

University of Michigan Library
Image Quality Review Manual



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Library Image Quality Review

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Overview of Image Quality Review

Personnel:

- 1 Special Projects Librarian – oversees the operation – approximately 10 hours/month
- 1 QR Coordinator – 40 hours/week - approximately 20 hours/week overseeing operation and 20 hours/week doing quality review
- 1-2 Students – 15-20 hours/week doing quality review in shifts of no more than 4 hours at a time
- Programmer time – fixing bugs, revisions to database, requests for special reporting needs – as needed (infrequent)

Image File Types:

University of Michigan is receiving:

- G4 TIFF (text-only pages) – binarized and interpolated to 600 ppi. Typical file size: approximately 50 KB
- JPEG2000* (non-text pages and covers) – 300 ppi. Typical file size: 200-500 KB

(See [Appendix A](#) for further information on File Types, Resolution and Color Depth)

*We moved from JPEG to JPEG2000 in May of 2007.

Automated Processes:

Digitized volumes are “pulled” from the Google server on an ongoing basis. Scripts create the various files and download them to our local servers. Additional scripts perform several automated quality checks, including image validation using JHOVE, which checks that the files are well-formed and validates the compression scheme and file format. The image files are then moved to storage, and another script pulls sample sets of 20 consecutive pages (randomly chosen) from each volume and deposits them to a shared network drive. This script also creates a .csv file for each volume with a list of the 20 files. We use these sample sets for our “manual” quality review.



Manual Processes:

Under the current process, the QR coordinator selects an appropriate number of volumes to upload each day (based on how many we estimate can be reviewed for that day). She then uses a script that combines the individual .csv files for each of volumes into one large one, which is then uploaded to the QR database. The database generates a “worksheet” for each volume that is accessed via a web interface. The web interface also includes some other work tracking and reporting mechanisms. (See [Appendix B](#))

We currently have two workstations set up for the Quality Review Coordinator and Quality Review Technicians. Each workstation has one computer connected to two monitors. One monitor is used to view and record errors in the QR database. The page images are viewed on the other monitor using the ACDSee (currently using version 8), a software program we use to view and navigate through the images.

Error Types:

We are using most of the same terminology Google is using for their own in-house quality review (blurred, cleaning, warp, crop, obscured, colorization), but we’ve added two additional error types related to TIFF thresholding (thick, broken). For each error type, we distinguish between critical and non-critical errors. An error is considered critical when information is lost or illegible; an error is considered non-critical when there is a problem with the image but no information is lost. An example of a non-critical error would be a page where text is difficult to read but still legible, or there may be a foreign object present but it does not obscure any information content on the page.

We consider our Error Type Definitions to relatively stable at this point, but we still review them periodically to make sure they are accurate, up-to-date and easily understood.



Reporting:

We send reports to Google with the results of our quality review on a monthly basis. The reports include the % of each error type that was found among all the sampled files, as well as the percentage of all volumes received that month that the QR personnel were able to review. Please note that our goal is not to review samples from every volume, only to review a statistically significant percentage of what we receive in a given month. We also include graphs with the percentages of each error type we've seen over time in order to identify and monitor trends. (See [Appendix C](#))

Other Errors:

We also monitor page errors that are beyond the scope of the Page Error Types ("oddballs") and therefore do not fall under any of the categories we are tracking via the QR database. These are either errors we have not seen in the past that may be triggered by some change in Google's processing, or they may be errors we first saw in earlier months that are still showing up, and we want to keep Google informed so they can continue to work on the problem until it is satisfactorily resolved.

To track these types of errors we create a new folder each month where technicians can store the images in question. Each folder includes a form where technicians can describe the errors. Once a month the images and error descriptions are reviewed by the coordinator (and supervisor) and images with any new or significant recurring errors are compiled and sent on to Google along with descriptions.

Trends:

Overall the quality of scanning has improved continually over time, with error rates for most error types continuing to decrease to a point where they are no longer of significant concern. However we do continue to monitor in order to ensure that when any changes are implemented on Google's end (e.g., processing) we will be able to spot adverse effects on the quality of the images.



Training:

(See Appendices D and E)

Detailed Procedures for Image Quality Review

Getting Started:

You will need to access the following:

- **QR server** – provides access to sets of sample images from each volume received
- **QR database** – web interface for input of quality review data
- **ACDSee** – Software for viewing and navigating through the image files

Step 1: Connect to QR server- This has to be done each time you log in to the computer.

1. Go to: My Computer
2. Select server: qr on `mdp.umdl.umich.edu (mdp.umdl.umich.edu)
3. Login with unique name and your quality review database specific password¹- this is not your Kerberos password²!



¹ Your Quality Review Database password is assigned to you at hire and allows for access to the QR server in My Computer under: qr on 'mdp.umdl.umich.edu' (X:)

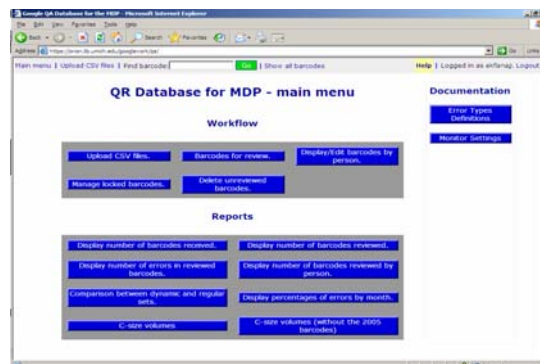
² Your Kerberos password allows you to log onto the University of Michigan's Kerberos realm, such as email and Wolverine Access

Step 2: Open QA database

1. Go to <https://orion.lib.umich.edu/googlework/qa/>
2. Login using Kerberos id and password

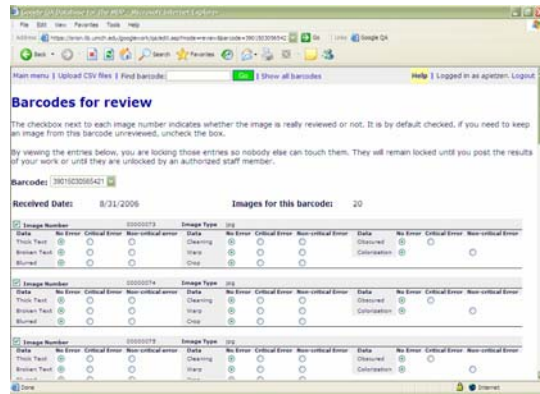


The main page of the database will appear, as seen below.



3. Click on "Barcodes for Review"
4. You will see a worksheet for a particular volume as identified by the barcode number. (e.g. 39015000566466) There are fields listing error types for each sample image (e.g. 00000203) for that volume

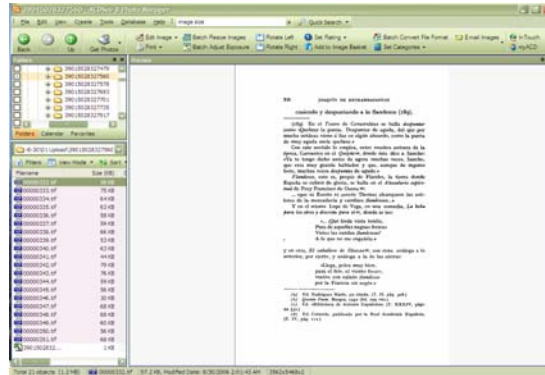
Worksheet will look similar to this:



Step 3: Open ACDSee

1. Double-Click on the ACDSee icon on your desktop. Hint: be patient, ACDSee can be slow and move at its own pace!
2. In the folders navigate to the My Computer folder and open it.
3. Double click on the qr directory on the server: qr on 'mdp.umdl.umich.edu (mdp.umdl.umich.edu)' (X:), which will already have been mapped to the X drive.
4. Open the folder containing the most recently uploaded image files (the QR coordinator sends an email to the group each time a new folder is uploaded to the database). For example: 2007-06-25
5. In the dated folder, open the upload folder you will be working from. For example: 01 upload. Once volume is open, it should contain:
 - A sample of 20 images (.tif and .jp2 files) from the scanned volume
 - a .xls file (which can be ignored)

- Open the first image. This is a sample view of what the screen will look like once a volume is opened.



- Review each of the 20 pages and mark any error types encountered (see "Page Error Types Defined" document) for each image in the worksheet.
- Click on "**Submit changes**" button at the bottom of the page in the QA database.

*Note: If you need to stop but you are not finished reviewing all the pages in a volume, uncheck the image files you haven't reviewed, and click on "**Submit changes.**"

- The database will automatically take you to a new worksheet for the next barcode to be reviewed.
- In ACDSee the next barcode should be located in the same upload folder you were already working from. Most likely the barcode will be the next one listed or among the next several. If you have a problem finding a barcode, please see Appendix C: Finding a "lost barcode" in ACDSee.
- If for any reason you ever need to go back to a file you have already reviewed – go to the main menu and click on "Display/Edit barcodes by person" and chose your unique name from the first drop down menu. When that has loaded, choose the date on which you reviewed the barcode. **This is not the date of the folder the barcode was in when you reviewed it.** Locate the barcode and edit.



12. When you are finished be sure to **Logout!**

QR Helpful Hints:

Be Patient! Especially as you are loading the system- it will work, you just have to be patient!

Be sure to take breaks so your eyes don't get too tired!

Use the navigation buttons on the website to navigate when using the database – avoid using the “back” button

If the page numbers in the database don't match with ACDSee- refresh the database page and see if that solves the problem. If the image numbers still don't match, make sure you are working on the right barcode in ACDSee. If you have done all of these things and the image numbers still do not correspond between the database and ACDSee, please inform the QR Coordinator.

Questions to ask yourself as you review pages:

Is the entire page readable or does it contain text that is thick, broken or blurry?

Are all characters legible or have they been cleaned away?

Is there anything obscuring the page?

Are any of the edges cropped off?

Is the page curved or warped?

Is there color when the page is only text (or line drawing)?

Reporting Other Errors:

For errors that don't fall under any of the standard page error types, follow the procedure outlined below.

Step 1:

In ACDSee, right click on the barcode with the problem image(s)
Copy the barcode (do not cut it)

Step 2:

Open My Computer on the Desktop
Click on the QR directory
Open folder 'Oddball Images'
Paste barcode into the folder

Step 3:

Open word doc: "Description of Oddball Images"
Type in the folder and barcode number, description of the problem, image number(s), and initials. See example report below.

Oddball Error Report

Please type the complete barcode along with the folder and its date before describing the error. In your description of the error include the image # where it occurred. Please remember to SAVE when you are done.

Barcode	Folder	Image #	Description	Initials
X:\2007-04-11\01 Upload\39015006105509	4/11	68	Black box	ekc
X:\2007-04-11\01 Upload\39015006369949	4/11	66	Black box	ekc
X:\2007-03-14\02 upload\39015006952504	3/14	167,168	Jpgs are distorted and unclear	mt
X:\2007-04-27\01 upload\39015001098246	4/27	13,14,15,17,18 20,22	Pink/green Running through pic	dm
X:\2007-03-14\02 upload\39015017078992	4/21	85	Tif that should be jpg	mt

Remember to SAVE and close the word doc when you are done.



Monitor Settings:

In order to maintain a consistent viewing environment for quality review all monitors should be set as follows:

1) Screen Resolution should be set at 1024 x 768

Go to: Start Menu

> Settings

>Control Panel

>Display

>Settings

> Screen Resolution

Slide screen resolution setting to 1024 x 768

>Color Quality

Choose Highest (32 bit)

Click "OK" to save settings

2) Monitor Calibration

To ensure the monitor is calibrated correctly so that it displays the correct range of grey-tones, go to this website and follow directions in the first paragraph.

<http://epaperpress.com/monitorcal/index.html>

ACDSee settings:

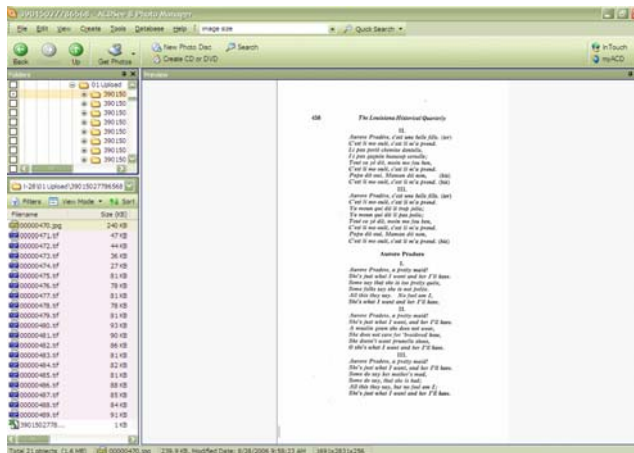
Open ACDSee

- 1) Navigate to: My computer/mdp.umdl.umich.edu/
- 2) Select folder to work from: 2006-04-22 (or some other date)
- 3) Select volume: 39015000566466 (individual barcode)

Once open, volume to review should contain:

- a) A sample of 20 images (tiffs and jp2s)
- b) ACDSee should look something like image below.
- c) Review images by using arrow keys to navigate through set of tiffs and jp2s

Always view images at 30%. Use zoom to magnify to 100% as needed.





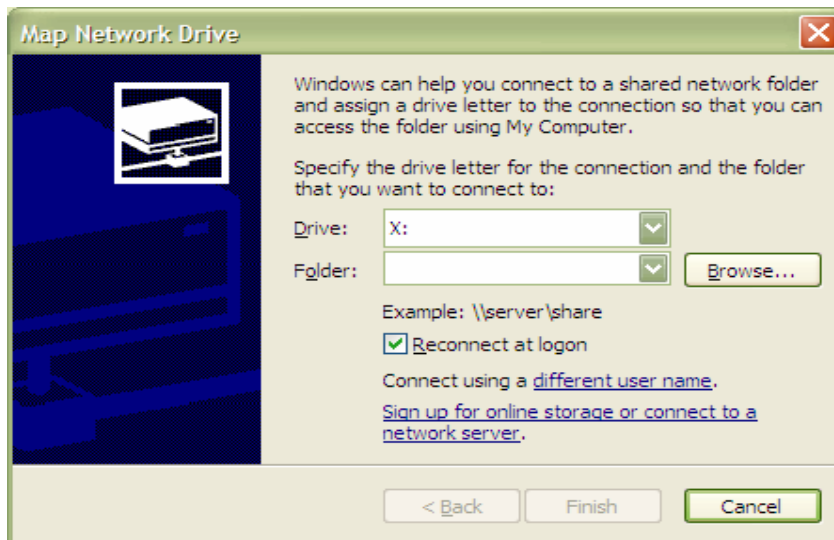
Finding a "Lost" Barcode in ACDSee:

1. In ACDSee, click on the blue tool bar that says "folders" (this will get you the right tools at the top of your screen).
2. On the largest grey toolbar at the top of your screen, you should have a tool that says "Search" with a magnifying glass in front of it. Click on it.
3. The search tool should have replaced your "folders" menu. Type the number of the barcode into the search field.
4. **BEFORE** you tell it to "Start" your search, click the horizontal arrow to the right of the search field. For some reason, "images only" is by default selected. **DE-SELECT** "images only."
5. Start your search by clicking "Start". You can now use the buttons under the "Start" button to go back and forth from your "folders" menu and your "search" tool.

Mapping/Remapping Network Drive:

You should only have to do this the first time you try to connect to the qr server. After the drives are mapped on your computer, you should be able to connect to the server by typing your username and password. (see "connect to the qr server" instructions below)

- 1) Go to: My Computer
- 2) Choose: Tools > Map Networked drive
- 3) You should see a box similar to this:



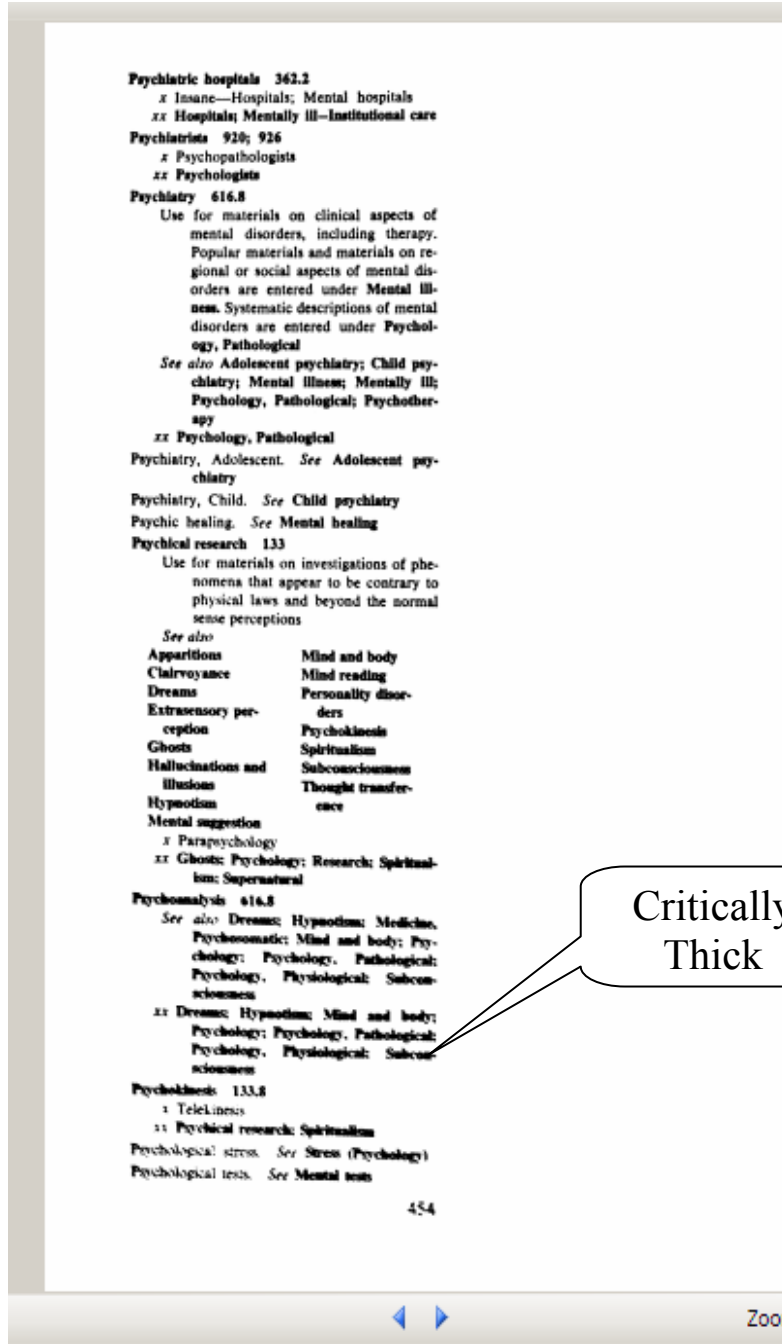
- a. In the Drive box, select drive to be mapped.
(X:)
- b. In the Folder box, type: [\\mdp.umdl.umich.edu](http://mdp.umdl.umich.edu)\qr
- c. Check the box marked 'Reconnect at logon'
- d. Click on 'Finish'

Page Error Type Definitions and Examples

Characteristic	Critical: <i>Page content is incomprehensible due to conditions not inherent in the physical book</i>	Non-Critical: <i>Page content is comprehensible though certain adverse conditions do exist</i>
Thick	Some letters are heavy, thick or dark compared to the rest of the text, resulting in an inability to distinguish individual letters and words	Some letters are heavy, thick or dark compared to the rest of the text, but letters and words are legible and there is no loss of information
Broken	Letters are substantially broken, resulting in unreadable text	Some letters are broken, but the text is readable
Blurred	Text is blurry and unreadable, image content cannot be distinguished	Text and/or image is slightly blurred, not "crisp", but all information is still legible
Cleaning	Portions of the text or image are erased from page, resulting in loss of information content	There are missing portions of the page, but there is no resulting loss of information. Or physical objects not associated with the text are visible, but do not result in a loss of information
Warp	Page is noticeably curved with portion of text/image either missing or illegible	Page is noticeably curved, but text is still readable and there is no resulting loss of information
Crop	Over-cropping has cut off a portion of an image or has caused enough text loss that information is missing or unreadable	Text/image edges have been cut off, but there is no resulting loss of information or image includes area beyond margin of the page e.g. scanning cradle is visible (under cropping)
Obscured	Text or images are covered in some way, but not erased and there is a loss of information	N/A <i>*when part of a page is obscured but there is no loss of information, this is classified as a cleaning error</i>
Colorization	N/A	Black and white text, captured as color



Critically Thick:





Non-Critically Thick:

V The Development of Socialist Consciousness

Our Party, the Hungarian Socialist Workers' Party, armed with the theory of Marxism-Leninism, professing the ideology of dialectical materialism and working with its scientific methods, has always considered ideological work, raising the educational level of society, advancing and improving socialist moral norms and the socialist way of life as indispensable conditions for the building of socialism.

After the 11th Congress, amidst conditions when international ideological struggles became sharper, and domestic conditions for building society more complex, our Party continued successfully to guide and organize ideological and cultural work. More communities and people are now living and working in a socialist manner. The idea of scientific socialism and the ideology of Marxism-Leninism have become deep-rooted and widespread in Hungarian society. People's way of thinking and acting, their political and moral state and consciousness are determined by the material and intellectual rise in our society, i.e. by its socialist development.

The ideological activity of the Party, the advance of intellectual life, the results achieved in scientific work, public education, culture, literature and the arts have a far-reaching influence on society. The thoughts and deeds of our people are permeated by a growing sense of responsibility, and the overwhelming majority see realistically the present level of our social development. They appreciate our achievements and trust that with joint efforts we can overcome the obstacles in the way of development and that we can attain our socialist goals.

A survey of the situation concerning ideology and public thinking demands that we observe the development of our society's ideological, conscious and moral state in its evolution, that we see all its current features and critically evaluate the present ideological work of our Party.

The overthrow of the capitalist system, the elimination of the remnants of feudalism, the creation of the power of the working class and the laying of the foundations for a socialist society have resulted in fundamental changes in our people's way of thinking. The conclusion of this historic process was the successful socialist transformation of agriculture, which resulted in further, profound and favourable changes in the thinking, not only of the peasantry but the people as

Non-Critically Thick



Critically Broken:

Im Schlaf war es ihm, als ob sein Heubett führe; doch die Müdigkeit und der starke Duft des sonnentrockenen Grases ließen ihn nicht wach werden.

Erst fürchterliches Gebrüll in seiner allernächsten Nähe riß Mikosch aus Schlaf und Heubett hoch. Vorsichtig schob er sich an den Rand des Heuberges – und sah geradewegs einem Riesenkater ins Gesicht, wie er ihn zeitlebens noch nicht vor Augen gehabt hatte.

Das Katervieh war vielleicht hundertmal so groß wie Mikosch, es war gelb wie Sand und riß sein Maul auf, als wollte es die Sonne verschlingen.

Mikosch machte vor Entsetzen seinen krümmigen Rücken buckel und fauchte erschrocken.

Das sandgelbe Hundertkatervieh erblickte den kleinen Kater auf dem Heuberg, gähnte noch einmal und sagte: „Wer bist denn du, du Zwerg?“

Mikosch argerte sich, daß der Große so geringschätzig von ihm sprach. Jetzt sah er auch, daß das fürchterliche Vieh in einem festen eisernen Gitterkäfig saß. Mikosch stellte seinen schönen schwarzen Schwanz senkrecht wie eine Antenne auf, gähnte auch und meinte von oben herab: „Und wer bist denn du, du Rauschebart?“ Der Riese antwortete freundlich: „Ich bin der Lowe Hassan.“

Critically Broken

Non-Critically Broken:

36 / INTERNATIONAL LABOR MIGRATION IN EUROPE

The successful implementation of the electoral reform has inspired important political forces in the country to inquire whether foreigners might also take part in the Swedish parliamentary elections. This proposal has been advanced by, for instance, the trade unions and the two socialist parties in the Parliament. The Parliament has, however, voted for a more liberal citizenship policy as a more practical alternative means of giving immigrants a say in Swedish political life.

Decrease of Control over Immigration

Another issue of increasing importance to Swedish immigration policy results from the fact that immigration tends to be less and less controllable. During recent years immigration has been at a very high level even though the Swedish economy is facing its most serious recession since the 1930s. Recent economic developments in Sweden have departed considerably from the cyclical pattern characterizing the industrial world as a whole. In 1974 and 1975, when growth came to a standstill in the OECD area and world recession was in full swing, Sweden maintained a reasonable rate of economic expansion and unemployment was among the lowest of all OECD countries. But in 1976-77, just as the economic activity in the OECD area as a whole increased sharply, Sweden experienced increasing economic difficulties.

Nevertheless, unemployment remained at a record low level in 1977 of 1.9 percent of the total labor force. This was the result of active policy interventions, such as the release of investment funds, stock-building incentives, an increase in public employment, and other employment-creating measures. A major aim of the economic policy as a whole was to maintain employment.

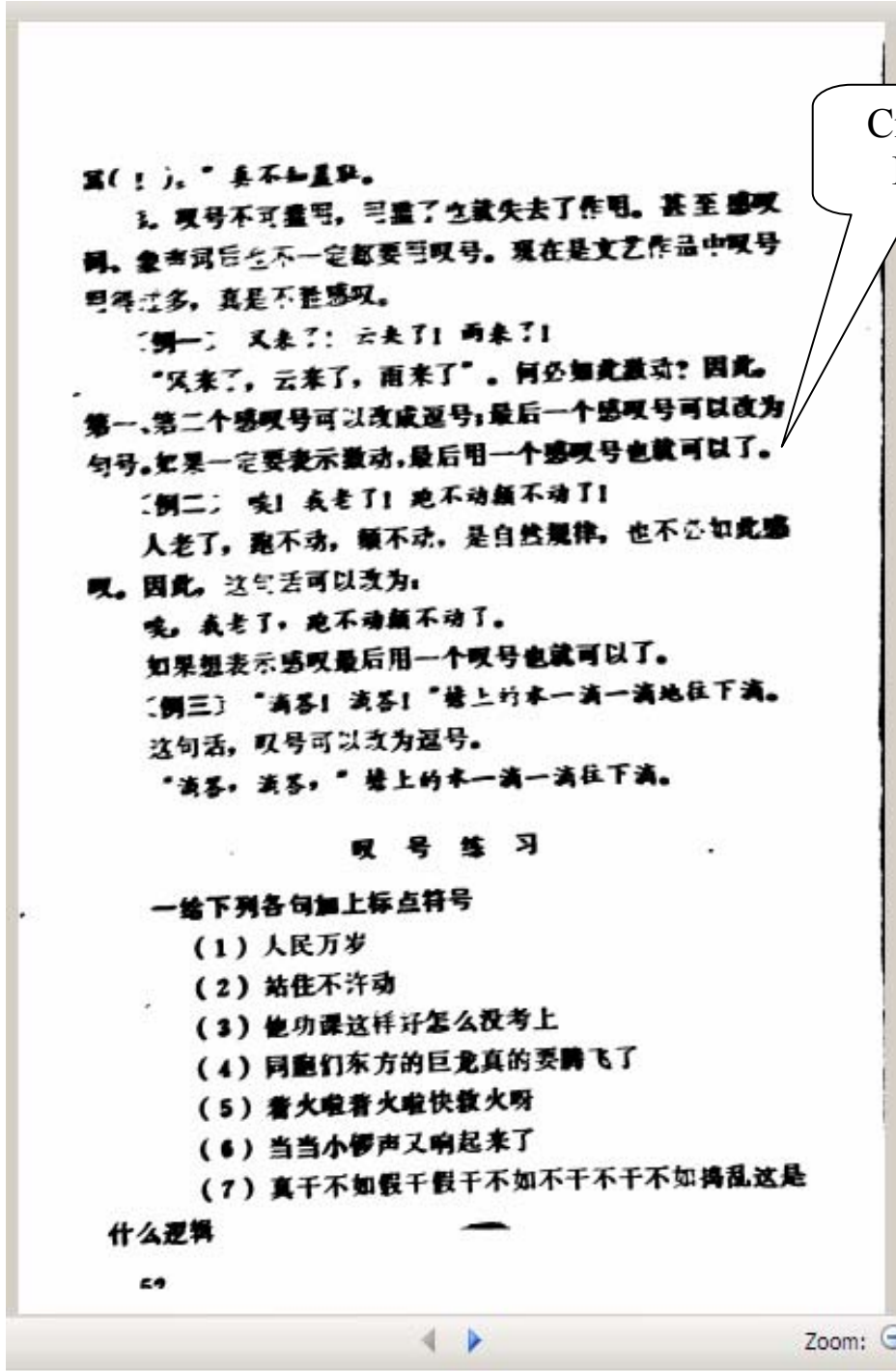
Under normal circumstances a recession of the present magnitude, combined with only a somewhat favorable employment situation, would not have led to an increase in immigration. The attitude of the authorities to immigration in general has been very restrictive, since the main thrust of their policy has been to safeguard the interests of the national labor force. Of course, immigrants already in Sweden. But since labor migration between Nordic countries is free and the employment situation in Finland has improved sharply, many Finns moved to Sweden, where the employment situation is comparatively stable as a result of the policy interventions. In 1977, the unemployment rate in Finland was 5.6 percent of the total labor force.

Another factor contributing to the "wildcat" character of immigration to Sweden in 1976 and 1977 was the increased influx of political refugees and other foreigners who apply for residence permits for humanitarian or other special reasons. Since the coup d'etat in Chile in 1973, Sweden has accepted more refugees from Latin America than has any other OECD country. Furthermore, in 1976 Sweden received a substantial number of Christian Turks, Lebanese, and Syrians who applied for political asylum and came to Sweden spontaneously and individ-

Non-Critically Broken

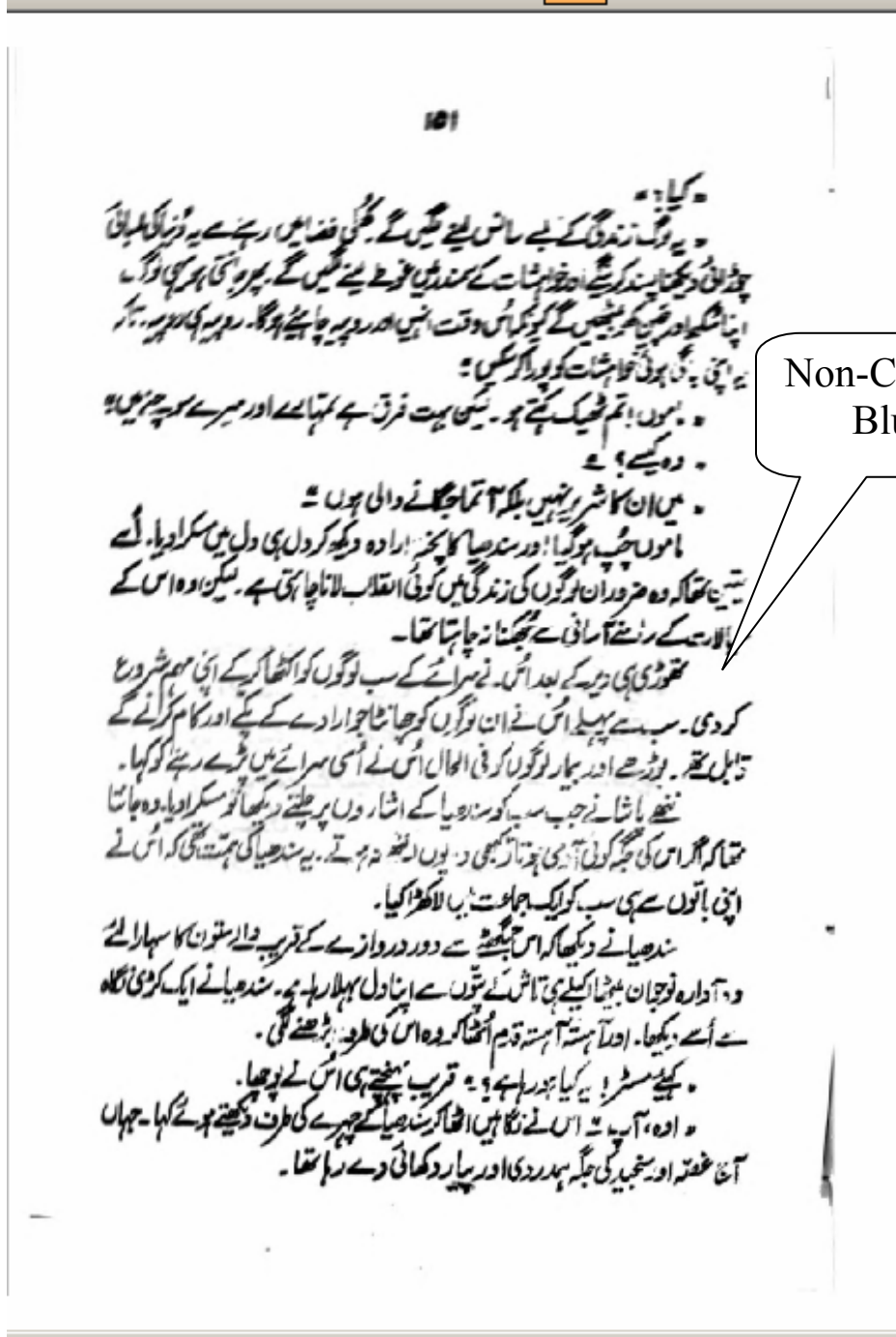


Critical Blur:



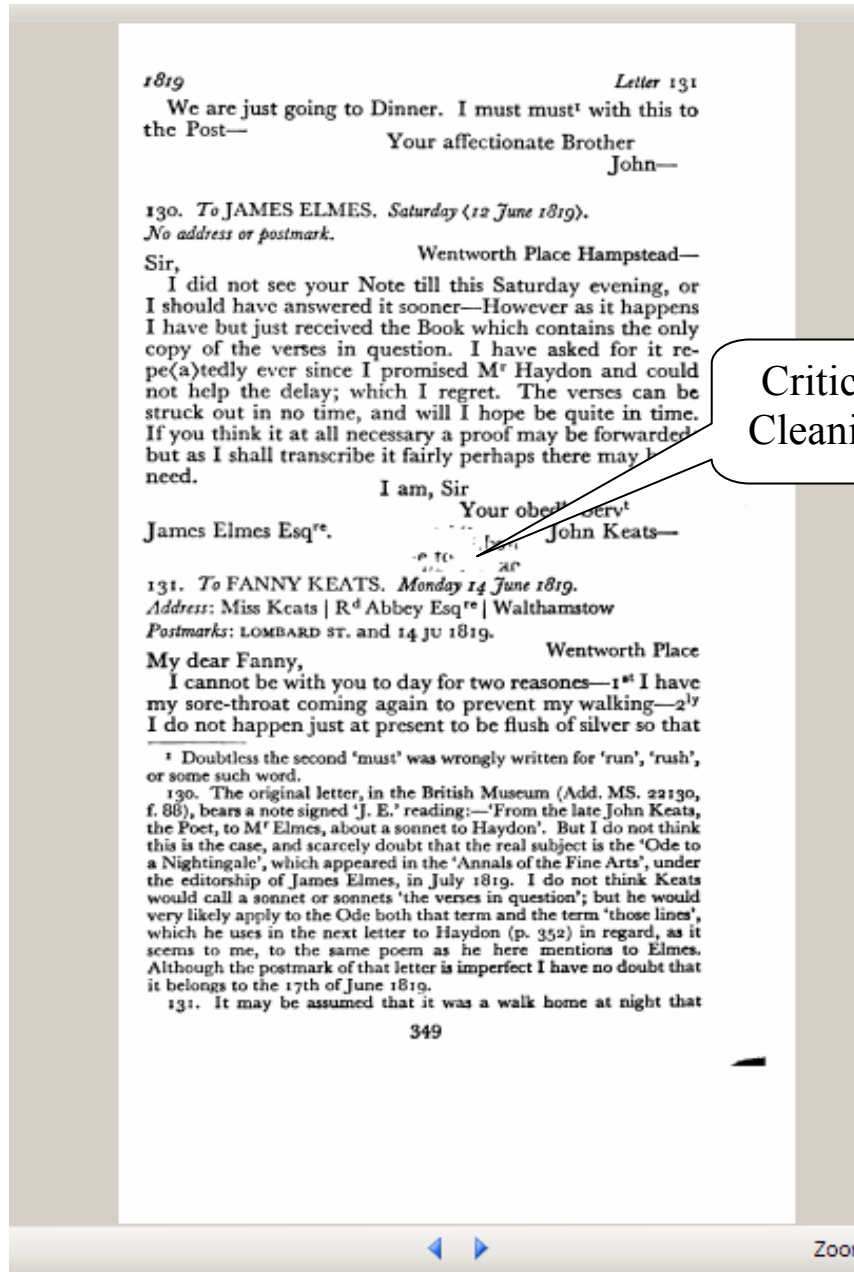
Critical Blur

Non-Critical Blur:



Non-Critical Blur

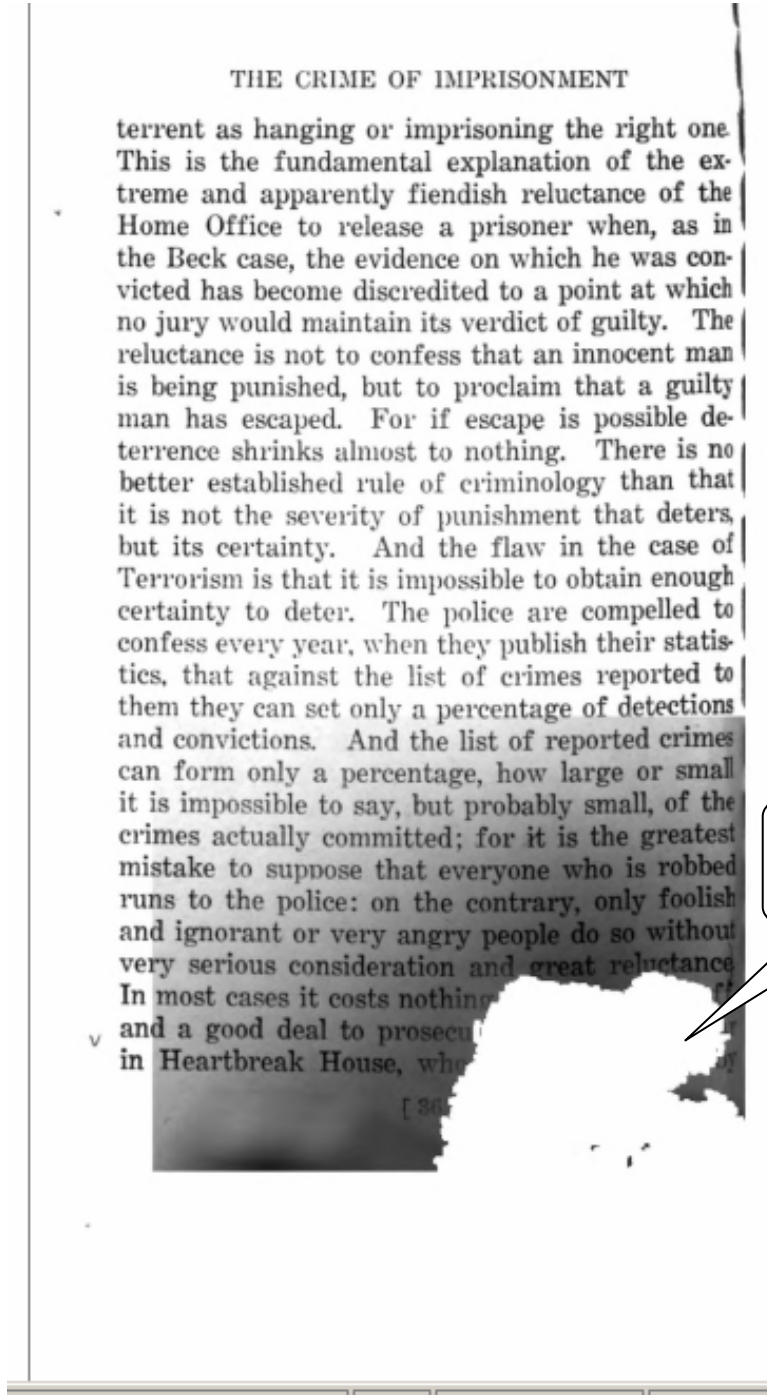
Critical Cleaning:



Critical Cleaning



Critical Cleaning:



THE CRIME OF IMPRISONMENT

terrent as hanging or imprisoning the right one. This is the fundamental explanation of the extreme and apparently fiendish reluctance of the Home Office to release a prisoner when, as in the Beck case, the evidence on which he was convicted has become discredited to a point at which no jury would maintain its verdict of guilty. The reluctance is not to confess that an innocent man is being punished, but to proclaim that a guilty man has escaped. For if escape is possible deterrence shrinks almost to nothing. There is no better established rule of criminology than that it is not the severity of punishment that deters, but its certainty. And the flaw in the case of Terrorism is that it is impossible to obtain enough certainty to deter. The police are compelled to confess every year, when they publish their statistics, that against the list of crimes reported to them they can set only a percentage of detections and convictions. And the list of reported crimes can form only a percentage, how large or small it is impossible to say, but probably small, of the crimes actually committed; for it is the greatest mistake to suppose that everyone who is robbed runs to the police: on the contrary, only foolish and ignorant or very angry people do so without very serious consideration and great reluctance. In most cases it costs nothing and a good deal to prosecute in Heartbreak House, wh

Critical Cleaning



Non-Critical Cleaning:

Rosalynde

said to Rosalynde: 'Is this that fair Alinda, famous for so many virtues, that forsook her father's court to live with thee exiled in the country?' 'The same', quoth Rosalynde. 'Then', quoth Gerismond, turning to Saladin, 'jolly forester, be frolic, for thy fortunes are



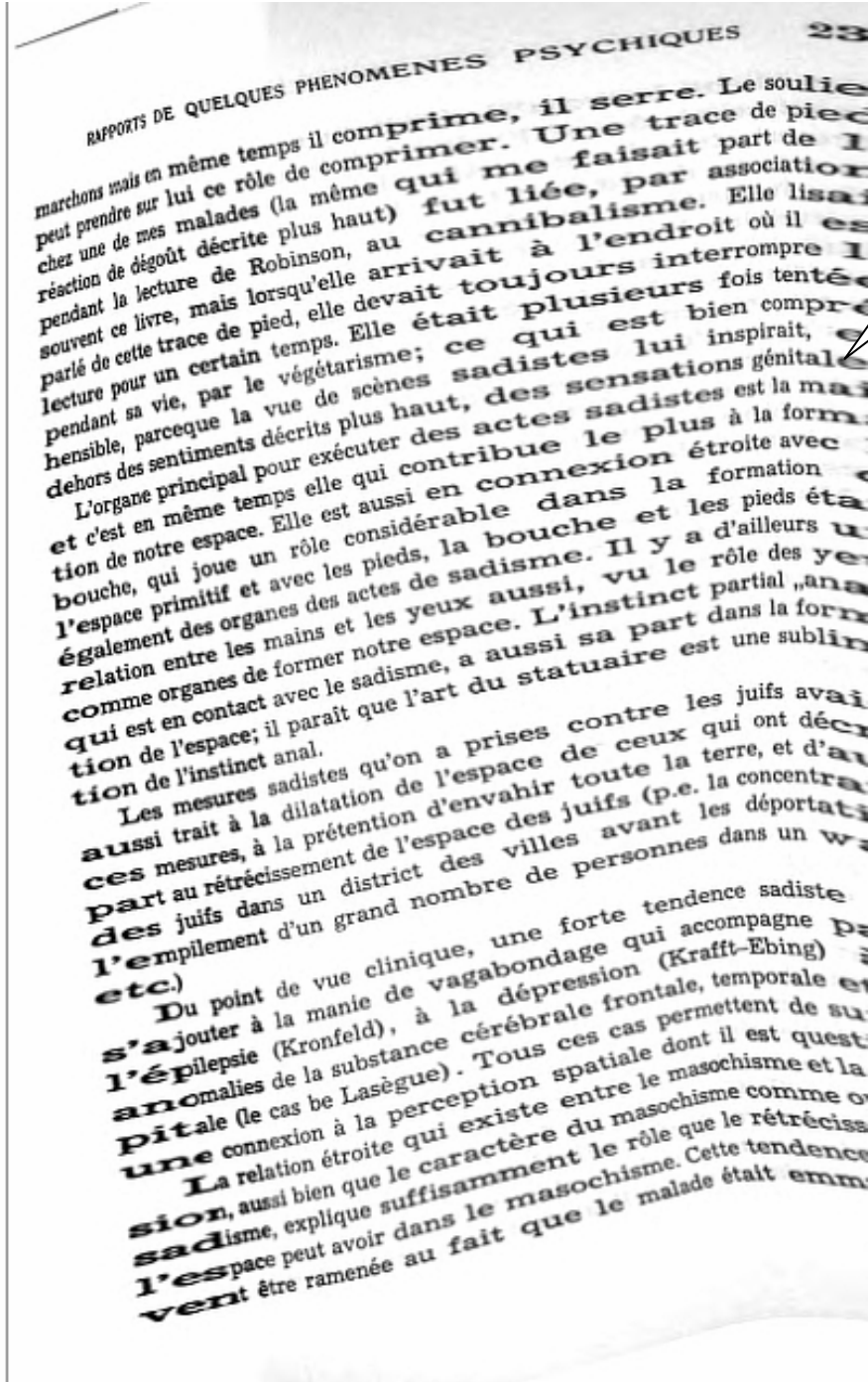
great, and thy desires excellent; thou hast got a princess as famous for her perfection as exceeding in proportion'. 'And she hath with her beauty won', quoth Saladin, 'an humble servant, as full of faith as she of amiable favour'. While every one was amazed with these comical events, Cory-

don came skipping in, and told them that the priest was at church, and tarried for their coming. With that Gerismond led the way, and the rest followed, where to the admiration of all the country swains in Arden, their marriages were solemnly solemnized. As soon as the priest had finished, home they went with Alinda, where Corydon had made all things in readiness. Dinner was

Non-Critical Cleaning



Critical Warp:



Critical Warp



Non-Critical Warp:

Non-Critical Warp

Eight other Textile Polymers—Part I

Fortisan and wood^{22, 23}. In many cases, differences exist between these previous results and the present ones, but it is not possible to state with confidence the origin of these differences; as was pointed out above, isosteric heats are subject to large uncertainties and the differences between various sets of results may in large part be associated with this; Guthrie⁶⁰ and Hermans⁴⁰ have previously noted that differences exist between isosteric and calorimetric data on similar materials. (It is seen in Fig. 11 that the range of values covered by the four viscoses in the present study is large.) A brief comparison of the present values with the previously published results is as follows.

The heats given in Table II for cotton are higher than those reported by Taylor²² and those calculated from Urquhart and Williams's data^{13, 44}; examination of the sorption isotherms of the latter workers shows that this difference is due to their high-temperature isotherms being higher than the present high-temperature isotherms (the low-temperature values are in good agreement). The differential heats for cotton reported by Rees⁴⁴ lie between the present values and those of Urquhart and Williams. The heats given in Table II for viscose are higher than Taylor's values²² but lower than those of Simril and Smith²¹. The present results for $-\Delta H$ for mercerized cotton are higher than the values of Taylor²² and Rees⁴⁴. The heats given by Rees⁴⁴ and Guthrie⁶⁰ for Fortisan, Tenasco and cuprammonium rayon are in fair agreement with the present values.

ACKNOWLEDGEMENTS

The X-ray photographs described in this paper were prepared and assessed by Drs. J. Mann and L. Roldan of this Association; Dr. W. M. Corbett purified the wood pulp; Dr. H. J. Marrinan prepared the bacterial cellulose.

The author is grateful to Drs. L. R. G. Treloar, H. J. Marrinan and J. Mann for many helpful discussions.

This work is part of the programme of fundamental work in progress at the British Rayon Research Association, Heald Green Laboratories, Wythenshawe, Manchester, 22.

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Critical Crop:

Critical Crop

qu'on éprouve à faire concorder les résultats de la reconstruction interne et ceux de la reconstruction comparative. Le système le plus largement utilisé comporte trois laryngales, c'est-à-dire qu'il repose essentiellement sur la reconstruction interne ; le critère principal est l'effet de coloration, *infra*, p. 16.

« Quasi-sonantes » de la reconstruction interne	Correspondants anatoliens	Reconstruction
*E (pas d'effet de coloration)	h	*H ₁
*A (coloration a)	hh (en hittite seulement)	*H ₂
*O (coloration o)	h	*H ₃

Mais ce système est insuffisant pour rendre compte des correspondances où h manque en anatolien sans qu'on puisse invoquer une chute conditionnée par l'environnement, et inversement de l'anatolien ne correspondant pas à une quasi-sonante. En outre, d'autres correspondances paraissent établir l'existence d'une laryngale labio-vélaire *A et d'une laryngale palatale *E^v, *infra*, p. 16.

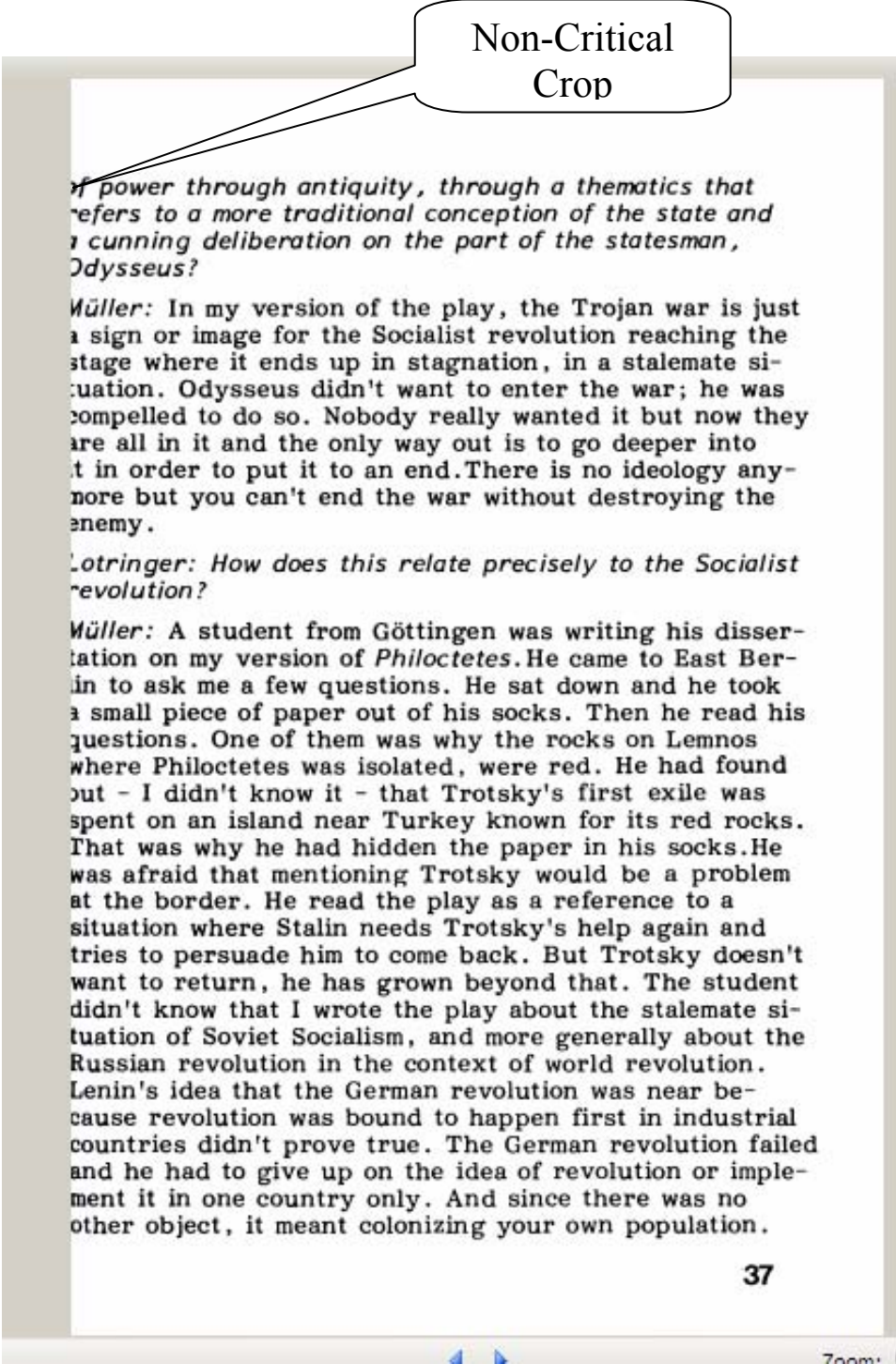
D) Évolution des laryngales

a) Les laryngales entre voyelles. — Elles ne se conservent qu'en anatolien, hitt. *mehur* « temps » (ailleurs : *mē-), et disparaissent dans les autres langues indo-européennes, provoquant des contractions vocaliques.

b) Les laryngales devant voyelle. — Elles se conservent en anatolien et « colorent » éventuellement la voyelle (1) :

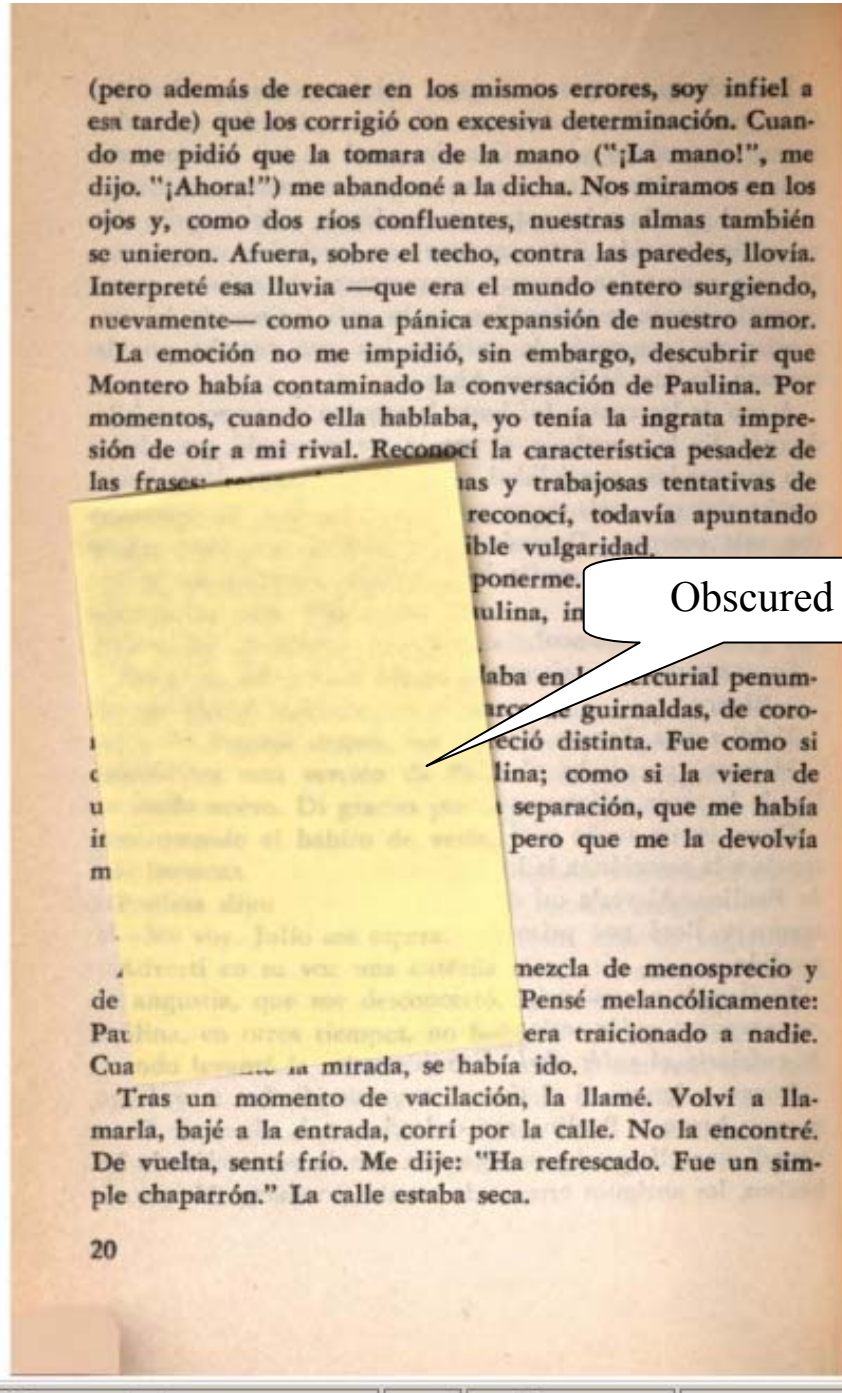
(1) Selon certains, comme J. KURYLOWICZ, *H₁ colore en a aussi bien *o que *e ; selon d'autres, comme BEEKES, *Sprache* 18, 1937, p. 117-131, *H₁ ne colore que *e : il existe donc, selon lui, une alternance *a : *o.

Non-Critical Crop:





Obscured:



Obscured

Colorization:

874472-QSD
Tr. to Buhr
10-15-98

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Colorization



Appendixes

Appendix A: File Types, Resolution and Color Depth

Google is able to support a variety of file formats and allows partner libraries to choose the format(s) that they feel will best suit their needs. The University of Michigan has chosen to receive bitonal G4 TIFFs for text-only pages and grayscale or color JPEG2000 files for the non-text pages. This decision was made because we felt that TIFF's were a better choice in terms of long-term preservation and for readability. G4 TIFFs are interpolated to 600 pixels per inch and typical file size is approximately 50 KB. The JPEG2000's files (both grayscale and full color) are 300 pixels per inch.

Google's process automatically checks each image for the presence of non-text imagery, meaning that they look for images that need more than black and white representation. There are 3 levels of color depth. Black and white text pages (and line-drawings, which contain only black and white lines) have a color depth of 1 bit. One-bit images allow for only 2 colors to display, and are therefore bitonal, in this case black and white. Grayscale images, or images that are black and white with shading, have a color depth of 8 bits. This allows for 256 color combinations to display, rather than only two. True color images, which are full color photographs and the like, have a color depth of 24 bits. At 24 bits, all three primary colors are combined at each pixel, allowing for $2^8 \times 3$ color combinations, or 16,777,216 different colors. Each bit is composed of three 8-bit color channels.

Appendix B: Quality Review Web Interface

Main menu | Upload CSV files | Find barcode: | Show all barcodes Help | Logged in as *annekz*. Logout

QR Database for MDP - main menu

Workflow

Upload CSV files.

Barcodes for review.

Display/Edit barcodes by person.

Manage locked barcodes.

Delete unreviewed barcodes.

Reports

Display number of barcodes received.

Display number of barcodes reviewed.

Display number of errors in reviewed barcodes.

Display number of barcodes reviewed by person.

Comparison between dynamic and regular sets.

Display percentages of errors by month.

C-size volumes

C-size volumes (without the 2005 barcodes)

Documentation

- Error Types Definitions
- Monitor Settings

Main menu | Upload CSV files | Find barcode: | Show all barcodes Help | Logged in as *annekz*. Logout

Barcodes for review

The checkbox next to each image number indicates whether the image is really reviewed or not. It is by default checked, if you need to keep an image from this barcode unreviewed, uncheck the box.

By viewing the entries below, you are locking those entries so nobody else can touch them. They will remain locked until you post the results of your work or until they are unlocked by an authorized staff member.

Barcode:

Received Date: 7/24/2007 Images for this barcode: 20

Image Number: 00000074				Image Type: tif			
Data	No Error	Critical Error	Non-critical error	Data	No Error	Critical Error	Non-critical Error
Thick Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cleaning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Broken Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Warp	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blurred	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Crop	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data				Data			
<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
Obscured				Colorization			
<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			

Image Number: 00000075				Image Type: tif			
Data	No Error	Critical Error	Non-critical error	Data	No Error	Critical Error	Non-critical Error
Thick Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cleaning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Broken Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Warp	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blurred	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Crop	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data				Data			
<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
Obscured				Colorization			
<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			

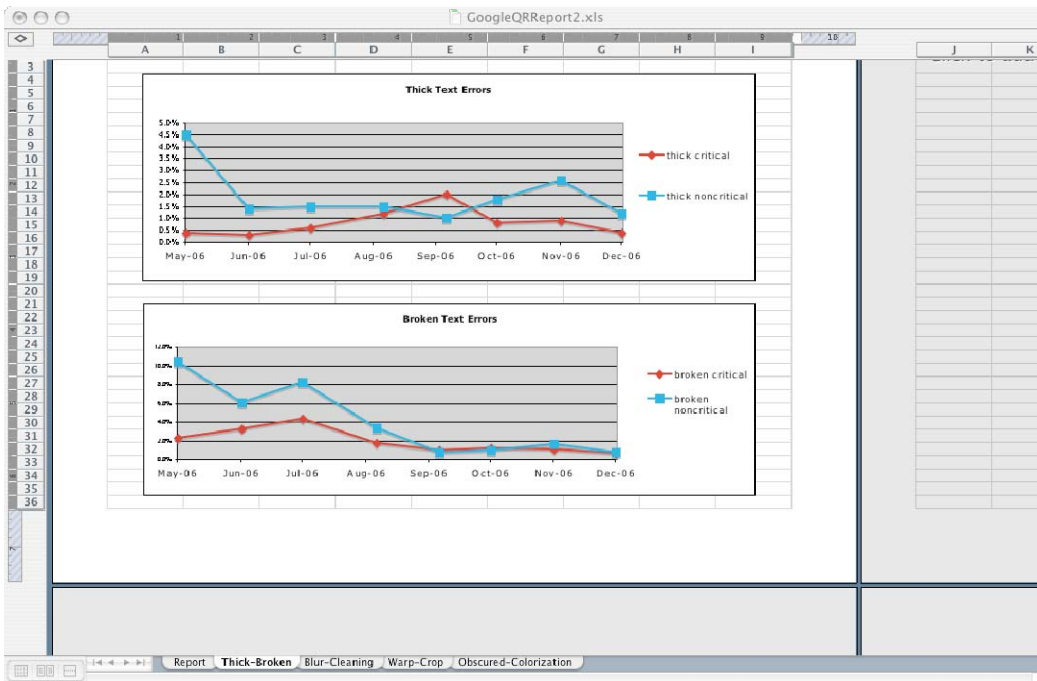
Image Number: 00000076				Image Type: tif			
Data	No Error	Critical Error	Non-critical error	Data	No Error	Critical Error	Non-critical Error
Thick Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cleaning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Broken Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Warp	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blurred	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Crop	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data				Data			
<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
Obscured				Colorization			
<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			

Library

Image Quality Review

Appendix C: Sample Quality Review Report

	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06
1								
2	thick critical	0.4%	0.3%	0.6%	1.2%	2.0%	0.8%	0.4%
3	thick noncritical	4.5%	1.4%	1.5%	1.5%	1.0%	1.8%	1.2%
4								
5	broken critical	2.3%	3.2%	4.3%	1.7%	1.0%	1.2%	0.7%
6	broken noncritical	10.4%	6.1%	8.2%	3.3%	0.8%	1.0%	0.8%
7								
8	blurred critical	0.7%	1.5%	1.5%	0.8%	0.4%	0.5%	0.7%
9	blurred noncritical	1.3%	0.4%	1.0%	0.7%	0.2%	0.5%	0.5%
10								
11	cleaning critical	0.5%	0.7%	0.8%	0.4%	0.5%	0.9%	0.9%
12	cleaning noncritical	19.8%	23.1%	18.3%	8.8%	6.7%	8.6%	11.5%
13								
14	warp critical	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%
15	warp noncritical	4.4%	2.6%	2.2%	1.4%	1.6%	2.1%	3.1%
16								
17	crop critical	0.3%	0.7%	0.9%	0.7%	1.1%	1.2%	2.1%
18	crop noncritical	1.5%	2.1%	1.6%	1.0%	1.5%	2.0%	1.5%
19								
20	obscured critical	0.1%	0.1%	0.1%	0.2%	0.2%	0.4%	0.4%
21								
22	colorization noncritical	24.6%	32.4%	23.1%	5.4%	1.0%	2.9%	4.0%
23								
24								
25	# of volumes received	#	#	#	#	#	#	#
26	# of volumes reviewed	1,267	4,845	3,249	4,135	3,099	1,888	2021
27	% of volumes reviewed	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
28								
29								
30								
31								
32								
33								
34								
35								
36								





Appendix D: Quality Review Training Overview

Day 1: (2-3 hours)

- Introductions and tour of the library
- Key for office and restroom
- Schedule and procedures for changing your schedule
- Parameters of the work and the expectations
- Confidentiality
- Email- group [googlegrgroup@umich.edu]
- Passwords – to QR database and student workstation
- Logging on and setting up the system
- Description of quality review process and demonstration

Day 2: (3-4 hours)

- Page Error Types - Critical vs. Non Critical Errors
- Monitor Calibration
- Oddball Images
- Log in to computer, server and database
- Setting up ACDSee
- Standardized viewing environment- 30% to view and 100% or less to zoom
- How to find barcodes in the database and in ACDsee
- Interactive Demonstration
- In remaining time, trainee does quality review on their own; (Coordinator to review all)

Day 3: 3-4 hours

- Log in to computer, server and database
- Set up ACDsee and find barcodes
- Trainee logs in and sets up system on their own
- Trainee uses the system with the Coordinator following their work
- Reinforce the importance of oddball images and – the need to look at them for patterns and the like
- Oddball images and have trainee go through documentation process
- Coordinator and trainee go over trainee's work from day 3
- In remaining time, trainee does additional quality review on her own; Coordinator reviews trainee's work



Day 4: regular hours

- Coordinator and trainee go over trainee's work from previous day
- Trainee continues to work on her own; Coordinator continues to review trainee's work
- At end of Day 4, Coordinator evaluates whether or not trainee is ready to work on her own. If yes, continue to spot check for next week. If no, Coordinator should continue to monitor closely for a few more days until trainee is up to speed and reviewing consistently.



Appendix E: Training Checklist for Quality Review Technician

- Paperwork and Pink Card to HR
- Overview of work, workplace expectations and have them read the Quality Review manual
- Where the key is and how to access it- extra keys in 8th floor office, explain what the keys open, such as lounge and bathroom
- Set schedule and discuss process for changing the schedule
- Make sure they have passwords to the server and workstation and are allowed to log in to the online database
- Add new hire to the email list (take former employees off the list)
- Ensure they understand how to calibrate their monitors
- Open ACDsee and demonstrate how to manipulate the system
- Demonstrate how to log in to the computer, database, and ACDsee
- Review error types- examples and definitions
- Describe and show how to document instances of oddballs
- Emphasize the importance and need for Consistency and Patience
- Explain how to find barcodes in the database and in ACDsee- explain how they're dated and the various clues that can be used to find errant barcodes