



WORLD LIBRARIES

Volume 26

No. 1

2022

[worldlibraries.dom.edu/index.php/worldlib](http://worldlibraries.dom.edu/index.php/worldlib)

# Visualization of French Book Covers from the Liberation Collection (1944-1946) at Cambridge University Library

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## ABSTRACT

ImagePlot is a software which analyzes the brightness, hue and saturation of each image in a data set, and uses it as a basis for the visualization of a whole book collection as an organized display. In this paper, we examine what insights it can give into Cambridge University Library Liberation Collection's digitized book covers. This collection consists in more than 3000 books and pamphlets in French on the Second World War, the Occupation of France and the Liberation, published between August 1944 and the end of 1946. This article discusses some of the findings and research questions resulting from the use of ImagePlot on this specific set of digitized historical book covers provided with rich metadata. The visualization of the 'brightness' of covers from groups of books written by the same authors show how cover illustrations contribute to the visual identity of some juvenile literature series and magazines, even when they are not all produced by the same artist. The visualization of the 'saturation' and 'hue' of some of these book covers leads into the field of color symbolism and of the aesthetics chosen by some publishers. With our corpus, the ImagePlot visualizations of books covers by year are less easy to interpret in terms of general trends and evolution.

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## INTRODUCTION

Illustrated book covers became an increasingly important feature of book production at the end of the 19<sup>th</sup> and in the 20<sup>th</sup> century. Book design and appearance are shaped by national or sectorial rules and traditions. Since the late 20<sup>th</sup> century, the development of web-based booksellers and platforms has led to an explosion in the availability of digitized book covers for online retail and promotional purposes. This material has been used for research in arts, design and aesthetics, the history of the book, the publishing industry and digital humanities. In a 2017 article, Wooseob Jeong from Emporia State University studied the "Media Visualization of Book Cover Images", using computational methods to explore differences among a sample of 100 bestseller book covers in different countries (Jeong, 2017). He used the ImagePlot tool, which

analyzes the brightness, hue and saturation of each image in a data set, and uses it as a basis for the visualization of a whole book collection as an organized display. The conclusions of the study highlighted cultural differences in book cover images: “East Asian book covers tend to have brighter colors, fewer red/purple colors, and fewer saturated colors than Anglo-American books covers” (Jeong, 2017, p. 33). For (paperback) bestsellers, Jeong found that French and Indian books have greater use of dark colors and more saturated colors on their covers than Chinese and Japanese books, whose cover images have more white, black or grey elements... (Jeong, 2017, p. 30).

We decided to examine what insights ImagePlot could give into a collection of digitized book covers from the Liberation Collection at Cambridge University Library, focused on French (but also Francophone) material published during a limited period of just over two years, from August 1944 to the end of 1946. The collection, which was started in the 2000s and was donated to Cambridge University Library by the retired publisher Charles Chadwyck-Healey, consists of more than 3000 books and pamphlets in French on the Second World War, the Occupation and the Liberation (Chadwyck-Healey, 2014)<sup>1</sup>. It provides a unique opportunity to survey the state of book publishing and printing in France, at a time when the country was just beginning its long recovery. It is currently the object of an Arts and Humanities Research Council (AHRC)-funded collaborative doctoral project between Cambridge University Library and the Open University, with a PhD student working on Visual humour in the collection<sup>2</sup>. There is a wealth of drawings, paintings, prints and photographs in the Liberation collection, though little is known about many of the books’ artists and illustrators<sup>3</sup>.

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<sup>1</sup> See the Liberation collection webpages, <https://www.lib.cam.ac.uk/collections/departments/french-collections/french-special-collections/french-rare-books/chadwyck>.

<sup>2</sup> See the Open University-University of Oxford-University of Cambridge Doctoral Training Partnership website, <https://www.oocdtp.ac.uk/france-and-second-world-war-cambridge-chadwyck-healey-liberation-collection-1944-1946>.

<sup>3</sup> The illustrated works in the collection cover topics such as the French defeat and the Exodus, the German occupiers, the prisoners and concentration camps, women, resisters, the destructions, the Liberation etc...

As a former publisher, Charles Chadwyck-Healey was particularly interested in the history of the book and their materiality, creating a comprehensive dataset of digital images of books covers in the collection. The collection has also been fully catalogued (MARC 21 and RDA, creation of Library of Congress Authorities), with records including additional details on editors and publishers which do not feature in standard library records. An ongoing project at Cambridge University Library has enabled the linking and integration of the digitized book covers to records in the library system (Fabry-Tehranchi, 2019). This feature is often available for new publications (under the influence of the online book trade) but was a novelty for a historical book collection. The Liberation collection thus offers a unique digitized corpus enabling researchers to examine a specific set of historical book covers produced in the Francophone world at the end of the Second World War<sup>4</sup>.

## MEDIA VISUALIZATION TOOL - ImagePlot

ImagePlot is a freely available image visualization tool developed by Lev Manovich and colleagues (Manovich, 2014). It is primarily based on the ImageJ software developed by and freely distributed from National Institutes of Health (NIH). It allows you to automatically obtain median values of brightness, hue and saturation of each image in a data set. Brightness Median is the median of grey scale values for the pixels in an image, Saturation Median is the median of saturation, which means purity of color, for each pixel in an image, and Hue Median is the median of color values of all pixels in an image (Jeong, 2017, p. 17).

All values are converted into 0-255 scale. For brightness measurements, color images are internally converted to greyscale using the formula:  $grey = (red + green + blue) / 3$ . If an image is pure black, Brightness\_Median will be 0; if an image is pure white, it will be 255. Low

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<sup>4</sup> Our dataset is deposited on the research repository of the University of Cambridge at <https://doi.org/10.17863/CAM.81730>.

Saturation\_Median value indicates that image colors are mostly desaturated; a high value indicates that most colors are close to being pure (very saturated). The 0-255 scale may lead to some confusion particularly for hue values since hue values are normally represented as degrees of a circle, 0 to 360, from yellow to red, with green, blue and purple in the middle. When the hue values are represented in a linear form, such as X-axis or Y-axis, the interpretation requires extra caution (Jeong, 2017), p. 18).

## DATA PREPARATION

As a first stage, images without either an author or a publication year were filtered out based on their metadata. As a result, a total of 2,794 cover images were identified and included for comparison analysis. For author analysis, only authors with 5 or more cover images were considered. The collection includes some publications published before 1944 or after 1946, which were also filtered out before the analysis stage, which concentrated on 1944 (n=373), 1945 (n=988), and 1946 (n=580). The images were separated into folders by year of publication and by author.

## DATA ANALYSIS METHOD

ImagePlot 1.1 was used for data analysis. For each folder, the ImageMeasure macro of ImagePlot 1.1 was run to measure each image's values of brightness, saturation, and hue. Once the measurement file was available, the ImagePlot macro was run to obtain a visualization file. For each visualization file, a size of canvas (20,000 by 20,000 pixels) and a size of thumbnail (100 by 100 pixels) were used. The TIFF output file produced by the software was converted to PNG for portability and display.

## DATA ANALYSIS

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## **OVERALL VISUALIZATIONS**

Figures 1, 2, and 3 show the results of visualization of all images in the dataset based on their brightness, saturation and hue. Most books in the collection have white covers (or mainly a white background, sometimes with color lettering or illustration), but it also contains a wide range of color and illustrated covers. It appears that most of the cover images are brighter and less saturated, while colors between white and blue are dominant. These results are predictable because many cover images have light yellow colors.

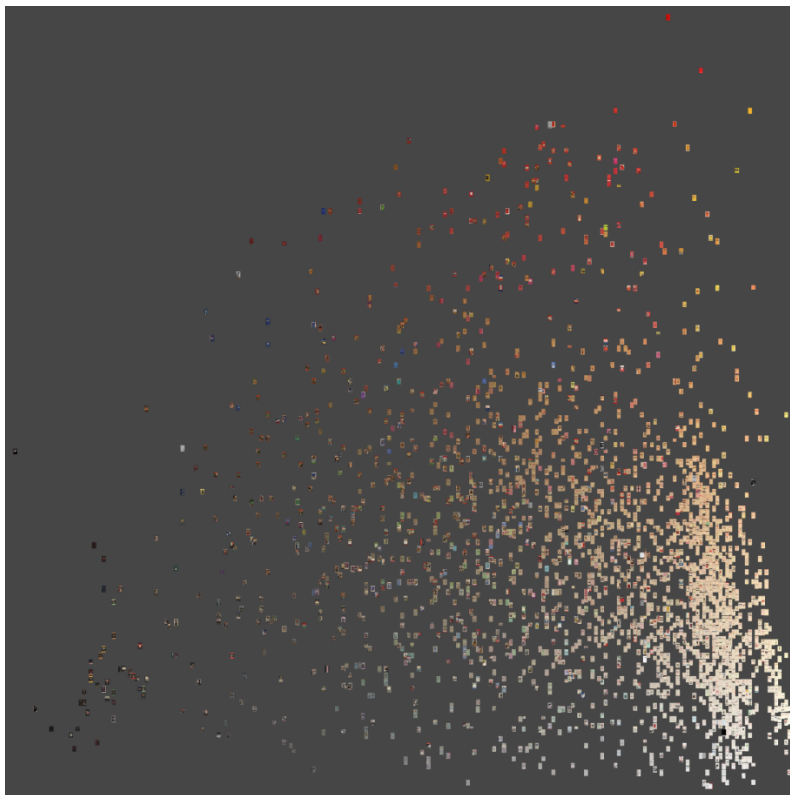


Figure 1. All Images with Brightness (X-axis) and Saturation (Y-axis)



Figure 2. All Images with Brightness (X-axis) and Saturation (Y-axis)

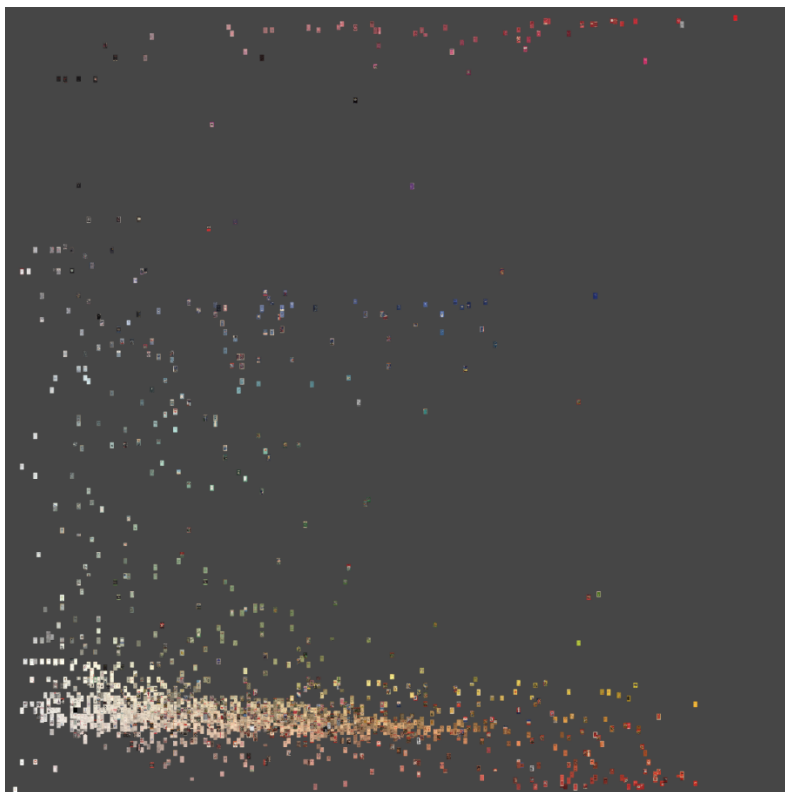


Figure 3. All Images with Saturation (X-axis) and Hue (Y-axis)

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## **VISUALIZATION OF BOOK COVERS BY THE MOST REPRESENTED AUTHORS**

We analyzed the metadata to find the authors with five or more titles in the collection: Aragon, Bernay, Blum, Brasillach, Clouet, Duhamel, Éluard, Érenburg, Fabre-Luce, France\_Ministère de la guerre, Galtier-Boissière, de Gaulle, Groc, Ingold, Jouve (Bonhomme, 2008), Lévis-Mano, Maritain, Mauriac, and Vercors. Among them, the most prolific authors (in some cases published before or after 1944-1946) are: Aragon (15 publications) and Eluard (12), followed by Fabre-Luce (10): a journalist and prolific writer, author of *Journal de la France 1939-1944* and Vercors (10), de Gaulle (9), Mauriac (9) and Pierre-Jean Jouve (7). If we restrict the corpus to authors with at least five publications between 1944 and 1946, we would need to exclude Levis Mano; as well as Galtier Boissière (author of several diaries written through the Occupation and the Liberation) and Brasillach, who both published works in the few years after 1946.

### *Brightness analysis by authors*

Figure 4 shows the output of visualization based on the cover images' brightness by authors.



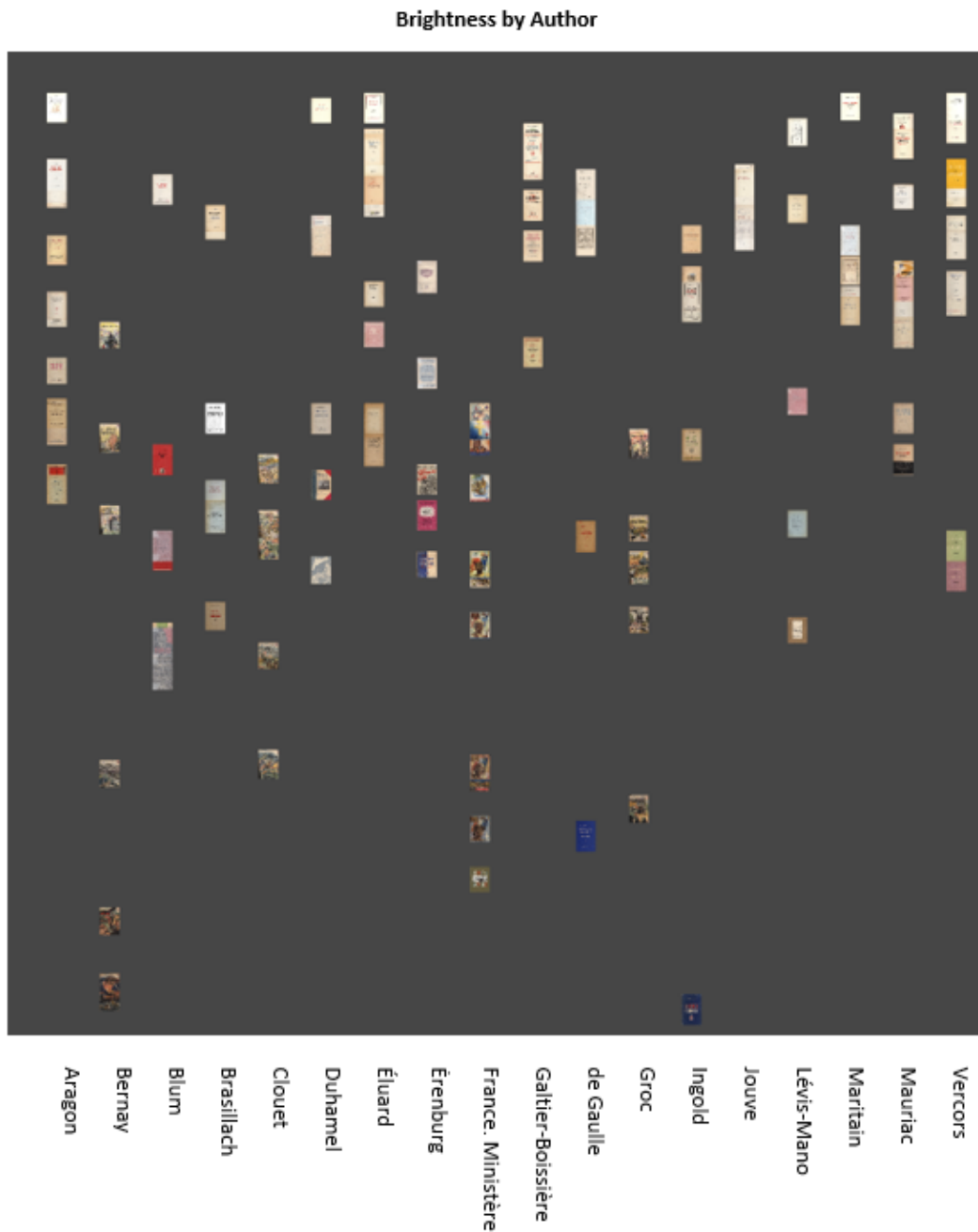


Figure 4: Brightness by Authors

Visualization by author highlights one particular juvenile fiction series: the Collection "Patrie libérée", published by Éditions Rouff (8, Boulevard de Vaugirard, Paris 15e), part of a longer series ("Patrie") which started during World War 1, narrating war events in a propagandistic

way. “Patrie Libérée” consists of 30 booklets (24 pages long) published between 1944 and 1946, sometimes with black and white illustrations. The series is characterized by a systematic use of illustrated color covers, even if they are printed on low quality paper.



1-2. Illustrator: F. Auer

5-6. Illustrator: C. Wanecq

3-4. Illustrator: A.G.

Figure 5: The “Patrie Libérée” series, works by Henri Bernay

Three authors stand out in our visualization, starting with Henri Bernay, pseudonym of the navy officer, journalist and writer Auguste Thomazi (1873-1959), whose works in “Patrie Libérée” all focus on naval battles. The 1949 volume *Épisodes héroïques de la guerre navale* compiles 10 such stories by Bernay. The covers of his works were illustrated by Frédéric (Maurice) Auer (1880-1961), a lithographer and illustrator of popular novels in the first half of the 20th century (*L'embouteillage de Saint-Nazaire*, *Le jour 'J' en Provence*); « C. Wanecq » (*Le naufrage de la*

"Picardie", *La bataille de Tarente*), and the mysterious « (A.) G. » (*La victoire du Cap Matapan*, *L'Odysée du sous-marin "Casabianca"*) (Figure 5 above).



Figure 6: The “Patrie Libérée” series, works by André Clouet

The second author is A. (André) Clouet (whose only identified book cover illustrator is « M. Guillemin », in *Combats en Birmanie*, see figure 6 above), and the third Léon Groc (1882-1956), a journalist and author of popular novels, both writer and director of the series. His work *La victoire d'Alsace* is a special issue with a cover including photographs by the « Service cinématographique de l'Armée ». Groc uses a Corsican-sounding pseudonym for *Délivrance de la Corse*: Marco Croccito. Only two illustrated covers of his books are signed, respectively by Frédéric Auer (*Oradour*) and « A.G. » (*Stalingrad*) (see figure 7 below). One issue we face is that the illustrator of a book cover is not always clearly credited; their name may be missing, and



the only clue may be a signature, sometimes only initials, on the illustration. Even when the illustrator is named, we do not always have further information about him.

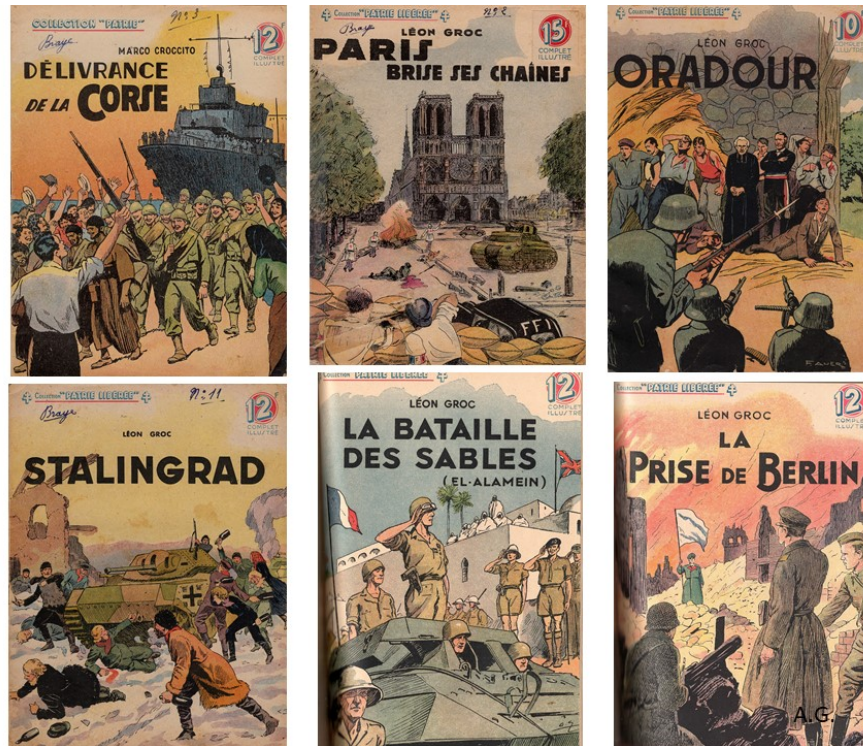


Figure 7: The “Patrie Libérée” series, works by Léon Groc

Illustrated covers can be a distinctive feature of a book series and significantly contribute to its visual identity (another example of a series for young readers with distinctive illustrated covers is “Les alliés”) (Fabry-Tehranchi & Panozzo, 2019). “Patrie libérée” shows that the same illustrators worked for some series and would contribute several covers, for different authors. The cover illustration related to the title (often providing action and location) and topic of the booklet; it also followed conventions of the genre of juvenile war stories illustration (featuring soldiers, military vehicles and weapons, as well as dramatic actions, in a variety of settings). Outside of series, did authors tend to work with the same (cover) illustrators? This could be facilitated by the use of the same publisher.



Figure 8: *L'armée française au combat* (1944-1946), covers illustrated by Raoul Auger

The outputs of the Services de presse du Ministère de la guerre are an interesting case of official publications: the Ministère de la guerre is the overarching entity in charge of editions and / or publication for works which are otherwise anonymous or, more rarely, involve other named authors. It produced 15 publications in our corpus between 1944 and 1945. In some cases, the publisher is named: Editions G.P. (Générale de Publicité), set up in 1944-45 at 80, rue St-Lazare, Paris 9e. Initially an advertisement agency, G.P. became a publisher specializing in children's literature (it later became G.P. Rouge et Or).

The main publication of the Ministère was the magazine *L'armée française au combat* and its special issues. From no 2, it adopts a consistent pattern for the illustration on the front cover: a portrait of a serviceman with the French flag on the foreground, and a white Lorraine cross on the right-hand side (Figure 8). The illustrator Raoul Auger (1904-1991), who also produced advertisements, posters and comics, is responsible for the great majority of the covers for the magazine and its supplements. The only cover which is not illustrated by him is *Evasions* (a 1946 special issue), by « P. Baudouin », but the issue also contains illustrations by Raoul Auger and Paul Ordner (1901-1969) (Aurousseau, 2014).



Figure 9: Special issues of *L'armée française au combat*, covers illustrated by Raoul Auger

Through 1945 and 1946 the many special issues of the magazine, though all color-illustrated and of the same format, have a different cover design. However, they are united by their focus on a single main element (Figure 9). It can be the portrait of a military person as in *Nos chasseurs*, *Parachutistes* and *Commandos*; or of a group of soldiers as in *Victoire* and *Le général Leclerc*. The cover can also feature a building, such as the cathedral in *Délivrance* (about the Liberation of Alsace-Lorraine), or a stone prison as in *Evasions*. It includes prominent symbols: for *Victoire* it is the allegory of Victory (an update and reinterpretation of the group of *La Marseillaise*, sculpted by François Rude in the 1830s for the Paris Arc de triomphe); for *Nos drapeaux*, a series of military standards, and for *18 juin: l'armée victorieuse*, the Lorraine cross.

It is noteworthy that due to political changes (from the Provisional government which succeeded the Vichy Regime, to the birth of the 4th Republic), from 1946, the Service de presse du Ministère de la guerre became the Service d'information du Ministère des armées, which

has five additional publications in our corpus. Did this imply a significant change in personnel within the institution, and a new composition for the editorial team of *L'armée française au combat*? It does not seem to have changed the publication and design of the magazine in obvious ways (issue 5 has the same graphic identity as the previous ones), or of its special issues, still published by Editions G.P., and illustrated by Raoul Auger.

*Saturation analysis by author*

Figure 10 shows the output of visualization based on the cover images' saturation by authors.

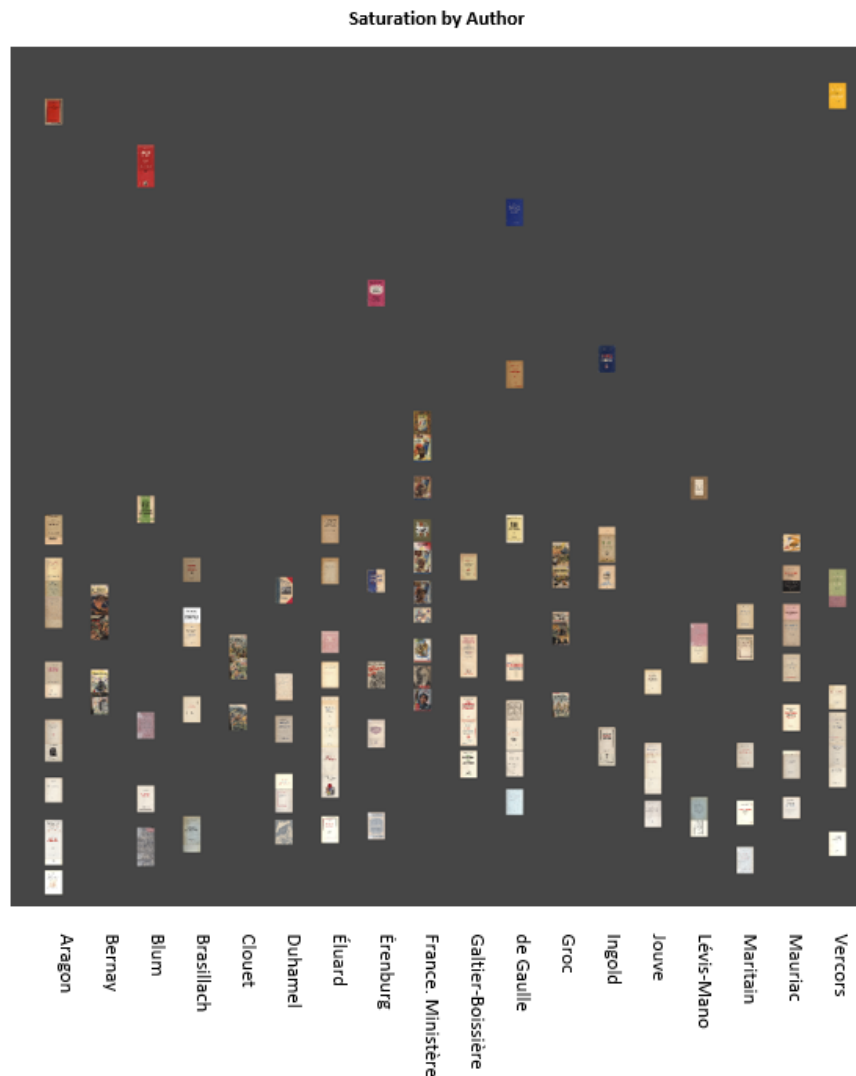


Figure 10. Saturation by authors



In the visualization of saturation, no specific author stands out, though covers with particularly high levels occasionally appear in the corpus of several authors - such as the intense red covers of Louis Aragon (*Le crève-cœur*, 1943), possibly associating the heart with the red color (Figure 11). For Léon Blum's *L'histoire jugera*, 1945 and *Le dernier mois*, 1946, the choice of red may be associated with the political leaning of the author, a prominent socialist leader (Birnbaum, 2015; Monier, 2016). This might also be the reason for the choice of a pinkish / red cover for the translation of *Dans la ménagerie fasciste* by the soviet writer Ylia Ehrenbourg (1891-1967) (Marcou & Ehrenbourg, 1992; Rubenstein, 1999).



Figure 11: Red covers

Two intense blue covers also stand out: the one for *L'armée coloniale* (1945) by Général Ingold (1995) (the white and red title and illustration on the blue background create a patriotic tricolore ensemble) and *Le général de Gaulle vous parle* (1947) (Figure 12).





Figure 12: Blue covers



Figure 13: Colored covers for the Editions de Minuit

Finally, the yellow cover of Vercors' 1946 limited edition of *La marche à l'étoile*, which was issued in a slipcase, together with *Les armes de la nuit*, in shade of pink, and *Le silence de la mer*, in green (Figure 13), stand out both within the author's publications and in the production of Les Éditions de Minuit, which started clandestinely in 1942, and are normally characterized by a very sober white covers, only printed in black and sometimes in red (Gilbert, 2021; Riffaud, 2014; Simonin, 1994; Vignes, 2010). Usually, reprints, generally issued by the same publisher,

only feature subtle changes from one year to the other (see the numerous reprints of Eluard’s *Au rendez-vous allemand*, or those of Brasillach’s *Poèmes de Fesnes*).

*Hue analysis by author*

Figure 14 shows the output of visualization based on the cover images’ hue by authors.

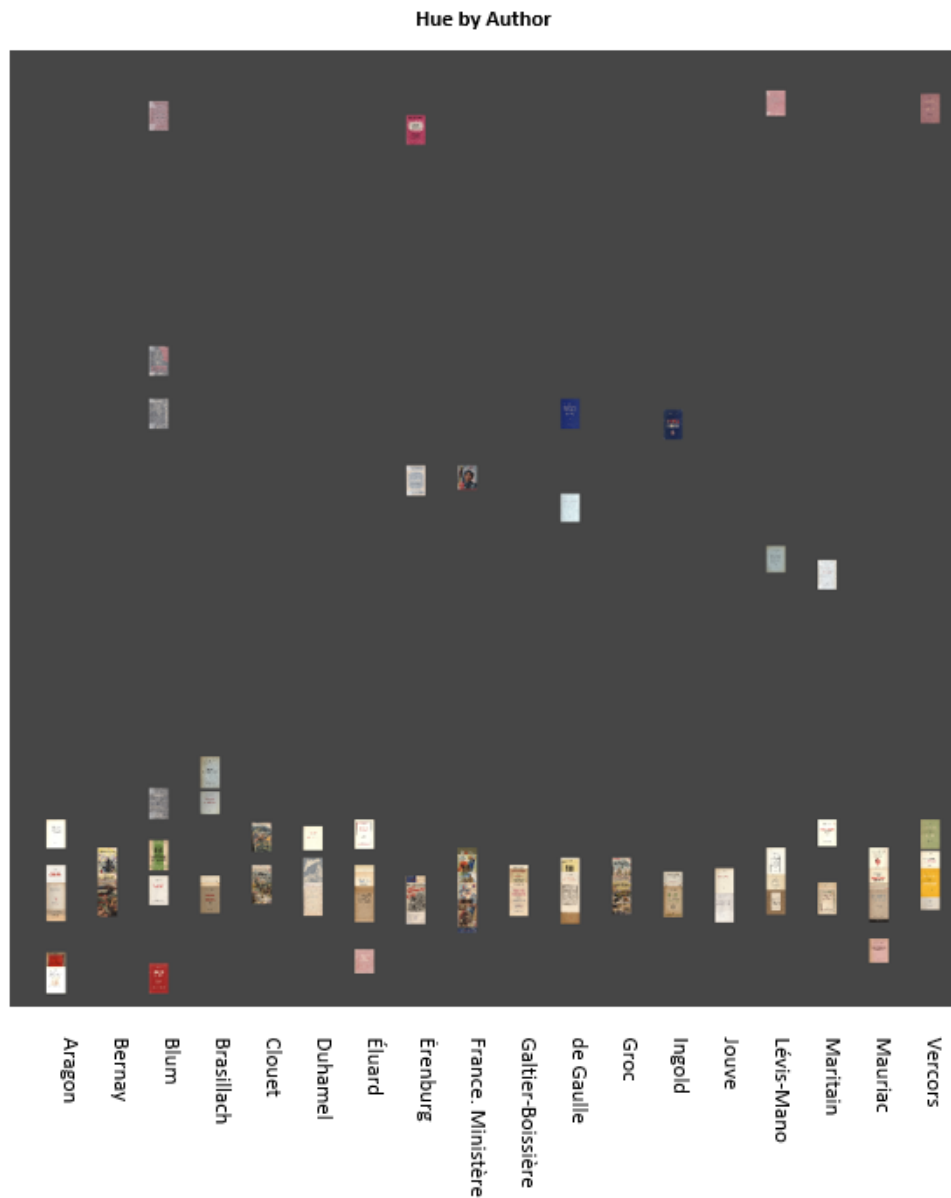


Figure 14. Hue by authors

### VISUALIZATION OF BOOK COVERS BY YEAR

Figures 15, 16, and 17 show the brightness, saturation and hue of cover images published in 1944, 1945 and 1946 along with those of all the cover images in the data set. It may be that brighter and more saturated colors were used in the publications of later years, but the visualizations are in this case more difficult to distinguish and interpret.

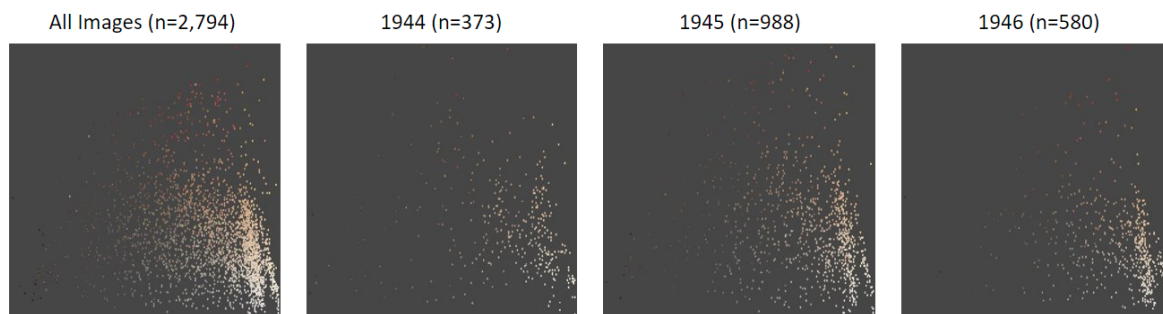


Figure 15. Multi-year comparison of brightness (X) and Saturation (Y)

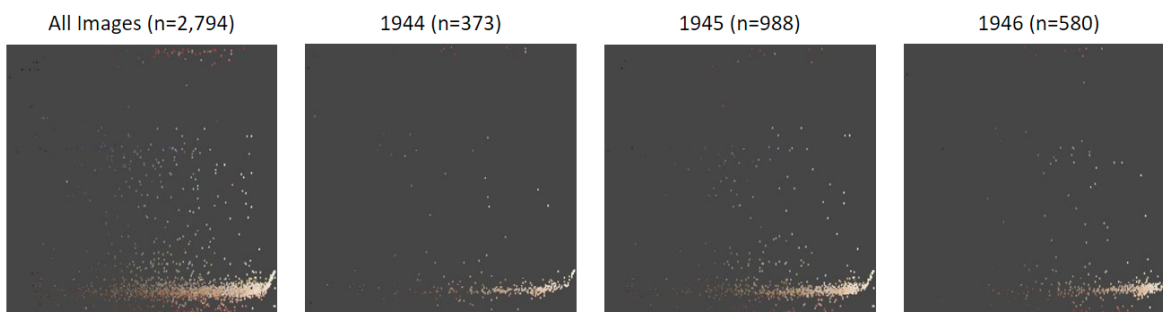


Figure 16. Multi-year comparison of brightness (X) and Hue (Y)



Figure 17. Multi-year comparison of Saturation (X) and Hue (Y)

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## CONCLUSION

The ImagePlot visualization tool is one way through which digital humanities research can analyze relatively large corpora of digitized books cover images such as those from the Liberation collection. The analysis of the colors in the corpus of digitized images, along with metadata from the catalogue records, point to general trends (or outliers) which wouldn't necessarily stand out from an individual and subjective human perspective. They offer a general, distant reading of the collection which raises interesting questions and invites new interpretations.

In the visualization of covers by author, the brightness analysis put the focus on the darker illustrated covers of three authors working for the juvenile literature series “Patrie libérée”, Bernay, Clouet and Groc. It points to a visual identity in the cover design and illustrations of the whole collection, even if the covers were produced by different illustrators (Frédéric Auer, A.G., M. Guillemin, Wanecq).

The case of the Service de presse du Ministère de la guerre / Service d'information du Ministère des armées is also an interesting one, with a large corpus of illustrated covers consisting primarily of the magazine *L'armée française au combat* and its many supplements. This constitutes an even more obvious example of illustrated publications used with propagandistic purposes. In that case, the same illustrator, Raoul Auger created most of the covers, and the production kept its graphic identity (and its publisher) despite wider changes affecting the institution which sponsored it.

While the more encompassing visualizations provide the most striking pictures and show the variety and wealth of book covers in the Liberation collection, the specific visualizations by

author were useful in pointing to sub-corpora and opening the way for more detailed and interpretative case studies.

With our corpus, the software analysis and comparison of Brightness, Hue and Saturation by year (in 1944, 1945 and 1946) seemed less fruitful because differences (apart from the quantity of images per year) were hard to pinpoint, let alone interpret. We may perceive, from 1944 to 1946, a general evolution to more colorful, and brighter colors, but this would need further investigation.

## LEADS FOR FUTURE RESEARCH

More can be done on the visual identity of book covers of children's literature (which is well represented in the collection) which are often characterized by striking illustrated colored covers. This could be achieved by comparing the cover page esthetics and choices of juvenile series such as "Patrie Libérée" and "Les Alliés". A book cover design is also shaped by its intended buyer / audience. One could put into perspective these publishing practices (and readers' expectations) by contextualizing them through an examination of the covers of other literary genres, from political essays to fiction. Cover choices could highlight a different distribution of types of publication through more detailed studies on sub-corpora in the collection.

It would be interesting to investigate in more detail (maybe through correspondence and contracts preserved in publishers' archives) the respective role of authors, illustrators and publishers in designing book covers.

Another research avenue could be the economic and practical matters of production, including the availability and cost of primary material, such as the dyes used to produce colored covers, from colored paper to color illustrations. More is known about the restrictions regarding the paper supply for book production during and after the war (Fouché, 1987 ; Mollier, 2008).

A limit of the current study is the issue of preservation of historical material and possible fading / alteration of book covers (due to age / exposition to light); the use and dimming effect of the glassine (translucent glossy paper) cover protections; and / or the survival and visual characteristics of other publishing elements such as bellybands (usually red, white or black, they are rarely kept; some creep up in our corpus, digitized on top of the cover). A distinct question is that of photographic as opposed to illustrated covers: is or would the ImagePlot software be able to distinguish them?

There are many ways in which the Liberation collection and more specifically its corpus of digitized book covers can be investigated. For us, the use of ImagePlot has shed light on the visual identity of book covers from the juvenile series *Patrie Libérée* and the official propagandistic magazine *L'Armée française au combat*: we hope it can be a starting point for further investigation and / or be integrated in other types of research on the collection.

## ACKNOWLEDGEMENTS

We would like to thank for their contributions Beth Hendrickson (Emporia State University), Hugh Jones (Cambridge University Library) and Brady Lund (Emporia State University), and Charles Chadwyck-Healey, donor of the Liberation collection, who also sponsored the digitization of the book covers.

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