the Darwinian model, followed a deterministic component. Even though the biological information system for regulating the organism and establishing effective stimulus and response patterns with the environment have become extremely complex in human beings, it does not mean the more primitive information system has disappeared without a trace.

I believe that in a sense the X-signal system is more essential to our biological functions just because it is primitive and more fundamental to us because of its very simplicity. In my investigations I have discovered many phenomenon that indicate the hidden existence of this primitive signal system within the totality of our biological information system, and I have given thought to how this correlates to the traditional practices of acupuncture and moxibustion. I trust that further study on the workings of the X-signal system will lead to new advancements in the traditional therapeutic techniques of acupuncture and moxibustion.