

INNOAGON is an acronym for ‘innovative agonology’, but is not synonymous with ‘science of martial arts’

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Abstract

Innovative agonology (INNOAGON) is an applied science dedicated to promotion, prevention and therapy related to all dimensions of health and regarding the optimization of activities that increase the ability to survive (from micro to macro scales). The first premises of INNOAGON date back to the nineteenth century when Jigoro Kano, a Japanese professor, laid the foundations of judo science. He clearly emphasised that the most important thing was ‘judo in mind’? Unfortunately, the perception of judo globally has been reduced to a sport. Since both the successes of ephemeral sporting careers limited to a dozen years at most and the pathologies of sport that do not bypass judo are phenomena that focus the attention of the media hungry for sensationalism, it is not surprising that judo as science is ignored despite Jigoro Kano’s efforts. He presented this idea originally (judo as science and complementary physical and moral education system) as a lecture given at the University of Southern California on the occasion of the 10th Olympiad in Los Angeles 1932.

In 1938, the founder of judo dies, and at the same time Tadeusz Kotarbiński (an eminent Polish philosopher, logician, methodologist of sciences, ethicist) publishes agonology, i.e. the general theory of struggle, while 17 years later he publishes his fundamental work *A Treatise on Good Work* – contemporary praxeology (science about good work), in which he includes agonology. Unlike judo science, neither agonology, nor praxeology propose physical exercises. However, praxeology and agonology, including four specific theories of struggle: the theory of destruction (1970), the theory of non-armed struggle (1983), the theory of defensive struggle (1991), theory of combat sports (2000) complement the principles of judo science. Seryioku-zenyo ‘maximum efficient use of energy’ is a praxeological principle, although formally the praxeology lecture as conceived by Kotarbiński was translated into Japanese long after Jigoro Kano’s death. Jita-kyoei ‘mutual prosperity for self and others’ is in a sense the prototype of the praxeological-ethical category of ‘bravery’, based on mixed assessment. Thus, in terms of scientific justification, on purely theoretical grounds, Kano’s directive that the most important thing is ‘judo in mind’ has been largely fulfilled since 1938.

The promotion of the new sub-discipline of ‘science of martial arts’ in the global science space after 2010 looked promising. Unfortunately, also this time, the appeal of hand-to-hand fight for commercial purposes was eagerly exploited by the owners of electronic media and, under the camouflaged name of mixed martial arts (MMA) bloody fights returned, this time not in gladiatorial arenas but in cages, where the humiliation of human dignity is the socially accepted norm, albeit not in accordance with the Olympic Charter. Neo-gladiatorism has become legal and available for all time to every smartphone user.

In the global science space, the name ‘innovative agonology’ emerged in 2016, and on 22 July 2023 in San Francisco, USA, at the global Applied Human Factor and Ergonomics (AHFE), 36th session is dedicated entirely to INNOAGON (Human Factors from the Innovative Agonology Perspective). The acronym INNOAGON will be very difficult to force into any formulation of the sport, let alone manipulate to scientifically justify the legitimacy of neo-gladiatorism, after all INNOAGON is not synonymous with the science of martial arts. Ultimately, the point is not only to counteract potential manipulation, but to protect science (as a distinct part of reality and its social mission) from ridicule – it is easy to sarcastically argue that mixed martial arts has strong intellectual support in the form of science of martial arts, and that other sports do not have such an expressive one.

Keywords: AHFE • Jigoro Kano • judo • neo-gladiatorialism • Tadeusz Kotarbiński

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International Military

Sports Council – is an organization known as CISM (the abbreviation comes from French **Conseil International du Sport Militaire**) with headquarters in Brussels (Belgium), where also the General Secretariat is situated. CISM is a non-political organization, open for military forces from all countries in the world. The range of this cooperation is very wide and includes both sport (Olympic level sports competitions, world-, continental-, regional-championships), scientific (symposia, conferences) and solidarity aspects (helping less developed countries by providing them with various forms of assistance and support in their activities for the development of the widely understood sport) [26].

CZĘSTOCHOWA

DECLARATION 2015: HMA against MMA – ‘continuous improvement of health through martial arts as one of the most attractive form of physical activity for a human, accessible during entire life should constantly exist in public space, especially in electronic media, to balance permanent degradation of mental and social health by enhancing the promotion of mixed martial arts – contemporary, bloody gladiatorship, significant tool of education to aggression in a macro scale’.

Gdansk 2nd HMA World Congress Resolution

– **Article 1** The white flag with five interlocking ‘Olympic rings’ is the most recognizable symbol in the global public space. Neither did the resurrected idea of Olympia, ‘Citius, Altius, Fortius’ save humanity from the horrors of two world wars, nor did the declared mission

INTRODUCTION

If any entity, individual, team, institution (of course through its representatives: leaders, experts, etc.) uses the word ‘struggle’ or synonyms in an important message, it means that it is almost always about an extremely difficult situation, the overcoming of which requires considerable effort and competence. The single factor that most significantly differentiates these situations is the ethical question – whether the goal of the necessary overcoming is laudable or shameful. Extreme examples of actions that are morally acceptable but require destruction are both the necessary amputation to preserve the life of the patient and, in cases of necessary defence, the mutilation or even deprivation of life of the aggressor.

In a sense, paradoxically, first the COVID-19 pandemic, then Russia’s aggression against Ukraine on 24 February 2022, highlighted that the term ‘struggle’ (and synonyms) dominates the space of social communication [1]. However, what is probably more surprising in the global space of science is the discovery that the term ‘self-defence’ is commonly used in numerous categories of sciences [2], whose object of exploration is not the phenomenon of struggle understood either in a general sense (an exploration initiated by Tadeusz Kotarbiński (1986-1981) [3] and developed by Jarosław Rudniański (1922-2008) [4]), or in a specific sense – for example, precisely self-defence as a particular case of defence struggle, i.e. a specific human activity, for the study of which the original tools are inspired by defence struggle theory [5].

In line with the vividly expressed truth ‘that science does not tolerate emptiness’, a new discipline, ‘innovative agonology’ has emerged, which peculiarity is its complementary approach, and it is precisely this advantage that opens up

the prospect of applying general [3] and specific theories of struggle [6, 4, 5, 7], methods, means and unique tools in circumstances where overcoming real threats, from micro to macro scale, requires the cooperation of specialists from even distant fields.

The promotion of innovative agonology, precisely in the global science space, can be symbolically linked to the date of 22 July 2023. At the 14th International Conference on Applied Human Factors and Ergonomics (AHFE 2023) and the Affiliated Conferences (20-24 July, 2023 San Francisco, California, USA) the thirty-sixth session was dedicated to *Human Factors from the Innovative Agonology Perspective*. Six presentations, by five Polish researchers (published in: AHFE International. Healthcare and Medical Devices, Vol. 79, 2023), is an example of presenting a series of issues from a complementary approach.

The aim of this paper is to recommend the acronym INNOAGON as a globally recognisable symbol of a new applied science with exceptional cognitive and application values from micro to macro scale.

Chapter 1: The paradox of the ephemeral mission of the science of martial arts

The first author of this publication, for two main reasons, proposed in 2010, at the 2nd World Scientific Congress of Combat Sports and Martial Arts, the name, but at the same time the promotion of ‘science of martial arts’ as a new sub-discipline [8].

Firstly, five years after the historic edition of *Archives of Budo*, the journal has been honoured with a five-year *Impact Factor* (0.542) and *2-IF*, 0.488. This honour is certainly one of the few and is important if only because recognition of

the journal guarantees including it in the Web of Science literature database (WoS) and consequently annual monitoring that unique indicator – *Impact Factor*. The higher it is, it is evidence that papers published in a particular journal are more frequently cited in other scientific journals, also indexed by WoS [9]. To this day, no other homogeneous group of sports (even the richest ones, such as basketball, hockey, sailing, soccer, tennis, etc.) is represented by scientific journals of this class to be evaluated by WoS. The explanation is simple. Prominent coaches of sports clubs, which have not only a significant budget but also a scientific background, protect the secrets of their and their team's 'workshop'.

Secondly, the interest in the first and second editions of Congress, exceeded the expectations of those who created the *Archives of Budo* journal [10]. It seemed that the authority of specialists (at the same time scholars and practitioners) of the various hand-to-hand combat disciplines popular throughout the world would generate interest among those responsible for education and public health precisely in the educational and health potential of the practice of martial arts still shrouded in mystery. The creators of the *Archives of Budo* (the same time the main leaders in making the 1st World Scientific Congress of Combat Sports and Martial Arts 2006 [11]) were supported by the positive experiences of their own.

Waldemar Sikorski (1937-2022) [10] in 9-11 November 1987 organised 1st International Congress of Science and Methodology in Judo – Spała, Poland [12]. He was then (after 13 years of success as a coach of the national and Olympic judo team) president of the Polish Judo Association. At that time, Stanisław Tokarski gave an introductory paper under the telling title *Judo – sport and philosophy* [13]. These two eminent practitioners with judo black belts and academic degrees published a book years later (1998), which brought the knowledge of Japanese martial arts included in the budo formula to the Polish public [14]. Incidentally, Jan Harasymowicz (later a member of the Editorial Board *Archives of Budo*) had failed to realise this intention 20 years earlier. The communist censorship did not allow the promotion of budo (see glossary) in Poland, so in 1978 he published *The Philosophy of Karate*, but in the content he promotes budo [15].

Roman Maciej Kalina organised an intimate International Scientific Conference *Sprawnościowe i moralne aspekty walki wręcz w wojsku* (eng. *Efficiency and moral aspects of close combat in the military*) – 29 September 1994, Wrocław, Poland. The keynote speakers were: Josef Herzog (1928-2016) [16, 17]; Ewaryst Jaskólski (1932-2007) [18, 19]; Stanisław Sterkowicz (1952-2018) [20, 21] and Stanisław Tokarski [22] – from 2005 members of the Editorial Board *Archives of Budo*. For the first time, the issue of hand-to-hand combat practices was also analysed in a moral context. And it was a period of social transformation in Poland – the reduction (merger) of military academy. The pretext for organising this conference was precisely the merging of the two Wrocław military academy. It was also an opportunity to synthesise twenty years of experience of promoting judo and modern hand-to-hand combat in military education at the academy where Kalina worked. It was at this time that the theory of defensive struggle was published, along with the assumptions of prevention and therapy of aggressiveness through the use of exercises in the broad sense of hand-to-hand combat, which includes judo, self-defence and fun forms of combat [5]. A little later, the results of experiments based on these assumptions were published [23]. Unfortunately, both monographs were published in Polish. Also in Polish was published a monograph with 33 presentations by participants of the Scientific Conference *Wychowawcze i użytkarne aspekty sportów walki* (eng. *Educational and utilitarian aspects of combat sports*) (5-6 October 2000, Warsaw, Poland) [24]. This was a landmark event, also due to the number of participating researchers and the variety of issues presented, but also the participation of the presidents of all Polish combat sports associations.

Kalina, Sikorski and Tokarski shared yet another common experience prior to this conference and the idea, born 5 years later, to create the *Archives of Budo* [10] – popularising the educational, health and utilitarian values of competently realised practice within the framework of the Polish Budo Foundation founded in October 1997 (Sikorski was its secretary) [25]. In addition, Kalina already had experience of pursuing a similar mission on a much wider scale – from 1995 he was the President of the Judo Committee CISM [26].

During the 2nd World Scientific Congress of Combat Sports and Martial Arts (2010), another

of the International Olympic Committee (IOC): "1. (...) the promotion of ethics and (...) ensuring that, in sport, the spirit of fair play prevails and violence is banned" (Olympic Charter, p. 18) stop the pathology of permanently educating contemporary man in aggression.

Article 2 Likewise, symbols (a sword pointed downwards surrounded by five rings) and motto ("Friendship through Sport") of Conseil International du Sport Militaire (CISM) did not stop soldiers from killing each other and murdering people after 1948 (the year of establishing CISM, the second largest multi-sport discipline organization after the IOC, and also the year of the Universal Declaration of Human Rights).

Article 3 Although there are five identical combat sports in the Olympic Games and the Military World Games, their potential is still not used to meet the second of the Fundamental Principles of Olympism: "(...) to place sport at the service of the harmonious development of humankind, with a view to promoting a peaceful society concerned with the preservation of human dignity" (Olympic Charter, p. 13).

Article 4 Boxing and wrestling cultivate the traditions of ancient Olympism. Judo and taekwondo have given martial arts humanistic and health attractiveness. Fencing combines this tradition with modernity in the spirit of chivalry. Aiming dynamic offensive and defensive actions directly at the opponent's body (irrespective of the protectors used) in such a way as not to hurt is a measure of respecting those knightly rules. This rule harmonizes with the principle of respect for the opponent's as well as one's own corporeality and dignity over the vain victory at all costs.

Article 5 For the civilized individual and the society for whom human health and dignity are the common good, participation, in any role, in brutal shows of people massacring each other cannot be a standard of the quality of life. Neo gladiatorship camouflaged under the banner of martial arts or combat sports is a slight to the Fundamental Principles of Olympism, but also to the Universal Declaration of Human Rights. Therefore, this Resolution should inspire as many actors of Knowledge Society as possible jointly to oppose any deformations of

the mission of Olympism and sport. The expansion of the pathology of unauthorized naming neo gladiators as combat sports athletes will soon turn the Fundamental Principles of Olympism into their own caricature – objective indicators are a testament to the devastation of all dimensions of health by the practice of legal bloody pageants [30].

Rzeszow Declaration

– 1. The continuance of the organizing other Congress editions in many different countries is the warranty of dynamic development of the theory of combat sports and the theory of martial arts. 2. The recommendation of *Combat sports propaedeutics* as an integral part of physical education is important because of the need of felling safe among students of all types of school and also is an effective interpersonal violence prevention at school and outside the school and a prevention of a damage of the body (teaching how to fall safety). 3. The recommendation showed in the structure of Rzeszow University *University Center of Combat Sports and Martial Arts (UCCSMA)* aim to intensify and to integrate the works of research teams and the particular scientists who deal with combat sports and martial arts. 4. To implement in *Index Copernicus* portal the scientific subdisciplines *Combat Sports and Martial Arts* which will make it easier to identify all scientists from all over the world who deal with that issues. [11, p. 89]

Budo (Budō) – originally a term denoting the “Way of the warrior”, it is now used as a collective appellation for modern martial arts of *kendō, jūdō, kyūdo* and so on. The primary objective of these “martial ways” is self-perfection (*ningen-kesei*) [34].

Reism, reificationism,

concretism or concretionism – is a view that only concrete material things exist. It is a philosophical theory associated with **Tadeusz Kotarbiński** who proposed that it involves both the proper view about the kinds of objects that exist and the literal way of speaking about things. It is based on the **ontology** of **Stanisław Lesniewski**, specifically, his “calculus of names”. This theory, which is also referred to

important event took place – the participants established the International Martial Arts and Combat Sport Scientific Society (IMACSSS).

Meanwhile, the promotion of neo-gladiatorism (bloody spectacles) under the camouflaged name of ‘mixed martial arts’ began to dominate the internet and electronic media. The dimension and scale of the cumulative negative effects were not possible in the practice of the gladiatorial games of the Roman empire [27, 28]. Thus, the continued use of the term ‘science of martial arts’ has begun to lose its meaning for at least two equivalent reasons. First, the seriousness and social mission of science is being devalued. Secondly, scientific journals (and it does not matter if they are evaluated by WoS or other prestigious literature databases) that have the phrase ‘martial arts’ in their title are at risk of numerous manipulations. Among the ones visible ‘with the naked eye’ is the use of the phenomenon of ‘mixed martial arts’ in the propaganda of extreme aggression and violence as an acceptable way to achieve success, and this model permeates expressively other spheres of social interaction. The threat of instrumental use of the ‘science of martial arts’ in this procedure is obvious.

The response of ‘science of martial arts’ experts primarily associated with the editors of the *Archives of Budo* and branch journal *Archives of Budo Science of Martial Arts and Extreme Sports* [29] was to organise two editions of the World Congress on **Health and Martial Arts in Interdisciplinary Approach** (2015, 2018) organised by the *Archives of Budo with partner Polish universities. The acronym of these Congresses ‘HMA against MMM, captures the deepest sense of their mission. Unfortunately, the lack, in particular, of response from the addressees (global actors of high social influence) to the Gdansk 2nd HMA World Congress Resolution [30] is perhaps the clearest evidence of the need to end the ephemeral mission of the science of martial arts.*

Chapter 2: INNOAGON will not share the fate of JUDO

INNOAGON’s analogy with JUDO is legitimate in many ways. The acronym INNOAGON was created by combining the first 4 letters each of the two words that make up the name of the ‘innovative agonology’, It is the new applied science dedicated to promotion, prevention and therapy related to all dimensions of health and regarding the optimization of activities that increase

the ability to survive (from micro to macro scales). The basic method of INNOAGON in the research and application sphere is a complementary approach in the broadest possible cognitive-behavioural perspective [31].

The term ‘innovative’, according to the general definition of the word, emphasizes openness (but with all the standards of science) to continuous improvement of one’s creations. ‘Agonology’ is synonymous with ‘the general theory of struggle’ created by Tadeusz Kotarbiński a year before the outbreak of World War II [3]. It is a combination of the words ‘agon’ (which in ancient Greek also meant ‘struggle’) and the suffix ‘-logy’ (used as ‘the study of a certain subject’ – in this case, ‘fighting’ in the broad sense). Thus, from today’s perspective, it is legitimate to use the term ‘agonology’ not only as a synonym for ‘the general theory of struggle’, but also as ‘science about struggle’, which includes all detailed theories of struggle [6, 4, 5, 7]. However, it would be incorrect to claim that is also synonymous with ‘science about struggle’. In the interest of the precise language of INNOAGON, it would be correct to say that this new applied science draws knowledge from all theories of struggle. These theories, on the one hand, provide premises and assumptions for hypotheses, which are then verified in experiments and diagnostic studies. On the other hand, they provide the explanations necessary for interpreting observational data and justifications when formulating meaningful implementations in areas of practice concerning education, health, survival, etc.

Such a mission can be attributed to the applied science created by Jigoro Kano (1840-1938) and promoted at the turn of the 20th century, which he called JUDO [32]. ‘The concept of “jū” (gentleness) was the underlying principle of judo technique’ [32, p. 14], whereas ‘(...) Kanō’s declaration of his choice to use “dō” instead of “jutsu” was significant ideological turning point for all of the martial arts. He accentuated judo’s edifying potential and considered practical applications (*jutsu*) as important, albeit secondary, and modified violent *jūjutsu* techniques into a “Way” of training for a better life’ [32, p. 27].

Among the interpretations of the combination of the two words, the interpretation in the 2009 monograph *Jigoro Kano and the Kodokan: an innovative response to modernisation*. ‘From

a technical perspective, judo was almost fully developed by 1887. However, the evolution of its spiritual or philosophical aspects was still an ongoing process. It was not until January, 1922, that Kanō defined what were to become the essential ideals of judo at the Kōdōkan Cultural Council (*Kōdōkan Bunkakai*); those being ‘maximum efficient use of energy’ (*seiyoku-zenyo*) and ‘mutual prosperity for self and others’ (*jita-kyōei*). These ethical principles were formally announced when Kanō was sixty-three years old, forty years after founding the Kōdōkan’ [32, p. 21].

This knowledge supplemented by the experience of judo practice in various areas reveals a system that, from today’s perspective, would qualify as applied science based on a complementary approach. Kano recommended four methods of Kōdōkan judo: **randori** – this is sparring (free practice) in which both trainees attack freely by applying various techniques they have learned, except ones considered to be dangerous; **kata** – the various *kata* are based on a highly sophisticated, abstract rationale making them irrelevant in a modern setting; **lectures** (*kōgi*) – were included as an essential part of judo education; **dialogue** (*mōndo*) – in the Kōdōkan is to compel students to ask their instructors about any manner of things they did not understand (...) Combat is based on theories that cannot be mastered without actual physical training, but dialogue is essential for real progress and understanding, and was combined with *kata* and *randori* to facilitate the cultivation “well-rounded people” [32, p. 14-19].

However, Kano seems to have attributed hand-to-hand combat exercises (the formal ones, *kata* and real combat, *randori*) with excessive cognitive properties, and to have set an overly ambitious educational mission before judo instructors. Evidence is in vain that *kata* and *randori* are the optimal means of achieving the ability to understand most phenomena of the world around us. Instead, there are testimonies that outstanding teachers (*sensei*) of judo and many martial arts and combat sport have had an overwhelming effect on the personal transformation of even extremely difficult characters. We believe that the selectively quoted passages describing the teachings of Jigoro Kano are sufficient argumentation to accept as true that the methodology of complementary approach must be prudently limited.

Finally, since the founding of Kōdōkan (in May 1882), the only globally recognised judo activity today is a combat sport with Olympic status (first as a demonstration tournament, at the Tokyo 1964 Olympic Games). The health effects of judo practice are known to a narrow circle of experts, as are the statistics of fatalities and injuries during judo training and tournaments [33]. Only in Japan, after 107 years of Kōdōkan, martial arts education was implemented (judo, kendo, sumo), within physical education, as a specific curriculum under the name ‘*budo*’ [34]. Evidence of far-reaching effects in the area of public health is contained in a 2013 report by the Institute For Health Metrics and Evaluation, University of Washington – only in Japan years lived with disability (YLDs) caused by the fall decreased in the period 1990-2010 among people up to 54 yrs. [35]. Many universities in Japan have *Judo Therapy Faculties* and this practice, unfortunately, has not lived to see imitators in other cultures, but most notably the attention of the global media.

INNOAGON, despite its broad behavioural offerings, does not include a physical activity that can be promoted with a professional sport perspective, especially combat sport. Jigoro Kano promoted judo in a completely different social reality and not with the intention of recommending it as a combat sport. Instead, he took the opportunity to expound the ideas and principals of judo during a guest lecture in Los Angeles 1932 on the occasion of the 10th Olympic Games being held there [36]. However, over time he saw an opportunity to implement the ideals of judo precisely through sport. But sport was also very different then than it is today.

Jigoro Kano’s dream was to implement judo at the highest level of consciousness and self-realisation – ‘judo in mind’ [37]. It came as a surprise to Japanese experts attending the 2nd World Congress on **Health and Martial Arts in Interdisciplinary Approach** (2018) that the theoretical basis for the realisation of this idea was laid by the Polish eminent logician, methodologist of sciences, ethicist, agonologists and praxeologist, Tadeusz Kotarbiński, for whom judo was an alien phenomenon (and this is certain information). It is somewhat of a historical paradox that in 1938 Jigoro Kano dies on the ship *Hikawa Maru* on his way back to Japan from an Olympic Committee meeting

as **somatism** and **ansomatism**, has been interpreted as an analogue of defended classic **physicalism** [65].

Occam's razor (also spelled Ockham's razor or Ocham's razor; Latin: *novacula Occami*) – is the problem solving principle that recommends searching for explanations constructed with the smallest possible set of elements. It is also known as the principle of parsimony or the law of parsimony (Latin: *lex parsimoniae*). Attributed to William of Ockham, a 14th-century English philosopher and theologian, it is frequently cited as *Entia non sunt multiplicanda praeter necessitatem*, which translates as ‘Entities must not be multiplied beyond necessity’ [63].

Neo-gliadiator – a person who trains mix martial arts (MMA) and similar forms of hand-to-hand fighting that do not meet the definition of sport according to the Olympic Charter [47].

in Cairo, and it is at this time that Kotarbiński publishes agonology (a theory that can be considered the intellectual basis of 'judo in mind').

Chapter 3: The cognitive-behavioural potential of INNOAGON and two issues of global importance solved by this science

A structuring methodological remark, in our view, should be useful in the further perception recommended in this and other INNOAGON publications. Standing on the position of reism (see glossary), there is no such thing as science, but there are people (and the tools at their disposal) to competently carry out cognitive and applied activities identified with a particular discipline of science or based on several disciplines. Independently, it is convenient and habitual (even in scientific texts) to use in such circumstances simplifications of the type that something is solved by science, religion, philosophy, etc. Since the complementary approach is the basic method of INNOAGON in the broadest possible cognitive-behavioural perspective [31, 38], so to express myself strictly, not science, but people with complementary competence (agonologists [39]) solved the issues signalled in the title of this subsection.

Historically, cognitive-behavioural factors have balanced each other since 1938 before the term 'innovative agonology' as used as an adequate name for the new applied science [39], and defined even more precisely a few years later [31]. From a methodological perspective, not only associated with INNOAGON, every new behavioural (motor) experience – intended or unintended – always has some cognitive consequence, but not vice versa. Even in-depth theoretical knowledge of a phenomenon whose motor dimension is more or less attractive and extreme (and in many circumstances necessary) will not turn into feedback until a person takes the risk of a hitherto unknown physical activity. The essence of this feedback is to confront the imaginary with direct experience. Such circumstances include, for example, dance, parachute jump, shooting, skiing. However, in the earliest stages of human ontogenesis, the adaptive effects of direct motor experience precede the opportunities for error correction, which are shaped by cognitive stimuli. Such is the course of the phenomenon of the first and subsequent falls of a child who independently adopts a vertical stance and takes his first

steps. The course of human adaptation to violence and aggression is reversed. It is the stimuli coming mainly from the external environment (especially from the Internet, electronic media, etc.) that most strongly stimulate the agonistic nature of man [40] to such extremely negative interpersonal relations and aggression transferred to things.

Diagnosing and reducing the susceptibility of the body injuries during the fall

It took INNOAGON experts half a century to solve this issue. This unique achievement was synthetically described by the authors of an international publication as the 'Polish School of Safe Falling' [41]. The year 1972 can be taken as a symbolic date for documenting the achievements of this school – the theory of safe (soft) falling was published in a scientific journal [42], and in a local military magazine a series of 22 miniarticles dedicated to "ABC Self-defence Art" (the first 5 concerned the justification for and the methodology of safe fall) [43]. The latter publication inspired the modification in 1974 of the hand-to-hand combat system in Polish Armed Forces. The first task of each randomly selected test was any of the safe fall techniques (including those useful to soldiers, e.g. forward roll with a rifle).

In a recent publication by authors belonging essentially to three generations of this school, the breakthrough findings of the susceptibility of the body injuries during the fall concerning the period between the age of 2 and 6 years of the child are documented [44]. The fourth year of a child's life is a landmark. There is a jump in the proportion of children who make mistakes during an unintentional collision with the ground. This finding was established by observing 2616 children's falls ($n = 191$) in a laboratory setting during individual sessions with a physiotherapist. The method is based on the three fun forms of falling (FFF), which make the action of the force that causes a child to fall backwards on a soft substrate localised first below the centre of gravity, then around the centre of gravity, until the situation transfers it above the centre of gravity, or including causing a loss of balance due to tripping over a gymnastics mattress. Among two-year-olds ($n = 34$), 37.14% made no mistakes, up to 20% of observed falls were made by 48.57% and between 21 and 40% of mistakes were made by 11.76% of children. Three-year-olds

(n = 32) respectively: 3.12%; 53.12%; 31.25%, and between 41 and 90% of errors were made by 12.5% of children. Four-year-olds (n = 47%): 2.76%; 8.51%; 46.8%, and between 41 and 100% errors 42.55%. Among five-year olds (n = 39) and six-year olds (n = 39), only 2.56% each, while those making between 41% and 100% of errors predominate, 76.92% and 94.87% respectively.

Successful intervention in the ontogenesis of pre-school and early school age (in order to prolong the unconscious but optimal motor response of a two-year-old child during an unintentional loss of balance and collision with the ground, and to halt the escalation of errors until such an event is under control) requires the complementary use of knowledge belonging to different disciplines (categories) of science.

We refer at this point to the most general rule of agonology 'controlled environment' [4], supplementing it with the member 'and itself'. This rule, justifiably, already belongs to the methodological principals of INNOAGON.

Diagnosis and reduction of aggressiveness by methods of balanced use of measures qualified for the following spheres: cognitive (intellectual), emotional, ethical, aesthetic, motor

The beginning of the realisation of this ambitious goal is linked to the date (1991) of the publication of the defence struggle theory together with the assumptions of the reduction of aggressiveness by the complementary approach [5]. Unfortunately, the extremely pessimistic warnings published already two years earlier by the author of this theory that further educating humans *en bloc* to aggression (and this was happening before the expansion of the Internet) would result in civilian aircraft, vehicles, etc. being used for acts of terror proved real a decade later. The most emblematic events are: New York, 11 September 2001; Nice, 14 July 2016; London Bridge, 4 June 2017.

Optimistic evidence was provided by two experiments based on a complementary approach in the broadest cognitive-behavioural perspective. Each of these experiments lasted for an academic year (1992/93 with military cadets [23], while 2001/02 female students [45]). During the second, further new INNOAGON diagnostic tools

were applied. In particular, the use of *testing fights in a vertical posture* (TFVP) and the association of results with both psychological testing and the original INNOAGON simulations provided evidence that the effectiveness of hand-to-hand combat is not determined by the need for a high level of aggressiveness. The high level of generality of this work and editorial constraints mean that this issue requires a separate paper. The issue is important because both experiments are published in Polish.

The next stage in the refinement of this unique concept (system) was the development of a method for diagnosing and reducing aggressiveness using a certain category of fun forms of martial arts [46] – we used this name until we realised that the term 'martial arts' had been appropriated by the pathology of neo-gladiatorism [47, 48]. The most momentous advantages of this method are its simplicity, its attractiveness, its applicability in the diagnosis, prevention and therapy of children, adults and even people with physical disability [49] and with intellectual dysfunction [50]. However, it should be particularly emphasised that the distinct cognitive-behavioural value of this method can be verified almost immediately. Most interestingly, although the method is safe, it is not available to psychologists and educators for formal reasons. Unless they are qualified (generally acquired by a course method) to use physical exercises in the manner of physical education teachers, sports instructors, personal trainers, etc.

Chapter 4: Semantic and scientific consequences of the appropriation of the term 'martial art' to camouflage neo-gladiatorism

The INNOAGON expert is distinguished, among other things, by the precise use of the term 'martial arts' in statements that could directly or indirectly promote neo-gladiatorism. An example is the name of INNOAGON's unique tool 'fun forms of martial arts' referring to all exercises qualified for hand-to-hand combat, but in forms that are safe in the somatic and psychological sense. These exercises serve at the same time to build positive emotions and interpersonal relationships and prepare for self-defence, based on mild and relatively gentle countermeasures (preventing the escalation of aggression).

The authors of *Combat sports propaedeutics* argue this point: *Main means for adaptation to combat in direct hand-to-hand fight are constituted in this programme by recreational forms of combat, which moreover help initial training to soft forms of self-defence (...). Such an adaptation is supplemented by elements of judo (throws and grips)* [51, p. 11]. One of the seven objectives of *Combat sports propaedeutics* is: *learning respect the body of one's own and of other people, as well as soft methods of immobilisation of opponent's body* [51, p. 10]. Meanwhile, the 'zero in – fire – forget' philosophy is actually a concept of dehumanisation of modern soldiers. The effects are widely known through the documented bestiality of Russian aggressors on the Ukrainian population and the extreme destruction of the country's infrastructure. Thus, since the term 'martial arts', preceded by the adjective 'mixed' (MMA) is evidence of a camouflaged name for neo-gladiatorism, it is clear that to continue to use the name 'fun forms of martial arts' among others, would not only be a misappropriation of the social mission of science, but also of its seriousness. This also applies to the name 'martial arts bibliotherapy' used in scientific publications since 2015 [52].

The first impetus for replacing the name 'recreational forms of combat' used in *Combat sports propaedeutics* [51] with the term 'fun forms of martial arts' [46] was the optimism of the signatories of the 'Rzeszow Declaration' 2006 (see glossary) [11]. Further, the enthusiasm was first deepened by the effects of the 2nd World Scientific Congress of Combat Sports and Martial Arts (2010), and then 1st World Congress on **Health and Martial Arts in Interdisciplinary Approach** (2015) [53]. However, participants of Congress HMA against MMA 2015 formulated the *CZĘSTOCHOWA DECLARATION 2015: HMA against MMA* (see glossary), concerned about two phenomena. Firstly, the media escalation of the promotion of neo-gladiatorism. Secondly, the ignoring by these media of the possibility of at least partially offsetting the effects of this pathology by following the recommendations of science providing knowledge of the health potential of combat sports and martial arts.

Main relations of INNOAGON languages and praxeology

In historical terms, Tadeusz Kotarbiński first published agonology (1938 [3]), and a full lecture on praxeology (science about good work)

in 1955 [54]. He proceeded from the assumption that a man develops the biggest amount of energy and smartness when he or she finds in constrained situations. Just in course of a struggle an adversary does all his efforts to obstruct an action of the other side. In numerous kinds of struggles there are plenty of such situations [3]. However, agonology in Kotarbiński's terms is limited to the struggle between people: '... as any activity that is at least a two-subject one (premising that a team can be a subject) where at least one of subjects hinders the other' [3]. It was not until Jaroslaw Rudnianski, when developing a general theory of struggle and supplemented it first with the theory of non-armed struggle, [55], then with the theory of compromise [4], that he drew attention to the use of the term 'struggle' in the circumstances of counteracting numerous phenomena that threaten humans from the micro to macro scale – viruses, pandemics, effects of the elements, disasters, etc. Of particular interest are human-animal struggles. Among those attracting attention are the literary descriptions by Nobel laureates Sienkiewicz, Ursus' fight with the bull [56] and Hemingway, the battle with marlin and sharks [57], which have also been analysed partly from the INNOAGON perspective [58, 48].

Thus, Kotarbiński's inclusion of agonology as an issue within praxeology is justified by the fact that the phenomenon of struggle concerns the relationship of at least two entities 'cooperating negatively' (this is a synonym for 'struggle' in the language of Kotarbiński's praxeology), each of which belongs to beings endowed with consciousness (as opposed to viruses, fire, rain, cyclone, avalanche etc., or animals). This justification loses its force in relation to INNOAGON, but it does not negate the validity of using the precise language of praxeology when formulating the theorems of this new applied science. Moreover, the prospect of optimal use of INNOAGON when dealing with issues qualified by interdisciplinary categories and at the same time associated with extreme health and life risks is impossible with terminological liberalism [59, 39], as well as ignoring the barriers posed by the diversity of natural languages. The validity of the last argument is enhanced by the practice of prioritising the so-called congress languages (English, French, German, Russian, Spanish), over – in this case – Polish, in which all the detailed theories of

agonology and the oft-revised *A Treatise on Good Work* (i.e. a coherent exposition of the science about good work) are edited.

Chapter 5: Dilemmas of transferring Polish-language praxeology terms for the purpose of including them in INNOAGON edited in English

It has long been discovered that spirituality is the heritage of the East, and the wealth of neologisms in each of the natural languages is due to technological progress and the development of Western science. Perhaps this is why the richness of the Polish language, saturated with neologisms, is conducive to the use of apparently synonymous terms, with the benefit of formulating, above all in the field of science, definitions of phenomena that sometimes differ in details, the ignoring of which would be a mistake.

Key to praxeology, but also to any case of struggle, are terms that differ in spelling and meaning in Polish: 'effectiveness' and 'efficiency' [60]. In English and Russian these are terms that do not differ in spelling (English 'effectiveness', Russian эффективность). However, since the terminology of praxeology is to be an elementary tool of the precise language of INNOAGON, recommendations in the dominant language of the global science space (English) should be freed (without loss to the seriousness and mission of science) from the debatable dilemmas raised in Polish-language works.

We therefore adopt two conventional definitions of the key term 'effectiveness', in line with the meaning given to it by Tadeusz Kotarbiński. This is, in our view, a necessary methodological step to make INNOAGON a science that meets the expected criteria of an exploration based on a real, rather than a declared complementary approach. Thus, **efficiency** (in Polish "skuteczność" [60, p. 219] and in English, conventionally, 'effectivenessS') is the positively evaluated compliance of an outcome with an objective. EffectivenessS is efficiency in the universal-distributive sense and an essential component of efficiency in the collective sense. **Effectiveness** (in Polish "efektywność" [60, p. 60] and in English, conventionally, 'effectivenessE') is the positive attribute of an action producing some positively evaluated outcome whether it was intended (effectivenessS and effectivenessE activity) or unintended (effective activity).

Tadeusz Pszczołowski, author of the *Mała encyklopedia prakseologii i teorii organizacji* (eng. *Little Encyclopaedia of Praxeology and Organisation Theory*) [60], bases the justification for the definition of effectivenessE on Kotarbiński's work dedicated to the effectiveness of scientific research. Kotarbiński, in his own style, i.e. taking care of the precision of his statements, argued the relation of the concept of effectivenessE to the concept of effectivenessS in this way. He asks 'whether effectivenessE is a particular case of effectivenessS or not'. If, in his opinion, 'effectivenessS is only the degree of achievement of the goal, while effectivenessS does not include effects that are useful but not foreseen by the goal, then effectivenessE is not a particular case of effectivenessS'. Thus, effectivenessE refers not only to the intended effects, but in general to those that are evaluated positively, regardless of whether one intended them or not [61, p. 79].

As an aside, SJ Sokolowski, following Kotarbiński's reasoning, drew attention to the possibility of distinguishing three meanings of the term effectivenessE [62, p. 23]. In the circumstances of creating a precise INNOAGON language at the interface with the logical necessity of using key praxeological concepts, Occam's razor is useful [63].

A concept with a higher level of generality is 'efficiency'. Praxeology gives it four meanings. The first, in a synthetic (general) sense, is the totality of the practical qualities of an action, i.e. its positively evaluated characteristics. The second, in the universal sense – each of the qualities of good work individually, e.g. effectivenessS, profitability, economy, etc. Third, in the manipulative sense – skill, dexterity. Fourth, mental ability – capacity for mental effort [60, p. 227-228].

The relevance of mixed assessment from the perspective of INNOAGON and complementary research methodology

Mixed assessment ('efficiency-ethical') brings together the creators of two sciences, judo and praxeology, neither of which was inspired by the innovative achievements of the other. Jigoro Kano based judo education (practice) on respecting two principles: *seiyoku-zenyo* and *jita-kyōei* (see above chapter two). Tadeusz Kotarbiński's exploration of praxeology (slogan of "good work") was combined with ethical criteria in relation to all activities (physical and mental) [54]. He gave this category of evaluation the name "dzielność" (Polish), which translates

into many other natural languages: 'courage' (English), 'vaillance' (French), 'Tüchtigkeit' (German), 'храбрость' (Russian) [60, p. 59].

The habit of applying mixed assessment by oneself to the widest possible class of activities during daily activity would be an expressive application of complementary research methodology in its simplest form, universally accessible. Although it is impossible to estimate effectiveness with an indication of what proportion goes to prevention and what proportion goes to therapy, such self-monitoring stimulates the imagination. One who not only can do this, but above all will strive to make his every action effective and at the same time praiseworthy (it is, after all, the realisation in practice of *seiyoku-zenyo* and *jita-kyōei*), will give testimony to a high level of mental health. In a sense, INNOAGON is a restoration of the ideals of judo enriched with many other forms of motor activity (apart from *randori* and *kata*), which, we emphasise again, cannot be given the status of a new sport. Thus, INNOAGON, offering safe fall and avoiding collision technique, fun forms of combat exercises, honourable self-defence etc. is undoubtedly a guarantee of strengthening the other dimensions of health and survival.

CONCLUSIONS

The conjuncture of the argumentation synthesised in this work about the similarities and differences of the concept of judo as a science in relation to agonology and praxeology combined with examples of INNOAGON experts' solutions to two issues of global importance (unfortunately, ignored by public health stakeholders at various levels), reveals the much broader cognitive perspectives and application possibilities of this new applied science. A real challenge is to break down the ineffective physical education system starting from primary education. The rationale is the high cost of PE teacher education compromised by the results of many research reports revealing the escalation of lifestyle diseases among increasingly younger children. We associate the radical breakthrough of this crisis, deepened year by year, with the move to replace physical education with the subject of 'preventive medicine' in every type of school [64]. Thus, among the parallel innovations, the most important would be: interim projects for a 'physiotherapist in every school'; transferring 'psychical education' faculties to medical schools and decomposing them into the speciality of 'preventive medicine'; changing the profile of 'psychical education' studies into the training of personal trainers and sports coaches (bachelor's level would be sufficient).

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