Facial Image Analysis

Instruction Manual

Visual Genealogy
February 15, 2011

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When using images for face comparisons there are some basic rules that you should follow.

- When you are trying to compare two images, the most important thing is that the poses are similar. Sometimes that is difficult to do, but for the most part, people in the early days of photography seemed to take pictures that were either straight on or angled at about 15° right or left.

Comparing images of two people, both facing about 15° to the left is easy to do. But what if one person is 15° left and one person is 15° right. Then we have a problem because that’s a 30° difference and probably won’t work.

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There is a simple way to solve this problem - it’s called a mirror image. Here’s an example of a young girl who is looking to the right and we need her to be facing the other way.

Here is the original picture. Using an image editor the picture can go from facing right to facing left.

Now a comparison can be made of another image that is also facing left.
• The larger the image the better. Pictures that are put on the internet are frequently compressed. To the naked eye they look good, but since they have been compressed to speed transmission, they do not have the density that is best for face comparisons.

As a rule, try to get an image that is at least 50 kilobytes large. You can use smaller images, but when you display the image you are apt to get pixilation - ragged edges and fuzzy images.

• When you are scanning an image the best thing to do is to set the dpi (dots per inch) count as high as you can. Most scanners will go to 600 dpi. Some will go all the way to 1,600 dpi. Use the highest setting your scanner will accommodate.

There are two types of scans - preview and the actual scan. The preview gives you a chance to see what is on a page and then choose what you want to scan. Here is an example:

This is how the preview image looks when the image is first scanned.
This is how the scanned image looks after it has been scanned.

If you wanted to get an even better image from the scanner you could crop an even smaller portion of the picture, as we have done on the left.
This is the ideal picture. A very good image that will work well with the software to compare images.
FaceOff - Face Comparison Software

The FaceOff software has been designed to be an easy to use product so that anyone can compare images. The process is simple:

First, open the application by clicking on the Desktop Icon:

1. First, click START and you are asked to choose the image that you want. Simply go to the image in the file that you want, double click and it will appear on the screen.
2. Click NEXT and you will be asked to find the eye locations. It is important to be very accurate when finding the center of the eyes. To help you do this when the mouse is on the picture it will magnify a portion of the picture. You will be able to easily find the center of the eye. Click both eyes and two crosses will appear. When you are finished, click NEXT.
3. You will be asked to repeat the same process for the second image. When you finish the second image, you will be taken to the following screen:

![Side-by-side comparison screen](image)

4. This is the screen that will do the side-by-side comparison. Move the slide (on the right) and you will see a vertical line that will move across the two images so that you can compare features on the two pictures.

This is the side by side comparison

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You will notice on the bottom of the image that there is a button called “overlay.” If you click on that button you will begin the process of fading from one image to another.

5. Use the slide on the right and one image will fade in while the other one fades out. This is an excellent way to look at the faces in total and get a sense of how close they are to each other.

You will be amazed at how similar people can look from youth to older, and how one generation can look so similar to another.

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That's how simple it is to do the comparisons.

Some things to remember about comparing faces:

• It is almost impossible to get exactly the same angle from one image to another. The angle will have an effect on the comparisons, so don’t expect it to be exact.

But, as a rule, if things are close it is probably the same person or at least someone in the same family.

• What to look for when comparing images:

Is the distance from the eyes to the nose, mouth and chin the same? There can be times when things line up, but not often when it’s different people or different families.

Look at the width of the face. This can be deceiving because of hair. But because we normalize we take hair out of the equation and you should be able to see similarities or differences easily.

Eyebrows are often a give-a-way. Look for the location, not the style of the eyebrow. Remember, fashion changes and today’s thin eyebrow might have been very thick not long ago.

The eyes will always be in the same place - that how we make the comparison. However, the shape of the eye is often a good indication of similar faces.
• Aspect Ratios:

In the early days of photography, the lens might not have been the best in the world, and there could be distortion of the image. If you are an advanced user of Photoshop or other image editing software and you think that there might be an aspect ratio problem, then by all means, change some of the image and see if there is a better fit. But, of course, be careful that you are not creating a self-fulfilling comparison.

A final word about faces.

From the time we are born we learn to recognize faces. Our first memories are of the people around us and an infant will learn that face and trust that person at a very young age. Over time we refine that skill until we do it unconsciously, but very accurately.

We have all had the experience where we see someone after a long period of time and immediately recognize them, even if we can’t remember the name or where we knew them from.

The human mind has an amazing ability to see the similarities and differences in faces. This tool can help you analyze faces but the face is not a fingerprint. A fingerprint is either the same of different. It is black and white. A face is much more subtle and while there will never be a perfect match, there are family characteristics that can be recognized easily from one generation to another, or features that will assure us that we are looking at the same person in two different pictures.

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