WORKING WITH FRAME GRABS

Incorporating frame grabs is a great way to help your reader understand the analytic points you are making about embodied displays in face-to-face interaction. But producing quality frame grabs can initially seem intimidating and may appear to involve a lot of effort. With these tips, however, it needn't be so!

Your main goal in preparing frame grabs is to maintain consistency from grab to grab. Think of this as keeping things "in register" so changes from one grab to the next are more easily noticeable. To do this, you'll need to maintain a constant crop, image size and resolution, overall brightness, and position of any text or graphics that you add, for example, participant labels or a line of transcript.

An equally important goal is to make sure you can go back and easily edit your frame grabs without having to start from scratch. Editors and academic advisors have a nasty habit of asking you to make changes to the frame grabs you have so carefully produced, so be prepared!

Initial adjustments (to be done on all grabs)

1. Open up the original .bmp frame grab (assuming you're working with Quicktime Pro).

Initial exported .bmp from Quicktime Pro

2. Save it as a .psd (Photoshop) file with a name that you'll be able to remember. I find it useful to use a name that indexes the moment of the grab with some feature of the talk (e.g. "start of ate.psd"). From this point forward you will be working with a Photoshop file (.psd) until you are ready to make the final .tiff file that you will insert into your document. It's helpful to keep grabs from the same part of the analysis together in the same folder.

3. Apply the "de-interlace" filter (under Filters > Video).

After De-interlace filter – notice the hand is clear now

4. Use Levels to adjust the light and darkness of the image (under Image > Adjustments). The first time you do this you will need to experiment to find an overall brightness and contrast that shows as much detail as possible and that will print well. Once you find the right Level settings, you can save these settings (as an .alv file) and then use them again and again.

After application of Levels

5. Next you may need to crop the frame grab. It is a good idea to automate this procedure so that every grab you make (from the same bit of data) has the same crop.

Comparison of before and after crop

Consider what is the tightest crop that still includes all the participant motion in the video. I prefer a standard 3:2 ratio of length to height. You can set the ratio by setting the Select tool to "Fixed aspect ratio" and then typing 3 and 2 into the boxes provided.   You could also use a 5:4 ratio ("8 x 10"). Once you find a crop you like, check the size (in pixels) in Image Size and then create an Action that will apply this crop to all images.   Actually, there are three mini-steps involved in cropping: a) applying a "selection" b) moving the selection and 3) doing the crop. You can put all these steps into one Action.

6. Next you'll need to resize the image to its final size. I use the following settings in Image Size: Resolution 144, Print size 5. Five inches gives the grab a nice "inset" look when inserted into a Word document.


Frame grab after it has been cropped and resized

7. Again save the basic .psd file. This edited version becomes the base image that you will use for all subsequent manipulations. Take care with these "master images."

Note: I've made a single Action that will automatically do all the steps given so far in these instructions with a single click of the mouse! So after I open a .bmp file all I have to do it click on one Action button and, bam, bam, bam, I have my master frame. With a PS feature called Droplet I could even apply this Action automatically to an entire folder of .bmp files. Who says frame grabs are hard work?

Working with Layers

One of the most brilliant features of Photoshop is its ability to use multiple layers. Think of these as like the layers of clear acetate sheet that animators use. You can draw/edit on each layer separately and then "look down" through the layers and see them all as one image. You can also "turn off" any layers that you don't want to show.
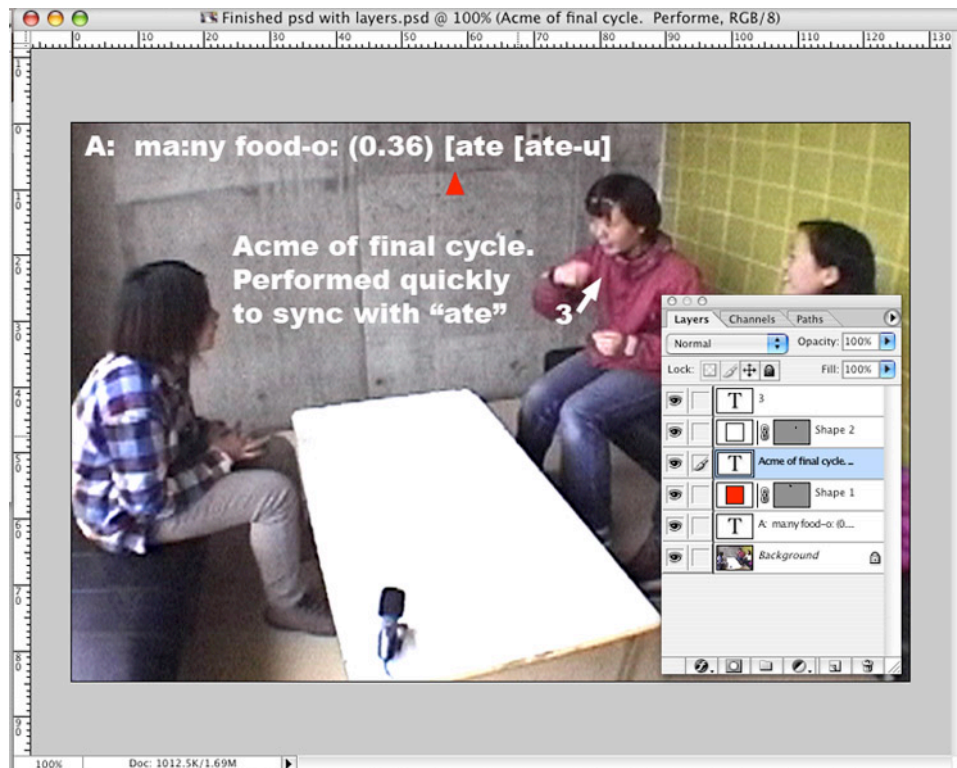

Basically, you want to put each individual element that you add to the frame on its own separate layer. I have used a separate layer for each of the following types of information: 1) each participant's identification 2) a transcript segment 3) each separate analytic comment 4) each separate arrow 5) and so on. By keeping everything on its own separate layer you can always go back and easily edit just the one thing you want to change. And believe me there is ALWAYS something you have to change later!

## Adding a line of transcript and identifying the "time moment"

Many of the analytic points you will want to be making will involved showing the relationship between various visual displays and what's happening in the talk at that moment. Perhaps the best way to do this is to include a line of transcript on a layer in the grab. Inserting a line of text is very simple. All you need to do is copy the line, click on the Text tool (the capital T), and paste. The challenge though is getting this text in a consistent position in each of your frames. Luckily it's fast and easy to do with an Action.

A note here about the size, font, and color of your text: first the final size of any font you put into a frame grab will be relative to the size at which the grab is finally published. For a 5" wide image in a Word document, 12-point font looks fine. But, for example, if the image were to be published at only 2.5" wide this font would look like 6-point font and be almost impossible to read. A san-serif font like Arial (possibly in bold) is easiest to read. The color you use will depend on the dominant background color(s) in your video. Use a dark color on a light background or a light color on a dark background. Also be aware of how colors "convert" to black and white. For example, a bright red may appear as a dark grey while a yellow may appear white.

4
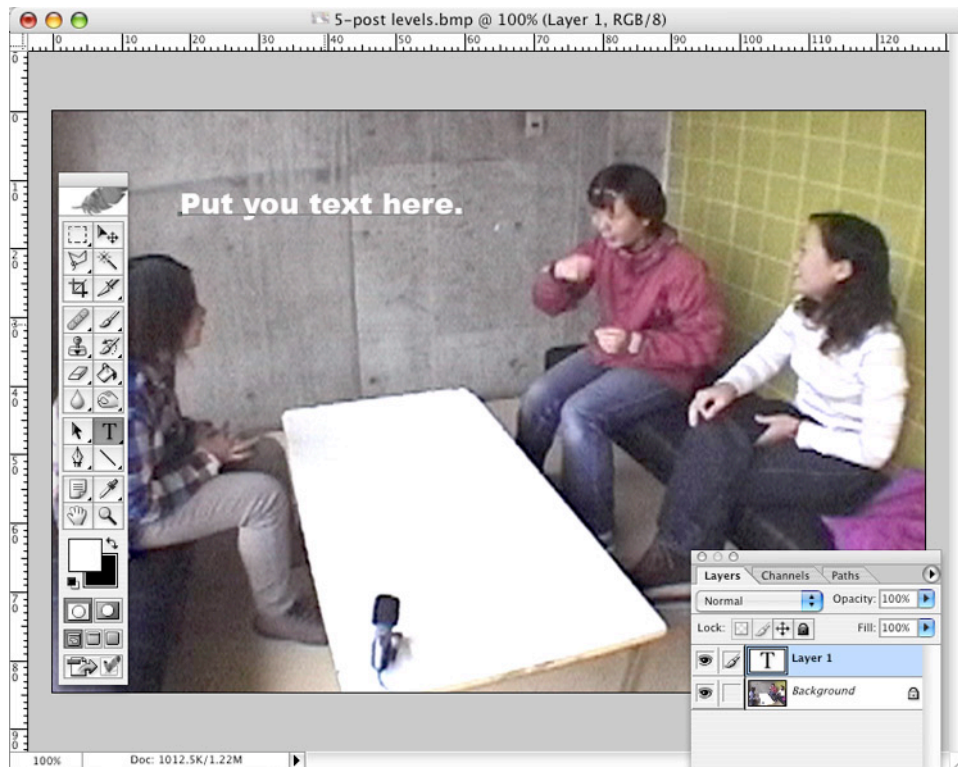
Step 1 – Paste in text

a. After you have pasted in the line of transcript, move the text into the top left corner of the image. If should be right against the borders of the image.
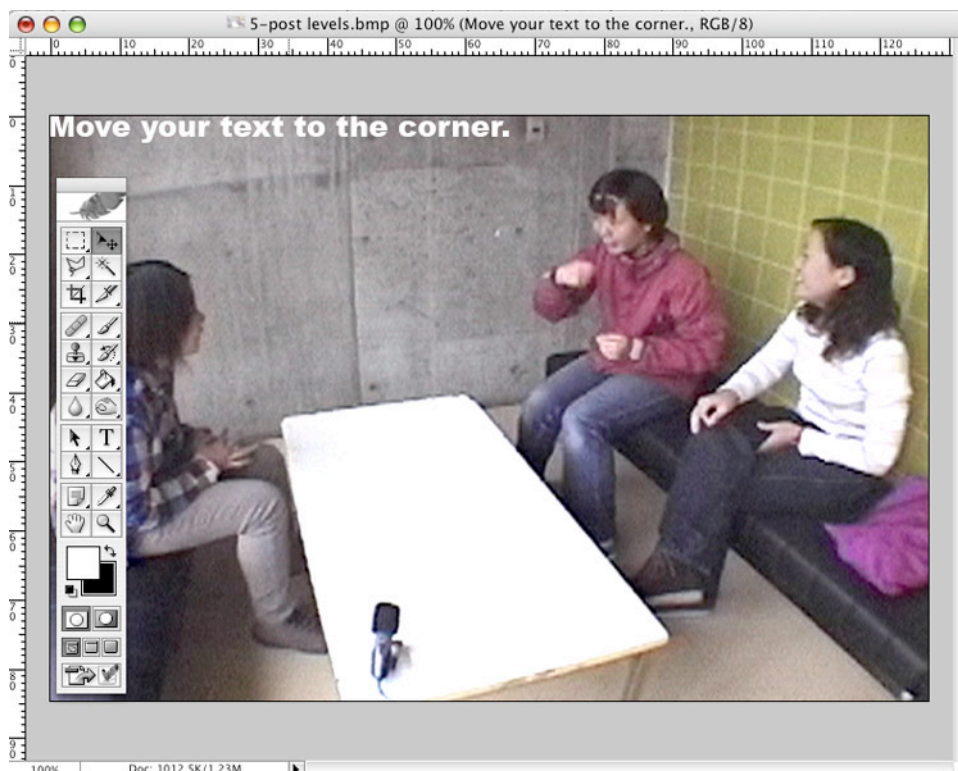

Step 2 – Move text to corner

b. Next, set up an Action that moves the text layer back down and inward a fixed amount so you have a uniform margin. You decide how far you want to move the text when when you're setting up the Action.
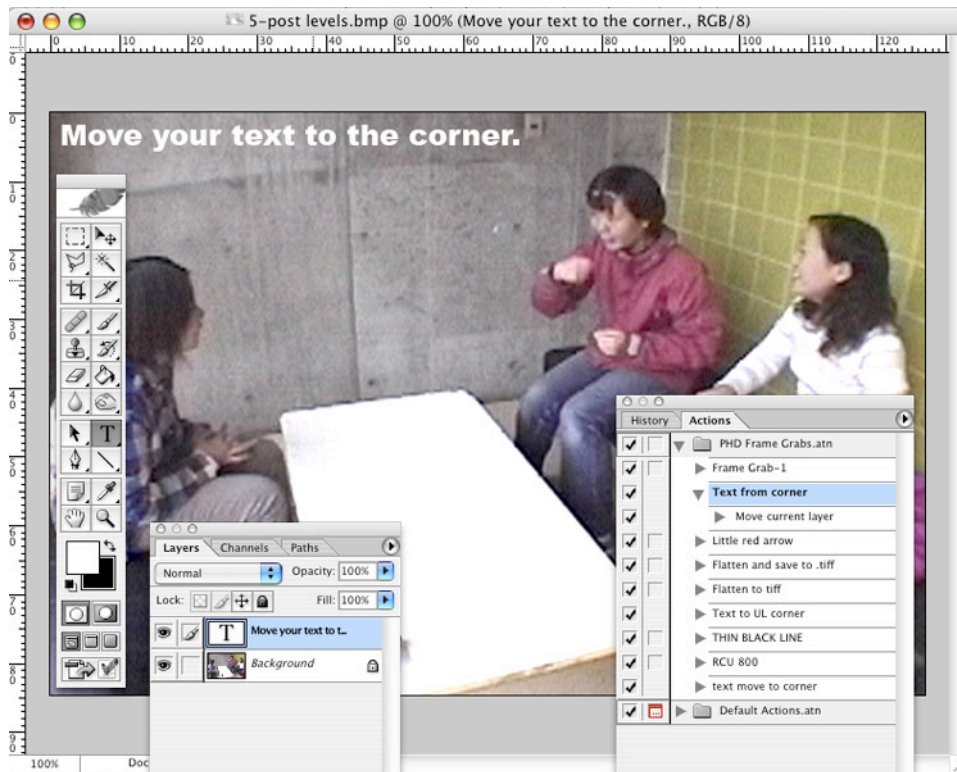
Step 3 – move text out of corner

c. Now that you have the line of transcript in place you need to identify the exact moment in this talk that this frame grab represents. You do this by positioning a marker under the line of text. You can make an Action that will insert a marker, but you will need to move the marker to its exact location by hand (or rather with the arrow keys).
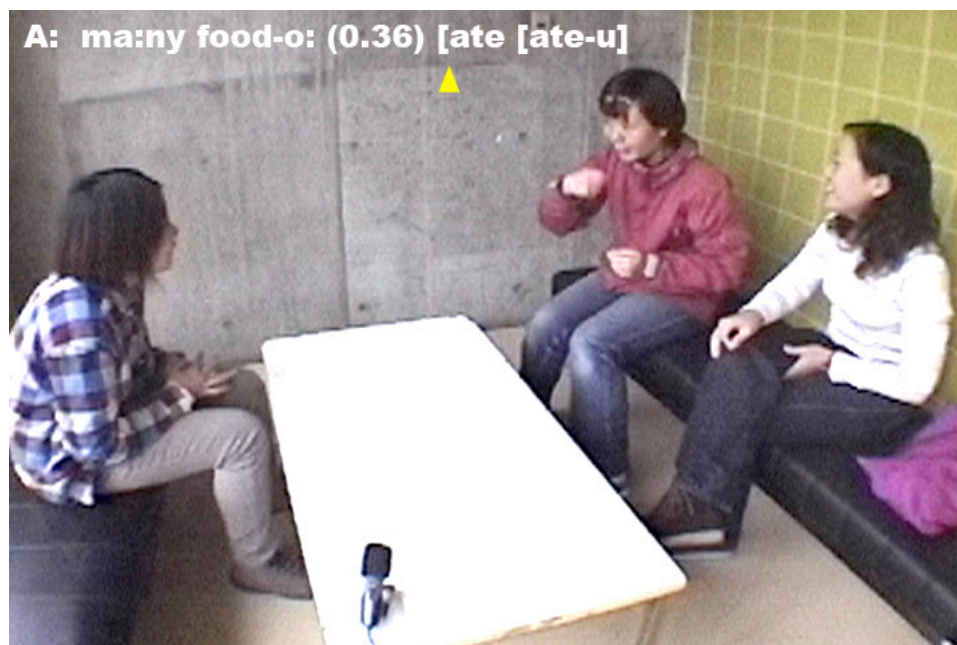
Step 4 – mark the exact moment of the grab with an arrow

d. You can continue to add as much other information as you want to your frame grab. Try to use dark colors over light areas and light colors over dark areas so that the information you add will be easily visible. Once you have added all the information you want, save the file in two formats. First save it as a .psd file. This is your master file. Next save it as a .tiff graphics file. This will be the file you actually insert into your document. If you are going to be uploading the file to the web you'll want to save it as a .jpeg file too.

Finished .tiff file ready to be inserted into a Word document

I have always made all my frame grabs in color as I think that color images communicate better than black and white. Besides most color images print reasonably well in black and white anyway. However, publishers often request a black and white "original" so if one is needed all I have to do is go back to my .psd master file and create a separate black and white version (which is an art in itself).

Making and using Actions

In the instructions above I have mentioned several times that you can simplify the production of frame grabs by using Actions. An Action is the same concept as a "macro" in Word. Both are little programs that can automate any procedure you find yourself doing again and again. Using Actions can save you hours and hours of time – not to mention decreasing your risk of carpal tunnel syndrome! And the best part is that making an Action is as easy as starting and stopping your home VCR.
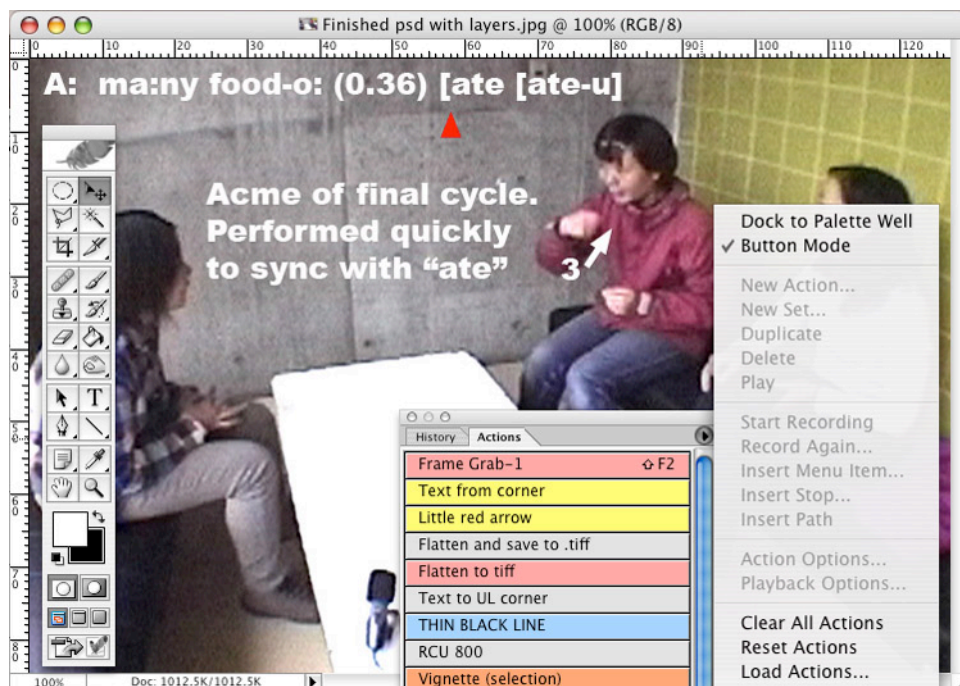
Action palette – Button mode

To make a new action you can't be in "button mode" so just uncheck this option. Once are in edit mode, click on "New Action…" and then give your Action a name and a color designation.
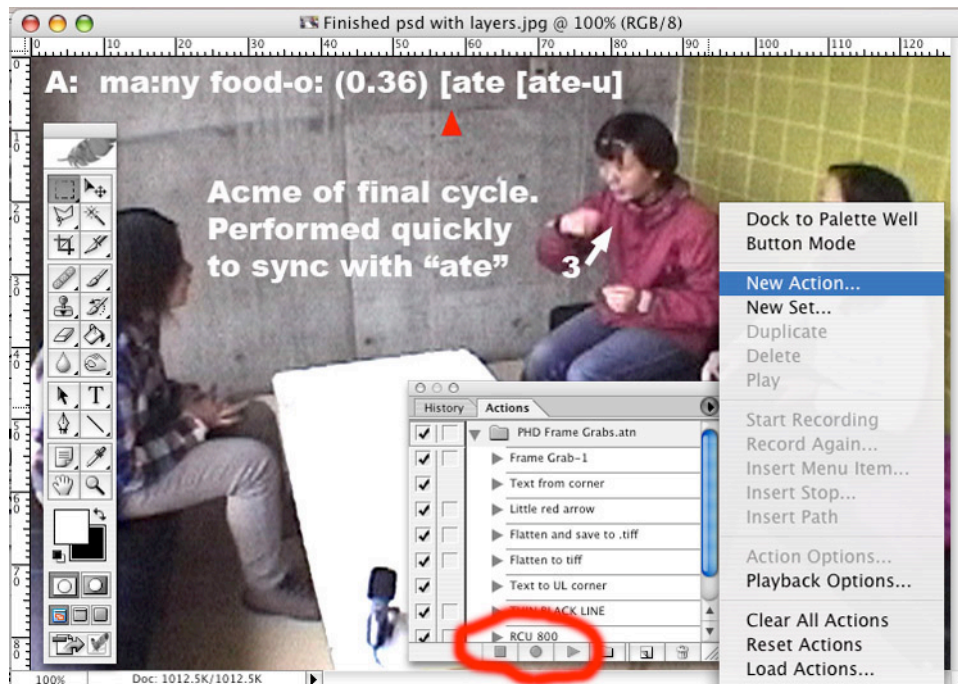
Action Palette – Edit mode

To start making an Action click on the round "record" button. Next make whatever changes you want to the image. Photoshop will remember each of the moves you make. When you're finished with the steps you want to automate, click on the square "stop" button. That's it. To run an Action all you need to do is highlight the name of the Action and then press the "play" button. It's that simple! It's even simplier in the Button mode where all you have to do is click the name of the Action.

What you can do with Actions is limited only by your ingenuity! Basically, any time you find yourself doing anything repetitive, it's time to set up an Action to do it automatically. By the way, you can include the use of one Action in another more complex Action. I had well over 100 frame grabs in my dissertation so these time-saving steps were invaluable.

To further automate the production of frame grabs, you can also apply an Action to a whole folder of images ("batch process") using the "Droplet" feature in Photoshop. When you drop a folder on the droplet icon on your desktop, the Action is automatically applied to every image in the folder. So you can just drop in a folder and go get coffee while Photoshop makes your frame grabs for you!

DOWNLOADS

If you wish, you can download and use the Actions and Levels settings, I use to make frame grabs. They are available both in the files section of the KAIWA Yahoo Group (a group for CA in Japan) and also on my personal download site:

http://groups.yahoo.com/group/kaiwa/

http://homepage.mac.com/WebObjects/FileSharing.woa/33/wa/default?user=dcarroll2&templatefn=FileSharing82.html&xmlfn=TKDocument.82.xml&sitefn=RootSite.xml&aff=consumer&cty=US&lang=en

ANIMATED FRAME GRABS

Now for the really fun stuff! Do you remember those "animated" magazines and product packaging in the Harry Potter movies? And did you think to yourself, man, that would be cool if I could do that with my data! Well, you can. It's called an animated GIF. You've seen these before in the form of annoying little twirly graphics on amateurish websites and animated emoticons in chat forums. But they can have a serious side too.

Animating a series of frame grabs is not just a poor man's attempt at doing a movie clip. An animated frame grab can on occasion make an analytic point much more powerfully than a single still image or a movie clip because you can focus the viewer's attention on the key movements in the interaction. You can visually distill the phenomenon you are describing. And, of course, you can add arrows and comments, which is difficult to achieve in a video clip even with high-end digital editing software such as Final Cut Pro.

An animated frame grab is essentially just a series of frame grabs (in either .tiff or .jpeg format) that are embedded into a single animated GIF file so that they show one after another creating the impression of movement. Remember those flip books you played with as a kid?


There are two parts to making an animated frame grab: the easy part and the hard part! Basically, you've already learned to do the hard part in the sections above about making frame grabs in Photoshop. The trick to making the illusion work is that all the frame grabs must be identically prepared. They must have the save size, resolution, and cropping so that only the motion of the participants changes from frame to frame. The Levels on each grab also need to be consistent so your animated frame grab doesn't flicker like an old silent movie. And any transcript segment you've added shouldn't jump around. That's why we learned to do all these things with Actions in the prior sections – so you can do them again and again in exactly the same way.

The next job in preparing to make the animated GIF is to put all the individual frame grabs that you're planning to use in the animation in one folder. Don't put anything else in this folder. It's important at this stage that each file has a name that will cause the files to be listed in the right order in the folder, for example, you could use something like "gazemove-1" "gazemove-2" and so on. Letters also work nicely ("gaze-a" "gaze-b" "gaze-c").

THE EASY PART

Actually producing the GIF animation itself is easy, easy, easy! Once you have edited and saved all the frame grabs you're going to be using for this animation into one folder with sequential file names, just follow these steps:

1. Open Photoshop then choose "Edit in ImageReady" from the File menu.
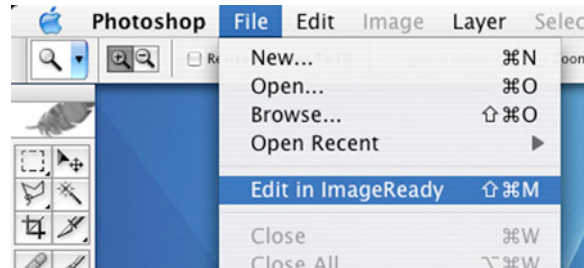
2. In the File menu select "Import" > "Folder as Frames." Find your folder with the sequentially-named frame grabs. When you do this, ImageReady automatically inserts one of the files into a separate layer of a new file.
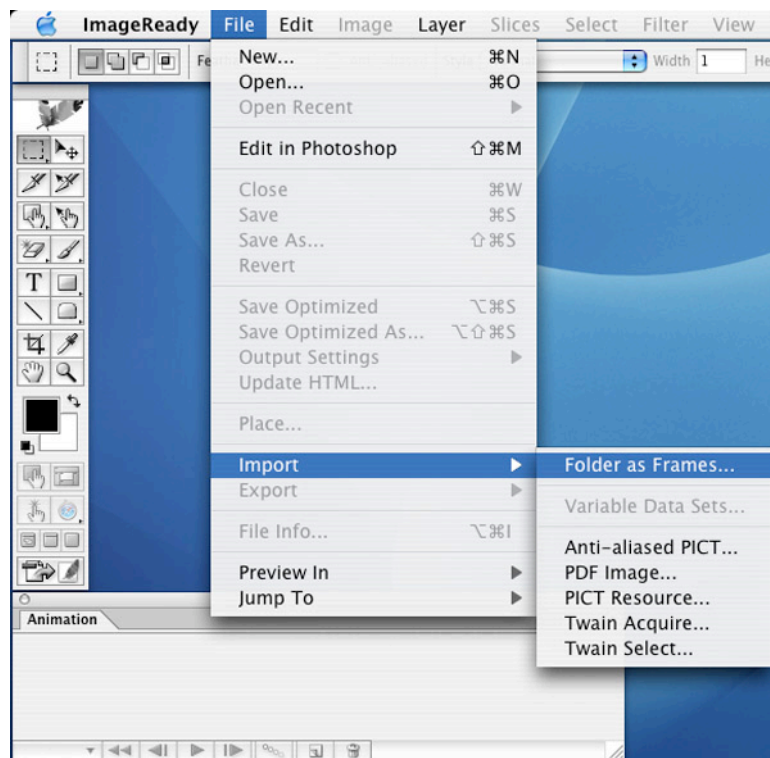
3. To see how your animated GIF will look just click on the "play" button on the bottom of the Animation box window. Under each thumbnail image in the Animation box is a time (0 sec.) and next to this is a very teeny arrow. Click on this arrow to get a timing menu that will allow you to decide how long you want each frame to be displayed. Experiment until you get the timing the way you like.
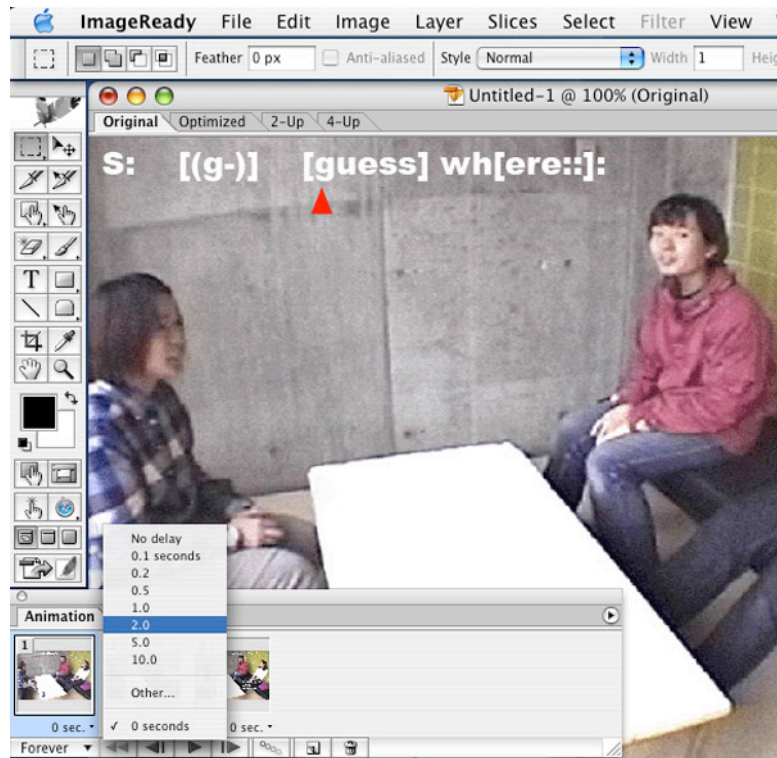
4. If the frame grabs you were working with were fairly large, you might want to change the final size of the GIF image at this point. You do this in the Image Size dialog box under "Image." The smaller the image, the faster the animation will download and begin running once it's on the web (or wherever).

5. Next, under the File menu, select "Save Optimized as…" and then give your creation a name.
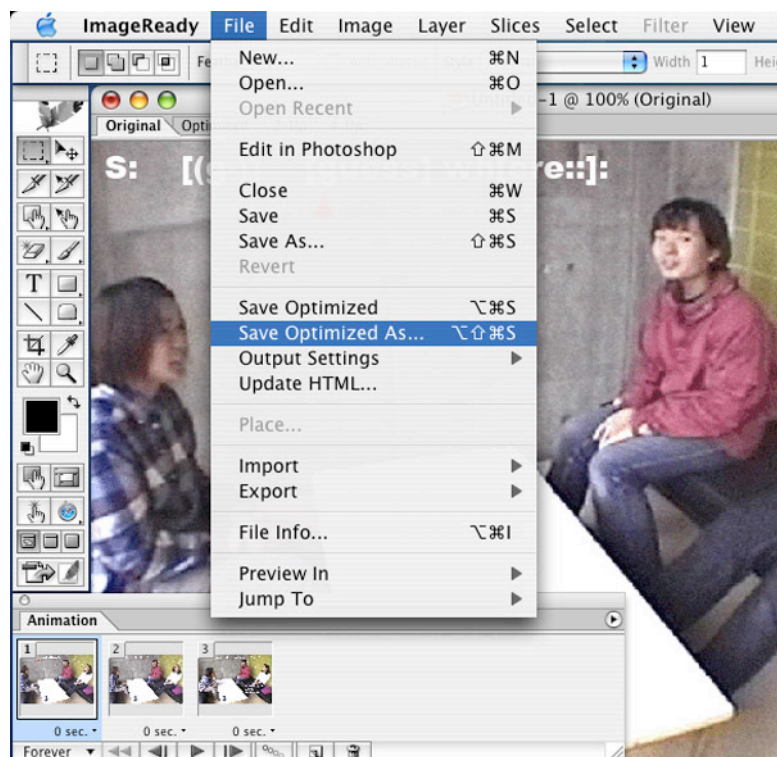
6. That's it. Your animated GIF is now ready to use. You can upload it to the web or put it into a PowerPoint or Word document. To play the animated GIF in a Word document you need to insert it as a movie (Insert > Movie…) as I have done in this document.