

prof. Bernard Wiśniewski
e-mail: bwisniewski@wsb.edu.pl
ORCID: 0000-0002-0011-7271
WSB University in Dąbrowa Górnicza
DOI: 10.26410/SF_2/21/2

FUNDAMENTAL PROBLEMS OF SECURITY RESEARCH IN THE CONTEXT OF FORECASTS AND FORESIGHT PART II: ORGANISATION AND ERRORS

Abstract

Changes are a natural part of modern times. They require to be observed, to determine the impact on the workings of the security systems which have been adopted and to react to emergence of new solutions. One of the consequences of such observation is forecasting.

The organisation of forecasting is a set of undertakings, which comprises many fragmentary measures. This arrangement relies on the expertise and information available to it and a number of events that occur in an unforeseen manner both before and during the anticipation. Properly organised foresight may provide an efficient and effective way of preventing threats and extraordinary events, as well as, in the event of their occurrence, significantly reduce the level of losses and control both the aforementioned destructive phenomena.

Having regard to the above mentioned circumstances, this work gives a synthetic description of activities, including organised operations. In the following part of the article the issues of identification of the term “research” and arrangement of the research process are outlined.

The issues of drawbacks and advantages of forecasting are presented further on in the paper, and subsequently the issues of errors made during safety assessment, with particular emphasis on their sources and implications. In the closing part of the article the issues of pros and cons of forecasting were referred to.

The content of the considerations provided indicates that research on the future is challenging, complex and demanding. Their essence is usually to determine the directions, nature and scope of the necessary changes in the basis of predictions, the consequences of which have a direct impact on the subject of all the activities of people who strive for security, namely the human beings and the environment they live in.

Keywords

security, forecasting, time, future, organization, process, mistakes

Introduction

The unpredictable events that surprise people almost every day force us to improve the scientific prediction of the future. "It can be observed, therefore, that the main aim of research into the future should be to pursue science-based forecasts. The above statement contains the essence of the functioning of a scientific discipline, referred to as forecasting. This notion is to be understood as a cognitive activity that is used to show the most probable directions of development, its pace, structure and range. Prognosis aims, consequently, to indicate the most probable directions and dynamics of development of specific domains of life and its structure and ongoing changes. At the same time, the projection aims to accurately determine the conditions in which such development will take place. These conditions specify the essential elements on which the elaboration of forecasts of varying nature and extent is built"¹.

Foresight can be perceived in terms of organised activities, understood as the action of different people (institutions) ordered in time and space, oriented towards a common goal. This order can be permanent (within an organisation), created ad hoc (temporary cooperation of people or institutions) or semi institu-

tionised by previous commitments of cooperating parties².

In this perspective, it would be fair to note that forecasting is accompanied by errors which 'are part of life, they may be associated with all forms of human endeavour. The nature of such mistakes is sophisticated and their causes can be reported from many angles; not only technical, but also: psychological, sociological, organisational or cultural"³. Therefore, an error is no more than a manifestation of human erroneousness.

Principles of the organisation of forecasting

An interesting classification of operations, considering the ratio of effect to point of origin. According to such a criterion, an action can be divided into:⁴

- construction (when the effect is a new state, a property initially not existing);
- destructive (when the effect of an action is the disappearance of a state, a feature initially existing);

¹ W.Kaczmarek, B.Wiśniewski, *Prognozowanie bezpieczeństwa*, [in:] *Bezpieczeństwo w teorii i badaniach naukowych*. Wydanie drugie uzupełnione, (ed.) B. Wiśniewski, WSPol, Szcztytno 2018, p. 58.

² More: J. Prońko, *Potrzeby i możliwości doskonalenia działań zorganizowanych* [in:] *Racjonalizacja zarządzania jednolitymi formacjami umundurowanymi odpowiedzialnymi za bezpieczeństwo wewnętrzne*, Vol I, (ed.) B.Wiśniewski, Szkoła Główna Służby Pożarniczej, Warszawa 2017, pp. 9-24; B. Wiśniewski, *Wprowadzenie* [in:] *Racjonalizacja zarządzania jednolitymi formacjami umundurowanymi odpowiedzialnymi za bezpieczeństwo wewnętrzne*, Vol I, (ed.) B.Wiśniewski, Szkoła Główna Służby Pożarniczej Warszawa 2017, p. 7.

³ K. Kuchta, I. Tylek, A. Rawska-Skotniczny, *Przyczyny i metody zapobiegania błędom ludzkim w inżynierskiej działalności budowlanej*. Część I: *Klasyfikacja źródeł błędów*, [in:] *Przegląd budowlany*, No. 5/2017, Warszawa 2017, p. 17.

⁴ T. Kotarbiński, *Abecadło praktyczności*, Interpress, Warszawa 1971, p. 24.

- conservative (when the effect of the action is to maintain the state of a characteristic initially present);
- preventive (where the effect is to maintain the absence of an undesirable condition or characteristic).

The allocation of an action to the above categories is often subjective in nature, stemming from the observer's reference to one and not any other relatively relevant property (characteristic) of the observed object⁵.

Structured actions are those "aimed at a specific objective, characterised by an appropriate sequence of stages and consistent compliance with the implementation principles of each step. It is also called "a cycle of organised activity" or "an organisational cycle" in reference to the traditional concept of the French theoretician of organisation H. Le Châtelier"⁶. In light of the above, it should be recalled that the cycle of organised activity includes:⁷

- to set a clear, well-defined objective;
- to examine the measures and conditions to be applied to achieve the intended purpose;
- to prepare the means and terms;
- to make a reality, meaning to carry out the intended steps in accordance with the plan;
- to monitor the results obtained and draw lessons from them.

Prognostic activities shall take the form of a research process. This approach requires clarification of the meaning of the terms 'process' and 'research'.

Tadeusz Kotarbiński, defines the process as "an event which is a change heading in a certain direction due to some indicated factor"⁸. In turn, Leszek Krzyżanowski understands this notion as "any sequence (string, chain) of transformations, taking place in directly consecutive or overlapping moments, intentionally distinguished in some respect, as a definite entity"⁹.

Tadeusz W. Nowacki regards the term "scientific research" as "work performed by a researcher or team aimed at achieving the progress of scientific understanding, obtaining new principles (scientific statements, theses, certainties, generalizations, definitions) about e.g. historical and social dependencies, etc."¹⁰.

Tadeusz Pilch, on the contrary, perceives scientific research, from the point of view of its ultimate purpose, as research:

- any cognition aimed at gathering theoretical knowledge in order to build generalizations, universalizations, laws of development and transformation of the reality under investigation (...);
- an attempt to check the effects of the applied solutions, the consequences of the operation of a system is also

⁵ R. Gwardyński, *Safety in Praxeological Approach*, [in:] *Security - Threats, Law and Organization. Schriften zu Mittel- Und Osteuropa in der Europäischen Integration. Band 24*, (ed.) B. Wiśniewski, G.G. Sander, P. Kobes, Verlag Dr. Kovač, Hamburg 2019, p. 11.

⁶ *Encyklopedia organizacji i zarządzania*, Państwowe Wydawnictwo Ekonomiczne, Warszawa 1981, p. 109.

⁷ R. Krupski, *Podstawy organizacji i zarządzania*, Wydanie 5 zmienione, I-BiS, Wałbrzych 2004, p. 19.

⁸ T. Kotarbiński, *O pojęciu metody. Wybór pism*, Vol I, PWN, Warszawa 1957, pp. 708 – 710.

⁹ L. Krzyżanowski, *Podstawy nauki zarządzania*, PWN, Warszawa 1985, pp. 139 – 140.

¹⁰ T.W. Nowacki, *Leksykon pedagogiki pracy*, Wyższa Szkoła Pedagogiczna TWP, Radom 2004, p. 22.

a search for features, properties of events and processes (...)”¹¹.

The concept of research is also clarified as: “investigative activities leading to the detection and establishment of a scientific fact, the law of theory; exact learning of reality by means of analysis and scientific research methodology”¹².

Research is also deemed to be any genuine attempt to ‘examine a problem in a systematic way or to contribute to our understanding of the issue’¹³.

On the grounds of the explanations presented above, it has been assumed that research is a deliberate and conscious effort, using scientific methods, to enrich academic knowledge through an objective and insightful study of reality.

The set-up of the research process “demands that the researcher has a vast knowledge of the external factors influencing the research itself. This applies both to the researcher’s knowledge of himself/herself, his/her efforts to become aware of his/her own presuppositions with which he/she enters the research process, his/her knowledge of the studied subject, as well as his/her knowledge of interpersonal relations, of the distortions that the research process brings into these relations (...). Each researcher must know and understand the meaning and essence of the research (...). It is therefore necessary to have the appropriate knowledge of the subject of re-

search (...) as well as an adequate ethical attitude”¹⁴ and true scientific passion.

In view of the foregoing, it is time to clarify what the structure of the research process is. “There are many approaches describing the research procedure which, despite their differences, are based on a certain common and logical sequence of events – steps that the researcher has to take to attain the research target”¹⁵. Let us take a look at some of them.

A highly detailed division of the research process includes:¹⁶

- to identify the research problem;
- to define the purpose of the research;
- specifying the working hypothesis;
- development of a research concept;
- collection of literature;
- study of literature;
- literature analysis and development of research results;
- generation of conclusions.

In accordance with Marian Cieślarczyk’s position, the research process incorporates three main stages:¹⁷

- conceptual (conceptualisation of research) – requires discussion, confrontation, improvement and change;
- executive (research implementation) – does not allow for amendments and

¹¹ T. Pilch, *Zasady badań pedagogicznych (wydanie drugie poprawione i rozszerzone)*, Warszawa 1988, p. 19-20.

¹² S. Czygier, *Badanie naukowe [in:] Nowy leksykon metodologiczny*, red. K.M. Czarnecki, Wydawnictwo Naukowe „Śląsk”, Katowice 2007, p. 25.

¹³ A.S. Reber, *Słownik psychologii*, Wydawnictwo Scholar, Warszawa 2000, p. 74.

¹⁴ T. Pilch, *Zasady badań pedagogicznych (wydanie drugie poprawione i rozszerzone)*, Wydawnictwo Akademickie „Żak”, Warszawa 1998, p. 63.

¹⁵ M. Bodziany, *Proces badawczy [in:] Teoretyczne i metodologiczne podstawy problemów z zakresu bezpieczeństwa. Podręcznik akademicki*, (ed.) Z. Ścibiorek i Z. Zamiar, Wydawnictwo Adam Marszałek, Toruń 2016, p. 228.

¹⁶ Ch. Frankfort-Nachmias, D. Nachmias, *Metody badawcze w naukach społecznych*, Zysk i S-ka Wydawnictwo, Poznań 2001, p. 36.

¹⁷ M. Cieślarczyk, *Metody, techniki i narzędzia badawcze oraz elementy statystyki stosowane w pracach magisterskich i doktorskich*, Akademia Obrony Narodowej, Warszawa 2003, pp. 22–23.

must be carried out strictly in accordance with established assumptions;

- final (finalisation of research) – is a summary of the research effort, crowned by the attained result.

The organisation of security forecasting shall take into account:¹⁸

- type of forecasting;
- trends in the security environment;
- optimal set of forecasting methods available for implementation.

As with all the research procedures presented hitherto, forecasts have their strengths and weaknesses.

The advantage of prognosis appears to be simplicity, although such a statement does not sound unequivocal. Meanwhile, the disadvantage is that the quality of forecasting remains unasserted¹⁹.

One cannot, however, overlook the factors that have a pejorative influence on the results of projections, among which can be counted:²⁰

- objective:
 - a. restrictions on access to information and knowledge to be forecast,
 - b. insufficient level of detail and knowledge in the forecasting process,
- subjective:
 - a. partiality in the choice of future-proofing material,
 - b. contradictions in the perception of the future.

It is well worth stressing that there is a certain danger with regard to forecasting. Well, 'selectively treated facts, events or phenomena show diverse and often

contradictory tendencies. They prevent the formulation of scientifically justified views on future development trends of existing risks and new, non-existent dangers. Only the detection of causal relations between appropriately classified phenomena or facts, the disclosure of sources and primary causes of both their occurrence and evolution, may constitute a basis necessary for conducting evaluations of a general nature"²¹.

The main steps in assessing security forecasts are:²²

- formulation of the prognostic goal;
- defining a set of foresight elements;
- selecting forecasting methods and rules;
- description of the envisaged safety level;
- performance of the forecasting task.

It is vital to underscore the key role played by the trend in security forecasting. "The trend (developmental tendency) of a time line expresses a long-term tendency to monotonous (one-way) changes of the projected variable. A trend is a result of a permanent influence on a given phenomenon (...) of an established composition of factors, both of an objective and subjective nature"²³.

Prognostic errors

The term 'error' is defined as:

- "non-compliance with the applicable rules..."

¹⁸ Ibidem.

¹⁹ More: P. Lubiewski, *Bezpieczeństwo państwa w ujęciu systemowym*, „Zeszyty Naukowe SGSP”, No. 74/2/2020, SGSP, Warszawa 2020, p. 115.

²⁰ Ibidem, p. 186.

²¹ W. Kaczmarek, B. Wiśniewski, *Pprognozowanie bezpieczeństwa...*, op. cit., p. 6

²² Ibidem, p. 182.

²³ *Prognozowanie w zarządzaniu przedsiębiorstwem, Pt. IV Prognozowanie na podstawie modeli trendu*, (ed.) J. Nazzarko, Politechnika Białostocka, Białystok 2017, p. 5.

- “mistake concerning the content, the essence of something.”
- “neglect of something while doing something (...) usually because of the unpredictable negative consequences;
- a deed, an activity that has (...) bad consequences;
- an improper step, an undertaking”²⁴

Dictionaries provide such information. The term “error” is seen in the scientific literature a little more extensively.

Tadeusz W. Nowacki²⁵ defines the notion of “error” as “incompatibility between the actual state and its explanation”. However, Z. Piątek describes an error, in terms of a particular type of interference in the collection, use and transmission of information²⁶. Wincenty Okoń defines “error” as “a discrepancy between reality and its reception in human consciousness”²⁷. Józef Pieter, on the contrary, perceived the “error” as an ineffective action or its consequence²⁸. A separate view was presented by B. Popielski, who considers an act contrary to the commonly recognized principles of knowledge to be an error, in a damaging action or omission that could have been avoided by compliance with the principles appropriate to the state of knowledge²⁹. On the other hand, A. Liszewska believes that a doctor’s behaviour may be considered an error if it violates the rules of professional conduct

developed on the grounds of science and practice applicable in a given case³⁰. In contrast, Arthur S. Reber notes that the term “error” has “several general meanings in which the term is referred to:

- to drift away from the correctness;
- faulty conviction;
- a state in which a misconception is upheld;
- in statistics: deviation from the correct result;
- in an experiment: any change in a dependent variable caused by factors other than a modification of the independent variable;
- an inappropriate or incorrect response that results in a delay in learning the correct answer”³¹.

As has always been the case, also this time, we need to look at the basic sources. The concept of ‘research’ is generally perceived as a term:

- “work, activities aimed at learning something by means of scientific analysis;
- a set of actions, methods to monitor (...), the result of such control;
- confirmation of the presence of some indicator or determination of its level”³².

Errors are seen through the prism of unsolicited actions, “within which a distinction can be made between: intentional (fully conscious, thoughtful and targeted) and unintentional (not inten-

²⁴ *Wielki słownik języka polskiego*, t. A-G, red. S. Dubisz, Warszawa 2018, p. 296.

²⁵ W. Nowacki, *Leksykon pedagogiki pracy*, Radom 2004, p. 29.

²⁶ Z. Piątek, *Błędy w Naturze i błędy wobec Natury*, [in:] *Prakseologia*, No 3-4/1993, Warszawa 1993, pp. 120-121.

²⁷ W. Okoń, *Nowy słownik pedagogiczny*, Warszawa 1996, p. 34.

²⁸ J. Pieter, *Słownik psychologiczny*, Katowice 2004, p. 52.

²⁹ More: B. Popielski, *Medycyna i Prawo*, Warszawa 1968.

³⁰ More: A. Liszewska, *Odpowiedzialność karna lekarza za błąd w sztuce medycznej*, [in:] *Edukacja Prawnicza*, No 107, maj 2009.

³¹ A.S. Reber, *Słownik psychologii*, Warszawa 2000, p. 91.

³² *Wielki słownik języka polskiego*, t. A-G, red. S. Dubisz, Warszawa 2018, p. 176.

tionally done, reflexively, under the influence of the moment)³³.

The mistake is also seen in terms of decisions or outlier actions “in any way from decisions and actions that are appropriate to the situation, as determined by the applicable rules and principles of conduct arising from the nature of the task, technique, technology and organisation of work, safety requirements or common sense³⁴.”

In order for errors to occur, however defined, the following conditions must be met, which come down to existence:³⁵

- an erroneous entity, i.e. one fitted with human awareness;
- an environment in which changes can be made;
- some kind of reference of a given subject to a given expectation.

Forecasting, like any research procedure, is flawed by mistakes. The most frequent are:³⁶

- a realised forecast error, which gives complete information on the accuracy of the forecast. A significant disadvantage is that this information only becomes available when the forecast expires;
- an expected forecast error that can be estimated.

Other forecasting errors may be:³⁷

- estimations consisting of erroneous statistical inference;
- random and impossible to predict and not resulting from repetitive factors.

Forecasting errors may originate from the following:³⁸

- the use of incomplete, uncertain or false information;
- the selection of inappropriate test methods employed in the forecasting process;

“Mistakes are made both in thinking itself, in the organisation of action, as well as in the process of operation³⁹.”

Bearing in mind that each error gives rise to specific results, it ought to be highlighted that the errors disclosed “are usually only symptoms of more complex weaknesses (...), and the detection of an error should always be treated as an opportunity to introduce improvements and necessary modifications to a poorly functioning (...) procedure. The condition for taking advantage of this opportunity is to know the roots of the error. The essence of improvement is therefore conscious action aimed at making something better⁴⁰.” It should also be remarked that failures

³³ K. Kuchta, I. Tylek, A. Rawska-Skotniczny, *Przyczyny i metody zapobiegania błędom ludzkim w inżynierskiej działalności budowlanej. Część I. Klasyfikacja źródła błędów*, [in:] *Przegląd budowlany*, No 5/2017, Warszawa 2017, p. 18.

³⁴ *Podstawy zarządzania operacyjnego*, red. Z. Jasiński, Kraków 2005, p. 313.

³⁵ E. Żarnecka-Biały, *Wprowadzenie: Anatomia błędu*, [in:] *Prakseologia*, No. 3-4/1993, Warszawa 1993, pp. 120–121.

³⁶ J.B. Gajda, *Prognozowanie i symulacje w ekonomii i zarządzaniu*, Wydawnictwo C.H.Beck, Warszawa 2017, pp. 99–100.

³⁷ B. Wiśniewski, *Praktyczne aspekty badań...*, op. cit., p. 184.

³⁸ Ibidem.

³⁹ K. M. Czarnecki, *Błędy i pomyłki w badaniach naukowych (Opracowanie autorefleksyjne)*, [in:] *Zeszyty Naukowe Wyższej Szkoły Humanitas, Zeszyt No 4/2009*, Seria: Pedagogika, Sosnowiec 2009, p. 23.

⁴⁰ P. Sowizdraniuk, *Doskonalenie współdziałania podmiotów ratowniczych*, [in:] *Instytucje publiczne i prywatne w systemie zarządzania kryzysowego*, B. Wiśniewski, J. Prońko, P. Lubiewski (red. nauk.), Warszawa 2018, p. 138 oraz Z. Martyniak, *Nowe metody i koncepcje zarządzania*, Wydawnictwo Akademii Ekonomicznej w Krakowie, Kraków 2002, p. 106.

tend to spread. They may also cause irreversible pejorative effects if there is no “error detection logic capable of dealing with the problem and minimising its effect”⁴¹.

In order to avoid mistakes, individual and team work requires effective organisation, which shall be based on transparent, understandable and acceptable principles. “Although such arrangement of work is possible, in the absence of appropriate supervision and a large number of tasks carried out in parallel, the risk of making mistakes increases, the correction of which can be very expensive. Particular attention ought to be paid in such a case to the mode of implementation of alterations”⁴².

Summary

Safety precautions continue uninterrupted. They are accompanied by the acquisition, collection and processing of information and expertise. This process is aimed at rational forecasting of the future, for which “methods that are not expensive, simple to apply, easy to interpret and, above all, ensuring satisfactory results of the predictive process”⁴³. In this context, it is important to select appro-

priate and objective measures of forecast quality assessment”⁴⁴.

Bibliography

Bezpieczeństwo państwa (Dylematy i konsekwencje), (eds.) B. Kaczmarczyk, B. Kogut, SA PSP, Kraków 2011.

Bezpieczeństwo w teorii i badaniach naukowych. Wydanie drugie uzupełnione, (eds.) B. Wiśniewski, WSPol, Szczytno 2018.

Bodziański M., *Proces badawczy* [in:] *Teoretyczne i metodologiczne podstawy problemów z zakresu bezpieczeństwa*. Podręcznik akademicki, (ed.) Z. Ścibiorek i Z. Zamiar, Wydawnictwo Adam Marszałek, Toruń 2016.

Cieślarczyk M., *Metody, techniki i narzędzia badawcze oraz elementy statystyki stosowane w pracach magisterskich i doktorskich*, Akademia Obrony Narodowej, Warszawa 2003.

Czarnecki K. M., *Błędy i pomyłki w badaniach naukowych* (Opracowanie autorefleksyjne), [in:] *Zeszyty Naukowe Wyższej Szkoły Humanitas*, Zeszyt No. 4/2009, Seria: Pedagogika, Sosnowiec 2009.

Czygier S., *Badanie naukowe* [in:] *Nowy leksykon metodologiczny*, red. K.M. Czarnecki, Wydawnictwo Naukowe „Śląsk”, Katowice 2007.

Encyklopedia organizacji i zarządzania, Państwowe Wydawnictwo Ekonomiczne, Warszawa 1981.

Frankfort-Nachmias Ch., Nachmias D., *Metody badawcze w naukach społecznych*, Zysk i S-ka Wydawnictwo, Poznań 2001.

Gajda J. B., *Prognozowanie i symulacje w ekonomii i zarządzaniu*, Wydawnictwo C.H. Beck, Warszawa 2017.

⁴¹ D. Lock, *Podręcznik zarządzania jakością*, Warszawa 2002, p. 317.

⁴² K. Kuchta, I. Tylek, A. Rawska-Skotniczny, *Przyczyny i metody zapobiegania błędom ludzkim w inżynierskiej działalności budowlanej*. Część I: *Klasyfikacja źródła błędów*, [in:] *Przegląd budowlany*, No 5/2017, Warszawa 2017, p. 20.

⁴³ *Prognozowanie w zarządzaniu przedsiębiorstwem*, Cz. I *Wprowadzenie do metodyki prognozowania*, (ed.) J. Nazarko, Politechnika Białostocka, Białystok 2004, pp. 27-37.

⁴⁴ J.B. Gajda, *Prognozowanie i symulacje w ekonomii i zarządzaniu*, Wydawnictwo C.H.Beck, Warszawa 2017, p. 111 oraz *Prognozowanie w zarządzaniu przedsiębiorstwem*, Pt. IV *Prognozowanie na podstawie modeli trendu*, (ed.) J. Nazarko, Politechnika Białostocka, Białystok 2017, p. 113.

- Gwardyński R., *Safety in Praxeological Approach*, [in:] *Security – Threats, Law and Organization*. Schriften zu Mittel- Und Osteuropa in der Europäischen Integration. Band 24, (ed.) B. Wiśniewski, G.G. Sander, P. Kobes, Verlag Dr. Kovač, Hamburg 2019.
- Institucje publiczne i prywatne w systemie zarządzania kryzysowego*, (ed.) B. Wiśniewski, J. Prońko, P. Lubiewski, Warszawa 2018.
- Justyński K., *Material Scope of Public Safety and Public Order in the Context of Police Responsibilities*, Internal Security, WSPol, Szczytno 2019, Special Issue.
- Justyński K., *Police in the System of Public Safety – Polish Experience*, Internal Security, WSPol, Szczytno 2017, Vol. 9 Issue 1.
- Kaczmarek W., Wiśniewski B., *Prognozowanie bezpieczeństwa*, [in:] *Bezpieczeństwo w teorii i badaniach naukowych*. Wydanie drugie uzupełnione, (ed.) B. Wiśniewski, WSPol, Szczytno 2018.
- Kamiński S., *Nauka i metoda. Pojęcie nauki i klasyfikacja nauk*, TN KUL, Lublin 1992.
- Kotarbiński T., *Abecadło praktyczności*, Interpress, Warszawa 1971.
- Kotarbiński T., *O pojęciu metody. Wybór pism*, Tom I, PWN, Warszawa 1957.
- Krupski R., *Podstawy organizacji i zarządzania*, Wydanie 5 zmienione, I-BiS, Wałbrzych 2004.
- Krzyżanowski L., *Podstawy nauki zarządzania*, PWN, Warszawa 1985.
- Kuchta K., Tylek I., Rawska-Skotniczny A., *Przyczyny i metody zapobiegania błędom ludzkim w inżynierskiej działalności budowlanej. Część I: Klasyfikacja źródła błędów*, [in:] *Przegląd budowlany*, No. 5/2017, Warszawa 2017.
- Liszewska A., *Odpowiedzialność karna lekarza za błąd w sztuce medycznej*, [in:] *Edukacja*
- Lock D., *Podręcznik zarządzania jakością*, Warszawa 2002.
- Lubiewski P., *Bezpieczeństwo państwa w ujęciu systemowym*, „Zeszyty Naukowe SGSP”, No. 74/2/2020, SGSP, Warszawa 2020
- Lubiewski P., *Bezpieczeństwo państwa – reminiscencje*, Zeszyty Naukowe Państwowej Wyższej Szkoły Zawodowej im. Witelona w Legnicy, Legnica 2020, No. 34(1)/2020.
- Lubiewski P., Gwardyński R., *Ochrona zabytków przed zagrożeniami terrorystycznymi, kryminalnymi, militarnymi i pozamilitarnymi*, Katedra Bezpieczeństwa Społecznego Instytutu Bezpieczeństwa i Edukacji Obywatelskiej Wydziału Pedagogicznego Uniwersytetu Pedagogicznego w Krakowie, Kraków 2018.
- Lubiewski P., *Zagrożenie – rozważania na gruncie teorii*, Zeszyty Naukowe Państwowej Wyższej Szkoły Zawodowej im. Witelona w Legnicy, Legnica 2020, No. 34(1)/2020.
- Martyniak Z., *Nowe metody i koncepcje zarządzania*, Wydawnictwo Akademii Ekonomicznej w Krakowie, Kraków 2002.
- Nowacki T.W., *Leksykon pedagogiki pracy*, Wyższa Szkoła Pedagogiczna TWP, Radom 2004.
- Okoń W., *Nowy słownik pedagogiczny*, Warszawa 1996.
- Pieter J., *Słownik psychologiczny*, Katowice 2004.
- Pilch T., *Zasady badań pedagogicznych (wydanie drugie poprawione i rozszerzone)*, Warszawa 1988.
- Pilch T., *Zasady badań pedagogicznych (wydanie drugie poprawione i rozszerzone)*, Wydawnictwo Akademickie „Żak”, Warszawa 1998.
- Piątek Z., *Błędy w Naturze i błędy wobec Natury*, [in:] *Prakseologia*, No. 3-4/1993, Warszawa 1993.
- Podstawy zarządzania operacyjnego*, red. Z. Jaśński, Kraków 2005.
- Popielski B., *Medycyna i Prawo*, Warszawa 1968.
- Prognozowanie w zarządzaniu przedsiębiorstwem*, Cz. IV *Prognozowanie na podstawie modeli trendu*, (ed.) J. Nazarko, Politechnika Białostocka, Białystok 2017.

- Prognozowanie w zarządzaniu przedsiębiorstwem, Cz. I Wprowadzenie do metodyki prognozowania*, (ed.) J. Nazarko, Politechnika Białostocka, Białystok 2004.
- Prońko J., *Potrzeby i możliwości doskonalenia działań zorganizowanych* [in:] *Racjonalizacja zarządzania jednolitymi formacjami umundurowanymi odpowiedzialnymi za bezpieczeństwo wewnętrzne, Tom I*, (ed.) B. Wiśniewski, Szkoła Główna Służby Pożarniczej, Warszawa 2017.
- Racjonalizacja zarządzania jednolitymi formacjami umundurowanymi odpowiedzialnymi za bezpieczeństwo wewnętrzne, Tom I*, (ed.) B. Wiśniewski, Szkoła Główna Służby Pożarniczej Warszawa 2017.
- Reber A.S., *Słownik psychologii*, Wydawnictwo Scholar, Warszawa 2000.
- Security – Threats, Law and Organization. Schriften zu Mittel- Und Osteuropa in der Europäischen Integration. Band 24*, (ed.) B. Wiśniewski, G.G. Sander, P. Kobes, Verlag Dr. Kovač, Hamburg 2019.
- Sowizdraniuk P., *Doskonalenie współdziałania podmiotów ratowniczych*, [in:] *Instytucje publiczne i prywatne w systemie zarządzania kryzysowego*, (ed.) B. Wiśniewski, J. Prońko, P. Lubiewski, Warszawa 2018.
- Sowizdraniuk P., *Doskonalenie współdziałania podmiotów ratowniczych*, [in:] *Instytucje publiczne i prywatne w systemie zarządzania kryzysowego*, B. Wiśniewski, J. Prońko, P. Lubiewski (red. nauk.), Warszawa 2018.
- Teoretyczne i metodologiczne podstawy problemów z zakresu bezpieczeństwa. Podręcznik akademicki*, Z. Ścibiorek i Z. Zamiar, Wydawnictwo Adam Marszałek, Toruń 2016.
- Wielki słownik języka polskiego*, t. A-G, red. S. Dubisz, Warszawa 2018.
- Wiśniewski B., *Description of Security Systems – a Few Reflections*, Internal Security, WSPol, Szczytno 2019, No. 1/2019.
- Wiśniewski B., Kowalski R., Koziol J., Szyłkowska M., *Bezpieczeństwo procesów decyzyjnych*, TUM, Wrocław 2018.
- Wiśniewski B., *On the Need of Reaching the Origins of Security – an Introduction to the Discussion*, Internal Security (Special Issue 100 th Anniversary of the Establishment of the State Police), WSPol, Szczytno 2019.
- Wiśniewski B., *Organizacja przygotowań obronnych administracji publicznej*, AON, Warszawa 2009.
- Wiśniewski B., *Praktyczne aspekty badań bezpieczeństwa*, Difin, Warszawa 2020.
- Wiśniewski B., *System bezpieczeństwa państwa. Konteksty teoretyczne i praktyczne*, WSPol, Szczytno 2013.
- Wiśniewski B., *Wprowadzenie*, [in:] *Racjonalizacja zarządzania jednolitymi formacjami umundurowanymi odpowiedzialnymi za bezpieczeństwo wewnętrzne, Tom I*, (ed.) B. Wiśniewski, Szkoła Główna Służby Pożarniczej Warszawa 2017.
- Żarnecka-Biały E., *Wprowadzenie: Anatomia błędu*, [in:] *Prakseologia*, Warszawa 1993, No. 3-4/1993.

About the Autor

Bernard Wiśniewski, Director of the Centre for Research Methodology in Security Sciences at WSB University in Dąbrowa Górnicza. He is also a lecturer at the Main School of Fire Service in Warsaw. His interests include state security, internal security, crisis management and security theory. He published his works in Poland and several European countries.