

**Digitizing Cultural Heritage
Materials:
Fundamentals and Best Practices**

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DIGITAL LIBRARY

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The comprehensive digital publishing program of the ULS

For the past decade, the ULS has been building the capacity to mount digital content on the Web and has been successful in producing a growing array of searchable, browsable collections of value to the University and the region.

In addition, the University of Pittsburgh's University Library System (ULS) and [University Press](#) have formed a partnership to provide digital editions of press titles as part of the library system's D-Scribe Digital Publishing Program. Thirty-nine books from the Pitt Latin American Series published by the University of Pittsburgh Press are now available online, freely accessible to scholars and students worldwide. Ultimately, most of the Press' titles older than 2 years will be provided through this open access platform.

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why digitize?

- access: overcome limitations around using physical object
- preservation: documentation of an object at a particular moment in time

why digitize?

- high quality representation for multiple re-uses, not just web
- enable new uses: documents as data, aggregations, manipulations, etc.

the bigger picture

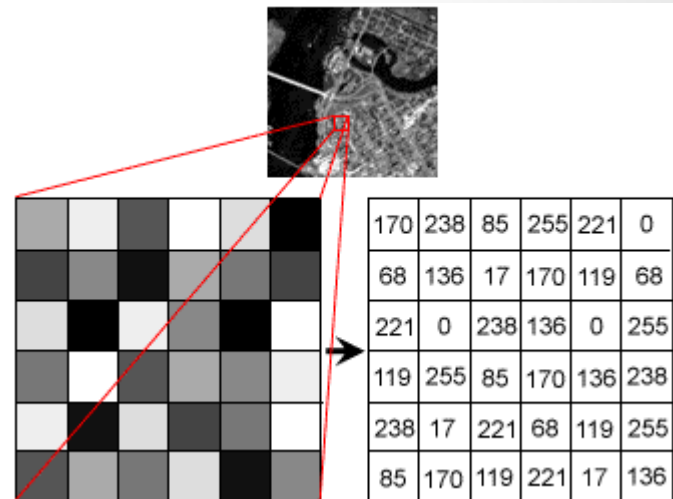
- digitization is a *multi-stage process*
- scanning, or imaging, is only one small aspect
- digitization is part of an even bigger process: digital asset lifecycle management

**...that said, today
we'll focus mostly on scanning**

what is a digital image?

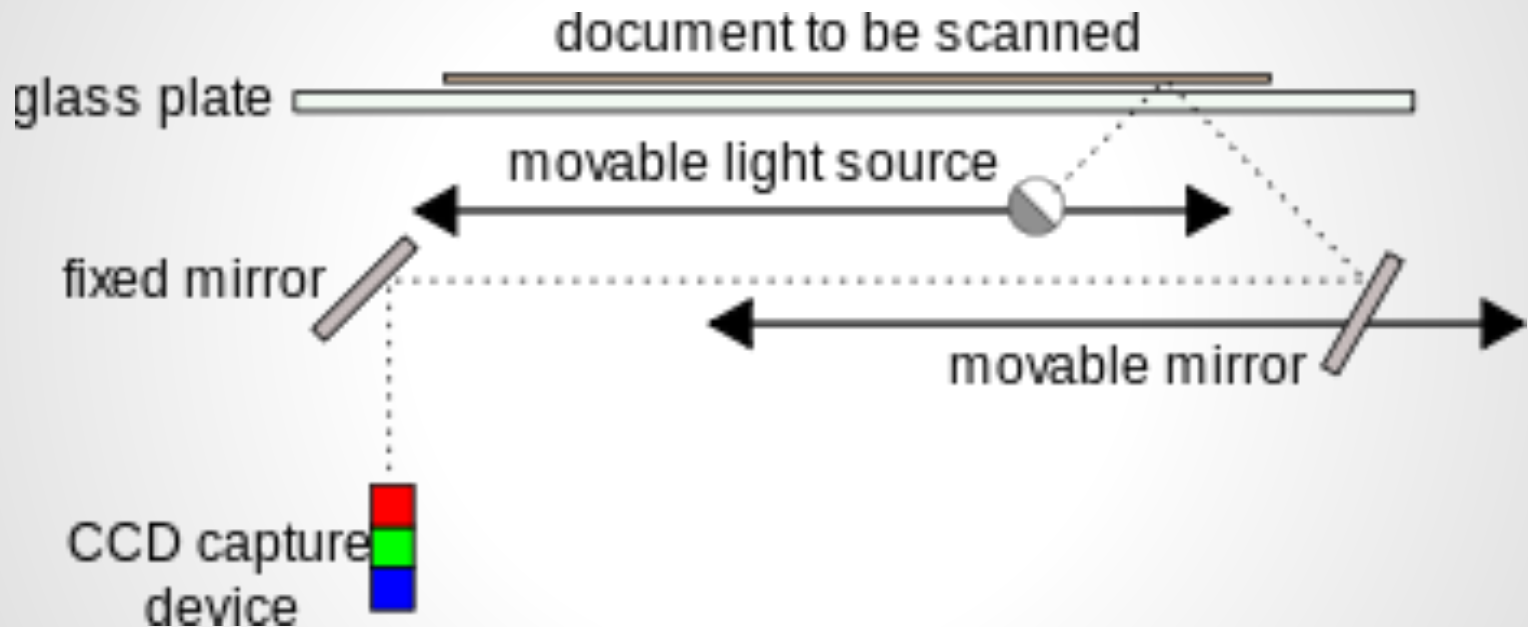
a grid of pixels, each with a value

1	1	1	1	1	1	1	1	1	1
1	0	0	0	1	1	0	0	0	1
1	1	0	1	1	1	1	0	1	1
1	1	0	1	1	1	1	0	1	1
1	1	0	1	1	1	1	0	1	1
1	1	0	0	0	0	0	0	1	1
1	1	0	1	1	1	1	0	1	1
1	1	0	1	1	1	1	0	1	1
1	1	0	1	1	1	1	0	1	1
1	0	0	0	1	1	0	0	0	1
1	1	1	1	1	1	1	1	1	1



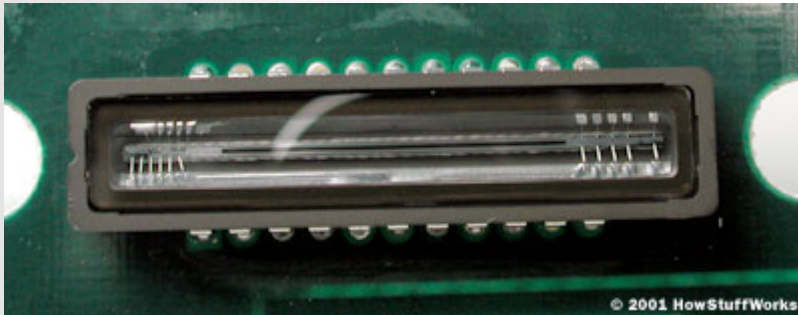
how are digital images captured?

sensors, typically *CCD*

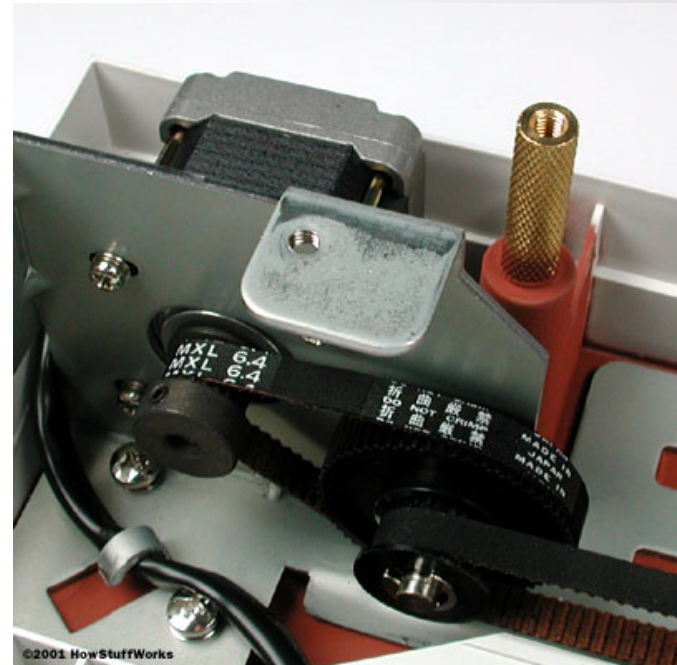


source: en.wikipedia.
org/wiki/Image_scanner

inside a flatbed scanner:



the ccd



the stepper motor

characteristics of images

bit depth
resolution
dynamic range
compression
file format

*You could describe an image:
"A 24-bit RGB uncompressed TIFF scanned at 400 ppi"*

**careful:
resolution does *not* automatically
measure quality:**

"Dpi ... is only an indication of the sampling interval between pixels. It is not an indication of what size detail the scanner can ultimately see, or its MTF behavior, as much as it is of how finely the center of a pixel can be located."

Donald Waters, What is an MTF ... and Why Should You Care?
RLG DigiNews, 2 (1)

compression

lossy or lossless



compression artifacts

color management

calibration

device profiles

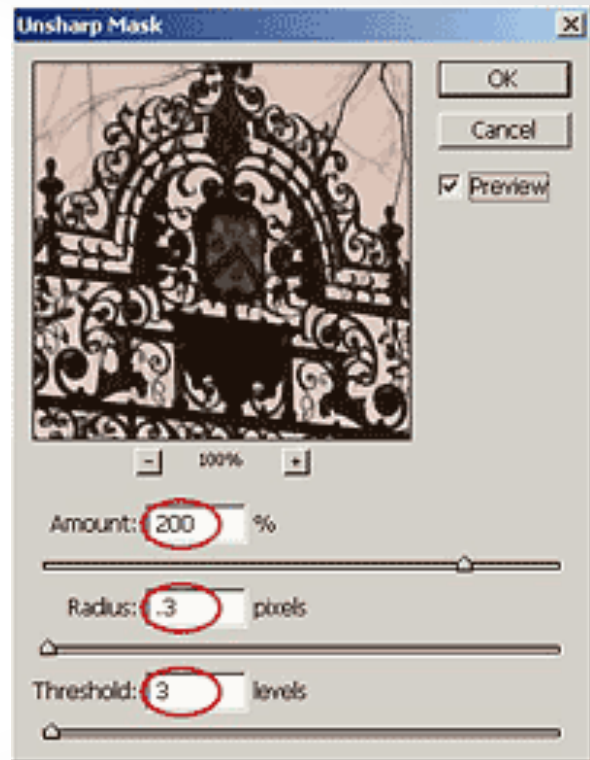
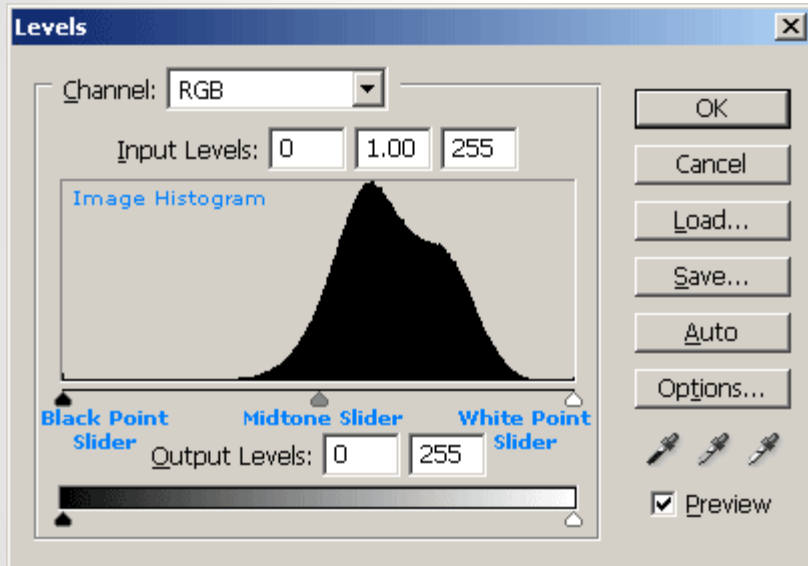
embedding profiles

targets and colorcheckers



internal file metadata

image editing, enhancement



**considerations for
digitization in
libraries, archives, and museums**

***there is no single best
specification for digitizing***

**it depends on your content
and your project objectives**

concept:
information or artifact?

```
- <div type="translation">
  <head>Translation</head>
  - <p>
    To Mistress Caelestis, for the welfare of Emperors
    <supplied reason="lost">Marcus A</supplied>
    urelius Antoninus and Marcus Aurelius Commodus, Augusti,
  - <del rend="erasure">
    <supplied reason="lost">and Crispina Augusta</supplied>
    <gap reason="lost"/>
  </del>
  ; Lucius Aemilius Calpurnianus Muse and his wife, Mucia Pudentilla, gave and dedicated
  <supplied reason="subaudible">this</supplied>
  on account of the honours paid to Lucius Aemilius Mucianus and Quintus Aemilius Augurinus, formerly
  their most dutiful sons.
  </p>
</div>
```



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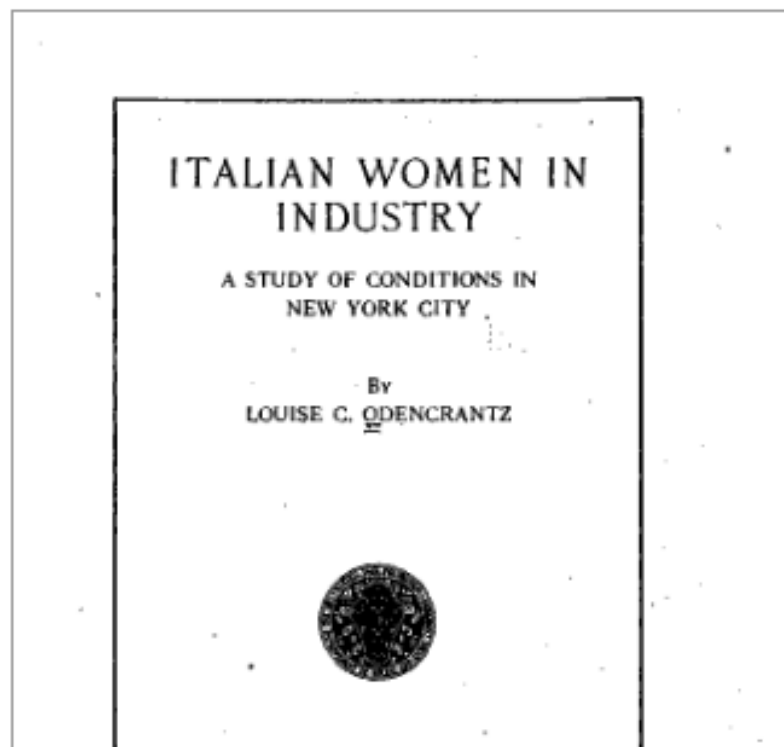
Title: Italian women in industry : a study of conditions in New York City / by Louise C. Odencrantz.

Author: Odencrantz, Louise Christine, 1884-1969.

Collection: [Making of America Books](#)

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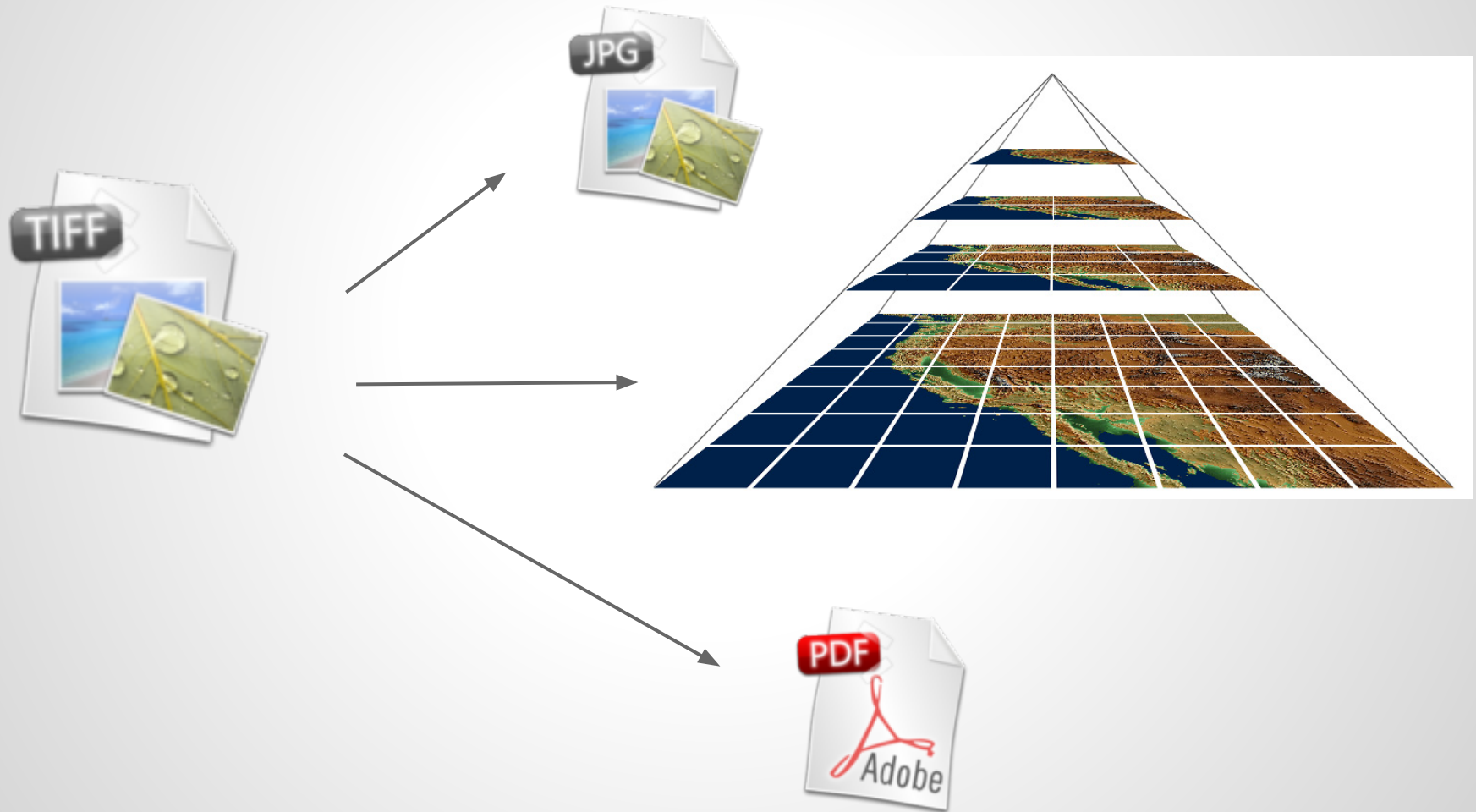


In principio erat verbum
et deum esse non loquitur. Hoc est in principio
et per deum. Contra primum facta sunt
et in ipso factum est in hoc quod factum
est. In ipso factum est. et non erat factum
non erat. et hoc in ipso factum est. et non
hoc non in principio factum est. In hoc
non in ipso factum est. non in ipso factum
est. Hic venit in ipso factum est. et non
non in ipso factum est. et non in ipso
factum est. Non in ipso factum est. sed in
ipso factum est. et non in ipso factum
est. et non in ipso factum est. et non
in ipso factum est. In ipso factum est
et non in ipso factum est. et non in ipso
factum est. et non in ipso factum est.
et non in ipso factum est. et non in ipso
factum est. et non in ipso factum est.



concept:
master and derivatives

one master, many derivatives



decisions

color, grayscale, bitonal

**benchmarking for quality:
resolution or target size**

cropping

OS/4
W. M. D.
293
LOT
18/293

- 51 An antique medicine chest, covered with copper, richly embossed, and a line engraving of Charles II. inside the lid
- 52 An ancient brass candlestick
- 53 Two antique brass snuffer stands
- 54 One ditto candlestick
- 55 Two ancient brass ladles and a cup
- 56 Six ancient shoe buckles
- 57 Five ditto
- 58 Pair antique spurs
- 59 Ditto
- 60 Ditto
- 61 Ditto
- 62 Ditto
- 63 Ditto
- 64 Ditto
- 65 Ditto
- 66 Ditto
- 67 Ditto
- 68 Antique stirrup iron
- 69 Two ancient bits
- 70 Bunch of antique keys and a puzzle lock
- 71 An antique bronze tea-urn, formerly in the possession of the Lords of Berkeley
- 72 An antique bronze tea-kettle and stand, richly chased with figures, birds, and beasts
- 73 An antique brass dish, with embossed figures of Adam and Eve in the Garden of Eden tempted by the serpent
- 74 An antique oak cover for a chafing dish, richly carved through with animals and figures
- 75 A model of a French man-of-war taken by the English, *La Modeste*, fully rigged, lately in the collection of Sir Samuel Rush Meyrick
- 76 An ancient halberd
- 77 Ditto

scan both sides?

handling blank / missing pages

Missing Page

RESOLUTIONS

61

British Embassy at Washington, D. C., to the British Labor Party, Transport House, London; and to Pandit Jawarhalal Nehru, Allahabad, India, together, in the last case, with expressions of greeting and working-class solidarity to the Indian Socialists.

XV

ANTI-SEMITISM

Whereas, the tactics of fascism rest in part upon the discrediting and outright persecutions of minority groups, especially the Jewish people; we condemn anti-Semitism in all its forms and manifestations, assuring the victims of such repression of our sympathy.

However, we express to the Jewish people our conviction that the only fundamental and realistic way to combat anti-Semitism is to build up the working class forces struggling to create a social order based on brotherhood in a Socialist cooperative commonwealth.

XVI

INNER PARTY PUBLICATIONS

Whereas publishers of factional organs such as Socialist Appeal and Clarity have openly expressed and volunteered that they will desist and refrain from publishing or distributing periodicals upon inner party positions, and

Whereas a publication giving an opportunity of expressing various theoretical lines of the party is helpful to party welfare,

Be it resolved by the delegates assembled in convention that the National Executive Committee appoint a board of directors with equality of representation of all groups and tendencies who are to publish an organ publishing all points of view on theoretical and other questions within the party.

And be it further resolved that within six weeks of the next convention the prohibition of publications other than the organ approved by the National Executive Committee be lifted.

And be it further resolved that any member, group, or faction violating the purport of this resolution be subject to the discipline of the party.

include targets?



行平の預養はては家愛ありし姉の海士あり其執心の
紙盡まつはせし者を語り傍の向回を望むるを伴ゆり
謗に能許松丸は米の飯にて珍重するけり乃て聞きて
も飽かぬ譬をもべし
奕面 源友小面葺の類



physical considerations for fragile material



and there's a lot more...

quality control

file naming

metadata

derivative formats

file organization

storage

rights management

usage policies

bibliography and links forthcoming...

thanks!

questions?