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**Polish popular science journals since the 18th century  
until the year 1939 (assumptions of a research project)**

## Research Project Objectives

The genesis of the proposed initiative entitled “Polish popular science magazines until the year 1939” was the lack of a comprehensive summary of the history of this type of periodicals that has so frustrated media experts, historians, scholars of the history of education and culture<sup>1</sup>. Not even fragmental lists of them are available, not to mention a comprehensive summary of the history of press. The prepared research project aims to create a complete and reliable informational and documentary database and to comprehensively describe the subject matter by providing a broad presentation and characterization of popular science periodicals, even though this objective poses a number of problems, especially with the periodicals from the eighteenth century. It should be underlined that the planned research project will be pioneering in nature as far as Polish scientific achievements are concerned, since most of the titles will be presented and discussed for the first time.

An important aspect of the research will also be to search for general regularities, common for the sub-periods, that shape the popular science magazine market, presenting its determinants, trends, and the relationship between their development and the institutional and social environment. It is also important to resolve whether the setting up of the studied periodicals was accompanied by a social need or whether their development was determined by educational activities addressed to various social groups, but undertaken by scientific institutions and educational establishments. The aim of the study shall also be to explain how the process of popularizing science evolved through this type of communication channel and consequently, the changes in their scope of functions. The study shall also present a phenomenon, namely the evolution of the popular science magazine’s shape, which is based on a transition, starting from imitating foreign models to creating one’s own model based on national material and the co-operation with Polish scholars. A hypothesis has been adopted that these magazines were fixed components of permanent

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1 Research assumptions for project implemented in 2015-2018 in Pedagogical University of Cracow, financed by National Science Centre (NCN, OPUS 8/HS2, ID: 276841).

learning, accompanying the reader during his/her lifetime. We expect that the conducted analyses will demonstrate that the setting up of these periodicals was enforced by patriotic, educational, cultural and practical reasons.

Having the research objectives of this study in mind, it is also necessary to fill in the missing gap regarding the research on the design of Polish popular science periodicals. Therefore, the subject of this study will be the history and evolution of the design of the studied periodicals, namely the layout (overall design) including headpieces, ornaments, illustrations. It is also planned to study the typology of the graphic material theme, determine the functions of the illustrations found in popular science magazines, as well as to list woodcut artists and the photographers. In this regard, an assumption has been made that the design of popular science periodicals had played an important explanatory, commentating and supplementary role in relation to the text. Another research assumption can be summed up in a statement that popular science magazines have become an extremely convenient channel for communicating information on technology development.

### **Significance of the project**

The research topic of this study is of an interdisciplinary nature. However, an analysis of the literature on the subject shows that an extensive study approach in this area has not yet been initiated. Publications that are present in the circulation of scientific knowledge in the public sphere support the thematic dispersion and segmentation of the conducted studies, which was undoubtedly influenced by the lack of a bibliography of popular science periodicals that have been published on Polish lands since their first appearance in the eighteenth century, and also by the prevailing terminology confusion in this field. Therefore quantitative analyses of the studied phenomenon (statistics, development, typology) were not conducted. A starting point may however, be the findings relating to the eighteenth century (22 titles), and the nineteenth century (19 titles). Yet, there is a lack of data for the period between 1900 -1939. New studies show a significant quantitative increase in the study group (an increase of over 50%). It is planned to analyze a collection of approx. 200 titles.

The scientific literature on the subject of popular science magazines has only a few items, which confirms the researchers' faint interest in the proposed issues. In compressive summaries of the history of Polish press, this group is rather overlooked, but if present, it is presented contextually or is marginally referred to in monographs relating to the chosen, broader press categories, that are chronologically, geographically and thematically diverse, or limited to specific, individual titles. The fundamental reason for such a faint interest and consequently little research progress being made was a lack of research in the areas of registration and documentation, as well as a lack of a quantitative and qualitative analysis of the studied phenomenon. The only scientific work that is of a comprehensive nature is that on popular science periodicals of the nineteenth century written by G. Wrona (2007). The author conducted a statistical analysis of the studied phenomenon and also presented qualified titles along with their authors. K. Pająk (1998) focused from a historical perspective on a group of journals popularizing the achievements of science and

their role in consolidating the authority of science. In the author's findings one may notice a terminological inconsistency because he did not draw a clear line between scientific titles and popular science titles cited in the text. I. Kaniowska-Lewańska (1960), J. Białek (1987) and J. Jarowiecki (1990) cited a few popular science titles in monographs focused on children's and adolescent literature, but did not comment on them in a broader manner. There are somewhat more discussions found of particular periodicals, however researchers were only interested in just a few journals. The origins and characteristics of the first eighteenth-century titles were described by D. Hombek in her monograph (2001). A piece of work, which is without a doubt interesting and valuable, however one might not agree with all of the researchers findings. "Wędrowiec" (The Wanderer) became the basics for works by J. Jakubowski (1947) and D. Kamisińska (2010, 2011). However, H. Tadeusiewicz (1993, 1995) published two articles presenting the characteristics and origins of "Polak Patriota" (The Pole the Patriot). A popular science magazine intended for children entitled: "Skarbiec dla Dzieci" (A children's treasury) was analyzed by M. Pękalska (2006), and a humanities magazine for teens - "Filomata" (Filomaths) by M. Rogoż (2001) and A. Trudzik (2003). A sketch of the history of the (Earth) "Ziemia", was included in the bibliography of its contents by W. Wojcik (1997), and G. Gzella (2003) took an interest in the nineteenth-century "Przewodnik" ("Przewodnik": scientific journal for the Galician peasants). The works of J. Dybiec (1981) and L. Zasztowt (1989) also mention the selected group of journals.

Further studies that would have allowed for an assessment of the artistic value of Polish popular science periodicals and of the development of the reader's aesthetic sense have not been conducted. This is mainly due to the fact that the design of Polish illustrated journals has not yet been completely analyzed, even though scholars of press reported the need to conduct studies, which would be the basis for tracing the evolution of the form and layout of various types of periodicals and their perception by society (M. Kafel, 1955; B. Golka, 1958, 1971; S. Peters, 1952, 1960; D. Heckermann, 1965; W. Natora-Macierewicz, 1965). The problem relating to layout was only dealt with selectivity when preparing the monographs of some of the press titles, such as "Kłosa" (Ear of Grain) (B. Szyndler, 1981). However, in relation to popular science magazines this was not done because of definitional problems and inconsistencies in terminology regarding press design. Wiktor Frantz (1963, 1964) attempted to organize this problem by codifying layout description but only of the daily papers. In view of the fragmentation and the randomness of the previous studies signaled above, the studies conducted on the history of Polish popular science periodicals until the year 1939, seem to be fully justified, also because of the need to initiate studies on the history of science popularization on Polish lands.

Therefore, the aim of the project is to conduct a comprehensive analysis of the popular science periodicals, in separate press intervals, established according to the periodization of Polish press. The research results will determine not only their quantitative development, their transformation regarding form and contents, but also their functions and tasks in the changing political and social conditions on Polish lands. Acknowledgement of the popular science magazine as an information medium, that also has an influence on the development of the aesthetic tastes of readers, thanks to a thought over and consistent graphical concept, will allow to acquire knowledge about the scope and coverage of the presented contents, the

changes in understanding the essence of popularization and its functions and the level of program tasks implementation. The results of the conducted studies will interest media experts, bibliologists, cultural history scholars, historians of science and education, and literary scholars. The conducted research will fill in a missing gap in the history of Polish press, it may contribute to undertake monographic studies of individual titles.

Creating a database with bibliographic descriptions of all the popular science magazines included in the project, will result in having them entered into the NUKAT central catalogue and consequently, will allow the users of national libraries, to determine journal location, availability, completeness and their state of preservation. Thus, contributing to the development of research on the history of science popularization on Polish lands and the development of its communication channels, or also may inspire to conduct monographic studies of the individual titles. After all, even the oldest popular science journal currently issued in Poland entitled "Wszeczeńświat" (The Universe) has not gained interest among researchers till this day. A database that is made available online will serve as a source of information about the magazines, and as a source of information, gained from autopsy, for the librarians creating the bibliographic descriptions in the NUKAT central catalogue.

## Work plan

The starting point for further analysis will be an attempt to create a universal definition of a "popular science journal", a definition that can be applied to periodicals published in various historical periods, because the existing terms that are present in the circulation of scientific knowledge in the public sphere have a high level of generality. Attempts made to clarify it are difficult due to the overlapping of the two terminological categories: popularization of science and magazine. One can therefore recognize that the goals of popular science periodicals result from the essence and objectives of science popularization, as well as the magazine's role. The popularization of science, as has been repeatedly noted, is a complex, multi-faceted process and can be defined in many ways. If we consider it as a specific form of scientific communication, then in such terms the periodicals serve as media transmission channels – they are the intermediary between the sender and the recipient. One should also ask oneself how did - in relation to the above – the term "popular science journal" and the criteria for their selection evolve, among other scientific, professional and hobby journals, as well as what was the basis of their difference? These activities will support the actions aimed at articulating the theoretical assumptions and the detailed characteristics of scientific knowledge, which will be preceded by the critique of the undertaken research problem in the context of the accumulated literature and documentation sources.

In the planned study "popular science journals" will become both the object and the source of study. Thus, a complete bibliography, prepared based on one's observation, of Polish popular science periodicals published on Polish lands until the year 1939, shall be the basis for the study, guaranteeing a reliable, multi-faceted and competent preparation of their monographs. Its preparation will be conducted in

stages, starting off with the collecting of research material and its verification, followed by preparations leading to database creation, and ending with the final edition.

To present the history of popular science journals on Polish lands since their creation until 1939, it was considered expedient to maintain the time intervals used in the historical research on the Polish press applied in the individual volumes of the "Historia Prasy Polskiej" (History of Polish Press), edited by Jerzy Łojek. Aiming to formulate the history of popular science magazines (initially the collection consists of approx. 200 titles), an attempt will be made to determine during what time frame and how many of these periodicals were issued on Polish lands. A statistical presentation will then be carried out in selected categories (theme, recipient). The gathered journals will be subject to both a formal and thematic analysis. Data concerning the circumstances of their establishment and termination, the publishers, editors, contributors, circulation, territorial coverage, the structure of the contents and its possible transformations, as well as the recipient, will undergo analysis. Another important issue is to try to determine how the process of adapting the form of information to the capabilities and the intellectual level of the recipient as well as how were the texts differentiated having in mind the potential recipient. It will also be interesting to determine the origins of the text (reprint, translation, abstract, original work). If we assume that the knowledge passed on in the periodicals was simplified and brought down to a popular level, one should consider the determinants that characterized this form of information? How was a scientific fact translated from using it in scientific context into using it in popular context by the means of this medium?

An attempt will also be made to try to answer the question of how the image of the scientist was developed, or whether he/she was even present in the press (throughout the studied period) and whether the editors and publishers developed and shaped the recipient's belief that science and technology are essential elements of overall human culture. Informing the general public through popular science writing about the achievements of science affect the overall level of knowledge, shaping the recipient's understanding of the world around him/her. One may assume that the reader-recipient, even though was not a specialist in a given field, was an enlightened person, more interested in the progress of science than a recipient of mass press. A popular science press reader was therefore a potential leader of the modernization processes in their environment, a pioneer in using technical innovations. The planned research, based on analyzing the contents published in popular science journals aims to answer the following questions:

1. How and to what extent, does popular science writing bring the reader closer to the practical application of the achievements of technical sciences?

2. Did popular science writing convey, in its contents, information or predictions about the directions and possible applications of inventions in everyday life?

3. Did the popular science periodicals comment new technical solutions, already used in everyday life, with which the reader had the opportunity to come into contact with, by explaining for example, the principles of operation?

Another important aspect of the analyses will be press design, which up to the mid-twentieth century was seen through the prism of the texts published in the magazine. Press historians pointed to the superior role of the contents of the articles compared to the illustrations that accompanied them and to the essential

importance of typesetting for the overall artistic evaluation of the piece of writing. Currently, special attention is given to the layout, emphasizing the need to conduct complex studies. In line with the above, an attempt will be made to conduct analyses, which will allow to assess the artistic value of the studied periodicals, which - it should be stressed - is an innovative initiative. The design in these magazines played an important explanatory and supplementary role in relation to the text. To be able to assess the evolution of this type of magazines and their artistic and educational value, it is necessary to carry out a detailed study of the layout, the overall design.

In line with W. Frantz's typology, physical elements and structural (fixed and variable) elements make up the layout of the magazine. Therefore, the project will include an analysis of the physical elements such as the form and contents of the magazine, paper, paper size, composition, printing technique, ink and its fixed structural elements such as column size, number, width, gutter width, color, permanent sections and columns designated to them, regular columns, the specificity of the material of the magazine text, the illustration, and typesetting, and the variable structural elements: changes in column size, changes in column width and number, the space between articles, occasional change of colour, ways of displaying articles, the types of distinctions in the text, the layout of articles, illustrations and types of titles. Although the scheme has been developed for analysing the design of contemporary press, by introducing some modifications, it can be used in studies of the press of past epochs. The result of the research will be the next stage of the study, a thematic typology of illustrations constructed for the woodcuts of the eighteenth and nineteenth centuries, and for illustrations found in magazines until the year 1939, in accordance with the current OECD science classification system - Revised Field of Science and Technology (FOS) classification or Frascati manual 2007. The illustrations will also be divided according to their type, form, printing technique, artistic technique, style, location and role in the magazine. The illustrations in the magazines interact with other forms of representation, in this case with the texts; however when searching for the meaning of the illustration, one cannot assume that it only reflects the meaning that is created in the text. Tracing the transformation of the design of Polish popular science magazines, will allow to formulate conclusions about the perception of these types of periodicals and their significance in educating the public during the periods that they appeared, as well as their artistic value and their importance for the development of Polish culture and science.

## Research Methodology

The choice of the research strategy is determined mainly by the concept to monographically present the problem, that aims to fully describe the studied titles, by making a selection based on value and verifying the existing findings, present in the circulation of scientific knowledge in the public sphere. The planned procedure will be complemented by interpretation activities however, they will be narrowed down to issues that will not raise any doubts. Their source will be that of research material, that will be verified by direct inspection, which consists of statistical data (quantitative development in general and in specific periods and categories, publishers, publishing centers, frequency) and the results of empirical analyses (the evolution

of the internal structure, the presented contents, the forms of communication, authorship, the origin of the text, design and its category and functions). The developed research strategy, which is the basis for analysis, will therefore result from applying widely descriptive procedures used in historical press studies. These activities, which are subordinated to the need of obtaining basic empirical indicators, will allow to unambiguously show a quantitative picture of the market as well as the changes and transformations undergoing in it, and also to identify the dominant groups of magazines on the market. It should be emphasized that, as a consequence of adopting such a research scheme, most of the intended, specific activities will be of an initial nature. It will be necessary to include an analysis of the formal contents as well as the contents themselves and to apply bibliographic methods in the study, allowing to create a database of popular science periodicals on the one hand and on the other hand, to use the collected material to illustrate the basic indicators of the press market (publisher, vitality, frequency, typology, vitality/lifespan, circulation).

The developing of a bibliography, although it will only be an introduction to further findings, shall definitely be the most time consuming. The collecting of the selected bibliographic data will be preceded by an analysis of literature on the subject and documentation sources (general bibliographies published, special catalogues, databases). The next step in the research process will be to locate the titles and to verify their level of availability and completeness, which in turn will condition the schedule of research trips (domestic travel: Warsaw, Wrocław, Poznań, international travel: Lvov). Based on preliminary findings, many of them are found to be unique therefore, there is a need to preserve them, even in a processed form. To evaluate the artistic value of copperplates, lithographs and woodcuts found in the individual titles appearing in the eighteenth and nineteenth centuries, arrangements regarding a style of art shall be used (H. Wöllflin, 1962), as well as the iconographic and iconological method of analyzing a work of art will be applied. To analyze the photographs published in the twentieth century magazines a reflection, has been proposed using contemporary studies on visual culture, especially regarding the systematics and interpretation of press photography as well as quantitative and qualitative methods, including compositional interpretation, which will allow to formulate conclusions regarding the transformation and the role of design in popular science magazines in the long run.

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## Polish popular science journals since the 18th century until the year 1939 (assumptions of a research project)

### Abstract

The aim of the project is to monographically describe the history of popular science periodicals that were published on Polish lands until the year 1939. A collection of approx. 200 titles published in the Polish language, addressed to both adult readers as well as children and adolescents, published individually or as part of a publication will be analysed. It is planned to prepare a bibliography of periodicals, which will be the basis for conducting a multifaceted analysis of the studied phenomenon, in the designated time intervals and to detect the differences as well as the similarities that occur during these time periods. A hypothesis has been formed that these journals, that are an important element of permanent learning accompanying the recipient throughout his/her life, have been subject to transformation, both in terms of form and contents. By conducting the analyses, we aim to seek the general regularities that have shaped the popular science magazine market during the studied period, to indicate its determinants, trends, relations with the institutional and social environment and to demonstrate that their setting up was supported by patriotic, educational, practical and cultural making reasons.

The starting point for the research will be to redefine the term „popular science journal”, in order to eliminate terminology confusion. The next step will be to create a database of

bibliographic titles, which will be discussed in the context of press studies (quantitative development, publishing centres, frequency, publishers, durability, profile, circulation, pictorialness, internal structure) having in mind the political and pedagogical context, as well as the context of cultural studies and the study of science. The picked out typological groups and their main representatives will be described in detail. Studies concerning the evolution of the internal structure, the language and form of expression, the origins of the texts, layout, and the evolution of design as an important element affecting the reception of the presented contents as well as its typology, shall also be included. The phenomenon, namely the evolution of a popular science magazine's shape, that is the transition from imitating foreign templates to creating one's own model based on national material and collaboration with Polish scholars, will also be presented. The following methods will be used in the study: the bibliographic method (collection and verification of data), written and formal contents analysis (description of the individual titles and their categorization), methods used for the systemizing and interpretation of press photographs, compositional interpretation, a iconographic and iconological method of analysing a work of art, statistical techniques (comparative analysis).

The aim of the project is to prepare a comprehensive analysis of the popular science periodicals of the chosen time intervals. The research results will determine not only their quantitative development, their transformation in terms of form and contents, but also their functions and tasks in the changing political and social conditions on Polish lands. Acknowledgement of the popular science magazine as an information medium, will allow to acquire knowledge about the scope and coverage of the presented contents, the changes in understanding the essence of popularization and its functions and the level of program tasks implementation. The results of the conducted studies will interest media experts, bibliologists, cultural history scholars, historians of science and literary scholars. The conducted research will fill in a missing gap in the history of Polish press, it may contribute to undertake monographic studies of individual titles, since they have not so far been presented in a monography. This group of magazines is also ignored in comprehensive summaries on the history of Polish press. The faint interest of the researchers, and consequently a little progress being made, was primarily caused by the lack of basic research in the areas of registration and documentation, as well as the lack of a quantitative and qualitative analysis of the studied phenomenon.

**Key words:** popular science journals, popularization of science, Poland, 18th and 19th century, 1918–1939

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