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## Book evolution in the material culture

## ЕВОЛЮЦІЯ КНИГИ У МАТЕРІАЛЬНІЙ КУЛЬТУРІ

**Abstract.** The book form and its place in the modern world from the point of view of the material embodiment are outlined. The review of various definitions of the concept “book” is presented. It is shown that at the moment there is no generally accepted definition of the book. Some definitions are very narrow, while others, on the contrary, interpret the book form too wide. The history of the appearance of the book as a flip through form is studied.

The changes occurring in the principles of information perception in modern conditions against the background of the active development of electronic carriers are analyzed, the main causes of the book culture crisis are considered. The main problems, facing the book design in the present, are described; the main causes of the book culture crisis are identified. It is shown that in a modern consumer society a printed book often does not have an informational role, but, like in the Middle Ages, it is an indicator of an owner's certain social status.

Different variants of the evolutionary development of the book have been considered, the two main areas are distinguished. The first one is the synthesis of electronic and paper carriers through various mechanisms of augmented reality. The second one is underlining and exaggeration in the classical book of inherent qualities only, which cannot be simulated on electronic devices, such as scrolled form, evolving in space and time, tactility, physical boundaries, etc.

**Keywords:** book design, book history, book in material culture, book evolution.

**Problem statement.** In European culture that inherits traditions of antiquity, there is an inextricable link between global culture and book culture throughout the history. Thanks to deep penetration into everyday life, at a certain point book has become a natural element of civilization, sometimes viewed with the consideration of its meaningful, semantic component exclusively. However, being inextricably linked with spiritual, humanist dimension, at the same time a book has “real”, material embodiment.

In the recent years, against the background of the development of electronic media, the book is no longer perceived as the only possible universal means of experience transfer. The axiomatic perception of the book form as inextricably linked with the content leads to the fact that the difference between perception of material and spiritual dimensions of the book is often lost. The growing number of alternative means of information transfer leads to the fact that the question about the need for a book form as a historically invented one often arises. To answer this question, the book should be viewed not only through the content aspect of the book form, but also through its material embodiment.

**The aim of this research work** is to analyze the place of a book in material culture and explore the evolution of book form in modern world.

**Analysis of recent research works and publications.** Book as a cultural phenomenon has been studied at all stages of its development. This theme has been of particular interest during the 20<sup>th</sup>–21<sup>st</sup> centuries, since the changes in cultural paradigm of interpersonal communication, perception and assimilation of information that are associated with scientific and technological revolution, directly affected established understanding. Thus, at the beginning of the 20<sup>th</sup> century M. Yanovskiy in his publication *About the Book: The Experience of Analyzing the Concept of “Book”* made the first attempt to analyze and generalize the definition of the term “book” in Ukraine [16]. He systematizes more than fifty definitions of the “book” concept from various encyclopedias, dictionaries and scientific works.

At the same time, an attempt to create the philosophy of a book has been made by Russian book researcher M. Kufaev in his monograph *Problems of the Book Philosophy* [13], where he researched issues of the book philosophy, book science and bibliology as separate disciplines. The au-

thor notes that, "... the book is a product of human psyche and it has psychic nature ... The word is an individual product, through the emanation into matter, through the embodiment in the book it became a social factor... The individual and social elements are merged together in the dual nature of a book." [13, p. 120].

Particular attention was paid to the problem of the book philosophy at the turn of the 21<sup>st</sup> century, with the development of various electronic means of information transferring. For instance, O. Kuzmenko in the article "History of the Book as a Socio-Cultural Phenomenon—Articulation of Global Epochs" [12] interprets the book as a special model of the system in the field of information and communication technologies, which plays a fundamental role in socio-cultural evolution.

T. Bruyeva considers the book as a cultural and philosophical phenomenon through the prism of the essence of man in her thesis "The Book as a Cultural Phenomenon: The Philosophical Aspect" [6]. She concludes that the book as a form of knowledge transfer continues to be relevant in the digital era, but points out that book culture in modern information society does not die, but transforms, preserving its humanistic content.

K. Zasmag comes to a similar conclusion in the article "The Book as a Cultural Phenomenon" [9], also considering issues, related to the book culture with the human person, where the book acts as a leading means of communication and contributes to the perfection of the communication act itself, leading to a value reorientation of the worldview of the individual.

Thus, the issue of the book philosophy attracts a large number of researchers. However, most of them examine the book mainly in the light of the content, spiritual component, ignoring its material transformation.

#### **Presentation of the main research material.**

Phenomenon of the book as part of civilization evolution of modern information environment should be analyzed taking into account its historical, social, and cultural aspects. Study of the book culture requires a profound multifaceted multidisciplinary approach, existing at the intersection of many disciplines, such as book science, design, literature studies, philology, linguistics, sociology, etc. The peculiarity of the book analysis in the context of general scientific knowledge is to clarify the correlation of humanistic, ideal, material and physical aspects of the book as a way of storing and transmitting information and development of the personality.

Today there is no specified definition of the "book" term. In DSTU 3017-95 "Edition. The main types. Terms and Designation" book term is defined very dryly and briefly as for an edition being over 48 pages in volume [8]. Such definition is extremely narrow and cannot contain all the semantic wealth of the "book" term, the variety of meanings connected with it and traversed through the history of human civilization.

M. Yankovskiy defines the book as "a product of human creativity, perceived by organs of sight and the touch in a sta-

ble form as a combination of signs, requiring for their perception of their own installation in relation to these bodies and united in such a way that their separation is impossible without destruction of the book" [16, p. 158].

The Great Soviet Encyclopedia gives the following definition, "The book is the most important historical form of consolidation of semantic information (generally connected and sufficiently large text), which continues to evolve and is intended for repeated reproduction and transmission in time and space. The text of the book is fixed on the sheet of paper using characters (letters or other graphic images) perceived by the vision (books for the blind designed for perception by the touch are exceptions). Contemporary book is a code, representing a block of fastened pages with text and illustrations and external protective elements (binding, cover)" [5, p. 335].

S. Omilyanchuk defines the book as a complex system of relationships, the essence of which is specified by a set of characteristics of the book, describing it as a dialectical unit, initiating the process of transferring information from man to man by various indirect communicative means. The book is considered by the author as an instrument of mass communication, which manifests itself in the form of printed works, combining various information systems, such as letter, speech, notes and visual art [14].

One of the most prominent researchers in the book philosophy M. Kufaev gives the following definition, "The container of any thought and words embodied in visible sign, all that could obtain appearance and character of the book in the narrowest sense of word, under some technical modification is the most correct understanding of the book. Types of books are the Assyrian cuneiform, the Latin scroll, modern folio, brochure and the poster" [13, p. 61–62]. On the one hand, such interpretation of the term is universal to the maximum. This is a comprehensive attempt to combine various manifestations of the book culture in a single whole. On the other hand, too broad interpretation makes it almost impossible to clearly distinguish and differentiate book form from any other form of knowledge transfer.

I. Barenbaum, in his study *Book Study and E-book*, that analyses the book development and its evolution in the context of modern culture, concludes that "book is a product of writing or printing, which has any sign shape that can be read (ideographic, alphabet, musical, digital), recorded on any material (stone, clay, leather, papyrus, silk, board, paper, synthetic materials), which performs several functions (informational and communicative, ideological, cognitive, aesthetic, ethical, etc.) simultaneously and is addressed to real or abstract reader" [1, p. 11]. Such definition is similar to the definition of M. Kufaev, it is synthetic and has similar advantages and disadvantages.

Thus, we see that interpretation of the "book" term by different researchers extremely varies. The complexity of the book definition is caused by versatility, complexity and heterogeneity of its manifestations in socio-cultural environment. The most important role of the book is to transfer information in all its diversity. However, book is of inter-

est not only as a carrier of knowledge, but also as a material object, with a number of unique, distinctive historically formed properties.

The place of a book in culture changed at various stages of its development. In multi-page form, similar to modern one, a book appears during the Middle Ages, replacing scrolls. At that period of time clerics were principal consumers and makers of books. The church wealth made it possible not to save money on the production of manuscripts. Written records were made on large sheets (curried leather was often used as a material), richly decorated with miniatures, letters, and gold. However, it was inconvenient to use the sheets so large, so they were subsequently halved. Such folded sheets of parchment have received the title of diplomas (from the Greek diploma—"folded twice"). When these diplomas accumulated, they were bounded in so-called codes (from lat. Codex—"trunk"). Thus, a modern book form appeared. Multi-page codes were convenient and quickly became widespread within scholars of theology and other sciences.

The new form of physical organization of knowledge transfer changed not only in appearance, but also in principles of relations between information and the user. Access to sections and parts was simplified; a structured flow of information through its fragmentation into small fragments-pages emerged. Therefore, the need to untwist and re-read the entire scroll disappeared, it became possible to read only the necessary part directly. Since then, information can be perceived not by one big block, but it is possible to address the small block, needed right now. This evolutionary jump is somewhat similar to contemporary times in terms of the integrity change.

At the same time, the medieval book was not only a source of knowledge; it occupied an important place in material cultural environment. It was an indicator of the status, the subject of art, where the external form often prevailed over the content. This was due to the low literacy of population, which did not allow the majority of people to get familiar with content and with specifics of the process of book making, in which manual labor and expensive materials were widely used. As a result it led to high cost of book products. Due to this fact, only wealthy people could afford it. The book's authenticity was emphasized by costly design, original form of pages and binding, incrustation of precious stones and metals, and so on.

However, due to the development of typographic printing technology, book had become significantly cheaper, rooting deeper into socio-cultural environment by the 16<sup>th</sup> century. The high ideals of the Renaissance led to the fact that knowledge became one of the most demanded humanistic values. Thus, the book making process started over, but this time as a more spiritual, meaningful phenomenon rather than material one. These trends reached their peak in the 20<sup>th</sup> century, when scientific and technological revolution and almost absolute literacy of population in most countries of the world made the book the most common and convenient form of transfer of large volumes of knowledge [7; 10; 11].

However, at the end of the 20<sup>th</sup> century another crisis of book culture happened. Electronic information media, network storage, data transmission and digital devices are rapidly developing. Accelerating rhythm of life leads to the fact that media culture is accelerating, society needs quick access to information. At the same time, readers are not often ready for comprehension and systematization of large volumes of data, they consume it situationally and fragmentarily. The ability to access virtually any information through the World Wide Web at any time leads to reduction in the need and ability to memorize this information beyond the one-time context.

The book form loses the position of the main method of accumulation and transfer of large bulk of knowledge, with the printed book no longer being the unique medium of systematized information, passing this function to electronic media. Such devices are traditionally called electronic books, but they have a fundamentally different form of embodiment and interaction with the reader. The main difference between electronic media is the presence of an interactive response, non-linear interaction with the reader. A habit to interact with the text is formed, instead of static absorption of it. Due to this fact, classic textbook becomes uninteresting and inconvenient for perception to the average reader.

Against this background, it should be noted that modern society is defined by researchers as a "consumer society" and is characterized by a high need for possession of things, especially if they are trophies. At the same time, they can be an indicator of not only material, but also intellectual, spiritual status. Great French philosopher Jean Baudrillard pays great attention to this phenomenon. In his writings, *The System of Things* [4], *Society of Consumption. Its Myths and Structures* [2], *Symbolic Exchange and Death* [3], the philosopher explores the evolution in public consciousness associated with the cult of material consumption.

Things from a human environment that look original and non-standard, such as clothing, furniture, books, are often indicators of a high degree of cultural development, a kind of "friend or foe" recognition system. At the same time, these artifacts and their real cultural value are not evaluated adequately by the consumer and used only as a unique marker. The consumption of a cultural product, including a subject of book culture, is not often directly related to the consumption of content of this product, but only expresses desire to possess the subject. "Culture is no longer created for prolonged existence. It is preserved <...> as a universal authority, as an ideal standard, and even more, the more it loses its semantic substance <...> but in reality, in its mode of production, it obeys the same call of 'urgency' as material benefits" [4, p. 135]. This fact imposes a number of requirements, precisely on the appearance of things, because visual component is evaluated first and foremost. So, the use of a "true" paper book gives the reader a different status than use of a smartphone or a tablet for reading.

In addition to changes taking place in principles of information perception, in today's world there is a growing

tendency of users who prefer the game form of interaction with any objects and processes. To this day, practically any area of social activity, such as education, business, production, art, and even science is subordinated to this need. Everything is covered by the person's desire to "play" constantly and continuously.

The game form of activity as a leading form is largely formed due to constant interaction of people with electronic equipment, which not only transmit information, but form feedback with the reader, responding to its actions through various channels of information, such as verbal, visual, audio and their combinations. "The gadget is actually determined by associated practice, which does not belong either to utilitarian or to symbolic type, but it is a game activity. It is game activity that increasingly manages our attitude towards things, people, culture, leisure, sometimes towards work, and, moreover, towards politics" [4, p. 149]. The boundaries between game and other activities disappear, however, due to this fact, game activity acquires symbolic signs and becomes complicated both in form and content [2; 3; 4].

This fact should also be taken into account when designing everyday things. There is a need to add gaming elements to things that were not historically inherent. So, it was previously thought that toy book is only needed for children's audience, but now adults take great interest in it. Visual solutions for adult audience are more refined, full of allusions and quotes from historical context or on the contrary, meet the most up-to-date topics, they are minimalistic, have a subtle humor, hints of well-known events, problems of modern life, etc.

It should be noted that, following the pace of life, today any product requires a minimization of production time, whether it is an artwork, a working mechanism or a scientific article. All modern culture carries a seal of industrial production, optimized especially for it, being at the same time short-lived and variable. The vast majority of things are evaluated impulsively, for their appearance and under immediate emotions and are forgotten by the consumer immediately when the feeling of novelty weakens.

New, directly opposite tendencies find expression against the backdrop of high technological capacity of material environment of a person in recent years. They express uniqueness, individualization of things, manual work, the need for things that carry the element of care. Artifacts giving an impression that they exist specifically to satisfy desires of this particular consumer are highly valued. This is achieved with non-standard materials, calligraphic means, individualization through personal appeal, making books on order with the name of the user, etc. A similar desire for uniqueness is a natural reaction to rejection of widespread unification, the desire to stand out from the general mass, through the individuality, positioning oneself as a separate personality.

Modern design is obliged to take into account these mutually exclusive tendencies and to find solutions that satisfy such diverse needs. In book design, these phenomena are expressed in adding various elements of interaction to clas-

sical book (now it is possible to move, paste, color elements of the book), in using non-standard materials, as well as in different versions of the symbiosis of classical book and modern electronic devices (for example, through supplemented reality, when you direct a smartphone camera on printed page and additional objects appear on the device screen and an artwork "comes alive"), and so on.

The book form is characterized by a special relations with the person and the surrounding environment, which result from its physical, "real" qualities. Traditional book has a number of unique physical characteristics that cannot be emulated by electronic media. These include, for example, page turning form that develops in space and time, number of pages, tactile characteristics, mass and linear dimensions, etc. It is the use and pointing, the hyperbolization of these unique qualities now constitutes the essence of development of material component of the book. The page turning form usually evolves: pages are made in a non-standard way, supplemented by tabs and bulky elements. Tactile characteristics are emphasized through the use of different materials and contrasting combinations of smooth, relief and rough surfaces. The shape of the book changes from generally accepted rectangular shape to the figured one. Special types of paper make the book pleasantly heavy or, on the contrary, unexpectedly light-weighted, large illustrations are included even into the books for adults. All of this is meant to emphasize original materiality of the book.

The development of technologies leads to the possibility of using a variety of post-printing techniques in the design of a modern book, such as cutting, blind stamp printing, hot stamping, varnishing and flocking, wooden, fabric, plastic and other insertions. All these technologies greatly enrich the reader's sense of experience, pushing him beyond the limits of information exchange.

At the same time from the point of view of content, there is a symbiosis of book, audiovisual and network culture, interpenetration of interaction methods with the reader. The book acquires features, typical to electronic media of information that is interaction with the reader, ability to produce various sounds, inclusion of lighting elements, etc. At the present stage of development, book features as phenomena of material and visual culture are in emphasizing its unique real characteristics, with simultaneous adaptation of internal content according to the requirements of the digital age.

**Conclusions.** The current crisis of the book culture is associated with changes both in material and spiritual aspects of society existence. First, the essence of this crisis is the change of the patterns of perception information by the subject. Traditional book form mostly does not meet modern requirements for quick access to information.

However, it cannot be argued that the book's role can be reduced to cultural atavism. Throughout the history of the book culture development the role of the book is associated with formation of a creative and humanist beginning in man. The spectrum of its capabilities is much broader than simply information transfer.

Despite the decline of the book culture that has taken place in the last decade that is associated with the development of electronic media, the book does not die, but only evolves in accordance with requirements of time. Many of informative, meaningful functions of the book transfer into electronic books and network technologies. However, classical (printed) book preserves and develops its unique material qualities. The traditional material book satisfies a number of needs that electronic media are not capable of providing.

Primarily, this feature is typical only to its physical qualities, namely tactile properties, realized due to features of used materials, page form, volume, possibility of physical interaction. The printed book is enriched partly by borrowing their properties from electronic media, such as interaction with the reader, the ability to reproduce sounds, the inclusion of illumination elements, etc. At the same time, content of the book adapts to needs of modern consumers, evolving into game and interactive forms.

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**Величко Н.**

**Еволюція книги у матеріальній культурі**

**Анотація.** Розглянуто книжкову форму та її місце в сучасному світі з точки зору матеріального втілення. Подано огляд різних визначень поняття «книга», історію розвитку й становлення книги в матеріальній культурі. Проаналізовані зміни, що відбуваються в принципах сприйняття інформації в сучасних умовах на тлі активного розвитку електронних носіїв, розглянуто основні причини кризи книжкової культури. Охарактеризовано основні проблеми, з якими стикається сучасний книжковий дизайн. Розглянуто різні варіанти еволюційного розвитку книги через посилення її унікальних рис. Перший — синтез електронних та паперових носіїв через різноманітні механізми доповненої реальності. Другий — підкреслення та гіперболізація у класичній книзі притаманних тільки їй рис, які неможливо емулювати на електронних пристроях (як-от гортальна форма, що розвивається у просторі і часі, тактильність, фізичні межі).

*Ключові слова:* книжковий дизайн, історія книги, книга у матеріальній культурі, еволюція книги.

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**Эволюция книги в материальной культуре**

**Аннотация.** Рассмотрена книжная форма и ее место в современном мире с точки зрения материального воплощения. Представлен обзор различных определений понятия «книга», показано, что в настоящий момент не существует общепринятого определения книги, некоторые определения очень узкие, другие же, напротив, очень широко трактуют книжную форму. Проанализированы изменения, происходящие в принципах восприятия информации в современных условиях на фоне активного развития электронных носителей, рассмотрены основные причины кризиса книжной культуры. Рассмотрены различные варианты эволюционного развития книги, выделены два основных направления. Первое — синтез электронных и бумажных носителей через различные механизмы дополненной реальности. Второе — подчеркивание и гиперболизация в классической книге присущих только ей качеств, которые невозможно эмулировать на электронных устройствах, таких как листаемая форма, развивающаяся в пространстве и времени, тактильность, физические границы и т. д.

*Ключевые слова:* книжный дизайн, история книги, книга в материальной культуре, эволюция книги.

*Стаття надійшла до редакції 11.09.2018*