A beginner's guide to anonymizing video data

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Introduction

Through this hands-on manual the reader will get acquainted with the tools and practices needed to anonymize video data. This is an essential skill when presenting qualitative research findings in conferences or research articles.

The first part of this manual is dedicated to the anonymization of single frames, or screen captures, from video recordings. This practice is of importance for researchers who would like to highlight visual aspects of their data in mediums where moving images is not suitable or possible, such as research articles. The second part of this manual is dedicated to the anonymization of entire video recordings. This practice comes in handy when presenting data in conferences or public venues, such as broadcast television.

By following this step-by-step guide, the reader will be able to do the following things:

- Capture screenshots from video recordings by using QuickTime or VLC.
- Make stylized images from still frames.
- Highlight specific objects from the still frame.
- Blur faces or objects in video recordings.
- Alter the pitch of video recordings.
- Delete sensitive segments of audio from a video recording.

For any questions regarding the procedures described in this manual, feel free to contact me through the following email address: elias.Ingebrand@liu.se
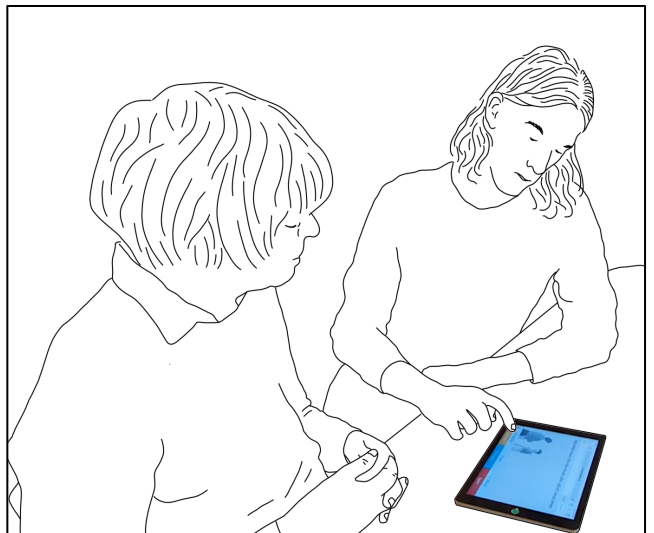
Part 1.
Anonymizing screen captures

Introduction to Anonymizing screen captures

Whether you are a Mac or Windows user, this guide will help you to make stylized images from specific still frames of a video recording. The images that you will be able to produce are detailed enough to highlight focal aspects of ongoing interactions but altered enough to ensure the anonymity of the included participant(s).

When it comes to editing, there is unfortunately no single approach that suits all. Accordingly, the step-by-step instructions provided in the following are based on my personal preferences and I encourage all readers to make any modifications needed to suit their style of work. With some practice you will be able to make anonymized images with ease. The estimated time for anonymizing an image is around twenty minutes, depending on the level of details of course.

Below is a comparison of an unedited image and its stylized equivalent.

Getting started

When working on the anonymization of screen captures the following (free) software will be used:
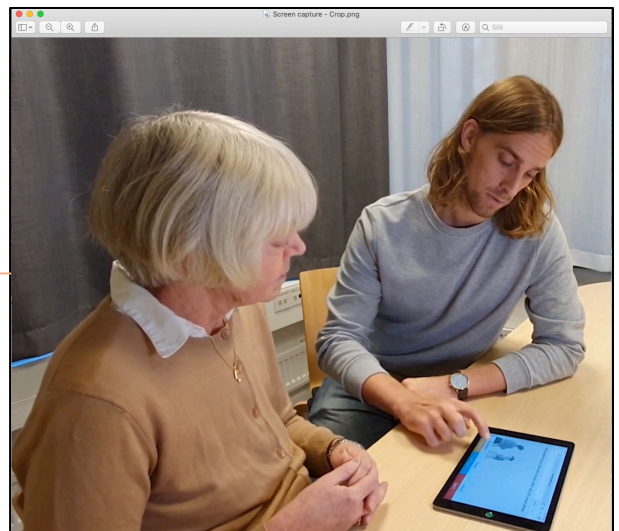
- QuickTime Player (for Mac users)
- VLC (for Windows users)
    - Download at https://www.videolan.org/vlc/download-windows.sv.html
- Sketchbook
    - Download at https://sketchbook.com/thankyou

Saving a screenshot in QuickTime (Mac)

1. Open the video recording in QuickTime.

2. Fast-forward the recording until you reach the frame that you would like to save. Once you have reached the desired frame, press paus.

3. If you need to make any minor adjustments you can always move the video recording forwards or backwards, on a frame-by-frame basis, by pressing on the right or left arrow key on your keyboard.

4. To make a screenshot simply hit "Command (⌘) + C" on your keyboard. The frame is now copied but not yet saved.

5. Open any image editing software, such as Preview or Sketchbook, and hit "Command (⌘) + V" to paste the copied frame.

6. Save the screenshot by hitting "Command (⌘) + S". Typically you are recommended to save any screenshots as PNG or TIFF to ensure that the image quality is high enough.

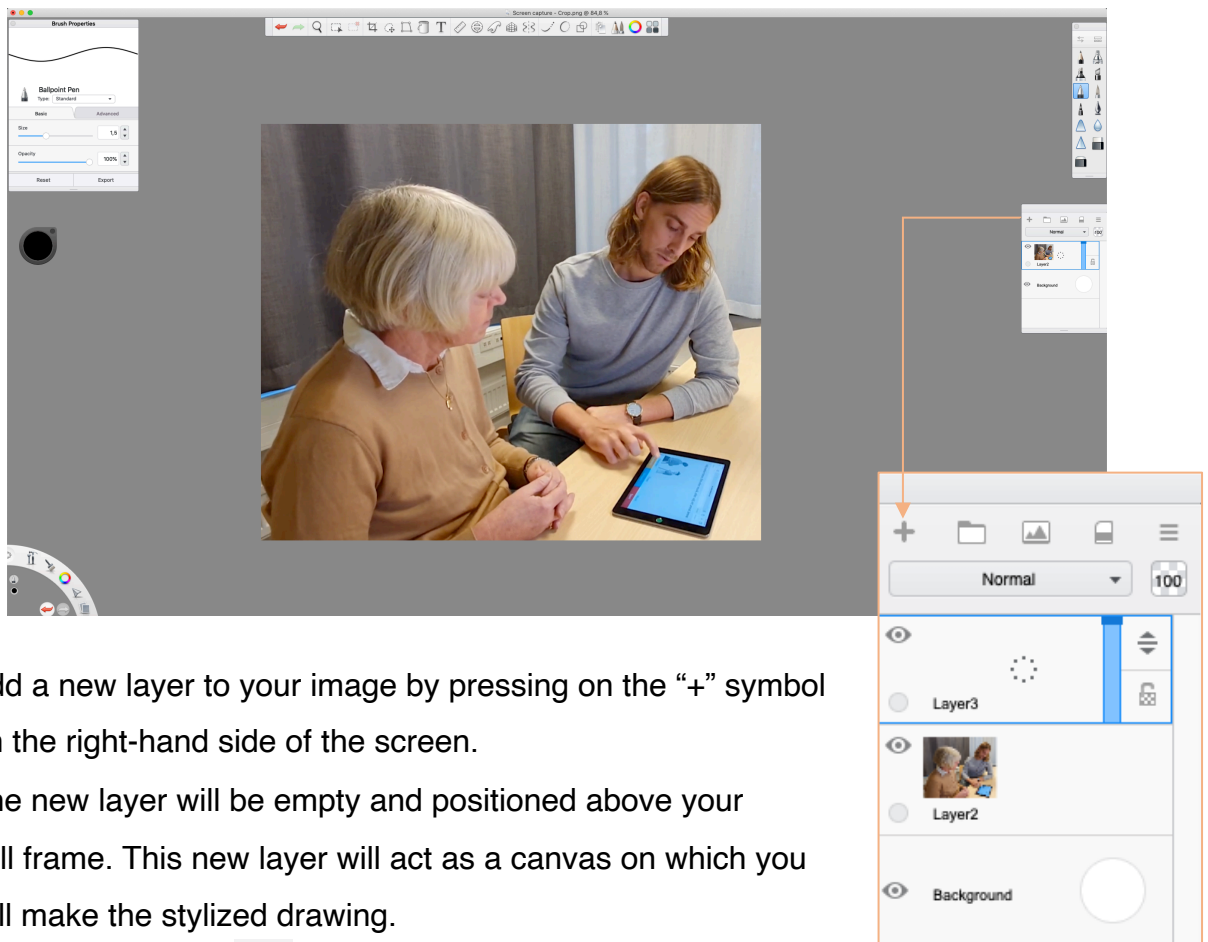Hit "Command + V" to paste your screenshot in Preview

Saving a screenshot in VLC

1. Open the video recording in VLC.

2. Fast-forward the recording until you reach the frame that you would like to save. Once you have reached the desired frame, press paus.

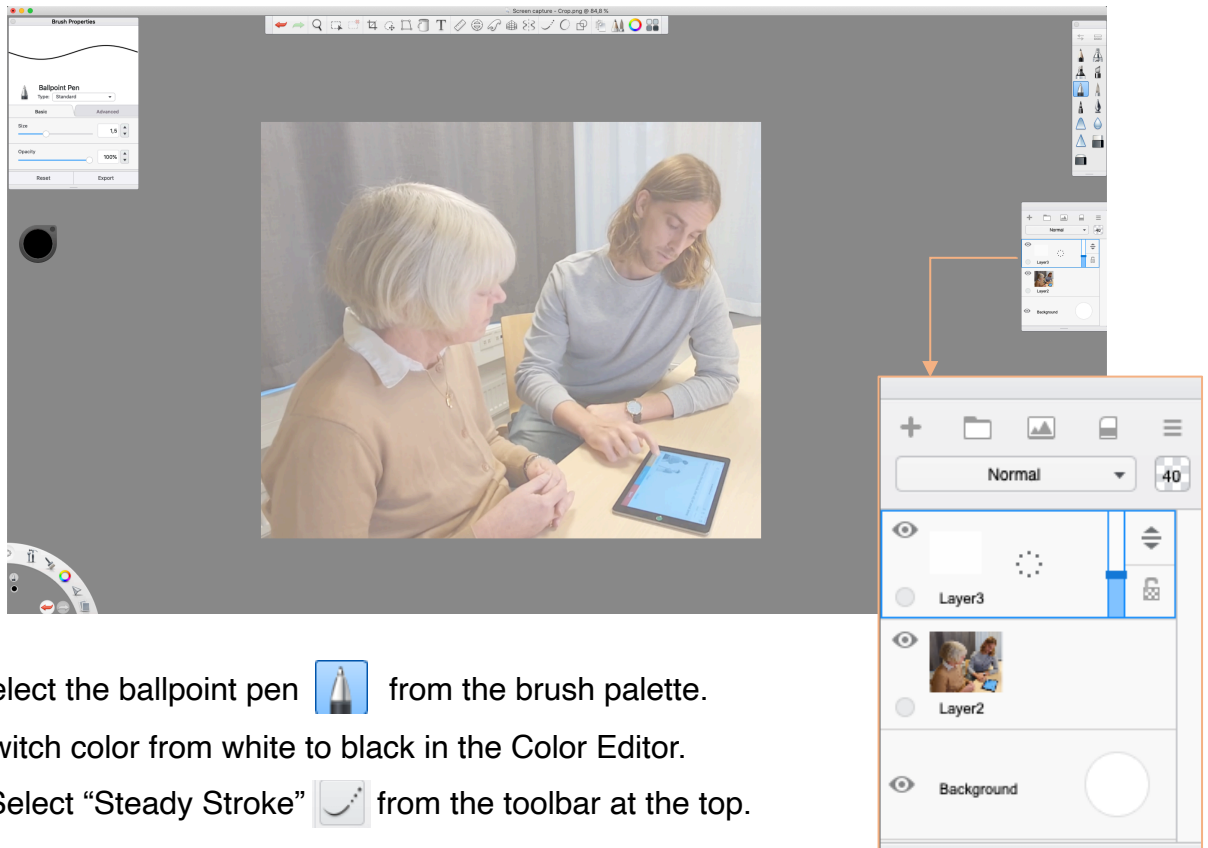**3.** On the menu bar, press Video then select "Take Snapshot".

Anonymizing a still frame in Sketchbook

1. Open your saved still frame in Sketchbook.

2. Add a new layer to your image by pressing on the "+" symbol on the right-hand side of the screen.

3. The new layer will be empty and positioned above your still frame. This new layer will act as a canvas on which you will make the stylized drawing.

4. Select "Flood Fill" from the toolbar at the top of the screen.

5. Choose white from the "Color Editor" at the bottom left-hand side of the screen.

6. Click anywhere on your image to fill the empty layer with white color.

7. Change the opacity of your top (white) layer by dragging the blue slider downwards.

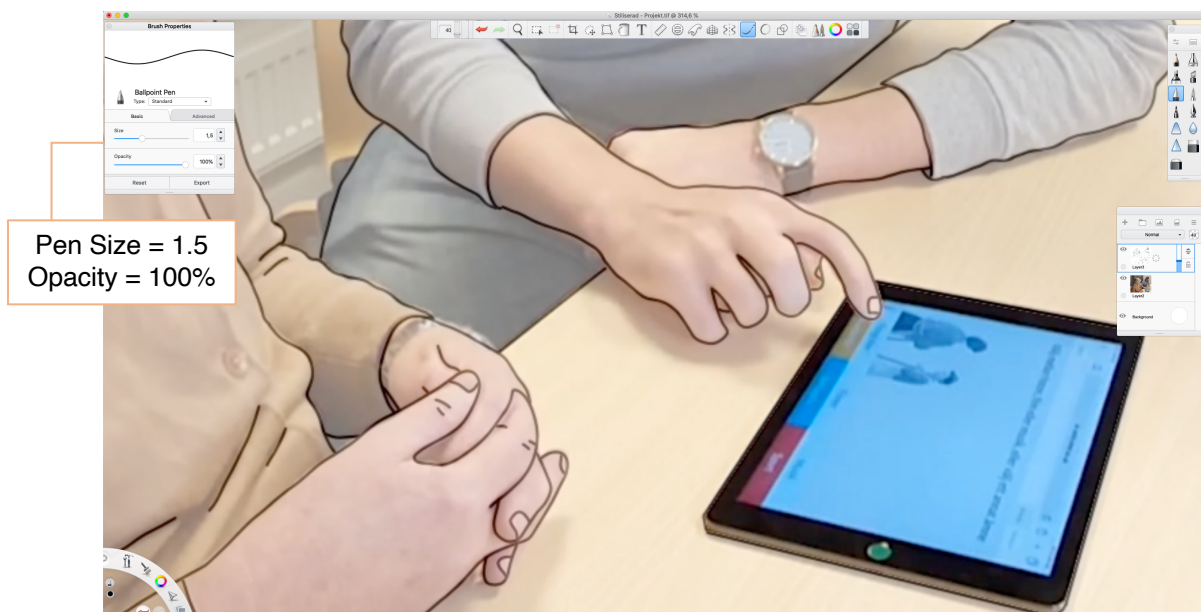**8.** Select the ballpoint pen [pen icon] from the brush palette.

9. Switch color from white to black in the Color Editor.

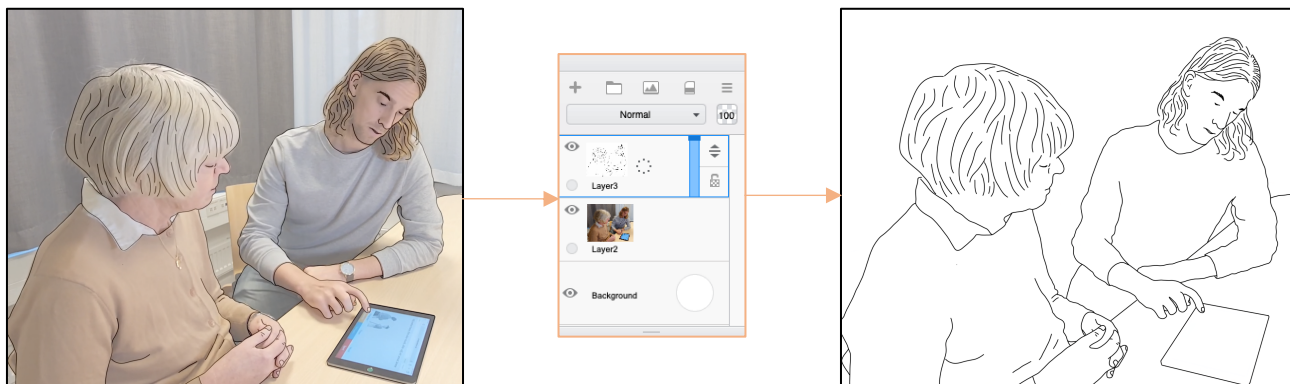**10.** Select "Steady Stroke" [icon] from the toolbar at the top.

11. Whilst still on the transparent layer, start tracing the visible contours from your still frame by left-clicking, sustaining the pressure, and dragging your mouse along the contours.

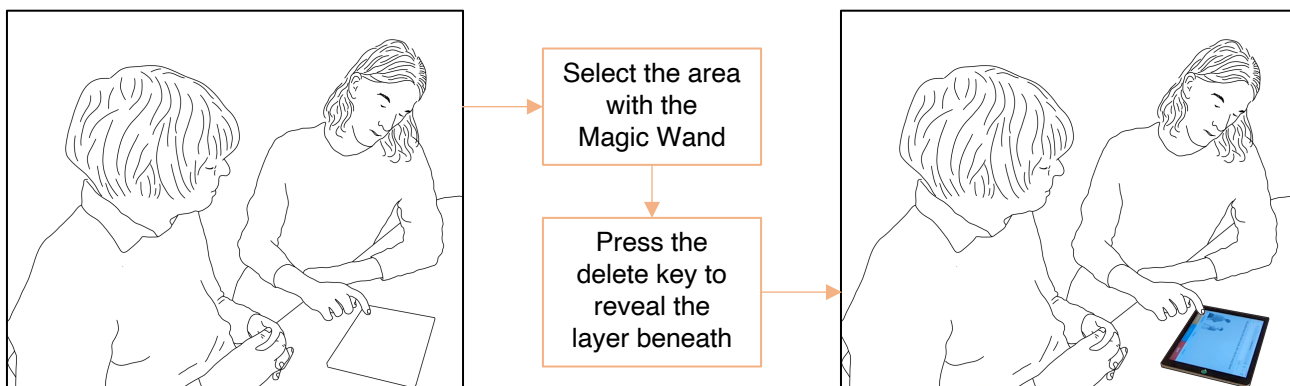**12.** You may need to zoom in on your image when tracing more detailed contours. Do this by pinching on your trackpad or select the "Magnifier" [Q] from the toolbar.

Pen Size = 1.5
Opacity = 100%

13. When all contours are traced, re-adjust the opacity of the top layer to 100%.

14. To reveal any underlying structures of the still frame simply delete the corresponding area from the top layer. You can do this manually by selecting the "Eraser" from the brush palette, left-click with sustained pressure and then drag your mouse over the desired area. Another option is to select the area that you wish to reveal by using the "Magic Wand" located in the toolbar at the top of the screen. Click on the area that you wish to erase and then press "Delete" on your keyboard to reveal that part of the still frame.

15. Your anonymized still frame is now completed.

16. To save the image press "File" in the menu bar then choose "Save as".

Change filetype from .tiff to .png in order to merge all visible layers to one image.

Part 2.
Anonymizing video recordings

Introduction to Anonymizing video recordings

Whether you are a Mac or Windows user, this guide will help you to edit your video recordings in a way that ensures anonymity of any included participant(s). All editing is done through the free software DaVinci Resolve. The anonymization for moving images is twofold, visual aspects (such as faces) are blurred and auditory features are altered or removed. By adjusting the area and amount of blurring, it's possible to retain a high level of details (gaze, facial expressions etc.) whilst still safeguarding the anonymity of the participants.

Below is a still frame from an anonymized video recording.
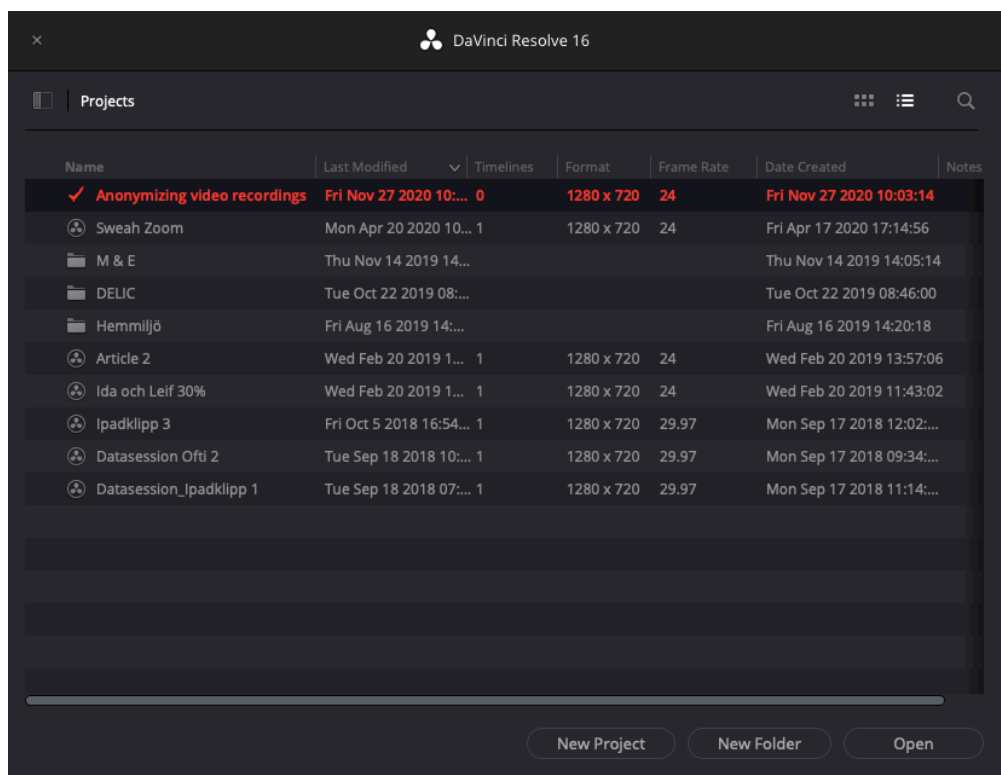
Getting started

When working on the anonymization of video recordings the following (free) software will be used:
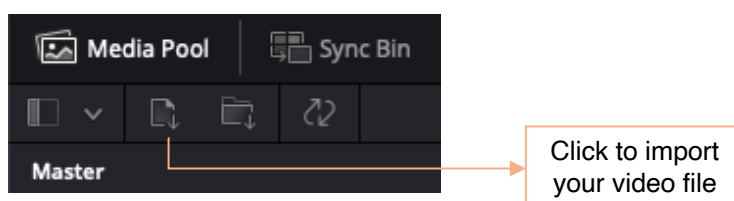
- DaVinci Resolve
    - Download at https://www.blackmagicdesign.com/products/davinciresolve/

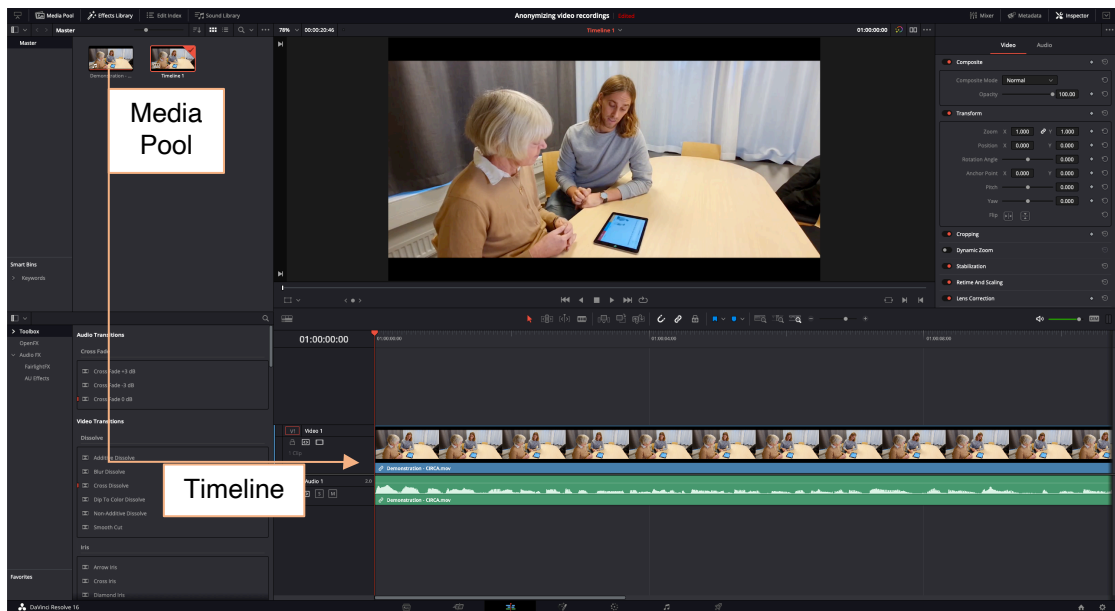## Anonymizing video recordings in DaVinci Resolve

1. Open DaVinci Resolve.

2. Click on "New Project" at the bottom of the window and name your file.

3. Double-click on your project to launch the "Edit Page".

4. In the top left corner of the screen you will see the "Media Pool". This is where all of your files are stored. In this guide we will only work with one video file.

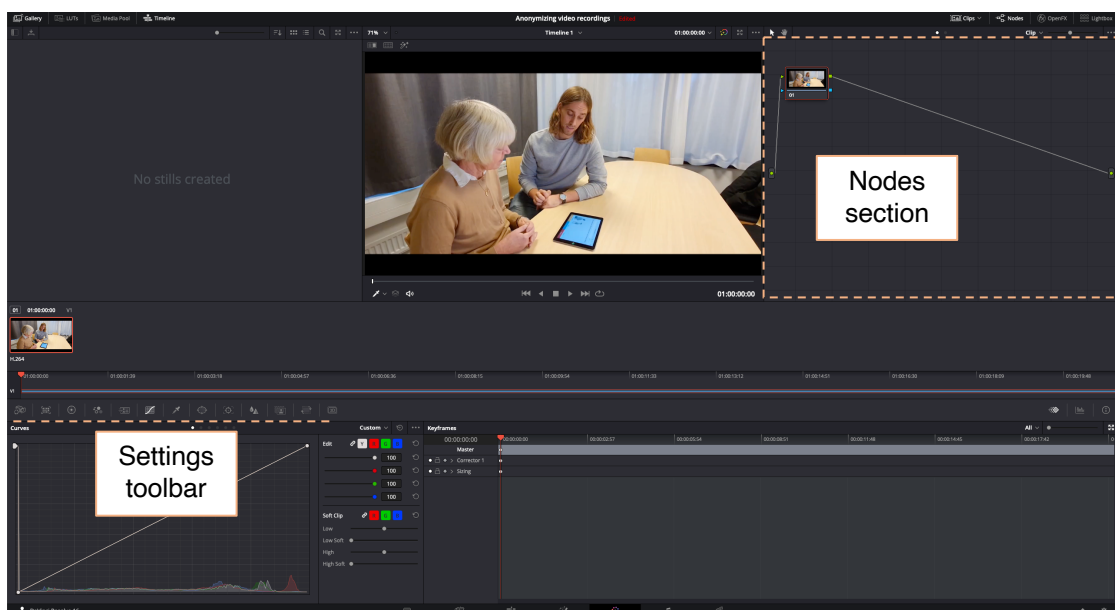**5.** Click on "Import Media" then find your video file and select "Open".

Click to import your video file

6. Drag your video file from the "Media Pool" down to the "Timeline".
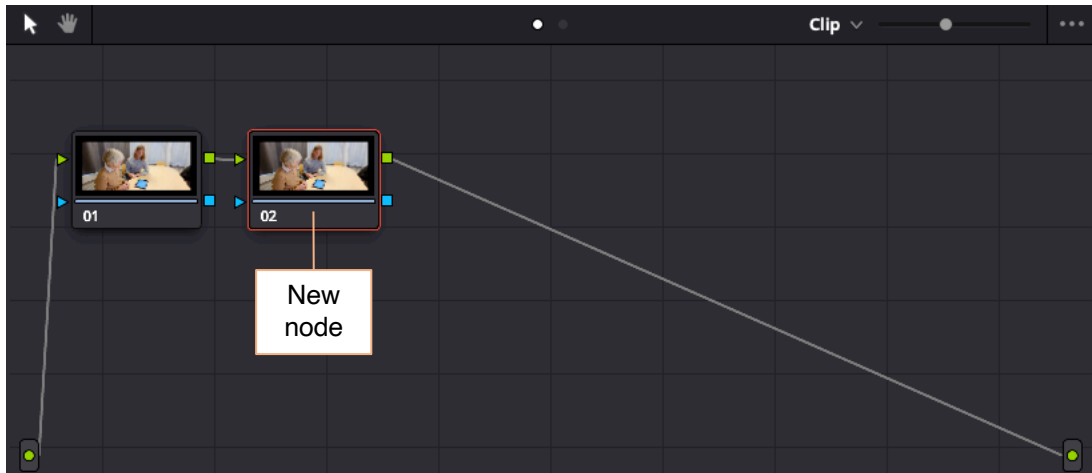

7. Change view from the "Edit Page" to "Colors" by clicking on the symbol in the toolbar at the bottom of the screen.

8. We will use the "Color Page" to add blurred areas to the video recording
By blurring the faces and any personal artefacts of the participants you will be able to safeguard the anonymity while maintaining a high level of details.
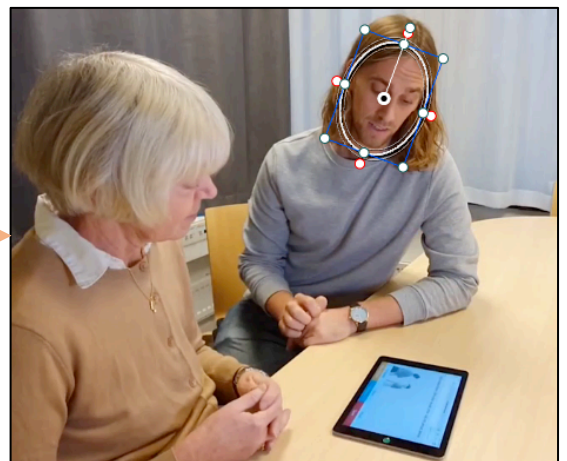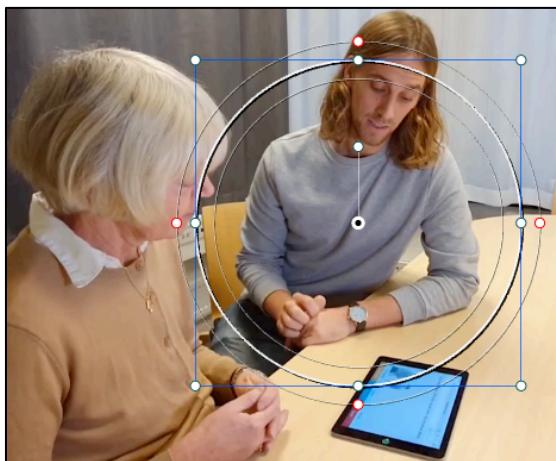
9. When working in the "Color Page", focus will be on the "Nodes section" and the "Settings Toolbar". Adding new nodes is similar to adding layers when anonymizing still frames (Part 1).

10. Right-click within the "Nodes Section", choose "Add Node" and then click on "Corrector". This will create a new thumbnail image with the name "02".

11. Drag the new thumbnail towards the gray line to link it to the original node. You will need one node for each area that you wish to blur.
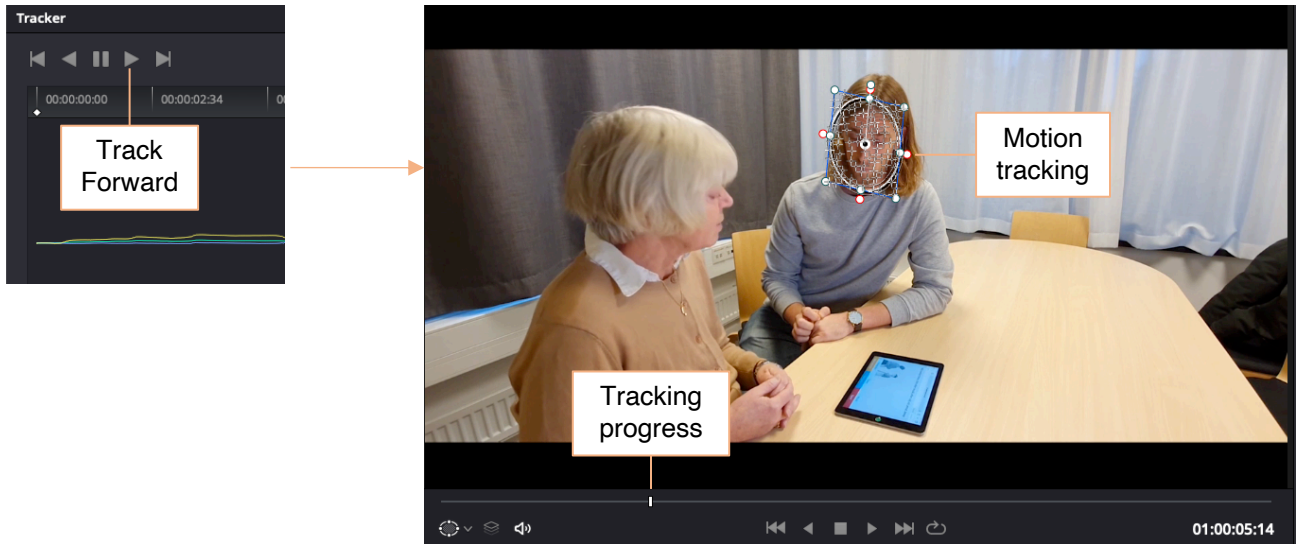

12. With the new node still selected, click on "Window" ◔ in the "Settings Toolbar".

13. Select the circle shape. This shape will outline the area that you wish to blur.

14. Adjust the size and shape of the circle to fit the desired area by selecting and dragging the white markers surrounding the circle.
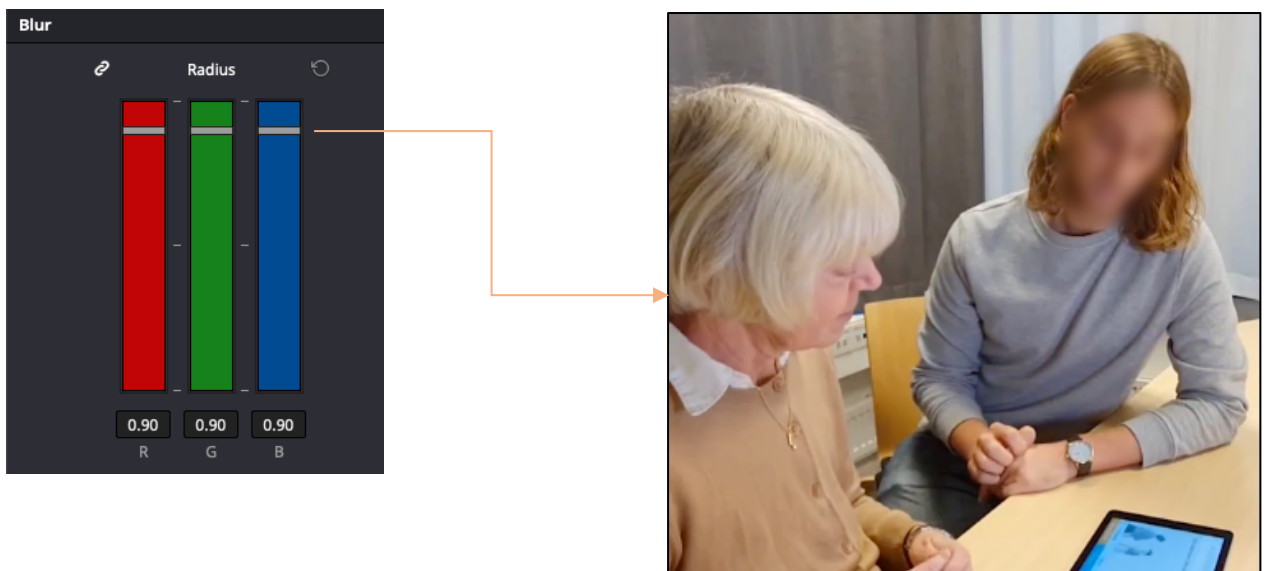

15. Now that the area is fully covered it's time to move on to "Motion tracking". "Motion tracking" is necessary since you are working with moving images and the covered area will constantly change position over the course of the recording.
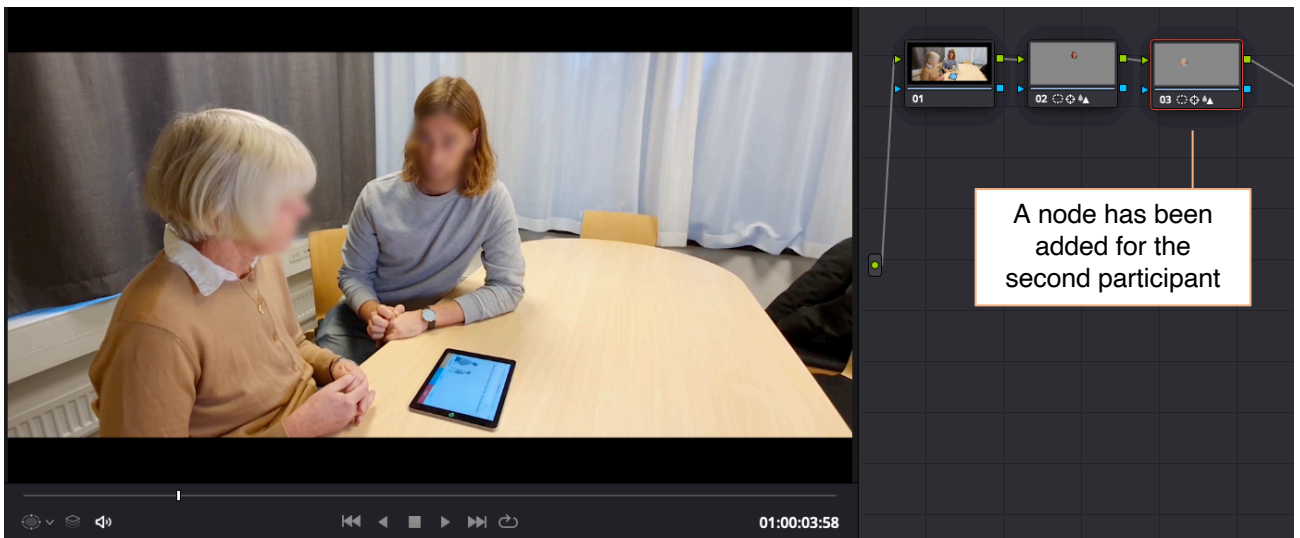
16. Click on "Tracker" ⊕ in the "Settings Toolbar".

17. Make sure that your video file is fully rewound. If not, adjust this by dragging the marker along the timeline as far to the left as possible. If you need to, you can also adjust the position and shape of the circle.

18. Start the motion tracking by clicking on "Track Forward". You will see how the shape and position of the circle changes along with the progression of the playback. Allow the tracking to continue until the playback is completed.

19. Once the entire video recording has been tracked it's time to blur the selected area.

20. Click on "Blur" 🔹 in the "Settings Toolbar".

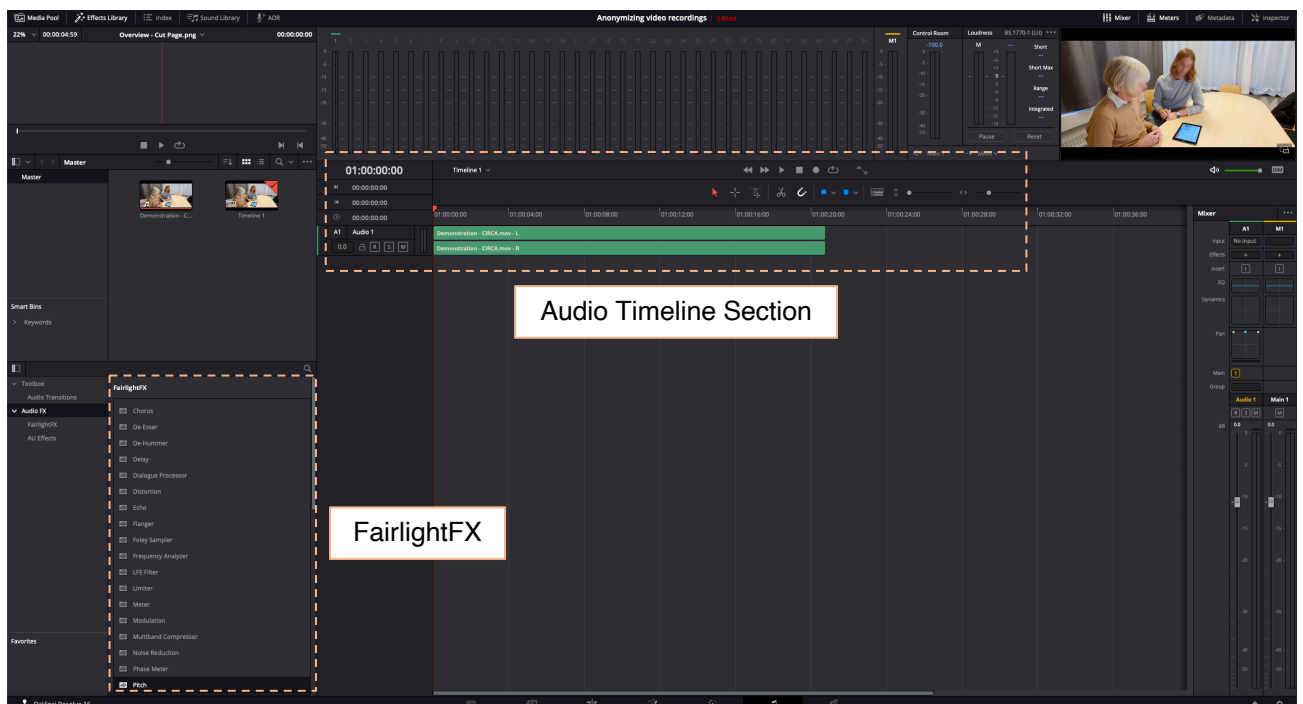**21.** Drag the "Radius" sliders upwards to add blur to your node.

22. Repeat step 10-21 for any additional areas that you wish to blur.

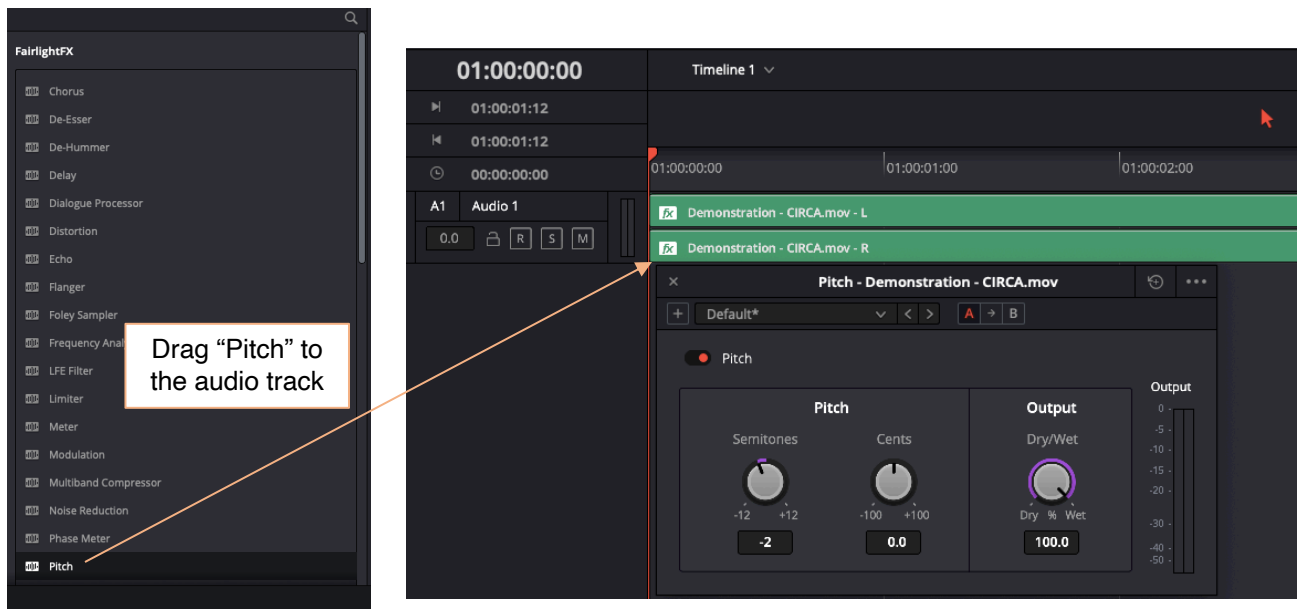A node has been added for the second participant

23. When you are satisfied with the visual anonymization it's time to move on to the audio track of the video recording.

24. Change view from the "Color Page" to "Fairlight" 🎵 by clicking on the symbol in the toolbar at the bottom of the screen.

25. When working in "Fairlight", focus will be on "FairlightFX" and the "Audio Timeline Section". The anonymization is a two-step procedure, first you will change the pitch of the audio track and then you will cut out any segments where names of the participants or locations occur.
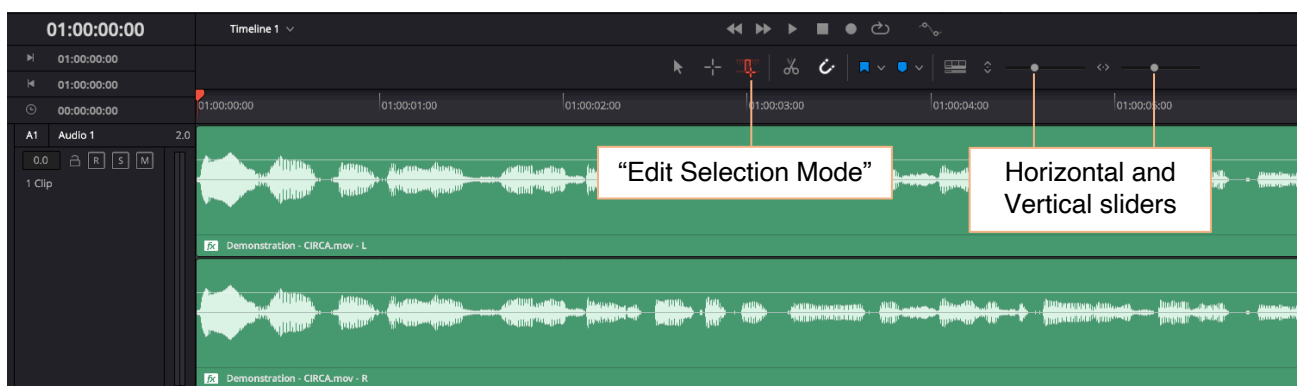

Audio Timeline Section

FairlightFX

26. In "FarlightFX", click on "Pitch" and drag the module to the audio track. By doing this a new window where you can alter the track's pitch will appear.

Drag "Pitch" to the audio track

27. Turn the pitch upwards or downwards by turning on the knobs in the "Pitch Window". It is usually sufficient to turn the pitch up or down by two semitones.
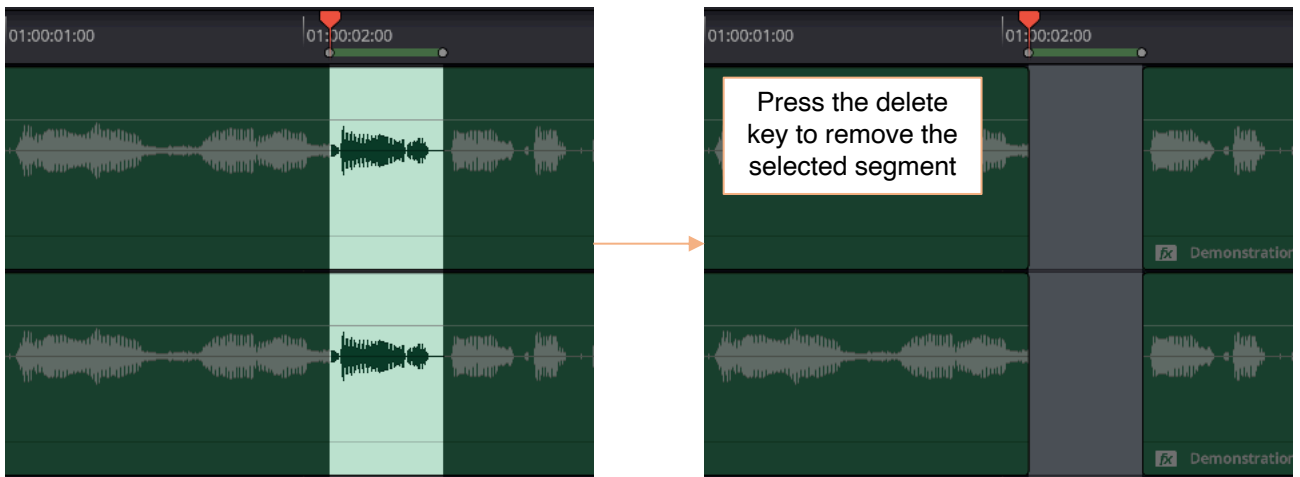
28. When you are satisfied with the pitch alteration it's time to cut out any audible names of locations or participants from the audio track.

29. Use the "Vertical" or "Horizontal" sliders to make the individual segments of the audio track more visible.

"Edit Selection Mode"

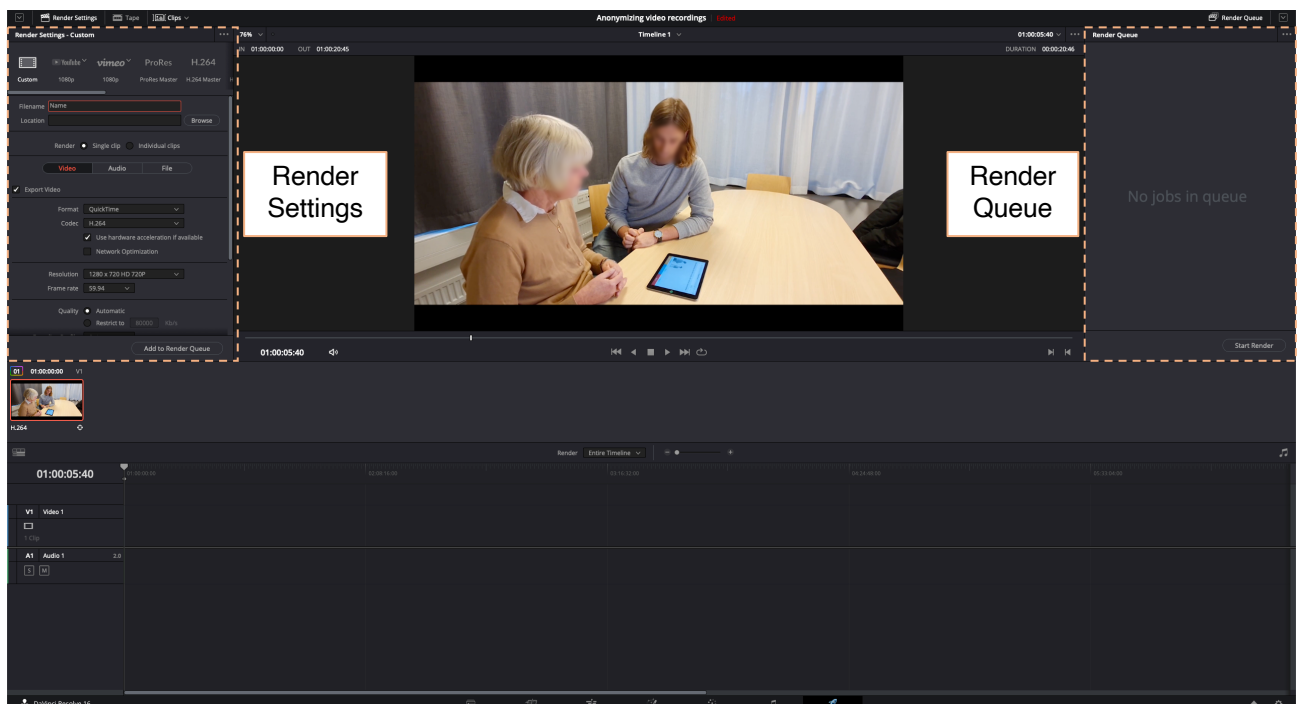Horizontal and Vertical sliders

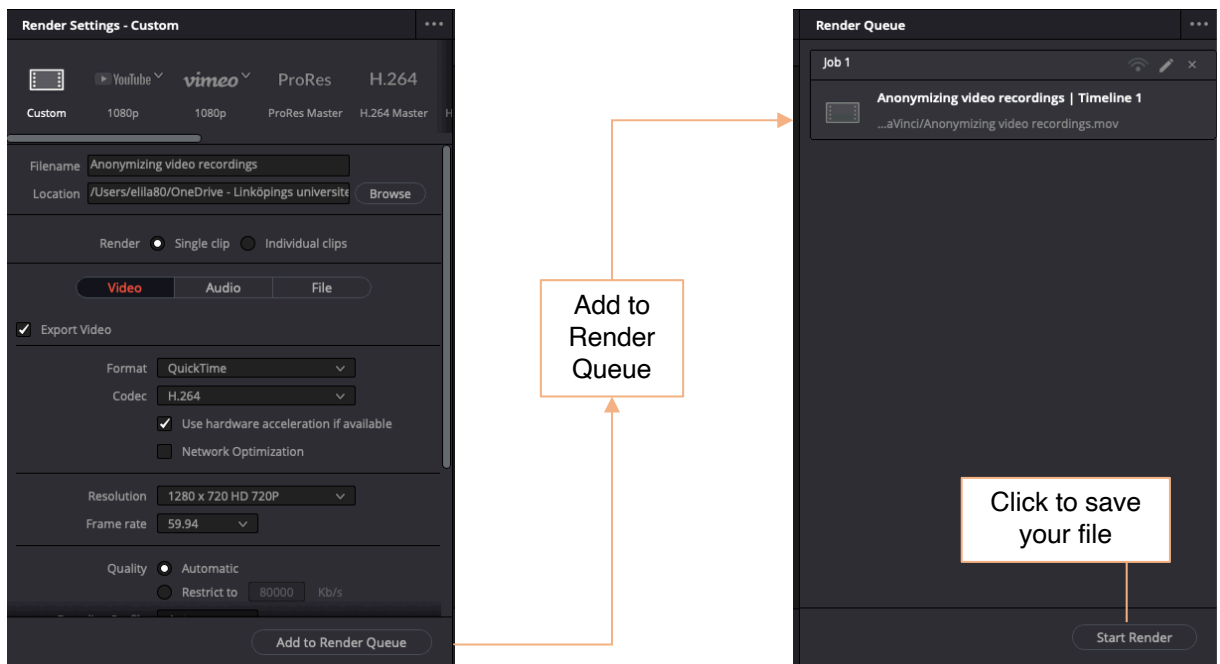**30.** Click on "Edit Selection Mode". This tool is used to make selections in the audio track.

31. Select the segment that you wish to cut out by left-clicking on the audio track, sustaining the pressure, and dragging the cursor along the timeline.

32. Once the segment is highlighted, press delete on your keyboard to cut it away.

33. Repeat step 31-32 for any remaining segments that you wish to remove.

34. Once all sensitive segments are removed, the anonymization of your video recording is completed and all that's left is to save your edited file.

35. Change view from "Fairlight" to "Deliver" by clicking on the symbol in the toolbar at the bottom of the screen.

36. In "Deliver", focus will be on "Render Settings" and on "Render Queue".

37. In "Render Settings", name your file and choose a location to save it.

38. Choose what format you would like your edited video to have and then click on "Add to Render Queue".

39. In "Render Queue", click on "Start Render" and wait until your file is fully processed.

40. Your video recording is now anonymized and saved.