

# KABA Subject Headings and the National Library of Poland Descriptors in Light of Wojciech Wrzosek's Theory of Historiographical Metaphors and Different Historiographical Traditions

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**Abstract:** The aims of this article are, first, to provide a necessary background to investigate the discipline of history from the knowledge organization (KO) perspective, and secondly, to present, on selected examples, a way of analyzing knowledge organization systems (KOSs) from the point of view of the theory of history. The study includes a literature review and epistemological analysis. It provides a preliminary analysis of history in two

selected universal Polish KOSs: KABA subject headings and the National Library of Poland Descriptors. The research is restricted to the high-level concept of historiographical metaphors coined by Wojciech Wrzosek and how they can be utilized in analyzing KOSs. The analysis of the structure of the KOSs and indexing practices of selected history books is performed. A particular emphasis is placed upon the requirements of classical and non-classical historiography in the context of KO. Although the knowledge about historiographical metaphors given by Wrzosek can be helpful for the analysis and improvement of KOSs, it seems that their broad character can provide the creators only with some general guidelines. Historical research is multidimensional, which is why the general remarks presented in this article need to be supplemented with in-depth theoretical and empirical analyses of historiography.

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## 1.0 Introduction

One of the basic goals of knowledge organization (KO) is to form the theoretical background to create new knowledge organization systems (KOSs) and improve existing ones. These tools have different structures and contexts of use, but their primary purpose is to organize documents to provide users with a convenient way to access and manage them as knowledge artifacts (Mazzocchi 2018). This means that KO is mainly based on the practical needs of researchers and others interested in gaining knowledge about a specific aspect of reality; but at the same time, it has to be deeply grounded in domain knowledge. It seems to be especially true in the context of domain-specific KOSs, where only detailed knowledge of a domain can form a sound foundation for all KO activities. The need for analysis of various domains is a fundamental task in contemporary

KO research (Smiraglia 2012), which emphasizes the differences between underlying assumptions, paradigms, objects of inquiry, and methods used in different disciplines, sub-disciplines, and fields.

The object of analysis in this paper is the domain of history. The point of departure is the definition taken from the *Oxford English Dictionary* (<https://www.oed.com/>), which defines it as, "The branch of knowledge that deals with past events; the formal record or study of past events, esp. human affairs. Also: this as a subject of study." History is a separate discipline with a tradition dating back to antiquity. The works from this period such as the Chinese *Spring and Autumn Annals* with commentaries (*Zuo Tradition* 2016), *Records of the Grand Historian* by Sima Qian (1993), the Greek *The Histories* by Herodotus (1996), and *History of the Peloponnesian War* by Thucydides (2017) are the classic works of Eastern and Western civilizations. Since its in-

ception in antiquity, the bulk of research has focused on political and diplomatic history. The state was stabilized in the nineteenth century with the professionalization of historical research (Finney 2005; Iggers 2005). Since the beginning of the twentieth century, and especially after the end of the Second World War, new research fields such as social history and historical anthropology have emerged.<sup>1</sup> This turn was connected with new research methods. A work of a Polish historian Maria Nietyksza (1971) entitled *Ludność Warszawy na przełomie XIX i XX wieku* is a representative example of the social history approach. The author analyzed the populace of the capital of Poland (then one of the cities of the Russian Empire), utilizing quantitative methods and a broad range of statistical sources. A different approach was taken by Anna Żarnowska (1985), who explored the life of workers in Warsaw at the turn of the nineteenth and twentieth centuries. The author used different primary sources than Nietyksza, biographical materials, among others, and asked different research questions. The subject of the work, to a large extent, was the workers' culture and their daily life.

In order to provide users with useful KOSs in the discipline of history, there needs to be an understanding of this mix of ideas, methods, and approaches. The aims of this article are, first, to provide a necessary background to investigate the discipline of history from a KO perspective, and secondly, to present, on selected examples, a way of analyzing KOSs from the point of view of a theory of history. The study makes use of a literature review and epistemological analysis. A starting point for the review was the International Society for Knowledge Organization (ISKO) KO literature database (<https://www.isko.org/lit.html>). Other sources, like Google Scholar (<https://scholar.google.com/>), were also used to find relevant literature. The main part of the paper is devoted to the use of epistemological theory developed by Polish historian Wojciech Wrzosek, who specializes in the history and theory of modern historiography, to analyze KOSs. In this respect, the paper refers to Birger Hjørland's epistemological approach (see 2002, 438-440). It also seems to be in line with the suggestion formulated by Richard P. Smiraglia (2015, 99), who pointed to specific work on impressionist artists, which, according to him, "could easily be viewed as a prelude to domain analysis of the French painting world." Therefore, it appears that KO researchers should try to exploit domain knowledge, including different theories, to advance KO.

The objects of analysis are selected Polish thesauri and indexing practices followed by indexers from institutions that have developed these tools. The paper refers here to two approaches presented by Hjørland (2002), that is, constructing special classifications and thesauri (see 2002, 425-428) and indexing and retrieving specialties (see 2002, 429-430). It should be stressed that the paper provides only a

preliminary analysis of history in two selected Polish KOSs: KABA subject headings (KABA) and the National Library of Poland Descriptors (NLPD). Furthermore, the analysis is mainly restricted to the high-level concept of historiographical metaphors and how they can be utilized in analyzing KOSs. The paper makes use of a specific historiographic framework as an example, but there are also other views that can be applied to the analysis of KOSs. Some of other authors working in the field of the theory and methodology of history are mentioned in the literature review.

The remainder of the article is organized as follows: Section 2.0 presents a literature review with special consideration of domain-analytical works in history and related disciplines. Section 3.0 presents Wojciech Wrzosek's concept of a historiographical metaphor as the theoretical background of research. The example of an epistemological analysis of two Polish KOSs from the perspective of two historiographical traditions and their historiographical metaphors is presented in Section 4.0. An analysis is performed on the structure of the KOSs and indexing practices of selected history books. A special emphasis is placed upon the requirements of classical and non-classical historiography in the context of KO. Lastly, a summary is presented.

## 2.0 Literature review

A sizeable body of research exists in KO on different domains, but only a small number of studies have focused on history. This section provides a review of the literature about domain analysis in general, along with selected papers and books related to the use of different approaches in KO and information science to the domain of history and related disciplines. Additionally, some chosen works about history, interesting from the perspective of the goal of this paper, are also presented. This part can be deemed an introduction to the domain analysis of history and the foundation for the sample analysis presented in the following sections.

The origin of domain analysis is connected with a proposal formulated by two Danish researchers, Birger Hjørland and Hanne Albrechtsen, in the 1990s (for a short history of a domain analysis see Smiraglia 2015). In a programmatic article published in *Journal of the American Society for Information Science*, Hjørland and Albrechtsen (1995, 400) advocated studying "the knowledge-domains as thought or discourse communities, which are parts of society's division of labor." Their research program was in contrast to popular then, yet limited approaches based on formal computer-related or cognitive analysis. After this initial step, Hjørland (2002) published the next seminal paper exploring eleven approaches within the domain-analytical

view, such as constructing special classifications and thesauri, indexing and retrieving specialties, and epistemological and critical studies. According to Hjørland (2002, 451), the combination of choosing methods and conducting research based on them can help “strengthen the identity of IS and strengthen the relationship between research and practice in IS.”

Other authors' works also contribute significantly to the theory and practice of domain analysis. Hanne Albrechtsen (2015), one of the creators of this new line of research, presented the origins of domain analysis as a new approach to KO and information science in a project on software reuse. Joseph T. Tennis (2003) focused on providing transferable definitions of domains using two analytical devices, namely, “areas of modulation” (the extension of a domain) and “degrees of specialization” (the intension of a domain). One of the issues addressed by Tennis (2003, 194) was how “the domain is positioned against other domains.” María J. López-Huertas (2015) discussed domain analysis in the light of interdisciplinarity, stressing different requirements for the analysis of disciplines in comparison to interdisciplines. Jenna Hartel (2003) focused on hobby domains as a subject of domain-analytical research. The point of departure for her study was the concept of “serious leisure” coined by Robert A. Stebbins and his taxonomy of hobbies. Hartel provided examples of employing domain knowledge as she, for instance, wrote in the context of analyzing changing forms of recipes, “Literature on the social history of cooking would explain how household cooking routines at the turn of the 19th century generated tacit cooking knowledge in children and obviated the need for detailed recipes” (Hartel 2003, 234). In the context of this paper, it should be underscored that there might be real differences between professional historians' and hobbyists' approaches to history, but there has not been such research from the perspective of KO so far. Maurine W. McCourry (2015) presented a model that can be used to assess whether library cataloging codes suit user needs. The author studied a domain of music, but as she suggested, her methodology could be used to research in other domains as well, e.g., in history.

A vital addition to Hjørland's work has been made by Richard Smiraglia. He is, among other things, the author of a thorough examination of formal studies employing domain-analytical approaches. The analysis, covering papers published in the years 2003–2014, revealed that the majority of studies used informetric and terminological techniques. Almost no studies focused on the production of guides to reference materials, yet Smiraglia (2015) stressed that they are instead the objects of applied activity in KO. Smiraglia also noted that only five domains had been studied three times as of 2014, namely archives, image searching, LGBT, physics, and social media. There were also four papers related to music and twenty-two

dealing with KO. Włodarczyk has also analyzed papers from relevant sources (2015–) such as the journal *Knowledge Organization* and *ISKO proceedings* to find additional materials using a domain-analytical approach. The analysis reveals that the state of domain analysis has not changed very much. The domain of KO is still extensively analyzed (e.g., Castanha and Wolfram 2018; Wang 2019). It should be stressed that these kinds of analyses should be seen as fundamental for the future development of KO, but a need exists to embrace other domains, especially within other research communities, like sociology, anthropology, history, and much more. Smiraglia's work can serve as a point of departure for every project considering domain analysis as its core paradigm. Together with Hjørland's definition (2017a) from the *ISKO Encyclopedia of Knowledge Organization*, the review prepared by Smiraglia gives insight into the frontier of domain analysis research.

Aside from the contributions presented above, papers on history have been written by KO researchers. Claudio Gnoli (2014) analyzed Marc Bloch's essay *The Historian's Craft* from the perspective of KO. Gnoli (2014, 129) was interested in Bloch's view on “how historical knowledge can be organized.” His article was divided into four themes: dealing with terminological problems, general rules of the organization of historical knowledge, historical sources, and interdisciplinarity of history. For Gnoli (2014, 134), the most important is the last aspect. He concludes: “The very delimitation of a discipline like history involves complex problems. All this should encourage experts of knowledge organization to adopt a cross-medial, interdisciplinary approach, if they really desire to be of help to researchers.” Interdisciplinarity as an important feature of history and how this domain is influenced by other disciplines will be further described in the next sections. It should also be stressed that Bloch's opinion is only one of many, although formulated by the renowned and influential historian.

Ann M. Graf and Richard P. Smiraglia (2014) carried out a descriptive study of entries related to race and ethnicity from the bibliography forming a basis for the authors of the *Encyclopedia of Milwaukee*, developed in the history department of the University of Wisconsin-Milwaukee. They utilized basic bibliometric methods analyzing, among other things, the productivity of authors, types of resources, and title term co-occurrence. Their research showed (Graf and Smiraglia 2014, 120) that “Concept population is shared with the domain at large but without the indicators of productivity that are found in domains representing research fronts.” The paper is a good example of an approach based on quantitative techniques, different from the approach applied by Gnoli (2014). Graf and Smiraglia (2012) also described the process of the development of a taxonomy used to organize the content of the

*Encyclopedia of Milwaukee*. They showed how knowledge of Milwaukee history and practical reasons informed specific decisions made during the activity. Although not explicitly, Malgorzata Pawlak and Karol Sanojca's (2018) study about the evolution of the internal structure of the *Bibliography of Silesia History* can also be regarded as KO research in history. The authors presented the changes occurring in the Polish and German bibliographic schemes and indexes.

The temporal aspect of reality has also been studied within KO and related fields. These studies are of both theoretical and practical nature. Jutta Frommeyer (2004) examined the chronological terms and period subdivisions in three subject heading systems, *Library of Congress Subject Headings* (LCSH), Répertoire d'Autorité Matière Encyclopédique et Alphabétique Unifié (RAMEAU), and Regeln für den Schlagwortkatalog, pointing out serious problems connected with these systems. The analysis resulted in a proposal for a new time-retrieval model and search interface. The issue was further explored by Vivien Petras, Ray R. Larson, and Michael Buckland (2006), who proposed the Time Period Directories, an infrastructure connecting named periods, events with dates, and locations. The purpose of it was to allow users to search for temporal information in a more effective way. One of the latest attempts to describe periods using linked data is a project entitled PeriodO. It aims to build a period gazetteer that includes different period definitions such as of the Iron Age. The authors (Rabinowitz et al. 2016, 55) hope that due to the improvement of tools associated with a dataset, they "illuminate the evolution of historical disciplines over time." It appears that with the development of PeriodO, the data can be used by information scientists specializing in KO to better understand the characteristics of temporal information in different disciplines, thereby developing better KOSs.

The researchers have also explored problems related to the cultural aspects of chronological information. Qing Zou and Eun G. Park (2011) presented a proposal for a Chinese Time Ontology, which enables reconciliation with the traditional Chinese approach to time, based on a luni-solar calendar, the titles of different emperors, and their reign periods. They stressed that their model can be employed to other non-Western time scales. The cultural aspects of temporal information were also explored by Arashanapalai Neelameghan and G. J. Narayana (2013), who presented a detailed study discussing both socio-cultural background and time issues concerning KOS.

Studies have been written on historical information systems (HISs) and practical implementations of specific KOSs in history. Javier García-Marco (1994) gave the basic outline of the use of KO in HISs. He described fundamental issues, like the influence of different theories on terminology, differences in treating historical systems by

heritage (archival) institutions and researchers, and the sketching out of a conceptual system. García-Marco (1994) also observed that a HIS, due to its complexity, is a good testing field for KO. This complexity results both from a long history of a domain and from its interdisciplinarity. Claire Beghtol (2001) also aimed at addressing a practical problem. She described the methodology employed in the *Iter Bibliography*, which is a part of the Iter Project, concerned with the Middle Ages and Renaissance, to develop high-quality KO. Further studies investigated the practical uses of different KOSs in history. For instance, Branka Purgarić-Kužić (2006) analyzed the practice of classifying materials related to history, according to the Universal Decimal Classification (UDC) in the National and University Library in Zagreb. Apart from the interdisciplinarity of history (which is widely acknowledged within the KO community), she stressed, among other issues, the disadvantages of geographical subdivisions for Croatia in UDC. This paper is only one example of numerous studies devoted to different classifications in various cultural settings. Although history was a topic of research in library and information science and KO, the analyses are scattered, and there is still a lack of theoretical background in the domain of history from the perspective of KO. This research generally did not consider epistemological stances and different discourse communities within a broad domain of history.

The KO studies on the humanities can be regarded as a source of inspiration for KO research on history. Hjørland (2017a, 441) pointed to Anders Ørom's (2003) discourse analysis of the domain of art studies as "a model of a domain-analytic study." Ørom examined different approaches (paradigms) to art history (traditional paradigms: iconographical, stylistic, materialistic, and "new" art history paradigms) and matched them with three levels in the domain of art (art exhibitions, documents, KOSs). The significance of the study lies in the analysis of the impact of different paradigms on the art domain, and consequently, on the theoretical framework of KOSs in this domain.

Archeology, which is closely related to historical research, has also been studied within KO. Teija Oikarinen and Terttu Kortelainen (2013) employed the content decomposition method to research a catalog of archeological artifacts. The study showed problems related to non-uniformity and omissions in the catalog, which partly resulted from the character of the archeological materials. The authors used both qualitative and quantitative analyses to describe the collection description. This approach, based on the combination of different methods, seems to be the most fruitful for domain analysis. It seems to enable information scientists to look at the analyzed domain from many perspectives complementary to each other. Quantitative analysis can provide important basic information



about, among other things, the terms and concepts used, but it does not answer questions concerning the motivations of researchers. It appears to be especially relevant to social science and humanities research (see Hjørland 2002, 439-440). Another study on a domain of archeology is authored by Edmund Lee (2017), who presented, among other things, the use of KO in archeological research in the United Kingdom and the impact of KO on new historical narratives.

KO studies focused on archival science are of high value for historical research. For instance, Thiago Henrique Bragato Barros and João Batista Ernesto de Moraes (2010) carefully analyzed two archival science manuals using discourse analysis to find the differences and similarity within the domain. José Augusto Chaves Guimarães and Natália Bolfarini Tognoli (2015) discussed provenance, a fundamental concept of archival science, as a domain analysis approach. Analyses of archival science from the perspective of KO seem to be especially important for historians and also for the creators of KOSs in history due to archives being a gateway to primary sources, the essential materials for historical research.

Among the aforementioned studies, Gnoli (2014) and Ørom (2003) are especially interesting in the context of this study because of the objects or methods used. The first is one of few attempts at combining the theory of historiography and KO. The author rightly emphasized the importance of interdisciplinarity in the context of historical research. Ørom is an example of a relatively unusual approach to the humanities in domain analysis based on discourse analysis. Discourse and epistemological analyses can potentially provide the creators of KOSs with additional knowledge to broaden their view of a domain, and thereby lead to the construction of a better KOS (see Hjørland 2002, 439-440).

The KO community can also try to exploit domain knowledge to shape the evolution of KOSs (Smiraglia 2015, 100). Plenty of research studies have been written on historiography and historical methodology, which are highly important for constructing well-suited and useful KOSs in history. Due to the substantial body of literature, only some example sources are mentioned: 1) encyclopedias and dictionaries regarding historiography, which consist of entries for individual historians and regional and topical historiography (e.g., Boyd 1999); 2) books containing an overview of general (e.g., Schneider and Woolf 2011) and national historiography (e.g., Grabski 2006); 3) specific time periods in the history of historiography are also the topic of monographs, particularly about a significant change in historiography that occurred in the twentieth century (e.g., Iggers 2005); 4) numerous individual works and edited books on different fields (e.g., Perks and Thomson 2016), methods (e.g., Gregory et al. 2018), and

specific topics (e.g., Heuman and Burnard 2011); and lastly, 5) scientific journals devoted to the history or theory of historical research, for example, *Klio Polska*, *History and Theory*, *Rethinking History*, *Historical Methods*, and *Historyka*, which can be regarded as useful sources for researchers aiming at analyzing history from the point of view of KO. However, as Georg G. Iggers (2005) underlined, one should be careful about different theories, because some of them differ considerably from the practice of historiography. Iggers (2005, 100) wrote that

a number of theorists in France and the United States, mostly coming from literary criticism, such as Roland Barthes, Paul De Man, Hayden White, Jacques Derrida, and Jean-François Lyotard, frequently identified as postmodernists—a label some of them would vigorously reject—would call for this surrender and question the distinction between fact and fiction, history and poetry. They viewed history as having no reference to a reality outside of its texts. But as we shall see, practicing historians seldom went so far ... Not only did historians continue to work conscientiously and critically with sources, but, ... they also adopted methods and findings from the social sciences. Thus, they by no means gave up the conviction that the historian must follow rational methods to gain truthful insights into the past.

As a consequence, it is worth noting that, apart from analyzing studies into the theory of history, a more detailed empirical analysis of practical examples of historical writing is needed. This kind of research can utilize, for example, bibliometric methods like word co-occurrence.

The review of the literature presented above shows that no detailed study concerns the broad domain of history from the perspective of KO. Moreover, only a few works apply domain analysis to the humanities. It illustrates that there is a need to conduct more such investigations (cf. Smiraglia 2015). It should be noted, however, that this study is only a preliminary investigation into the domain of history, and more work is needed.

### 3.0 Wojciech Wrzosek's theory of historiographical metaphors

This section is devoted to the concept of historiographical metaphor as presented in Wojciech Wrzosek's (1997) book entitled *History, Culture, Metaphor*. The rest of this section is based on this author's description and analysis. The author described a breakthrough in French historiography as a change between the classical and non-classical. Although Wrzosek (1997, 12) focused on a single country's historiography, he stressed that the changes that occurred within

it “reflect certain global trends.” The partial convergence can be seen, for instance, in the case of French and Polish historiography from 1956 through 1989. However, it must be noted that significant background differences existed (Pleskot 2012).

Wrzosek (1997) defined a historiographical metaphor as a fundamental category that forms a basis for historical knowledge, i.e., the works of historians trying to describe and understand the past. It should be stressed that metaphors are not exclusive to a domain of history but are pervasive in all domains. As a consequence, scientific metaphors deserve the KO community's attention (Hansson 2013). This approach was adopted by Marek Hetmański (2014), who analyzed the role and characteristics of metaphors in KO.

Wrzosek (1997, 47) emphasized that

The metaphors which are dominant in a culture, including those on which a certain discipline of scholarship is based, provide models—so to say—of the field of study.” He later clarified, “Such metaphors, being embedded in culture, become neutral, and (eventually) objective, segments of the commentator's thinking. In other words, they govern the interpretation of phenomena without being controlled by anything. Thus, metaphorical clauses impose a certain understanding of the world, and turn into heuristic models of sorts. (47)

The basic information about different historiographical metaphors is presented below.

### 3.1 Classical historiographical metaphors

According to Wrzosek (1997), significant differences exist between classical and non-classical historiography that arose from the change of underlying historiographical metaphors. Classical historiography embraces different schools and approaches, but they all employ such elements as a broadly applied, anthropomorphic view on historical phenomena and traditional historiographical metaphors of development and genesis (with linear time). They are strictly related to each other. The anthropomorphism can be seen not only when the object of the analysis is a life of a single person like a king or a famous hero, but also when traditional historians describe the history of a nation, organization, or society. Each subject is treated like an individual who is a direct maker of history, shaping a historical process. The anthropomorphism of classical historiography is related to a concept of development and genesis. Wrzosek (1997), citing the work of Robert A. Nisbet, stressed that development is seen by these historians as spontaneous, inborn, continuous, indispensable,

and directional. The metaphor of genesis, important for historiography, can be understood, according to Wrzosek, twofold. First of all, it can be understood as a set of circumstances that are associated with and precede a specific phenomenon (like the genesis of feudalism) and secondly, as “chains of consecutive incidents which are connected by the presumed generation of some by others” (Wrzosek 1997, 46). The concept of genesis, in turn, is related to the concept of time, which is “linear, astronomical time, ordered in the triad past—present—future” (Wrzosek 1997, 117).

### 3.2 Non-classical historiographical metaphors

Wrzosek (1997) maintained that the change of historiographical metaphors resulted in the advent of the French non-classical historiography. The main difference lay in a shift of focus from the “objective” description of related events to the description of human life as a whole. New historians have focused on fields that their traditional counterparts were not interested in, such as everyday life. They started utilizing two main approaches: modernist (quantitative-based social and economic history) and non-modernist (historical anthropology). Wrzosek (1997) divided the modernist historiography into moderate and extreme. One of the features differentiating them is the existence or the lack of a single determining factor. Wrzosek added that Fernand Braudel's modernist view does not indicate it, but other historians, who are called extreme modernists by him, point to different spheres of social life, e.g., economics or demography, as pivotal points for understanding historical development and change. The latter approach is related to quantitative history (Wrzosek 1997). The author stressed that modernist historiography refers to new ideas such as Ludwig von Bertalanffy's systems theory, Claude Lévi-Strauss's theory of structuralism, and Émile Durkheim's view on sociology. In contrast to traditional historiography, the position of humans in this variant of historiography is significantly different. New historians are more interested in processes and structures than in the lives and activities of individuals, which marks a fundamental shift in historical research. It marks a departure from the perspective of direct anthropomorphism. The changed metaphors involve a different concept of development, the modified concept of genesis, “the categories of determinism which are radically different from those of the genetic or cause-and-effect determinism of traditional historiography” (Wrzosek 1997, 99), and the concept of time completely different from linear time. Once again, these metaphors are strictly related to each other. Wrzosek (1997) described these metaphors using the example of Fernand Braudel's work. According to this view, the development is seen as non-linear with many possible paths.

The historical world is a complex social system consisting of different subsets such as geographical regions and social groups that are connected by relationships. The system is shaped by different processes, of which the most important are the processes of long duration, almost immutable, like a relationship between a human and the natural world. These processes determine the identity of the system. For new historians, a cause-and-effect relationship is not as crucial as for traditional historians who focus on events. They use a different intra-structural concept of genesis, where links between different substructures and changes of substructures are the most important determining factors. The cause-and-effect determinism has been replaced by functional determinism. A new kind of determinism also influences the concept of time. As Wrzosek (1997, 117-118) stressed,

modernist historians are no longer able to assign precise dates to patterns of economic evolution, booms and slumps in the market or instances of cultural diffusion; they may only indicate the duration of such developments and their temporal correlation with other processes. This is because it is impossible to assign a precise date to such occurrences as Protestantism, the baroque or the influence of Islam.

Wrzosek (1997) wrote that the advent of non-modernist historiography has originated from the objection to the structuralist and functionalist metaphors of modernist historiography based on economics and sociology. The creators of this new line of research have turned to anthropology as a focal point. The central concept has become the culture and people as actors in different cultural settings. According to Wrzosek (1997, 141):

The genre's luminaries, along with foreign (i.e., non-French) scholars who follow in their footsteps, try to preserve such components of the ideology of the Annales school as would allow the maintaining of traditional historiography's humanistic value: the tenet that the human being is the focus of history. They want to sustain the human being's prominent position. Nevertheless, the human being is now deemed not the agents of events, but the creator of and participant in culture, and the vehicle of civilization. By means of examining the individual or an anonymous group of individuals, we may fathom the universal and supra-individual rules that inflexibly govern a certain society or epoch.

The important line of research has become investigation on *mentalité* (mentality), understood by Georges Duby in his article *Histoire des mentalités* from 1961 (as cited in

Wrzosek 1997, 136) as "a system of images and concepts that produce different harmonies in the various social groups and strata making up society."

Wrzosek (1997) explored and described two distinct approaches to historiography, classical and non-classical, that emphasize different aspects of historical existence. He noted (1997, 124-125),

The two images of the human being, the traditional one and that depicted by non-event historiography, are mutually incompatible. It seems impossible to develop a coherent historical narrative that would use both approaches—the process-centered and event-based. In order to do this after all, one would have to establish explanatory links between process-centered and event-based reality, *inter alia*, by proving that functional determinism may be reduced to cause-and-effect brand—or *vice versa*; if this is unfeasible, then both spheres of discourse remain incommensurable with respect to explanation.

This problem was exemplified by Wrzosek (1997) by Fernand Braudel's (1995) work entitled *The Mediterranean and the Mediterranean World in the Age of Philip II*, which failed to achieve this goal.

The historiographical metaphors can be used as a high-level backdrop for analyzing KOSs in history and indexing historical works. The next section contains a review of sample universal indexing tools used in Polish libraries from the perspective of historiographical metaphors, and consequently traditional and "new" history. These metaphors help to uncover the epistemological backbone of these systems and identify possible improvements and changes.

#### 4.0 KABA subject headings and the National Library of Poland Descriptors from the perspective of different historiographical traditions and metaphors

The section presents two Polish universal KOSs through the lens of classical and non-classical historiography and Wrzosek's historiographical metaphors. First, both systems are briefly introduced. Secondly, the structure of KABA and NLPD and indexing practices are presented in relation to classical historiographical metaphors. Lastly, these systems are analyzed from the standpoint of non-classical metaphors and interdisciplinarity as a basis of non-classical historiography. Examples of the structure of KOSs and book descriptions are representative; that is, they have been selected to illustrate standard practices followed by developers and indexers.

#### 4.1 Introduction to KABA subject headings and the National Library of Poland Descriptors

The two Polish universal systems analyzed here differ significantly from each other, as their history, structure, and indexing rules are markedly different. KABA, managed by the NUKAT Center, is used by the network of Polish academic and scientific libraries. It originated from work carried out in the early 1990s aiming to automate library processes at the Warsaw University Library. After careful consideration, it was decided that the basis for the creation of a subject access tool would be a French subject heading system, RAMEAU, with *Library of Congress Subject Headings (LCSH)* and *Répertoire des vedettes matière de l'Université Laval* as secondary sources. The French subject headings were a source of relational structure and rules of application of specific headings and subdivisions for the Polish thesaurus (Kotalska 2002). Barbara Kotalska (2002, 154), an author of the article presenting the cooperation between KABA and RAMEAU teams, cautioned that "RAMEAU headings are subjected to a naturalization process." However, this translation process sometimes resulted in the use of headings and subdivisions inappropriate for Polish historiography. For instance, a chronological subdivision "1870-1914" copied from RAMEAU is used in KABA to index books about Polish history. This period is especially significant for France and Germany, but not for Poland, because the starting date is connected with the outbreak of the Franco-German War. However, with time, KABA has gained more independence; i.e., more and more decisions have been made independently, yet older headings and subdivisions have not been corrected.

The team responsible for the development of KABA consists of subject specialists. However, each person usually manages vocabulary for more than one discipline. For example, Iwona Ruśc deals with economics, geography, psychology, pedagogy, and sociology. Paweł Rygiel is responsible not only for history, but also for law, religious, and art studies (NUKAT 2018). It seems impossible that one person could have substantial knowledge of all these domains. For instance, Rygiel is a specialist in archeology. Consequently, the question arises whether the KABA vocabulary for different domains is developed at the same level of granularity.

Although there were some attempts to use KABA in a novel way (e.g., Mazurek et al. 2014), it has remained a traditional, pre-coordinated system based on headings and subdivisions used mainly in Polish academic libraries. The team responsible for the development of the KABA system has made some improvements, e.g., it has introduced new genre/form headings in line with changes introduced in the Library of Congress. It should be noted, however, that the accepted rules are complex in comparison to the

*Library of Congress Genre/Form Terms for Library and Archival Materials* (Włodarczyk 2014).

NLPD, the system developed in the National Library of Poland, was introduced at the beginning of 2017. It has been recently presented by Joanna Cieloch-Niewiadomska (2019), so in this article, only some fundamental rules of this system are presented. Apart from the article mentioned above, information about the project is also available at the special website maintained by the National Library of Poland (<http://przepisy.bn.org.pl/>). The description provided below is based on these documents. The main source of the vocabulary, at least in the first stage of the project, is the previous system called the National Library of Poland Subject Headings (NLP SH), which utilized the division into headings and subdivisions. The NLP SH thesaurus is now being transformed according to the rules of NLPD, and after the completion of this process, it will serve as a basis for retrieval and indexing. The analysis of the NLPD structure presented in the article is performed using examples from this unfinished tool, but ready-to-use descriptors have been selected.

In contrast to NLP SH, NLPD is a post-coordinated system based to a large extent on common usage. In comparison to KABA, the vocabulary is characterized by a much more specific level of granularity; i.e., the creators have tried to separate individual pieces of information as much as possible. NLPD is formed by a set of independent, domain-specific thesauri, but connected and presented in one interface. This structure of separate domain-specific thesauri seems to ease the issue of domain knowledge incorporation but may restrict interdisciplinary development of the system.

The NLPD vocabulary is divided into twelve facets: "form and type," "genre," "audience," "cultural area," "subject," "subject: person," "subject: corporate body," "subject: event," "subject: place," "subject: work," "subject: time," and "discipline and approach." The structure described above is not fully employed due to practical limitations of the software used by the National Library of Poland, where only nine facets are available, and some descriptors are wrongly assigned to facets. For instance, genre descriptors are presented in the general "subject" facet.

The development of NLPD's domain-specific vocabulary is addressed differently from the solution adopted at the NUKAT Center. During the NLPD project starting in 2015, a number of subject librarians, e.g., in history, economics, and ethnology and anthropology, have been employed for, among other things, "managing subject thesauri, and designing new descriptors according to the demands of the publications within the discipline and this discipline's development" (Cieloch-Niewiadomska 2019, 46). Cieloch-Niewiadomska (2019) provided examples of



vocabulary enhancement resulting from the employment of specialists.

#### 4.2 KABA subject headings and the National Library of Poland Descriptors from the perspective of classical historiography and its historiographical metaphors

##### 4.2.1 The structure of KOSs

The classical metaphors of development and genesis can be tracked in the structure of both KOSs. This type of metaphor is especially prevalent in the context of event-related political historiography. Thesauri may show the genetic sequence of events and the linearity of development. To analyze KOSs from the perspective of classical historiographical metaphors, they should contain well-developed vocabulary related to different kinds of events. Both KABA and NLPD are in line with these requirements in this respect. According to classical metaphors, these events can be easily presented on a timeline as points in time because they are more or less precisely dated and linked by a cause-and-effect relation. As an example for further analysis, the shortened, translated versions of records representing the First World War are presented and analyzed below.

##### NLPD

World War I (1914-1918)  
RT Paris Peace Conference (1919-1920)  
RT Assassination at Sarajevo (1914)  
NT Battle of Gorlice (1915)  
NT Battle of Konary (1915)  
NT Battle of Łowczówek (1914)

Polish Legions (1914-1917)  
RT Battle of Konary (1915)  
RT Battle of Łowczówek (1914)

##### KABA

World War, 1914-1918  
RT World history—20th century

World War, 1914-1918—Campaigns and battles—Poland  
NT Gorlice, Battle of (1915)  
NT Konary, Battle of (1915)  
NT Łowczówek, Battle of (1914)

World War, 1914-1918—Causes  
RT Sarajevo (Bosnia and Herzegovina)—1914 (Assassination)

In the light of traditional historiographical metaphors, it is not enough to code the exact date of the event, e.g., the day and time of a battle. The genetic relationships between the events need to be explicitly shown. The need for implementation of such causal relations in information systems has been already identified by different researchers (e.g., Petras et al. 2006). In the records presented above, several traces of this way of thinking can be found. First of all, it can be seen in the fragment related to the assassination of Archduke Franz Ferdinand of Austria. The descriptor in NLPD, which represents this event, is directly related to the descriptor “World War I (1914-1918),” which reflects the genetic relationships between the assassination and the outbreak of the First World War. In contrast, the creators of KABA have added another level of the division with the subdivision “Causes,” whose name directly refers to a metaphor, yet it is the only event mentioned in this record. Additionally, the term “World War I (1914-1918)” in NLPD is related to a descriptor representing the Paris Peace Conference. This way of thinking is not included in KABA since headings for meeting names are not connected with topical terms. The examples provided above are also in line with a linear time metaphor.

However, the two systems do not include other associative relationships that can be established through the point of view of classical historiographical metaphors. The set of narrower terms for the First World War in NLPD is formed by the names of different battles, whereas in KABA, once again, in compliance with the grammar of the system, there is one more hierarchical level established by the addition of subdivisions “campaigns and battles,” supplemented by the names of the countries or regions. When one looks at these examples from the perspective of classical metaphors, new associative relationships could be established between related events. It should be underscored that several choices always exist. For example, battles form different lines of successive stages. In the battle of Łowczówek (22-25 December 1914), the First Brigade of the Polish Legions, which fought on the Austro-Hungarian side, faced the Russian forces. After the battle, which did not change the strategic situation considerably, the next more significant clashes at this part of the Eastern front line broke out during Gorlice-Tarnów Offensive of Austro-Hungarian troops. It was the logical aftermath of the battle of Łowczówek, and consequently, an associative relationship could be established. The next battle fought by the First Brigade was the battle of Konary (Klimecki 1993), so it could also be related to the descriptor representing the battle of Łowczówek. These are only two examples of possible choices. In comparison to KABA, the option for the creation of such relationships in NLPD is facilitated due to the establishment of the relationships between the de-

scriptor for the Polish Legions and descriptors representing different battles in which Polish soldiers fought.

It should be noted, however, that there are serious problems associated with the classical metaphor of development. Wrzosek (1997) contended that this metaphor has become intertwined with other metaphors, e.g., of progress and evolution. For the history of a concept of state, for instance, it means that there are initial, intermediate, and final stages of development. The last one can be differently conceptualized, for instance, as Western democracy or a communist state but always as a highly desirable and final stage. Contemporary research and practice show that this view is too simplistic; hence, it cannot be (and is unadvisable to be) directly included in the KOS structure. It shows the limitations of including traditional metaphors when other modernist and anti-modernist approaches are vital and accepted within the research community.

#### 4.2.2 Indexing practices

Indexing can also be analyzed from the point of view of classical historiographical metaphors. For instance, it is possible to do so with a traditional metaphor of genesis. Once again, it is primarily possible in the case of some political and military history works, i.e., the books and articles that emphasize and analyze the roots of political events. An example of such an approach is Christopher Clark's (2013) book entitled *Sleepwalkers*, whose aim is to explain the decisions made by politicians that led to the outbreak of the First World War. As Clark (2013, xxix) wrote,

The story this book tells is, by contrast, saturated with agency. The key decision-makers—kings, emperors, foreign ministers, ambassadors, military commanders and a host of lesser officials—walked towards danger in watchful, calculated steps. The outbreak of war was the culmination of chains of decisions made by political actors with conscious objectives, who were capable of a degree of self-reflection, acknowledged a range of options and formed the best judgements they could on the basis of the best information they had to hand. Nationalism, armaments, alliances and finance were all part of the story, but they can be made to carry real explanatory weight only if they can be seen to have shaped the decisions that—in combination—made war break out.

The descriptions of the 2017 Polish translation of the book in both Polish KOSs are provided below. Both systems employ MARC 21 Format for Bibliographic Data. MARC tags are given only to identify data elements used (cf. Library of Congress 2017), to understand the examples better.

#### KABA

650 World War, 1914-1918—Causes  
650 World War, 1914-1918—Diplomatic history  
651 Europe—Politics and government—1871-1918

#### NLPD

648 1801-1900  
648 1901-2000  
648 1901-1914  
648 1914-1918  
650 World War (1914-1918)  
650 World politics  
651 Europe

As described in Section 3.1, the establishment of genetic relationships between events is one of the essential foundations of historical research employing traditional metaphors. There is no one solution used in KABA to show the genesis of events at the level of indexing. The first solution, exemplified by the description given above, utilized two groups of headings: the name of an event with the subdivision “causes” and strings representing facts or domain where the genesis of this event was sought. The second solution is used when a book or article is devoted to many different factors contributing to the event described. In such instances, only the name of an event supplied by the subdivision “causes” is utilized. The question arising from the second solution is connected with the granularity of a description: is it possible to take into account more specific factors? It could be useful, especially in the context of academic and research libraries, but the level of granularity should be set independently by each institution.

The NLPD indexing rules do not allow indexers to indicate the genesis of events explicitly. The difficulties result partly from the characteristics of post-coordinated systems. There is no direct indication of cause and effect descriptors, which are listed in a description on the same level. However, admittedly, analyzed subject indexing practices have not been applied consistently. The element of causation is not included in numerous cases that it could be in both KABA and NLPD. In the NUKAT Center, it seems to be connected with the practice of a central catalog where librarians from different institutions produce records, including subject indexing.

### 4.3 KABA subject headings and the National Library of Poland Descriptors from the perspective of non-classical historiography and its historiographical metaphors

#### 4.3.1 The structure of KOSs

Many historical works written in the twentieth century exemplify the employment of non-traditional approaches that one can also try to include in the process of creating thesauri. These approaches are connected, according to Wrzosek (1997), with the influence of other domains like sociology, economics, ethnology, and anthropology; hence their terminology should be incorporated into KOSs at an appropriate level of granularity. It seems that at the stage of vocabulary development, taking into account non-classical metaphors is, to some extent, equal to the analysis of interdisciplinary issues connected with new lines of research. Such a thesaurus needs to include many interdisciplinary terms; however, it should be underscored that the creators of thesauri in the discipline of history need to analyze primarily terms developed within this domain. The analysis shows that there is a lack of some important terms in both Polish KOSs. For instance, in NLPD, one cannot find the term “microhistory,” which is a significant subfield of historical anthropology.

The systems built according to non-classical approaches should include the terms for different disciplines, subdisciplines, fields, subfields, but what is equally important is the appropriate relationships pointing to the impact and interrelations between them. This condition is better satisfied by the NLPD system, which has a better-developed network, consistent with contemporary thesaurus construction standards and Polish historical research. In KABA, for instance, the descriptor “social history” is not related to the term “history” but only to “sociology;” similarly, the descriptor “economic history” is only connected to the term “economics.” These are examples of the general situation that needs to be improved.

Another aspect connected with the advent of new historiography that needs to be emphasized is related to broadening the scope of research methods and techniques. Modernist historians, due to the interest in a wide range of topics, have accommodated methodological influences from different disciplines, and within them from different scientific theories. Both systems include descriptors representing them, but the main difference lies in the method of categorizing terms. In KABA some terms, e.g., “statistical methods,” are represented as subdivisions, which are not included in the network of relationships, because there are no relations between headings and subdivisions. This lack is a permanent, well-known feature of such systems that impedes their browsing functionality. In contrast to

KABA, NLPD has better-developed relationships between the terms denoting methods and techniques. However, it seems that there is a need to supplement the two systems with more terms for methods used in contemporary historical research.

Another issue, which seems to be primarily connected with the complexity of new historiography, concerns the types of relationships that should be included in KOSs. This problem, but from the general point of view, was discussed by Hjørland (2016) in an article about the future of traditional thesauri. Hjørland (2016, 152) noted that “Different kinds of relations have different importance in different domains . . . Because of this, and because the semantic relations themselves may be relative to different queries, it is problematic to consider a thesaurus as a uniform standard for all fields as opposed to a domain-specific semantic tool.” Hjørland (2016) argued, discussing the differences between thesauri and ontologies, that semantic relations should not be restricted to three basic types (BT/NT, RT, USE/UF) at any cost, because there is no research indicating the atemporal and domain-independent value of such an approach. Both KABA and NLPD only utilize these basic types of relationships. It seems that the establishment of more specific relationships in KOSs in history could facilitate the description of a complex landscape of contemporary historiography based on different metaphors. For instance, a special type of relationship could be used to show the connection between influencing and influenced substructures. However, this issue has to be further investigated in the context of specific history works.

Interdisciplinarity that influences both terms and relationships among them is closely related to new historiographical metaphors. One of them is a new metaphor of genesis. Instead of the line of events where one generates another linearly, new historians have proposed more complex solutions of intra-structural genesis. They are not homogenous; that is, there are numerous variants of this general approach. Some of them identify a specific aspect of reality as a causative factor, and some build a more multifaceted image of historical reality (Wrzosek 1997). In the context of the former approach, a KOS creator might relate different fields to one selected as the most important one. For instance, the creation of a system from the perspective of the theory that the historical reality is founded on economics entails the extension of terms and relationships related to this domain, and moreover, that is fundamental in the light of the theory, the subordination of different aspects to the economy. The subordination does not necessarily need to be understood as the creation of hierarchical relationships but rather as the direct linkage between descriptors representing different aspects of reality with that representing economic phenomena. However, the richness of modern historical research in terms of methodological

and theoretical pluralism indicates that the structure of the majority of KOSs cannot be founded on a single approach to historiography such as that assuming the precedence of the economy over other domains. As a consequence, the task of establishing relationships in compliance with this intricate image is much more difficult in comparison to a system based on a single approach. Every aspect of reality, like a structure or process, can be potentially related to others. It seems that the only solution for the creators of KOSs is to analyze the existing approaches carefully and decide which are the most representative and beneficial for their group of users. It can be achieved by a thorough examination, not only of the history domain, but also other related disciplines and fields. During this activity, there is a need to include subject specialists to a much greater extent than before. As was presented in Section 4.1, this aspect is addressed better in the development of NLPD.

#### 4.3.2 Indexing practices

An important issue, worth considering from the perspective of non-classical historiography and its metaphors, concerns how history works are indexed in both systems. One of the approaches used in non-classical historiography is historical anthropology. An example of such an approach is a book entitled *A History of the Body in the Middle Ages* by Jacques Le Goff and Nicolas Truong (2018), which presents the two-fold approach of Medieval people to the body as both positive and negative. Different aspects of the main object, such as gender, work, crying, dreams, age, death, eating, beauty, and social metaphors related to the body, are described and analyzed. Le Goff and Truong have tried to approach the topic, from, among others, sociological and anthropological perspectives, absent in traditional history, and consequently not embraced by classical metaphors. Although they described the situation from the fifth to fifteenth centuries, with some remarks on the sixteenth and seventeenth centuries, the book cannot be considered a systematic and thorough description of the issues mentioned above. It is instead a historical essay that can be regarded as an example of an historical anthropological analysis, including the history of the mentality of medieval people. The results of the subject indexing of the work are presented below.

##### KABA

650 Human body—Religious aspects—Middle ages  
650 Sociology of the body—Middle ages

##### NLPD

045 1001-1501

648 1101-1200  
648 1201-1300  
648 1301-1400  
648 1401-1500  
648 1501-1600  
650 Human body  
650 Philosophical anthropology  
650 Social anthropology  
650 Sociology of the body  
650 Middle Ages  
651 Europe  
655 Essay  
658 Ethnology and cultural anthropology  
658 History

Apart from the lack of precision (the book is mainly about Western Europe), librarians from both institutions correctly used the name of the leading topical element: “human body.” The interesting aspect of these descriptions lies in the use of descriptors representing different disciplines and their branches. The use of the descriptor “sociology of the body” in KABA’s description results from the equivalence relationship with “human body—social aspects” and “human body—sociology.” By contrast, the description made using NLPD involves the disciplinary approach of the book (“ethnology and cultural anthropology,” “history”) described explicitly in the separate 658 MARC fields (see Library of Congress 2017). The creators of the system have allowed librarians to use only thirty-four selected descriptors to show this feature, and consequently, some disciplines and subdisciplines, although also used by researchers, cannot be employed this way. The NLPD description of *A History of the Body in the Middle Ages* also includes the descriptors for the sociology of the body, philosophical, and social (cultural) anthropology that cannot be used to show the disciplinary point of view adopted by the authors. However, these descriptors do not show the subject of the book, but rather the authors’ perspective on the subject. The essay is undoubtedly not about philosophical or social anthropology. Moreover, although the NLPD contains the descriptor “historical anthropology,” it was not used to describe the book. It shows that the NLPD system should be developed further to accommodate different disciplines’ perspectives.

As discussed, non-classical historiography also employs new research methods from a range of social sciences disciplines. However, currently, neither system takes into account this property of historical writing. The decision about the inclusion of such information could be based, e.g., on user studies similar to the one conducted by McCourry (2015).

Another important aspect is the method of indexing temporal information in both systems. Time is metaphorized differently in non-classical historiography, which also has some implications for KO. It has not been seen as



merely linear and teleological. Wrzosek (1997) drew the connection between functional determinism and a new concept of time. He showed this aspect of modernist historiography through the example of Fernand Braudel's work. According to the French historian, different aspects of reality evolve in different rhythms. Some of them change more slowly than others. One of the examples of slow development is, according to Braudel, material culture from the fifteenth to the eighteenth century (see Wrzosek 1997). The subject descriptions of the first volume of Braudel's (2019) *Civilization and Capitalism, 15th-18th Century*, which focus on this aspect of reality, are presented below.

#### KABA

650 Economic history—15th century  
 650 Economic history—1500-1800  
 650 Material culture—15th century  
 650 Material culture—1500-1800

#### NLPD

648 1401-1500  
 648 1501-1600  
 648 1601-1700  
 648 1701-1800  
 650 Economic history  
 650 Capitalism  
 650 Material culture  
 651 World  
 655 Monograph  
 658 Economy, economics, finance  
 658 History

The use of different chronological subdivisions or descriptors suggests the lack of continuity, which does not comply with Braudel's view. This issue is connected with what is called by Hjørland (2017b, 59-60) "the epistemological view" of subjects, which asserts "that different 'paradigms' entail different subject representations." If one agrees that the "long duration" concept is cognitively important, and it seems to be such, the creators of KOSs of history should take it into account while formulating indexing rules. Braudel's book is not merely a collection of simple facts and events that occurred around the world from the fifteenth to eighteenth centuries. Braudel looked instead at the durability of the world in longer period. In the context of such works, the idea of using the names of the periods mentioned by Petras, Larson, and Buckland (2006), which suggest durability, seems to be in line with the "long duration" underlined by Braudel. It would also be possible to add additional descriptors that could em-

phasize whether an author of a historical book or article looked at subject from the perspective of long term processes, e.g., with the descriptor "long duration."

In this section, KABA and NLPD systems have been analyzed through the lens of different historiographical traditions and metaphors. Both structures of KOSs and indexing practices have been examined on selected examples attempting to show that the knowledge of different traditions and metaphors can illuminate the development of such systems. It seems that due to this knowledge, KOSs creators can make better, informed decisions.

### 5.0 Summary

This article has presented a general review of literature, which is crucial from the perspective of the creation of KOSs in history. Moreover, it has provided examples of epistemological analyses of KOSs' structures and indexing practices of history books from the point of view of a single historiographer's framework. There are other theoretical standpoints in history that should be analyzed from the perspective of their applicability to the development of KOSs. It seems that even such a general epistemological theory as presented in this paper can be regarded as a valuable point of departure for analyzing and possibly improving KOSs in history. KO researchers and practitioners need to be aware of this theoretical background that can bring changes both to thesaurus structure and indexing practices. However, the designers of systems, both in their structure and indexing rules, will inevitably face the problem of deciding which specific elements can be included in a system; that is, they need to compromise on the question of domain knowledge. As Wrzosek (1997) stressed, two distinct approaches to historical reality represented by classical and non-classical historiography are difficult, or even impossible, to combine in historical writing. It seems that there are two main possible solutions to address the challenge faced by KOS designers. The first solution is to build a system based on only one group of interrelated metaphors, but it would result in the exclusion of other views (cf. the example of BKK provided by Ørom 2003, 142). It would be potentially possible to do so only when information resources indexed with this system would be limited to representing this one group of metaphors. The second solution is to attempt to take into account different groups of metaphors and to try to include them into one system. This solution is associated with a similar issue that was faced by Ørom (2003) during the analysis of the visual art domain. Ørom (2003, 142) wrote,

Because the Art & Architecture Thesaurus is a more "open" and more expanded work of "bricolage" than universal classification systems, it is easier to in-

tegrate new aspects of art studies in the facet structure. At a theoretical level however, the eclecticism and the “additive” conception of conceptual relations mean that the Art & Architecture Thesaurus has a problematic epistemological foundation.

In the case of KOSs in history, different facets could be organized according to different traditions and metaphors. Indexers could also possibly apply knowledge about classical and non-classical historiography to improve indexing practices. Some examples were provided in Sections 4.2.2 and 4.3.2, but more work is needed.

An additional problem can result from a possible lack of domain knowledge. Non-specialists creating domain vocabulary and indexing history books and articles may not notice the need and possibility of different choices, as primary and secondary school curricula are based on traditional metaphors for the most part. Therefore, the employment of specialists is advised. This is accommodated in both Polish systems, yet, as it was presented in Section 4.1, the developers employed at the NUKAT Center also need to deal with the vocabularies outside of their areas of expertise. Similarly, indexing books at NUKAT is often done by librarians who are not specialists in a specific domain.

Although the knowledge about historiographical metaphors given by Wrzosek can be helpful for the analysis and creation of KOSs, it seems that their broad character can provide the creators only with some general guidelines. Historical research is multidimensional, which is why the general remarks presented in this article need to be supplemented with in-depth theoretical and empirical analyses of history; that is, there is a need to analyze thoroughly different branches of history, fields, and subfields. According to Tennis (2003), it is equal to diminish the extension of a domain and to increase its intension. The basis for such an investigation can be books and papers on theory and history of historiography, some of which have been reviewed in Section 2.0 of the paper. Moreover, historical works and user studies can be conducted to supplement analysis. It appears that such a line of research can provide the basis for creating user-friendly and domain-grounded KOSs in history.

## Note

1. Many other disciplines use historical methods and analyze their subjects chronologically, e.g., musicology comprises historical musicology that focuses on the history of musical genres and life of composers, but this domain is distinct from the discipline of history due to its different aims, traditions, and primary objects of inquiry. As Richard T. Vann (2018) wrote about the history of the arts: “Despite essential differences, these forms of histo-

riography have some common features. One is that they are almost invariably produced outside history departments and faculties. For this reason they have tended to be regarded as somewhat exotic specialties.” Cf. Gnoli (2014, 133-14) who discussed boundaries of history.

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