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5th World Scientific Congress of
Combat Sports and Martial Arts
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ABSTRACT BOOK

Wojciech Jan Cynarski, Przemysław Pawelec,
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Rzeszów 2022

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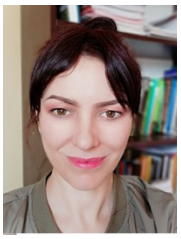
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FOREWORD BY PROF. SYLWESTER CZOPEK
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Ladies and Gentlemen,

Dear Guests of the University of Rzeszów!

I am greatly honored to welcome the Participants of the 11th International IMACSSS Conference and the 5th World Scientific Congress of Combat Sports and Martial Arts. A balanced and harmonious life, where physical exercise meets spiritual development and noble behavior is a value much needed in the modern way of living. Martial Arts have greatly contributed to promoting this attitude. The sport builds bridges between people and cultures through healthy rivalry and mutual respect, which has become extremely important nowadays. Being a host of a scientific event of this scale is an important celebration for the University. My sincere thanks go to the IMACSSS authorities for choosing our university as the host of the Congress, and to all people who contributed to the organization of this undertaking. I hope that Congress will abound in fruitful discussion and interesting presentations. I also hope that your stay in Rzeszów will be a memorable experience, and our university will be remembered as an institution which unites the legacy of the past with openness and modernity.

Professor Sylwester Czopek

Rector of the University of Rzeszów

FOREWORD BY PROF. WOJCIECH CZARNY
DEAN OF THE INSTITUTE OF PHYSICAL CULTURE STUDIES

Ladies and Gentlemen,

Dear Guests of the University of Rzeszów!

The Institute of Physical Culture Studies cooperates with many institutions of sport and tourism, physical culture, and science, in particular with scientific societies, such as IMACSSS (International Martial Arts and Combat Sports Scientific Society) and the Idokan Poland Association. Both specialized associations organize regular scientific events. I am honored to be a member of these organizations, along with some colleagues from our faculty. I am very happy that another world congress is being held here.

The World Scientific Congress of Combat Sports and Martial Arts has been organized in Rzeszów in a four-year cycle since 2006. Thus, it is already the fifth such Congress in our city and in the facilities of the University of Rzeszów. It is, at the same time, the eleventh annual IMACSSS International Conference. IMACSSS is the chief host here. This time the Congress program includes the elections of the General Assembly for the next term of office.

This Congress is connected with the upcoming XXX jubilee of the Idokan Poland Association (IPA). It was the IPA community that initiated the foundation and registration of IMACSSS as a global association. The leader of IPA is Prof. Wojciech J. Cynarski, president and technical director, still active as a practitioning trainer, one of the few holders of high master's degrees in jujutsu and karate. He is to prepare the solemn academy on the occasion of this jubilee which opens our Congress.

The leader of the Japanese Budo Academy, Prof. Kantaro Matsui, is the invited speaker here. Many outstanding specialists and researchers of martial arts and combat sports from around the world take part in the Congress. The previous Congress in Rzeszów in 2018 was the largest scientific conference in the history of the University of Rzeszów, with the participation of 120 researchers from all the continents. This time, over 50 works have been submitted too. There will also be workshops and presentations. Counting all the guests, dozens of reviewers and organizers, there shall be not less participants this time.

I wish all the Participants a fruitful debate, exchange of the latest knowledge, and a pleasant time to spend in the capital of Podkarpacie and during their stay in Poland.

Professor Wojciech Czarny

Director of the IPCS

FOREWORD BY PROF. WOJCIECH J. CYNARSKI
PRESIDENT OF IMACSSS

Dear Colleagues, Ladies and Gentlemen,

Behind us now lies several years of good organised work, integrating society of researchers of fighting arts - martial arts, combat sports and self-defence systems. We held conferences in Europe and Asia. It was Genoa, Italy (2012), Tsukuba, Japan (2013), Rzeszów, Poland (2014), Brno, Czech Rep. (2015), Rio Maior, Portugal (2016), Osaka, Japan (2017, in conjunction with 50 year anniversary of JAB/Japanese Academy of Budo), Rzeszów again (2018, 25 year anniversary of IPA/Idokan Poland Association), Viseu, Portugal (2019), Putrajaya, Malaysia (2020, 10 year anniversary of IMACSSS), and Chongqing, China (2021). This year we meet in Rzeszów, and in the next year (2023) - in Osaka again.

We organise scientific congresses of fighting arts in Rzeszów every four years, which was initiated in 2006 at the initiative of Prof. Kazimierz Obodyński. So it is also the 11th International IMACSSS Conference and the 5th World Scientific Congress of Combat Sports and Martial Arts in Rzeszów. IMACSSS, University of Rzeszów, and IPA cooperate here in the organisation.

We are carrying out a number of joint research projects as well. We are looking forward to continue to hear site proposals to organise the next conference of IMACSSS - in 2024, and in the following years. IMACSSS is also the patron of the quarterly "Ido Movement for Culture. Journal of Martial Arts Anthropology". This Journal is indexed on Web of Science, in Scopus/Scimago index, and some other most important scientific bases.

In total, there are about one hundred participants, i.e. registered for participation and reviewers. There are several dozen people who submitted abstracts of their work. 52 abstracts were assessed by 40 reviewers in the double-blind review system. The papers were classified as oral presentations and poster presentations, and some were rejected. I would like to thank the reviewers from the Scientific Committee and from outside the Scientific Committee for their good work. We also established a special Panel of High-ranking Masters, with the participation of Grand Masters W. Piłat, Z. Sawicki 9 dan, M.N. M. Shapie 9 dan, R.J. Maroteaux 9 dan. Some experts, such as J. Lee-Barron 10 dan and K. R. Kernspecht 10 toan, they couldn't come. We included demonstrations and workshops to emphasize the connection between scientific reflection and practice.

In Rzeszów this year we will choose the leadership for next term. We will also try to make sure another trip to Poland will be both enjoyable and scientifically useful. I am glad that after two years of conferences organised out of necessity in remote mode, we meet here directly. Welcome to our Congress, which I am doing on behalf of the IMACSSS and the Organizing Committee of this Congress.

Professor Wojciech J. Cynarski, President

10 dan of Idokan

KEYNOTE SPEAKER

Prof. Kantaro Matsui

President of IBU – International Budo University, Chiba, Japan

Director of JAB – Japanese Academy of Budo, Tokyo, Japan

Chairman of the general incorporated Association of Budo Culture for the Disabled

Kantaro Matsui has been a professor at International Budo University since 2007, where he assumed the roles of dean in 2015 and vice-president in 2019. His research focuses on budo, a comprehensive system of Japanese martial arts, for the disabled. He runs the Association of Budo Culture for the Disabled, promotes budo to the disabled, and has been involved in the Japanese government's program "Sports for Tomorrow", which promotied 2020 Tokyo Olympic Games and the Paralympic Games. During this, he visited 6 European countries holding lectures for the promotion of Japanese martial arts for the disabled. In the 2020 Yokohama Sport Conference, organized by Science Council of Japan, he coordinated the "Diversity and Inclusion! Session, where he gave a presentation titled "The inclusive nature of Budo, Japanese martial arts" and a symposium titled " Body-mind Coalescence as an Extension of Entities and the Environment ".

Selected publications

books: "BUDO PERSPECTIVE volume ONE" 2005 Kendo World Publications Ltd.
papers: "Budo practice for post-stroke patients – reflections on historical and scientific issues" 2015 Archives of Budo
"An insight into the rule-defining process of Paralympic Karate and its benefits on karate and people with disabilities" 2019 Archives of Budo
"An invitation to Budo for the disabled Is Budo good for the disabled? Is Budo for the disabled good for Budo?" 2018
multiple languages
English version https://blog.canpan.info/kantaro/img/SFT-English.pdf
Polish version https://blog.canpan.info/kantaro/img/Polish.pdf
Hungarian version https://blog.canpan.info/kantaro/img/Hungarian.pdf
Serbian version https://blog.canpan.info/kantaro/img/Brochure20in20Serbian20.pdf
Budo experience
Manager of Karatedo Club at the International Budo University for twenty-five years
Tankendo (短剣道) fifth dan

KEYNOTE SPEECH

Kantaro Matsui

International Budo University, President (Japan)

ANOTHER INVITATION TO BUDO FOR THE DISABLED - JUNCTION OF WESTERN AND EASTERN PHILOSOPHY

Key words: budo, disabled, phenomenology, lemma, Tojisha-Kenkyu

Background. This presentation is based on my activity titled “An invitation to Budo for the disabled – Is Budo good for the disabled? Is Budo for the disabled good for Budo? - “ targeted for Europe, as a part of Japanese government's project "Sports for Tomorrow" which was one of the ways of promoting sports values ahead of the 2020 Tokyo Olympic and Paralympic Games.

An open system for persons with disabilities

Budo（武道）is a comprehensive concept of Japanese traditional martial arts, i.e. judo, kendo, karate, kyudo, etc. Historically, most Budo originate from techniques used in battles to defeat one’s opponent. On the battlefields in ancient Japan, there were no referees to say “Stop!” Even if a samurai sustained an injury that imposed limitations on using his body, he would still have to continue fighting. This origin made Budo an open system for people with disabilities.

Lecture meeting titled ”An invitation to Budo for the disabled”

In the lecture meeting, I discussed the following issues. You can find the links to the brochures in four languages in the description.

1. Is Budo good for people with disabilities?
2. Why is Budo good for the disabled?
2.1. Unconscious learning
2.2. Context
3. Is Budo for the disabled good for Budo?
3.1. People with disabilities encourage us to find new coaching methods
3.2. The disabled encourage us to be innovative coaches
3.3. The disabled make us act as true martial artists

The starting point for my discussion was the limitation of my research, which I conducted to obtain scientific evidence that Budo training effectively improves physical activity in people with disabilities. In this experiment, I found six participants who had strokes. The number of participants was tiny, so I conducted a single case study. The tests included four kinds of motor tests. From these tests, we were able to obtain scientific evidence. The data clearly showed that, in general, Budo rehabilitation effectively delivered quantitative improvements [Matsui *et al.* 2015].

However, Budo training and physical therapy rehabilitation have similar movements. My experiment doesn’t answer why Budo training gives the disabled such good results or what part of Budo training is effective.

On the other hand, we didn't only have the motor tests, but also a few self-reported tests and interviews with the participants. And we found that not only could the patients perform daily life tasks better due to Budo rehabilitation, but they also showed less fear, more self-efficacy, and a healthier self-image. The interviews suggested that Budo-based rehabilitation is qualitatively different from other forms of rehabilitation. I hypothesized that the mindset change from “I am disabled who has to have rehabilitation” to “I will be a Samurai or Jedi” makes a big difference.

However, such a hypothesis lacks objectivity and generality, and even if it disguises itself as science, can it not be recognized as "genuine" research?

Mind-body dualism vs. Body-mind monism

Since Descartes divided the body as an object and the mind as a spirit by dualism, we have been taught that qualitative data are irreproducible, unreliable, and defy scientific scrutiny. On the other hand, Budo was built on the Body-mind monism, 身心一如. As a Budo practitioner, I am torn between two basic ideas.

We have built natural science on the premise that the Logos logic, which consists of the law of identity, the law of non-consistency, and the law of excluded middle, is correct. However, there is not just the Logos logic but also the Lemma logic (eastern philosophy), which abolishes the law of excluded middle. Logos logic developed disciplines, such as medical science, not because the dualism was correct. It was just useful in deriving the practical results of medicine. From the point of view of eastern philosophy, western logic is a theory that is valid only in a limited place, and it seems that the entirety of the world cannot be understood in terms of that theory [Kioka 2014]. However, Eastern philosophy, from the perspective of Western logic, is full of contradictions and tautology and seems wrong or says nothing. But it's not that one is wrong, rather they are complementary.

Junction of Western and Eastern Philosophy

This can be understood not as a conflict between the Western and the Eastern theory but as a conflict between a frame made by Descartes in the 17th century and a frame made by Husserl in the 20th.

The reason why Husserl launched such phenomenology is that if everything can be broken down into elements and explained by logic, there must be something that was overlooked. To capture that territory, phenomenologists stopped their judgment, reduced it to transcendental subjectivity, and tried to capture the world beyond the boundaries of object and subject, centered on directivity. A phenomenologist examines how experience is gained, rather than examining whether the object of the experience exists or not, whether it is right or wrong, and so on.

The Tohjisha-kenkyu (当事者研究 which translates to research done by the person concerned with the issue) is a phenomenological activity started in a Japanese facility for mentally disabled persons. It is an activity in which people with disabilities analyze themselves and gain their independence while being supported by peers with whom they can share their physical experiences [Ishihara 2013]. This is a common practice in martial arts courses. The University of Tokyo established The Tohjisha-kenkyu Laboratory in The Research Center for Advanced Science and Technology in 2015. Its research targets are not limited to people with disabilities but also athletes, astronauts, and so on.

Conclusion. It doesn't matter which method is the correct one, phenomenological or scientific because both are complementary when it comes to research. At the very end of my lecture meeting titled” An invitation on Budo for the disabled”, I always emphasized

that subjective data is an important factor and that we should not be satisfied with the numbers on the Excel files. A few years ago, I believed that getting subjective data will be a preparation for the future in which we will possess scientific technology for objective verification. But now, I've come to think that subjective data is important for phenomenological verification. The field of Budo for the disabled is a suitable field for effectively using these two methods together.

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ABSTRACTS
(IN ALPHABETICAL ORDER ACCORDING TO NAMES OF GRAND MASTERS IN THE CONGRESS)

Volodymyr Pilat[1(ABDEF)], Eliasz Sidoruk[2(ABDEF)], Michał Kurak[2(ABDEF)]

[1] International Federation of Boiovyi Hopak (Ukraine)
[2] International Federation of Boiovyi Hopak (Poland)
A-Study Design, B-Data Collection, D-Data Interpretation, E-Manuscript Preparation, F-Literature Search

MASTER VOLODYMYR S. PILAT - ORGANIZER OF THE REVIVAL OF THE COSSACK MARTIAL ARTAND HIS LIFE'S WORK - BOIOVYI HOPAK.

Key words: Pilat, Boiovyi Hopak, martial arts, the way

Raised in Cossack traditions and the warrior's spirit, Master Volodymyr Pilat revived a long-forgotten upbringing and personality improvement system. Having achieved his greatest in karate, he opened an experimental school of Cossack martial arts. Despite severe repression from the authorities, numerous attempts at fatal poisoning of him and his students, and attempts to destroy any material documenting the true nature of Hopak, the Master has been developing the school of Boiovyi Hopak for over 35 years.

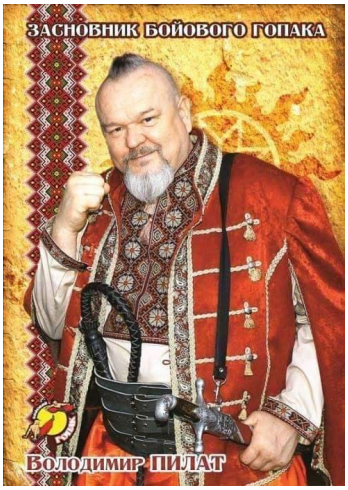

Photo 1. Volodymyr Pilat, Founder of Boiovyi Hopak

A Hopak focused on lifelong improvement. Hopak practitioners can realize themselves in three directions of personality development - warriors of body, mind, and spirit. The school's philosophy defines the Hopak practitioner as a 'Knight of Light, Truth, Good and Love,' directing students to guard these virtues through the comprehensive refinement of body, mind, and spirit.

The teachings provide 7 degrees of progression divided into discipleship, transition, and mastery. The four directions of development - Health, Artistic, Sports, and Combat - consider the capabilities of people of all ages and health conditions.

Photo 2. Family Coat of Arms of Pilates, "New", "News" or "Golden Leg", awarded in 1121.

Volodymyr S. Pilat - a master of martial arts, having achieved the highest skill levels in traditional styles, decided to revive the long-forgotten Cossack system of education and personality improvement - the Boiovyi Hopak. During the Soviet occupation of Ukraine, when free martial arts training was forbidden, Master Volodymyr Pilat secretly recreated the forgotten Cossack martial art. It was a quest to learn about his

history and roots, which the occupiers had systematically destroyed. After 300 years of repression and destruction of the Cossacks, their fighting techniques, knowledge, and system of upbringing have finally become widely available. The basis for founding such a comprehensive system as the Boiovyi Hopak was a combination of family upbringing, ancestral Cossack knowledge, his own martial arts experience, a great deal of research work and last but not least the strength of character and toughness of spirit Master Pilat forged in the struggle for ideas and life.

Volodymyr Pilat was brought up in a descendant Cossack family [Okolski 1641], where there had been a strong belief in the need to fight crime for generations. Therefore, he could not imagine situations where people learned martial arts to create evil. Given his family traditions, his father's service in the police force, and his great desire to do good, it is unsurprising that the Master dedicated himself to self-improve from an early age.

When, after a few years of gymnastics and wrestling, at the age of 13, the Master found himself in the karate section, he was already aware of his path, where he was going, and what his goal was. His first karate teacher introduced him to the samurai code of bushido, which also directed martial arts into the framework of defending truth, the value of good, fighting crime, and serving in the army.

All the above context was only a part of the Master's motivation, as the main reason was to use the knowledge he received to defend the nation and the country occupied at that time by the soviets.

In the 1970s, there was no division into weight categories in karate. So in fights, V. Pilat had to cope with various opponents, especially during the black belt exam. That time it included the circular system - 30 minutes of duels in which every 60 seconds, there was a change of opponents (full-contact). During training, the Master used additional weights, usually 26 kg in total (3 kg on the hands, 10 kg belt, and other 5kg weights on each leg) - a such practice allowed him to achieve an advantage in duels. He practiced for about 7-8 hours a day. Between training sessions, he read a lot, having amassed an entire library that would contain around 10,000 books today. The Master learned various martial arts and sports. At 190 cm tall and weighing 96-100 kg, it was difficult to find worthy opponents, hence the trips to Moldova, the Caucasus, the Baltic states, and Russia in search of sparing practice opportunities. There was only one goal - to achieve the best possible result. Later it was confirmed by measurements of punching power: right leg - 1500 kg, left leg - 1200 kg, right hand - 800 kg, left hand - 700 kg, taken at the Department of Physical Education of the Lviv State Institute of Physical Culture.

At the same time as he practiced karate, V. Pilat was learning knife fighting. Motivation and the desire to win yielded great results. At that time, sports duels were forbidden or carried out inside the special services – within KGB structures. A lot of duels were organized unofficially, so in the 1980s, the Master often took part in fights without rules to test his abilities.

The tangible effects and practice of martial arts were usable in real-life situations, so the Master was repeatedly attached to a task force on particularly dangerous criminals. During such operations, he repeatedly apprehended criminals with knives or firearms. The reputation and respect among the structures that Pilate trained also saved him during the karate trainer mass arrests organized by the KGB in the 1980s, after the legalization of martial art in 1978 [Zhykov 1979]. It is worth remembering that V. Pilat started training karate illegally back in 1968.

In addition to martial arts, the Master simultaneously developed spiritually. At 12, the young Volodymyr was found by a Raja Yoga teacher who suggested that he attend meditation classes. Since then, the Master has excelled in spiritual practices and studied various philosophical and religious currents.

In the 1980s, as a veteran karate practitioner, as a respected sensei with a huge school (headed by additional five trainers), after so many years of hard work, the Master was faced with the choice of dropping everything and taking up the revival of the Cossack martial art [Pilat, Prystupa 1991], which is known today as Boiovyi Hopak. One confirmation of the direction he had chosen was the blessing he received from Sathya Sai Baba in 1983 to develop Hopak. The Master took lessons from Sant Thakar Singh, which ultimately confirmed the Master's eternal idea that the task of the warriors of light is to bring order to the planet and secure a dignified life for the people. In "Hopak code of knightly honor," V. Pilat described the types of warriors [2004], their path, and their motivations. He emphasized that the combat technique should only be uncovered for people fighting against evil.

Volodymyr Pilat ran a karate school until 1986 and the Boiovyi Hopak section since 1985. Unfortunately, with the development of Hopak, repression by the Russian services also began. The KGB repeatedly summoned the Master for interviews with threats to make the Master stop developing the Cossack martial art. From the Hopak story's beginning, the Russian services tried to destroy the sections and the Master's social status. Each subsequent book publication was associated with increased oppression. A few days after publishing the first book on Hopak in 1991, the Master's flat burned down in unexplained circumstances with practically the entire edition of the books. Assassination attempts on the life of the Master and his trainers were also repeatedly organized. In 1998-99, four shots were organized to fatally poison the Master (he miraculously remained alive thanks to his strong body). Despite many attempts and obstacles, the Master held daily Hopak classes in 6 sections.

From the beginning of Hopak's development, V. Pilat knew that in Hopak, he had to, analogous to karate, acquire the highest possible level of skills and knowledge. To this end, he learned the science of character, apitherapy, massage, and herbal medicine. In addition, V. Pilat had a perfect command of white weapons. In 1985, he was the first in Ukraine to start conducting seminars on saber combat, including using two sabers simultaneously, working with short, medium, and long sticks, seminars on knife combat, and self-defense with handheld items. In addition, he conducted seminars on massage and radiesthesia.

In search of Cossack's knowledge and traditions, the Master traveled all over the USSR and part of Europe and met with Cossacks from the east and south of Ukraine, from Kuban or Minsk. He also met with Oleksandr Besklube many times, whom he helped to create the Spas martial art. V. Pilat founded an organization that united the Cossack movement for the first time in about 250 years. He was the organizer of the first Cossack congresses after the revival. It led to the organization's growth on a vast scale in a short time.

Having the largest knowledge base of Cossack fighting, collecting Cossack fighting techniques that had been passed down in his lineage and from various Cossack teachers scattered throughout Europe, the Master systematized the style, created a School which, thanks to its strong organization, technique and philosophy, has survived and continues to develop to this day, despite the first 20 years of increased terror by the Russian services.

The martial art has been systematized as an attacking style. There are far fewer defensive techniques. There are 7 degrees of advancement (3 discipleship degrees - Zhovtyak, Sokil, Yastrub; transition level - Dzhura; and three mastery levels – Kozak, Kharakternyk,

Volkhv). Four development directions have been created, considering the possibilities of people of all ages: the Health direction, the Artistic direction, the Sports direction, and the Combat direction. Each of them has its specificity and a different goal [Pilat 1994].

Participation in 5 different categories of competitions is required to obtain the corresponding degrees of progression [Pilat 1999]:

1. "Odnotan" - a solo composition - demonstrates the technique for a given level.

2. "Tan-dvobij" - a previously learned arrangement simulating a duel, consisting of technical elements, performed simultaneously by two competitors.

3. "Zabava" - sparring with limited contact.

4. "Bornya" - a type of duel with light contact.

5. "Herc" - a type of full-contact duel, including white weapons.

The bases of the philosophy of the discipleship degrees are the "Guidelines for Hopak practitioners," the "Hopak code of knightly honor," and the "laws of pedagogical ethics." The Mastery Degrees include learning the secrets of Characternyks and wielding white weapons, including duels with weapons in the above categories.

As Hopak was envisaged from the beginning as a monastic system geared towards a lifetime of personal improvement, students can realize themselves in three directions of development – warriors of body, mind, and spirit. Hopak practitioners are described as: "Knights of Light, Truth, Good and Love" [Pilat 1994]. It sets students on guarding these

virtues through comprehensive self-improvement.

Summary

For 37 years, the Boiovyi Hopak school has developed on two continents, now actively developing mainly in Ukraine, Poland, partly Canada, and the USA.

Although many manuscripts were destroyed during the repression, V. Pilat wrote 17 books on Hopak, defining the philosophy and technical requirements for the different levels. Several films, hundreds of articles, and interviews with the Founder and Supreme Teacher of Hopak have been produced. Since 1996, Hopak championships have been held regularly, as well as inter-style competitions of "Free Cossack Combat" along with various cultural festivals.

Volodymyr Pilat's work has brought results not only as personal achievements. The Master, who has devoted his entire life to excelling in martial arts and the life's majority - to the development of Cossacks and Hopak, has created a system that, in addition to educating warriors, also stimulates the growth of Cossack culture and tradition.

The elderly Hopak practitioners from Ukraine have been bravely defending their country and Europe in Ukraine's war against Russia since 2014.

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Zbigniew Sawicki

Polish Union of Associations of Polish Martial Art *Signum Polonicum* (Poland)

MAIN CHARACTERISTICS DENOTING POLISH MARTIAL ART SIGNUM POLONICUM

Key words: martial art, fencing, singlestick, sabre

The purpose of the presentation is to show the main features that identify the Polish martial art of *Signum Polonicum*. The author intends to present the distinctive Polish martial art techniques, their division and teaching methods that make it possible to badge *Signum Polonicum* from other martial arts.

Furthermore, the presentation allows to elaborate the knowledge on Polish martial art *Signum Polonicum*, shows its main threads and features and at the same time their affiliation to Polish national culture and armed traditions.

The presentation shows both nonpareil and chasm of this martial art against the background of contemporary European martial arts. It reminisces a fortiori to the Polish mentality, the way of perceiving reality and national features from which it originated and flourished.

On completion the author emphasizes its utilitarian character and a kind of adherence to one cavalry formation - hussars, which guarded its secrets until the end, that is, to its disbandment.

This protection of knowledge about old Polish fencing art inflicted great struggle with its reconstruction and put the work on its retrieval into stasis for many centuries. Only the attempts made in *Signum Polonicum* allowed for its successive disclosure and assiduous reconstruction in the hope that we would get as accurately as possible to its original image. It is a general presentation with an emphasis on some characteristic aspects that allow for our work in the field of recreating old Polish sabre - singlestick fencing and its training programme we teach from, to be perceived.

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A-Study Design, B-Data Collection, D-Data Interpretation, E-Manuscript Preparation, F-Literature Search

ANUAR ABDUL WAHAB (1945-2009): THE LEADERSHIP ANDCONTRIBUTIONS TO THE ESTABLISHMENT OF TRADITIONAL ART OF WAR INTO MODERN MALAY SILAT

Background. Leadership, as a process, is making use of influence, without force, to guide and coordinate the activities of members to achieve a defined goal [Sarpira *et al.* 2012]. Martial arts are a multi-dimensional terminology that denotes not only knowledge of practice but also scientific description. Silat was used in the ancient Malay civilization's traditional art of war [Shapie *et al.* 2016]. Pertubuhan Seni Gayung Fatani Malaysia (PSGFM) is a silat organization that develops and conducts the activities of Malay Silat as a whole (culture, sporting activities, developments of silat curriculum, research and developments, martial arts promotion etc.) [Abdul Razak, Muhamad 2022]. Anuar Abd. Wahab was the founder of Pertubuhan Seni Gayung Fatani Malaysia (PSGFM) and the responsible figure to establish, develop and spread the original Malay silat form known as silat pulut or gayung pulut [Anuar 2008].

Problem and aims. Silat is widely practiced in Malaysia and has been inscribed as a cultural heritage by UNESCO. However, there are limited information on the leader that responsible to develop and establish silat from local heritage to international application. Thus, identifying the contributions made by silat figure is important to know the direction of current leader to develop silat in world stage, particularly without living the traditions that inherit from the golden age of Malays empire. This information is useful to determine the originality of Silat compared to other martial arts, particularly in the Malaysian silat context.

Methods. This paper used document analysis and review. It employed the qualitative method on current available literatures, books, various official PSGFM documents, published journal articles that related to the establishment of world of Malay silat.

Results. Anuar was a prominent martial arts leader in world of silat [Shapie 2022]. He was the responsible figure to establish, develop and spread the original Malay silat form known as silat pulut or gayung pulut. The silat pulut is the Malaysian version of traditional indigenous martial arts that inherited from the Malay art of war. He was also the founder of world silat competition such as silat olahraga (combat sports) and silat seni (artistic). He became the first silat leader in the world that given the responsibility by the Ministry of

Culture, Arts and Heritage of Malaysia in 2002 to develop the modern silat curriculum known as Seni Silat Malaysia (SSM).

Conclusion. Grandmaster Anuar Abd. Wahab was a great leader in silat. His 50 years dedication in establishing the original Malay Silat to the world stage was recognised by government, martial artists, national and international either in silat or pencak silat communities. His greatest contributions were in establishing the curriculum of Seni Silat Malaysia which can be used by many other type or streams from different groups of silat and on established the silat sports in international community (Silat Olahraga and Silat Seni).

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ABSTRACTS
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THE PREVALENCE OF INJURY AMONG COMBAT SPORT UNIVERSITY ATHLETES

Key words: sport injury, combat sport, epidemiology

Introduction. Combat sport is become one of the popular sport among university students.

Problem. Combat sport have a higher risk of injury as it involves repeated movements, including kicking, punching, blocking defensive moves with the arms and legs and wresting an opponent to the ground [Koutures, Demorest 2018; Hammami *et al*. 2018]. Indeed, evidence showed that, on average, Olympic combat sport athletes sustain one injury every 2.1 hour of competition [Lystad *et al*. 2020]. However, there is limited information on injury prevalence among combat sports athletes in Malaysia, especially the young athletes. The purpose of this study was to determine the prevalence and risk factors of injury among combat sport university athletes in Malaysia.

Methods. About 159 participants with mean age 21.70+/-1.95 years who were involved in sparring events were recruited. Data were collected using a questionnaire consisting of questions about the demographic profile of the athletes, their injury experience and type of injuries sustained, and factors of injuries and rehabilitation received. Descriptive analysis, and independent t-test were used for data analysis.

Results. More than half of participants (53%) had experienced muscle and ligament injuries during sports activities and most of the injuries are moderate (58%). In addition, 67% of participants sustained lower limb injuries during sports activities. There is a significant mean difference in the rate of sport injury for the two levels of participation groups ($p < 0.05$). Interestingly, the injury did not happen during the competition instead occurred during training or sparring session.

Conclusion. This study provided the information on the prevalence of sport injury among combat sport athletes. It was also revealed that higher levels of participation in sports have a higher risk of injury.

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CHANGES IN THE ATHLETES` KATA SELECTIONS IN TOP-LEVEL KARATE COMPETITIONS: COMPARISON OF THE KATA SELECTION IN THE SEASON 2019 AND 2021

Key words: *karate, kata*, competitions

Background. Systematic analysis of competitive sports performance is essential in all sports. Previous studies of karate [Augustovicova *et al*. 2018; Novosad *et al*. 2020] showed changes in kata sports performance in connection with major revision in kata rules. The continuous analysis is therefore essential.

Problem and aim. The study`s primary goal is to describe the type and frequency of katas performed at the Karate 1 competition in the season 2021 and analyse if there are differences between the preferred katas between seasons 2019 and 2021.

Method. All performed katas during 4 Karate 1 Premiere leagues, 4 Youth Leagues, 1 Youth and 1 Senior European and 1 World Championship in year 2021 were investigated. Competitors' gender, age category, name of the performed kata and round of the competition were recorded. Chi-square tests were conducted. A total of 2,579 katas were performed during the season 2021 (1263 in themale and 1316 in the female category). A total of 2,190 kata were performed during the season 2019 (1,137 in the male and 1,053 in the female category).

Results. The most performed kata in the season 2021 was: Papuren (345, 13,38 %), Gojushiho sho (314, 12,2%) Anan Dai (287, 11,1%) Suparinpei (200, 7,8%), Gojushiho Dai (185, 7,2%). Number of performed katas depends on the number of entries and top-level kata medallists had to perform between 3 and 4 katas. The most performed katas in the season 2019 were Suparinpei (313, 14.3%) followed by Anan Dai (301, 13.7%), Papuren (286, 13.1%), Chatanyara Kushanku (204, 9.3%) and Anan (186, 8.5%). There is a significant difference between the choice of katas between the seasons 2019 and 2021. The kata medallists had to perform between 6 and 7 katas.

Conclusions. The selection of kata used in the competition varies according to the preferences of the athletes, or on the basis of the points that the athletes received for the performed kata. The scoring analysis should be carried out in the next investigation. It is necessary to compare the technical, athletic, and total score of the kata between series, gender and age categories to provide better information for coaches, athletes and referees.

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THE PSYCHOLOGICAL DYNAMISM OF COMBAT EXPERIENCES IN MARTIAL ARTS AND COMBAT SPORTS: UNDERSTANDING LIVED EXPERIENCES TO FOSTER BETTER PRACTICES

Key words: sports psychology, phenomenology, martial arts and combat sports

Background. Conceptual chaos prevailing in the field of MA&CS [Martinková, Parry 2016] foreshadows the difficulties of studying their psychological experiences. Usually, scientific production on Psychology applies constructs to investigate MA&CS. On another side, psychological knowledge is inherent to existential traditions of MA&CS. Under these paradigms, scientific knowledge, due to its instrumental objectivity, moves away from the practice and experience lived at MA&CS. In the same way, due to its traditional idealism and eventual dogmatism, cultural knowledge distances itself from rational scientific knowledge about such phenomena. Phenomenology dares to face this epistemological problem, leading to the most elementary experiences that enable and challenge the practice of MA&CS [Barreira 2017]. From a practical perspective, it gives access to central problems inherent to MA&CS: aggressiveness and discipline, both mobilized by the need to negotiate with the danger of violence.

Problem. *Corporeal fighting* enables MA&CS practice, whereas is constantly challenged by violence (brawling) and playing of fighting (fun), usually misconceived as real fight and mock fight. The goal of this research is to identify and understand how these phenomena essentially interact with the personal experience lived by practitioners.

Method. The rigorous empirical-phenomenological model used as a method in Psychology is recognized by prestigious scientific forums [Silva *et al.* 2022]. This research involved interviewing practitioners of eight MA&CS modalities (Karate, Judo, Brazilian Jiu-Jitsu, Wrestling, Muay-Thai, Taekwondo, Boxing, Capoeira) in all Brazil regions, transcribing their narratives, and analysing them. So far, forty open and in-depth interviews, conducted under *suspensive listening* - focused on the report of a lived experience in the first person - have been carried out. The analysis - intentional crossing - consists of comparing the narratives in search of the purposeful lived experiences that structure transitions between combative phenomena.

Results. Analysis shows a common dynamism between modalities. A successful psychological balance, lived as intersubjective tension, is threatened by falling into violence or falling into a playfight. In these cases, hostility and condescendence respectively drive the practitioners. Intimidation acts decisively in transitions, for both those who are affected by it and for those who inflict it.

Conclusions.This psychological dynamism seems to be the critical element to understanding personal development on MA&CS, whose leadership can transfer to practice deliberatively modulating experiences intensity to foster better practices in avoiding violence and condescendence [Serrano Rodrigues *et al.* 2021; Coelho, Barreira 2020]. Future directions point to the importance of investigating these phenomena in different countries and cultures.

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PATTERN OF MOVEMENT MAE-GERI TECHNIQUE, DEPENDING ON THE ADVANCEMENT OF THE KYOKUSHIN KARATE ATHLETES

Key words: movement, karate, athletes

Introduction. The pattern of movements that each athlete presents individually translates into the results achieved, on the other hand, it is a factor related to the occurrence of an injury. Although each athlete develops an individual movement pattern, some general characteristics of a given technique are very similar. In the paper, assume that the temporal-spatial parameters of the movement pattern may be significant variables in teaching a technique in terms of its effectiveness and, on the other hand, protection from injury [Piepiora *et al*. 2022].

Therefore, the aim of this study was to compare mae-geri kicks in kyokushin karate athletes of various advancement levels.A group of 26 participants was qualified for the research. Due to technical grade, the athletes were divided into two groups: 13 in each group, advanced athletes with grade from 2 kyu to 4 dan (brown and black belt) and beginners with grade from 9 kyu to 7 kyu (orange and blue belt) [Blaszczyszyn *et al*. 2019].

Methods. The data was acquired by an optical motion capture system. Motion capture systems (optical, inertial) are basic systems for obtaining data for kinematic analysis in sport. Kinematic data was recorded using a motion tracking system (Vicon Motion Systems Limited, Oxford, UK) sampling at 250 Hz. Matlab 2016a with the BTK Toolkit library and the Mokka software were used to analyze the data. The nonparametric Mann–Whitney U-test was used for statistical analysis. The angles of individual joints were determined using the Plug-In Gait software. The separate kick was cut out from recording based on the trajectory of the ankle marker in the frontal axis of the kicking leg, thanks to which the kick itself was analyzed. Peak kick samples are obtained from the separate kick signal for a minimum value of knee joint flexion angle plus 5 degrees. Such a procedure enables exact cutting of the body pose in the peak kick based on the input signal captured with a frequency of 250 Hz. For comparative analysis, a mae-geri kick performed in the air, in order to illustrate the natural technique used by a given athlete, each particypant performed 3 kicks. A total of 47 recordings were made [Blaszczyszyn *et al*. 2019; Szczesna *et al*. 2021].

Results. The comparative analysis showed the most significant differences in the trajectory of the hip and knee joints in the sagittal and frontal planes, and in the ankle joint in the frontal and transverse planes.

Conclusions. Advanced athletes perform the kick pattern with slightly lower limb flexion values but greater ranges of lateral movements, they also perform smaller ranges of lateral

and rotational movements of the foot. The results obtained may prove helpful in the training process in terms of developing power and preventing injuries.

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SENSORY-MOTOR RESPONSES, BIOELECTRICAL MUSCLE TENSION AND GROUND REACTION FORCES AS A FACTORS INFLUENCING THE MOVEMENT PATTERN OF THE FENCING LUNGE

Key words: electromyography, ground reaction forces , fencing, reaction time, movement time

Introduction. The main goal of the research reported in this paper is to investigate the influence of the sensory-motor responses, EMG and ground reaction forces (GRF) on the effectiveness of the typical fencing action, which is a straight lunge in épée on the opponent's trunk. The time of reaction and speed of movement together with the coordinated action of the muscles involved determination of success gaining in fencing bout (Witkowski *at al*. 2018).

Material and methods. Twelve junior and senior women's national team members took part in the research. The athletes represented high sports level. Among them there were Word and European Championships medalists. Fencers performed 2 attacks with a straight lunge on the coach's body. The target of the attack was the hitbox marked with the OptiTrack markers on the coach's outfit. The individual technical tests were performed at the coach's command in accordance with the principles of a typical fencing lesson with the participation of a coach.

Results. The study found significant relationships between sensorimotor response times and the response times of the arm muscles (0.86) and the forward leg muscle (0.79). In addition, a significant correlation was found between the maximal EMG value and the ground reaction forces (GRF) of the gastrocnemius muscle of the rear leg ($p < 0.001$).

Conclusion. The study results clearly confirmed that the effectiveness of the lunge depends on the time corresponding to the activation of the extensor arm and the volume of EMG generated by the gastrocnemius muscles of the rear leg. Thus, the phenomenon is associated with the process of programming sensorimotor responses at the central level and in the premotor phase, where the reaction of ground forces in synergy with EMG also plays an important role (Borysiuk 2008).

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FITNESS AND PROFESSIONAL TRAINING OF POLICE OFFICERS IN DISTRICT DEPARTMENTS OF THE CZECH REPUBLIC

Key words: police, police organization, training, professional training, police education

Abstract. From the point of view of the police organizational structure, the district departments are backbone of the police. Police officers serving in these departments have the highest frequency of cases involving physical aggression, robbery, assaults etc. For this reason, these police officers are often exposed to stressful and collisional situations, which can influence their decision-making and act [Anderson *et al*. 2002; Verhage *et al*. 2018]. Futhermore It is determined that the existing criteria for assessing the physical readiness level of the police officers at districts departments do not fully take into account the specifics of their activities [Bondarenko *et al*. 2020].

Therefore, the research team set a goal to determine whether the police as an organization provides the conditions and training opportunities for the development of fitness and technical skills for police performance.

Research sample. The total number of respondents to this study was 102 police officers in direct service out of which 84 were men and 18 women. The age of the research sample was divided into 5 categories: 20-22 years (6 respondents), 23-27 years (30 respondents), 28-33 years (32 respondents), 34-39 years (24 respondents) and 40+ years (10 respondents). The period of the police service was divided into 4 categories: 1-4 years (32 respondents), 5-8 years (34 respondents), 9-14 years (26 respondents) and 15+ years (10 respondents). Categories were created because of the diversity of responses for each category.

Methods. The data collection was carried out by means of a non-standardized questionnaire containing 37 questions. The questionnaire is divided into four sections and consists of open, closed and dichotomous questions. The first section focuses on the description of the police officers (age, gender, period of police service). The second section provides information on basic police training. The third section focuses on physical and technical training. The fourth and the last section focuses on the current approach of the police to training. The analysis of the collected data was performed by descriptive statistics and the inductive method.

Results. The study results have shown that there is no development of fitness and professional training within the scope of the training in district police. The physical fitness testing is not uniform. More than 70% of the interviewed police officers are not motivated for fitness or professional training.

Conclusions. The police organization does not have uniform testing of police officers. Police officers are losing motivation to develop fitness and professional skills due to lack of favourable conditions, low publicity and time available for professional development. The research shows that police officers in the district departments are not sufficiently prepared to perform their profession. The system of testing and training is vague and inconsistent.

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MULTICRITERIA ANALYSIS OF THE FORCE RATIO BETWEEN TWO JUDOKAS IN DELAYED REAL TIME

Key words: live decision making, to intervene/to annotate, live actors, judo combats analysis, multi-criteria analysis.

Background. Since 2016, at the UFRSTAPS of Montpellier, 3rd year students (judo specialty) analyze in a multicriteria way judo combats in order to optimize their coaching, refereeing, teaching, journalism.

Problem. One of their works consisted in analyzing on computer a combat in real time deferred (without pause, without visual or auditory signal). It was necessary to estimate the force ratio by clicking next to the video in an orthonormal graph composed of 4 sectors: (dominant-programmed [S1]; programmed-dominated [S2]; dominated-automatic [S3]; automatic-dominant [S4]). The more important the criteria were considered; the more clicks were placed on the periphery of the axes [Calmet *et al*. 2017].

Aim. To identify the inversion of the balance of power in the combat (depending on the combat time, % of clicks in [S1] and % of clicks in [S3] will be the two most important); to make repeatable and homogeneous observations; to confirm our previous results on this subject [Calmet *et al*. 2019].

Method. After 40 min of training, 12 students analyzed 4 times the same combat presenting an inversion of the force ratio: the judoka to be observed was first dominant-programmed, then was dominated-automatic and lost the fight. These students were aged 20.4 ± 1.9 years, brown belt to black belt 2nd dan, practicing 4h to 12h of judo weekly, had followed courses of judo specialty (90h), ICT (18h) and video analysis (10h).

Jarque-Bera, Kruskal-Wallis and Kolmogorov-Smirnov tests were used to analyze the data. Analyses were performed with XLSTAT(1) 2019.4.1, significance level was set at 5%.

Results. No statistically significant difference in: (i) duration times for 4 observations (Kruskal-Wallis, p = 0.919); (ii) number of clicks per observation (Kruskal-Wallis, p = 0.715). The percentages of clicks per sector according to time show the location of the inversion force ratio: [S1] = 40.2%; [S2] = 16.5%; [S3] = 32.3%; [S4] = 11%).

Table 1. Data concerning duration times, number of clicks, distribution of clicks (X–Y)

Data \ Num. of observation		Obs1	Obs2	Obs3	Obs4
Comparison of the duration times (hh:mm:ss)	Average	00:07:37	00:07:36	00:07:31	00:07:32
	SD	00:00:15	00:00:14	00:00:29	00:00:27
Comparison of the number of clicks	Average	27.6	28.1	30.5	32.1
	SD	11.9	15.2	17.9	17.8
Comparison of the distribution of clicks (intervals and X coordinates)	[1-44]	1	2	3	5
	[45-88]	7	10	13	9

	[89-132]	21	31	26	34
	[133-176]	44	45	34	41
	[177-220]	38	24	34	51
	[221-264]	66	59	75	57
	[265-308]	52	63	47	66
	[309-352]	39	47	63	53
	[353-396]	25	20	26	30
	[397-485]	11	8	14	7
Comparison of the distribution of clicks (intervals and Y coordinates)	[1-28]	1	0	0	0
	[29-56]	0	2	5	5
	[57-84]	23	19	20	16
	[85-112]	32	35	29	34
	[113-140]	49	46	45	53
	[141-168]	47	53	67	65
	[169-196]	37	50	66	72
	[197-224]	39	55	39	51
	[225-252]	62	39	45	32
	[253-311]	14	10	19	25

Source: Own research.

Conclusions. These results do not appear to be due to chance. As a first check, the analysis of randomly obtained X-Y coordinates shows significant differences (Kolmogorov-Smirnov, $p < 0.0001$). The identification of the inversion of the force ratio in combat, the homogeneity, reliability and repeatability of the analyses test our hypotheses and confirm the previous study in 2019. The transferability of these skills to real-life situations must be verified.

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A PILOT STUDY OF KARATE SPECIFIC AEROBIC TEST IN THE CZECH REPUBLIC

Key words: martial art, physical performance, karate testing method

Background. Sports performance in karate depends on the high development of physical abilities. Thus karate uses specific movements, and specific tests should be used to measure the level of an athlete's performance. Most physical abilities can be improved through regular training. Periodic testing could help to set and evaluate the training

progress.

Problem. It is a need to evaluate the karate practitioners' performance with a specific tool. This pilot study aims to set and test the protocol and variables that are easily measurable even in non-laboratory conditions, is user friendly for analyzing the results and do not take too much time to perform.

Method. Four male blackbelt holders (age 26, 28, 28 and 38 years) took part in the pilot application of the Karate Specific Aerobic Test (KSAT). It was developed by David Nunan in 2006. The test consists of straight punches, and roundhouse kicks combinations on a heavy bag. The karateka participated in KSAT test-retest data collection one week apart. During the testing, we followed the KSAT [Nunan 2006] protocol.

For testing, we used a free-standing heavy bag (overall weight including the base 61 kg, height 180 cm), multisport watch Polar Vantage V combined with H10 heart rate sensor (H10 records HR data once per second), interval timer (Interval Timer iOS app, developed by Alysha Kwok) which had been set up according to test protocol and printed Borg's exertion rating scale [Borg 1998].

Results. The mean time of exhaustion was 833 (SD 20,99) seconds for the test and 865 (SD 16,64) seconds for the retest. The rate of perceived exertion was about 15 for the test and 16 for the retest. Heart rate reached a maximum of 196 (SD 2,16) beats per minute in the test and 193,25 (SD 4,79) in the retest

Conclusions. KSAT is a usable measurement method to test the specific abilities of karate practitioners. In the future, detailed normative values and ratings should be determined. That innovation will allow karate teachers to evaluate athlete development quickly and easily.

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WRESTLING: THE IMPACT OF THEIR CULTIVATION ON ACHIEVEMENTS IN VARIOUS AREAS OF LIFE

Key words: combat sport, wrestling, physical fitness, career, social position

Background. The issue concerns sport with a centuries-old tradition in Europe and outside Europe [Cynarski 2020]. We know that this wrestling sport, practiced since ancient times, builds strength and versatile physical fitness. This hard training, however, ensures a high level of fitness and capacity of the body. The competitor also acquires real combat skills in close combat and in a lying ground position, which gives him a relative sense of security.

Aim. The problem of the impact of wrestling skills, training and related experiences

[Litwiniuk *et al*. 2006; Korobeynikov *et al*. 2021] on the careers of people who have achieved success in various areas in life was discussed.

Method. The qualitative method of expert judgments, also known as the competent judges method, was used [Obodyński, Cynarski 2003; Cynarski 2021]. Seven specific questions were answered by seven experts from five countries.

Results. Professionals very positively assess the impact of wrestling on their further career after completing competition training. They indicate the improvement of general physical fitness, acquired skills, strengthening of willpower and character.

Conclusions. For the participants of the study, practicing wrestling was or still is an asset in their further professional careers, helping them to achieve a better status position.

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TOWARD A GRAND THEORY OF SPIRITUAL PRACTICE: A SUMMARY, CRITIQUE AND ENHANCEMENT OF TAEKWONDO'S CONCEPT OF SPIRIT

Key words: practice, right practice, sudden awakening/gradual cultivation (SA/GC, *dunwu jianxiu* 頓悟漸修), intuition, (martial) spirit

The purpose of this manuscript is to elucidate an all-encompassing theory of 'spiritual practice' in the martial art/martial sport context, by explicating how a synthesis of fundamental aspects of paradigms of practice in martial arts, physical education, bodily awareness, East Asian philosophy and meditation could be brought into alignment with each other. It begins with a summary of theoretical conceptualization of 'spirit' that has gained acceptance in the Taekwondo academic and practitioner context in the ROK, critiques the limited theoretical basis of this conceptualization, and then offers a more comprehensive theory of 'spiritual practice' that is widely grounded in both East Asian philosophies and main contemporary paradigms of 'bodily knowing' practice. These paradigms of practice hold intuition as a goal of practice, realized through praxis; the "reflection and action directed at the structures to be transformed." The enactment of "right practice" includes rigorous discipline, repetition of (patterns of) ideal forms, focused concentration, and bodily and cognitive awareness, toward what might may allow for (the development of) intuition. Also influencing our understanding of practice is understanding the difference between procedural knowledge (knowing how to practice techniques) and propositional knowledge (knowing why these techniques are practiced). Through real-life examples of these aspects of practice in the martial arts context, compiled by the qualitative ethnographic research methodology of interviewing long-time martial art practitioners, this manuscript supports the thesis that these paradigms of practice have aspects that align with each other.

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MODELLING INSTITUTIONAL ANALYSIS OF MARTIAL ARTS AND COMBAT SPORTS

Key words: mesoscopic model, mesoscopium, sport institutionalization

Background. The institutionalization of Martial Arts and Combat Sports is linked with various models, making them visible as intentional communities. Their names, rules and activities institutionalize personal practices as communitarian accepted norms, values, and symbols, establishing different networks of persons, groups and communities. If this socio-cultural actions become "relatively permanent structured with and as social patterns, roles and relations that people enact in certain sanctioned and unified ways for the purpose of satisfying basic social needs" [Fichter 1971: 269], thereafter they become on a higher degree of institutionalization.

Problem and aim. The sportivisation analysis [Elias, Dunning 1996] do not respond to the complexity of the intentions in each motrice action, and one of the examples is the "non-sport" institutions that become after the "sportivisation" as we can see in Bayer [2021] analysing Okinawan "genuine Karate" against the so called Japanized Karate-do, or in any other "genuine" martial art such as Jujutsu links with Judo.

The broader question we are identifying in institutional analysis of MA&CS is this one: are clubs, associations, federations and societies in MA&CS a non-controlled social agitation or do they content a social movement explainable and understandable by an institutional analysis model?

Assuming a possible modelization, we are pursuing a path with this two main questions: 1) How to explain and understand the institutionalization of martial motrice actions?, 2) How to model the interpretation of these phenomena?

Material and methods. Wojciech J. Cynarski *et al*. [2005, 2009] and K. Obodynski [2009], among some others, study the macro levels of fight motricity, supporting interpretation models for martial arts institutionalization. On this models, some authors go deeply on the study of a discipline such as wushu emergence [Filipiak 2010], or Karate Institutionalization [Figueiredo 2006], and include the modernity conflicts and crises between actors and institutions [Raimondo 2009], demonstrating them with precision even on integrative movements such as Mixed Martial Arts [Sanchez Garcia 2010].

The analysis of intentional communities in karate showed that there are not a "decontrolled institutional agitation of institutional moves" [Figueiredo 2006: 257] and a mesoscopic model of institutional analysis was developed, based on polarization and differentiation methodology. The mesoscopic model for analysing institutional development on MA&CS contexts and disciplines use philosophical approaches based on polar deconstruction (Jacques Derrida) and action hermeneutics (Paul Ricoeur) linked with Hermeneutic Praxeology (Girton) used as a community insider participant observer and this is the methodology used to present results and conclusions in 2022.

Results. Intentional communities and various circumstances inside MA&CS create interesting internal tensions becoming indicators of different degrees in a certain variable.

Using hermeneutics and deconstruction methodologies on the institutionalization of fight motricity, from motrice action analysis, cultural modernity standard and social details, polarizing and differentiation found this dimensions: Injury Intentional Motrice Actions versus (/) Safety and Non Injury Intentional Motrice Actions; War and utilitarian fight/ Peace and ritualized fight; Mythical/Factual; Orientalism/Occidentalism; MA/CS; Practitioner/Competitor; Grades/Medals; Teaching/Coaching; Titles/Wins; Process/ Product.

Conclusions. The deconstruction of MA&CS main context poles contributes to (1) integrative interpretations that (2) differentiate these practices from others in sportivization processes (3) approaching an intentional motrice actions as broader ad precising modelling to understand and explain Martial Arts and Combat Sports

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INTER-GENDER DIFFERENCES FROM WEIGHT-BEARING UPPER EXTREMITY SWAY MEASURES IN BRAZILIAN JIU-JITSU TEENAGE ATHLETES

Key words: Brazilian Jiu-Jitsu, combat sport, Force Plate, Single-Arm Plank, Symmetry Index

Introduction. Brazilian jiu-jitsu (BJJ) is a combat sport based on ground fighting and submission holds. The tactic of the fight is to bring the opponent to the ground, immobilize him and perform a finishing technique - a lever or choke, forcing the opponent into submission via joint locks or chokeholds. The main techniques in BJJ require a variety of body movements, such as flexion, extension, torsion and traction mechanics and centre-of-mass displacement, most performed in a close combat. The previous studies have shown that a high level of dynamic postural stability and control of displacement of the centre of mass are essential for good sport performance in BJJ athletes [Lima *et al*. 2017]. Other studies, focused on sports injuries shows that elbow injuries to be the most prevalent orthopaedic injury in BJJ athletes [Scoggin *et al*. 2014, McDonald *et al*. 2017]. Therefore, the assessment of the stability and symmetry of the upper extremities in a close kinetic chain position seems to be an important activity for the injury prevention in BJJ athletes.

The purpose of this study was to determine if inter-gender differences of stability the upper extremity exist in elite sport BJJ athletes. We hypothesized that stability measures obtainedfrom the force plate during a weight-bearing upper extremity sway test will allow us to indicate inter-gender differences and to find athletes at risk of upper body injury.

Material and Methods. A group of thirty-five teenage athletes (25 boys and 10 girls) participated voluntarily in this study. All BJJ athletes were members of Polish national team with international sport level and with training experience ranged from 7 to 10 years. The study group was divided into two subgroups: boys (B) and girls (G). Boys were aged 15.9 ± 1.6 years, and girls 16.0 ± 0.8 years. The variables used in this study were obtained from the 'Alpha' force plate. The weight-bearing upper extremity sway test (Pontillo, Sennet 2020) consisted of keeping the balance in a full plank position with one upper limb on a force plate and a contralateral upper limb behind the back. Two, 30 second trials were done for right (R) and left (L) upper extremity placed on the force plate with a 15 second break between trials.

For the analyses the better result was used. All subjects were blindfolded during testing toeliminate the visual component of balance. Study results were analysed as the variables describing the displacement of the hand Centre of Pressure (CoP) on the plate: the length of the sway path (SP) in cm and the sway area (SA) in cm^2. In descriptive statistics Mean ±

Standard Deviation were used. Standardized symmetry indexes (SI SP and SI SA) were calculated as: ((|R − L|) / (0.5 * (R + L)) × 100. The SI were interpreted such that the value of SI = 0% indicated full symmetry, while SI ≥ 100% indicated asymmetry. The SI values also allow to assess upper extremity with better stability. Negative values mean better stability in the right, and positive values in the left upper extremity. As the analysed data did not have a normal distribution, the Mann-Whitney U test was used to assess the differences between the groups. The significance level was set at $p < 0.05$.

Results. Both analysed variables indicated the inter-gender differences in keeping balance of the upper extremities. The SP values for the right upper extremity in B (23.8 ± 14.9 cm) were 2 significantly higher ($p = 0.002$) than in G (9.1 ± 6.9 cm). The SA values were also significantly higher ($p = 0.011$) in B (0.6 ± 0.4 cm^2) than in G (0.3 ± 0.2 cm^2). The values of the analysed variables for the left upper extremity indicate no significant differences between the groups.

The values of the SP in B were 25.5 ± 19.4 cm and in G were 25.2 ± 14.3 cm ($p = 0.706$). The SA in B were 0.8 ± 0.8 cm^2 and in G were 0.6 ± 0.2 cm^2 ($p = 0.760$). The analysis of the values of both SI SP and SI SA showed that in both groups, the right upper extremities were more stable in the majority of BJJ athletes. SI SP had negative values in 48% of boys and 90% of girls, and SI SA in 56% of boys and 90% of girls. The values of SI SP were significantly higher in G (108.7 ± 50.0%) than in B (56.9 ± 44.7%), what indicate the poorer symmetry in girls ($p = 0.007$). SI SA had also higher values in G (74.6 ± 48.8%) than in B (46.0 ± 25.7%) but this difference was not statistically significant ($p = .083$). Five boys and six girls had a SI SP value > 100%, what indicate a functional asymmetry between the right and left upper extremities.

Discussion. The weight-bearing upper extremity sway test that we used in this study, appears to be the practical injury screening tool for sports in which functional fitness of upper extremities are essential for good performance. We used it to functionally assess the muscular capacity and neuromuscular control of the upper body during the closed kinetic chain position. We proposed the option of interpreting the measures obtained from the force plate, which allowed us for the identification of inter-gender differences in the tested BJJ athletes.The higher values of both SP and SA in boys, than in girls were noted, what indicate that girls had better stability, but these differences were statistically significant only for the right upper extremity. Functional asymmetry was also found (indicating poorer stability of the left upper extremity), with the female athletes having greater differences between the extremities. Our results confirm the results of the study carried out by Burdukiewicz *et al*. (2017), who noted asymmetry in muscle mass in BJJ athletes. The authors of this study noted that the size of trunk and upper extremities muscle mass on the right side of the body was higher than that on the left side. We conclude that female BJJ athletes had better stability and poorer symmetry of upper extremities than male athletes. The right extremity was more stable in both gender groups. Future study should be done in a greater sample size and should examine whether a specific cut off biomechanical variables score obtained in this test, could identify athletes at risk of upper body injury.

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SEQUENCING OF JOINT POWERS IN AN ITF TAEKWON-DO SIDE KICK DURING POWER BREAKING

Key words: biomechanics, ankle power, knee power, hip power

Background. Power breaking is a discipline in International Taekwon-Do Federation (ITF) Taekwon-Do and is a category in international competitions. The objective is to break material such as pine boards to demonstrate practitioners' correct technique execution and development of power in their Taekwon-Do techniques. Although some research has been done on velocity and force in power breaking with a side kick performed by ITF Taekwon-Do practitioners, power has not been investigated yet.

Problem. The aim for this study is to determine if a specific sequencing exists in the joint powers of the hip, knee, and ankle in the standing and kicking leg that occur during a successful break when performing an ITF side kick in power breaking.

Method. Participants will be ITF 4th degree black belts or above in ITF Taekwon-Do; i.e., they will have a minimum 10+ years of Taekwon-Do practice to ensure proper technique is performed during the experiment. To quantify joint powers, one force plate and a three-dimensional motion capture system will be used with a six degrees of freedom marker model. Participants will be required to break pine wood boards with a step-through side kick. 730 Newtons is required to break a 1-inch pine board; therefore, the force to break each board will be the number of boards multiplied by 730. This number will be multiplied by the velocity to gain the power value. Data will be labelled, and any gap will be filled in Vicon Nexus (version 12). Data will then be processed and calculated in Visual 3D. One-way ANOVA will be used to quantify the difference of the joint powers on a successful performance.

Results. If it is found that there is a particular sequence of the joint powers, then the angles which the joints go through will be presented to describe what the technique looks like when the specific sequence of joint powers occur. As this is a study in progress, testing is currently being performed. The results of this study will be available in October 2022 for presentation. We anticipate presenting a case study of 1-2 participants at the conference.

Conclusion. The results of this research are expected to enhance both instructors and students understanding of the ITF side kick for regional, national, and international competitions as well as ITF rank promotions. This study will additionally contribute to joint sequencing, ITF, Taekwon-Do, and knee power generation literature.

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PEDAGOGY IN ITF TAEKWON-DO EDUCATIONAL COURSES: HOW IS THE ART TAUGHT?

Key words: *musul*, *muyae*, *mudo*, International Instructor Courses, General Choi Hong Hi

Background. The International Taekwon-Do Federation's (ITF's) International Instructor Courses (IIC) are designed to ensure proper execution and understanding of Taekwon-Do, yet no known study exists on how IIC educate future Taekwon-Do instructors. The *musul-muyae-mudo* pedagogy attempts to understand the natural development of students within Taekwon-Do.

Problem. The aim of this paper is to examine if the *musul-muyae-mudo* pedagogy exists within ITF IIC.

Methods. Three semi-structured interviews were performed with ITF 6th-9th degree black belts who are internationally recognized Taekwon-Do instructors. Collectively, participants have attended numerous IIC courses. Thematic analysis was utilized to uncover common codes and themes across the interviews, and data was then synthesized.

Results. *Musul* is achieved during IIC through demonstrations of technique. *Muyae* learning is not encouraged during IIC, but ones' Taekwon-Do experience affects the impact IIC have on the individual. *Mudo* is achieved when grand masters teach ITF moral culture and how to apply Taekwon-Do lessons to everyday life.

Conclusion. Few ITF practitioners understand the *musul-muyae-mudo* pedagogy, but if this understanding of Taekwon-Do education is taught on IIC, instructors would better understand how to teach *mudo*.

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THE INFLUENCE OF BOXING TRAINING ON MOTOR SKILLS AND PHYSICAL FITNESS IN TRAINING GROUP UP TO 25 YEARS OF AGE

Key words: physical fitness, martial arts, boxing training

Introduction. Boxing is a sport discipline consisting of a direct fist fight between two fighters, according to certain rules with a limited field of impact. Boxer training is primarily aimed at maximizing the results achieved by the athlete at every level of sport. The increase in strength, speed and endurance is aimed at increasing the effectiveness of the athlete during sports competition and the prevention of injuries resulting from repetitive, specific movements during training. During the martial arts, the fighter wants to acquire both fast and strong. The most effective blows require the player to create strength in the shortest possible time – power will be important here [P (power) = F (force) x V (speed)]. Therefore, the formula shows that the athlete should include in his preparatory process properly selected strength and speed training, which will have a positive effect on the development of power and efficiency of the nervous system.

Problem statement. The main goal of the article was to get acquainted with and check the impact of boxing training on motor skills and physical fitness in people up to 25 years of age and to expand knowledge in this field. The specific objectives of the article include finding answers to questions:

1. Has the quality and level of motor skills of the study group changed?

2. What abilities have improved?

3. How much has motor skills improved?

4. Have the motor skills of the group stagnated?

5. Has the physical fitness level of students deteriorated?

Methods. 18 people took part in the study - 16 men and 2 women. Each of the respondents attended boxing training lasting 1.5 hours at least once a week. Participants were told not to take any medication, caffeine, alcohol or any intense effort within 24 hours of taking measurements. The Physical Fitness Index consisted of 6 attempts:

1. Speed tests - fast running in place for 10 seconds with high lifting of the knee and clapping under the raised leg - we count the number of claps.

2. Jumping tests - long jump from a place, the distance is measured by a jumper with his own ideas (the result is rounded to the "whole foot").

3. Arm strength tests - overhang on the bar, performing exercises with an increasing degree of difficulty.

4. Flexibility tests - standing at attention, making a continuous slow movement of the trunk forward without bending the legs at the knees.

5. Abdominal muscle strength tests - lying back, raising the legs just above the ground, performing exercises as long as possible - "transverse shears".

6. Endurance tests - continuous running - two variants of the test: running at a pace of about 120 steps per minute - we measure the running time, running at a distance - we measure the distance traveled in a specific time. All tests were carried out with due diligence and with the observance of the principles of safety.

Results.

1. The obtained test results showed changes, hence we can conclude that it is not possible for a properly conducted boxing training to cause a complete range of physical fitness.

2. The quality and level of motor skills have mostly improved. The level of physical fitness has increased.

3. The abilities that have improved are speed, arm strength, flexibility, abdominal muscle strength and endurance. Jumping has not changed.

4. None of the characteristics studied at the university of Rzeszów did not deteriorate in total.

5. Boxing training is an excellent method of developing overall physical fitness. As a result, the exercises used in it are suitable for diversifying trainings of other disciplines.

Discussion and conclusion. Similar research conducted in Ukraine In the Department of Physical Education of the university medical engineering of the Kiev Polytechnical Institute, the dynamics of physical preparation and the degree of physical fitness of students of the first and second year were traced. The influence of boxing in the process of their training was directly determined on the formation of special movement skills. The study involved 108 students: 54 first-year students and 54 second-year students who were tested at the beginning and end of the year. These studies allowed the assessment of the overall and special physical fitness of students who, during physical training, performed boxing training during one and two years, respectively.

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PROFESSIONAL WRESTLING AND JUDO INTERACTION IN SPAIN IN THE MID-TWENTIETH CENTURY

Key words: sport history, martial arts, combat sports, judo, jujutsu, Spain

Introduction. The early development of Asian martial arts in western countries was closely linked to show business [Brousse, Matsumoto 1999]. Particularly, the interaction between the professional wrestling show and the *jujutsu* (a.k.a. *jiu-jitsu*) show was very rich and diverse in manifestations. In this regard, professional wrestling soon incorporated both experts and Asian martial arts skills to the show in order to increase its appeal. This especially happened by the beginning of the twentieth century, when Japan impressed the rest of the world by defeating Russia at the Russo-Japanese War (1904-1905) [Archer, Svinth 2010]. A few decades later, after World War II (1939-1945), the professional wrestling show was again in fashion in Europe, while judo started its final transformation into an international modern sport [Brousse 2000]. In this context, where professional wrestling was very popular and judo was still little known, tensions and (sometimes unplanned) synergies emerged. The aim of this study was analyzing these tensions and synergies for the case of Spain.

Methods. Sport press published in Spain during the 1940's and the 1950's, such as *Marca* o *El Mundo Deportivo*, was the main source of information for this study. The contents of the interviews conducted by Gutiérrez García [2004] with several judo pioneers in Spain were also used. Sport history literature, both at the national and international level, provided context for data interpretation and data triangulation, in order to strength the validity of our analysis.

Results and Discussion. Professional wrestling became a very popular show in Spain in the mid-1940's. A few years later judo started to grow, with judo pioneers clearly refusing their art be related to a wrestling show. For them, judo was an amateur, intellectual, noble sport, that had nothing to do with the travesty and money-driven business of professional wrestling.

„Catch [Professional wrestling] was mockery, joke, coarseness, show, fixing at last. (Interview with judo pioneer Bernardo Ungría)".

„For me, it was, to some extent a demeaning show. (Interview with judo pioneer José del Busto)".

But, on the other hand, *jujutsu*/judo was used by some professional wrestlers (e.g., Belgian Congolese Max Looder, American Dom Carver, French Gen Tilly or Spaniard Lambán), who exploited the "secret", "scientific" and "dangerous" techniques of the exotic art to submit their opponents. For example, Gen Tilly "beat his opponents by attacking the spring of their tendons, or by digging his fingers into the neuralgic points where he made a dent, putting them at his mercy, like an easy toy" (Ochoa-Salesa y Tarrés-Gen Tilly el viernes en

Price, 1949). This image permeated to the popular classes, contributing to judo rapidly dissemination in Spain during the following decades.

Conclusion. Spanish judo pioneers tried to keep judo as much away as possible from the mass sport of professional wrestling. Despite this, judo/*jujutsu* was frequently present in the show, allowing spectators to know and feel attracted by its powerful imaginary and techniques, which eventually contributed to judo dissemination in the country.

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DIFFERENTIATED EFFECT OF SELECTED TRAINING LOAD ON EXPLOSIVE STRENGTH OF FEMALE KARATEKAS

Key words: performance, maximum power, individualization

Introduction. Success at the top-level karate events is conditioned by the excellent physical preparedness of the competitors to give the best possible performance. Explosive strength is one of the most important factors of performance [Bompa, Buzzichelli 2015] and an important predictor of the speed of execution of dynamic techniques in karate [Loturco *et al*. 2014; Quinzi *et al*. 2020].

Methods. Our sample consisted of 3 female karateka's, who regularly compete at national and international tournaments in senior category in kata. Our subjects performed twice a week for 5 weeks during all conditioning training units, 6 series of 6 repetitions for both exercises, half-squat (90° in knee joint) and bench-press (shoulder width grip). Throughout our experiment, we monitored the power [W] in each repetition in squat and bench-press using FitroDyne device (www.fitronic.sk). We used weight corresponding to individual Pmax [W]. Subsequently, we calculated the value of Pmean [W] for the whole training unit. We used visual and evaluated statistical analysis using C statistics of time-series data analysis and evaluated the trend of Pmean [W] values (for training unit) during monitored period. The significance level of p <0.05 was used.

Results. Subject 1 achieved statistically significant increase in Pmean [W] in the squat throughout the experiment ($C = 0.88$, $Z = 3.00$, $p \leq 0.01$). Subject 2 achieved visually increase, but data were variable and turned out to be statistically non-significant, although very closely ($C = 0.47$, $Z = 1.59$, p = n.s.). In subject 3 we recorded a slight decrease ($C = -0.003$, $Z = 0.01$, p = n.s.).

In the bench-press, for subject 1 the values were relatively stable during experiment period and we did not observe statistically significant changes ($C = 0.14$, $Z = 0.50$, p = n.s.). We observed gradual improvements throughout the experiment in subject 2 and 3. The changes in values were statistically significant ($C = 0.73$, $Z = 2.47$, $p \leq 0.01$) respectively ($C = 0.59$, $Z = 2.03$, $p \leq 0.05$).

Conclusion. In our study, we demonstrated the various effects of 5 weeks training program load based on using the weights representing the individual value of Pmax [W] on the trend in the development of explosive strength. Based on our results, even a short training program with an optimized load respecting the needs of the individual athlete can enhance the level of explosive strength, but not automatically. An individualized training program based on scientific knowledge may have a different effect on an individual athlete. We emphasize the necessity of individualization and permanent control of the intensity of performed exercises to achieve even better results during the development of explosiveness of female karateka's.

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SELECTED SOMATIC FEATURES AND MOTOR EFFICIENCY OF COMPETITORS TRAINING JUDO AND KICKBOXING

Key words: physical fitness, martial arts, International Physical Activity Test

Introduction. The following thesis aims to compare the physical form of judo and kickboxing competitors in Rzeszow sports clubs.

The choice of subject was determined by a relatively small amount of contemporary scientific studies concerning dependency on physical fitness level in the martial arts discussed. Nevertheless, in the past decade, there were some publications about motor training in martial arts which would justify the choice of subject. These publications include works of Gabriel Szajna [2011: 22-39], Wojciech J. Cynarski [2012: 52-55], Janusz Jaworski [2012: 5-9] as well as Danny Plyler and Chad Seibert [2017: 52-58].

Problem statement. The following thesis aims to compare the motor skills of judo and kickboxing competitors in Rzeszow sports clubs using the International Fitness Test [Dobosz 2012: 18-20], which studies basic motor characteristics. In addition, the dissertation evaluates the somatic characteristics of competitors. The tests were conducted in October 2021.

Methods. The tests were carried out on 36 competitors of sports clubs in Rzeszow practicing kickboxing and judo. The duration of training for subjects ranges from 4 to 7 years, while their age ranges from 17 to 25 years.

The thesis used an anthropomorphic method to measure the selected anthropomorphic parameters, namely the height and weight of the competitors.

To assess fitness, tests included in the International Fitness Test were performed.
Participants in the test were healthy, with no contraindication to physical activity.

The physical fitness results were analyzed statistically, resulting in an arithmetic average, minimum and maximum values, and standard deviation.

Results. Findings from the International Physical Fitness Test show that competitors who practice judo are more physically fit.

Judokas have an advantage over kickboxing practitioners in tests like speed, endurance, strength of hands, agility, and sit-ups. Better results could be due to the type of training judokas practice daily. The functional units of the muscles become more active during judo practice. Kickboxing practitioners are, however, more adept at jumping, bending their arms, and being flexible.

The differences in the results of the tests presented above are insignificant, they involve a few seconds or repetitions. In the hand strength test, the maximum values are the same for both groups, whereas the average value is slightly higher for judokas.

In terms of somatic build, it turns out that kickboxing practitioners have a higher body mass and height.

Discussion and conclusion. The thesis aimed at comparing the motor skills of judo and kickboxing competitors and exploring how martial art influences somatic build.

In martial arts, specific features are important for achieving competitive efficiency. Physiological characteristics of competitors which are measured through skill and fitness tests are particularly important. Fitness includes endurance, muscular strength as well as cardiovascular and lung endurance. In contrast, skill elements include coordination, speed, strength, reaction time, and agility [Kulik 2015: 2-37]. Most martial arts require combining technique with strength, aerobic fitness, and strength connected with speed.

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CONSTRUCT A CULTURE OF PEACEBUILDING, NOT A CULTURE OF WINNING, FOR TAEKWONDO DIPLOMACY

Key words: Republic of Korea (ROK, Democratic People's Republic of Korea (DPRK), sports diplomacy, cultural diplomacy, martial arts, combat sports

Problem. The Republic of Korea (ROK; South Korea) and the Democratic People's Republic of Korea (DPRK; North Korea) have utilized Taekwondo demonstrations for soft

diplomacy purposes for decades. World Taekwondo (WT) athletes represent the ROK, while International Taekwon-Do Federation (ITF) athletes represent the DPRK in these cultural exchanges. Despite their good intentions, the current initiatives to merge the WT and ITF Taekwondo styles and to hold competitions between their athletes ignores warnings in current sport diplomacy research.

Aim. Building upon recent research on Taekwondo diplomacy, this paper suggests that Taekwondo actors adapt Galtung's conflict resolution theory (CRT) to avoid pitfalls of sports diplomacy while building upon their cultural diplomacy successes.

Methods. For this qualitative study, a literature review was performed on Taekwondo diplomacy, Taekwondo philosophy, sports diplomacy, and cultural diplomacy in order to determine where these areas of study intersect. The keywords "World Taekwondo (WT)," "International Taekwon-Do Federation (ITF)," "sports diplomacy," "cultural diplomacy," "North Korean Taekwondo," and "Taekwondo demonstrations" were entered into Google Scholar and the South Korean academic databases RISS (Research Information Sharing Service) and KISS (Korean studies Information Service System). Themes were identified and then codified. The themes were then analyzed and correlated into Taekwondo soft diplomacy literature.

Results. Switching from a relationship of mutual respect and shared cultural background to one of competition comes with risks. This study outlines the problems that currently exist in this strategy and offer a potential solution that focuses on Taekwondo's ultimate philosophical goal: the building of peace. CRT provides a framework in which Taekwondo can be practiced differently and with respect for each Korea's differences.

Conclusion. There has been little discussion to date on the potential problems with using Taekwondo for sport diplomacy. There exists a possibly of increasing hostilities between the Korean peoples and possibly not influencing the target audience. CRT provides a framework in which Taekwondo can be practiced differently and with respect for each culture's differences. It is suggested that WT and the ITF adapt CRT from a practical peacebuilding concept to a theoretical framework for Taekwondo diplomacy.

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PSYCHOPHYSIOLOGICAL STATE AND DECISION MAKING IN WRESTLERS

Key words: psychophysiological state, wrestlers, decision making

Background. The investigation of psychophysiological functions in athletes is important to adapt the training process. In this paper we examine speed perception and decision making during wrestling fights as a crucial component of performance [*cf.* Causer, Williams 2013; Gierczuk *et al*. 2018; Chernenko *et al*. 2020; Zadorozhna *et al*. 2021]. We argue that wrestler must anticipate the situation and speeded choices of response selection are required based on fast and frugal decision making.

Aim. The approach investigates a psychophysiological test battery to test correlates of fast or slow decision making in wrestlers.

Method. 29 elite Greco-Roman wrestlers were examined. The psychophysiological states of wrestlers were studied by a test battery of vision motor test, non-verbal intelligence, anticipation and heart rate variability. Those competences are correlated to fast or slow decision making time when choosing between different stimuli.

Results. The analysis revealed correlation between fast decision making and visual perception, increase of impulsiveness and level of emotional strain during fights. In addition, faster decision making was present in those wrestlers with high anticipation ability and balance between processes of arousal and inhibition. The psychophysiological data suggests that fast decision-making correlates with the autonomic regulation of the heart rate.

Conclusions. Fast decision making in wrestlers seems to be related to a number of parameters in a psychophysiological test battery calling for a causal and experimental approach in the future and specific training of those factors allow wrestlers to improve their decision time.

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EDUCATION TO BRAVERY - CONTEMPORARY UNDERSTANDING AND METHODS OF INTERNALISING BRAVERY AMONG MARTIAL ARTS ADEPTS

Key words: sports pedagogy, bravery, education for values, martial arts

Introduction. Education as a complex process of both external influences and internal transformations of the personality aimed at preparing the individual for life [Śliwerski 2012], is an important element of the practice of Far Eastern martial arts [Cynarski 2012]. Not only martial arts masters [Mifune 2004; Kano 2005], but also philosophers and educators [Kowalczyk 2010; Ohsawa 2011; Cynarski 2012; Stevens 2013; Kozdraś 2018] have written about education to values through martial arts. The contemporary perspective of the martial arts as a process of education to values necessitates, in a way, a revision of the category of bravery, which is often confined by adepts of the martial arts solely to the concept of courage. The Polish social pedagogue Aleksander Kamiński, in his publication "*The Birth of Bravery*", points out that the category of bravery should be seen as a fundamental energy in the service of moral values. At the same time, he explains that open societies have different ideals and views, but for these to exist in people's everyday lives, brave people must be involved. Bravery is, in his view, the foundation of character, and therefore only people with character can build a better world [Kamiński 1958]. Brave people are sought after in martial arts education; in view of this, the question arises as to how to shape attitudes of bravery among young people so that they meet the challenges of the modern world?

Objectives. The main objective of the research will be to describe how contemporary adepts of selected martial arts interpret and give meaning to the category of bravery, as well as to find out how trainers of selected martial arts educate their pupils to bravery. As the main problem of the research I assumed the question: What significance does the value of bravery have for adepts of selected martial arts? I have included the following questions among the specific problems: How do martial arts students define the category of bravery? What manifestations of human courage can constitute, in the opinion of martial arts adepts, human bravery? What differences exist in the understanding of bravery among the martial arts students surveyed? To what extent do students of the martial arts recognise the need to develop and strengthen their courage in the course of self-improvement? What methods do martial arts trainers use in the process of internalising the value of bravery among their adepts?

Methodology. I will use a quantitative research strategy to address the research questions adopted. The main test method will be a diagnostic survey. Within this method, I will use a questionnaire survey addressed to practitioners of selected martial arts (*judo, aikido, karate*) taking into account their gender, age, rank and training experience. The second research group will be the trainers of the martial arts studied. The research will be conducted between June and September 2022. I will present the results of the research in the form of descriptive statistics with a percentage indicator.

Discussion. I suppose that describing the ways in which adepts of the martial arts understand and getting to know the ways in which martial arts trainers internalise values

associated with bravery can contribute to more effective work into directing this human activity towards various manifestations of human bravery, expressed in courage, energy, entrepreneurship and ingenuity in everyday life.

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THREE PARADIGMS OF KARATE: SPORTS ASPECT

Key words: style karate, general karate, Olympic karate, Japan local civilization

Short announcement. The Olympic attempt of karate and the information hype caused by it impose the opinion that the Olympic karate is replacing traditional martial systems from the life of society, and only karate as a sport will guarantee further progress. This article is devoted to the real state of modern karate.

Introduction. Karate originates from combat systems in the paradigm of "martial skill", formed in the conditions of a specific Japanese local civilization. Karate, was formed under the influence of the global processes of westernization of Japan as a combat system, which should be considered in a different paradigm - Budo or "the system of education in the warrior spirit". Further penetration into the Western civilization environment led to the emergence of a new form of karate in the system paradigm of "sport" [Lozovyy, Serhiienko 2021]. Competitions appear in the structure of Budo as part of training, and since 1957 they have acquired the features of modern sports [Lozovyy, Serhiienko 2020].

Methodology. The work summarizes own research, studies and analyzes information obtained from scientific publications, competition results, personal contacts with masters of different styles.

Results. In the course of the development of karate and its transition to a new paradigm, along with its already existing forms, new ones arose, corresponding to changes in society. Accordingly, new forms of competition appeared. In our opinion, all competitions in karate can be attributed to one of three forms, which should be positioned as three separate sports with the characteristic features of sports: special management and organizational structure; regular calendar; stable rules and regulations.

1. Style (Budo) karate. Competitions are held within a particular style, which is a separate sport discipline. Formed in the Japanese civilization environment in the process of modernization and westernization; philosophically, spiritually and technically close to the original paradigm of "martial arts".

2. General karate is a transitional form from Budo to a sport in which representatives of different styles compete, while maintaining its originality. Organically combines the advantages of traditional training in Budo and modern sports management.

3. Sports (Olympic) karate was created according to the laws of Western civilization, as a product of globalization, when karate elements suitable for it were built into the finished structure of modern sport. Philosophy, rules, choice and application of technique are as far as possible from the original paradigm of "martial skill".

The systemic differences between them are as follows: 1) the degree of remoteness from the parent Japanese local civilization towards the Western and from the original paradigm of "martial skill"; 2) the impact of the processes of modernization, westernization and globalization [Bowman 2010]; 3) differences in combat philosophy, conditions and risk according to escrimology [Acutt 2015]; 4) the structure and method of using the technical arsenal; 5) the mission of the corresponding combat system in modern society.

Discussion and conclusions. Our conclusions are confirmed by the opinion of the leading karate practitioners Kubota T. (Gosoku Ryu), Funakoshi K. (Shotokan, FSKA), Kanazawa H. (Shotokan, SKIF), who recognize the existence of karate in different paradigms and forms, equally significant and having a public demand for each. The three forms of competition should be considered different sports with different social missions, and their assessment solely on sports indicators is incorrect.

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ELEMENTS OF SARMATISM IN THE HISTORICAL POLISH MARTIA ART SIGNUM POLONICUM

Key words: historical Polish martial art, *Signum Polonicum*, meme, Sarmatism, Neosarmatism

The article is an attempt to describe the elements of Sarmatism passed on to adepts in the process of teaching the historical Polish martial art *Signum Polonicum*. The development of martial arts, regardless of latitude, is related to the spiritual and philosophical sphere; it is also strongly based on the local cultural code. After reaching a certain level of technical proficiency, practitioners begin to look for the metaphysical sources of their martial art in order to understand it and experience it in the fullest possible form.

In the Baroque period, one of the main cultural and philosophical trends in Poland was Sarmatism - an original, idealizing system of values including a set of philosophical, spiritual, cultural and physical phenomena. It is currently undergoing the process of redefinition and re-idealization along with the progressive reconstruction and development of the old Polish martial art in order to extract universal values that constitute both its archetypal and memic character that allows for propagation independent of the local cultural code. The Sarmatian context that runs through the historical Polish martial art helps, through typical references - both historical (actual historical events, set in the Baroque period and events inspired by them from later centuries) and to all areas of art (literature - Sienkiewicz's Trilogy, Pan Tadeusz, art - Polish Sarmatian image, music - national opera The Haunted Manor e.a.) learn and understand the elements that distinguish Polish martial art from other, dynamically operating systems, e.g. Asian martial arts whilst retaining all the traits of a typical species representative.

Introduction. Description of the elements of Sarmatism present in the historical Polish martial art Signum Polonicum, serving as elements of its philosophical and cultural definition.

Objectives. Promoting the historical Polish martial art Signum Polonicum in diverse local communities and in martial arts centers around the world. Developing an optimal model allowing for the transfer of the idea of modern Sarmatism through martial art in environments with different cultural codes.

Methodology. Participant observation, analysis of the available literature on the topic, analysis of works of art, analysis of social needs taking into account the synergy effect of physical, philosophical and spiritual aspects conjoined with local cultural code.

Results. There is an increasing social demand for the development of native martial arts embedded in local history, culture, philosophy and spirituality. Currently, this demand goes far beyond the ludic processes of historical recreation or factual documentation of historical events. In the process of development, one can observe the penetration of selected, redefined ideas of Sarmatism into the practice of martial arts - nomenclature, training clothes, characteristic weapons or a strong connection with spirituality are just some of the elements that are subject to such a fusion. The martial art of Signum

Polonicum is in the phase of propagation in more and more diverse and distant areas and cultural codes.

Conclusions/Discussion. Presentation of the martial art universalism outside one's own region requires "translating" the idea of Sarmatism into concepts available to grasp for participants of different cultural codes. This process demonstrates an upward trend.

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COMPARISON OF ELECTROMYOGRAPHIC ACTIVITY OF RECTUS FEMORIS BETWEEN ISOKINETIC KNEE EXTENSION TRAINING AND ROUNDHOUSE KICKS - CASE STUDY

Key words: biomechanics; martial arts; strength training

Introduction. Roundhouse kick is one of the most commonly used leg technique in many martial arts [Gavagan, Sayers 2017]. Its main power is generated by knee extension at final stage of technique execution [Thibordee, Prasartwuth 2014]. Proper power training needs to imitate electromyographic activity of muscles generated during the roundhouse kick execution to reduce need of motor learning transfer [Moreira *et al*. 2021]. The aim is to analyse the contribution of the data collected with BIODEX isokinetic device in better understanding the execution of the roundhouse kick.

Methods. 33 years old karateka with 13 years of experience performed 10 roundhouse kicks to a shield and 10 repetition of knee extension in isokinetic test protocol on BIODEX SYSTEM 4 PRO with maximum speed of 500 deg/s, both with right leg. EMG electrode was attached to rectus femoris accordingly to SENIAM protocol. NORAXON Ultium IMU sensors was used to measure EMG activity of right rectus femoris muscle, angular velocity of knee extension movement and foot acceleration.

Results. For both roundhouse kick and isokinetic knee extension, occurrence of maximum angular velocity was before the occurrence of maximum acceleration with mean time difference was 0.01s and 0.034s, respectively. In both cases peak activation of rectus femoris occurs before reaching maximum angular velocity and acceleration (x = 0.138s and x = 0.064s respectively) (Table 1).

Table 1. Differences in the time of occurrence for maximal values of studied variables.

	Roundhouse kick				Isokinetic knee extension			
Move	T_{EMGmax}-T_{amax}	T_{EMGmax}--$T_{\omega max}$	$T_{\omega max}$ - T_{amax}	Peak muscle activity (uV)	T_{EMGmax}--ta	T_{EMGmax}- - $T_{\omega max}$	$T_{\omega max}$ - T_{amax}	Peak muscle activity (uV)
1	-0.325	-0.123	-0.202	701.89	-0.096	-0.059	-0.037	317.37
2	-0.102	-0.115	0.013	614.92	0.013	0.052	-0.039	455.48
3	-0.125	-0.137	0.012	665.23	-0.183	-0.148	-0.035	508.05
4	-0.112	-0.123	0.011	499.10	-0.053	-0.014	-0.039	610.38
5	-0.111	-0.122	0.011	684.36	-0.022	0.014	-0.036	616.34
6	-0.114	-0.124	0.010	641.31	-0.042	-0.009	-0.033	578.00

7	-0.113	-0.123	0.010	678.01	-0.100	-0.069	-0.030	704.51
8	-0.147	-0.161	0.014	549.84	-0.022	0.010	-0.032	876.78
9	-0.122	-0.126	0.004	692.72	-0.092	-0.063	-0.030	538.48
10	-0.111	-0.126	0.015	719.44	-0.042	-0.008	-0.034	724.84
mean	**-0.138**	**-0.128**	**-0.010**	**644.68**	**-0.064**	**-0.029**	**-0.034**	**593.02**

T_{EMGmax} – time of reaching maximal electromyographic activity; T_{amax} – time of reaching maximal acceleration; $T_{\omega max}$ – time of reaching maximal angular velocity

For roundhouse kick, mean maximal electromyographic activity of rectus femoris was 644.68 uV±67.35. For isokinetic knee extension mean maximal electromyographic activity of rectus femoris was 593.02 uV± 147.13uV (Table 1).

Discussion and conclusion. Angular velocity of knee extension during roundhouse kick (over 2000 degs) exceeds the possibility of isokinetic machine adjustment, making impossible to imitate the speed of fast kicking techniques on BIODEX (fixed on 500 deg/s). Contrary to previous studies, no muscle fatigue was observed as peak muscle activity varies without decreasing tendency through this experiment [Quinzi *et al*. 2016]. Similar level of rectus femoris activity during the execution of both moves in 5 trials suggest that trained martial artist can maintain muscle control of knee extension in different circumstances, even if physical target of a kick is not present [Kim *et al*. 2011]. Shorter time between maximum muscle activity and maximum movement speed justifies use of isolated isokinetic training for shaping power of roundhouse kick, which is concurrent with other study, where frontal kick was tested [Quinzi *et al*. 2013]. As karate type of roundhouse kick have faster onset of peak angular velocities than Taekwondo athletes [Barnamehei *et al*. 2020], but lower maximal velocity of a kicks [Gavagan, Sayers 2017], isokinetic training could be beneficial as training transfer tool in changing motor pattern of technique execution, depending on training goals. High speed isokinetic training could be beneficial for rehabilitation after lower limb injuries to regain similar muscle control before going back to martial arts practice.

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HEALTH ASPECTS OF PRACTICING SPORTS FIGHT WITH FOAM STICKS

Key words: public health, hip joint, pelvis, aikido, coxartroza

Background. The use of foam sticks in competitive sports has been made a complementary component to aikido training as well as a form of collision avoidance skill development [Mroczkowski 2019]. This article evaluates the author's earlier observations i.e. that competing with foam sticks may improve the mobility of the hip joints and the position of the pelvis.

Problem and aim. Aim of the research was to show the effect of practicing foam sticks competition on movement disorders of the hip joints in the elderly.

Methods. A 58-year-old person complaining of periodic pain in the hip joints was subjected to the examination. The patient suffered from degenerative changes in the left hip joint - coxarthrosis. The examined person showed asymmetry of movement in the hip joints' area while walking. The limitation in the range of motion of the left hip joint was clearly visible. In the course of two years, the examined person performed selected aikido exercises and learned how to move correctly during a foam stick competition, such as in aikido. This movement, often known as "hip walking" [Ueshiba 1985], requires the active involvement of muscles with their origin attachments on the pelvic bones and insertion attachments on the proximal femur, especially the rotating muscles of the hip joint. The speed of this movement is due not only to the speed of movement of the lower limbs, but more to the intense twisting of the pelvis propelling the movement of these limbs. The aim of teaching this mode of movement was to properly engage the muscles attached to the pelvic bones, especially the muscles responsible for hip rotation, in order to achieve symmetry of hip movement while walking [Mroczkowski 2009; Mroczkowski 2015].

Results. After 2 years of exercise, the patient was found to have improved the symmetry of movement while walking when it came to his hip joints. The subjective perception of pain in the affected hip joint, as assessed on a numerical scale from 0 to 10, decreased from 4 to 1.

Conclusion. In the case of pain in the area of a specific hip joint, the patient most often relies on the painless joint more often. After a certain period of time, this results in acquiring the movement habits of walking leading to asymmetrical movements of the hip joints. Restricting movements in a specific joint results in the reduced stimulation of synovial fluid secretion. Limiting the secretion of synovial fluid may lead to degenerative changes, which in turn may require surgical treatment. According to orthopedists, in the cases of less advanced degenerative changes in the hip joints, maintaining the range of motion and increasing muscle strength reduces pain in most patients [Kruczyński, Szulc 2014]. The validity of this theory was confirmed by the research findings listed in this

article. There was a reduction in periodic pain and an increase in the symmetry of movement while walking when it came to the hip joints' movement.

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AMINUDDIN ANUAR (1970 – NOW): THE LEADERSHIP AND CONTRIBUTIONS TO THE GLOBALIZATION OF MALAY SILAT

Key words: *silat*, globalization, leadership

Background. Silat is widely practiced in Malaysia and has been inscribed as a cultural heritage by UNESCO. Aminuddin Anuar is the silat leader in Malaysia. He was elected as the second grandmaster of Pertubuhan Seni Gayung Fatani Malaysia (PSGFM) in 2009 by the council of senior grandmaster due to his experience and ability to communicate with many silat leaders in Malaysia. His vision on going global is by developing and conducting the activities of Malay Silat as a whole (culture, sporting activities, developments of silat curriculum, research and developments, martial arts promotion etc.) [Abdul Razak and Muhamad 2022].

Problem and aim. There is limited information about leader that is responsible to develop and establish silat worldwide. To identify the contributions made by silat leader is important because this will determine the direction of an organization in promoting Malays Silat in the eyes of the world, particularly in living the traditions that inherit from the golden age of Malays empire. This information is useful to determine the authenticity of Silat [Anuar 2008] compared to other martial arts, particularly in the Malaysian silat context.

Methods. This paper used the official PSGFM's documentation, literature analysis, interview, and review. It employed the qualitative method on current available evidence such as literatures, books, various official PSGFM documents, published journal articles that are related to the establishment of the Malay silat.

Results. Aminuddin is a prominent martial arts leader in world of silat [Shapie 2021]. He was a former national and world champion of silat between 1990-1995. He replaced his father, Anuar Abdul Wahab (1945 -2009) as the leader of PSGFM. He is the guru for many silat fighters between the 1980s and 1990s – a period when the world of silat was excited with the introduction of Silat Olahraga (combat sports) and Silat Seni (artistic sports). Under his leadership many silat grandmasters are born such as the Grandmaster Dr Mohamad Nizam Mohamed Shapie [Pawelec *et al*. 2015], Grandmaster Mohd Shahiid Elias, Grandmaster Mohd Safwan Abu Hassan, Master Nur Fiqah Qari, Master Nur Hidayah Mohd Abdul Wahab and many junior silat instructors. He responsible for the establishment of World Silat Federation (WSF) in 2020 that allowed many interested

countries to participate in silat activities worldwide via valid certification of one silat syllabus known as Seni Silat Malaysia [Shapie and Elias 2016].

Conclusion. Grandmaster Aminuddin Anuar is a visionary leader in silat [Abdul Razak and Muhamad 2022]. His dedication in the globalization of the original Malay Silat to the world was recognised by the government, many martial artists, among many local and foreign silat and pencak silat communities. The leadership was inherited from his father, the late Grandmaster Anuar Abdul Wahab.

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THE INFLUENCE OF ALCOHOL ON REACTION TIME AND SURVIVAL IN A SELF-DEFENSE SITUATION

Key words: reaction time, knife crime, criminal act, knife attack, alcohol in self-defense

Introduction. The experience of individual members of the security forces and the discussion of the professional public reveal a hitherto sufficiently unexplained issue of the influence of alcohol on self-defense performance. The real effect of alcohol on the ability of a defender intoxicated with 1.1 alcohol to defend itself against the literature has not been satisfactorily described. The purpose of the investigation is to determine the effect of 1.1 breath alcohol on the reaction time and survival of a person who is attacked by an attacker using a knife.

Methods. The research group consists of 23 men and 30 women with different experiences of self-defense, combat sports, and martial arts. Individuals were included in the sample based on a combination of self-selection and chain selection. The criterion was the age of 20 to 33 years and participation excluded some exclusive criteria, including alcohol dependence.

The project in question is based on quantitative research. The main research method was experiment. Another method of research was comparison.

The effect of alcohol on the reaction rate of the test person and on his self-defense performance against a knife attack was investigated. The reaction time was measured using the Simi motion. Self-defense performance was determined using a survival scale created by Vít and Novák. Two measurements were made in each person, which were then compared - at 0 and then at 1.1 - of alcohol.

The knife attack was carried out with a rubber knife with paint on the blade for better recording of hits; it always had the same course (4 attacks by a helper from a distance of 80 cm). The attacks before and after drinking alcohol were the same, but participants were informed that it was important to throw coins.

Results. According to the results, no significant effect of alcohol was found on the reaction time of the affected persons before alcohol consumption and at 1.1 alcohol. Similarly, no significant effect of alcohol on the ability of the affected person to live was found. However, when drinking alcohol, people collected more fatalities than before drinking alcohol (however, survival itself was not affected).

Discussion. We believe that the alcohol level of 1.1 ‰ affected our participants in different ways and could have a stimulating effect on some people. To a large extent, alcohol alleviated testing inhibitions and anxiety and, for this reason, individuals were able to obtain similarly good results on the second measurement. Training between the first and second measurements could also play a role (especially for less-trained people).

Conclusions. Hypotheses about the effect of alcohol 1.1 have not been confirmed or refuted. It can be stated that in the tested group, alcohol did not have as significant an effect as expected and the reaction time of people and their ability to survive was not significantly affected by alcohol.

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THE EFFECTS OF INSTRUCTIONAL AND MOTIVATIONAL SELF-TALK ON AXE KICK PERFORMANCE IN TAEKWONDO

Key words: taekwondo; kicking; self-talk; performance

Background. Applying psychological approach such as self talk into sport has been shown to provide positive results [Sato *et al*. 2018; McCormick *et al*. 2018]. Self-talk can be referred as the words or sentences that were said to selves for a specific purpose, such as to increase motivation or to improve ability in performing a skill. Several studies have been conducted on the effectiveness of several types of self-talk. This includes instructional and motivational self-talk [Chang *et al*. 2014; Hardy *et al*. 2015].

Problem. Despite of many findings showed the effectiveness of self-talk, lack of research had been conducted on how applying self-talk could contribute to skill execution performance in Taekwondo. Thus, it is the aim of this study to determine and compare the effects of instructional and motivational self-talk on axe kick performance in taekwondo.

Method. Thirty (N = 36) black belt taekwondo athletes (mean age = 22.73 years old) were recruited as participants of this study. Participants were asked to attend three testing sessions separated by three days between sessions, each session with different self-talk; i) instructional, ii) motivational and ii) no self-talk. The peak height and velocity of the kicking was analyzed as indicator of performance and were compared between the three types of self-talk using one way repeated measure analysis of variances.

Results. Results showed performing motivational self-talk produced significantly greater peak height and kicking velocity compared to instructional ($p < 0.05$) and no self-talk ($p < 0.05$).

Conclusions. The findings showed the importance of cues during self-talk training for the athletes in order to enhance their performance. It is suggested for the coaches and athletes to learn the correct way of self-talk before tournament to maximize its effectiveness.

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MARTIAL ARTS ON WIKIPEDIA VIEWS. TRENDS IN PERIOD 2015-2022

Key words: fighting arts, Wikipedia, analysis of trends

Introduction. Wikipedia is a mass project based on the idea of free licenses. It is therefore an open source research source that is transparent and easy to use by researchers. Therefore, it is interesting how the topic of fighting arts is presented in this source, because it is used by millions of Internet users around the world. The term "martial arts" describes (according to Wikipedia) „codified systems and traditions of combat practiced for a number of reasons such as self-defense; military and law enforcement applications; competition; physical, mental, and spiritual development; entertainment; and the preservation of a nation's intangible cultural heritage" [Encyclopedia 2022].

The investigated problem concerned the identification of trends in the creation, modification and reception of content related to martial arts on Wikipedia. Therefore, trends in the following indicators were also studied: „1) Pageviews (Total pageviews for any topic over time), 2) Langviews (Breakdown of the language settings of the Pageviews of a topic), 3) Topviews (Breakdown of the most popular Wikipedia topics for that time period), and 4) Massviews (The views of a specific page or hashtag category)" [Weiner 2018].

Methods. Pageviews Analysis was used as the research method. The following tools were used: WikiStats and Wikimedia Commnons beetwen July 1, 2015 (beginning of the analysis by WikiStats) and June, 30 2022 (analysis completed)

Results. The obtained results (on absolute value) indicated the trends in the creation, modification and reception of slogans related to martial arts in WikiStats [1) Pageviews (Page views: 4,116,357 Monthly average: 49,004), 2) Langviews („martial arts" term in 103 languages), 3) not among the top 100 sites, and 4) Massviews (1610 views per day as a specific page or hastag category)] and Wikimedia Commnons (562 media files total in this category).

Discusion and conclusion. The measurement tools used revealed in some cases the differences in the levels of interest of authors and recipients in specific terms, which will be presented in the appropriate statements**.**

As the results show, the term „martial arts" was not the main subject of interest for Wikipedia users. However, it can be stated that this term has its own elements that may favor its increase in popularity in the future.

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FIGHTING WITH A TALLER AND HEAVIER OPPONENT - PSYCHOLOGICAL ASPECT

Key words: fighting, psychology, Thai boxers

Background and Problem. So far, the major issue has been the lack of unambiguous reasons why Thai boxers do not decide to fight with bigger and taller opponents. The problem has not been depicted in details among European participants yet. The aim of my specified questions presented in this survey is to show factors and reasons defining achievements of Thai boxers fighting with taller opponents.

Method. The subject of the study were ten Polish responders: eight men and two women who practise stand- up martial arts. Each of the respondents has been training for at least 3 years, so we could say that they are at an intermediate or even advanced level.

Results. This abstract specifies the most vital questions displayed to the respondents. One of them has been connected with the weight of the contestants. The most common weight range was from 60 to 70 kilograms. The second popular weight range was from 70 up to 80 kilograms. Finally, the following ranges obtained 10% in terms of popularity: from 50 to 60 kilograms, from 80 to 90 kilograms and subsequently the last one was more than 90 kilograms.

The following questions have been asked: 'How long have you been practicing martial arts? Please include a specific number. All respondents have answered that question, however their answers varied. Next question referred to frequency of trainings done weekly. The major group revealed that they practice from 2 to 3 times a week.

As I previously estimated, the majority of respondents have had the opportunity to fight with a taller and heavier opponent- 8 out of 10 sportspeople had the opportunity to face a bigger opponent. In the following question: 'Will you be able to fight with an opponent who weights 30 kilograms more than you?' 8 people replied positively. In the next question I wanted to discover whether these respondents would feel fear in case of fighting with a substantially heavier opponent. In that case 5 respondents said 'yes'.

As far as the level of intensity of fear is concerned, the most frequent answers were: five, six and eight. Another issue to discover has been the criteria of participation in such a fight. Undoubtedly, vast satisfaction in addition with substantial money reward were enumerated as the main reasons to participate in a mentioned above fight. The results of the last part of the questionnaire revealed that 80% of the respondents claim that fight is the source of satisfaction and enjoyment.

Conclusions. This allows the conclusion that from all martial arts, Thai boxers practicing stand-up fighting have overcome a huge number of bigger opponents incorporating their own rules. They have achieved unobtainable for others goals. The present findings confirm that they demonstrate the original meaning of practicing fighting sports. Experts with many years of experience in the ring believe that winning with bigger ones is possible for thai warriors through the experience gained in the ring, which they collect from an early age, and mental perseverance, which is shaped through the long and demanding training process.

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METHODOLOGY FOR PREDICTING THE SUCCESS OF KICKBOXING ATHLETES

Key words: kickboxing, prognosis, success, morphofunctional, physiological, biomechanical, psychophysiological, indicators

Introduction. Modern competitive activity imposes significant requirements on the level of functional readiness of martial arts athletes. In martial arts, the problem of factors determining the success of performances has not been finally resolved. [Plush *et al*. 2022]. There is no consensus on a full comprehensive assessment of these factors.

Problem. Predicting the condition of athletes in kickboxing requires the use of informative, valid and accessible tests and functional tests. The study of the relationship between the technical-tactical and physical training of athletes makes it possible to predict the growth of sportsmanship. The presence of a significant correlation between the indicators of technical and tactical training and the results of fitness tests was shown. [Rydzik *et al*. 2021].

The development of an anthropometric profile for a specific sport can serve as a diagnostic criterion in predicting the results of an athlete [Burdukiewicz *et al*. 2018].

Forecasting the growth of athletes' sportsmanship requires the use of special informative tests. Ulupinar *et al*. [2020] used the 10-second frequency speed of kick test (FSKT) and counter movement jump (CMJ) test to differentiate the skill level of kickboxers. It is shown that FSKT can be used to identify successful and unsuccessful kickboxers.

Methods. 185 athletes aged (18.58±0.46) years were examined. We studied the features of physical development, goniometric parameters of the joints of the extremities, the features of psychophysiological reactions, the adaptive capabilities of the cardiovascular system, and determined the main biomechanical parameters. Forecasting was carried out using a sequential Wald procedure with the calculation of prognostic coefficients and their information content.

Results. A prognostic table of the functional state of kickboxing athletes has been developed. The content of the forecast consists in evaluating the results, determining the appropriate predictive coefficient and summing these coefficients to achieve one of the prognostic thresholds. In accordance with generally accepted approaches, the threshold value was set at ± 13, which corresponds to a probability of 95% ($p<0.05$). Exceeding the positive threshold means a high level of success of the athlete. When the negative threshold is reached, the probability of success is low.

Conclusion. A methodology for predicting the success of kickboxing athletes using morphofunctional, physiological, biomechanical and psychophysiological indicators has been substantiated and developed.

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CUT OR THRUST? CONTRIBUTION TO THE REFLECTION ON THE MULTIFACETED EFFECTIVENESS OF CUTTING AND THRUSTING WITH A MELEE WEAPON

Key words: hussar sabre, sabre cuts, stab, stab wound, diagram of cuts

The article ponders comparison of effectiveness between cutting and thrusting techniques from a multifarious approach - tactical, martial arts, human biology. Its aim is to present the issues rarely debated in Polish science. It presents historical sources and the opinions of researchers on the topic, permitting a broad view of an extremely wide range of issues. It describes the efficacy of cuts and thrusts in both battle and duel, their technical potency, lethality of techniques and the body's response to sustained wounds. It shows the division into the fight of warriors with and without protective armament.

In conclusions it endeavors to present an answer which of the techniques is more effective. The material for the study was obtained thanks to literature analysis, both from the period (16th-19th century sources) and from the sparse available literature on a broad range of topics (monographs, articles in magazines, periodicals or the Internet) broaching the issue in question. The result demonstrates a coherent, nevertheless - due to the nature of the work – a very limited comparison of the above-mentioned combat operations with their efficiency It also encourages further research in the field.

Introduction. The paper attempts to compare the effectiveness of cutting and thrusting techniques from a multifaceted approach - tactical, martial arts, human biology. It has scarcely been discussed in Polish literature.

Objectives. By analysis of the available literature and sources, it describes both the effectiveness of cuts and thrusts in battle and duel, their technical potency, lethality of techniques and the body's response to wounds. It demonstrates the division into fight of warriors with and without protective equipment

Methodology. Analysis of the available literature, both from the era (16th to 18th century sources) and limited literature on a wide range of topics (monographs, press articles, magazines, internet) that concerned the topic.

Results. The results show a historical picture of the effectiveness of cutting and thrusting techniques with white weapons depending on the situation of the battlefield and the duel, the use of protective equipment by combatants or the fight without it.

Conclusions. The article aims to draw attention to the issues in question, important, inter alia, for a better comprehension of historical techniques in martial arts and their practical application in real combat, so far rarely mentioned in the literature and to encourage further research in this field.

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STABILITY AND SYMMETRY DURING WEIGHT-BEARING UPPER EXTREMITY SWAY TEST IN GRAPPLING COMBAT SPORTS ATHLETES

Key words: combat sports, force platform, injury prevention, single-arm plank.

Introduction. Brazilian Jiu-Jitsu (BJJ), Judo (J), and Greco-Roman style Wrestling (W) are among grappling combat sports (GCS) that focus on throws, takedowns and on ground-fighting. Characteristics of the techniques such as throws, ground techniques, immobilisations, submissions, and joint locks, commonly used in GCS put the practitioners at a high injury risk. The previous studies indicate that in GCS injuries frequently occur in the upper extremities (more than 40%), the lower extremities (up to 40%) and the spine/ trunk (17-26%) [Hammamia 2018; Del Vecchio *et al*. 2018]. Such high frequency of upper body injuries relates to specifics of body positions taken during grappling combat techniques, that require athletes to function largely in a closed kinetic chain positions with weight-bearing upper extremities.

The purpose of this study was to verify if variables attained from core stability testing using force plate technology allow to find the differences among elite athletes practiced three GCS: BJJ, J and W. We hypothesized that there are sport-related differences in a weight-bearing upper extremity sway test measures among elite athletes and asymmetry between upper extremities will allow to indicate athletes at risk of upper body injury.

Material and Methods. A group of fifty-eight male combat sports athletes, including 25 Brazilian Jiu-Jitsu athletes (BJJ) aged 16.0±1.6, 16 judokas (J) aged 23.9±3.7, and 17 wrestlers (W) aged 27.1±4.0, participated voluntarily in this study. All athletes were members of Polish national teams with international sport level, who regularly spent approximately 2h per day (6 days a week) practicing their combat sports. Their training experience ranged from 4 to 20 years. Stability was assessed using weight-bearing upper extremity sway test performed on the force platform. Subjects were instructed to maintain their balance in a full plank position with one upper extremity on the force plate and the contralateral upper extremity behind their back. All subjects were blindfolded during testing to eliminate the visual component of balance [Pontillo, Sennet 2020]. Two, 30-second trials were performed for right and left upper extremity with a 15 second break between trials. The better result was selected for the analyses. Result analysis was based on measures describing the displacement of the hand Centre of Pressure (CoP) on the platform: sway velocity (cm/s) in medial-lateral (*SV ML*) and anterior-posterior (*SV AP*) directions. Statistical analysis was performed with descriptive measures: mean ± standard deviation. The one-way analysis of variance and the Scheffe post hoc test for the mean

differences among groups (BJJ, J and W) were used. Standardized symmetry index (*SI*) was calculated as: ((|R − L|) / (0.5 * (R + L)) × 100. The significance level was set at $p < 0.05$.

Results. We find significantly differences in *SV ML* and *SV AP* for both upper extremities. *SV ML* values for both upper extremities were similar in J (right 1.04 ± 0.53, left 1.07 ± 0.58) and W (right 1.03 ± 0.41, left 1.08 ± 0.48) and both were significantly higher (right $p = 0.012$ and left $p = 0.001$) than in BJJ (right 0.66 ± 0.43, left 0.58 ± 0.39). The results in AP direction were more differentiated. *SV AP* values for the right extremity were also significantly higher ($p \leq .001$) in both J (1.08 ± 1.20) and W (1.31 ± 0.62) than in BJJ (0.38 ± 0.23), but J and W results were less like each other. *SV AP* values for the left upper extremity were similar in BJJ (0.55 ± 0.53) and J (0.60 ± 0.54), and significantly higher ($p = 0.002$) in W (1.18 ± 0.65) than in both BJJ and J. The values of *SI* indicate symmetry/asymmetry of the CoP velocity between extremities and was interpreted such that the value of $SI = 0$ indicate full symmetry, while $SI \geq 100\%$ indicate asymmetry. The lowest *SI* values was noted in W (*SI ML* 25.39 ± 23.01; *SI PA* 32.74 ± 32.37) and the highest in BJJ (*SI ML* 53.50 ± 37.44; *SI PA* 61.22 ± 48.72), but these differences were not statistically significant. Number of athletes at risk of upper body injury (*SI* values ≥ 100%) were 6 (23.08%) in BJJ, 3 (18.75%) in J, and 1 (5.55%) in W.

Discussion. Uhl *et al.* [2003] showed in their study, that the single-arm plank is a closed chain test position, that requires not only stability of the wrist, elbow, and shoulder, but the trunk and hips as well. Utilizing this test as screening tool for muscle capacity and neuromuscular control facets of core stability (expressed by the strategy of weight-bearing upper extremity balancing) also allow to identify upper extremity asymmetry and risk of upper body injury [Ponitllo, Sennet 2020; Pontillo *et al.* 2021].

This study allowed to indicate that in a closed kinetic chain positions with weight-bearing upper extremities BJJ athletes were the most stable, but in the same group the most athletes with upper body injury risk were indicated. In W group the worst stability with the best symmetry between right and left extremities were noted. Similar values of *SV* in groups J and W and significantly lower in the BJJ group may indicate differences related to the specificity of techniques used in the compared GCS. They can also be related to the age difference in the compared athletes. Future studies in larger groups and analysis of other hand balancing parameters are necessary for better explaining these differences.

We conclude that the weight-bearing upper extremity sway test allowed to identify sport-related differences in muscle capacity and neuromuscular control as well as to indicate athletes with upper body injury risk. Our study shows the option of using this test as screening tool in sport monitoring and injury prevention.

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AM AIKIDOKA: INSIDE INTO INTERNATIONAL AIKIDO MARATHON

Key words: martial art, social activity, spiritual training, physical performance

Background. Aikido is a non-competitive Japanese martial art. It was created in the half of the 20th century by Morihei Ueshiba, who devoted his entire life to studying martial arts and spiritual teaching. Despite no competition in aikido, aikido practitioners (aikidoka) meet in teaching seminars. The basic seminar schedule consists of two training sessions (one to two hours) per day. A Group of European instructors established the idea of the International aikido marathon (IAM), 24 hours long consecutive practice of aikido.

Problem. In aikido, all levels practice together. Thus, the intensity of practice varies on the practitioner's intention and the technical or physical proficiency of his or her partner. This paper aims to determine how aikido practitioners deal with a consecutive 24 hours aikido marathon.

Method. The Aikido marathon was held in 2018 in Kosice, Slovakia. For gathering basic information, participative observation was used. In the end, all participants were asked to fill in a questionnaire. This tool consisted of two parts of both close and open questions. Borg rating of perceived exertion scale [Borg 1982] was used to measure physical activity intensity level. The first one is for knowing feelings and strategy how to cope with the aikido marathon, and the second is about a recommendation for improving the idea of the aikido marathon. Data were transcribed and coded using the grounded theory.

Results. All participants were allowed to end whenever they felt tired. They could even quit or continue after some rest. After quitting, percieved exertion varied from very hard to very, very hard, according to Borg's scale. Aikidokas participated in meeting the challenge rather than learning new techniques or methods. They the saw aikido marathon more as a social and spiritual practice than a physical one, although vigorous exercise led to that. They are willing to participate in that event annually, but not more often. Aikido practitioners felt more substantial relation to other people on the mat when exhausted from the practice.

Conclusions. The international aikido marathon is a unique event that leads to the social cohesion of aikido practitioners. IAM fulfils aikido's social and spiritual ideas and is a supplementary activity to general teaching seminars. Organisers should consider some organisational changes to make it more specific.

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SOUTHEAST ASIAN MARTIAL ARTS BOOK REVIEW: THE WARRIOR ATTITUDE (SIKAP PENDEKAR) IN MALAY SILAT ENCOURAGING MALAYSIAN INTEREST IN GLOBAL MARTIAL ARTS AND COMBAT SPORTS

Key words: warrior, nalay silat, warriot

Background. This book published by UNESCO ICM in collaboration with UiTM consists of four main chapters, each representing a Nation from the Southest Asia region. This paper reviews on the first chapter, "The Warrior Attitude (Sikap Pendekar) in Malay Silat Encouraging Malaysian Interest in Global Martial Arts and Combat Sports". Although there are over 368 types of Silat in Malaysia [Anuar 2008], many of which are not recognized by any international body. The word 'martial arts' has multi-dimensional connotations that represent not only scientific descriptions but also knowledge of practice [Cynarski, Skowron 2014]. To achieve the state of "Warrior's Attitude" requires spiritual and physical skills based on Malay culture, arts and crafts that are in line with the Islamic Law. This rare achievement requires the use of knowledge at the right place with peace and justice at the same time remaining a calm spirit [Anuar 2008].

Problem and aims. A vast majority of martial arts are at risk of becoming extinct without proper institutional support and recognition. UNESCO ICM committed to safeguarding underprivileged martial arts around the world sheds light on such martial elements and related cultural diversifications in Malaysia. The country of multiracial background also has many other martial arts while the indigenous martial arts are mainly silat. There are also multiple styles and teachings of silat that need to be unravelled and recognized. This is a book review of "Southeast Asian Martial Arts: A Unique and Complex Phenomenon" by UNESCO ICM.

Methods. Physical interviews and martial arts performance were conducted to attain the authenticity and the correct information of each martial art. Each martial art's highest-ranking guru of grandmaster were interviewed and showcased their techniques to be documented. This paper used book reviewing method.

Results. The chapter of the book is divided into five parts explaining the indigenous Malay Silat Peninsula Malaysia, Organized Competition, Variations of Silat in Malaysia, Other forms of martial arts in Malaysia and conclusion of the chapter. Seni Gayung Fatani is the

original form of silat and has become the reference of Malaysian Seni Silat Curiculum [Anuar 2002] practiced around Malaysia [Anuar 2008; Shapie, Elias 2015].

Conclusion. This chapter has high impact on documenting martial arts in Malaysia as it covers multiple silat teaching that are lost in time. The chapter notes that Silat was enlisted under Intangible Culture Heritage of Humanity category by UNESCO, while "original Silat" rooted in Malay culture has yet to achieve the heritage status. Additionally, Seni Gayung Fatani is the only original silat teaching from Malay Peninsula [Ministry of Culture, Art and Heritage 2002]. Malaysia Martial Arts Federation however has united multiple martial arts in its federation building a culture of harmony and, peace. Hence, this chapter truly represents Warrior Attitude (Sikap Pendekar) in Malaysian Martial Arts.

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HOW TO BOOST CARDIOVASCULAR ENDURANCE OF SILAT EXPONENTS USING PLYOMETRIC: A REVIEW

Key words: *silat*, endurance, plyometric

Background. The art of self-defence in Silat are based on Seni Silat Malaysia system with belting system each identified by 7 different levels [Shapie, Elias 2016]. Combat sport in silat are divided into two, Silat Tempur [Shapie, Elias 2014] for exponents age 7 to 13 years old and Silat Olahraga [Shapie, Elias 2015] for more experience exponents of age 14 and above. Cardiovascular endurance, power and agility are some of many fitness components that are needed for silat exponents to perform well during competition [Shapie *et al*. 2018]. Plyometric training typically requires jumping movements vertically or horizontally, promotes functionality of the nervous system in sports performance by doing fast and powerful movements [Shah 2012]. Cardiovascular endurance is the ability of the body to transport oxygen to actively working muscles during physical activity while heart and lungs work to deliver energy to the entire body to minimize fatigue [Adam 2002].

mailto:hazimsamsudin@gmail.commailto:hazimsamsudin@gmail.commailto:hazimsamsudin@gmail.com**Problem and aims**. Plyometric training is widely studied due to its practicality and effectiveness. There is very little study done towards performance and silat combat sports. Hence, there are limited information on how plyometric can boost cardiovascular endurance of silat exponents. Therefore, identifying how plyometric training can boost silat exponents is important for further study referencing.

Methods. This paper analyses and review how plyometric training effect cardiovascular endurance of silat exponents. This review uses qualitative method on available journal articles and books related to cardiovascular endurance, plyometric training and silat.

Results. Both Silat Olahraga and Silat Tempur are contested with 3 rounds with each lasting for 2 minutes [Shapie 2016]. Cardiovascular endurance performance of silat exponents needs to be developed to aid recovery during the intermittent of competition [Shapie 2018]. Silat exponent are already exposed to plyometric training when undergoing Seni Silat Malaysia syllabus. Plyometric training that was given to silat exponents for 6 weeks has shown to boost their cardiovascular endurance amongst other fitness performance.

Conclusion. During competitive combat sport, silat exponents are expected to battle for at least twice before the final fight, which is why cardiovascular endurance is an important component to improve besides skills and other aspects. More studies can be developed in silat combat sports and other training methodology which ultimately increase the value

exposure and value of this sport. This informative review will feed future silat coaches with information in coaching silat exponents especially in young upcoming exponents which are still lacking studies.

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SURFACE ELECTROMYOGRAPHY CHARACTERISTICS OF A PUNCHING ACTIVITY BETWEEN ADVANCED SILAT PRACTITIONER AND NON-SILAT PRACTITIONER

Key words: *silat*, non-silat, activity

Background. The data from biomechanics sensors, together with more complete kinematic, kinetic, and electromyographic data that illuminate how the performance was accomplished [Fernandes *et al*. 2014], provide key performance outcomes. These devices would use wireless networks to provide reports to a gateway node about the condition of specific body organs. A major challenge for effective use of these miniaturized devices is achieve the reasonable interpretation towards the biomechanical data from the input on the muscular activation [Lalouani *et al*. 2021]. The primary approach is analysing and assessing empirical data. The language used to describe martial arts is diverse and includes elements for both scientific assessment and practical expertise. The classical technique of combat performed by the ancient Malay culture utilised Silat [Shapie, Elias 2016]. A Silat organisation with a thorough Malay cultural martial arts activities module is called Pertubuhan Seni Gayung Fatani Malaysia (PSGFM). It is officially registered in Malaysia [Razak, Muhamad 2022]. One of the key movements in Silat is punching. The characteristic of muscle activation being measured using electromyography to describe maximum contraction from the muscular connected the surface electromyography. Various studies focusing both kicking and punching techniques with the ability to assist on the motion activity in the martial arts like Taekwondo and Karate [Ishak, Eager 2021].

Problem and aims: Recent developments in martial art have heightened the need for determination of muscular activation towards the characteristic of human biomechanics. This study set out with the aim of assessing the importance of electromyography in comparing the behaviour of punching in dominant hand between non-practitioner and advanced Silat practitioner. The language used to describe martial arts is diverse and includes terms for both scientific description and practical expertise. The traditional art of war practised by the traditional Malay civilization included the usage of Silat [Shapie, Elias 2016]

Methods. Twelve persons were categorized into non-practitioner (n = 6, no experience) and advance practitioner (n =6, > 15 years of experience). The punching activity from the analysis of the upper body only on the dominant hand consists of muscles from the biceps,

triceps, flexor carpi radialis, and brachioradialis. The variables of muscle activation were analysed using Cometa surface electromyography (EMG). The analysis comprises towards the variables of muscle activation and the moment of maximum EMG amplitude. The proportion of the analysis designed to obtain the root-mean-square value and, accordingly, the maximum voluntary contraction from the punching cycle.

Results. Advance Silat practitioner have significant greater muscle characteristics of the biceps, triceps, flexor carpi radialis and brachioradialis compared to the non-practitioner when performing punching activity. At the same time, Silat practitioner punching muscle activation were constant compared to the non-practitioner. The maximum voluntary contraction values produced by the practitioner are at the earliest bumps and decrease slightly at the end.

Conclusion. The research completes the objectives outlined. With the support of surface EMG, the muscular behaviour shows the practitioner capability on punching activity dominantly when comparing with the non-practitioner. This demonstrates how crucial it is for the younger generation to understand that practising martial arts techniques like punching and kicking consistently as part of their training routines will increase their effectiveness and performance and Silat as an example of it.

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BIOELECTRICAL PHASE ANGLE AND ITS ASSOCIATION WITH THE ANAEROBIC PERFORMANCE OF YOUTH JUDO ATHLETES

Key words: combat sports, body composition, bioimpedance analysis

Background. The bioelectrical phase angle (PhA) has been identified as a relevant indicator of cellular health, body cell mass, the integrity of the cell membrane [Silva *et al.* 2020] and as a biomarker of muscle quantity and predicts the intracellular-to-extracellular water ratio in athletes [Campa *et al*. 2022]. High PhA values are associated with subjects who have high muscle mass and a higher content of intracellular than extracellular fluids [Campa *et al*. 2020]. In judo, it was highlighted that PhA might indirectly indicate muscular function in elite athletes [Matias *et al*. 2015].

Problem and aim. PhA has not been widely reported nor used in youth judo populations [Mala *et al*. 2015]. Especially not in connection to anaerobic performance. However, the literature reports that PhA can be used to monitor adolescent athletes' physical condition and sports performance [Obayashi *et al*. 2021]. Therefore, this study aimed to explore possible correlations of PhA with anaerobic performance in youth judokas.

Methods. Testing was performed on five youth judokas (age = 16.34 ± 0.95 years; weight = 72.92 ± 13.94 kg; height = 16.34 ± 0.95, skeletal muscle mass = 37.37 ± 7.42 kg). Bioelectrical impedance analysis (BIA) was done using InBody 720 Tetrapolar 8-Point Tactile Electrode System (Biospace Co., Ltd., Seoul, Korea). Skeletal muscle mass and Phase Angle variables were taken into further analysis. Anaerobic performance was measured with a 30s Wingate test with a 7.5% workload of the participant's body mass on the Monark Eregomedic 924 Ergometer. Maximum power (W), Maximum power to body mass (W/kg) and Average power (W) were taken into further analysis. Data were processed and presented using the SPSS for Windows 26.0 (SPSS, Inc., Chicago, IL, USA). The Shapiro–Wilk test was used to assess the normality of the data, and the Pearson correlation coefficient to assess the level of association between variables with statistical significance set at $p \leq 0.05$.

Results. The PhA showed a statistically significant high positive correlation with SMM ($r = 0.929$; $p = 0.022$) and Average power ($r = 0.928$; $p = 0.023$). Maximum power and Maximum power to body weight didn't show any statistically significant correlation.

Conclusions. Results showed a significant positive association between PhA and youth judokas' skeletal muscle mass, which aligns with current literature findings. Furthermore, a significant positive association between PhA and the average anaerobic power of youth judo athletes was identified. BIA present a fast, reliable and accessible method. With the usage of PhA parameter, additional insight into youth judokas' muscular functions and anaerobic performance could be given. Especially when there is a lack of time, funding or other testing equipment. The PhA could be a promising variable for sports scientists and coaches in judo; however, further research on a broader sample of youth judokas is needed to assess the practical applicability of PhA in judo. Additionally, the PhA association with other performance parameters and specific judo tests should also be examined.

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"ASCEND TO THE SOURCE". POLES IN CHINA. STUDIES IN THE HISTORY OF POLISH MARTIAL ARTS TOURISM IN XX AND XXI CENTURY

Key words: chinese martial arts, wushu, Poles in China, martial arts tourism

Background. The article presents the history of the first journeys of Polish martial arts pilgrims to China. This text focuses mainly on the years 1990-2010, when key figures for the development of kung fu in Poland, made their trips. Journeys often resulted in invaluable experience, which the masters used to establish their schools in Poland and train the next generation of warriors. Some masters share their experiences in short articles on training [Kalisz 2000; Osuch 2002; Szymankiewicz 2012].

Problem and aims. The purpose of this article is to present the difficult beginnings of Poles' travels for training in China. Firstly, the outlining the of historical and political background was sketched. The second part presents selected accounts of the first contacts between Poles and their Chinese masters and teachers, the difficulties and challenges that accompanied first meetings.

Methods. The author conducted 25 in-depth interviews. The interviews were conducted between 2019 and 2022 in face-to-face meetings or using distance research methods due to the COVID pandemic and the overseas locations of the selected respondents.

Results. The gathered material made it possible to outline the main problems which individual Polish martial arts tourists had to cope with, such as obtaining finances, meeting the formal requirements presented by the Polish and Chinese authorities. The material obtained through interviews gave insight into the often very private experiences of Polish travelers.

Conclusions. Poles had to overcome many obstacles to train in China. But the first contacts have often resulted in years of cooperation, further visits and finally to set up our own school of Chinese martial arts and to popularize them in Poland. Also Polish masters often became emissaries of Chinese culture.

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VISUAL PERCEPTION IN EPEE FIGHTING IN THE OPINION OF POLISH FENCERS

Key words: visual perception, attention, epee fencing

Introduction. In sports, success is determined by the ability to respond quickly to external stimuli. The course of this process depends on visual perception, anticipation, and the level of technical and tactical skill. The aim of the study was to determine which points the fencers focus their eyes on in the fight against the opponent. Fencing terms for epee fencing. Three types of weapon are used in fencing: epee, foil, and sabre. Compared to foil and sabre, the target area in epee fencing is the entire body.

Research question. Does the training experience affect the fencers' declarations of focusing their eyesight on the designated elements of the weapon and the place of hits in fencing?

Research hypothesis: The length of the training period did not affect the eyesight of the fencers tested.

Methods. The study included 110 fencers, women and men were distinguished in two groups of juniors 79 and 31 elite seniors. According to the records, the age is in the range of 15-31.

Isolated 3 groups were selected according to training experience: up to 5 years novices, 6-10 years advanced and over 10 years experts.

The research method was a diagnostic survey, fencers filled in a questionnaire during breaks in sports struggles. The respondents determined where they focus their eyes during a fencing fight. 12 items were designated, which included the epee weapon of the important hit field. The respondents specified one of the selected focus points of their eyesight.

Research results. 1) The eyesight concentration of the studied groups of fencers was varied; 2) The women fencer focused their eyes on the forearm and torso, and on the elements of the epee weapons, 3) The men fencer kept their sight perception on the enemy's epee weapon.

Conclusions. The training internship of the fencers under study does not statistically differentiate between competitors focusing their eyesight on a selected part of the opponent's body and the epee weapon.

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HOW TO PERCEPT KATA

Key words: *karate, kata*, self-defense, Qi Jiguang 32 verses.

Introduction. Kata forms are Karate training forms. Kata can be trained for competing in tournaments or for self-defence. According to legends, everything started with a Buddhist monk Bodhidarma and a 16-year-old girl Fan Qiniang, the creator of the White Crane style.

Only two books remain preserved to this day. The first is Jixiao Xinshu, written by a trustworthy author, a Chinese general Qi Jiguang, and the second is Bubishi, written around 1850 by an unknown author.

Methods. The author decided to do research as proposed by Descartes. For the research, the author used a qualitative method. He opted for probabilistic sampling in the population practicing karate. He started collecting data by learning fifteen Kata, continued with the method of participant observation, and collected data by attending global seminars. He used content analysis focused on written and visual objects.

Results. Through the research of Kata, the author made several conclusions that make understanding Kata possible. That begins with awareness that Kata teach self-defence techniques, and not attacking techniques. They are based on natural circular moves where the Sun and the Moon Hand are foundations for everything. Kata philosophy has origins in Five Elements philosophy (Wu Xing), and subordinated five animals. There is no fist punch in Kata, because Kata forms use mainly six Ji hands. All old and original Kata are made according to six Kata rules described in author's book. The author succeeded to decode, or at least gave possible explanations for Qi Jiguang's and Bubishi posters (posters include drawings with symbolic text).

The findings are based on Chinese philosophy, kinesiology, psychology, anatomy, pressure points, Kiai jitsu, mathematical and physical science. Actions from posters are parts of many Kata. This article explains two posters from Bubishi.

Conclusion. The value and understanding Kata was lost before Karate spread from Okinawa in the beginning of the twentieth century. Kata are made for weaker people's self-defence training. They have base in natural circular moves, Chinese philosophy and six Kata rules. The fighters do not use boxing fists but six Ji hands.

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EPIDEMIOLOGY OF COMPETITION INJURIES IN ELITE KARATE ATHLETES

Key words: *kumite*, anatomical location, injury incidence rates

Introduction. Karate has been introduced as a new Olympic sport discipline and will debut as a part of the program at the upcoming XXXII. Olympic Games in Tokyo. In karate, there is a certain risk of injury that may exclude an athlete from training and competition. Therefore, it is necessary to pay increased attention to injuries and deal with injuries in Kumite, not only from an epidemiological point of view but also to analyze the causes of injuries from a time, tactical and technical point of view. Many authors has dealt with the issue of injuries [Augustovicova *et al.* 2019, Arriaza *et al.* 2009, Boostani *et al.* 2012]. Arriaza *et al.* [2009] and their research confirmed that the change in the rules in 2009 significantly reduced the incidence of injuries by almost half. The number of injuries was recorded in study Augustovicova *et al.* [2019] during four world championships over the years (2010,2012,2014,2016), with a total of 506 injuries of which 51 (1.4%) were classified as time-loss injuries. The IIRAE and IIRME were calculated 5.13 (95% CI, 3.82-6.74) and 1.98 (95% CI, 1.47-2.60), respectively. We aimed this study to determine the injury proportion and incidence rate.The work aims to determine the incidence of injuries at two consecutive World Championships in karate and to determine the dependence of the anatomical location and injuries of the karate.

Methods. Our data was collected at the 2018 Madrid World Karate Championships before and after the 2021 Olympic Games in Dubai. Injuries were recorded during kumite discipline by trained healthcare professionals and written into the simple injury report form. Injury incidence rates were calculated per 1000 athlete-exposures (IIRAE) and per 1000 minutes of exposure (IIRME), with 95% CI. Subgroups were compared by calculating the injury incidence rate ratio (RR) with a 95% CI, whereby the IIRs were deemed statistically different from one another if the 95% CI did not include the null value [Graham *et al.* 2005].We used the Chi-square good fit test to assess the dependence of the anatomical location and the karateka injury.

Results. During the two championships, a total of 241 injuries were recorded, 162 in men and 79 in women. Overall, we calculated IP 113.3 (95% CI, 99.2-128.2), IIRAE 53.6 (95% CI, 47.0-60.8) and IIRME 19.3 (95% CI, 17.0-22.0). The overall injury rate was statistically significant in men as in women RR AE 1.53 (95% CI, 1.16-2.03) P = 0.0016; but not in RR ME 1.26 (95 CI, 0.96-1.6) P = 0.0956. Based on the result of the Chi-square test of good agreement $\chi 2$ (df = 4, N = 241) = 351.7; P <0.001) (Table 3), we can state that there is a statistically significant dependence between karate injury and anatomical location.

Conclusion. During WKF World Karate Championship in Madrid 2018 and Dubai 2021, a total of 241 injuries were recorded among 2133 athletes. The most often injured anatomical location in our study was head and neck (163 injuries, 68%). Successful implementation of

knowledge could protect the health of karatekas and support the financial costs of their treatment and rehabilitation.

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A STUDY ON *BUDO* IN JAPANESE SCHOOL PHYSICAL EDUCATION – FOCUSING ON "COMPETITION" AS LEARNING CONTENT

Key words: winning and losing, offense and defense, play, responsive body

Introduction. With a few exceptions, interpersonal interactions are indispensable aspects of learning *Budo*. These aspects characterize martial arts as a type of physical culture. The official Courses of Study state that one learning content of the "*Budo*" field is "offense and defense," which takes the form of "victory and defeat" as a result of a competition. The intention is that, through this learning, students can reach their goals in health and physical education as well as in school education itself [MEXT 2018]. The purposes of this study are to examine, from the focal point of "competition," the characteristics of *Budo* as teaching content in Japanese school physical education and to clarify the potential of martial arts as teaching material.

Methods. Specific investigative methods used in this study are as follows: (1) an examination of the position of "martial arts" in Japanese school physical education and the treatment of "competition," "offense and defense," and "victory and defeat" in martial arts education; (2) an examination of the meanings and significances of "competition" in physical exercise culture; (3) an examination of "victory and defeat" and "offense and defense" as learning content in the martial arts area; and, through these examinations, (4) clarification of the potential of martial arts as teaching material.

Discussion and Conclusion. The learning contents of school physical education in Japan are based on the "Courses of Study". In *Budo* field, "victory and defeat" and "offense and defense" are stated as contents of learning.

Examining "competition" in sports using philosophical methods, Drewe defines its essential characteristic as "a joint effort in the pursuit of excellence". This views do not indicate that the main part of the definition of "competition" is "to win or lose" or "to determine the superior nature of excellence". From the standpoint of play theory, "competition" is a form of the play, and from an analysis of the structure of the play, its essence is considered to be found specifically in its "processes".

The texts for the martial arts field use the phrases "the acceptance of victory or defeat" and "enjoyment of offense of defense". What these learning contents show is not that children should obtain "victory" or "superiority as obtained from offensive attack." Rather, the result of "competition" is instead an "acceptance of victory or defeat"; it is not the "offense and/or defense" itself that is considered as the end result of competition. It can be considered that the learning contents of *Budo* presented by the Courses of Study is not the results that are to be obtained from "competition," but rather the process of "competition" as a concept of "play".

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MARTIAL ARTS: NEW PATHS ON OLD TRACKS TOWARDS THE PERFECT HUMAN BEING?

Key words: human, martial arts, studies

Twelve years ago, in 2010, I was honored to present the first plenary lecture for the 2nd World Scientific Congress of Combat Sports and Martial Arts here in Rzeszow. I talked about "Body Mastery, Holistic Experiences and Spiritual Horizons: An Intercultural Look at Body Techniques". My abstract said: All sensory perceptions, all experiences, all the knowledge about the inner and outer worlds thusly gained, are made with the body. Students and practitioners of Martial Arts know this. In traditional Far Eastern martial arts, body and mind are trained and conditioned to influence each other. Culturally and nationally different developments show a variety of paths to the common goal of perfection.

What have I learned since then? My last lecture here in Rzeszow four years ago dealt with „Kalarippayattu – an ancient South Indian martial art as a source, mirror and example for martial arts, body arts and holistic health techniques". To summarize: Kalarippayattu is (one of) the oldest martial arts on earth. In addition to its combat aspects, it is a very spiritual physical discipline. Based on a science of breathing, it combines physical training, mental tasks, self-defense and self-discipline. Body and soul are considered indivisible: Control of the body must go hand in hand with mastery of the psyche in order to move toward spiritual perfection.

What have I learned since then? Our friend and president Wojciech Cynarski likes to stress „the humanistic theory of Far-Eastern martial arts" [Cynarski 2011: 22] from an anthropological, philosophical and even religious point pf view. „The canon of today's anthropology is creativity – the ideal of active, creative, versatile man", as he wrote [Cynarski 2012: 90]. „The way of martial arts … is the method of achieving a higher level of health, inner harmony, morality, the ascetical form of education and, at the same time, universal psychophysical training for everyone who wants to undertake this yet not easy way" [Cynarski 2011: 31].

Is it true that East and West meet with equal rights in a pit where a martial art requires daily training? Should we further differentiate? Two years ago, in 2020, Dr. Mohamad Nizam Mohamed Shapie had invited me to give a lecture on „Governance in Martial Arts and Combat Sports" at the 2nd Global Scientific Martial Arts and Cultural Congress in Putrajaya, Malaysia. Governance in the title referred to the political chaos in the institutionalization and legal regulation of martial arts, allowing registration and control. I was very excited to attend this Cultural Congress in this beautiful part of our globe. Due to factors out of my control related to the Corona pandemic, it was not possible for me to fly to Malaysia. Following the book „The Future is Asian" by Parag Khana, I had planned to outline our worldwide developments: „In the 19th century, the world was Europeanized. In the 20th century, it was Americanized. Now, in the 21st century, the world is being Asianized." The author believes „this will be the Asian century." „Asia is rapidly returning to the centuries-old patterns of commerce, conflict and cultural exchange that thrived long

before European colonialism and American dominance.“ What can we learn from that? Is this also true, especially true, for martial arts?

In a book “Toward an Eastern Mind-Body Theory“, the author Yuasa Yasuo, a famous Japanese philosopher, „suggests … a reorientation in our understanding of the body“ which „may eventually involve a full-scale reorientation in our ways of knowing“ [1987: 1]. „His studies revealed that that Asian traditions typically do not sharply separate the mind from body“ [*Ibidem*]. „Eastern philosophies generally treat mind-body unity as an *achievement*, rather than as an essential relation“ [*Ibidem*]. This makes it „clearer why meditation and philosophical insight are inseparable in the Eastern traditions: wisdom must be physically as well as intellectually developed“. „Through Yuasa’s discovery, we can better grasp the nondualism central to so many Asian traditions. In conceiving an integration of body and mind, the various Eastern philosophies undercut such Western dichotomies as spirit-matter, subjectivity-objectivity, and theory-praxis“ [Yasuo 1987: 1-2]. „Training solely for technique without concern for the perfection and enhancement of the personality has usually been regarded as heretical in Eastern cultivation theories...The preoccupation with technique alone is taken to be dangerous“ [Yasuo 1987: 209]. „Before evaluating the philosophical significance of the Eastern claim for achieving mind-body unity, we must clarify its nature. After all, the Western tradition, especially since Descartes, has generally denied the unity of body and mind“ [Yasuo 1987: 2]. For this special concept, what we might call „achieved body-mind unity“, we have no exact Western correlate [Yasuo 1987: 3]. „The main thrust of Western intellectual history has avoided the discussion of the perfect human being. The focus has been rather on the universal, not the exceptional“ [*Ibidem*].

In my lecture I will add a few personal experiences with shaman in the Amazon jungle and surgeons at home, confirming this perspective, that violate our Western thinking. But then, I’m getting old. I’ll be 82 next week. Maybe I should look back to the next generation. Yesterday, for them, today was still tomorrow. One of my former doctoral students, Dr. Andreas Held, is now the head of 27 schools of Traditional Tae Kwon Do in Austria. Tae-kwon-do is a Korean form of Karate and was forbidden under the Japanese occupation from 1910. Like all present-day martial arts, Tae-kwon-do aims for a perfect synthesis between body, mind and nature.

In the empirical part of his dissertation, 20 years ago, Dr. Held could show that after training in traditional TKD more energy is floating through the meridians of the practitioners, they have less stress, their intuitive and creative thinking increases, and for a short time the whole body organism becomes more basic. He used many different research methods from Kilian photography to blood tests and bipolar questionnaires testing the people’s mood and mind. All tests showed that over time the results further improved with increased and advanced time of training. He has always been highly engaged in all his work. In contrast to our Western approaches in sports and medicine, he tried to bring body and mind into line. It was somewhat difficult, to put it politely, at my old and famous Technical University of Munich, to put his dissertation through a newly founded faculty of sport science, fully oriented at the Western science model of man. Andreas Held started from zero. In the meantime he trained more than 50.000 Taekwondo students, wrote four books, became a martial arts model and a successful manager and the head of Europe’s biggest martial arts system.

My final question: Is this both our newest and oldest way towards the perfect human being?

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FROM CONFLICT TO INTEGRATION: THE FORMATION OF FITNESS CULTURE FOR ALL IN REPUBLIC OF CHINA

Key words: fitness culture for all, conflict, integration, traditional Chinese martial arts, western modern sports

Introduction.

Fitness culture for all in China was formed in the first half of the 20th century, which is the result of conflicting and integrating of Chinese and Western sports cultures. Under the pressure of the national crisis brought about by foreign aggression, the fitness consciousness was awakened in Chinese people. Facing two choices of fitness methods, exotic Western sports and traditional Chinese martial arts, two heat discussions occurred, which highlighted the respective advantages and disadvantages of Chinese and Western sports, and embarked on the road of modernization of Chinese martial arts. Under the historical mission of saving their nation, Chinese people from all classes choose either traditional Chinese martial arts or Western modern sports for fitness according to their own preferences, which symbolized the formation of fitness culture for all in China.

Methods.

Using the methods of documentary review and the historical analysis, this paper intends to explore the motives, ways and characteristics of the formation of fitness culture for all from the conflict and integration of traditional Chinese martial arts and Western sports in modern China.

Results

1. Conflict between traditional Chinese martial arts or Western modern sports. After the outbreak of the Opium War, China began to learn Western sports consciously. A fierce conflict was formed between Western modern sports and traditional Chinese martial arts, which led to two heat discussions about "local or foreign sports". It is these two discussions that pushed Chinese to understand traditional local sports and modern foreign sports deeply, promoted the sport participation of Chinese people from all classes, and spawned the formation of a national fitness culture in China.

The first discussion was about "the retention or repeal of military exercises" which occurred between 1918-1922. Some of the Chinese elites criticized that German and Japanese military exercises have tendencies of militarism and conquest, and European and American competitive sports have tendencies of championship and aristocracy, and both of them lead to the separation of body and mind. They argued that traditional Chinese martial arts have the advantages of adaptability of venue conditions, emphasizing both "unity of heaven and man" and "harmony between body and mind", and suit for everyone to participate. They advocated to replace Western modern sports with traditional Chinese martial arts. Of course, there are also some advocates of popularizing modern western sports to put forward tit-for-tat views.

The second discussion was about which can save China, local sports or foreign sports in 1930s. In 1931, Japan's Army occupied the Northeastern regions of China which triggered

a sense of national crisis in Chinese. Some of the Chinese elites put forward the plan of saving China through sports. They made comments that China had studied Western sports since the Opium War but the physique status of Chinese people was still weak and the political fate of China' being invaded by imperialism wasn't changed. So they urged to develop traditional Chinese martial arts to save the country and strong the people.

2. Integration of traditional Chinese martial arts or Western modern sports. Through the two discussions, Chinese had deepened their understanding of the advantages and disadvantages of Western modern sports and traditional Chinese martial arts, which has enabled the Chinese government to promote both of Western modern sports and traditional Chinese martial arts at the same time in all social strata. Chinese martial artists begun to promote the modernizing transformation of traditional Chinese martial arts on the basis of science by establishing competition system, improving the body movement system, booking the files, teaching students in public school and associations and communicating with the martial artists at home or abroad. With the integrating of Western modern sports and traditional Chinese martial arts, both of them became the fitness sport and popularized all social strata of China, so that the national fitness culture of "saving our country and strengthening our people" formed in modern Chinese.

Discussion and Conclusion. The formation of fitness culture for all in China was formed through conflict and integration of traditional Chinese martial arts and Western sports in the serious national crisis, which has the nature of making the country and its species strong.

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