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Milena I Tsvetkova

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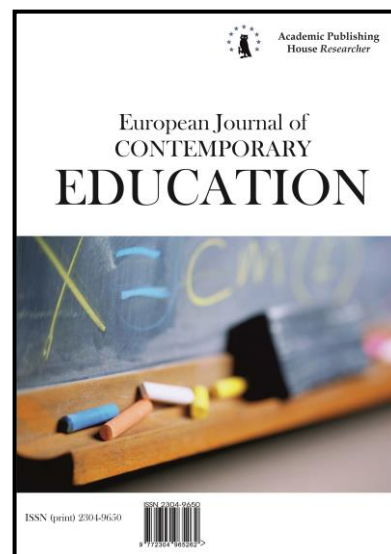


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## **Cross-Disciplinary Higher Education between Medialogy and Bibliology: Book Science as Degree Programme in Universities Worldwide**

Milena Tsvetkova <sup>a,\*</sup>

<sup>a</sup> Sofia University, Faculty of Journalism and Mass Communication, Sofia, Bulgaria

### **Abstract**

Object of the study: The broad object of this study is the academic field of the book and the book as an area of interdisciplinary teaching. Purpose: to prove that the 21st-century cross-media and hybrid media ecosystem emancipates Book Science from the rest of the sciences in whose objects it can partake only as a constituent using one of its elements, properties or attributes. Tasks: to identify and summarise the theoretical and methodological differences between conventional Book Studies and the specific Book Science; to update and conceptualise the understanding of the book as a traditional means of communication in the light of the modern perspectives of digital transformation; to offer a framework of an innovative media science of the book. Hypothesis: Returning to the matter of the book as a medium, the hypothesis to be tested in this study is: “the book is set to be vindicated as a basic scientific category and be studied by a science of its own as an agent of communication, while the scientific book – as a communicator of “good” science. Methods: analytic and synthetic processing of primary and secondary resources, the selective monographic method, systematisation and summarisation of data from scientific-methodical and normative-legal documents on the issue examined. Results: Based on a working hypothesis, this study provides theoretical knowledge in Book Science and proposes points of support toward future fundamental and applied research in Book Science. Significance of the study: Overall, our findings suggest that 1) the research on the new theoretical views about the book will facilitate an increase in the academic interest in book-related professions, encourage the design and update of university curricula and programmes in Book Science, to support interdisciplinary research of book and digital media culture; 2) it is expected that the present text will provide the factors militating against the introduction of innovations in higher education and doctoral programmes in Book Science insofar as books as products of the publishing industry, and thus subject to market forces, drive back business interest in higher education toward book-related professions; appropriate measures to overcome the challenges outlined have been suggested.

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\* Corresponding author  
E-mail addresses: [milenaic@uni-sofia.bg](mailto:milenaic@uni-sofia.bg) (M. Tsvetkova)

**Keywords:** higher education, interdisciplinary teaching, media education, book studies, book as communication, correlation between book theory and mass communication theory.

### 1. Introduction

At the heart of the present research lies the commitment to outline a clear scientific doctrine – comprising both theory and methodology – of the study, explanation and future development of the phenomenon “book”, which brings to the fore new knowledge about the book as the oldest existing medium or the oldest means of mass communication. This conceptual framework unites the accumulated archaeological and historical evidence on the book as the first medium shaping the pattern of mass communication, which has subsequently become a key agent in the social communication system and today represents the most unpredictable factor and object of the media industry.

The author’s proposition is that the book needs to be vindicated as a general scientific category by means of an innovative Book Science, thus allowing it to be studied by all sciences in its two fundamental aspects: form and content, as text and as a medium.

The present work comes as a result of the author’s long-standing and purposeful research which began with a dissertation entitled “Reading – anti-manipulation filter: Individuality and audiovisual manipulation” defended for a doctorate degree in 1999. It is chapter 3, paragraph 1 thereof, entitled “Book – medium for interindividual communication”, which first offers a definition of the research object from a communication perspective: the book as “a communication subject playing the part of an information source materialized in print, in mass or limited circulation, but serving the purpose of interindividual, ‘epistolary’ communication.” (Tsvetkova, 1999). The author’s interest in the scientific category of the book remains intact as part of her “Book as medium” lecture course at the Sofia University, which has been taught since 2001. The cross-disciplinary science of book, unparalleled in Bulgaria, is an academic discipline belonging to the professional field of “Public Communication and Information Sciences”. It was established in response to higher education’s imminent need for new scientific knowledge about the book so as to vindicate it as a foundation of the media pyramid. The integration of the “Book as medium” subject into the curricula of three university majors allowed the elaboration of a new theory about the book based on the dual system principle bridging the gap between theoretical and practical science.

Individual research results and statements have earned approval at national and international scientific congresses as well as in scientific publications and in front of an academic audience. A comprehensive concept of the book as a medium was first presented in public in 2003 in front of professionals at ULISO’s 13th national scientific conference “Library cooperation – present and future: Research ideas and projects in the field of written communication” (Sofia, 5-6 June 2003). The “Book as Medium” monograph published in 2012 is the first research work in Bulgaria dealing with the media nature and specifics of the book. It elaborates a theoretical concept on the book as a communication medium, built as a result of the interaction between Book Studies and Media Studies, Bibliology and Mediology (Tsvetkova, 2012). The scientific community and academia were offered an *essential analysis* of the book as a social-communication phenomenon – the oldest medium credited with programming the mass communication model. Regrettably, to date there has been no other published scientific monograph on the media essence of the book. No research work has been made public that is solely dedicated to the book as a means (technology, invention) of communication, i.e. explaining it in the unity of the genesis, process and result thereof.

### 2. Methods

A complex of interrelated research methods have been used which correspond to the object of the study and the tasks set: the qualitative systematic review, methods of the analytic and synthetic processing of primary and secondary resources, the selective monographic method, systematisation and summarisation of data from scientific-methodical and normative-legal documents on the issue examined. The “content assessment” method, which designates the process of “reading, selecting, evaluating, comparing and analysing the details when telling a story” (Marzolf, 1978: 15) has been applied to the documentary sources examined. This is a method

whereby the researcher relies on their own experience and scientific intuition to select evidence from the environment examined that is most reliable and best matches their hypothesis.

The present study employs the notion of “science” as a system of building fundamental knowledge regarding understanding the world and humans, as well as knowledge whose practical application has been postponed in time. The term “programme” refers to the provision of higher education in its broadest sense, “including provision that is not part of a programme leading to a formal degree” (ENQA, 2015: 7). In this study, the term “book” refers to the primary cultural medium. The work operates with the definition of “book as a medium”: *a formatted medium (concept of medium) for the exchange of ideas and lasting knowledge, transmitted through a virtual image of a reality (concept of text)* (Pettersson, 1985; Tsvetkova, 2012: 69). Examining the levels of connotation leads to deciphering not only the direct but also the indirect uses of the term “book” in the sense of communication or medium. Bibliology and Book Studies are considered synonymous in the present study<sup>1</sup>.

### 3. Theoretical review

Why is it necessary to resurrect the debate on the boundaries of Book Science? First comes the issue regarding the international scientific term. In Bulgaria, the term “Knigoznanie” has four different corresponding translations into English: “Book Studies”, “Study of Books”, “Book Science”, and “Bibliology”. For instance, leading Bulgarian researcher of books A. Gergova used the term “Book Science” in 1987 as equivalent to “Knigoznanie” (“Book Studies”) and “Bibliology”. In addition, she makes no distinction between the terms “science”, “scientific field”, “scientific area”, and “scientific discipline” (Gergova, 1987: 3-9).

Scientific intuition suggests that the research field of Book Science is not synonymous with Book Studies (Knigoznanie, as transliterated from Bulgarian). Book Studies is defined as “a book sciences complex”, which includes Bibliology and Bibliography. Furthermore, Book Studies has established itself as a term equivalent to Bibliology – complex book studies (Rats, 2012: 152), which, according to French bibliologist Robert Estivals, is not a science merely about the book, but a “science about written communication” (Fr. “la science de la communication écrite”) (Estivals, 2002). Therefore, Book Science is not another name for Book Studies but represents a core concept of the latter.

#### Bibliology and the innovative Book Science

“Bibliology” (Bibliologie, deriving from Greek *biblion* – book, and *logos*, λογία – teaching) in a narrow sense represents a scientific description of books from their earliest period to the present day, including all materials and processes related to book production (Roberts, Etherington, 1994). When understood in this narrow sense, Bibliology does not refer to the book’s text, hence it is frequently identified with Bibliography. The subject it deals with is the “bookness” of the book comprising the description, editing, printing, publishing, circulation, reprinting, and collecting (Oxford, 1989), as well as the history, technology and economics of book production. Sometimes Bibliology is mixed up with Bibliometrics. Rather than being a science, though, Bibliometrics is merely a quantitative method belonging to the toolbox of science metrics. Bibliology is occasionally confused with Bibliologie, which is the study of the Bible (also referred to as Biblical studies). The reason is that the second meaning of the term Bibliology in English is a synonym of Theology – a study of biblical doctrines, Biblical Theology (Webster, 1913).

Another narrow meaning of Bibliology explains its unusual position in the Common European Research Classification Scheme (CERCS) created by the European Commission. There, Bibliology is reduced to a descriptive discipline belonging to the Humanities (Eston. Humanitaarteadused), differentiated from Bibliography (H105) and placed in a common research area together with Paleography, Epigraphy and Papyrology (Class H110) (ETIS, 2018).

The scope of Bibliology covers neither just the history of the book, nor just bibliography (description of the book). Bibliology can be defined most concisely as *academic knowledge about the book as a physical and cultural artefact*.

The science of Bibliology is already 210 years old. Polish bibliologist Krzysztof Migoń has traced its research paradigms and thus identified its problem zones (Migoń, 2010: 44-53). The onset of Bibliology as science of the book is marked by Gabriel Peignot’s encyclopedia “Dictionnaire raisonné de bibliologie” from 1802–1804 (Peignot, 2006: 85-97; Janssen, 2006). What follows is the development of the four paradigms of the science: historical, philological, the



paradigm of the sociological, psychological and pedagogical areas, and, finally, the information-communication paradigm in Book Science, which does not appear until the end of the 20<sup>th</sup> century. The focus is only on the textuality of the book, its written content and language. The significance of the philological area stems from the obvious fact that it is books that frame language and words, and the respective bibliological processes (book creation, circulation, and reception) exist parallel to language and literature. However, as established by Krzysztof Migoń, the philological approach to the book reduces scientific interest only to those properties of the book that are of importance to philological disciplines; to studies dedicated to the birth of literary works only as books and to their fate and reception among readers. Unfortunately, even today numerous researchers of the book and literature in their interdisciplinary aspects consider Book Science to be a somewhat secondary literary discipline whose primary task is compiling bibliographies and studying books as literary monuments.

The contemporary functional concept of Book Science has been devised thanks to the development of the information and communication sciences. The newly created information and communication models have raised the book paradigm to a qualitatively new level. The theoretical concepts of two European scientists – Paul Otlet (1934) and Robert Estivals (1978) – have played a pioneering role in this process.

To Paul Otlet, Bibliology is identical with science to documentation (Otlet, 1909) and thus he proclaims it as a universal science whose object are all documents and their functioning. In 1934, adopting the large-scale thinking typical of encyclopedists, Paul Otlet defines the so-called documented being (Fr. *l'être documenté*) as a subject of Bibliology, while also laying the structural foundations of all other sciences whose summaries can be characterised as “documents” (books, journals, various “scripta”) (Otlet, 1934; Migoń, 2004). Paul Otlet’s documented being also covers several novel book formats which his colleagues doing research into the academic field of Book Studies later forget: the photographic book (Fr. *livre photographique*), the microphotographic book (Fr. *livre microphotographique*), the photomicrographic book, (Fr. *livre photomicrographique*), the microphoto book (Fr. *livre microphotique*). In 1909 he already refers to the new media as “substitutes for the book” (Fr. *substituts du livre*): sensory/tactile book (Fr. *livre tangible, livre taille*), visual book (Fr. *livre visible*), auditory book (Fr. *livre sonore*), audiobook (Fr. *livre audible*), “projected book” (Fr. *livre à projection* or *bibliophôte*) and “telephoto book” (Fr. *livre téléphoté*) (Otlet, 1906: 87; Otlet, 1934: 216-247, 431).

Forty-five years later Robert Estivals resurrected the interest in Bibliology with his comprehensive concept of a science on the written content and communication [in original: “la science de l’écrit et de la communication écrite”] (Estivals, 1978, 1987, 2002). Two hundred years after Gabriel Peignot, Estivals’ works reiterate the former’s understanding of the newest paradigm of Book Science, which is that “Bibliology covers the universal collectivity of human knowledge”, [in original: “la Bibliologie, embrassant l’universalité des connaissances humaines...”] (Peignot, 1802).

One of the reasons for the advantages of Bibliology as a basis for a new media science of the book is its interdisciplinarity. A useful research perspective can be gained by relating Bibliology to Bibliognosy (Gr. *biblos* – book, and *gnosis* – knowledge), i.e. knowledge about the book. The term “bibliognosy” (Fr. *bibliognosie*) was suggested by abbot Jean Joseph Rive as early as 1789, but it fell into disuse during the 20<sup>th</sup>-21<sup>st</sup> century. It has also been used to designate the (comprehensive) study of the book in its entirety. If we compare the terms “bibliognosy” and “book studies” etymologically, we will find out that they are synonymous while contemporary Bibliology should supposedly reach beyond them in terms of scale. The history of the science demonstrates that due to the complex nature and universality of the object of the book, Bibliology must interact actively with all other sciences. The other reason that necessitates prioritising the science of Bibliology as a foundation for a new Book Science is that its leading contemporary theoretician – Frenchman Robert Estivals, who is one of the most dedicated book researchers in the world, brings the book closer to its immanent media nature – as a variety of the physical and electronic-virtual carriers of written information.

### **Medialogy and the innovative Book Science**

The most significant institution which makes intellectual and artistic activity possible is the book. It does not matter whether it would be used as a means of information exchange, spiritual interaction or psychological impact. As such, it has to be examined as part of the integral research

area of “Medialogy of the book and reading”, i.e. simultaneously as an “*artefact*” of the reading practice, as the first artificial means of recording based on writing, and the first and most important product of the communication sources spectrum (Tsvetkova, 1999). The book is a tool for the highest possible spiritual flight, competing with all similar technological devices as it preserves the information balance when its cognitive function is realised. And, last but not least, the book is a means of intellectual survival.

What will be understood by a *medialogical approach* to the research of the book? First, it is important to note that currently there are two versions of conceptual scientific approaches to media – Medialogy and Mediology. However, the object of both of these approaches is the *relationships* and *connections* in the media evolution.

Medialogy (Ger. *Medienwissenschaft*) refers to the “science, study and expression of media”. It aims at more than merely “study of the middle” – that is, it is dedicated to the “study of betweenness” and supplies specific knowledge about the media disciplines by studying their object – the mediator, and media technology (Fischer, 1996). The medialogical approach links technology to its function of a primary propelling tool or mediator in the perspective of communicative interaction with its predicted or unpredictable effects. The tool used to study this functional field is the strategy of *contextual synergy*, i.e. Medialogy is in search not only of the medial component of the communication environment with its activity and influence but attempts to establish the factors of cohesion between the co-subjects (sender and receiver, author and reader) and discover the formulas of the reinforcing effects as well as deduce and draw conclusions from amorphous and chaotic relations, messages and symbols.

The medialogical approach would be most appropriate to form the new paradigm of managing the book as a medium and supply it with scientific and applied knowledge – “management through contexts”. Essentially, it is about designing management systems at an overcybernetic level, which are based on the mechanism of information feedback. This task has been embraced by one of the new scientific disciplines called “infordynamics”<sup>2</sup>, which rejects the classical “signal paradigm” of management and looks for ways to design a “machine that produces conclusions”, controllable data and relations that change over time and in context. In other words, an overcybernetic management model will be based on making sense of the accumulated prestige (image) of a given book as a result of “optimised search” by means of progressively populating databases that are part of the mechanism, or forming some “knowledge structure” or “structure of relationships” changing over time. It is the medialogical approach in particular that could contribute its own abstract (not mathematical) model to perfecting *a concept for managing the book through feedback based on an “information resonance” algorithm*.

On the other hand, mediology (Fr. *médiologie*) is a scientific discipline which deals with the *relations* between man and his technological extensions (“second nature”) as well as the *links* and interaction between technology and culture (Hartmann, 2003). The initiative for creating Mediology came from French philosopher and journalist Régis Debray<sup>3</sup>. According to him, mediology needs to examine the relations between the higher social functions (religion, politics, ideology and spiritual attitudes) and the technological structures responsible for transmitting information and the information impact. Thus, it is interested not only in the carriers or the means of communication but most of all in the efficiency of the symbolics, i.e. of the topic of mediation (through words and images) and its transformation into material power. However, the inception of Mediology can be traced back to Victor Hugo’s extensive manifesto “Ceci tuera cela”, part of his novel “Notre-Dame de Paris” (1831), from where it continues with the contributions of Walter Benjamin (1892-1940)<sup>4</sup>, Marshall McLuhan (1911-1980)<sup>5</sup>, Abraham Moles (1920-1992)<sup>6</sup> and Umberto Eco (1932-2016) (Fedorov, Kolesnichenko, 2013).

Mediology is a scientific discipline which can help us to the greatest extent with modeling the book as the authentic medium in the communications evolution and as an ever-changing and self-verifying media prototype. It is not so much materialism that matters to Mediology but rather the ability of a medium to multiply and extend human potential by explaining how ideas transform into material power. The toolbox of Mediology helps prove that the book is *an environment for information communication, which is materialised in print, exists in mass or limited circulation, but serves the purpose of interindividual, ‘epistolary’ communication*. The same proposition can be found in the following aphorism by ancient Greek philosopher Epicurus: “I am writing this not to many, but to you: certainly we are a great enough audience for each other.”

In fact, Book Science (albeit under a different name) has long been dealing with the development of media, writing and verballity, and with analyses of the development of the various communication units and processes as well as of issues currently topical for media science and that have been deemed significant for the near and distant future.

Several theoretical motives can also be identified for putting Book Science forward as a core concept of conventional Book Studies. In the system of sciences (traditionally divided into natural versus unnatural sciences, or material versus spiritual ones), the book can be said to be a “centaur system” as it occupies middle ground – essentially, it combines features from both worlds of objects and symbol systems (Rats, 2012: 157). Furthermore, if the object of general Book Studies is the entire “domain of the book” or “book culture” as physical space and an activity, specific Book Science is interested in the object of the book in its functionality (Rats, 2012: 152). In 2010 when Krzysztof Migon traced the evolution of Book Studies, he claimed that a fundamental principle of a pure Book Science is book research not so much as a historical and social fact but rather as an act of communication. Specific Book Science employs the functional approach which is built on scientific interest in the actual and potential realisation of the various functions of the book as well as obtaining scientific knowledge on the book in a historical and contemporary aspect as an immanent process of intersubjective and social communication. Hence, when the discussion is focused only on Book Science, the researchers’ attention needs to address the properties of the book as a means of bringing together verbal and visual information as well as being a communication tool (Migon, 2010: 49). Which, in essence, represents the function of the medium.

The position of the book within the media spectrum has long been acknowledged by classical scholar of communication science Harold Innis. According to his theory, the system of the book is one of the oldest and most steadfast media systems developing parallel to society in technological, content, and social terms (Innis, 1923, 1986). History has established the book as a reliable mediator between different eras. What is more, according to mediologist Régis Debray, it is the historically proven technology of “mediation” (an intermedium) between humanity’s symbolic forms and material activity, and thus a medium in space and time. Its functional capacity is broadly extrapolated as the process of symbolisation, the social code of communication, as an archiving system, a recording device, a transformational technology and a distribution network (Debray, 1996: 13). According to sociologist Robert Escarpit, the true function of the book is unlimited information dissemination constantly maintained by people (Escarpit, 1966: 22). Polish bibliologist Krzysztof Migon supports an identical proposition: “Undoubtedly the primary function of the book is its communicative feature realized in culture and society insofar as it is far and foremost a tool for social communication.” (Migoń, 1976: 31).

It is only the functional communication approach that can reveal the information-communication function of the book as envisioned by researchers: as a means of holding together, storing and exchanging information. A book is not merely a device or an object but a materialised embodiment of particular historical manifestations of the social consciousness (Nemirovskiy, 1979). The civilising mission of the book is not *statics* but *dynamics* as it “works” toward moving, changing, modeling, and transforming reality. The functional essence of the book reveals the entire toolbox humans are equipped with to transform their inner and outer worlds as well as the impact of the book on societies, culture and civilisation as a whole. The media essence of the book and its position in the system of social communication provides the basis for examining it from an authentic sociological perspective as a means of influencing the individual and social consciousness.

The views of communication theorists and book scientists outlined hereby prove that *the expression “book as medium” is not a private aspect or metaphor of certain functions of the book but represents its immanent essence*. The book is a tool of the mind; it is a mediator between the human minds; it is the human invention for communication using recorded information and thus presumably the most important medium for the development of human civilisation.

#### 4. Results

The demand to formulate a specific Book Science has gained ground as a result of changes in the scientific paradigm on the knowledge about the book as well as conforming to the opinions of European scientists in the discussion active in the period 2009–2016 (Nauka o knige, 2009, 2010). This discussion focused strictly on the phenomenon “book” and proclaimed the need for

developing a specific science that has a clear object, i.e. Book Science. Some scientists who have supported this view since the 20th century are Polish professor Krzysztof Migon – one of the leading bibliologists in the world (Migon, 1976, 2010, 2012, 2013, 2016), Russian professor Mark Rats whose contributions cover the methodology of the science (Rats, 2009, 2012), book scientists and book researchers N. Sikorskiy (Sikorskiy, 1965; Bakun, 2008), B. Bodnarskiy (Bodnarskiy, 1983), N. Lelikova (Lelikova, 2007, 2010), L. Dovnar (Dovnar, 2011, 2012), S. Lyutov (Lyutov, 2012), B. Lenskiy and V. Vasilev (Lenskiy, 2007).

During this period the specific Book Science obtained its academic accreditation in a number of European universities: degree programmes “Book Science” at the Mainz University, Germany; University of Erlangen-Nuremberg, Germany; Ludwig Maximilians University Munich, München, Germany; Pedagogical University of Cracow, Poland; Doctoral Programmes in “Book Science” at the Sofia University, Bulgaria; Vilnius University, Lithuania; Mainz University, Germany; University of Erlangen-Nuremberg, Germany; Department of Book Studies, Institute of Communication and Media Research at the University of Leipzig, Germany; Institute of Book Science and Documentation at the Vilnius University, Lithuania; Institute of Information and Book Science Studies at the University of Warsaw, Poland (Sosińska-Kalata, 1997: 27-32), et al. (see also Table 1, Appendix).

A key principle of a new Book Science is that the book is the first medium invented in human history and as such it is an indispensable central factor in the past, present and future of every civilisation. The book is placed at the very bottom of the media pyramid which frames the mass communication model, so every later media format<sup>7</sup> is secondary in relation to it as it merely exploits, diversifies and perfects its immanent characteristics. Hence, the book as the oldest medium will always be a part of the new media spectrum. The message communicated by the European Commission on the changes in the tax regimes for e-books goes along the same lines: “Book publishing is the ‘oldest’ of the media and content industries, as it can be traced back to the 1st century AD when the modern book format was introduced. The codex, a book made of a number of sheets of paper, gradually replaced traditional scrolls, which could only be accessed linearly. This new format allowed random access and is therefore considered the most important technological development before Gutenberg invented printing in 1440.” (European Parliament, 2016).

### **Purpose and Tasks of Book Science**

The main purpose set by the innovative Book Science is to prove that the book is first and foremost a medium, which is achieved through verifying not only the traditional models of social and mass communication but also the mediological, genealogical, anatomical, bioinformatic, biosemiotic, datascientific and other user-driven approaches to the book.

The tasks which Book Science needs to address are connected with identifying sufficient grounds to relate its subject with a commitment to the survival, reproduction and exchange of ideas taking into consideration the largely unpredictable 21st century. Book researchers need to identify and raise awareness of the reasons for the viability and sustainability of the very notion of the book from the perspective of the 21st century, in which the success of science depends not on narrowly specialised and differentiated approaches to subjects but on readiness to integrate the knowledge about them. Nowadays there are abundant scientific facts, viewpoints and forecasts but the issue lies in how they are made sense of. The book as the most important form of storing and exchange of human knowledge, significant both historically and as an ongoing process of development, needs its own conceptual model that will allow it to be re-examined consciously in its entirety.

In response to the requirements for formulating a new theoretical paradigm, the innovative Book Science faces four **methodological tasks**:

- 1) To give proof of the need for innovative knowledge about the book with a view to its evolution and metamorphoses as a binomial, multimodal and multisensory medium;
- 2) To produce an autonomous, theoretical and terminologically unambiguous statement reconciling opposing positions on the separate aspects of the phenomenon “book” and, despite the lack of terminological coherence in communication theory as a whole, to fix and enrich the following key terms: “book”, “media”, “information”, “communication”, “feedback”, “text”, “body”;



3) The topic needs to become problem-saturated, which will provide the conditions necessary to reaffirm and develop an integrated and comprehensive contemporary concept of the media science of book;

4) To encourage a new culture of analysing and forecasting the behaviour of the book in the ever expanding and diversifying spectrum of communication means in globalised media space; to set the pattern of innovative and heuristic thinking in future researchers, authors and producers in the publishing industry and promote the enhancement of their culture of reading and interaction with their recipients.

The primary content task of Book Science is to legitimise scientifically the object “book” in terms of its topicality and functionality, i.e. not as a cultural-historical or industry-statistical fact but as a function. The algorithm to achieve this task has to cover the following structural-logical steps:

1. Determine the specifics and uniqueness of the communication process involving the book as well as its functional essence as a mediator between communicator and recipient, as a means of interpersonal communication, as a tool for knowledge, manipulation or therapy.

2. The book is typologised from a content, mediological, bibliological and bibliopsychological perspective as a means of information and a mediator in social communication.

3. A scheme is developed, and the relevant communication factors are detailed (source, channel, mediator, recipient, feedback).

4. A universal binary media format is designed which includes content and form (text and body); then its genericity and implicitness with regard to the book as a medium are proven.

5. Using the toolbox of comparative media studies, the relationships between the book and the other media in the common communication space are revealed, alongside the regulatory mechanisms in the “society – books” interrelationship.

6. Using the toolbox of forecasting and heuristics, the optimal and realistic hypotheses on the future of the book as a medium are drawn.

The thematic coverage of the research material draws the following **problematic circles**: etymology of the book as a medium, genealogy and mediaarcheology of the book, mediatorics of the book, the book as a message and tool for manipulation, pragmatics and aesthetics of the paper body, symbolics and semiotics of the paper body, and futurology of the book.

The innovative Book Science offers a unified theory combining the views on the book as a binomial medium with content and form (text and body), the constructive and manipulatory potential of the book as a medium, the media archaeology triad of Pre-Gutenberg, Gutenberg and Post-Gutenberg books, the metamorphoses of non-conventional books (audiobooks, visual books, e-books, multimedia books, cross-media books, hybrid books, augmented reality books, nanobooks, etc.), the revival of ancient practices in the art of book and reading, and the predictions on the future of the book made by science and fiction.

The aspect of the “book as body” has a strong heuristic potential as explained by anthropological, psychological and critical art theories of corporality. This will allow the past, present and future of the book to be re-examined in augmented reality from the perspective of the corporeal modality of the reading person.

### **Theoretical foundations of Book Science**

There is universal agreement that the book has a special place and role in the development of humanity and that it is something more than a mere means of transmitting and storing knowledge. Yet our scientific and practical behaviour with regard to the book does not go further than the trivial work for and with the book as one of the many means of mass communication. Even more disturbing, the book is being fetishized as a publishing and market product in our attempt to take it out of the media system of social communication and interiorise it as a commodity available in stock on the market or at home.

The conceptual model of Book Science is being built using resources from multiple sciences. The starting point of the need for such a model is the dual essence of the book as it is a human object and a human activity at the same time. Just like any Science of the Artificial World (of the cultured domain), Book Science has to be a system of object-oriented (physics, chemistry, etc.) and action-oriented (philosophy, sociology, political sciences, management, etc.) sciences. This fact emancipates Book Science from the other sciences whose object it can partake in only as a

constituent with one of its components, elements, properties or attributes (Belovitskaya, 2006: 249–250).

Science of artefacts – this is how prominent methodologist, engineering geologist, book collector and theoretician of bibliophily Mark Rats defines Complex Book Science. It is exactly his competence in the following three domains – science of science, natural science, and the art of book – that gave him an impetus to switch the focus to studying the book. (Israeli professor Mark Rats first announced his proposition on the need for overcoming the narrowly scientific views in traditional book studies in 2009) (Rats, 2009: 18). The sense of “complexity” of any of the “sciences of the artificial” or of the artefacts lies in the hybrid nature of their object of knowledge and the categorial distinctiveness of the research domain. All non-natural sciences (of the -logy type) focus on their own objects (artefacts), but also cover the related types and systems of activity ranging from the creation to the application of these artefacts. Embracing this argument, Mark Rats insists on studying the book within the universal nuclear ontological scheme of the “sciences of the artificial”:

creation (preparation) → object (artifact) → usage (application)

In order to cover the entire spectrum of its communicative, polyfunctional and universal aspects, the knowledge about the book must build upon the social sciences. Focusing the scientific interest towards the book as a social “actor” could be achieved in the following directions:

- × the book as an autocommunication tool;
- × the book as a “link” to the information field;
- × the book as a tool for expert scientific communication;
- × the book as a means of lifelong learning and competence building;
- × the book as a reference tool and a source of systematised and succinct knowledge;
- × the book as a source of secondary and meta information;
- × the book as a means of distribution of artistic models as well as moral and aesthetic values;
- × the book as a tool of economics, business, politics and diplomacy;
- × the book as a tool of medicine and psychiatry (bibliotherapy, communication therapy), etc. (Gergova, 1987: 7-8).

Although sociological disciplines would explain the predominant essence of the book as a tool, the scientific results of such research would contribute to highlighting the indispensable from the non-essential in the “use” of the book by the system of social communication.

Yet the book remains the key structural element of social memory in any civilisation, regardless of the way its media are called – documents, artefacts or appropriated nature in the form of objects. For a comprehensive picture of the essence of the book as an object and a system of signs (documents), it is mandatory to combine knowledge pertaining to the domains of the social sciences, arts and humanities, technical and natural sciences (knowledge on the raw materials of the book). Thus, only a *polymorphic or hybrid concept about the book* could reveal its purpose as a mediator between different worlds<sup>8</sup>.

On the basis of this position, each scientific domain has the right to demonstrate interest in the book. Aspects of its specificity have been already revealed by certain domain-specific sciences such as Bibliologie (Fr.), Bibliology (Eng.), Buchwissenschaft (Ger.), Bibliologijos (Esp.), Knygotyros (Pol.), Knigovedenie (Rus.), Knigoznanie (Bul.), as well as by the general and special sciences of philosophy, history, sociology, psychology, anthropology, cultural studies, literary studies, etc. All of them have and will have a particular contribution in the future complex research of the scientific category “book” in its *statics* (in terms of composition, structure and content), *dynamics* (in terms of functions, impact effect and reflections), *pragmatics* (object and symbol usages) and *innovatics* (see Table 2).

### Methodology of Book Science

If a given scientific discipline and university degree programme is to become an authentic tool for enhancing the quality of the learning process, it needs to be oriented toward innovations and, specifically, Innovative Management as an “emerging independent discipline in science and education” (Tyunnikov, 2017: 172). The innovative scientific concept of the book offers a synergy between theory and methodology to aid its study as a medium. Since the book as an object belongs

to one of the most large-scale interdisciplinary academic domains, it is only possible to study and explain it by means of a *cross-disciplinary approach*. The cross-disciplinary approach to be used here is fully justified because even communication science into whose domain traditional and new means of communication fall, has not yet identified its own research methods so it employs interdisciplinarity in its exploration and argumentation. Moreover, a contemporary Book Science will inevitably develop in the conditions of *polyparadigmality* which is generally characteristic of social sciences. The research approach toward the book will combine the genealogical, anthropological, archaeological, informational and receptive approaches. The research process will accommodate large-scale cross- and interdisciplinary (documentary, archeographic and bibliographic) integration of scientific knowledge from the following domains: history, theory and methodology of the written word and the book; history and theory of social information; history and theory of social communication; history and theory of media; history and methodology of publishing; psychology, sociology, culturology, anthropology and phenomenology of reading.

The quality methods are the primary ones utilised in studying the book as a medium. The methodological toolbox of the innovative Book Science needs to include:

- 1) Critical analytic-synthetic processing of the current terminological toolbox of the sciences studying books, science, literature, and written communication;
- 2) The “content assessment” method with regard to the arrays of studied documentary, historical, literary and mythological sources;
- 3) The method of negative assumption in the attempts to overcome regressive and dominant cultural stereotypes;
- 4) The modeling method;
- 5) A comparative dichotomy analysis of the relationships “physical book – audio book – screen book”, “print book – digital book”, “word book – wordless book”, etc.
- 6) SWOT analysis;
- 7) Deep interviews and surveys;
- 8) Empirical methods: documentary, bibliographic and publisher-editor analyses, bibliometrics analysis, media monitoring.

In order to strike a balance when encountering the “missing data” phenomenon in certain specific manifestations of the book as a medium, in which “information noise” would cause a research problem, in some cases it is advisable to resort to *predictive thinking* which is based on “*imputing values to missing data*” (imputation method) commonly used in empirical sociology. It has been applied in research situations of unspokenness or unexplainedness (e.g. mysterious, lost, undeciphered books), including scientific mystifications as well as cases of non-homogeneous verbal expressions and terminological dissonance (even chaos) in the oral and written discourse on the phenomenon “book”.

The scientific category “book” also needs to be subjected to a multi-directional critical analysis using the “*negation*” method, the negative assumption, the counterpoint technique (for instance, surveys of the type “Why do I hate books?”; when explaining “black statistics” of the hated and unwanted books; when assessing piracy, plagiarism and book theft, and when pointing out the disadvantages of the book as a medium and the negative effects of reading). Scientific thought requires contrastive viewpoints because dichotomies and contrasts serve the purpose of overcoming dominant cultural stereotypes. As we know, biases and prejudices hinder not only scientific but also business and daily reasoning. They underlie misjudgments and poor forecasting. The attempt to overcome dominant stereotypes has very little to do with fanaticising the “usefulness – harmfulness” extremes. The “negation” method outlines every true conclusion logically deduced from objective conditions and makes known the rest which is obvious from the perspective of common sense but contradicts mass opinion. Human thought has repeatedly criticised writing, reading, and books. There have also been diametrically opposed evaluations on the socially or morally disapproved of practices regarding books and reading. Facing the state of affairs inevitably causes discomfort, especially when such positions are supported in societies belonging to the “religions of the book” (the three monotheistic ones). However, the context of democracy allows for the equally successful and competent support of any view regardless of how unpopular it might be.

Since the prescriptive approach is becoming increasingly productive in theoretical research on social subjects, *the principle of prescription* and ideocracy rather than the diagnostics principle

characteristic of the descriptive approach will be more effective in Book Science. Therefore, primary importance should be given to the identification of new ideas and proposals on enhancing the book's visual communication and use as an object. The key element of radical ideas is that the only prerequisites they need are *resolution* and *creativity*.

Innovative Book Science needs to make use of *proactive applied scientific thinking*. This has been done so as to accumulate ideas for promising media and publishing projects. In turn, the latter require a new market strategy based on *the surprise effect*. Reader expectations and even dreams need to be exceeded<sup>9</sup>. What are the proactive techniques which underlie the present concept of the media science of book?

First, when the majority, willingly or not, agrees on the contemporary nature of the rule that in order to remain competitive in the digital era, publishers have to become exclusively virtual, all at once someone subdues virtual technologies to the classical print product.

Second, when the majority believes that it must adapt to the enticing offers of digital publishing, someone all of a sudden publishes a physical book which is indispensable for everyone's adaptation and reminds us that we are individuals consisting of atoms, not bytes.

Third, while sensationalism in communication inventions is only sought in the direction of the virtual, someone creates a ground-breaking paper book in an old Gutenberg format.

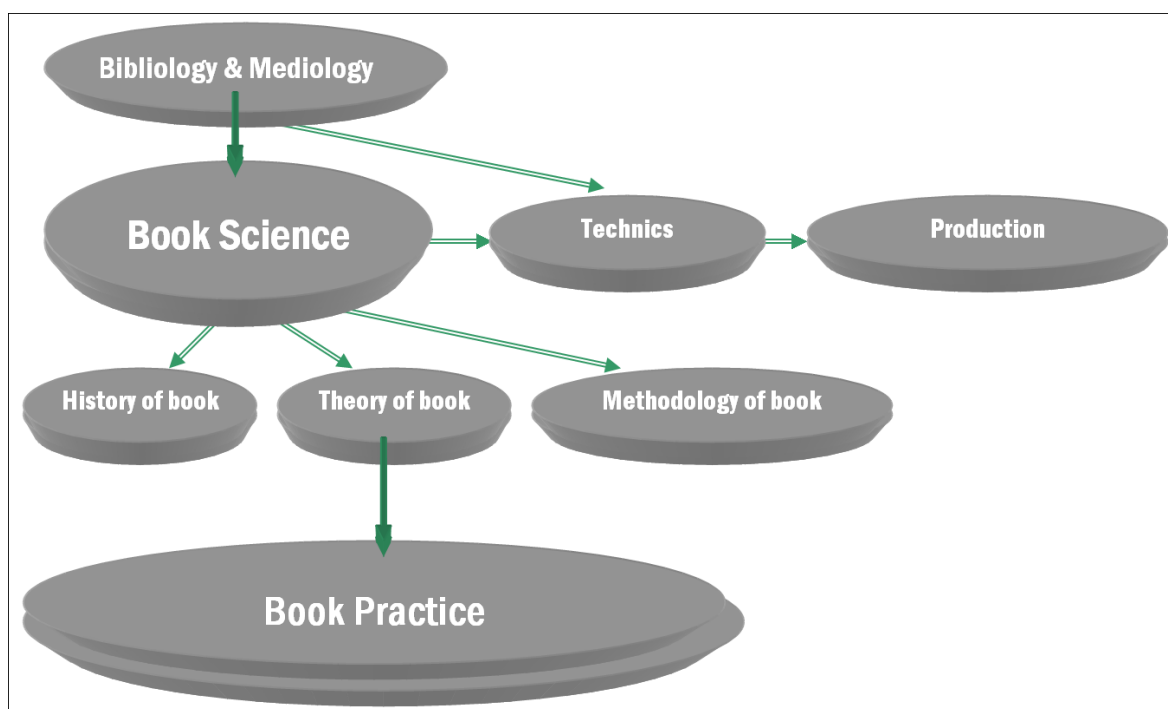
Fourth, while optimistic technocrats are trying to convince the world that the 100-year-old technology of the print book is emasculate in the face of the virtual future of the Web, someone publishes a book of the future based on its 5000-year work experience in religious rites.

To sum up, an innovative Book Science has to be surprising and unexpected even for the readership instead of remaining confined to reflections or responses to surveys or market research. Just like the most widely cited piece of advice toward the young generation by IT industry genius Steve Jobs, who used it as the final statement of his 2005 Stanford University commencement address, reads – “Stay hungry. Stay foolish.” Actually, when does an invention emerge? When everyone says that something is impossible but there is someone who does not know this – and thus makes the impossible possible. This is how civilisation has kept moving forward ever since Biblical times. President Harry Truman used to say that if Moses had read surveys, he would stay in Egypt. Henry Ford adopted the same course of action – when criticised for his lack of interest in market trends, he would retort: If I had listened to the voice of the customer, I should create no car but just a cart with faster horses.

It is most frequently claimed that the book's odds in the technologically uneven fight against new media are impossible to calculate because every prediction (using these very same technological means) would not take into account the psychological implications that determine the outcome of the conflict, thus leading to a change in user preferences. In the past no one could predict the transformation of epistolary communication into telephone communication. The emerging tendency for harder realism in contemporary users of information as well as the increasing skepticism in the “fallacy” of the written word is a consequence of the “effect of the virtual world”, of the “omnipresence” and “obviousness” caused by the impact of online daily life on the internet.

In fact, the future of the book can be predicted. This is possible if the latter is vindicated as a medium by placing it in the cross section between Bibliology and Mediology – that is, in the polymorphic area of the innovative educational conception of “Book Science”. Taking into account the remark by pedagogy scientist Y. Tyunnikov that the term “conception” should not be used indiscriminately only because it is “fashionable”, and that every educational conception should be designed according to the three-component system “theory – methodology/designing – practice” (Tyunnikov, 2012: 68, 80), a relevant visualization is offered below (Figure 1).





**Fig. 1.** Book Science Structure

## 5. Discussion

It is now time to draw attention to young researchers' stagnated motivation to examine the academic field of the book. The descriptive, investigative and narrative form of knowledge about the book typical of the 20th century, and the former socialist countries in particular, has been processed and reproduced over the years from a strictly materialistic perspective (the book as matter); nowadays, in the era of transition from print to digital, it collides with the new understanding of the book as mediamorphous essence. The old understanding of the book hardly makes a difference between the categories of "essence" and "appearance". Instead, it restricts the essence and content of the category of "book" to the familiar print edition, i.e. it wrongfully puts a sign of equality between *essence* and *appearance* (Belovitskaya, 2009: 113). Since 2010 numerous pretend science debates for and against electronic books have brought about seismic waves all over the world and to date scientists have not come up with a generally endorsed definition of "book", which diverts the focus away from the problems of the essence of the book and proves researchers' inability to harness the duality of the book, examine it terminologically as an undivided whole, and accept the changeable and non-obligatory connection between the physical form of the book and its perfect essence. The faltering independent thinking that is observed in young book researchers is particularly worrying as it even grows into fear of facing opposition against the acknowledgement that the book is the first medium in history which has experimented with, designed and multiplied the mass communication model. We often come across non-scientific reflections and discursive clashes involving people characterised by cognitive inhibitions, inner resistance, and deeply-held biased thinking, who reject the position of the book within the media spectrum. Such resistance, from a contemporary perspective, is fully unjustified.

The reticence and frustration among young researchers could be due to several reasons.

First, at the background of a growing consensus in business and practice that the book is a medium, we identify an absence of a comprehensive study on the topic. Theoreticians are not interested in the book. Traditional Book Studies have been developing primarily by means of a historical-sociological approach, more rarely through a philosophical one, and since recently, following the modernisation of library information activities, development has also taken place in an informational aspect. In Bulgaria, Book Studies are reduced to history of the book, rather history of materialism, i.e. production, storing and distribution. Most researchers only acknowledge the media essence of the book and go no further to condition it intuitively in their

work. Others support views that verge on the idea of the book as a tool of communication. Yet all remain in a mode of general declarativity instead of developing an essential analysis of the category “book” or devising a theoretical-communication concept of the book. Several of these authors pertaining to the communication-media paradigm (M. McLuhan, G. Grundmann, R. Estivals) have been analysed by book scientist Alisa Belovitskaya, who as early as 1987 expresses her indignation that the essence of the book as an objective phenomenon of social reality has not been and is not among the research tasks of world book researchers. It can be said that western Book Studies also remain indifferent to the problem regarding the essence of the book. Only in several works published in the mid-60s and the 70s–80s of the 20th century (French, Polish, Czech, Russian) do we find interest in the book as an object of book-centred rather than sociological, economic, psychological, pedagogical, literary critical or librarianship research. However, even the newest studies, which offer academic views different from traditional ones, do not examine the book as an independent phenomenon in its relationship with the “external environment” but the latter – social, cultural, economic, technological, and informational, is projected on the book instead. In other words, there is an attempt to judge the book solely on the basis of its presence in this environment referring only to personal experience, thus identifying it either only with its physical form (printed codex) or with a work (text, literature or copyright) (Belovitskaya, 1987). Research focused on studying and identifying the immanent essence of the book as an objective phenomenon of social reality is *yet to be conducted*, as A. Belovitskaya concludes more than 20 years later (Belovitskaya, 2009: 87).

Second, authoritative theoretical studies on the book published so far (which must be read and cited as a rule of thumb) offer a one-sided and reduced explanation of the phenomenon. Three popular reductionist versions are outlined below:

- From a philosophical point of view, the book is a *dialectical unity of science and art* because even though a book is a work of fiction, it always has cognitive value.
- From a semiological perspective, a book refers to *any “information object” denoting the visible or invisible world and available for use outside the actual field of the denoter.*
- From a social-psychological perspective, the book is a tool for impact (and interaction) which is equipped with indispensable *cognitive, educational, instructive, emotional and “motive”, strongly personalised functions.* Unlike television, which is the authoritarian “mediator” in communication, characterised by a technologically and technically guaranteed manipulative function, the “conservative” and “rigid” traditional mediator – the book, is primarily *formatively* programmed.

Third, the reductionist points of view about the book outlined above are a result of non-scientific contentions influenced by the stereotypes that “*the book is an object*” and “*the book is a commodity*”.

In order to overcome the stereotype of *the book as an object*, scientists need to, first and foremost, move away from the clichéd idea of the book as “ink on a white sheet of paper”, which limits the understanding thereof merely to the specifics of creation (production) and delivery. During the 60s and 70s of the 20th century, identifying the category “book” only with the paper body, i.e. the material-construction form of existence of the book, was common practice. However, today researchers need to be reminded of the book as a gnoseological phenomenon. As a thought result, the book is a reflection of reality, which bridges the gap between consciousness in reality (the author’s consciousness) and objectified consciousness (fixed in the text). Due to the discrepancy between the author’s consciousness and what is written on the physical carrier (most often paper), the book represents a subjective source, that is a carrier of non-absolute objective and true knowledge nonetheless reflecting to some extent objective facts, processes, phenomena, and ideas. Before becoming a mediator between author and reader, the book is already a medium between author and reality, on the one hand, and on the other – between author and text (the outcome of the reflection). Merely taking this argument into account will pass censure on any attempt to reduce the book to a physico-objective entity.

A stereotype that is deadly restrictive on scientific thought is the idea of *the book as a commodity*. Economic changes in the mechanisms of functioning of the system of the book as well as the absolute commercialisation of book publishing and book trading have forced contemporary Book Science immediately and indirectly to respond by dropping its theoretical and methodological level. It is as if we witness the revival of the Marxist understanding that the book is like any other

commodity having consumer value and yielding profit. Such a proposition would be justified if *the essence* (the book) and *the appearance* (the publication) matched – if the reader bought only the “commodified physical body” of the book and if that very same “commodified physical body” disappeared in the consumption process. *Commodities* are products manufactured for sale, and books become commodities only after becoming a part of the economic value chain. Outside it the book is not a commodity (Belovitskaya, 2009: 167-168). The book was not created in human society as a product for sale (Belovitskaya, 2009: 297). “The wrongful pragmatic-commercial attitude to the book only as *a commodity* and to book production only as *a manufacturer* of this commodity, which is rooted in the professional mindset of book practitioners and some theoreticians, has provided sufficient ground to re-examine the nature, essence, forms and social purpose of the book in a more detailed way.” (Belovitskaya, 2009: 42).

To sum up, the scientific approach to the category “book” requires disregard for a handful of old conventions and liberation from connotational and stereotypical thinking. For instance:

- A distinction should be made between “*the content of the category ‘book’*” and “*the content of the book*”, i.e. between the abstract scientific category and the specific human work.
- The categories “*essence*” and “*appearance*” should not be confused. There are still authors who wrongfully put a sign of equality between “*essence*” and “*appearance*” in their interpretation of the essence and the content of the category “book”, on the basis of which they reduce it to a printed copy.
- Relativise the general idea of the book as *a spirit* or *a monument*, which hinders scientific thought.
- Relativise the synonymous relationship between book and *work of fiction*, which is an expression of a one-sided philologisation.
- Expose the harmful synonymisation of the book with *an object* or *a thing*, which demonstrates one-sided and vulgar sociologisation.
- Relativise the synonymisation of the category “book” with the *printed copy*, i.e. the physical-material, constructive form of existence of the book.
- Realise the fundamental inadequacy and incorrectness of the formula “*the book is a commodity*”. The penetration of this formula into the higher education system transforms in economic terms the interest therein and leads to the mercantilisation of the educational need, reducing it to an entrepreneurial skill in the book-related business. It is important to remember that the essence of the book and the content of an adequate theory thereof are not subject to change in a market environment characterised by a shortage of economic, managerial and organisational knowledge and skills in book practitioners.

**All of the above is important for the future of science and future of the book alike because, as book scientist A. Belovitskaya explains, *old-fashioned interpretation and stereotypical understanding of the category “book”* restrict the possibilities of the book to compete with the modern tools for storing, transmitting and carrying information and predetermine it as a failed medium (Belovitskaya, 2009: 82, 86). The final reason for the reluctance toward the research as well as the low popularity of pursuing a university degree in book-related professions most probably is the strong dissonance and terminological discrepancy in the structure of higher education in this direction.**

In order to verify this assumption, we undertook an analytic-synthetic processing of primary sources. The information collected is from various parts of the world. 21 countries have been identified that match the search criteria. 52 degree programmes for education in the thematic field of the book have been established. The country distribution is as follows: Belgium (1), Bulgaria (3), Canada (3), Czech Republic (1), Estonia (1), France (1), Germany (12), Greece (1), Italy (3), Lithuania (2), Moldova (1), Netherlands (2), Norway (1), Poland (4), Romania (1), Russia (1), Slovenia (1), Switzerland (1), Ukraine (6), United Kingdom (3), USA (3).

Table 1 (*Appendix*) describes each programme under the following categories: programme / discipline offered; objectives; contents; faculty, university; country. The profile for each programme is standardised according to the essential information relating to the objectives of the research. The key empirical information is broken down into four basic categories using the IFLA matrix for Library, Archive and Information Science Education (IFLA, 2007) as well as that of the Royal School of Library and Information Science (RSLIS, 2005):

- I. Information on the types of educational systems of regional and geopolitical levels.

II. Information on the disciplinary (organisational) affiliation.

III. Information on the objectives – the stated goals for the level and type of professional work are summarised.

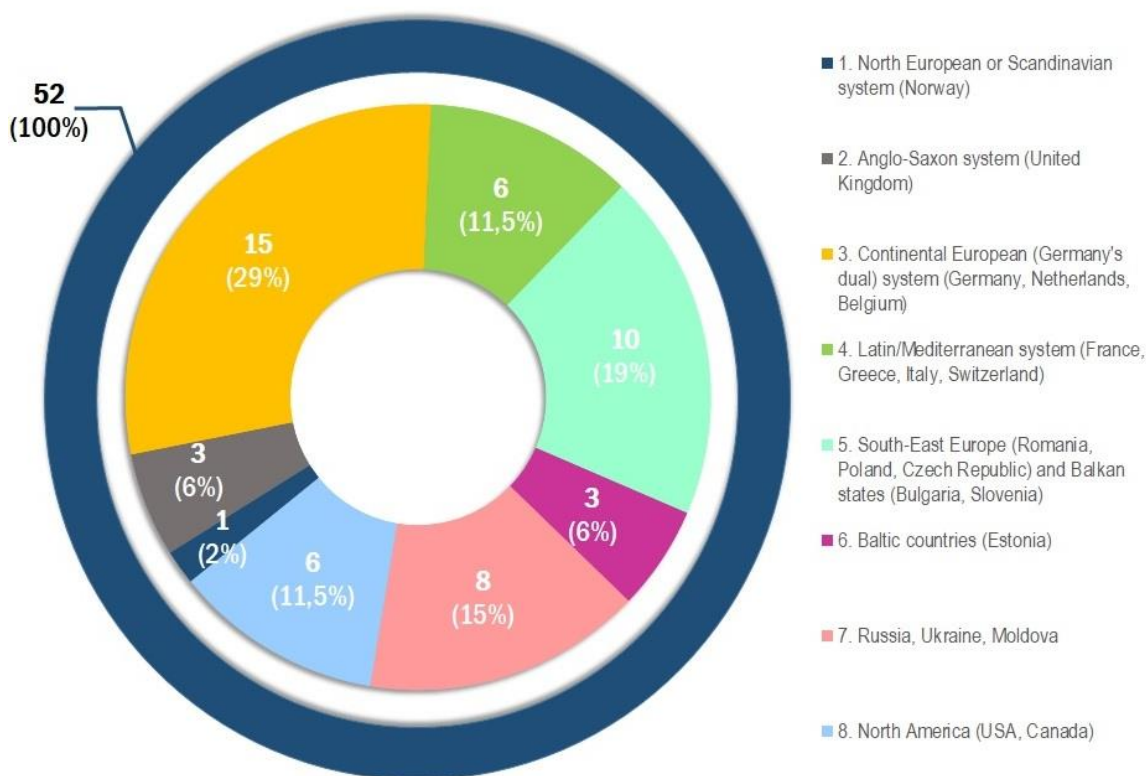
IV. Information on the contents (fields of expertise offered) – core courses and other selected topics, which are part of the programme, are listed.

The analysis and conclusions are made on the basis of processing the current information provided as well as on knowledge of the research and educational paradigms in the field of Book Science in Europe.

**Results based on the types of educational systems of regional and geopolitical levels**

The degree programme categorisation based on regional specificities demonstrates the broadest support for higher education on Book Science in countries with Continental Dual system (Germany, Netherlands, Belgium) – 15, as well as in South-East Europe (Romania, Poland, Czech Republic) and the Balkan states (Bulgaria, Slovenia) – 10.

Number of degree programs with a focus on the book (n = 52)

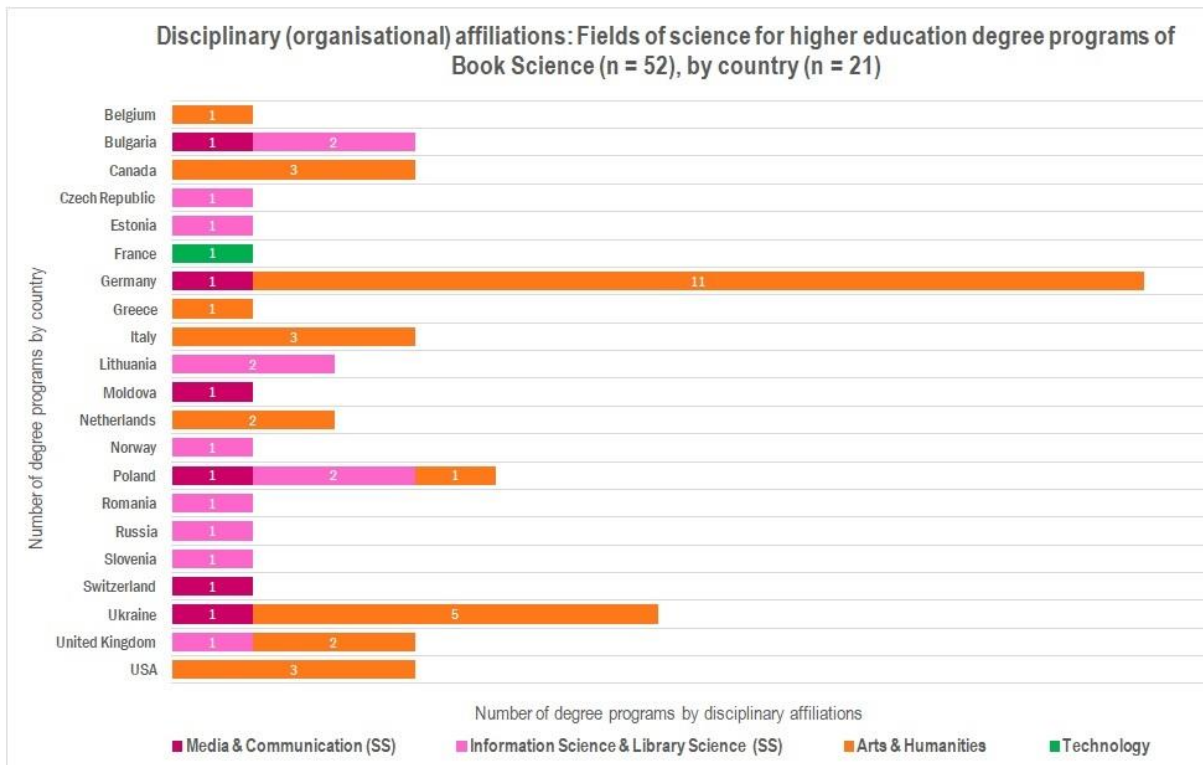


**Fig. 2.** Number of degree programmes related to studying the book (n = 52) by type of educational system

**Results based on the disciplinary (organisational) affiliation**

The degree programmes were categorised based on their organisational affiliation with a particular academic institution, within a specific faculty or specific academic department, or with a particular subject area or specific subject/discipline. Our purpose was to establish that the curricula of the Book Science degree programmes tend to belong to the subject area of Media and Communication (6), which is relevant to the cross-disciplinary paradigm of the innovative science of book – a combination of Bibliology (Book Studies) and Mediology (Media and Communication Studies).

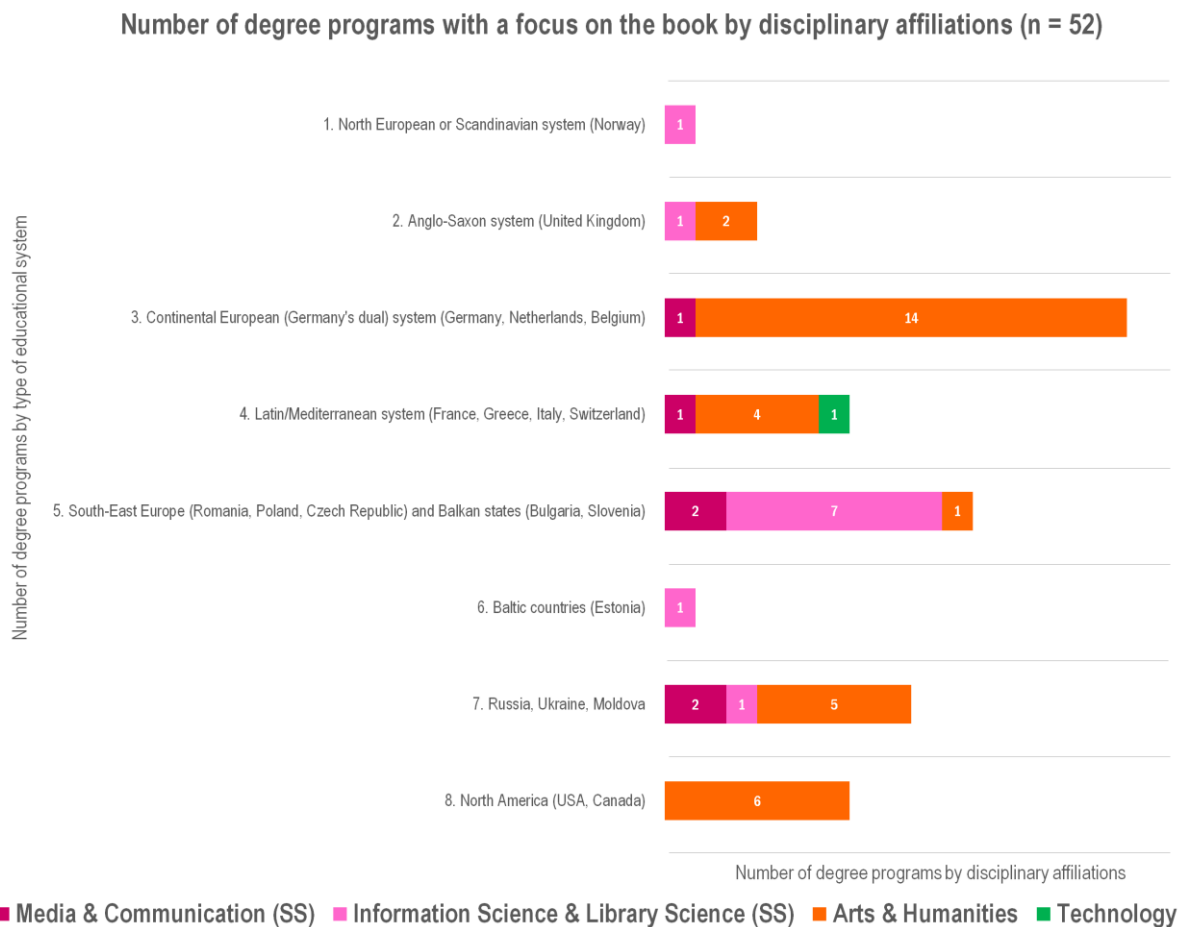




**Fig. 3.** Disciplinary (organisational) affiliations: Fields of science for higher education on Book Science (n = 52), by country (n = 21)

It seems that Arts and Humanities (32) are the most common academic umbrella for Book Science education programmes, which is a radically different field from the scientifically correct one, i.e. Social Sciences (19). Higher education on Book Science belongs to the tradition of the liberal arts in countries following Germany's dual system model (14) and in North America (6). Some of these liberal arts degree programmes stand out with their hardly relevant discipline-specific affiliations with Philosophy, Philology, Education. One such programme in France has even been placed within the extravagant academic field of "Technology".

Research has shown that large differences still exist concerning the objectives and contents offered in the field of the theoretical and practical knowledge of books. Very often, there is no clear difference between the degree programmes' goals, learning outcomes and fields of expertise offered; the programmes have similar names but different courses and topics; no target audiences are specified, etc. This lack of uniformity has been causing a number of barriers between higher education institutions that offer degree programmes in the said field, in particular related to the credit transfer processes, mobility, recognition of learning outcomes and the disciplinary skills that are expected from employees.



**Fig. 4.** Number of degree programmes on the subject of “book” based on their disciplinary affiliation (n = 52)

It is our belief that precisely the most advanced and recent knowledge about the book as a subject matter needs to be taught. Today such knowledge is generated within the paradigm of the book as a medium and as communication. Based on the classification of OECD FOS 2012 or FORD 2015, used by Web of Science, Scopus, and the global Academic Ranking of World Universities and QS World University Rankings, the academic focus of the higher education on Book Science has to fall into the subject category of Social Sciences, subject area of Communication or Media and Communication (OECD, 2015: 59). Considering the importance of the applicability of the knowledge acquired for the students’ future careers, we insist on the above for two major reasons: (a) Because one of the key goals of higher education is creating a broad advanced knowledge base for students (Council of Europe, 2007), comprising the newest, leading, most avantguard knowledge in the field; (b) Because the key stakeholders, mostly employers, are primarily from the communications, media and publishing industry so they require professionals with academic qualifications in the field of communications, media and publishing.

The situation in higher education outlined above demonstrates a shortage of conceptual knowledge and its weak structuring while the programs are incommensurable, not comparable and non-transferable between the states. The conclusion deduced from the research on worldwide higher education programmes focused on the academic field of the book is that unlike unified terminology and university degrees in the fields of law, economics, medicine, etc., book-related subjects and degrees could drive to desperation young people aspiring to obtain education therein. Instead of using the unified name “Book Science”, universities around the world choose highly specific or marginal wordings even for their bachelor programmes. Equally strongly dispersed is the subject orientation of the departments carrying out the scientific, academic and educational

activities in the field of the book in various countries. Some place the category “book” within Social Sciences, others – within Humanities, yet others – within Pedagogy, and even Arts. This state of affairs, on the one hand, demonstrates that the book is indeed a general scientific category as researchers from numerous fields show justified interest in it, and it is undoubtedly subject to examination by all sciences in its two fundamental aspects – form and content, text and medium. On the other hand, this lack of coordination raises doubts on the uniform understanding of “book” in all its aspects among scientists. Further to this comes the warning of entrepreneur Elon Musk: “It is important to view knowledge as sort of a semantic tree – make sure you understand the fundamental principles, i.e. the trunk and big branches, before you get into the leaves/details or there is nothing for them to hang on to” (Musk, 2015).

**Future research**

The expected effect of the present research work is the wide popularisation of the concept of the book as a key and non-circumventory mediator in the exchange of socially significant information, which provides sufficient scientific arguments and tools for project work across the system of the book as well as for predicting the future transformations in the overall lifecycle of the book (authors – mediators – readers). The idea is to reinforce and expand the scientific theoretical and applied use of the notion of “book as medium” as well as its genealogically adequate media status, which will ensure winning behaviour in the so called war for the reader in the Attention Economy and will pacify heated debates and negative forecasts regarding the future of the book and reading.

The proposed framework of the Media Science of Book is expected to:

⇒ foster conditions for innovative and proactive research perspectives as well as critical attitude and conceptual thinking with regard to the genealogy, evolution and metamorphoses of the book;

⇒ provide orientation in the primary and alternative sources of information in strategic planning used in scientific research and the applied fields of study of the book;

⇒ show ways for examining the book as a medium adequate to all civilisations, and book production – as a foundation of the creative industries, media industries and media culture.

An innovative Book Science could serve as a generator of research topics and project development ideas based on Bibliology and Mediology, as well as on the Communication and Information Sciences. Below are four potential directions which offer good prospects for research and implementation (Table 2).

**Table 2.** Possible future directions for study and research of the book

Dynamics	Statics	Pragmatics	Innovatics
<ul style="list-style-type: none"> <li>▪ The book as a soul and body (psychosomatics)</li> <li>▪ The book as a symbol and metaphor (semiotics)</li> <li>▪ The book as a function of the four “elements” (fire, water, air, earth)</li> <li>▪ The book as a conversation (open books, collective books, updatable books, etc.)</li> <li>▪ The book as a conflict (controversial books, provocative books, books aiming</li> </ul>	<ul style="list-style-type: none"> <li>▪ Eroticism of the physical book</li> <li>▪ Unnecessary book (dysfunctional – unsold, feedstock, second hand, scrap, etc.</li> <li>▪ Scary book (unwanted for reading)</li> <li>▪ Discomfort book (non-ergonomic, non-friendly, repulsive to readers)</li> <li>▪ Weird book (unusual in form or purpose, or undeciphered)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Book-object (book-art object), ready-made object and artist's book</li> <li>▪ The book as a personal belonging</li> <li>▪ The book as a thing (souvenir, etc.)</li> <li>▪ Edible books, books-to-eat</li> <li>▪ The book as a gift</li> <li>▪ Trivia books</li> <li>▪ Dummy books</li> <li>▪ Contraband books</li> <li>▪ The book as sculpture; the</li> </ul>	<ul style="list-style-type: none"> <li>▪ Alternative physical books (pre-paper and post-paper)</li> <li>▪ Mutations of the book as medium</li> <li>▪ Data Science of the book (the book as a relational database, the book as an informational artefact, the book as an intelligent interface)</li> <li>▪ Bioinformatics of the book (the book as biosis–abiosis, brain-computer, user-driven interface)</li> <li>▪ Biosemiotics of the book</li> </ul>

<p>to discredit s.o./s.th, scandalous books, etc.)</p> <ul style="list-style-type: none"> <li>▪ The book as a tool for manipulation (scientific, religious, psychological, work of fiction, etc.)</li> <li>▪ Dangerous books (fake books, bogus science books, sect books, terrorist books, negational books, discriminatory books, fundamentalist books, etc.)</li> <li>▪ Book-hypothesis</li> <li>▪ Prophetic book (books containing prophecies, predictions and providence)</li> <li>▪ Pygmalionics of the book – fetishism, transforming the object of desire into sculpture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Optimal book (book maximum, most expensive, most valuable, largest, smallest, most beautiful, ugliest, etc.)</li> <li>▪ Extravagant and eccentric book</li> <li>▪ Snobbery and books</li> <li>▪ Disposable book (on perishable media)</li> <li>▪ Empty book, “mute” or “silent” book (book without text)</li> <li>▪ Non-books (products made from books, which imitate books)</li> <li>▪ Anti-books</li> <li>▪ Bibliocadavers</li> </ul>	<p>sculpture as book</p> <ul style="list-style-type: none"> <li>▪ The book as accessory (books-jewellery, etc.); book accessories</li> <li>▪ The book as background (in photography, television or cinema)</li> <li>▪ The book in home décor</li> <li>▪ The book as indoor media</li> <li>▪ The book as ambient media</li> <li>▪ Architecture and design inspired by books (by their content, form or appearance) – media facades, media exterior, furniture, buildings, social landscape requisites</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ecology of the book (information ecology, media ecology)</li> <li>▪ Futurology of the book as a communication medium</li> </ul>
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It is likely that the present text may contain debatable hypotheses as well as a number of terms that do not belong to communication and information theory, which could seemingly pose difficulties for the narrowly specialised comprehension of the research proposition. However, all of these reveal an alternative examination of the phenomenon of “book”, that is, an alternative perspective which is not always innovative but rather anticipatory, voiced earlier in a different semiotic and semantic order which will help us rediscover the wealth of Book Science.

## 6. Conclusion

Further research could answer the following questions: Why is there such wide diversity of scientific, academic and education references to the field of the book in different countries? To what extent are these fields of book-related research or education taking into account any International Standard Classification of professions and economic activities or at least the subject groups of the Universal Decimal Classification (UDC)? Do the variability of terminology and the lack of global coordination in the names of university majors affect how and to whom books are taught? How does the professional qualification of local or regional groups of researchers affect the research tasks and outcomes of objective book studies? How does the academic qualification of university lecturers affect their teaching of knowledge about the book? Do differences in the names or the specific scientific field of the academic discipline affect the conceptual and balanced understanding of the book as the oldest medium? Further research on the relationship between the majors in higher education institutions focused on the cognition of the book, as well as of the dynamics of the research programmes on the book could lead to a broader and deeper understanding of the nature and power of the book for the management of social, economic and political processes on a global scale.

In his works “Problems of the philosophy of the book” (Kufaev, 1924) and “The book in the process of communication” (Kufaev, 1927), written 95 years ago, Russian book scientist Mikhail



Kufaev gave a most precise direction for the general scientific study of the book by demanding the clear demarcation of the area of integration and cohesion (i.e. mediality) between book and reader, between Book Science and the Psychology and Sociology of reading, between the needs and interests of the readers, their values as well as national and cultural traditions: *“Nature, humans and books make up the greatest triad of life. The author restricts himself through the inability to express his thoughts using words; his “clipped” thought is unleashed in the physical nature of the book through the artistic embodiment of this partial thought and the words of the book, in the social process of reading, experience and behavior, it is filled up with meaning, ultimately revealing all thoughts of the author, the reader, the critic, and the public figure. This process continues all the way while the book is being reflected on in space and time. Hence, the issue about life and man as a communicative being becomes one with the issue about the book. Solving these problems in science, literature, technology and the living environment is equally a duty and a feat.”* (Kufaev, 2004: 158-159).

Book-science educators and book researchers in the 21-st century are tasked with an irrevocable duty: If they defend and rediscover the media essence of the book, they will get closer to answering the question why and how everything happens in civilisation and human life. “The Book” might turn out to be a reference to the mysterious number “42” from “The Hitchhiker's Guide to the Galaxy” – the “meaning of Life, the Universe, and Everything”.

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### NOTES

\* Such synonymization is acceptable among sciences in different languages as far as the terms “mediology”, “medialogy” and “media studies” are concerned; another example would refer to “editorics” and “editology”, which have not been acknowledged by the world’s scientific terminology and stand for “science of publishing” or “publishing studies” only in French while in English or Italian they would mean “science of editing”.

<sup>2</sup> Informodynamics is a scientific discipline which studies the information phenomenon in the process of its self-organisation, the rules governing the information phenomena and their relations to the energy phenomena, including intellect, reason and all other negentropic information processes.

<sup>3</sup> Régis Debray (born 1940) is the author of “Course in General Mediology” (Debray, 1991), “Life and Death of Image” (1992), “Manifestes medialogiques” (1994), “Introduction to Mediology” (Debray, 2000a), „Transmitt” or „Transmitting Culture” (Debray, 1997; 2000b), etc. From 1981 to 1995 he is an official adviser on Foreign Affairs to Président François Mitterrand.

<sup>4</sup> Contributory work: Benjamin, Walter (1936). The Work of Art in the Age of Mechanical Reproduction. Repr.: London: Penguin Books, 2008.

<sup>5</sup> Contributory works: „The Gutenberg Galaxy: The Making of Typographic Man” (1962), „Understanding Media: The Extensions of Man” (1964), „The Medium is the Massage: An Inventory of Effects” (1967), „War and Peace in the Global Village” (1968), „From Cliche to Archetype” (1970).

<sup>6</sup> Contributory works: „Théorie de l’information et perception esthétique” (1973), „Sociodynamique de la culture” (1973), „Theorie des actes, vers une ecologie des actions” (1977), „Labyrinthes du vecu” (1982), „L’education aux communication et societe” (1986), „Psychosociologie de l’espace” (1998).

<sup>7</sup> The term “format” is used in the information-communication sense of a specific structure of the information object which allows it to be identified in the system of recording media (the so-called media for recording). The classification of the formats of the world's largest library catalogue WorldCat follows this principle. The book is one of a total of 19 formats and is represented by 8 sub-formats: e-book, thesis/dissertation, microform, continually updated resource, braille book, large print, audiobook (CD, cassette, eAudiobook, LP), e-singles.

<sup>8</sup> The meaning of polymorphism is illustrated by the hybrid creatures from mythology, archeology and art – cherub, sphynx, sirus, griffon, centaur, etc. which embody a synergy of power and mind, energy and matter, earthly and unearthly, nature and civilisation, to fulfill their mission of guards and mediators between different worlds.

<sup>9</sup> It is known that the majority of people are limited in their dreams which essentially represent people's current experience projected into the future. This statement was proved by the author's annual survey carried out among students majoring in Book Publishing at the Sofia University (from November 2010 to day). When asked "What is your dream book?" (an experiment on project-based thinking), students come up with interesting ideas which, however, do not extend beyond their personal practical and reading experience.

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## Appendix

**Table 1.** Basic information on higher education in Book Science at universities worldwide (2000–2019)

Programme/Discipline offered	Objectives	Contents	Faculty, University	Country
<b>Bachelor</b>				
1. Book Science	Students deepen and expand their knowledge in the key areas of the history of books, book trade, e-publishing and e-commerce.	The main focus is the “book” – the oldest and most important written medium for providing information, education and entertainment. Key topics: book production, book design, history of reading and the reader, research into the use of books.	Institute for the Study of the Book, Faculty of Humanities, Social Sciences, and Theology, University of Erlangen-Nuremberg, Erlangen	Germany
2. Book Science	Professionals in all fields of activity of the book trade and publishing industry (production, marketing, sales, copy-editing, press, public relations, etc.).	The medium “book” with its cultural, economic and technical characteristics is placed at the centre of the programme.	Faculty of Linguistics and Literature, Ludwig Maximilians University Munich, München	Germany
3. Book Science, Library Science and Bibliography Studies	Professionals in the field of library and information science; Professional title: librarian-bibliographer; bibliographer-specialist in book science, manager of publishing activities.	Book Science, Library Science, Bibliography Studies, Information Science, Documentation Studies, Book Trade, Library Management	Kharkiv State Academy of Culture, Kharkiv	Ukraine

4. Book Science, Librarianship and Bibliography	Professionals in the field of library and information science.	Book Science, Library Science, Bibliography Studies, Information Science, Documentation Studies, Book Trade, Library Management	Institute of Culture, Kyiv National University of Culture and Arts, Kyiv	Ukraine
5. Book Science, Library Studies and Bibliography	Professionals in the field of library and information science.	Library Science, Book Science, Bibliography Studies, Information Science, Documentation Studies, Book Trade, Library Management	Faculty of Culture and Arts, University of Lviv	Ukraine
6. Book Science, Library Studies and Bibliography	Professionals in the field of library and information science.	Library Science, Book Science, Bibliography Studies, Information Science, Documentation Studies, Book Trade, Library Management	Faculty of Communication and Management, Rivne State University of Humanities	Ukraine
7. Archive and Book Sciences	Supplies theoretical bases to book- and archive-related professions.	Book Studies, Archival and Paleographic Studies, Archival Science and Practice	Faculty of Letters and Philosophy, University of Udine	Italy
8. Book Studies	To provide libraries and other information institutions with academically educated and highly qualified information professionals.	Bibliography; Cataloguing; Indexing and Abstracting; Information Retrieval; ICT, Web and Database Design; Library Management; Library Holdings; Library Politics; Cultural Policy; Museum and Archival Studies	Department of Library and Information Sciences, Faculty of Philosophy, Sofia University	Bulgaria
9. Book Studies	Professionals in the field of information and knowledge management, librarianship, record management, development of information environment.	History of Books and Libraries; Publishing, Information Studies; Information Services; Bibliographic Description and Subject Cataloguing; Indexing and Abstracting; Collection Management; Information Systems and Networks; Database Management; Information Processes in Organizations; Marketing in Library and Information Work	Department of Information Studies, Faculty of Social Science, Tallinn University	Estonia
10. Book Studies	Students are acquainted with the methods and theories of book studies and provided with information on potential professions, so that they can plan their careers as early as possible.	The programme comprises modules from the core areas of contemporary and historical research issues relating to book studies; areas of Production, Distribution, and Reception of Books; Media History; Media Law; Media Economics	Department of Book Studies, Faculty of Philosophy and Philology, Johannes Gutenberg University Mainz	Germany
11. Book Studies	To educate professionals for specialist positions in any type of library.	Information Infrastructure of Society; Collection Building; Bibliographic Work; Information Processing; Library Services; Children's Readings	Institute of Library and Information Science, Faculty of Communication, Vilnius University	Lithuania
12. Book Studies	Professional work in libraries and media centres.	Types of Media; Computer Applications; Database Utilization; Research Methods; Research Project	Institute of Auxiliary Science and Book Studies, Faculty of Polish and Classical Philology, Adam Mickiewicz University	Poland

13. Book Studies	The student obtains the professional title of a graduate librarian and informatics specialist.	Information Science; Library Science; Computer Science	Department of Library and Information Science and Book Studies, Faculty of Arts, University of Ljubljana	Slovenia
14. Book Studies	Interdisciplinary teaching. The goal is to provide pathways for students interested in books as communication, material culture, and artistic media on a global scale.	The main focus is the “book” as multiform, extending beyond the printed codex to embrace all formats, from cuneiform tablets to electronic media. Interdisciplinary field: studying the book as a material, cultural, sociological, religious, and artistic artefact; the relationships between text and image.	College of Arts and Sciences, Oberlin College and Conservatory	USA
15. Book Studies	Interdisciplinary teaching and programming focused on the cultural, social, political, visual, and literary dimensions of the book and its fundamental role in shaping the transmission of knowledge over time and across cultures.	History, Design, and Archaeology of the Book; Bibliography; Reception Studies; History of Libraries	Center for Humanities and The Sweren Wogan Institute for the Study of the Book, Goucher College, Baltimore	USA
16. Book Studies	Provides an overview of interdisciplinary book studies and an historical context. Designed for bibliophiles who may be considering future work in publishing, libraries, teaching, graphic design and typography, book arts or information technology.	Theory and Practice of the Book; Art and History of the Book; Artist Book; Production and Transmission of Texts; Literacy and the Sociology of the Book; Technology of Reading and Writing; The Pleasure of Reading	Liberal Arts, Smith College, Northampton	USA
17. Book and Publishing Studies	The objective is to develop a comprehensive and networked understanding of the significantly changing book and media market. Opportunities as media are an important communication instrument in all industries and a value-adding component of companies.	Topics: Book and media industry; digitalisation, the interdependency of new technologies (e-books, iPad and social media); alternative business models; socio-cultural changes. The course comprises specific business and economic, legal and cultural knowledge for an occupation in the book and media industry.	Center for Book and Publishing Studies, Institut für Medien- und Kommunikationsmanagement, Universität St. Gallen	Switzerland
18. Bibliology	Supply of theoretical bases to book professions.	Research Libraries; Information Science; Editing	Faculty of Journalism, Information and Book Studies, University of Warsaw	Poland
19. Bibliology and Information Science	Professional work in all areas of library and information science	Library Science; Book Studies; Bibliography; Information Science; History of Books and	Institute of Science Information and Book Studies,	Poland

	and publishing.	Libraries; Library Automation; Research in Library and Information Science	Faculty of History, Nicolaus Copernicus University, Torun	
20. Bibliology and the Science of Information	Professional work in all areas of library and information science, including administrative and supervisory activities.	Library Science; Information Science	Department of Bibliology and Information Science, Faculty of Letters, University of Bucharest	Romania
21. Documentation and Bibliology	Professional work in libraries and documentation centres.	Documentation Studies; Information Science; Library Science	Department of Library Science, Institute of Higher Education – Social Work and Education Science Gent	Belgium
22. Book, Text, Communication	Provides professional education in archival, paleographics and textology, and preparation for communication research.	Book, Text, Communication; Archival, Paleographic Studies; Biblioteconomia	Faculty of Letters and Philosophy with Domicile in Arezzo, University of Siena	Italy
23. Book and Publishing Professions	Professional licenciate in book and publishing professions.	Book Trade, Publishing, Library	Institute of Technology, University of Michel de Montaigne – Bordeaux III	France
24. Book communications in the library and information field	Preparing future practitioners of libraries and the book business.	Information analysis in book publishing, the arts and business, Theory and methodology of book science, Book business, Information resources in the library, News and advertising information, Visualisation of textual information	Library and Information Department, St. Petersburg State University of Culture, Saint Petersburg	Russia
<b>Master</b>				
25. Book Science	Research-oriented programme. Prepares students for the specific economics of the media sector with a focus on the print industry and its digital counterparts.	Main areas: types of media and the usability of text-based communication, from the printed book to new media, audiobooks, digital media, hybrid media.	Institute for the Study of the Book, Faculty of Humanities, Social Sciences, and Theology, University of Erlangen-Nuremberg, Erlangen	Germany
26. Book Science: Book and Media Research	Promotes and trains for specialised occupational fields in the publishing industry, for which a higher degree is required, for example in the areas of online management, web 2.0 applications and social networks.	History of books and media as a whole, from manuscript culture to the e-book; production and distribution as well as reception of (book) media; methods for researching media usage behaviour; reader and consumer research.	Faculty of Linguistics and Literature, Ludwig Maximilians University Munich, München	Germany
27. Book Science, Library Science and Bibliography Studies	Professionals in the field of book science, library and information science; Professional title: Teacher of special disciplines at a higher education institute.	Book Science; Library Science; Bibliography Studies; Information Science; Documentation Studies; Book Trade; Library Management	Kharkiv State Academy of Culture, Kharkiv	Ukraine

28. Book Science, Librarianship and Bibliography	To provide the education necessary for effective operation as a professional librarian and experience in book science, library and information science.	Book Science; Library Science; Bibliography Studies; Information Science; Documentation Studies; Book Trade; Library Management	Institute of Culture, Kyiv National University of Culture and Arts, Kyiv	Ukraine
29. Book Studies	A research-oriented programme. The goal is to acquire the ability to evaluate the function of the book in a social and media context.	Knowledge of book market structures and the critical analysis of the factors in book market development; legal and economic issues; publishing management	Department of Book Studies, Faculty of Philosophy and Philology, Johannes Gutenberg University Mainz	Germany
30. Book Studies	A research-oriented, media-focused consecutive course. Conveys in-depth knowledge of structures, processes, contents, effects and history of media-based communication.	Book Studies as a Media Science; Book History; Book Economy; Book Marketing; Book Publishing; Act of Reading	Institute of Communication and Media Studies, Faculty of Social Sciences and Philosophy, University of Leipzig	Germany
31. Book Studies	Gives priority to the study of the relationship between text, book and culture as well as the anglophone cultural area.	Book Studies places the "book" at the centre of its theory and research in a historical and contemporary perspective. Main areas: Literary Studies, Cultural Studies, Linguistics.	Chair Book Studies (formerly Institute for Book Science & Text Research), English Department and the Department of Philology, University of Münster	Germany
32. Book Studies	Prepares students for publishers, book dealers, employees at auction houses and libraries.	Interdisciplinary approach to books. Knowledge is fixed and displayed in books, which thereby form an intrinsic part of information and communications media.	Faculty of Humanities, University of Amsterdam	Netherlands
33. Book Studies	Professional publishing and editing; education of information specialists.	Early Printed Books and Incunables; Bookbinding; Codicology; History of Bookprinting; History of Libraries; Modern Book Lay-out; Information Processing of Old Books (Cataloguing, Digitisation); Electronic Systems of Cultural Heritage	Institute of Information Studies and Librarianship, Faculty of Arts, Charles University in Prague	Czech Republic
34. Book and Digital Media Studies	Successful careers in a wide range of fields, including all branches of the book trade, libraries, the cultural heritage sector and the knowledge industry; employment as antiquarians, booksellers, librarians, curators, and project managers for publishing companies.	History of the Book; New Media and Society; Publishing Studies; Concepts in Information Transition and Digital Media Technology; Digital Access to Cultural Heritage. Detailed knowledge and important academic skills in the field of Book Studies.	Faculty of Humanities, Universiteit Leiden	Netherlands
35. Book and Media Studies	Prepares students for vocations in journalism, publishing, editing, communications and graduate programmes in information and library science.	Interdisciplinary and historical investigation of the role of printing, books, reading, and electronic and digital media in cultures past and present. Topics: manuscript and book production, internet publishing, book	Faculty of Arts and Science, St. Michael's College, University of Toronto	Canada



		illustrations, advertising, censorship, reading and entertainment alongside the development of mass media		
36. Book and Library Science	Professional work in book and library science.	Types of Media; Computer Applications; Database Utilization; Research Methods; Research Project	Department of Book Studies, Faculty of Philosophy and Philology, Johannes Gutenberg University Mainz	Germany
37. Book History and Print Culture	Prepares students to work in library service, in culture management, and in historical archives.	History of the Book; Cultural Heritage; Information and Society	Department of English, Faculty of Information Studies, Massey College, University of Toronto	Canada
38. Book: History and Techniques of Analysis	The programme provides a deep understanding of key issues and methods in book history and familiarises students with the invention, development, spread and transformation of printing.	Interdisciplinary approach to the study of the book world from the inception of the printed book in the 15th century to the invention of the mechanised press in the 19th century. Topics: Books and Readers in Early Modern Europe; Intellectual History; Paleography; Manuscript Studies; Documents and Sources; Bibliography	School of History, University of St Andrews	United Kingdom
39. Book History and Material Culture	Prepares students for careers in a variety of fields, from publishing to positions in libraries, archives, museums, galleries, and academia. Work placement options: publisher, bookseller, private collector.	Area of interdisciplinary study that explores the “book” as an artefact in material culture. Main topics: studying the material production, circulation and reception of books and print, rare books, manuscripts and special collections. Core courses: Cultures of the Book; Working with Collections	Centre for the History of the Book, Chartered Institute of Library and Information Professionals, University of Edinburgh	United Kingdom
40. History of the Book	Prepares students for careers in related fields, including academic librarianship, museum curatorship, publishing, art, and the print and antiquarian book trade.	Area of humanities that explores the different material forms the book has taken over time, from clay tablets to computer screens. Optional courses allow for in-depth analysis of the history of specific components of the book. Key topics: Textual Editing, Bibliography, Bibliometrics, Palaeography, Codicology, History of Printing, History of Publishing, History of Reading, Library History, Digital Publishing	Institute of English Studies, School of Advanced Study, University of London	United Kingdom
41. Children's Book and Educational Material	The aim is the education and training of specialised scientists, capable of exploiting children's books and designing educational material, acquiring the 'know-how' so as to contribute effectively to the encounter of new	Core courses: Theories of Children Literature; History and Pedagogy of the Media; Reading and Literary Reception in Education; Pedagogical Act and Theatrical Art; Psychopathology in School; Educational Material and	Department of Pre-school Education and Educational Design, School of Humanities, University of the Aegean, Rhodes	Greece

	educational, reading and social problems.	Mathematics; Inquiring Methodology - Research Methods; The Children's book as a Text and as an Object		
42. E-books	Interdisciplinary teaching focused on the possibilities and challenges concerning the production, distribution, reception, reading and other types of use of e-books. Prepares students for careers in academic and public libraries.	Psychology and phenomenology of reading; E-books as part of book markets and literary fields; E-books as material, technological, and cultural artefacts; E-books in Danish, Norwegian and Swedish libraries and markets; Copyright and licensing	Department of Archivistics, Library and Information Science, OsloMet – Oslo Metropolitan University, University of Borås, The Reading Center at the University of Stavanger, Oslo	Norway
<b>Doctoral</b>				
43. Book Science	Allows students to develop core competencies in book studies; research development in media, communication and information science.	Contemporary book knowledge, Media and Communication Studies, Research Methods; Research Project	Department of Press Journalism and Book Publishing, Faculty of Journalism and Mass Communication, Sofia University	Bulgaria
44. Book and Library Science	Research in all areas of book, library and information science.	Research project in Book, Library and Information Science	Department of Book Studies, Faculty of Philosophy and Philology, Johannes Gutenberg University Mainz	Germany
45. Book Science, Librarianship, and Bibliography	Prepares students for a career in research and teaching in the fields of book science and library science.	Research project in Book Science and Library Science	Department of Library and Information Sciences, Faculty of Philosophy, Sofia University	Bulgaria
46. Book Science and Documentation	Research topics based on individual interests.	Research project in Communication and Information Sciences; Book Science; Documentation Studies	Institute of Library and Information Science, Faculty of Communication, Vilnius University	Lithuania
47. Book Studies	Research topics based on individual interests.	Area of interdisciplinary research of historical and current, cultural and economic significance in the interplay of literary, cultural, book and media-scientific questions. Key topics: narrative and publication forms of literature and media; media cultures, media changes	Department of Book Science, Gutenberg Institute for World Literature and Written Media, Goethe University in Frankfurt, Johannes Gutenberg University Mainz	Germany
48. Book Studies	Research development in book and media science.	Academic research in the field of "book communication" as a complex system.	Institute for the Study of the Book, Faculty of Humanities, Social Sciences, and Theology, University of Erlangen-Nuremberg, Erlangen	Germany
49. Book Studies	Research in the fields of book science and culture.	New knowledge and important academic skills in the field of book studies.	Faculty of Letters and Philosophy, University of Udine	Italy

50. Book History and Print Culture	Prepares graduates for careers in teaching and research; Contributes to the development of theory in book and culture; Stimulates a scholarly interest in research.	Research project in the field of Library and Information Science; Research topics in Book and its Social Contexts; Archives and Records Management	Department of English, Faculty of Information Studies, Massey College, University of Toronto	Canada
51. Bibliology	Teaching researchers in the fields of book science, library and information science, contemporary book knowledge.	Research topics in Book Science, Library and Information Science	Institute of Library and Information Science, Jagiellonian University in Krakow	Poland
52. Bibliology, Librarianship and Bibliography	The programme's aim is to train researchers, teachers and top managers for libraries and information centres.	The main content comprises research methods, epistemology, preparation, and presentation of a dissertation. Individual study of the following courses: History and Methodology of Science; Foreign language; LIS and Informatics	Department of Library and Information Science, Faculty of Journalism and Communication Sciences, Moldova State University	Moldova

Sources: ARWU Shanghai Ranking, CWUR World University Rankings, THE World University Rankings, QS World University Rankings, RUR World University Rankings, DoctoralStudy.eu, Eduniversal Grou