



## Europeana Photography Workshop - Girona

### Digitization systems and procedures in photographic image archives RECOMMENDATIONS FROM THE WORKSHOP

NOTES FROM THE WORKSHOP (by David Iglésias):

#### Digitization

- In scanner the light is straight and it makes evident the defaults of the image.
- With zoom lens is impossible to avoid TCA and distortion. It's not good for reproduction.
- The smaller the photosensor is, the more diffraction problems we have.
- Lens resolution is always superior to sensors. The limits are on the sensor.
- MTF, lens and sensor. It shows the relationship between detail and contrast. It determines the best way to use our equipment, and the possibilities for edition.
- If exposure is ok, we have no noise problem. It is important to expose very well.
- A small photosite have problems with diffraction.
- When the camera is close to the object, the problem is bigger. It has to do with magnification.
- Lens should cover even more than the sensor.
- Aliasing is produced because the sensor has limits in the capture of frequencies. When these frequencies are higher than the capacity of capture, aliasing appears.
- If we change magnification, we can avoid moiré.
- Nyquist frequency is the limit of frequency a camera can capture.
- More than 10% of contrast in limits frequency indicates some possible problem with aliasing.
- Without antialiasing filter, the MTF can be worst, as the aliasing effect cause more contrast.
- For reflection problems, a good solution is to use polarized filters on the lens and on the lights.
- Originals with texture can be a problem. A solution is to illuminate only one site and compensate later with uniformity of illumination.
- Sensors works with 12-14-16 bits. The real value to work with 16 bits is to work from the camera, from the capture.

## Digital Image processing

- Edition work must be numerically. It is objective. It doesn't depend on our visual perception.
- It is part of the process. We need post processing to fix some problems.
- It is very important to do changes using "preview" to avoid visual accommodation.
- It is completely necessary to do objectives measurements.
- It exist 2 domains of Digital Image Processing: A- Spatial domain. It has to do with pixel, its value and position. B- Frequency domain: to change detail. Fourier Transform.
- Sharpening. What are the limits of sharpening? Our visual system is designed to detect edges.
- Edges enhancement tools: unsharp mask; differences of Gaussian (dog) also called Mexican hat.
- Unsharp mak isolates high frequencies and it applies them to the image.
- Mexican hats isolates medium frequencies, and applies them to image. It's a better option.
- A 7.000 pixel image can't be seen in a usual screen as we need to see it at 100%. To see the whole image, the software transforms it.
- We should do an ICC profile of the camera to be assigned when we process the TIFF file, from a colour chart. From an specific colour chart for cameras.
- Capture One software, for example, it automatically assigns to the image the profile they have created to this model of camera.
- Photoshop works internally with Lab, nor RGB, even if we have an RGB file.