dr hab. Andrzej Czupryński
Higher Business School in Dąbrowa Górnicza

The Essence of Security Sciences

Abstract

Security sciences as a scientific discipline have formally existed in Polish science since 2011 and are still struggling to define their scientific identity, which is mainly due to their arbitrary creation and incorporating changes to them in a directive manner not resulting from the scientific assumptions of their development. To a large extent, the identity of security sciences is determined by an imprecisely defined subject of research and unformed research methodology, which researchers in security sciences uncritically borrow from other disciplines. The article emphasizes the need to clarify the structure of the discipline of security sciences and distinguish in it: methodology in security sciences, general security theory and detailed security theories.

Keywords: security sciences, scientific discipline, security research

Istota nauk o bezpieczeństwie

Abstrakt

Nauki o bezpieczeństwie jako dyscyplina naukowa formalnie istnieją w nauce polskiej od 2011 r. i nadal borykają się z określeniem swojej tożsamości naukowej, co głównie wynika z arbitralnego ich utworzenia i dokonywania w nich zmian w sposób dyrektywny, niewynikający z naukowych założeń ich rozwoju. W dużym stopniu tożsamość nauk o bezpieczeństwie determinuje nieprecyzyjnie określony przedmiot badań oraz nieukształtowana metodologia badań, którą badacze w naukach o bezpieczeństwie zapożyczają bezkrytycznie z innych dyscyplin. W artykule podkreśla się konieczność doprecyzowania struktury dyscypliny nauk o bezpieczeństwie i wyodrębnienia w niej: teorii poznania w naukach o bezpieczeństwie, ogólnej teorii bezpieczeństwa oraz szczegółowych teorii bezpieczeństwa.

Słowa kluczowe: nauki o bezpieczeństwie, dyscyplina naukowa, badanie bezpieczeństwa

Сутність наук про безпеку

Анотація

Науки про безпеку як наукова дисципліна формально існують у польській науці з 2011 р. і досі намагаються визначити свою наукову ідентичність, що, головним чином, пов›язане з їх довільним створенням та внесенням змін до них в директивний спосіб, що не є результатом наукових припущень їх розвитку. Значною мірою, ідентичність наук про безпеку визначає неточно окреслений предмет дослідження та несформована методологія дослідження, яку дослідники наук про безпеку безкритично запозичують з інших дисциплін. У статті підкреслюється необхідність уточнення структури дисципліни наук про безпеку та розмежування в ній: теорії пізнання в науках про безпеку, загальної теорії безпеки та детальних теорій безпеки.

Ключові слова: науки про безпеку, наукова дисципліна, дослідження про безпеку

Introduction

Implementation of studies in security sciences encounters significant cognitive difficulties arising from the application of appropriate strategies, methods, techniques and research tools and their interpretation, because they have no set research methodology [8, p. 35–47]. Hence in the cognitive process researchers make use of research methods, techniques and tools from related disciplines, as a result of which they are not always interpreted correctly in the aspect of the discipline in which they apply them. The basic difficulty arises from certain arbitrariness in interpretations of the subject and scope of research that is manifested in broadening of the scope of cognitive interest of the discipline, which is not fully justified. It is reasonable to perceive the adopted research methods in security sciences in the aspect of the subject of the discipline they concern, despite the fact that initially determined methods were applied in other disciplines. The researcher chooses the research strategy methods, techniques and other research tools, in an attempt at obtaining maximally objectivised results; nevertheless in social sciences they will always entail certain subjectiveness due to the nature of the object of the study. In security sciences rather commonly use is being made of the strategy of qualitative studies. "Qualitative research as a set of interpretational activities does

not place any methodological practice over others. (…) There is no proprietary theory or paradigm. (…) What is more, qualitative studies do not have methods or practices that are unquestionably inherent to them" [14, p. 28]. Hence social sciences, including also in the discipline of security sciences, are accused of cognitive subjectivism, especially by representatives of cognitive positivism and realism as a result of the lack of possibility of presenting results of research based on empirical studies. Due to the lack of understanding of the essence of qualitative studies, empirists and quantitative researchers call qualitative researchers "publicists" or "soft researchers", and consider their work as non-scientific or merely of an explorative nature, because they entail significant subjectivism [14, p. 30–33]. Yet this accusation is unjustified, as each field, including also scientific disciplines, require the application of other research methods, techniques and tools appropriately to the subject of the study, and even if they are similarly applied, their assumptions should be adapted to the analysed subject in the cognitive aspect of the given discipline. Hence it is reasonable to address the problem as to what proves the essence of the discipline of security sciences? In numerous works security researchers refer mainly to a description of the object of study in different categories, which extends the cognitive scope and may cause that due to blurring of boundaries, "washing out" of the subject of research, i.e. the loss of its expressiveness. The objective of the present article is to make the reader familiar with the cognitive scope and general structure of the discipline of security sciences. A thesis may be posed that solving of such a complex problem in this article is not feasible, but it is possible to deliberate the structure of security sciences.

To solve the initiated problems, use was made of the method of studies of contents of literature, which causes a significant lack of understanding, yet in its essence is applied in all research, but perceived in a fragmentary way instead of holistically. In most general terms the process of studying contents in literature consists in a coherent application of the reasoning operation (analysis, synthesis, comparison, abstraction, generalisation, inference) and strategy of reductional, taxonomic, heuristic and constructive thinking. Generally academics in various scientific disciplines, in a single line of a thinking process or separately, speak of the application of analysis, synthesis, comparisons, abstraction, generalisation and inference, and this may be justified in the aspect of the analysed subject. However, in social sciences, also in security sciences, the researcher studies the contents of the problem theory earlier coined by other scientists. And consequently he does not apply separately the operation of reasoning, but in a coherent way in the aspect of basic strategies (reductional, taxonomic, heuristic,

constructive strategies), and as an effect of such an approach modifies a theory or creates a new one. The theory grounded by the basis of generated knowledge comprises empirical evidence, yet in security sciences it may not always be possible or from the ethical viewpoint the conducting of an experiment may not be justified. Hence in security sciences qualitative strategy has found broad experimental application, which does not rule out or marginalise other cognitive strategies.

The present article is also a summary of deliberations under scientific internship in the Faculty of Internal Security of the Department of Civil Security Engineering of the Main School of Fire Service in Warsaw at the turn of May and June 2019.

1. Genesis and evolution of the discipline of security sciences

Despite the fact that they have their position in the classification of Polish science, security sciences as a scientific discipline have no defined essence, an security as such – only numerous definitions and classifications from the viewpoint of cognitive category, semantics or practice. The interpretation of security provides simple solutions and rather vague interpretations, suggesting that security means lack of danger, which is a considerable oversimplification. The clarification of etymology of the word *security* in different languages also provides similar reflections. In interpretations of the discipline we tend to omit the most important element – its structure.

"In their essence security sciences take up systematic deliberations of problems related to the life of people and activity of social organisations. Its paradigm is not some abstract cognitive rule, but much more problems related to the existence, development and functioning of a human and of social organisations which occur in practice" [21, p. 32]. In the aspect of a scientific discipline getting to know social pragmatism of security appears to be insufficient, because the discipline has been founded on compiled, recognised and developing knowledge which is comes to life as a result of getting to know a specific reality. Security is perceived as a "(...) state of being (of people, societies, structures and facilities), which allows survival, certainty, development and freedom of functioning in all fields of human activity. This state is variable over time and space, depending on developing or vanishing hazards (this variability is called by some people as a process)" [37, p. 42]. Universally defined security does not mean a definition of the discipline of security sciences, yet it contributes to proper perceiving of the subject of our studies.

Difficulties connected with interpretations of security sciences arise from the fact that is one of the youngest scientific disciplines, which was established in an arbitrary and contractual way in 2011 [38] in the field of the humanities and later on in the same year [31] it was transferred to the area of social sciences, and in 2018 [30], without changing the name and not providing its cognitive scope, it has naturally taken over the achievements and a considerable part of the academic staff from available from liquidated defence sciences. It is reasonable to seek the genesis of security sciences among others in military sciences, which were mentioned in the decree of 1947 [13], and then in decree of 1952 [12] they had gained the right of conferring scientific degrees. In 1965 military sciences were particularised and specified in the classification of academic degrees and titles [39] and from that moment on from the formal viewpoint the only change was their position in the listing of scientific degrees and titles. Military sciences were developed in military universities, but in the scope of state security and defence mainly in the General Staff Academy, and after its winding down in the National Defence Academy, which assured sound substantive and methodological foundations for security sciences. After the elimination of military sciences in 2011 security sciences were established and the defence science, however, no determination was made of the scientific scope of the new disciplines, which gave rise to conflicts pertaining to the subject of studies. Afterwards in a similar way the defence science was eliminated in 2018, without an indication which discipline would take over the cognitive scope of the liquidated one, as well as academic staff. Consequently a presumption may be made that the process of changes did not arise from scientific substantiation of the establishing process of a scientific discipline, but rather from contractual and arbitrary presumptions.

It is also reasonable to seek sources of security sciences also beyond the formal division of science and military sciences distinguished in 1947. The genesis of security sciences has a much wider context, allocated in various spheres of knowledge, because the basic subject of security of a human being, and consequently everything that applies to him, gives this discipline a specific nature, but this does not mean that security is a super field or super discipline. Conditions applicable to security sciences arise from:

- anthropology as a science on the origin and development of man, which determines his functioning in the natural and social environment;
- ethnography as a science on the culture of diverse nations, which determined their interests and political goals;

- military sciences, and initial in the war art, the interest of which was focused on guaranteeing territorial sovereignty to the state and counteracting external and internal hazards to the legal status;
- philosophy, which took up initially all spheres of human life and which used to define and still defines the sense of human existence;
- science on politics, which defines conditions for functioning of the state on the international arena and the application of its instruments for needs of survival, perseverance and development, as well as assuring the implementation of his essential, significant and vital interests;
- technical sciences in the aspect of improving the quality of human life, but mainly as an instrument for establishing fighting means to guarantee the defence of sovereignty;
- economy, which among others supports the state apparatus in assuring resources indispensable for its functioning;
- praxeology as a science related to efficient management, which despite its not having been defined is used to develop with the foundation of the state and its institutions, in the first place of the armed forces;
- sociology as a science on the society and principles of its development;
- science on administration in the scope of management and administration of the state and its institutions;
- polemology as a science on sources and causes of armed conflicts;
- psychology as a science on elementary needs of humans.

Conclusions from a review of literature indicate that this does not constitute a complete list of co-dependent fields, from which in a certain sense security sciences gain their knowledge. And consequently security sciences have their sources in different areas, hence the nature of their knowledge is of an interdisciplinary, multidisciplinary and transdisciplinary nature, which leads to ambivalence of their cognitive scope.

2. Security sciences

Science is a specific human activity, and its products should be characterised by properties that should differentiate it from other activity. Scientific work is perceived as a specific form of creative work, which consists in finding and setting up new links between already known phenomena, things, parts or between known concepts, or their reflection in certain phenomena or makes discoveries of revolutionary importance

for its further development. A characteristic feature of scientific work is reflecting or getting to know an unknown reality or the creation of concepts based on a scientific reflection of a defined being. Sciences arise from needs of actual life, hence its knowledge should be useful to satisfy human needs. Science is ascribed with: meaning of activities undertaken by academics, meaning of outcomes of scientific activities and meaning of perfect scientific concepts.

In the classification of science delimitation is made of its fields and disciplines, as well as of specialties that should arise from the properties and functions of sciences and its evolution or its revolutionary development. If the given fragment of knowledge meets the basic features and functions of science we may presume that this is a section of knowledge that meets conditions to become a field, discipline or specialty. The criterion that allows the distinguishing of a given discipline and its specialties may include: cognitive subject, object of cognition, method, conceptual system, social need for the development of theory and practice.

The discourse pertaining to classification and essence of science has been going on forever and in most cases there is a clash of views of atomists and evolutionists, which should be allocated in the concept of normal science where knowledge is being ordered and accumulated, because both atomists and evolutionists, despite the difference in concepts as to a scientific discipline, do not perceive properties of paradigms of revolutionary changes in science, which guarantee its surge-type development and exceeding of contractually set boundaries [24]. From the social viewpoint, of great importance is the usefulness of the given knowledge on social reality, because science should be socially useful, yet for the world of academics also its common matrix is necessary (the concept of a matrix may be conventionally compared to criteria of a scientific discipline) for needs of accumulating, developing and application of knowledge and possibilities of exceeding its borders [24, pp. 308–317]. The classification of science is complicated due to there being no possibility of applying homogenous division criteria. If we were to assume the division of science according to the criterion of research topic or methods of justifying primary assumptions or ways of justifying derivative assumptions, in each criterion a dichotomous division would be available. Given the topic of research we may distinguish formal sciences and real sciences. From the viewpoint of the way of justifying initial statements we may distinguish apriori sciences (theoretical sciences) and a posteriori (empirical sciences). Taking into account ways of justifying derivative statements, we may distinguish deductive sciences and inductive sciences.

T. Kotarbiński suggests that the division of sciences may be classified according to: applied methods, topic of the study, properties of the topic being studied, its logical nature and the required mental efficiency of a researcher indispensable in the given science [22, p. 573–580]. According to J. Ratajewski the classification of science and the demarcation of its new fields, disciplines and specialties should arise from the features and functions of science. Universally features of science comprise:

- capability of generalising the results of scientific activity, i.e. the ability of perceiving problems, posing questions and building up scientific theories;
- objective nature of declared judgements and assertions;
- accuracy and unambiguousness in the formulation of presented judgements and assertions;
- consistence of all measures (procedures) in science with scientific methods recognised by the academic milieu;
- significant informative nature of the language used in science, which allows the communication of scientists and verification of presented judgements and assertions;
- validity, logical relation and certainty of judgements and assertions passed on in scientific communication;
- constant criticism towards all the judgements (assertions) declared and a basis for continuous verification of judgements (assertions) already in existence and being communicated;
- creative nature of results of activity allowing the enriching of the hitherto scientific achievements [29, pp. 13–20].

The assessment of created knowledge from the viewpoint of specified features allows making a judgement whether the given knowledge section fulfils requirements necessary to become an autonomous scientific field, its discipline or specialty. To be able to be a science, each knowledge section should meet its commonly recognised functions: descriptive, explanatory, diagnostic, prognostic, methodological and systemising functions [29, p. 21]. It should be emphasised that in many cases the classification of science is accompanied by its aspects, such as: historical and geographic, static, dynamic, content-related, methodological, structural, linguistic, axiological, systemic, psychological, sociological, organisational, legal, ideological, political and economic aspects [28]. The multitude of accumulated criteria and conditions for the division of science causes that it is impossible to take into consideration all the aspects in any of them, yet an attempt should be made to have criteria adopted, because in such a case a discourse related to them would be feasible. If a division is assumed in

an autoritary way, without criteria, it becomes possible to speak of a discourse, but much more of a monologue.

According to S. Sulowski criteria that determine the specific discipline include among others: cognitive language, cognition method, researchers with defined capabilities, institutions executing specific studies, and the history of founding and evolution of a discipline [35, p. 33–34]. Atomists are convinced that science is divided into defined knowledge portions established by functionally similar scientific disciplines, which are focused on developing own theories. Evolutionists are of the opinion that scientific disciplines have no constant boundaries, and that their range extends or diminishes in response to challenges of the world and processes taking place in global science. Both only tend to order and accumulate knowledge with the use of diverse methods, but they do not introduce revolutionary changes as articulated by Thomas S. Kuhn [24].

To generalise we may assume that each scientific discipline comprises: academic staff; created knowledge; field, subject and object of research; methods of scientific cognition; conceptual language and the social need of carrying out research [7, pp. 9–16], but in the first place it is necessary to share the same paradigms in a given discipline by the scientists. A paradigm "(...) connects the community of academics and conversely, the community of academics consists of people who share a certain paradigm" [24, p. 298–299]. On the one hand, a society that shares the same paradigms forms foundations of a specific knowledge, but may also impede its development in fear from changes that may in a certain way violate hitherto assumptions worked out by them. A scientific discipline is a purposefully distinguished factual and methodological scope of knowledge and field of social reality which is the object of its scientific cognition and forming of knowledge in its relation to allow enhancing the quality of social life. If the cognition object of the given discipline is defined correctly [25, pp. 9–18], controversies related to its cognitive scope vanish.

The basic difficulty in security sciences is that security as a general topic of research does not exist in natural reality, and consequently it has no physical or biological features. Security as an object of research is a certain type of metaphor, but it also has individual elements to which physical features may be ascribed (institutions, organisations and systems). Researchers interpret the concept of security in different ways, an expression of which is the multitude of definitions in dictionaries [33, pp. 13–16], monographs and articles.

In an attempt at clarifying the essence of security, S. Koziej draws attention to the significant dynamism and variability of the phenomenon, which is to assure the possibility

of survival and development of interests of the security subject in specific conditions. The implementation of those interests is to take place by taking up challenges, minimising risks, making use of opportunities and counteracting hazards [23, p. 7], yet this does not relate to the discipline as a science, but much more to the practical sphere of security, yet such societal reality may be a subject of research. Security is an ambiguous category that relates to the sphere of consciousness of such a subject and points to a certain state of mind on the basis of phenomena considered to be hazardous or disadvantageous, which gives rise to a considerable subjectivism in perceiving of security. An appropriate assessment of security causes that the subject of security undertakes adequate means and actions to guarantee its perseverance, survival and development, and not excessive ones, resulting from untrue premises. The sensation of security and hazards by a given subject reflects its awareness of potential or real hazard (state of lack of security, obsession with hazards, false security, appropriate perceiving of security) [17, p. 17–21], which may prove to be inconsistent with the actual state and reflects its systems of needs and values and the state of mind.

Literature contains definitions of security describing it as lack of hazards, which does not seem much warranted, because hazards constitute an immanent part of the biological, social and political subject of security. Hence this is not the lack of hazard, but its low and acceptable level, which essentially does not cause destruction in the subject of security, but requires its monitoring and enhancing of systems to provide protection from it. Security objects participate in the generation of hazards, at different levels of conscious and intentional activity, and at different levels are subjects of negative impact of hazards. This does not mean that the security subject creates hazards in relation to itself, but much more that they are an unforeseeable or disrespected side product of security or civilizational development despite the fact that they are an antonym of security. To generalise hazards, it is reasonable to classify them according to the source of origin as:

- objective (intrinsic), i.e. existant regardless of the existence and perceiving of the experiencing subject;
- biased, i.e. existent regardless of the subject of knowledge and their perceiving. This implies that the existence of this group of hazards arises from activities undertaken by the security subject addressed at the natural, social or politic environment to achieve intended and subjected benefits.

"A hazard implies subjective occurrence (i.e. one dependent on the perception of the perceiving subject) and/or objective (actual) occurrence of a danger for values

important for the given subject ascribed to its security. A hazard is directed onto specific values, which are subject of protection by the given entity" [44, p. 10]. As regards dangers, security may be characterised in the negative or positive aspects. In the negative aspect security is perceived and defined as a response to hazards for the subject of security and frequently considered as a lack of hazards, which is not precise enough, because hazards always occur, but not in every case their level limits directly a high level of the possibility of perseverance, survival and development of the security subject. Applying a positive aspect it is possible to define security as an objective and subjective certainty of being, survival, possession, functioning and freedoms (opportunities) related to the development of the given topic [45, p. 12]. Literature of the subject security is perceived among others as:

- guarantee of inviolable survival of the security entity and its unconstrained development [34, p. 17–20];
- territorial integrity, sovereignty, free choice of the route to political development, achievement of wellbeing and social development [3, p. 13];
- state gained as a result of appropriately organised defence and protection from all military and non-military hazards with the use of forces and means coming from different scopes of activity of the state [36, p. 89];
- state of certainty, peace, lack of hazards and protection from potential hazards, [43, p. 27];
- category related to the state and the nation as the most important value, national need, objective of the activity of the state, social entities and groups, and concurrently a process that comprises various means, guaranteeing lasting existence free of any disturbances and national development (state) [20, p. 31].

Manifold interpretations of security indicate that is general perceiving its most justified in the process-related aspect, because it understands its essence as perseverance, survival and ability of the security entity to development, which in the aspect of a scientific discipline points to a very vast scope, object and subject of studies both in the general and specific sense. "Security in the process aspect – strives at assuring possibilities of survival, development and freedom of implementation of own interests in specific conditions, by making use of favourable circumstances (opportunities), undertaking challenges, minimising risk and counteracting (preventing and opposing) all types of hazards for the entity and its interests" [23, p. 7]. A process comprises consequent and concurrently positive or negative changes with cause and effect correlation which are taking place in the subject perceiving it or in its social or

natural environment. Processes may take place as a consequence of their conscious and intentional initiation, or may be automatic, i.e. initiated by other entities than the perceiving entity. From the viewpoint of security sciences importance is ascribed to security processes in the social and natural environment of the security subject, because the level of their changes proves the quality of security. Social processes are manifested by setting up mutual relations of numerous social phenomena comprising the behaviour of entities, social groups and other milieus [26, pp. 195–223]. Security processes as conscious and intentional actions of the security entity should cause defined state in the security environment. Security processes may be a product of intentional and conscious action of the security entity in its environment, yet they may also be a product of the response of the social environment to processes of changes. Security as a state and a process is something that is not easy to measure due to the absence of its physical features, Although from the social viewpoint we may describe its value, yet this description will also entail a subjective aspect from the viewpoint of expectations of the perceiving subject (fig. 1).
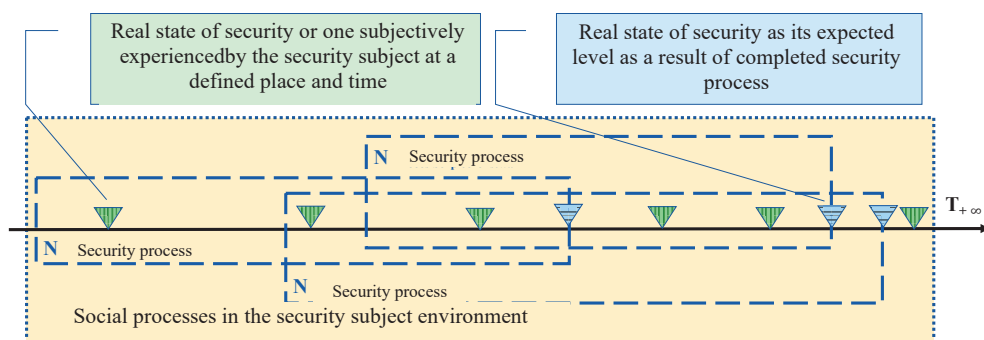
where:

N – means a countless and unclassified number of intentional and inherent security processes in the security subject environment

$T_{+}\infty$ – means an infinite time axis

Fig. 1. Security state and processes in the social environment of the security subject
Source: own study

Security is perceived as a state at a specific place and time, which means a situation characterised by lack of risk of losing something having a significant importance to humans, such as health, work, respect, feelings, and material goods and in this dimen-

sion it is of an existential nature. In this understanding this comprised needs, which are satisfied when the person in need has access to what he needs [40, p. 122]. Security as a state means its given level in a defined moment of the security process, but also as its expected ultimate state. And hence the state of security may be perceived as its assessment in any place and time of the security process, and as an intended final effect of the specific security process. Security processes as intended and purposeful are initiated by security subjects, but also lasting security processes may cause inherent processes as an effect of their positive or negative development. From the social viewpoint man is the basic security subject and his scope of needs and values in this respect is superior despite the fact that security sciences have been created on the basis of former military sciences. From the viewpoint of security sciences the subject of research also includes security processes.

From the material viewpoint the definitions of security comprises competencies of perceiving and interpretations of security, activities of security subjects and institutions, institutionalisation of security, structuring of security, which points to its multidimensional nature, in which emphasis is placed mainly on the foundations, needs, values, convictions, symbols, practices ad institutions that guarantee them [41, pp. 59–69]. Security is a need and a value, which for each security subject acquires a different significance, which is highly subjective and special. "Security displaces freedom and equality from the top position in the scale of values" [1, p. 22]. This thesis is one that is not easy to accept, yet it occupies a position in social reality of the security subject. This gives rise to a dilemma as to the extent to which the given security subject would accept conscious lowering of its rights to freedom and values in favour of its security? A distrustful and suspecting citizen striving at achieving security would be grateful for justified or unjustified limiting of his freedom in favour of security, which in reality may mean the approach of a democratic society to modern autocratic forms of the exercise of authority, based on an illusorically generated fear among the citizens. The biggest threat for international and state security is the weakness of the law and the randomness of its interpretation [27, pp. 104–124]. "Consequently the state means a rule that orders something that exists, but just as well something that should be" [16, p. 289]. We may assume that as regards security from the social and legal viewpoint the state in its actions is the ultimate result of the process of ruling rationalisation, i.e. it does or should do what is rational and necessary [16, pp. 287–312]. In the interpretation of M. Foucault rationalism does not arise from objective science, but much more from a necessity of the state doing what it considers to be correct, and

that is related with the effectiveness of ruling. Consequently according to M. Foucault rationality and necessity have significant relations with interpretation of the state of emergency as defined by C. Schmitt [32, pp. 45–77].

"Security is a subjective need, which means that it apply to diverse types of entities, from individual ones to major social groups, along with organisational structures (institutions) representing individual persons and various social groups (countries, nations, international system)" [42, p. 935]. Expectations and standards of perseverance and development for each security entity have inherent civilizational conditions. The essence of civilisation is expressed in the level of societal development in the given historical period, which depends on the degree of man's domination of the natural environment and has an anthropological dimension manifested in generated artefacts: material goods, production means, abilities of organising the society, culture goods and. "On the one hand civilisations are to some extent a result of reactions of people to the natural environment – reactions related to satisfying such elementary needs, as food or assurance of security. On the other hand – have cultural dependencies and frequently, albeit not always, are based on religion and integrate people using the same language" [15, p. 27]. Due to a different level of civilizational development security subjects have different individual demand for security.

Problems pertaining to perceiving and defining of security arise from the fact that we attempt to define them separately – in personal categories for an individual, social groups or nations; in institutional categories concerning different organisations, including primarily or exclusively countries; systems of social, political and legal values – and we should perceive security in a holistic way, because omission or marginalisation of one of the specified categories causes its nature to be incomplete, and even defective. Security has been and continues to be an autotelic value for each of its subjects [4, pp. 71–84]. The essence of the problem is the fact that security hazards become intensified with social polarisation of value systems. This does not mean that it is necessary to strive at the establishment of a homogenous system, but much more that the level of the discourse and identified differences should not establish a basis for conflicts, but instead be conducive to their mitigation. Regardless of the way in which we endeavour to interpret security, it always has a certain societal base, and the role of science is among others the clarification of specified phenomena, facts, processes and their causes, and consequently it is not polarisation, but much more the possibility of comprehending the essence of mutual attitudes and relations, not only from the personal and social viewpoint, but also from the institutional one [11, pp. 267–283]. Taking

up discourse and striving at avoidance of a conflict provides a basis for a guarantee of security on each of its levels and in each category. Security is a non-transferable right of man and of any other biological being striving at perseverance, survival and development [5, pp. 11–20]. Security is the superior need of man and of institutions created by him, and its quality is related with social and civilizational development of the subject of security [6, pp. 9–24].

Defining and classifying of security indicate that the field, subject and object of studies in security sciences is a fuzzy set, for which it is impossible to determine cognitive boundaries, because it has features of entropy, yet it is possible to describe cognition by defining dependencies between an area, a subject and an object in a systemic aspect, to which it is possible to ascribe the meaning of the defined set. A set as a whole consists of certain elements, compiled taking into account a certain given common trait. However, a fuzzy set is a generalised divalent classification of subject with view to the researcher's cognitive intentionality, which even in the aspect of scientific cognition is subjective, even if "objective" criteria are used. Entropy is a measure of indeterminacy and degree of disorder of elements and states within a given set. Despite numerous definitions, security sciences are still characterised by a high level of substantive and methodological disorder. Entropy of the cognitive area of security is reflected by the fact that as cognitive areas of security are discovered, the scope of unrecognised objects tends to increase, which points to the vertical and horizontal nature of the studied security, which he also proves the unending process of studying security and this is a common feature of scientific cognition – infinity.

The research scope of security sciences is the range and conditions of the evolution of subject, object and spatial security in defined conditions of civilizational development. The scope of studies is transdisciplinary, because it comprises all spheres of social life of the security subject. A characteristic feature of the field of studies is its cognitive scope of situating the study subject in categories of:

- geographical, physical, political, economic, social, civilizational or abstract space, which impacts the subject of the study;
- its position in relation to a similar group of objects;
- its functioning in a specified space, where its features are being studied [9, pp. 29–33].
  The subject of studies comprises:
- defined social reality of security;
- social communities and social groups comprised by security interactions;
- social institutions and relations between them in respect to shaping of security;

- social processes and phenomena affecting security;
- systems, subsystems and their elements that create security [9, p. 29–33].

The subject of research must exist physically or its conceptual reflection has to be there (conceptual metaphors). The subject of research may not be the future, as stipulated in certain studies, it consists of social reality, after the examination of which we may make presumptions concerning the future, but we cannot examine the future, because it does not exist. The cognition object in literature is interpreted in different ways, but in each case it had features ascribed to it:

- actual ideas – having the form of sensual impressions and combining features of sensual cognition;
- sensations and activities of the mind– combining known objects with feelings;
- ideas formed with the use of imagination, which are perceived and which have their reflection in the researcher's mind [2, p. 25].

Consequently to perceive the object of research, the researcher should have a mental insight about it. The object of research comprises features and relations as well as the force on impact on facts, processes and phenomena in the given object. The object of study in security are features of the given object in the cognitive or utilitarian aspect of security [9, pp. 29–33]. It should be emphasised that there is difficulty in clear determination of the sphere, subject and object of studies of security, because this is a complex issue, having a co-dependent cognitive area, subject and object with other disciplines, through which cognition acquires an interdisciplinary, multidisciplinary and transdisciplinary nature. This also arises from a considerable variability of security and its subjective perceiving as a state within a specific time interval, legal state, mental state of the security subject and security processes. Another aspect of the indicated difficulties is the linguistic freedom as to the scope of its defining, to which is attention is drawn among others by B. Szulc [37, pp. 31–42].

In general terms the discipline of security sciences comprises: cognitive theory in security sciences, general security theory and detailed security theories (fig. 2).

The cognitive theory in security sciences constitutes its integral part, fixes linguistically results of scientific reflections (systematising function) and is a cognitive theory (cognitive function) in the given discipline, ponders over what cognition is, examines cognition and concurrently defines its type, refers to possibilities and boundaries and the relevance of cognition of the object of security studies. Epistemology of security sciences is perceived as a cognitive theory of its research object. According to A. Keller, the theory of cognition studies the cognition and concurrently constitutes a certain

type of cognition [19, p. 9]. Epistemology is a science of knowledge and has its reflection in gnoseology perceived by philosophers, which is a science of possibilities and boundaries and the veracity of human cognition. The concept of gnoseology means knowledge, at which people of science strived in a sensual or mental way. The scientific nature resulted from mental reasoning, and the instrumental approach was determined by the sensual approach, which entails defective cognition. Epistemology of security sciences is expressed in cognitive procedures and methods of conditions related to the establishment and operation of the national security system in a specific environment. In theory cognition means relations between the perceiving subject and the object being perceived, which comprise such issues as: issues related to sources of cognition, real nature of cognition and existence of the external world and properties of the studied topic in the ontological context [18, pp. 24–25]. The general subject of research in security sciences is the social and open, structural and functional system of state security.
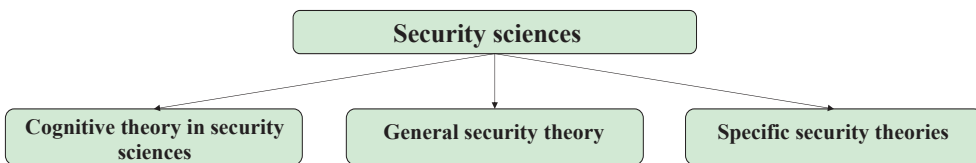

Fig. 2. Structure of the discipline of security sciences
Source: own study

The general security theory is a schematized set of information, laws and presumptions pertaining to description, explanation, diagnosis and prognosis of security in the personal, social and institutional aspect. The subject of research is the human social environment in the aspect of: opportunities, challenges, risk and security hazards, and the object of the research is man, without whom it loses its meaning. From the viewpoint of a scientific discipline, this part of it is most broadly described and explained, especially in the aspect of basic security categories.

Specific security theories concern systematised and accumulated knowledge in the subjective aspect, spatial aspect, sources of hazards, area and methods or organising security, importance and components of security. This is a highly complex fragment of knowledge related to security sciences, because it captures conceptually specific theories of security, in some cases appropriating areas, objects and subjects of research and their descriptions in the aspect of their different functions in theory.

Conclusions

Security sciences comprise a developing set of knowledge, laws and presumptions, and especially their structure and methodology of research. It may be presumed that as of 2011f rom the formal viewpoint their functioning is a sufficient period to allow the formation in this scope of a science with features structures with respect to substantive and methodological presumptions, yet such a presumption appears to be premature, because in social sciences there are too many variables that determine its development. It is clear that from the ontological viewpoint there is a need of further particularisation of the sphere, object and subject of studies, yet the basic difficulty in this respect arises from the fact that the academic staff certifying a discipline comes from various scientific fields and disciplines and each researcher prefer a specific research approach determined by the previous discipline. On the one hand this causes a hazard of "blurring" of a discipline in the direction of previous disciplines, but on the other hand skilful integration of the general security theory this allows enriching general and specific knowledge in the scope of security sciences. It ought to be emphasised that a discipline is only strengthened by monodisciplinary studies, because they affect to a greater extent its integration and constitution than results of interdisciplinary, multidisciplinary and transdisciplinary studies, as an effect of which revolutionary discoveries may be made, but as long as they are not there, this causes "blurring" of the principal cognitive trend. And hence security sciences are faced with a dilemma: consolidate the discipline and its substantive and methodologic basis or generate innovative knowledge, which may cause denying the discipline and the formation of a new one.

References

[1] Beck Ulrich, *Społeczeństwo światowego ryzyka. W poszukiwaniu utraconego bezpieczeństwa*, Wydawnictwo Naukowe Scholar, Warsaw 2012.

[2] Berkeley G., *Traktat o zasadach ludzkiego poznania,* Wyd. Zielona Sowa, Kraków 2005.

[3] Czaputowicz J., *Kryteria bezpieczeństwa międzynarodowego – aspekty teoretyczne* [in:] S. Dębski, B. Górska-Winter (scientific editor), *Kryteria bezpieczeństwa międzynarodowego państwa*, Wyd. PISM, Warsaw 2003.

[4] Czupryński A., *Aksjologiczne aspekty bezpieczeństwa*, "Europejski Przegląd Prawa i Stosunków Międzynarodowych" 2015, No. 4(35).

[5] Czupryński A., *Bezpieczeństwo w ujęciu aksjologicznym* [in:] J. Zboina (scientific editor), *Bezpieczeństwo na lądzie, morzu, i w powietrzu w XXI wieku*, Wyd. CNBOP-PIB, Józefów 2014.

[6] Czupryński A., *Bezpieczeństwo w ujęciu teoretycznym* [in:] (scientific editor) A. Czupryński, B. Wiśniewski, J. Zboina, *Bezpieczeństwo. Teoria – Badania – Praktyka,* Wyd. CNBOP-PIB, Józefów 2015.

[7] Czupryński A., *Kryteria dyscypliny naukowej* [in:] (scientific editor) A. Czupryński, B. Wiśniewski, J. Zboina, *Nauki o bezpieczeństwie. Wybrane problemy badań*, Wyd. CNBOP-PIB, Józefów 2017.

[8] Czupryński A., *Naukowe aspekty bezpieczeństwa* [in:] (scientific editor) A. Czupryński, B. Wiśniewski, J. Zboina, *Bezpieczeństwo. Teoria – Badania – Praktyka*, Wyd. CNBOP-PIB, Józefów 2015.

[9] Czupryński A., *Obszar, obiekt i przedmiot badań w naukach o bezpieczeństwie* [in:] (scientific editor) A. Czupryński, B. Wiśniewski, J. Zboina, *Nauki o bezpieczeństwie. Wybrane problemy badań*, Wyd. CNBOP-PIB, Józefów 2017.

[10] Czupryński A., *Obszar, obiekt i przedmiot badań w naukach o bezpieczeństwie* [in:] (scientific editor)A. Czupryński, B. Wiśniewski, J. Zboina, *Nauki o bezpieczeństwie. Wybrane problemy badań*, Wyd. CNBOP-PIB, Józefów 2017.

[11] Czywilis D., *Pojęcie bezpieczeństwa międzynarodowego w ujęciu teorii konstruktywizmu*, "Rocznik Bezpieczeństwa Międzynarodowego" 2007, No. 2.

[12] Decree on military academies of 10 December 1952 (Polish Journal of Laws/Dz.U. 1952 No. 49 item 324, art. 35), abrogated: 27.02. 1960.

[13] Decree of on the establishment of the General Staff Academy *of* 22 October 1947 (Polish Journal of Laws/Dz.U. 1947 No. 65 item 379), abrogated: 30.03.1951.

[14] Denzin N.K., Lincoln Y.S., *Wprowadzenie. Dziedzina i praktyka badań jakościowych* [in:] N.K. Denzin, Y.S. Lincoln (ed.), *Metody badań jakościowych. Vol. 1,* Wydawnictwo Naukowe PWN, Warsaw, 2014.

[15] Ferguson N., *Cywilizacja. Zachód i reszta świata*, Wydawnictwo Literackie, Kraków 2013.

[16] Foucault M., *Bezpieczeństwo terytorium populacja*, Wydawnictwo Naukowe PWN, Warsaw 2010.

[17] Frei D., *Sicherheit. Grundfragen der Weltpolitik*, Stuttgart 1977.

[18] Gottfried G., *Teoria poznania od Kartzjusza do Wittgesteina*, Wydawnictwo WAM, Kraków 2007.

[19] Keller A., *Wprowadzenie do teorii poznania*, Wydawnictwo WAM, Kraków 2010.

[20] Kitler W., *Bezpieczeństwo narodowe RP. Podstawowe kategorie, uwarunkowania, system*, Wyd. AON, Warsaw 2011.

[21] Korzeniowski L.F., *Securitologia. Nauka o bezpieczeństwie człowieka i organizacji społecznych,* wyd. EAS, Kraków 2008.

[22] Kotarbiński T., *Elementy teorii poznania, logiki formalnej i metodologii nauk,* Wyd. De Agostini, Warsaw 2003.

[23] Koziej S., *Między piekłem a rajem. Szare bezpieczeństwo na progu XXI wieku*, Wydawnictwo Adam Marszałek, Toruń 2006.

[24] Kuhn T.S., *Struktura rewolucji naukowych*, Wyd. Aletheia, Warsaw 2009.

[25] Lutostański M., *Idea wyodrębniania dyscypliny naukowej"nauk o bezpieczeństwie" i jej konsekwencje*, "Historia i Polska" 2018, No. 25(32).

[26] Merton R.K., *Teoria socjologii i struktura społeczna*, PWN, Warsaw 1982.

[27] Montbrial T., *Działanie i system świata*, Wyd. Dialog, Warsaw 2011.

[28] Pszczołowski T., *Nauka* [in:] *Encyklopedia*, wyd. PWN, Copyright @ 1997–2006.

[29] Ratajewski J., *Elementy naukoznawstwa i główne kierunki rozwoju nauki europej-skiej,* Uniwersytet Śląski, Katowice 1993.

[30] Regulation of the Minister of Science and Higher Education *on fields of science and scientific disciplines as well as artistic disciplines* of 20 September 2018 (Polish Journal of Laws/Dz.U. 2018 item 1818).

[31] Regulation of the Minister of Science and Higher Education *on Areas of academic study, academic disciplines and fields of study in the arts and sciences of* 8 August 2011 (Polish Journal of Laws/Dz.U. 2011 No. 179 item 1065), abrogated: 01.10.2018.

[32] Schmitt C., *Teologia polityczna i inne pisma*, Wyd. Aletheia, Warsaw 2012.

[33] *Słownik terminów z zakresu bezpieczeństwa narodowego*, AON, Warsaw 2009.

[34] Stańczyk J. (scientific editor), *Współczesne pojmowanie bezpieczeństwa*, ISP PAN, Warsaw 1996.

[35] Sulowski S., *O rozwoju badań i postulacie interdyscyplinarności w naukach o bez-pieczeństwie* [in:] S. Sulowski (scientific editor), *Tożsamość nauk o bezpieczeństwie*, Wyd. Adam Marszałek, Toruń, 2015.

[36] Szubrycht T., *Współczesne aspekty bezpieczeństwa państwa*, „ZN AMW" 2006, No. 4.

[37] Szulc B.M., *Bezpieczeństwo i obronność jako przedmiot nauki,* Bellona 2015, No. 4/2015(683).

[38] Resolution of the Central Committee for Degrees and Titles of 28 January 2011 *amending the resolution of scientific fields and fields of art and scientific nd art disciplines* (M.P. 2011 No. 14 item 149), abrogated: 01.10.2011.

[39] Order od the minister of higher Education of 15 July 1965 on *more detailed determination of scientific degrees and scientific titls depending on the field of science or scientific discipline to which those degrees and titles are applicable* (M.P. 1965 No. 38 item 217), abrogated.

[40] Zawadzki P. W.*, Bezpieczeństwo społeczne* [in:] K. A. Wojtaszczyk, A. Matera- -Sosnowska (scientific editor), *Bezpieczeństwo państwa*, Oficyna Wydawnicza ASPRA-JR, Warsaw 2009.

[41] Ziarko J., *Dylematy metodologiczne bezpieczeństwa jako nauki* [in:] W. Kwieciński (scientific editor), *Bezpieczeństwo. Wymiar współczesny i perspektywa badań*, Wyd. Krakowska Akademia im. A.F. Modrzewskiego, Kraków 2010.

[42] Zięba R, *Teoria ogólna bezpieczeństwa państwa w stosunkach międzynarodowych* [in:] (scientific editor) E. Haliżak, R. Kuźniar, G. Michałowska, S. Parzymies, J. Symonides, R. Zięba, *Stosunki międzynarodowe w XXI wieku*, Wyd. Scholar, Warsaw 2006.

[43] Zięba R., *Instytucjonalizacja bezpieczeństwa europejskiego*, Wyd. Scholar, Warsaw 2007.

[44] Zięba R., *O tożsamości nauk o bezpieczeństwie*, "Zeszyty Naukowe AON" 2012, No. 1(86).

[45] Zięba R., *Pojęcie i istota bezpieczeństwa państwa w stosunkach międzynarodowych*, "Sprawy Międzynarodowe" 1989, No. 10.

Dr hab. Andrzej Czupryński – is a research and didactic employee at the Academy of Business College in Dąbrowa Górnicza. He is the author of publications in the field of security, security research methodology, crisis management, martial arts and polemology.
ORCID 0000-0002-0519-4989

Dr hab. Andrzej Czupryński – jest pracownikiem naukowo-dydaktycznym w Akademii Wyższej Szkoły Biznesu w Dąbrowie Górniczej. Jest autorem publikacji z obszaru bezpieczeństwa, metodologii badań bezpieczeństwa, zarządzania kryzysowego, sztuki wojennej oraz polemologii.