

Some methodological and organisational dilemmas of implementing simulation diagnostic methods based on mixed assessments in defence education – empirical arguments

Authors' Contribution:

- ✍ A Study Design
- 📁 B Data Collection
- 📊 C Statistical Analysis
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Abstract

Background & Study Aim:

Tadeusz Kotarbiński defined 'struggle' in a broad sense as any activity that is at least a two-subject one (pre-mising that a team can be a subject) where at least one of subjects hinders the other. He also formulated the most general directive of necessary defence, which can be applied to any level of action: *To fight, if it is necessary to fight in defence of the nearer among fellow men (...)* *Hating no one and sparing the adversary every misfortune unnecessary for victories, and immediately showing him full active benevolence the moment fighting is no longer necessary.* The main cognitive objective of the research is empirically verified knowledge of the preferred modes of action in different situations of simulated physical aggression, by candidates applying for studies with different military profiles.

Material & Methods:

The research was conducted in 2019 with candidates to study at Polish military universities with two profiles (land forces and medical service). A random selection (purposive sampling) was made from secondary school graduates. The single criterion for inclusion in the study was met – interest (without detailing the motives) in this type of study. The only exclusion criterion was the lack of due diligence in filling in the questionnaire. Therefore, 309 questionnaires were qualified for analysis (14 did not meet the criterion of due diligence). In the current research (using the KK'017 questionnaire based on mixed assessments: 'efficiency – ethical'), I am analysing the results of two simulations, partly modified. First simulation: 'the purpose of physical aggression against the respondent is not clear'; Second simulation: 'the purpose of physical aggression directed at a person unknown to the respondent is not clear' (but in the presence of the respondent).

Results:

The profile of the secondary school completed differentiates statistically significantly ($p < 0.01$) only between graduates of military classes and vocational secondary schools. When simulated aggression, in the presence of the respondent, is directed at an unknown person, candidates for military studies with a commanding profile are more willing, at the level of statistical significance ($p < 0.01$), to act effectively and ethically than those preferring a medical profile. The only predictor of the suitability of military candidates, precisely because of their expected mode of action in situations of physical aggression, is a completed secondary school with a military profile.

Conclusions:

I consider the review of publications reporting on the results concerning the diagnosis of the two phenomena (aggressiveness and bravery) using the INNOAGON tools discussed above to be the first research challenge to put the already accumulated knowledge in order (especially as many works are published only in Polish). Conducting research in parallel using the available tools to simulate these phenomena is an opportunity to provide even more, reliable, attractive and more modern tools for diagnosing and reducing aggressiveness in people of all ages. In order to apply these INNOAGON tools in a complementary way (and therefore also based on physical effort), the professional competence of a psychologist or educator in the traditional sense of these qualifications is not sufficient.

Keywords: aggression • aggressiveness • bravery • INNOAGON

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Aggression (in psychology) – is deliberate behaviour by the perpetrator intended to either hurt the opponent, harm or distress him/her in any other way, cause pain (regardless of whether this aim is achieved), or destroy things [50, 51].

Aggression (in praxeology) – is to initiate destructive fight or move in a verbal dispute from material arguments to those causing distress to the opponent [52].

Aggressiveness – a human characteristic manifesting itself in inclinations to hurt others, to destructive behaviour. **Aggressive** = virulent, truculent, attacking [52].

Bravery – means efficiency in good deeds, efficiency combined with estimable aspirations [52, 1].

Simulation – caused in model an event, which under some circumstances is similar to the event occurring in examined real object [52].

Innovative agonology – 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 [32, p. 274].

INNOAGON – acronym 'innovative agonology' [34].

INTRODUCTION

Tadeusz Kotarbiński defined 'struggle' in a broad sense 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 [1]. He also formulated the most general directive of necessary defence, which can be applied to any level of action: *To fight, if it is necessary to fight in defence of the nearer among fellow men (...) Hating no one and sparing the adversary every misfortune unnecessary for victories, and immediately showing him full active benevolence the moment fighting is no longer necessary* [2].

This directive is based on mixed assessments: performance (effective – ineffective) and ethical (commendable – disgraceful). Four pairs of relationships of these evaluations are thus possible (see the description of the method used for details).

Even though the science about struggle, precisely as conceived by Kotarbiński [3], has been developed since 1938 through the publication of successive detailed theories by other authors [4-8], this knowledge still belongs to the deeply esoteric [9, 10]. In my opinion, it would not be entirely true to interpret that the main reason for this state of affairs is the fact that all these theories (starting with agonology, i.e. Tadeusz Kotarbiński's general theory of struggle [3]) are published in Polish. However, the purpose of this thesis is not to inquire into the reason why struggle in the universal sense (after all, it is the main area of military and classified applications) is not the subject of widespread theoretical and empirical research in the broad context of possible applications outside the military.

However, in the aftermath of 24 February 2022, the Russian aggression against Ukraine, the elementary

question comes to life anew: who is the man, that he kills other people with such relish?

This question, however, is only a philosophical background for the discussion of the results of the simulation studies undertaken in this thesis. There are, however, two main reasons. Firstly, the research was performed in 2019, i.e. when there was no basis for predicting that a war drama would soon take place in a country neighbouring Poland. Secondly, since the atrocities of the aggressor's soldiers are monitored by publicly available news services, this fact is relevant for the interpretation of the results of this research.

Thus, there was only one premise underlying this research – curiosity about a phenomenon explored by the author for more than a quarter of a century. Preferred human actions in extreme situations (including circumstances of interpersonal aggression) are the focus of my research based on simulation methods [11-21]. The basic assumption of the 2019 anonymous survey was to deliberately drop the question about the main motivation for applying to become a professional soldier. In this way, it gained the effect of credibility of the results. In other words, a candidate motivated mainly by the financial factor was not faced with the dilemma of 'which declaration is correct' in order not to waste the chance.

Publishing the results of this research only in 2023 prompts two important assumptions. Firstly, since Poland directly borders Ukraine, and even though it is one of the states actively assisting in countering this aggression with the exclusion of direct participation of its own armed forces, there is still no basis for predicting that the threat of aggression from a neighbouring nuclear power is not real. Secondly, knowledge

of the preferred actions of professional soldier candidates in situations of interpersonal aggression is an important element of selection and educational decisions made with regard to the levels prior to professional military training. In this thesis, I consider precisely ‘professional military training’ as one of the most important levels of defence education for society. I base the key premise for the creation of professional defence formations of society (army, police, border guards, etc.) on the conviction that it is necessary to select people with optimal personal predispositions to fulfil this mission.

The main cognitive objective of the research is empirically verified knowledge of the preferred modes of action in different situations of simulated physical aggression, by candidates applying for studies with different military profiles.

I decompose this cognitive objective into two research questions: 1) is the choice of military study profile a differentiating factor for young people in terms of their preferred actions in different circumstances of interpersonal aggression? 2) is the profile of education prior to military studies and experience in dealing with difficult situations significantly differentiating factors between professional soldier candidates in terms of their mental predispositions to counter physical aggression?

MATERIAL AND METHODS

Participants

The research was conducted in 2019 with candidates to study at Polish military universities with two profiles (land forces and medical service).

A random selection (purposive sampling) was made from high school graduates. Although this is not a selection that meets the most important methodological criteria of random selection, the high interest in these studies meant that the sample included secondary school graduates from all over Poland. The single criterion for inclusion in the study was met – interest (without detailing the motives) in this type of study. The only exclusion criterion was the lack of due diligence in filling in the questionnaire. Therefore, 309 questionnaires were qualified for analysis (14 did not meet the criterion of due diligence).

Graduates of general secondary schools were most likely to apply for studies with a command-military profile (56.17%), with similar proportions of graduates of secondary vocational schools (22.22%) and graduates of military profile classes (22.22%, that is, everyone). In contrast, graduates from general secondary schools dominated the studies with a military-medical profile (93.19%), while 10 graduates from vocational schools were candidates with a university degree in various specialisations (Table 1).

Study design

Presumptions and assumptions

The research used a verbal simulation technique based on the formula of anonymity of the declared choice. These criteria provide optimal conditions and comfort for the respondent to indicate such a way of acting in hypothetical difficult and extreme situations, which, at that moment, is closest either to his/her past experience or to his/her idea of how he/she would overcome the situation or remain passive. Moreover, the formula of anonymity eliminates

Table 1. Characteristics of the secondary school graduates surveyed.

Military studies profile	Age (years) M & SD	Graduated school profile			Social activity	Experience in solving difficult situations [^]
		military (n = 35)	general (n = 228)	professional (n = 46)		
commanding (n = 162)	19.4 ± 1.04	35	91	36	44	18 (7)
medical (n = 147)	19.7 ± 1.63	0	137	10	46	31 (8)
total (N = 309)	19.5 ± 2.83	35	228	46	90	49 (15)

[^] declaring that they often solve difficult situations (in brackets: people who lack such experience)

the factor of exerting pressure on the respondent (as mentioned in the introduction).

Measuring the variables that identify the essential elements of defensive action under laboratory conditions, in accordance with scientific criteria (and therefore ensuring the reproducibility of the basic circumstances under which the measurement is carried out) is in principle not feasible. An identical motor simulation could only address one element – the initial phase of an attack under identical laboratory conditions (same external environment, same ‘aggressor’, etc.). Although the number of possible motor responses to such initiated attacks is almost infinite, but it is possible to generalise the results of observations according to an established similarity, a reproducible scenario of offensive motor actions in a limited, for research purposes, time is not feasible. Separating the evaluation of the use of so-called hand-to-hand combat techniques from the effectiveness during real combat (judo, taekwondo, wrestling, etc.) takes place in the practice of combat sports, especially of Far Eastern origin. In military training, police training, etc., reliance on assessments of hand-to-hand combat (self-defence) techniques is common. There are few reports of the use of sophisticated forms of military hand-to-hand combat using dummy weapons and in the course of intense physical exertion [22]. However, for the use of both selection for professional combat sports training and testing of defensive competence, the results of *testing fights in a vertical posture* (TVFP) proved to be prognostic [23-25].

In mass study, non-motor simulations are the optimal method to ensure the required reproducibility of circumstances.

The empirical justification for choosing only two simulated threats of physical aggression (out of the 12 of the KK’98 questionnaire) is the phenomenon, discovered by the author in research twenty years ago, of a significant migration of declared actions when the attacked subject and target of aggression are changed. First simulation during this research: ‘the purpose of aggression is to kill the respondent (60.12% of respondents declared a counteraction meeting the criteria of necessary defence, 29.49% would be ready to respond with multiplied aggression, 10.39% declared passivity). Second simulation: ‘the purpose of physical aggression directed at a person

unknown to the respondent is not clear’ (29.08% declared countermeasures meeting the criteria of necessary defence, 68.41% responded with multiplied aggression, 2.51% declared passivity). The study was conducted on a large sample from the Polish population ($n = 1,472$) [13].

In the current research (using the KK’017 questionnaire based on mixed assessments: ‘efficiency – ethical’ [21, 26]), I am also analysing the results of two simulations, partly modified. First simulation: ‘the purpose of physical aggression against the respondent is not clear’; Second simulation: ‘the purpose of physical aggression directed at a person unknown to the respondent is not clear’ (but in the presence of the respondent). Possible combination of assessments: “ethical – effective”; “ethical – ineffective” and: “unethical – effective”; “unethical – ineffective”

Statistical analysis

The estimation of the results is based on the following indicators: frequency (N, n); mean (M); standard deviation (SD or \pm). An index ratio was used, calculating the significance of differences. The level of at least $p < 0.05$ and higher was shown as statistically significant differences. In the tables, effective measures (irrespective of ethical evaluation) have been highlighted in bold.

RESULTS

The profile of the secondary school completed differentiates statistically significantly ($p < 0.01$) only between graduates of military classes and vocational secondary schools. The former, in a situation of physical aggression directed at them, are willing to respect the effective criteria of necessary defence, i.e. act with respect for ethical norms (85.7% of declarations), the latter in 65.2% (i.e. almost every third, would act in a disgraceful manner). Students in military classes are also more likely than those completing the general profile to prefer to act in such circumstances in accordance with the criteria of necessary defence (Table 2).

The preferred profile of military studies does not differentiate between candidates in terms of the quality of their declared actions when they would be physically attacked. When simulated aggression, in the presence of the respondent, is directed at an unknown person, candidates for military studies with a command profile are more willing,

Table 2. Declared modes of action of respondents with different graduation profiles in stimulated physical aggression situations.

Mixed assessments of the quality of actions (cumulative for the variables „ethical”, „unethical”)	Graduated school profile						Total (N = 309)		Proportion difference between profiles (%)
	(1) military (n = 35)		(2) general (n = 228)		(3) professional (n = 46)		n	% [efficiently]	
	n	% [efficiently]	n	% [efficiently]	n	% [efficiently]			
‘physical attack on the respondent’ (in brackets: action effective//ineffective)									
„ethical – effective//ineffective”	30 (24//6)	85.7 [68.57]	182 (124//58)	79.8 [54.38]	30 (21//9)	65.2 [45.65]	242 (169//73)	78.3 [54.69]	(1)÷(2) 5.9; (1)÷(3) 20.5* ; (2)÷(3) 14.6
„unethical – effective//ineffective”	5 (3//2)	14.3 [8.57]	46 (34//12)	20.2 [14.91]	16 (7//9)	34.8 [15.21]	67 (44//23)	21.7 [14.23]	
proportion difference (%)	71.4**		59.6**		30.4*		56.6***		
‘physical attack on a stranger in the presence of the respondent’ (in brackets: action effective//ineffective)									
„ethical – effective//ineffective”	20 (6//14)	57.1 [17.14]	122 (31//91)	53.5 [13.59]	26 (8//18)	56.5 [17.39]	168 (45//123)	54.3 [14.56]	(1)÷(2) 3.6; (1)÷(3) 0.6; (2)÷(3) 3.0
„unethical – effective//ineffective”	15 (15//0)	42.9 [42.9]	106 (102//4)	46.5 [44.73]	20 (19//1)	43.5 [41.3]	141 (136//5)	45.7 [44.01]	
proportion difference (%)	14.2		7.0		13.0		8.6		

*p<0.05; **p<0.01; ***p<0.001

Table 3. Declared modes of action in stimulated situations of physical aggression of the same respondents, but according to the criterion of choice of military study profile.

Mixed assessments of the quality of actions (cumulative for the variables „ethical”, „unethical”)	Military studies profile				Proportion difference between profiles (%)
	commanding n = 162		medical n = 147		
	n	% [efficiently]	n	% [efficiently]	
‘physical attack on the respondent’ (in brackets: action effective//ineffective)					
„ethical – effective//ineffective”	125 (93//32)	77.1 [57.4]	117 (76//41)	79.6 [51.7]	2.5
„unethical – effective//ineffective”	37 (22//15)	22.9 [13.58]	30 (22//8)	20.4 [14.96]	
proportion difference (%)	54.2**		59.2**		
‘physical attack on a stranger in the presence of the respondent’ (in brackets: action effective//ineffective)					
„ethical – effective//ineffective”	95 (29//66)	58.7 [17.9]	73 (16//57)	49.7 [10.88]	9.0**
„unethical – effective//ineffective”	67 (65//2)	41.3 [40.12]	74 (71//3)	50.3 [48.29]	
proportion difference (%)	17.4**		0.6		

**p<0.01

at the level of statistical significance ($p < 0.01$), to act effectively and ethically than those preferring a medical profile (the declarations of these are basically distributed in half). However, under such circumstances, it would be expected that students of the medical profile would act more effectively but dishonourably (Table 3).

The criterion of experience in dealing with difficult situations is not a differentiating factor between preferred modes of action in two different physical aggression simulations. Thus, the only predictor of the suitability of military candidates, precisely because of their expected mode of action in situations of physical aggression, is a completed secondary school with a military profile.

DISCUSSION

The results of this research are not only important for Poland because of its neighbourhood with Ukraine, which is participating in a defence battle only seemingly on a medium scale (state against state) against an aggressor which possesses a nuclear arsenal sufficient to destroy the Planet. In reality, this is a macro-scale war – a clash of two value systems. However, only one side has the extreme capacity for global destruction (it has one of the largest nuclear arsenals).

Thus, starting from the assumption that mental defence preferences may be similar among citizens of warring states (but also filling a continuum up to the opposite pole: responding to aggression with multiplied aggression), the value of this research is equally concerned with the cognitive layer and the application layer. In a personal sense (one against one or a small group – micro scale), the results of this research obviously have a universal dimension. However, the dilemma, a consistent defensive struggle or submission under pressure from the aggressor (a scale only apparently medium – as already mentioned), concerns only one side of the war being waged.

Because of these premises, the results of these studies generalised from the perspective of the survival of any society (still the cognitive layer) authorise the derivation of important implications addressed to various aspects of the coordination of public affairs (application layer) – family upbringing, school education, selection of candidates for defence formations and training

(military, police, emergency services, etc.). Another such aspect is adequate social health indicators. Although the results of these studies do not apply to a sample of the Polish population, but to those who chose to perform professional military service with extreme profiles – command and medical – in a sense, they can be interpreted as simplified indicators of social health. Of course, with regard to that part of Polish society which identifies itself as being ready to fulfil a defence mission in the event of an escalation of the conflict to NATO countries. I believe that the empirical data from these simulations are a positive testimony to the social health of this particular representation of Polish society.

An interesting aspect of the universal cognitive dimension of this research is the empirical proof of both the effectiveness of the Old Testament principle of ‘an eye for an eye’ [27, p. 252] and Jarosław Rudniański’s intuition that ‘man becomes an aggressive being under certain conditions’ [28]. When the simulated attack is directed at the respondent, then declarations of respecting ethical rules during necessary defence dominate (78.3% of declarations) of the surveyed military candidates. However, when this simulation concerns aggression against a bystander (stranger to the respondent), more than half of these respondents (54.3%) reveal tendencies to respond to aggression with even multiplied aggression.

This relationship has been observed in my own and co-authored research for more than a quarter of a century [11-21]. In the sample mentioned in the introduction from the Polish population ($n = 1,472$) with secondary education, there were 454 people, 22.91% of whom were university candidates. Although this social group was more likely than university students and graduates ($p < 0.01$ and < 0.02) to declare a praiseworthy action in a similar simulation, 63.88% of them were ready to respond to aggression with multiplied aggression [13].

The ‘stability of declared actions’ indicator has optimal diagnostic value for studying the phenomenon of human functioning in situations of physical aggression. Its usefulness increases precisely by optimally increasing the simulated events taking into account the specifics of the social group. In the aforementioned own research from the end of the 20th century, I established, on the basis of simulations of three threats of interpersonal aggression, that firefighters from the most mountainous region of Poland are characterised by the highest index of

stability of actions (40.74%), which should be qualified as praiseworthy. Mountain rescuers are second (26.92%), while a lower score than Polish Armed Forces officers (12.02%) was found only among secondary school teachers (9.94%) [13]. Hence, it is reasonable to note that such simulation studies are an important element in, among other things, the creation of selection criteria for the defence and rescue formations of society.

A significant migration of declared actions was found by Klimczak et al. [29] on the basis of simulations of two very similar situations of interpersonal aggression using the method of projective simulation (projective test KS-4M). The modifying factor of the second simulation is the intervention of a police officer. The study included the animators of youth sports: 406 men; 110 women. The tendency to act defensively in the second simulation decreased among women by 27.2% compared to the first simulation (67.3%), while among men it decreased by 22.6% from 67.7% respectively. The results of the second simulation are further proof that the 'an eye for an eye' principle is still 'alive' and that Rudniański's intuition is true – under such simulated conditions, 31.8% of women and 31.4% of men become aggressive [29].

These examples are, in a sense, empirical evidence to explain the phenomenon of why it is so easy to induce a person to physically aggress against others from the micro to at least the medium scale (aggression against another state) – all that is needed is an external justification that 'removes' responsibility from the potential aggressor. However, these examples do not exhaust either the full body of empirical data or the methodological possibilities of the simulation methods offered by the new applied science, 'innovative agonology' [30-33] – acronym INNOAGON [34]. The second group (the first includes non-motoric simulation [35]) consists of motor and psychomotor multidimensional tests [36]. The third 'test fights' with the greatest diagnostic potential [37, 38, 23-25, 39], as they belong to tools based on a complementary approach [40]. Fourth 'fun forms of martial arts' [41, 42] – the authors of the INNOAGON acronym rightly call this group of (only apparently motor) measures 'fun forms of combat exercises' [34]. The reason for this is the appropriation of the term 'martial arts' to camouflage neogladitorialism [43, 44] by the promoters of this pathology.

A unique example of the combination of various methods of the second and third groups is the "survival multidisciplinary competition" [45]. Andrzej Tomczak [46], twenty years ago, conducted an experiment based on the results of this method (tools – in the broad methodological sense), but the lack of interest of entities responsible for the defence education of society (which is surprising from the perspective of ignoring the social mission of science in relation to the declared expectations of 'practice' on the products of science) ended in making the results of research available in the form of a doctoral dissertation. Meanwhile, technological advances have modified the tools Tomczak used (paintball) to such an extent that close contact combat with real weapons has become real. At the same time, it is very attractive to the participants in such fights [47].

Narrative reviews, by Klimczak and Chodała [48] based on an analysis of the results of just two multi-month experiments (there were no more [49, 38]) and observations for selection purposes [37], during which simulations from non-motoric simulation, motor (psychomotor) and 'test fights' groups were combined, taking into account the phenomena of aggressiveness and bravery, draws attention to the cognitive potential of combining these methods in a complementary way when studying relevant social groups (due to defence commitments).

CONCLUSIONS

I consider the review of publications reporting on the results concerning the diagnosis of the two phenomena (aggressiveness and bravery) using the INNOAGON tools discussed above to be the first research challenge to put the already accumulated knowledge in order (especially as many works are published only in Polish). Conducting research in parallel using the available tools to simulate these phenomena is an opportunity to provide even more, reliable, attractive and more modern tools for diagnosing and reducing aggressiveness in people of all ages. In order to apply these INNOAGON tools in a complementary way (and therefore also based on physical effort), the professional competence of a psychologist or educator in the traditional sense of these qualifications is not sufficient.

REFERENCES

1. Kotarbiński T. *Traktat o dobrej robocie*. Wrocław: Zakład Narodowy imienia Ossolińskich; 1955 [in Polish]
2. Kotarbiński T. *Pisma etyczne*. Wrocław: Zakład Narodowy imienia Ossolińskich; 1987 [in Polish]
3. Kotarbiński T. *Z zagadnień ogólnej teorii walki*. Warszawa: Sekcja Psychologiczna Towarzystwa Wiedzy Wojskowej; 1938 [in Polish]
4. Konieczny J. *Cybernetyka walki*. Warszawa: Państwowe Wydawnictwo Naukowe; 1970 [in Polish]
5. Rudniański J. *Elementy prakseologicznej teorii walki. Z zagadnień kooperacji negatywnej*. Warszawa: PWN, 1983 [in Polish]
6. Rudniański J. *Kompromis i walka: sprawność i etyka kooperacji pozytywnej i negatywnej w gęstym otoczeniu społecznym*. Warszawa: Instytut Wydawniczy Pax; 1989 [in Polish]
7. Kalina RM. *Przeciwdziałanie agresji. Wykorzystanie sportu do zmniejszenia agresywności*. Warszawa: Polskie Towarzystwo Higieny Psychiczej; 1991 [in Polish]
8. Kalina RM. *Teoria sportów walki*. Warszawa: Centralny Ośrodek Sportu; 2000 [in Polish]
9. Kalina RM. Agonology deeply esoteric science – an introduction to martial arts therapy on a global scale. *Proc Manuf* 2015; 3: 1195-1202
10. Kalina RM. Agonology – the unknown science. *Arch Budo* 2016; 12: 231-237
11. Kałużny R, Kalina RM. Przewidywanie sposobów działania w sytuacjach zagrożenia ludzi różniących się rodzajem aktywności fizycznej – badania symulacyjne. In: Kalina RM, Klukowski K, Jędrzejak K, Kaczmarek A, editors. *Współczesne kierunki rozwoju kultury fizycznej w formacjach obronnych*. Vol 5. Warszawa: Polskie Towarzystwo Naukowe Kultury Fizycznej, Sekcja Kultury Fizycznej w Wojsku; 2000: 31-38 [in Polish]
12. Kalina RM, Kałużny R, Kruzewski A. Different Ways of Counteracting Against Aggression by Soldier and Other Social Groups. Abstract book of the CISM International Symposium on Development of Sport in the Military; 2001 Nov 11-17; Guangzhou, China. Guangzhou: Conseil International du Sport Militaire; 2001: 22-23
13. Kałużny R. *Wykształcenie i nabyte doświadczenia jako kryterium przewidywania sposobów działań człowieka w sytuacjach zagrożenia*. [PhD dissertation]. Opole: Uniwersytet Opolski; 2001 [in Polish]
14. Kalina RM, Dadeło S, Chodała A et al. „Declared bravery” and its measurement. *Phys Educ Sport* 2005; 49(3): 213-218
15. Kałużny R, Kalina RM, Obodyński K. Percentages of righteous and aggressive subjects among the candidates for Land Forces in the years 1998-2007. In: Sokołowski M, editor. *Biosocial effects of military service as basis for further improvement of future physical education and sports programmes*. Poznań: Akademia Wychowania Fizycznego imienia Eugeniusza Piaseckiego w Poznaniu; 2007: 293-301
16. Kałużny R. Gotowość kandydatów na oficerów wojsk lądowych do niesienia pomocy innym. *Badania porównawcze 1998-2007*. In: Kołodziejczyk T, Kozerawski DS, Maciejewski J, editors. *Oficerowie grup dyspozycyjnych: socjologiczna analiza procesu bezpieczeństwa narodowego*. Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego; 2008: 343-351 [in Polish]
17. Kałużny R, Płaczek A. “Declared bravery” of Polish police officers (comparative studies of 1998 and 2010). *Arch Budo* 2011; 7(4): 247-253
18. Kałużny R. Agresja uczniów gimnazjum mechanizmem deprecjonującym funkcję wychowawczą szkoły. In: Rybczyńska-Abel Kawy D, Heine M, Karłyk-Cwik A, editors. *Współczesne wyzwania dla teorii i praktyki resocjalizacyjnej*. Toruń: Wydawnictwo Edukacyjne AKAPIT; 2013: 277-292 [in Polish]
19. Kałużny R, Kalina G. Change of the actions declared in simulated situations involving interpersonal aggression. *Arch Budo Sci Martial Art Extreme Sport* 2015; 11: 221-228
20. Kałużny R, Klimczak J. Declared by medical students actions towards of people in emergency situations – mixed assessments as a basis for analysis of simulation studies. *Arch Budo* 2017; 13: 323-333
21. Kałużny R, Kondzior E. Reliability of the KK’017 questionnaire – test-retest military cadets. *Arch Budo Sci Martial Art Extreme Sport* 2019; 15: 9-16
22. Ashkinazi S, Jagiełło W, Kalina RM et al. The importance of hand-to-hand fights for determining psychomotor competence of antiterrorists. *Arch Budo* 2005; 1: 8-12
23. Kalina RM, Jagiełło W, Chodała A. The result of “testing fights in a vertical posture” as a criterion of talent for combat sports and self-defence – secondary validation (part I: the reliability). *Arch Budo Sci Martial Art Extreme Sport* 2015; 11; 12: 229-238
24. Kalina RM, Jagiełło W, Chodała A. The result of “testing fights in a vertical posture” as a criterion of talent for combat sports and self-defence – secondary validation (part II: the accuracy). *Arch Budo Sci Martial Art Extreme Sport* 2016; 12: 163-180
25. Niedomagała W. The result of “testing fights in a vertical posture” as a selection criterion for professional training of judo sport – prognostic value TFVP. *Arch Budo Sci Martial Art Extreme Sport* 2016; 12: 181-190
26. Klimczak J. Reliability of the KK’017 questionnaire – test-retest female students of tourism and recreation. *Arch Budo Sci Martial Art Extreme Sport* 2019; 15: 113-118
27. Żychiewicz T. *Stare przymierze*. 2nd ed. Kraków: Znak; 1985 [in Polish]
28. Rudniański J. *Między Dobrem a Złem*. 3rd ed. Warszawa: Nasza Księgarnia; 1989 [in Polish]
29. Klimczak J, Barczyński BJ, Podstawski R et al. The level of bravery and aggressiveness of the sports activity organisers for the youth – simulation research *Arch Budo* 2016; 12: 345354
30. Kalina RM. Innovative agonology as a synonym for prophylactic and therapeutic agonology – the final impulse. *Arch Budo* 2016; 12: 329-344
31. Kalina RM. Language and methods of innovative agonology as a guide in interdisciplinary research on interpersonal relationships and people with the environment – from micro to macro scale. *Arch Budo* 2020; 16: 271-280
32. Kalina RM. Innovative Agonology – Its Definition, Detailed Theories, General Rule of Struggle, and Laws. Proceedings of the 14th International Conference on Applied Human Factors and Ergonomics and the Affiliated Conferences (AHFE 2023); 2023 Jul 20-24; San Francisco, USA. *Healthcare and Medical Devices* 2023; 79: 272-279
33. Kruzewski A, Gąsienica Walczak B. Although “self-defence” is an individual case of human defensive struggle and the object of research of the specific sciences dedicated to struggle, it also is a term borrowed by other categories of sciences classified by WoS. *Arch Budo* 2023; 19: 61-75
34. Kalina RM, Kruzewski A. INNOAGON is an acronym for ‘innovative agonology’, but is not synonymous with ‘science of martial arts’. *Arch Budo* 2023; 19: 193-204
35. Kalina RM. Multidimensional tests as a fundamental diagnostic tools in the prophylactic and therapeutic agonology – methodological basis of personal safety (Part I: non-motoric simulation). *Arch Budo Sci Martial Art Extreme Sport* 2017; 13: 191-201
36. Kalina RM. Multidimensional tests as a fundamental diagnostic tool in the prophylactic and therapeutic agonology – the methodological basis of personal safety (Part II: motor and psychomotor multidimensional tests). *Arch Budo Sci Martial Art Extreme Sport* 2018; 14: 1-14
37. Dadeło S. Czynniki determinujące kompetencje pracowników ochrony na Litwie. Warszawa: Akademia Wychowania Fizycznego; 2005 [in Polish]
38. Syska JR. *Psychomotoryczne efekty uprawiania przez kobiety nowoczesnych form gimnastyczno-tanecznych z elementami samoobrony* [PhD dissertation]. Warszawa: Akademia Wychowania Fizycznego Józefa Piłsudskiego w Warszawie; 2005 [in Polish]
39. Klimczak M, Klimczak J. Application of multidimensional simulation research tools in the diagnosis of aggressiveness among the youth – review of innovative methods. *Arch Budo Sci Martial Art Extreme Sport* 2018; 14: 205-213

40. Kalina RM. Methodology of complementary research as the basis for integrating science in fulfilling its social mission in the future. *Arch Budo* 2023; 19: 77-82
41. Klimczak J, Kalina RM, Jagiełło W. Fun forms of martial arts in diagnosing and reducing aggressiveness – mental effects of a one-day course for Polish animators of sport. In: Kalina RM, editor. *Proceedings of the 1st World Congress on Health and Martial Arts in Interdisciplinary Approach*; 2015 Sep 17-19; Czestochowa, Poland. Warsaw: Archives of Budo; 2015: 187-189
42. Klimczak J, Kalina RM. Placebo effect – the perspective of diagnosis and therapy of aggressiveness by using fun forms of martial arts during innovative agonology cognitive-behavioural sessions (case study). *Arch Budo* 2019; 15: 57-66
43. Piepiora P, Witkowski K. Personality profile of combat sports champions against neo-gladiators. *Arch Budo* 2020; 16: 281-293
44. Krzemieniecki LA, Piepiora P, Witkowski K. At the interface of gladiatorship and neogladiatorship: humanistic perspective in the diachronic and synchronic terms. *Arch Budo Sci Martial Art Extreme Sport* 2021; 17: 131-137
45. Tomczak A. The “survival multidisciplinary competition” psychomotor competence test as a synthetic tool for modern defence education. *Arch Budo Sci Martial Art Extreme Sport* 2022; 18: 51-59
46. Tomczak A. Ocena przygotowania żołnierzy do działań w warunkach odosobnienia. [PhD dissertation]. Wrocław: Akademia Wychowania Fizycznego; 2004 [in Polish]
47. Bąk R. The ability to use firearms in stressful conditions as an important criterion for survival. *Arch Budo Sci Martial Art Extreme Sport* 2021; 17: 151-156
48. Klimczak J, Chodała A. The effectiveness of hand-to-hand combat is not determined by the need for a high level of aggressiveness. *Arch Budo* 2023; 19: 205-212
49. Kalina RM. *Sporty walki i trening samoobrony w edukacji obronnej młodzieży*. Warszawa: Polskie Towarzystwo Naukowe Kultury Fizycznej, Sekcja Kultury Fizycznej w Wojsku; 1997. Vol 2 [in Polish]
50. Aronson E. *The Social Animal*. 6th ed. New York: WH Freeman and Company; 1992
51. Ruch FL, Zimbardo PG. *Psychology and Life*. Glenview: Scott Foresman and Company; 1997
52. Pszczołowski T. *Mała encyklopedia prakseologii i teorii organizacji*. Wrocław: Zakład Narodowy imienia Ossolińskich; 1978 [in Polish]

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