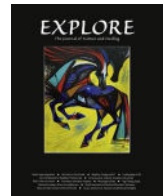


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Original Articles

An exploratory investigation of human biofield responses to encountering a sacred object

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ABSTRACT

Context: While advances in the Western sciences have increased our understanding of the human biofield, few studies have examined the potential effects of sacred objects on its functioning.**Design and study participants:** This exploratory study examined the effects of a sacred object called the Sri Yantra / Durga Stone on the human biofield. Twelve women and five men were studied on three separate occasions using the Bio-Well device, which purportedly measures aspects of the biofield: baseline (the day before exposure to the sacred object), pre-exposure (immediately prior to exposure to the sacred object), and post-exposure (immediately following exposure to the sacred object). A set of *a priori* hypotheses examined outcome effects on a set of variables, including multiple physiological systems.**Results:** The overall Bio-Well energy state (Bio-Well variables are in units of joules) was significantly changed following exposure to the sacred object ($p = 0.001$). In addition, the cardiovascular, endocrine, musculoskeletal, digestive, urinogenital, and immune system readings showed significant changes (p 's < 0.003) while the nervous and respiratory system assessments were unchanged. Chakra (defined as a center of vital prana) energy was changed following exposure to the stone ($p = 0.001$), while chakra alignment was not ($p = 0.145$).**Conclusions:** The findings from this exploratory study suggest that short-term human exposure to this particular sacred object had significant effects on aspects of the human biofield.

Background

The human biofield

In the Western sciences, the human biofield is gaining increased attention for its potential role in creating and maintaining health and wellbeing.¹⁻⁹ As our understanding of the biofield has evolved over the years, there have been different definitions to describe it. For the purposes of this study, the biofield is considered “an organizing principle for the dynamic information flow that regulates biological function and homeostasis.”^{1,5,7,8,10} Biofield interactions are said to organize spatio-temporal biological processes across hierarchical levels, from the sub-atomic, atomic, molecular, cellular and organismic. As such, biofield

interactions may have the ability to influence a variety of biological pathways, including biochemical, neurological and cellular related to electromagnetism, correlated quantum information flow, and perhaps other yet to be identified means for modulating activity and information flow across hierarchical levels of biology.”^{10,11}

Measuring the human biofield

Identifying instruments that validly and reliably assess the biofield has been a considerable challenge yet of fundamental importance to studying the biofield, with research teams having reviewed a vast array of such devices.¹¹ Such devices include those using gas discharge visualization, electrophotonic imaging, biophoton emission, laser therapy,

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infrared thermography, static magnetic fields, pulsed EMF therapies, EMF-light, electrical current, vibration and sound, physical and mechanical, and gas and plasma.¹¹ More recent efforts in this regard include calls for these technologies to better understand how disturbances or lack of coherence in biofield energy patterns can be indications of disease and aging, as well as health and wellness.¹²

The bio-well device

The Bio-Well is a second generation electrophotonic imaging (EPI) gas discharge visualization (GDV) device based on the Kirlian effect and utilizes modern optics, electronics, and computer processing for analyzing weak photon emission stimulated by a pulsed electromagnetic current.^{13,11} The Kirlian effect is based on photographic techniques used to capture the phenomenon of electrical glow, called coronal discharge. It is named after Semyon and Valentina Kirlian, who in the 1930s discovered that if an object placed on a photographic plate is submitted to a high intensity electromagnetic field, usually created by placing a high voltage metal plate under the photographic plate, an image of the glow around the object (a corona discharge) is captured on the photographic plate.¹⁴ Bio-Well devices are used in approximately 63 countries around the world, including in Russia where it has a Certificate of Conformance as a medical device. Bioelectrographic techniques have been used in integrative medicine and in a broader range of scientific applications.¹⁵⁻¹⁷ One of the objectives of the Bio-Well instrument is to identify the functional psycho-emotional and physiological state of a person.¹⁸

The Bio-Well device purportedly measures aspects of the human biofield by quantifying the weak photon emissions which are stimulated by the pulsed electromagnetic current at the fingertips where the meridians terminate.^{19,20} It uses the Korean Su-Jok hand system and the Chinese Jing-Well point system to map the quantified photon emissions from the fingertips to the body's primary organ systems. Analysis of the electro-photonic emissions is based on the intensity, fractality, and area of the captured finger-tip images called Bio-Grams. The image of each finger is divided into sectors corresponding to tissues, organ and body systems, having a start sector and an end sector as reference points, which have been defined based upon research by Peter Mandel and Dr. Korotkov.²¹ Bio-Well variables are in units of joules.

There have been a few studies using the Bio-Well device in western medicine. Gagua et al., for example, used the Bio-Well device to track the effects of complex oncological treatment including surgery, chemotherapy and irradiation.²² A more recent study used the Bio-Well device to understand the potential benefits of an education program that included yoga practices as a lifestyle for physiological well-being in children.¹³

Factors known to affect the human biofield

Biofield therapies (such as Reiki, Pranic Healing, Healing Touch, and Biofield Tuning) are complementary medicine modalities that are often utilized by practitioners to affect the biofield for healing. Studies have examined the effects of these modalities on illnesses such as cancer and chronic fatigue,^{2,23-25} however, while conducted in the context of influencing the biofield, such studies have not routinely actually measured the biofield.

Healing environments and sacred spaces and sacred objects

There is a long tradition of people taking pilgrimages to special environments and so-called sacred spaces for healing.²⁶⁻²⁹ The mythologist Joseph Campbell stated "The idea of a sacred [place] where the walls and laws of the temporal world dissolve to reveal wonder is apparently as old as the human race."³⁰ Research by Govinda DeCastro suggests certain characteristics make up a sacred space, namely approach, threshold, proportion, sound vibration, light and shadow,

color, memory, connection with nature, and the full engagement of the senses.³¹

Today, there are many types of approaches to encountering a sacred space, including forest bathing, crop circles, ancient sites, pilgrimages, vortices, and relics. Forest bathing as an example is the subject of continuing scientific research.²⁸ These studies suggest positive effects on psychosocial health, as well as physical health and immunity.³²⁻³⁴ Relevant to this study, these studies show favorable effects to reduce stress and improve how the nervous system is functioning, including heart rate variability.³⁵⁻³⁷ Certain architectural spaces too have been understood to provide forms of healing.^{26,38} Stone circles too have a long history of producing health related phenomena with a very significant spectrum of effects on individuals.³⁰

What about more modern settings and the potential to positively affect human health and wellbeing? There have been efforts to design spaces to enhance their therapeutic potential. In their book, *Therapeutic Landscapes: An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces*, Marcus and Sachs describe the effects of garden and nature views on people at healthcare facilities.³⁹ In a literature review of more than 400 peer-reviewed articles on evidence-based healthcare design, Roger Ulrich et al.⁴⁰ reported relationships between design strategies or environmental interventions and healthcare outcomes. In two categories – reduced pain and reduced patient stress – 'especially strong evidence' was found indicating a link between access to nature and health outcomes. Research also indicates a link between access to nature and reduced depression, reduced length of stay, increased patient satisfaction, decreased staff stress, and increased satisfaction.⁴¹

So called "sacred objects" can be found within a sacred space or independent of such spaces. An excellent source on this topic is Alexandra Walsham's "Introduction: Relics and Remains", which is a collection of essays by historians, anthropologists, archeologists and scholars of religion considering relics in a broad comparative and chronological perspective ranging from antiquity to the modern day and including Europe, Africa, Latin America and China.⁴²

For this study, we used a sacred object called the Sri Yantra / Durga Stone. The name "Durga" means the invincible in Sanskrit. Durga is considered a goddess of strength and justice who brings compassion, peace, calm and order to the chaos, destruction, and conflict in any situation.⁴³ The stone contains within it a form of sacred geometry called a Sri Yantra.⁴⁴ A Sri Yantra, sometimes spelled Shri Yantra, or Shri Chakra, is a form of geometry commonly used in Hinduism and Jainism.⁴⁵⁻⁴⁸ Like mantras, there is an ancient tradition of using yantras for healing.⁴⁸ A yantra consists of nine interlocking triangles that surround a central point known as a bindu. The triangles represent the cosmos and the human body. In Vastu, a Vedic system of sacred geomancy and space, yantras are used to bring harmony, healing and balance to homes, buildings, land and sometimes are worn by an individual on an as needed basis if a person so going through a challenging time.⁴⁹

Summary

While scientific research has been conducted at a number of sacred sites and with sacred objects around the world, and there have been examinations of how these sites affect human health and well-being, few studies have included examination of the human biofield in the context of the phenomenon. The current exploratory study examined this phenomenon using a device that purportedly assesses aspects of the human biofield and using a standardized pre-post scientific design.

Methodology

Study site

The study site was on the grounds of the Sripuram, Sri Narayani

Golden Temple in Vellore, India, approximately 145 km West of the large city of Chennai. At the Temple, the Durga Stone is constructed with a Sri Yantra incorporated into the top of it, which stands approximately 4 feet tall. According to the Temple, this particular Sri Yantra / Durga Stone “was energized by extensive and intensive prayer ceremonies” initially over a period of months and since then continuously over the past approximately 8 years. The intention is that anyone encountering the object will experience beneficial effects. The Sri Yantra / Durga Stone is considered a sacred object that is enshrined in the larger Temple site.

During visits to the ashram, people regularly approach and encounter the Sri Yantra / Durga Stone. This is accomplished by the person putting a single hand on top of the stone and holding it there for several minutes. At this particular ashram, the sacred object resides near the center of the property and is available for all visitors to encounter it. Signage next to the Durga Stone provides a mantra of “Om Mahadeviyay Sharanam” (I surrender to the Supreme Mother) and it is suggested that people quietly recite it while having their hand on the stone, although it is optional to do so.

Study population

Twelve women and five men ages 38 to 79 who had traveled to the temple and who were willing to participate in the study were enrolled. All study activities were approved and overseen by the Institutional Review Board (IRB) at the Institute of Noetic Sciences (<https://noetic.org/>) (IORG#0003743). All study participants signed an informed consent document before participating in the study.

Intervention design

Bio-Well assessment data were collected at three timepoints: (1) baseline, collected on the temple grounds but away from the sacred object the day before study participants encountered the object, (2) pre-sacred object, collected approximately 5 min before encountering the object, (3) post-sacred object, collected within approximately 5 min after encountering the object. Per the description of the Bio-Well device in the Introduction, all assessments were conducted by having study participants sequentially place each of their ten fingers into the Bio-Well device, thus capturing respective images that corresponded to the map of the body’s primary organ systems.

For each assessment the study participant was seated. At the sacred site, for assessments, the Bio-Well was positioned approximately 15 feet away from the Shi Yantra / Durga Stone. Each study participant approached, and while remaining standing, put a hand on the Shi Yantra / Durga Stone for up to 3 min. Study participants were not instructed to recite the previously described mantra or not, nor to maintain any particular state of mind or to recite prayers or not. There was no control condition as all study participants were part of the active intervention.

Data analysis

Once obtained, the Bio-Well data was immediately captured on the computer’s hard drive and uploaded to a secure and HIPAA-compliant cloud until subsequent compiling and analysis of the data.

Bio-Well data were initially examined using the SPSS descriptive statistics function which provides means, standard deviations, skewness, and kurtosis, as well as stem-and-leaf and histogram plots (SPSS version 27). These statistics were in the acceptable ranges for proceeding with the analyses.⁵⁰ Given the large number of variables within the Bio-Well organs/systems output, to avoid conducting an excessive number of statistical tests, only the summary organ system variable for each respective system was included in the analyses (Table 1). For example, for the endocrine system, the Bio-well provides quantitative data on the hypothalamus, epiphysis, pituitary gland, thyroid gland, pancreas, spleen, and adrenals (Table 2). For the study, however, only the

summary endocrine system data point was used as dependent variables. The same was done for each of the other system/organ systems examined (Table 2), yielding a total of 14 dependent variables.

Each of these summary variables were tested via separate repeated measures analysis of variance (ANOVA). In order to adjust for these 14 tests and autocorrelation amongst some of the variables, we used the Bonferroni Correction adjustment method as follows: $0.05/14 = 0.003$. Thus, only variables with at least a p value ≤ 0.003 for the ANOVA main effects tests were considered statistically significant. Post-hoc analyses were not conducted on variables not reaching the 0.003 threshold. Post-hoc testing was done at the $p < 0.05$ threshold.

Hypotheses tested

Primary Hypothesis: Emotional pressure readings will decrease, and overall energy and symmetry balance readings will increase following exposure to the sacred object as compared to their initial baseline assessment and pre-sacred object assessment.

Secondary Hypothesis: Organ system readings will show increases in energy following exposure to the sacred object as compared to initial baseline assessment and their pre-sacred object assessment.

Exploratory Hypothesis: Chakra system readings will show increases in energy and alignment following their exposure to the sacred object as compared to initial baseline assessment and pre-sacred object assessment. A chakra is typically defined as a spinning wheel of vital energy or prana, and according to yoga philosophy, is thought to be a confluence of physical and spiritual energy in the human body.^{2,51}

Results

Primary Hypothesis: Emotional Pressure, Energy and L/R Symmetry Balance. The overall Bio-Well energy measure was significantly changed across the 3 assessments ($F(2,32) = 11.34; p < 0.001$). Post-hoc analysis of the estimated marginal means showed that baseline was significantly different from pre-exposure ($p = 0.005$) and post-exposure ($p < 0.001$). Pre-exposure was significantly different from post-exposure ($p = 0.044$). The emotional pressure measure was not significantly changed across the 3 assessments ($F(2,32) = 7.64; p = 0.017$), nor was the L/R symmetry measure ($F(2,32) = 2.038; p = 0.156$) (Table 1).

Secondary Hypothesis: Organ Systems. The head assessment was significantly changed across the 3 assessments ($F(2,32) = 10.608; p = 0.001$). Post-hoc analysis of the estimated marginal means showed that baseline was marginally significantly different from pre-exposure ($p = 0.053$) and significantly different from post-exposure ($p < 0.001$). Pre-exposure was significantly different as compared to post-exposure ($p = 0.045$). The cardiovascular assessment was significantly changed across the 3 assessments ($F(2,32) = 11.441; p < 0.001$). Post-hoc analysis of the estimated marginal means showed that baseline was significantly different from pre-exposure ($p = 0.028$) and post-exposure ($p < 0.001$). Pre-exposure was significantly different as compared to post-exposure ($p = 0.045$) (Table 1).

The endocrine assessment was significantly changed across the 3 assessments ($F(2,32) = 10.34; p = 0.001$). Post-hoc analysis of the estimated marginal means showed that baseline was significantly different from pre-exposure ($p = 0.016$) and significantly different from post-exposure ($p < 0.001$). Pre-exposure was not significantly different as compared to post-exposure ($p = 0.123$). The musculoskeletal assessment was significantly changed across the 3 assessments ($F(2,32) = 7.36, p = 0.003$). Post-hoc analysis of the estimated marginal means showed that baseline was significantly different from pre-exposure ($p = 0.027$) and significantly different from post-exposure ($p = 0.007$). Pre-exposure was not significantly different as compared to post-exposure ($p = 0.072$) (Table 1).

The digestive assessment was significantly changed across the 3 assessments ($F(2,32) = 10.09, p = 0.001$). Post-hoc analysis of the estimated marginal means showed that baseline was significantly different

Table 1
Study variables and outcomes.

Name	Baseline	Pre-Sacred Object	Post-Sacred Object	p value ANOVA	p value Post-hoc
Energy	Emotional Pressure	3.01 (0.672)	3.17 (0.818)	3.96 (0.1.24)	n.s.
	53.78 (4.48)	60.54 (9.42)	66.78 (7.72)	<0.001	*0.005 ** <0.001 ***0.044
	Symmetry	90.18 (3.77)	91.10 (3.38)	88.07 (3.61)	n.s.
Head	4.456 (0.469)	4.987 (0.764)	5.537 (0.660)	0.001	*0.053 **<0.001 ***0.045
Cardiovascular System	4.823 (0.546)	5.446 (0.785)	6.034 (0.719)	<0.001	*0.028 **<0.001 ***0.045
Respiratory System	5.631 (0.668)	6.622 (1.800)	7.552 (1.401)	n.s.	
Endocrine System	4.923 (0.493)	5.648 (0.926)	6.167 (0.764)	0.001	*0.016 **<0.001 ***0.123
Musculoskeletal System	5.104 (0.752)	5.893 (1.097)	6.907 (1.758)	0.003	*0.027 **0.007 ***0.072
Digestive System	5.001 (0.526)	5.987 (1.282)	6.723 (1.096)	0.001	*0.024 **0.001 ***0.133
Urinogenital System	6.037 (1.081)	7.230 (1.710)	8.743 (2.525)	0.002	*0.015 **0.003 ***0.078
Nervous System	4.520 (0.442)	5.071 (1.144)	5.634 (1.042)	n.s.	
Immune System	4.441 (0.569)	4.983 (0.850)	5.314 (0.731)	0.003	*0.059 **0.001 ***0.135
Chakra Energy	5.123 (0.543)	5.931 (1.209)	6.780 (1.066)	0.001	*0.032 **0.001 ***0.066
Chakra Alignment	86.79 (7.179)	85.01 (6.927)	81.75 (7.634)	n.s.	

* Baseline different from Pre-exposure.
** Baseline different from Post-exposure.
*** Pre-exposure different from Post-exposure.
n.s. = not significant.

from pre-exposure ($p = 0.024$) and significantly different from post-exposure ($p < 0.001$). Pre-exposure was not significantly different as compared to post-exposure ($p = 0.133$). The urino-genital assessment was significantly changed across the 3 assessments ($F(2,32) = 8.39, p = 0.002$). Post-hoc analysis of the estimated marginal means showed that baseline was significantly different from pre-exposure ($p = 0.015$) and significantly different from post-exposure ($p < 0.003$). Pre-exposure was not significantly different as compared to post-exposure ($p = 0.078$). The immune assessment was significantly changed across the 3 assessments ($F(2,32) = 7.459, p = 0.003$). Post-hoc analysis of the estimated marginal means showed that baseline was marginally different from pre-exposure ($p = 0.059$) and significantly different from post-exposure ($p < 0.001$). Pre-exposure was not significantly different as compared to post-exposure ($p = 0.135$) (Table 1).

The nervous assessment was not significantly changed across the 3 assessments ($F(2,32) = 5.069; p = 0.015$), nor was the respiratory assessment ($F(2,32) = 8.67; p = 0.012$) (Table 1).

Exploratory Hypothesis: Chakra Energy and Alignment. Chakra energy was significantly changed across the 3 assessments ($F(2,32) = 10.705; p = 0.001$). Post-hoc analysis of the estimated marginal means showed that baseline was significantly different from pre-exposure ($p = 0.032$) as well as post-exposure ($p < 0.001$). Pre-exposure was not significantly different from post-exposure ($p = 0.066$). Chakra alignment was not significantly changed across the 3 assessments ($F(2,32) = 2.17;$

$p = 0.145$) (Table 1).

Discussion

This study examined intervention effects on emotional pressure, energy, and symmetry in response to exposure to the sacred object. The Bio-Well energy output variable is an aggregate of all the energy system measures. This variable was significantly increased, primarily from the initial baseline to the pre-exposure but also showing a marginal increase at post-exposure. The observed increase in energy from an initial 53 to a final measure of 66 was significant in the sense of the usual greater stability across time of that particular variable. The L/R symmetry (balance) variable was not significantly changed. Given that this was a fairly healthy study population, at baseline they already showed an

Table 2
Bio-well organs and systems variable domains.

Bo-Well Output Variables Across Organs and Systems	Summary Variables Which Were Used for the Study
Eyes	Head
Ears, nose, maxillary sinus	
Jaw, Teeth	
Cerebral zone (cortex)	Cardiovascular system
Cardiovascular system	
Heart	
Cerebral zone (vessels)	Respiratory system
Coronary vessels	
Throat, larynx, trachea	
Mammary glands, Respiratory system	Endocrine system
Thorax zone	
Hypothalamus	
Epiphysis	Musculoskeletal system
Pituitary gland	
Thyroid gland	
Pancreas, Spleen	Digestive system
Adrenals	
Spleen, Pancreas	
Spine - cervical zone	Urino-genital system
Spine - thorax zone	
Spine - lumbar zone	
Sacrum	Nervous system
Coccyx, Pelvis minor zone	
Colon - descending	
Colon - sigmoid	Immune System
Rectum	
Blind gut	
Colon - ascending	Chakra Energy
Colon - transverse	
Duodenum	
Ileum	Chakra Alignment
Jejunum	
Liver	
Pancreas, Spleen	Chakra Alignment
Gallbladder	
Appendix	
Abdominal zone	Chakra Alignment
Urino-genital system	
Kidneys	
Nervous system	Chakra Alignment
Immune system	
Muladhara	
Svadhithana	Chakra Alignment
Manipura	
Anahata	
Vishuddha	Chakra Alignment
Ajna	
Sahasrara	
Muladhara	Chakra Alignment
Svadhithana	
Manipura	
Anahata	Chakra Alignment
Vishuddha	
Ajna	
Sahasrara	Chakra Alignment

*Note: units of these variables are percentages or joules or a derivative thereof.

optimal L/R symmetry in the range of 85 to 100 in the Bio-Well scale and therefore did not have much room to increase.

The study also examined potential effects of exposure to the sacred object on different organ systems. The head and cardiovascular systems were significantly elevated post-exposure as compared to immediate pre-exposure. For the head, this could be expected as there was clearly an increased focus on the task at hand. For the cardiovascular system there was an increase across all 3 measures. For several of the other systems, the significant change was from the baseline to the pre-exposure, with no further significant change from pre-exposure to the post-exposure. Some of these systems might have needed a longer exposure in order to activate them. For example, for the endocrine and immune systems, considering the metabolic machinery, more time could have been needed.

The question arises as to why were some of the pre-exposure assessments significantly higher than the baseline measures? This could be because the pre-exposure assessment was taken on the temple site, which itself is considered a sacred site. There is a literature suggesting that visiting a sacred site can have beneficial effects on the mind and/or body,^{26–29} including places like special gardens and outdoor restorative spaces.^{39,40}

Regarding the exploratory hypothesis on the chakras, there is little published literature in this area to put these particular findings in perspective. The analyses revealed that chakra energy was increased in response to the sacred object while chakra alignment was not changed. In contrast to alignment, chakra energy can and does often show more significant temporal effects in response to external or internal experiences.⁵¹ The increase in chakra energy was greater at pre-exposure as compared to baseline, while the immediate post-sacred object exposure was marginally elevated. Chakras are considered to indicate the psycho-spiritual-emotional-energetics of a person.⁵¹

Study limitations

There are several study limitations that need to be acknowledged. The first is that there was no control condition as all study participants were part of the active intervention. It is possible therefore that the effects were in part due to expectation on part of the study participants and not from the sacred object. In addition, there is autocorrelation among some of the Bio-Well variables and for this reason and to correct for multiple comparisons, we used the Bonferroni Correction to be more conservative.

In addition, the duration of exposure to the sacred object may not have been adequate to fully capture its potential effects. Due to the stationed attendant to this sacred site, and per temple policy, each person was allowed only a maximum of 3 min to hold their hand on the object and be in a quiet state of receptivity. Despite this time limitation, we were able to document changes in some body systems. It is possible though that the effects would have been greater with a longer exposure time.

Additionally, while of potential interest, we were not able to obtain a recovery assessment. That is, it would have been of interest to obtain another assessment perhaps several hours after encountering the object to determine how long the effects lasted. Regarding the study's sample size, while it was adequate to conduct statistical testing, overall, the sample was modest in size. Also, while representing a relatively diverse age and sociocultural range, the sample might not be generalizable to a larger population.

Additionally, we did not have control measurements where the site was tested without the presence of any study participants, which could test for potential independent effects of the environment alone. The Bio-Well protocol we utilized, however, could not have examined such potential environmental effects. Another limitation is that we did not obtain data on participants' belief in the phenomenon of sacred objects. We therefore cannot determine the potential effects of belief versus lack of belief on any of these outcomes; effects of belief have been previously

demonstrated with biofield-related treatment effects.²⁴ Also, as previously noted, the protocol at the object was for people to voluntarily repeat the mantra while they had their hand on the stone. We did not control for whether people did or did not repeat the mantra.

Suggestions for future research

For future studies of such objects and sites, it will be important to have a condition to properly control for potential expectation effects.

Additionally, and given likely inter-individual subjective experiences of such objects and sites, an ideal design would permit each study participant to have as much time as they felt was needed to feel complete with their experience.

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