

Hanno: Experimental Investigation of Gyoki Impacting on the Human Heart Rate Variability and the Autonomic Nervous System

Damljanovic V and Faehnle O*

KenKiDan Seiki Dojo, Hauptstrasse 34,9434 Au, Switzerland

Abstract

This paper reports on an analysis of body response processes to empty minded gyoki skin contacting by applying methods from experimental physics. To that aim, measuring techniques are being evaluated testing their applicability to eventually enable an *in situ*, in process monitoring of human body's response processes to gyoki touch, causing self-healing by bio intelligence. Heart Rate Variability (HRV) testing method of the autonomic nervous system has been tested as a measure of body's stress level and its ability to recover. It was demonstrated that HRV testing is capable of measuring differences in body response to gyoki and non-gyoki touch.

Keywords: Gyoki; Seiki; Shiatsu; Bio-intelligence; Resonance; Heart rate variability; Autonomic nervous system; Manual therapy

Abbreviations: Heart Rate Variability (HRV); Autonomic Nervous System (ANS)

Introduction

In contrary to newborn reptiles, mammals are born without any eggshell protection with survival completely depending on parental support, protection and body contact. Hence, touching each other belongs to our most important ways of communicating, supporting and healing. While being in touch with each other, we communicate on a non-cognitive yet direct body level, allowing us to feel one others state of mind and intentions ranging from love to aggression. Therefore, mutual touch initiates communication between two beings enabling the initiation of self-healing processes by bio intelligence without medication.

Consequently, throughout history, various cultures developed independently methods applying human touch for diagnosis and treatment purposes of injured or ill human beings, e.g. the Chinese massage method Tui Na or the Japanese massage method Anma and Shiatsu [1-6]. Originating from the Japanese method of Shiatsu, Seiki is an independent method of treatment that Akinobu Kishi sensei for more than 30 years practiced and constantly evolved until his death and which is continued by his wife Kyoko Kishi sensei ever since [7-9]. Enabling the emergence of self-healing body energy activated by human touch, Seiki brings out the essence of Shiatsu: authentic gyoki touch in absolute presence and easy being (empty minded gyoki contacting the proband with a «breathing hand» [8,9]; to view human nature and all things as they really are. Therefore, Seiki has for all manual therapist and shiatsu students a deeper meaning. While Seiki specialists know exactly how to apply gyoki touch resonancing with patient's body and stimulating self-healing processes, little is known about body processes initiating and controlling self-healing by bio intelligence.

This paper reports on experimental analyses of human touch activated self-healing body energy applying the Hanno design of experiments evaluating infrared screening and HRV testing [10-15].

Research Methodology

Hanno method

Within a current Swiss research project, called "Hanno" (derived from an ancient strategy in Japanese sword fencing), the process of gyoki touch induced self-healing is being analyzed experimentally

focusing on the initial body response while being in resonance with therapists gyoki touch.

To that aim, different measuring technologies are being evaluated to enable the observation of the effects caused by gyoki touch.

The body response to gyoki touch can be distinguished into three sub-processes:

- "Contacting" two bodies by skin contact through a resonancing gyoki touch.
- "Communicating" i.e., the transportation of information from the gyoki contact zone to the injured body parts by using endogenous systems, e.g. lymphes, nerves, blood circulation and Ki energy flow [16].
- "Computing" by initiating self-healing processes at injured body parts.

Within Hanno, evaluation methods of experimental physics are being applied at the KenKiDan Seiki Dojo in Au, Switzerland, relying on deterministic design of experiments to analyze the process window of gyoki initiated healing processes [17,18].

For the evaluation of a certain measuring technology under test, two sets of experiments are being carried out:

- In a first series of tests, a professional seiki therapist is applying gyoki touch to both patients and persons without any health problems;
- In the second series of tests, an ordinary person is touching selected probands generating experimental reference data without gyoki being applied.

The results obtained by both series of experiments are subsequently

*Corresponding author: Oliver Faehnle, KenKiDan Seiki Dojo, Hauptstrasse 34,9434 Au, Switzerland, Tel: +41 79 2634011; E-mail: olifaehnle@gmail.com

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compared to provide objective evidence of the effects caused by gyoki touch.

Hanno testing infrared screening

In a first set of Hanno experiments, a gyoki touch induced rise of local body temperature at injured body parts has been verified experimentally [17]. Infrared screening was used comparing levels of local body temperature before and directly after gyoki contact, which was not applied at the injured body part directly but at another place at probands body [10] (Figures 1-3).

Applied by a professional seiki therapist, gyoki typically causes an increase of about 2 degrees Celsius at injured body parts, whereas no rise in temperature was detected if an ordinary person is applying touch. The detected temperature rise is a strong indication that seiki causes a local increase in blood circulation enabling self-healing.

Hanno Testing Heart Rate Variability (HRV)

Empowered by our heart beating, human's Autonomic Nervous System (ANS) unconsciously controls all vital body functions ranging from blood circulation to organs regulations and information transporting systems such as lymphes, nerves and Ki energy flow [16]. Hence it is no surprise that heartbeat's frequency spectrum and amplitudes are a measure for health, stress level and energy available for regeneration. Therefore, Hanno experiments have been conducted, analyzing heart rate variability (HRV) for its applicability to monitor gyoki impacting on ANS [11-15].

HRV is the physiological phenomenon of variation in the time interval between heartbeats. It is measured by the variation in the beat-to-beat interval dynamics of interactions of the sympathetic and parasympathetic parts of the ANS, thus representing a measure of stress level and the capability to recover [19]. For the Hanno experiments carried out, a commercially available HRV analysis software, called ans-analysis, has been used [20,21].

All illustrated parameters are calculated mathematically based on



Figure 1: Measuring principle applying an infrared camera to monitor probands temperature distribution of the body part under test: in this case the hands of the seiki therapist Mr. Damljanovic.



Figure 2: Patient-a (back pain problems) before gyoki touch featuring 31.30°C in the upper back area.



Figure 3: Patient-a after 2 minutes of gyoki contacting, featuring 32.98 °C in the upper back area: An increase of 1.7°C body temperature.

the heart rate variability; and the applied mathematics formulas were standardized in 1996 by an American and European task force [22]. Figure 4 shows a typical HRV measurement result conducted by the ans-analysis software. Next to the resting pulse rate (HR), the measured values of the sympathetic nervous system (SI) is displayed representing stress level. On the right side the value of the parasympathetic nervous system (RMSSD) is shown higher values indicate an increased parasympathetic nervous system activity and thus a higher ability for self-regulation. Hanno tests were carried out in two series of experiments applying ans-analysis equipment and software. All tests were conducted in the KenKiDan Seiki Dojo, Au, Switzerland. Various patients and probands were tested.

Prior to testing, patients and probands were sitting in a quiet situation for about 10 minutes without any disturbance and without measuring HRV. Subsequently, two HRV measurements were conducted: first the initial situation was documented without touching the test person. Afterwards proband was touched for about 1 minute and then again HRV was measured. Both HRV measurements were performed within about 10 minutes time and analyzed using the ans-analysis software tool. In a first series of experiments, patients suffering from rheumatism and sciatic pain syndrome have been treated by professional gyoki touch.

If gyoki touch is being applied by a professional Seiki therapist, gyoki touch causes the body stress index (SI) to decrease and at the same time patient's capability for regulation (RMSSD) to increase. In the following, two representative examples are given. With heart frequency staying almost at the same level, gyoki touch reduced the stress level of patient-b, suffering from rheumatism, by 85% (from 394.7 to 58.5). At the same time his ability to self-regulation increased by 4.2% (from 13.7 up to 14.3) (Figure 5).

Figure 6 shows the result of professional gyoki touch being applied to patient-c, suffering from a sciatic pain syndrome. In this case, two subsequent gyoki treatments have been applied. The first one within 10 minutes after recording the starting situation and subsequently a second gyoki touch after 6 days, demonstrating that gyoki touch generates longer lasting improvements. Patient-c's stress level was reduced by 79.5% (from 281.9 to 57.8). At the same time her ability to self-regulation increased slightly by 6.6% (from 12 up to 12.8). Please note that the heart frequency remained at the same level while the first two measurements were conducted (which were recorded within 10 minutes) while it dropped to a lower level after 6 days when the final gyoki touch was applied.

In a second series of experiments, healthy probands have been exposed to a series of touches carried out by both a professional Seiki therapist applying gyoki and by an ordinary person applying a non-gyoki touch. Various experiments have been conducted; in the following two representative examples are presented.

Proband-O was firstly touched by an ordinary person. This caused the stress level to decrease by 79.5% (from 170.9 to 35.3) while his ability to self-regulation decreased as well by 24.1% (from 23.2 to 17.6). Subsequently, a professional Seiki therapist applied a gyoki touch. This caused the stress level to decrease further by another 55.8% (from 35.3 to 15.6); this time, his ability to self-regulation increased by 32.5% (from 17.6 to 26.1). The results are summarized in Figure 7.

Vice versa, proband-M was firstly touched by Mr. Damljanovic applying professional gyoki and subsequently by an ordinary person (proband-d) with a non-gyoki touch.

The first gyoki touch caused the stress level to decrease by 83.5% (from 67.1 to 11.1) while his ability to self-regulation increased by 34.6% (from 24.5 to 37.5). Subsequently, an ordinary person, touched proband-M causing his stress level to increase by 51.5% (from 11.1 to 22.9) and his ability to self-regulation to decrease by 47.2% (from 37.5 to 19.8). The results are summarized in Figure 8. Please note that all

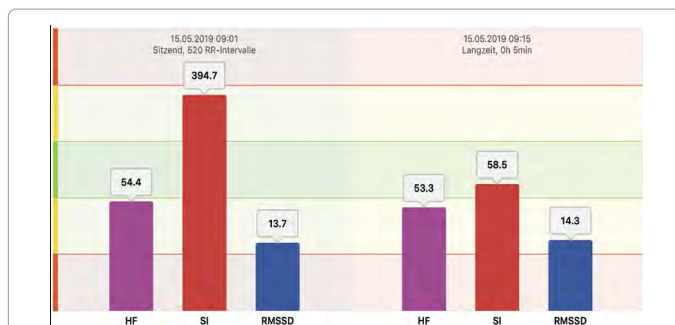


Figure 5: Applying gyoki to patient-b, suffering from rheumatism. SI reduced by 85% (from 394.7 to 58.5) and at the same time his ability to self-regulate increased by 4.2% (from 13.7 up to 14.3). Please note that both measurements were recorded within 14 minutes time.

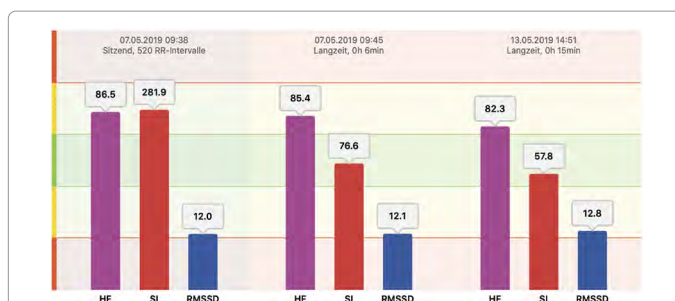


Figure 6: Applying gyoki to patient-c, suffering from a sciatic pain syndrome. SI level was reduced by 79.5% (from 281.9 to 57.8). At the same time her ability to self-regulation increased by 6.6% (from 12 up to 12.8). Please note that after both gyoki touch, SI decreased and RMSSD increased.

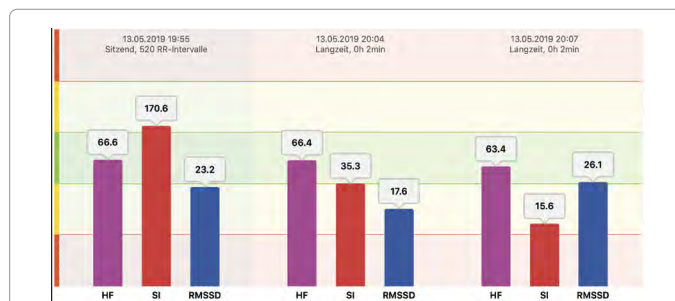


Figure 7: Proband-O was firstly touched by an ordinary person. This caused the stress level to decrease by 79.5% (from 170.9 to 35.3) while his ability to self-regulation decreased as well by 24.1% (from 23.2 to 17.6). Subsequently, a professional Seiki therapist applied a gyoki touch. This caused the stress level to decrease further by another 55.8% (from 35.3 to 15.6); this time, his ability to self-regulation increased by 32.5% (from 17.6 to 26.1). Please note that all three tests were conducted within 20 minutes time with heart frequency slightly decreasing (4.8%).

three tests were conducted within 12 minutes time with heart frequency slightly increasing (2.6%).

Results and Discussion

This paper reports on progress of a swiss research project called Hanno within which the body response processes to gyoki are under investigation. Hereby, body response to gyoki are being distinguished into three sub-processes: "contacting" (two bodies by skin contact through a resonancing gyoki touch), "communicating" (i.e. the transportation of information from the gyoki contact zone to the injured body parts by using endogenous systems, e.g. lymphes, nerves,

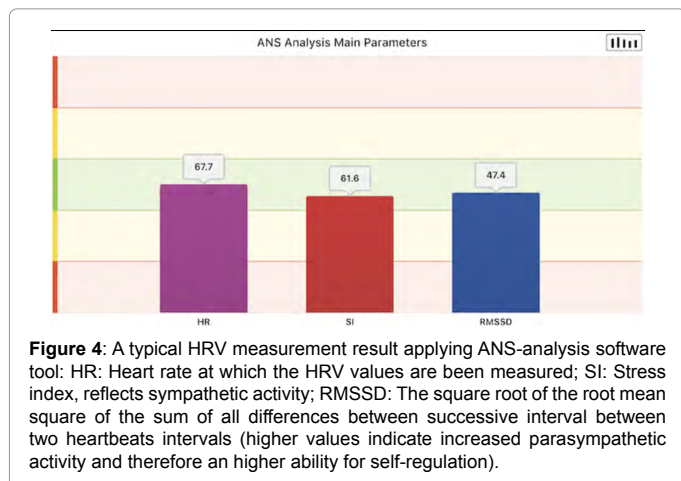


Figure 4: A typical HRV measurement result applying ANS-analysis software tool: HR: Heart rate at which the HRV values are been measured; SI: Stress index, reflects sympathetic activity; RMSSD: The square root of the root mean square of the sum of all differences between successive interval between two heartbeats intervals (higher values indicate increased parasympathetic activity and therefore an higher ability for self-regulation).

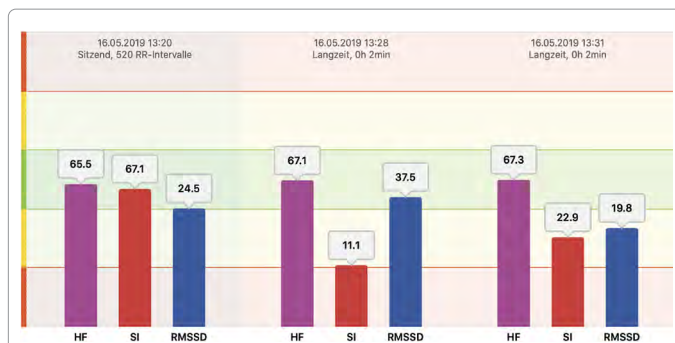


Figure 8: The first gyoki touch caused the stress level to decrease by 83.5 % (from 67.1 to 11.1) while his ability to self-regulation increased by 34.6% (from 24.5 to 37.5). Subsequently, an ordinary person touched proband-M causing his stress level to increase by 51.5 % (from 11.1 to 22.9) and his ability to self-regulation to decrease by 47.2% (from 37.5 to 19.8).

blood circulation and Ki energy flow) and “computing” (initiating self-healing processes at injured body parts).

Along that trail, methods from experimental physics are being applied to analyze the differences in body reactions to gyoki touch in comparison to ordinary touch. To that aim, various measuring techniques are being evaluated testing their applicability to eventually enable an *in situ*, in process monitoring of human body’s response processes to gyoki touch, causing self-healing by bio intelligence.

In a first set of experiments, we presented evidence for the rise of local body temperature at injured body parts induced by human gyoki touch. Subsequently, Hanno method was applied to analyze the heart rate variability (HRV) testing method of the autonomic nervous system as a measure of body’s stress level and its ability to recover, i.e., to start self-healing processes. It was demonstrated that HRV testing is capable of measuring differences in body response to gyoki and non-gyoki touch. While both cause humans’ stress levels to decrease, only gyoki can cause a substantially increase in body’s ability to recover. From the Hanno experiments conducted so far, there is a strong indication that gyoki has a significantly greater impact on the ability to recover in healthy probands (typically >30%) than in ill ones (typically >5%). This can probably be attributed to the fact that sick bodies are already burdened with healing processes.

Conclusion

In conclusion, within the Hanno project significant evidence in gyoki initiating and supporting self-healing processes have been found. So far, two testing techniques have been identified: HRV testing capable of monitoring gyoki touch impacting on the autonomic nervous system, and infrared screening sensing the initiation of self-healing processes at injured body parts. Progress has been made, which will allow further research into a better understanding of the functional principles of gyoki touch, where mutual contact between therapist and patient directly initiates and supports self-healing processes and merges lightness, stability and pain regulation into a greater whole.

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