The Cultural and Historical Contexts of Ornamental Prints Published in the Nineteenth and Twentieth Centuries in Europe: A Case Study for the Standardized Description of Museum Objects

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Abstract: The study focuses on ornamental prints (as components of pattern books) published and circulated all over Europe during the second half of the nineteenth century and in the first decades of the twentieth century. This special object type forms a particular segment not only in the history of ornamental prints and decorative arts in general but also in the history of architecture, applied arts, art education and archaeology. Enriched descriptions of these prints therefore have the potential to be of great benefit to scientific research in all the disciplines mentioned. The primary aim of this study is to survey and elaborate the standardized description of ornamental prints, considering them as visual works and describing them as museum objects. The paper attempts to answer questions posed from the multi-layered approach to scientific research, namely how to record ornamental prints that belong to a special object type, consisting of mixed visual and textual contents; and how to group the information in order to obtain the richest possible sets of data. The conceptual model of the standardized description will be elucidated with numerous examples, embedded in the broader art historical context.

1.0 Purpose of the study

The present study focuses on ornamental prints (as components of pattern books) published and circulated all over Europe during the second half of the nineteenth century and in the first decades of the twentieth century. This special object type forms a particular segment not only in the history of ornamental prints and decorative arts in general but also in the history of architecture, applied arts, art education and archaeology. Enriched descriptions of these prints, therefore, have the potential to be of great benefit to scientific research in all the disci-plines mentioned. Regarding the expected outputs of the detailed study of these prints, the primary aim of this study is to survey and elaborate the standardized description of ornamental prints, considering them as visual works and describing them as museum objects.

The paper presented here attempts to answer questions posed from the multi-layered approach to scientific research, namely how to record ornamental prints that belong to a special object type, consisting of mixed visual and textual contents and how to group the information in order to obtain the richest possible sets of data. The aim of the paper, therefore, is to show how all the informa-

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tion hidden in the pattern books might be revealed and the kind of data that might be gleaned from an enriched description of ornamental prints. The conceptual model of the standardized description will be elucidated with numerous examples, embedded in the broader art historical context.

2.0 Research antecedents

The corpus of pattern books and ornamental prints from the period in question has long been at the forefront of my art historical research. I have dealt with it from a dual viewpoint: that of an art historian-researcher and that of a collection curator. The very first idea of elaborating guidelines for the standardized description of ornamental prints arose during an attempt to achieve the advanced and enriched description of museum objects, in the framework of the AthenaPlus project in 2015 (http://athenaplus.eu/). During the experiment, led by Regine Stein (Philipps-Universitaet Marburg Deutsches Dokumentationszentrum für Kunstgeschichte - Bildarchiv Foto Marburg) and Nikolaus Simou (National Technical University of Athens), some project partners provided 100 high-quality, enriched metadata records based on the LIDO (Lightweight Information Describing Objects) description of objects, using the Getty Vocabularies (http://www.getty.edu/research/tools/vocabularies/). As a result of the experiment, we, as museum experts, were forced to rethink the depth of object descriptions and the need to use standardized, controlled vocabularies in everyday collection practice. On behalf of the Schola Graphidis Art Collection, three different object types were selected as case studies: 1) drawings from the eighteenth and nineteenth centuries as unique objects; 2) historical photographs from the first half of the twentieth century; and, 3) nineteenth-century ornamental prints. At this point, I started to deal with this material from the viewpoint of a collection curator and recognized the potential of enriched description for art historical research in the case of the examined special object type (Katona 2015). The basic ideas were presented at the General Conference of the International Council of Museums (ICOM) in Milan in July of 2016 in the framework of the events organised by the Committee for Documentation (CIDOC) (Katona 2016). All this was preceded by the study and research from 2008 to 2010 of a rare corpus of pattern books that has survived intact from the nineteenth-twentieth centuries and is currently conserved in the Library of the Hungarian University of Fine Arts in Budapest. The results were summarized and presented in the illustrated and annotated bibliography of the research project (Katona és György 2010). During this work, I had the chance to conduct a deeper overview of the corpus of pattern

books circulated in Europe in this period. I recognized that the historical motif compilations which played an intermediary role between the historical styles and the era of the "industrial" arts are not simply compilations of motifs but also contain a large amount of information relating to the histories of architecture, applied arts, design, and art education, and even to the series of the archaeological discoveries in their own century. A multi-layered aspect of historicism and art nouveau was gradually revealed.

I expanded the horizon when I started my collection work at the Schola Graphidis Art Collection in 2014, in a special education-related collection, which conserves all the museum objects associated with the very first Hungarian national art education institution, the Schola Graphidis Budensis (founded in 1778) and its successors up until World War II. The school was one of the main centres of industrial education in Budapest during the era of the Austro-Hungarian Monarchy as the Budapest Metropolitan Industrial Drawing School (between 1886 and 1945); it collected a remarkable set of pattern books used for educational purposes in everyday training practice. The study of the surviving ornamental prints, estimated to number around 15,000 individual pieces, turned my attention from pure art historical research to the collection side of these books and prints.

Combining the two interests, research and collection curating, I carried out further research on this subject in the framework of the invited researcher program of the INHA in 2016 and 2017, and I have started to elaborate the typology of pattern books in this period and the standardized description of ornamental prints, preparing them for art historical research. During my research work in Paris, I had the opportunity to study, among others, the pattern book collection of the *Collection Jacques Doucet* in the Library of the INHA and the outstanding ornamental prints collection of the *Bibliothèque Forney*. Below, focusing exclusively on the second topic, I publish the conceptual framework for the standardized description of ornamental prints from the nineteenth and twentieth centuries.

3.0 Cultural and historical context of ornamental prints

The era, broadly covering approximately eighty years between 1850 and 1930, encompasses the evolution of the "industrial" arts, when every endeavour pointed in one direction, towards the amelioration of taste and the improvement of the aesthetic appearance of industrial products, all in the service of industrial development. The cultural context of the "industrial" arts consisted of four main elements: 1) the applied arts museums founded in the second half of the nineteenth century and modelled after

the South Kensington Museum in London (1857); 2) the education system of the applied arts schools attached to the museums (1864. K. K. Österreichisches Museum für Kunst und Industrie, Wien; 1867. K. K. Kunstgewerbeschule, Wien; 1868. Deutsches Gewerbe-Museum, Berlin; 1869. Bayerisches Gewerbemuseum, Nürnberg; 1872. Magyar Királyi Iparművészeti Múzeum [Hungarian Royal Museum of Applied Arts], Budapest; 1880. O. M. K. Iparművészeti Iskola [Hungarian Royal School of Applied Arts], Budapest; 1874. Museum für Kunst und Gewerbe, Hamburg; 1876. Königliches Kunstgewerbe-Museum, Dresden; 1885. Uměleckoprůmyslové museum [Museum of Decorative Arts], Prague; 1905. Musée des arts décoratifs, Paris); 3) the new phenomenon of the world and international exhibitions (1851. Great Exhibition of the Works of Industry of All Nations, London; 1855. Exposition Universelle des produits de l'Agriculture, de l'Industrie et des Beaux-Arts, Paris; 1862. International Exhibition, London; 1867. Exposition universelle [d'art et d'industrie], Paris; 1873. Weltausstellung, Wien; 1878. Exposition Universelle, Paris; 1888. Exposició Universal de Barcelona / Exposición Universal de Barcelona; 1889. Exposition universelle de 1889, Paris; 1897. Exposition Internationale de Bruxelles, Bruxelles; 1900. L'Exposition de Paris 1900, Paris); and, 4) the societies and associations which supported progress in art and industry (1754. Society for the Encouragement of Arts, Manufacture and Commerce; 1845. Société de l'art industriel; 1864. L'Union centrale des beaux-arts appliqués à l'industrie; 1882. L'Union centrale des arts décoratifs (UCAD); 1877(?) Verein für Deutsches Kunstgewerbe, Berlin; 1884. Kunstgewerbe-Verein, Wien; 1885. Országos Magyar Iparművészeti Társulat [Hungarian National Society of Applied Arts]; 1887. Arts and Crafts Exhibition Society).

The publishing of historical pattern books and motif compilations was closely linked to the institutional system of applied arts museums, applied arts and industrial schools, the world and international exhibitions and the societies and associations involved in the development of the industry. The first comprehensive and, at the same time, the best-known and most influential collection of motifs, *The Grammar of Ornament*, appeared in 1856 (Jones), in the context of the Great Exhibition in London in 1851. Its author was the English architect and designer Owen Jones (1809-1874), the superintendent of the first world exhibition. Although different motif compilations had already been published as early as the 1820s (Zahn 1828; Gruner and Braun 1850; Bötticher 1834-1844), his work was unique, because it expanded the scope to "all styles and periods," i.e., to all known styles and periods in his time. Jones presented the ornamental motif sets of the historical styles using a completely new approach; he separated them from the objects bearing them and displayed

them comparatively in their historical contexts. He examined ornaments from Antiquity to the Renaissance, with a special emphasis on Islamic ornaments, in nineteen historical chapters, illustrated with 112 chromolithograph plates. The ornamental motif sets of the different historical styles were accompanied by ten plates showing representations of natural forms such as leaves, flowers, branches, etc.

With *The Grammar of Ornament,* Jones created a new publication type that led to a Europe-wide series of "comparative motif compilations" (a term implemented by the author of the article, although already used in preparatory drafts but published for the first time here). His followers soon appeared on the continent, first in France and then in Germany. In Paris, a French draughtsman, illustrator and lithographer, Auguste Racinet (1825-1893), published the second most influential comparative motif compilation, under the title *L'Ornement polychrome*, in two series in 1869-1873 and 1885-1887. Later the German architect and building restorer Heinrich Dolmetsch (1846-1908) compiled the authoritative German version of comparative motif compilations by all styles and periods and published his book under the title *Der Ornamentenschatz* in 1887. The tradition of publishing this special publication type continued into the first decades of the twentieth century, although the reproduction technique of chromolithography was replaced by offset printing, and the original purpose defined as serving the development of industry was replaced by serving the study of art history and archaeology (Speltz 1914; Bossert 1924) (Figure 1).

The recontextualizing practice of historicism made it possible to compare the motif sets of different styles, but the classification went even further and was extended to particular domains of the applied arts and architecture, which led to an overview of the evolution of particular styles or techniques of the applied arts. During the second half of the nineteenth century, therefore, many motif compilations appeared, which classified ornamental motifs according to their particular styles and periods (e.g., "classical" styles, medieval styles, Islamic styles, etc.), according to the domains of the decorative arts (e.g., textile arts, ceramics, etc.), according to the arts associated with architecture (e.g., mural painting, ornamental sculpture, stained glass, mosaics, etc.), and, finally, as a unique and exceptional category, according to form (Figure 2).

So far, two main features have determined the fate of these ornamental prints from the viewpoint of research: their physical characteristics and the consequent fact that they belong to library collections. Series of ornamental prints can be found in bound books or in separate folios, stored in a portfolio as a folio edition. Due to their physical characteristics, they are listed and inventoried as books in libraries, especially in libraries that were once attached to schools where the prints were used as teaching

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MOTIF COMPILATIONS

By All Periods

JONES, O.	**RACINET, A.**	**DOLMETSCH, H.**
The Grammar of Ornament	L' ornement polychrome	Der Ormementenschatz
1856	1869	1887
Pl. 76	Pl. LXVII	Taf. 55
Renaissance no. 3.	Renaissance	Italienische Renaissance
		Majolika-malerei

Figure 1. Comparative motif compilations by all periods.

MOTIF COMPILATIONS

Connected to the Applied Arts   **Textile Art**

VACHER, S.: Fifteenth century Italian ornament, 1886	**DUPONT-AUBERVILLE, M.:** L'ornement des tissus, 1877	**FISCHBACH, F.:** Ornamente der Gewebe, 1874

Figure 2. Comparative motif compilations. Domain: textile art.

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aids in daily training practice. The institutions shown in Table 1 had the best-known pattern book collections (or collections of ornamental prints).

City	Institution	Bibliographic reference
London	National Art Library	Science and Art Department. 1883.
Paris	Bibliothèque de l'INHA (Collection Jacques Doucet)	Decrossas et Fléjou. 2014.
Paris	Bibliothèque Forney	Clouzot et Engerand. 1912. Clouzot et Rémon. 1915.
Berlin	Kunstbibliothek	Schneider-Henn. 1997. Brand und Evers. 2000.
Heidelberg	Bibliothek der Universität	
Wien	Bibliothek und Kunstblättersammlung der Museum für Angewandte Kunst	
Prague	Uměleckoprůmyslové muzeum	
Budapest	Library of the Hungarian University of Fine Arts	Katona és György. 2010.
Budapest	Schola Graphidis Art Collection (as part of the Hungarian University of Fine Arts - High School of Visual Arts)	
New York	New York Public Library (The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Art and Architecture Collection)	

Table 1. Institutions with best-known pattern book collections.

4.0 Ornamental prints: library items or museum objects?

Owing to the two aforementioned circumstances, these books and portfolios have been inventoried as library items, which has led to a substantial loss of information. A typical bibliographic notice contains information about the highlighted author of the book but not about all the actors involved in the production process, whether invention or realization. A portfolio of ornamental prints was the end result of teamwork between the inventor (usually identified as the primary author), the draughtsmen, the lithographers, the staff of the printing house and so on. Similarly, if these series of prints are described as library items, their real content, which, as compilations of ornamental motifs,

is visual rather than textual, is completely lost. Regarding visual content, the information is usually limited to a tally of the number of plates, ideally (generally) with their reproduction technique also included. Nevertheless, the New York Public Library has digitized, described and published online the series of ornamental prints in its *Art and Architecture Collection* as visual works and not only as supplementary illustrations of the textual contents in books, which means they have interpreted them as museum objects (prints) and not as library items (https://digitalcollections. nypl.org/divisions/the-miriam-and-ira-d-wallach-division-of-art-prints-and-photographs-art). On behalf of the Schola Graphidis Art Collection, we have followed the same policy relating to this special object type, publishing them on Europeana in the framework of the AthenaPlus project in 2015 (http://www.europeana.eu/portal/hu/search?q=ornamental+print&qf%5B%5D=schola+graphidis).

Below, the series of prints are considered as visual works instead of textual contents, and are described as museum objects instead of library items. Nevertheless, some groups of data will come from the "collection" level, which can be identified with the book or portfolio itself as the collection or series of ornamental prints, whereas others will come from the "item" level, which means the individual prints themselves. As a result, the schema of description below is a mixed formation, considering the sources of information which could derive from different levels. This condition may result in certain difficulties during the inventory process, since information needs to be recorded which relates both uniquely to the print and to the book in general.

5.0 Three groups of information

To explore the greatest possible amount of information that might potentially be included in a series of ornamental prints, a three-element system of description has been devised. The three elements are considered as three groups of information, concerning the different layers of contextualisation. The first group of information relates to 1) the object (print) itself, the second concerns 2) the representation, and the third, putting the item in a broader context, pertains to 3) the historical context of the object (as part of a series of prints) (Figure 3).

5.1 Group 1: Object Data Group (the object)

The Object Data Group contains information relating to the object itself, and consists of the following fields: creator, title, date, inventory number, materials/technique, measurements, provenance, repository name, location, related works (Table 2).

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Figure 3. The three-element conceptual model of the standardized description of ornamental prints.

Field name	Getty vocabs	Level	Example
Creator	ULAN	facet: Persons, Artists	Jones, Owen (British architect and designer, 1809-1874)
		facet: Non-Artists	Firmin-Didot, Ambroise (French publisher and collector, 1790-1876)
		facet: Corporate Bodies	
Title			
Date			
Materials/Technique	AAT	facet: Materials	paper
		facet: Objects / Visual and Verbal Communication / Visual Works / visual works / visual works by material and technique / photomechanical prints or / prints / prints by process or technique	chromolithograph, lithograph, photolithograph
Measurements			
Inventory Number			
Repository Name			
Provenance			
Location	TGN	nation level	Germany
Part Of			
Related Works			

Table 2. The use of Getty Vocabularies in the Object Data Group.

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5.1.1 The creator field

The creator field is one of the most crucial components in the Object Data Group. Its content comes from the "collection" level. As mentioned above, the bibliographic notice of the library database lists only the main author, who is identified as the highlighted person in the context of the pattern book. This person is actually the inventor of the concept as a whole. His role is very important, since the act of compiling ornamental motifs that properly represent the chosen historical style was of immense intellectual value in the nineteenth century. This skill was associated with an outstanding proficiency and deep knowledge in the domains of the history of art and archaeology, as emphasized in the case of Auguste Racinet, in the introductory text of *L'Ornement polychrome*, written by the Firmin-Didot brothers, the publishers of the book (Racinet 1869-1873, II). The best-known comparative motif compilations were great enterprises of their kind. For *The Grammar of Ornament*, Owen Jones not only involved his contemporaries in writing the introductory essays for some chapters but also invited some to contribute to the invention of the plates as well. The English painter and architect J. B. Waring (1823-1875) wrote essays for the chapters on Byzantine ornament and Elizabethan ornament, the English archaeologist John Obadiah Westwood (1805-1893) wrote the explanatory text accompanying the plates of Celtic ornament and the British architect Sir Matthew Digby Wyatt (1820-1877), Secretary of the Great Exhibition in 1851, left his own mark on this comprehensive historical work by writing remarkable essays for the chapters on Renaissance ornament and Italian ornament. The English sculptor and Egyptologist Joseph Bonomi (1796-1878) and the British architect James William Wild (1814-1892) contributed to the invention and compilation of motifs for the chapter on Egyptian ornament, the British architect and lithographer Thomas Talbot Bury (1811-1877) drew the Stained Glass plate, and the Scottish-born botanist and designer Christopher Dresser (1834-1904) drew one of the plates in chapter twenty on natural forms. Jones also relied on the participation of his pupils in executing drawings and preparing them for publication. Moreover, he collaborated closely with the English lithographer and architectural draughtsman Francis Bedford (1816-1894), later a famous photographer, who drew the plates onto stone with his team of assistants (Jones 1856) (Figures 4 and 5).

In some cases, more than one printing house would be involved in the printing process, as in the case of Moritz Meurer's (1839-1916) 1895 *Pflanzenformen*, where the photolithographs were printed by Friedrich Gröber of Leipzig, the heliotypes were printed by Albert Frisch of Berlin and the lithographs were printed by Friedrich

Schwabe (see the Materials/Technique field). This means that even within one pattern book, the author of the book as a whole, the inventors of the plates, the designers, the lithographers, the printing houses and the publishing house, in short, all the actors involved in the production process from invention to publishing, have to be examined one by one with regard to each plate.

5.1.2 The title field

The title information related to the object may come from both the "collection" and "item" levels, since it can be identified with the inscription of the print, located centrally at the top or bottom of the plate. If the information is missing from the plate, it can be found in the list of illustrations. The inscription defines the subject of the representation itself, designating mainly the period, the geographical location and the style of the displayed ornamental motifs.

5.1.3 The date field

The date information comes from the "collection" level and is identical to the date of publication of the pattern book itself.

5.1.4 The materials/technique field

The materials/technique field, similar to the creator field, is a more compound issue. Many of the comparative motif compilations were made with the planographic printing technique of chromolithography. Moreover, some pattern book authors, in close collaboration with the printing houses, experimented with the process itself in their motif compilations (Zahn 1828; Jones 1856; Racinet 1869-1873). The invention of chromolithography therefore indirectly influenced the design, the applied arts and the education of the period (Twyman 2013). Other mixed photomechanical printing processes, such as photolithography, were in use in parallel. In some cases, it is possible to find plates executed with completely different printing techniques within the same series of prints. As in the case of Meurer's *Pflanzenformen*, already mentioned above, the collection of stylized plant forms designed and drawn by Meurer and his students consists of three kinds of plates executed with different contemporary printmaking techniques: photolithography, lithography and heliotype. The three techniques required the collaboration of three different printers: Friedrich Gröber of Leipzig, who printed the photolithographs, the photographer Albert Frisch (c. 1840-1918) of Berlin, known as the German pioneer of anthropological photography, who executed the heliotypes, and Friedrich Schwabe, also

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THE OBJECT

FIELD NAMES	CONTENTS OF THE FIELDS
CREATOR	Jones, Owen (author, text by)
	Westwood, Jonas Obadiah (author, text by)
	Warren, Henry Albert (1830–1911) (illustrator, drawn by)
	Aubert, Charles (illustrator, drawn by)
	Bedford, Francis (lithographer, lithographed by)
	Day & Son, London (printing house, printed by)
TITLE	Celtic No. 3. Plate LXV
DATE	1856
MATERIALS / TECHNIQUE	paper, chromolitography
MEASUREMENTS	
INVENTORY NUMBER	
REPOSITORY NAME	The Rare Book Collection of the Schola Graphidis Art Collection, Budapest
PROVENANCE	
LOCATION	Hungary
RELATED WORKS	

Figure 4. The Object Data Group (example: Jones 1856).

THE OBJECT

FIELD NAMES	CONTENTS OF THE FIELDS
CREATOR	Jones, Owen (author, text by)
	Dresser, Christopher (designer, designed by)
	Warren, Henry Albert (1830–1911) (illustrator, drawn by)
	Aubert, Charles (illustrator, drawn by)
	Bedford, Francis (lithographer, lithographed by)
	Day & Son, London (printing house, printed by)
TITLE	Leaves and flowers from nature No. 8. Plate XCVIII
DATE	1856
MATERIALS / TECHNIQUE	paper, chromolitography
MEASUREMENTS	330 X 220 mm
INVENTORY NUMBER	
REPOSITORY NAME	The Rare Book Collection of the Schola Graphidis Art Collection, Budapest
PROVENANCE	
LOCATION	Hungary
RELATED WORKS	

Figure 5. The Object Data Group (example: Jones 1856).

of Berlin, who made the lithographs. In this case, not only the techniques of each plate but the contents of the creator field (see the Creator field) have to be recorded separately.

5.1.5 The measurements field

The measurements data come from the "item" level and relate to the print itself. They are not identical to the measurement data of the book or portfolio, which is naturally larger than the prints themselves. The Measurements field contains the height and the width of the print in millimetres.

5.1.6 The inventory number, the provenance, the repository name and the location fields

This part of the Object Data Group refers to the collection of museum objects and contains information at local level. Nevertheless, the provenance data might be interesting not only at local but also for exploring the cultural background of the pattern book itself. Recording the inventory number field is a decision made by the collection manager. It can be generated automatically from the database; alternatively, a museum identification number can be generated by concatenating the library catalogue entry number with the number of the plate.

The provenance information comes from the "collection" level, although in some cases it might also be relevant in the historical-cultural context of the object. An example from the Schola Graphidis Art Collection concerns the very first Hungarian pattern book, published in 1879 under the trilingual title "A magyar házi ipar díszítményei, 1879. - Ornamente der Hausindustrie Ungarns, 1879. - Ornements de l'industrie domestique de la Hongrie, 1879." It served as a representative documentation of a collection composed of common art objects (objects of "Hausindustrie"), which represented Hungary at the Vienna World Exhibition in 1873 (Pulszky és Fischbach 1879). The author of the book was the museum director and art historian Károly Pulszky (1853-1899), who selected and compiled the objects and motifs depicted in the book and who also wrote the preface. His associate author was the inventor-creator of chromolithographic prints, the German textile designer and draughtsman Friedrich Fischbach (1839-1908). There were numerous additional persons involved in the production of this compilation, who will be mentioned later in the cultural-historical context. One of them, however, also deserves mentioning in the framework of the Object Data Group. This person is the previous owner and presumed donor of the copy, Count Jenő Zichy (1837-1906), who happens to have played an active role in reforming

industrial education in Hungary in the late nineteenth century. He was in direct contact with the architect-teacher of the Budapest Metropolitan Industrial Drawing School, the institution whose library conserved this book. Although the seal of the Count's Library can be seen only on the title page of the book, it is important to record this information, since it highlights the link between the personalities and the institutions that played key roles in industrial development and the related industrial education in the Austro-Hungarian Monarchy. His name also has to be mentioned in the cultural and historical context of the object, in the Context Data Group.

The repository name refers to the collection of museum objects itself, to which the series of ornamental prints belongs.

The location field concerns the geographical place where the collection of museum objects can be found at the national level.

5.1.7 The part of and the related works fields

The part of field is a reference to the bibliographic notice of the whole series of ornamental prints to which the print belongs. The related works field is an image field which contains the whole series of ornamental prints that the print belongs to.

5.2 Group 2: Representation Data Group (the representation)

The Representation Data Group contains information related to the representation itself, with the following fields: cultural context, description, subjects and related works (Table 3).

In the case of pattern books and ornamental prints, the term representation does not have a narrative context, it is related exclusively to the ornamental motifs and the broader cultural context of the original objects from which the ornamental forms are derived. Although in some cases a single print may contain a dozen or more motifs, its representations may still be listed in a well-defined group. Since nineteenth-century classifications and groupings of ornamental motifs follow style-, nation- and geography-related principles in chronological order, the representations of a unique plate tend to belong to only one style, period or nation (Figures 6 and 7).

5.2.1 The cultural context field

The content of the cultural context field for each print comes from the "item" level and can be identified clearly. This is the cultural context of the original object from which the ornamental motifs were taken. It differs from

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Field name	Getty vocabs	Level	Example
Cultural Context	AAT	facet: Styles and Periods	Egyptian (ancient), Pompeian Style
Description			
Subjects	AAT	facet: Objects / visual works by material or technique	textile art, ceramic ware
		facet: Physical Attributes / Design Elements / motifs	acanthus, palmette, paisley
		facet: Physical Attributes / Design Elements / ornament areas	borders, friezes
		facet: Physical Attributes / Design Elements / patterns	allover patterns, foliation, meanders
Related Works			

Table 3. The use of Getty Vocabularies in the Representation Data Group.

the thematic context of the Context Data Group, which relates to the cultural context of the pattern book as a whole. Its content is identical to the title of the object, but here a controlled vocabulary has to be used. The terms of the styles and periods facet in the Getty Art and Architecture Thesaurus can be listed in the case of comparative motif compilations. It is also valid for other types of compilations, however, as a different selection of textile motifs, ceramic tiles, mural painting, etc. The content of the Cultural Context field may provide an overview of the different historical styles or periods as interpreted from the viewpoint of historicism in the nineteenth century.

5.2.2 The description field

A description field has been pasted in the Representation Data Group, in the context of the representation. Its content comes from the "item" level, cutting it off from the textual content of the pattern books. The authors of the comparative pattern books wrote detailed introductions for each chapter of the whole collection. They attached short descriptions for the plates, mentioning the resources of the ornamental motifs displayed on the plates. The information given here clarifies the characteristics of the original works, including their object type, which is not always obviously identifiable from the ornamental prints. The description specifies the original object from which the ornamental motif derived and the object type. These descriptions are the best clarifying texts for the representations, so are ideal for forming the contents of the description field.

5.2.3 The subjects field

The subjects field can be filled conveniently after reading the brief descriptions of the ornamental prints. The information given in the cultural context field of the Representation Data Group can be complemented with other diverse sorts of information: 1) information about the domains of the applied arts (e.g., textile arts, ceramics, etc.) and of the arts associated with architecture (mural painting, stained glass, mosaics, etc.) can be recorded here; 2) the type of ornamental form (floral, geometric, animal) can also be recorded here, since it specifies the characteristic of the form itself; and, 3) the third subgroup of information, however, which denotes the terms related to theoretical approaches, requires some explanation. Besides compiling and classifying the ornamental forms of historical styles and natural forms, nineteenth-century pattern books provided space for theoretical questions. Pattern books dealing with the formal analysis of ornamental motifs form a particular segment of the entire corpus. Handbooks of ornamental composition analysed ornamental and natural forms on the principles of plane geometry and listed the general principles of design in the service of creating of a new style. The analysis concerned both form and colour. It was again Owen Jones, writing in *The Grammar of Ornament*, who first summarized (Jones 1856, 4), in thirty-seven propositions, the "General principles in the arrangement of form and colour, in architecture and the decorative arts." The chromolithographic plates in *The Grammar of Ornament* can be interpreted as illustrations of the ascertainments made by Jones about form and colour. If the coloured plates of a pattern book (or even of a textbook) were designed in order to illustrate the principles of form and colour manifested in the ornamental motifs, the related terms (polychromy, architectural polychromy, theory of colour, theory of form, design, principles of design) must be recorded in this field.

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Figure 6. The Representation Data Group (example: Jones 1856).
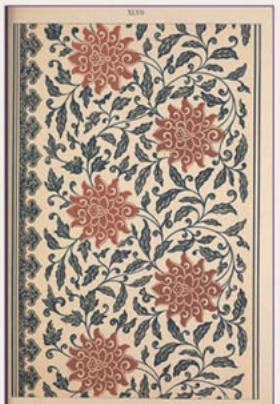
Figure 7. The Representation Data Group (example: Jones 1867).

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Field name	Getty vocabs	Level	Example
Actor	ULAN	facet: Persons, Artists	Cole, Henry (English administrator, designer, and museum director, 1808-1882)
		facet: Non-Artists	Pulszky, Károly (Hungarian museum director and collector, 1853-1899)
Institution	ULAN	facet: Corporate Bodies	National Gallery (British art museum, London, founded 1824)
Related Events			
Period		facet: Styles and Periods	Historicism, Art Nouveau
Place	TGN	nation level	Germany
Thematic Context	AAT	facet: Activities / Disciplines / visual arts	architecture, decorative arts, industrial arts
		facet: Activities / Disciplines / education	art education
		facet: Objects / Visual and Verbal Communication / Visual Works / visual works / visual works by material and technique / photomechanical prints or / prints / prints by process or technique	chromolithography, lithography, photolithography

Table 4. The use of Getty Vocabularies in the Context Data Group.

5.2.4 The related works field

The related works field is an image field which contains all the other ornamental prints attributed to the same content, belonging to the cultural context field in the Representation Data Group.

5.3 Group 3: Context Data Group (the cultural and historical context of the object)

The Context Data Group contains information related to the cultural and historical context of the series of objects (the entire pattern book or portfolio itself) with the following fields: actor, institution, period, related events, thematic context. All the content fields come from the "collection" level (Table 4).

5.3.1 The actor field

The actor field contains all actors who played a catalytic role in the realization of the book or portfolio. They cannot be identified either with those who were involved in the production process (persons who made the drawings or lithographs, companies who printed the plates), or those who were identified as authors. They were involved in the event (see the related event field) that prompted the publi-

cation of the pattern book (e.g., participation in a world or international exhibition), so the printed publication can be considered as the documentation of the event. The previously mentioned Hungarian pattern book, "A magyar házi ipar díszítményei, 1879. - Ornamente der Hausindustrie Ungarns, 1879. - Ornements de l'industrie domestique de la Hongrie, 1879.," served as the representative documentation of the collection of common art objects (objects of "Hausindustrie") that represented Hungary at the Vienna World Exhibition in 1873 (Pulszky és Fischbach 1879). The conceptual inventors of the collection, Flóris Rómer (1815-1889) and János Xántus (1825-1894), keepers of the Hungarian National Museum, played an indirect but very important role in the creation of the series of chromolithographic prints. Indexing their names is therefore of added value, for it helps reveal the historical context of these objects. Their names are mentioned in the introductory text of the book. The content relates to the whole series of prints, which is the reason why making a recording in this data group is so important (Figure 8).

5.3.2 The institution field

The institution field serves to record all institutions (museums, schools, ministries, societies, etc.), which can be associated, in a broader context, with the pattern book

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Figure 8. The Context Data Group (example: Pulszky-Fischbach 1879).

and its prints. Staying with the example above, the Hungarian National Museum has to be recorded here as the conserving institution of the collection of common art objects. Similarly, the London National Gallery has to be linked as an entity in the institution field to the selection of textile motifs compiled by the English architect Sydney Vacher (1854-1934), titled *Fifteenth century Italian ornament: Chiefly taken from brocades and stuffs found in pictures in the National Gallery London*, published in 1886 (Vacher 1886) (Figure 2). Not only did museums publish specimens for practical use in architecture, applied arts, design and education, but professors of educational institutions were commissioned, supported and encouraged by their schools or the cultural ministries to compile particular motif collections for training purposes. The example of a lesser known textbook highlights the role of the institution field. Two textbooks by the Moravian painter and draughtsman Anton Andel (1844-?) in the series titled *Grundzüge der Ornamentalen Formenlehre* were widely used in the domain of elementary drawing education in normal and industrial schools in the Austro-Hungarian Monarchy during the last decades of the nineteenth century. *Das Polychrome Flachornament* contains almost fifty chromolithographic plates with ornamental motifs from different styles and periods, and it was published with the support of the K. K. Ministerium für Cultus und Unterricht in Vienna in 1880 (Andel 1880). Nevertheless, the title page of the volume not only contains this information but also

publishes the educational institution where the author of the work was employed at the time the book was designed, printed and published. This information may also be valuable, not only as additional biographical data, but as information that could help to reconstruct the network of schools, which played an active role in publishing pattern books and catalysing industrial development during this period. This justifies the inclusion in this field of the names of schools as institutional entities.

5.3.4 The related events field

The related events field serves to record events, mainly exhibitions, connected to the printed publications. In the case of Jones's *The Grammar of Ornament*, it is the Great Exhibition of London in 1851, while in the case of the Pulszky-Fischbach album, it is the Vienna World Exhibition in 1873, although national exhibitions can also be listed in this field.

5.3.5 The period field

The period field refers to the period when the whole series of prints was created, putting the pattern books in their broader cultural context. The terms "historicism" and "art nouveau" as sub-terms of the styles and periods facet in the Getty AAT can be used here. Alternatively, it would be possible to use "nineteenth century CE" and "twentieth

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century CE" in the associated concepts facet in the Getty AAT.

5.3.6 The place field

The place field refers to the broader geographical location of the pattern book and can be defined at the country level.

5.3.7 The thematic context field

The thematic context field of the Context Data Group concerns all the general fields to which the pattern books are linked in a broader context. The main categories are as follows: 1) subjects, with terms referring to architecture or the applied arts; 2) educational purposes of the publication, with terms here referring to the main category of education (art, applied arts, architecture, drawing, industrial and public education); and, 3) techniques of production, with terms referring to the main category of planographic and photomechanical printing processes (e.g., lithography, photolithography, chromolithography, offset lithography), using the objects facet of the Getty AAT.

6.0 An attempt for applying the ornamental prints conceptual model to the data structures of existing standards like CDWA, CCO and LIDO

The basic idea to elaborate the conceptual model for the standardized description of ornamental prints originates from the needs of art historical research. The enriched, context-based description of this object type could serve many advantages for this upwarding research field. The main characteristic of this model is to separate clearly the information related to the object, the representation and the context, grouping all the coherent information together, creating three groups of information in order to publishing them online. Below, an attempt has been made to integrate the ornamental prints conceptual model into the data structure of existing descriptive standards like Categories for the Description of Works of Art (CDWA; Baca and Harpring 2016), *Cataloging Cultural Objects (CCO;* VRA 2017) and LIDO (Lightweight Information Describing Objects). These descriptive standards expand their scope to the broad range of cultural heritage objects, considering the different requirements of diverse object types. Their structure is different, therefore the logic of describing ornamental prints in the systems is different. The CDWA consists of thirty-one main categories, of which twenty-seven refer to the object itself, and four are defined as authorities (person/corporate, place/location, generic concept, subject). The *CCO* is working with much less main categories, of which the nine "element" categories

refer to the object, and, similarly to the CDWA, four are defined as authorities (personal and corporate name, geographic place, concept, subject). In contrast, the LIDO does not work with separate authority categories, furthermore its core unit, the descriptiveMetadata main category has been divided only into 4 subcategories: objectClassification, objectIdentification, event, and objectRelation. While the starting point of CDWA and *CCO* is the object, LIDO emphasizes the importance of the event, and it defines the data of creation as elements linking to the event.

Considering the grouping of information, the logic of the three mentioned descriptive standards is different from that of the ornamental prints conceptual model, which is based on the needs coming from the approaches of the research. Tables 5-9 below show clearly that the elements which belong to the same data group of the ornamental prints conceptual model (object or representation or context) can be connected only to different categories of the descriptive standards.

7.0 Possible outputs of the standardized description of ornamental prints

The theoretical model and the structure of the standardized description of ornamental prints have been outlined above. If the whole concept were to be implemented in actual practice, the following outputs for art historical research could be expected.

1) The network of schools of architecture, fine arts, applied arts and industry that were involved in industrial development during the nineteenth-twentieth centuries in Europe could be reconstructed. The information is based on the content of the institution field in the Context Data Group.
2) The network of the principal actors of education in architecture, applied arts, industry and general drawing could be outlined. The information is based on the content of the creator field in the Object Data Group and of the actor field in the Context Data Group.
3) A cross-section of ornamental motif sets of historical styles and periods could be defined, as interpreted by authors in the era of historicism and art nouveau. The information is based on the cultural context field in the Representation Data Group.

    The network of the printing houses of the period who were involved in the production of pattern books could also be reconstructed, providing valuable data for the history of printing techniques. The information is based on the content of the creator field in the Object Data Group.
4) Similarly, the network of the publishing houses of the period who were involved in the production of pat-

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Descriptive Standard	Elements / Categories	OBJECT DATA GROUP					
		Creator	Creator's Role	Title	Date	Materials/Techniques	Measurements
CDWA	element	(4.1) Creator Description (core)	(4.1.4) Creator Role (core)	(3.1) Title Text (core)	(4.2) Creation Date (core)	(7.5) Materials / Techniques Name	(6.2) Dimensions Type, (6.3) Dimensions Value, (6.4) Dimensions Unit
	broader categories	(4.) Creation (core)	(4.) Creation (core)	(3.) Titles or Names (core)	(4.) Creation (core)	(7.) Materials and Techniques (core)	(6.) Measurements (core)
CCO	element	Creator (linked to the Personal and Corporate Name Authority)	Role	Title	Creation Date	Material, Technique	Extent, Value, Unit, Type
	broader categories	Creator Information	Creator / Creator Information	Object Naming	Creator Information	Materials and Techniques / Physical Characteristics	Measurements / Physical Characteristics
LIDO	element	eventActor	roleActor	titleSet	eventDate	eventMaterialsTech	displayObjectMeasurements
	broader categories	eventSet / eventWrap / descriptiveMetadata	actorInRole / eventActor / eventSet / eventWrap / descriptiveMetadata	titleWrap / objectIdentificationWrap / descriptiveMetadata	eventSet / eventWrap / descriptiveMetadata	eventSet / eventWrap / descriptiveMetadata	objectMeasurementsSet / objectMeasurementsWrap / objectIdentificationWrap / descriptiveMetadata

Table 5.*The Object Data Group in the data structures of CDWA, CCO and LIDO

Descriptive Standard	Elements / Categories	OBJECT DATA GROUP					
		Inventory Number	Repository Name	Provenance	Location	Part Of	Related Works
CDWA	element	(21.2.3) Repository Numbers (core)	(21.2) Repository / Geographic Location (core)	(23.1) Provenance Description	(29.2) Place Name	(27.1) Citations for Sources, (27.1.1) Page, (27.1.2) Work Cited or Illustrated, (27.1.3.1) Number Type	[links to the images of the same series of ornamental prints]
	broader categories	(21.) Current Location (core)	(21.) Current location (core)	(23.) Ownership / Collecting History	(29.) Place / Location Authority	(27.) Related Textual References	
CCO	element	ID	Current Location	Former Locations	Names	Related Work	[links to the images of the same series of ornamental prints]
	broader categories	Current Location / Location and Geography	Location and Geography	Location and Geography	Geography Place / Authorities		
LIDO	element	workID	repositoryName	eventSet	repositoryLocation	relatedWorkSet	[links to the images of the same series of ornamental prints]
	broader categories	repositorySet / repositoryWrap / objectIdentificationWrap / descriptiveMetadata	repositorySet / repositoryWrap / objectIdentificationWrap / descriptiveMetadata	eventWrap / descriptiveMetadata	repositorySet / repositoryWrap / objectIdentificationWrap / descriptiveMetadata	relatedWorksWrap / objectRelationWrap / descriptiveMetadata	[links to the images of the same series of ornamental prints]

Table 6.*The Object Data Group in the data structures of CDWA, CCO and LIDO

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Descriptive Standard	Elements / Categories	REPRESENTATION DATA GROUP			
		Cultural Context	Description	Subjects	Related Works
CDWA	element	(16.3) Specific Subject Terms	(16.1) Subject Display	(16.2) General Subject Term (core)	[links to the visual resources of the representation]
	broader categories	(16.) Subject Matter (core)	(16.) Subject Matter (core)	(16.) Subject Matter (core)	
CCO	element	Culture (linked to the Concept Authority)	Description	Subject	[links to the visual resources of the representation]
	broader categories	Stylistic, Cultural and Chronologocal Information	Description	Subject	
LIDO	element	culture	objectDescriptionSet	subjectSet	[links to the visual resources of the representation]
	broader categories	eventSet / eventWrap / descriptiveMetadata	objectDescriptionWrap / objectIdentificationWrap / desrcriptiveMetadata	subjectWrap / objectRelationWrap / descriptiveMetadata	

Table 7. The Representation Data Group in the data structures of CDWA, CCO and LIDO

Descriptive Standard	Elements / Categories	CONTEXT DATA GROUP					
		Actor	Actor's Role	Institution	Related Events	Period	Place
CDWA	element	(28.2) Person Name (core)	(28.10) Life Roles (core)	(28.2) Person Name (core)	(17.1) Historical / Cultural Events	(5.2) Styles / Periods / Indexing Terms	(29.2) Place Name (core),
	broader categories	(28.) Person / Corporate Body Authority (core)	(28.) Person / Corporate Body Authority (core)	(28.) Person / Corporate Body Authority (core)	(17.) Context	(5) Styles / Periods / Groups / Movements	(29.) Place / Location Authority (core)
CCO	element	Creator (linked to the Personal and Corporate Name Authority)	Role	Names	Broader Context	Culture (linked to the Concept Authority)	Names
	broader categories	Creator Information	Creator / Creator Information	Personal and Corporate Name Authority	Subject Authority	Stylistic, Cultural and Chronologocal Information	Geography Place / Authorities
LIDO	element	eventActor	roleActor	eventActor	relatedEventSet	periodName	partOfPlace
	broader categories	eventSet / eventWrap / descriptiveMetadata	actorInRole / eventActor / eventSet / eventWrap / descriptiveMetadata	eventSet / eventWrap / descriptiveMetadata	eventSet / eventWrap / descriptiveMetadata	eventSet / eventWrap / descriptiveMetadata	subjectPlace / subjectSet / subjectWrap / objectRelationWrap / descriptiveMetadata

Table 8. The Context Data Group in the data structures of CDWA, CCO and LIDO

Descriptive Standard	Elements / Categories	CONTEXT DATA GROUP Thematic Context						
CDWA	element	(2.1) Classification Term (core)						
	broader categories	(2.) Classification (core)						
CCO	element	Class (linked to an Authority Record for Class)						
	broader categories	Class						
LIDO	element	objectClassificationWrap						
	broader categories	descriptiveMetadata						

*Table 9.*The Context Data Group in the data structures of CDWA, CCO and LIDO

*Where an object-related element is not applicable, an authority element appears instead

tern books could also be reconstructed, providing valuable data for the history of book publishing. The information is based on the content of the creator field in the Object Data Group.

7.0 Conclusion: from an object-based description towards a context-based description

In the case study outlined above, the emphasis shifted from an object-based description of the prints toward a context-based description, which prompted useful experiments in the domain of collection management. The enriched description and the deeper study of visual works which belong to the same object type and represent the same period could provide an unusual cross-section of an art historical period. It may lead to a more detailed, multilayered understanding of the era of historicism and art nouveau. In this context, the advanced description of objects goes far beyond everyday inventory practice, and can be evaluated as art historical research itself and as part of the domain called "digital art history."

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