



# User Manual

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V-Note, Bremig LLC

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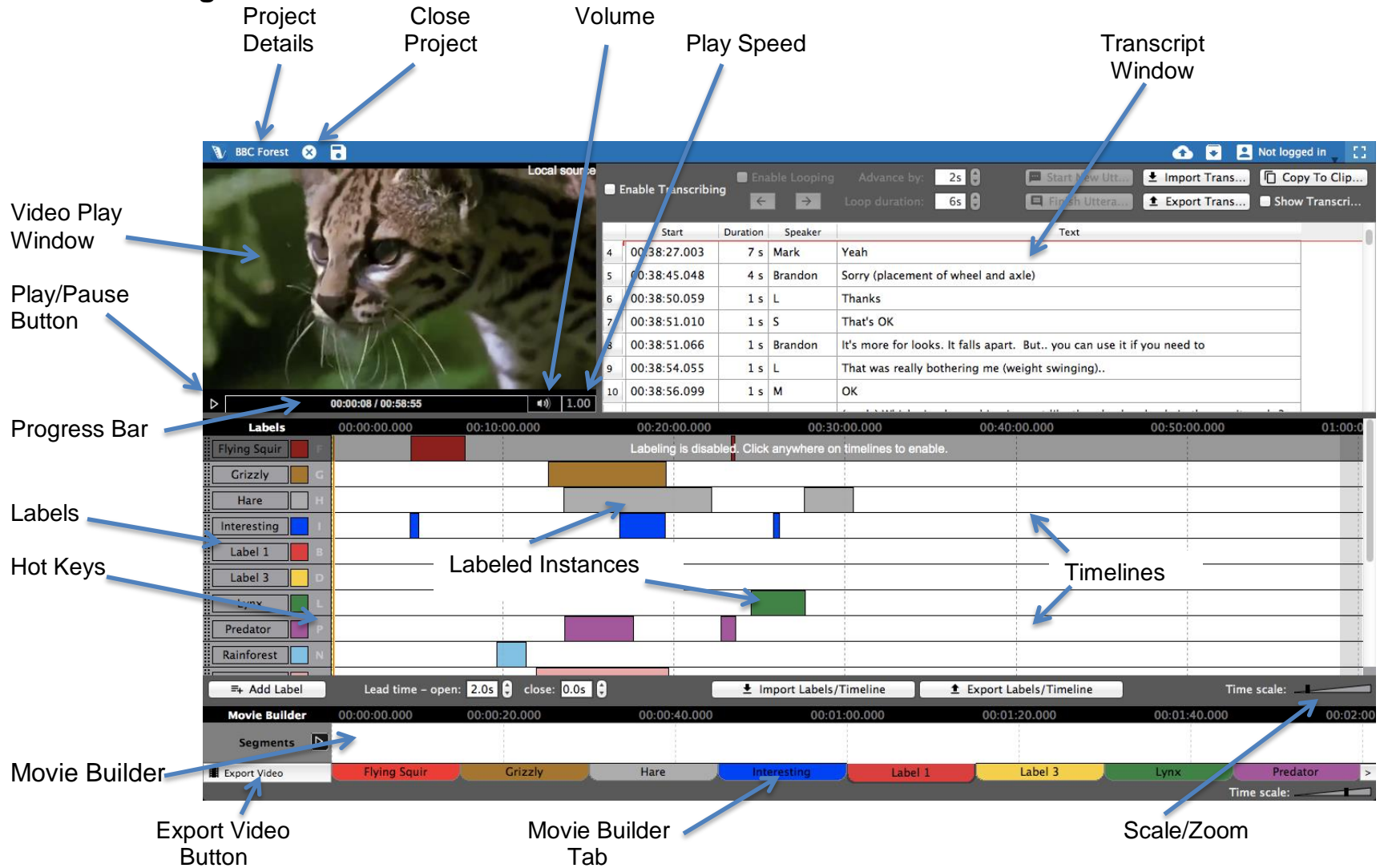
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**You can find short tutorial videos on V-Note here:**

**<http://bit.ly/2cqBRxM>**



## Overview Diagram



# Chapter 1: Getting Started

## An Overview of V-Note

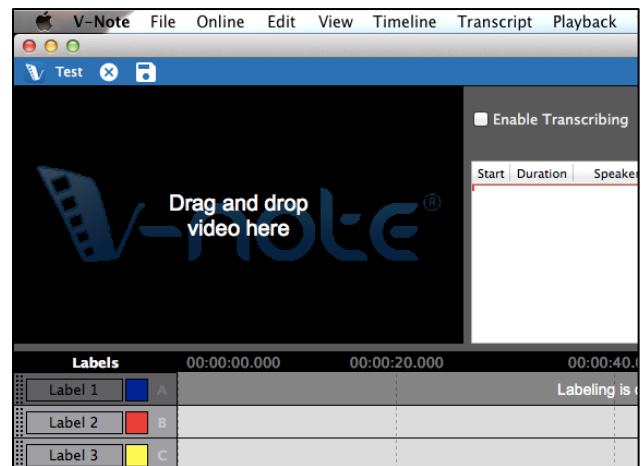
V-Note is designed for those of us who work with videos. Using multiple timelines, hot keys, online sharing, transcripts, drawing, raw data output, and numerous other features, V-Note can offer a video analysis experience like no other.

## Bringing Videos into V-Note

The first thing you may want to do is bring a video into your V-Note project (V-Note's main file format which maintains and associates all of your media, transcripts, timeline data, etc). You can do this by opening a folder on your desktop and dragging in a media file in the following formats: .mp4, WebM (VP8), H.264, .mov, \*.wmv, or .mp3.

Alternatively, you can double click the video play window (black space) to browse to a video file.

\*.wmv files are only supported in a Windows environment

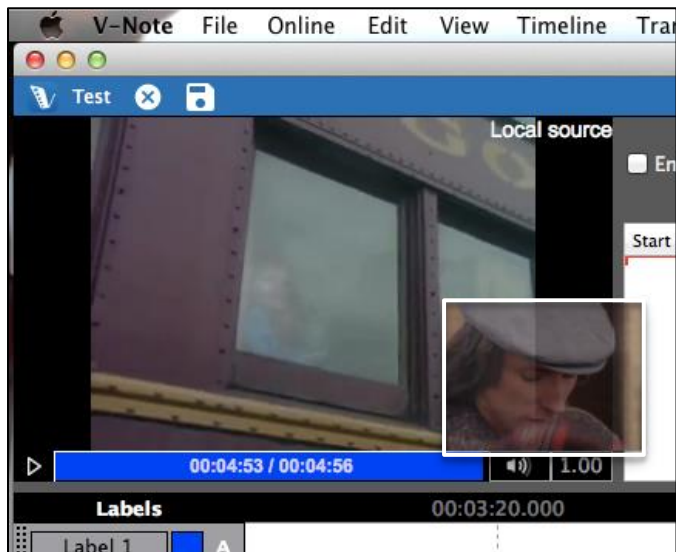


## Playing and Navigating a Video

Videos imported into V-Note begin playing automatically. To **start or stop play**, simply click on the video play window or the triangle “play” button just below the video play window.

The bar below the video play window will provide a **preview thumbnail of the video** when you drag over it. This can help you to rapidly locate parts of a video.

To change the play head position you can single-click on the timeline you can click anywhere on the blue bar below the video or double-click on the timelines.

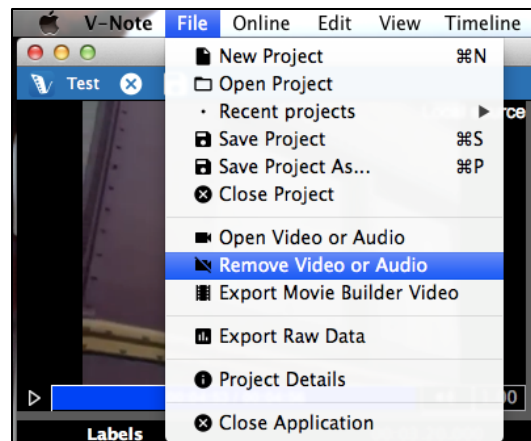


## Removing a Video from V-Note

To remove a video or audio file from your V-Note project you can click on the File menu on top. Choose “Edit Playback Sources.” Next, select the media file you wish to remove and choose “Remove Audio or Video.”

Note: you cannot remove a video from a file that has already been saved or downloaded from the cloud. Instead, start a new project.

If you want to locate the video file from the earlier-saved project, you can browse to it by clicking: File Menu > Project Details > Video [...]. This will browse to the file.



If a project has been saved from a shared project on our cloud-based streaming services, the related video will be saved only as a temp file. You should contact the original owner to obtain the original.

## Custom Settings

V-Note allows users to change function-key assignments (e.g., save project, advance looping, etc.), languages and default font used by the program.

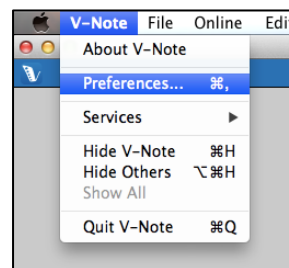
This functionality is accessed differently depending on platform.

On a Mac:

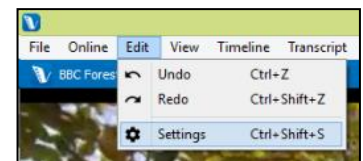
Choose: “V-Note” top menu > Preferences

In Windows:

Choose: “Edit” top menu > Preferences



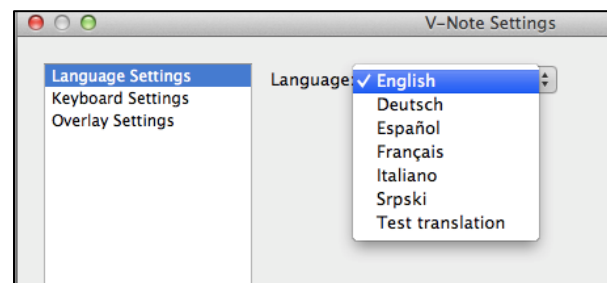
Mac OS



Windows

## Changing V-Note’s Language

To change the language in which V-Note is displayed, choose “Language Settings,” and then select your preferred language. V-Note can be displayed in: English (US), German, French, Spanish, Italian, and Serbian.

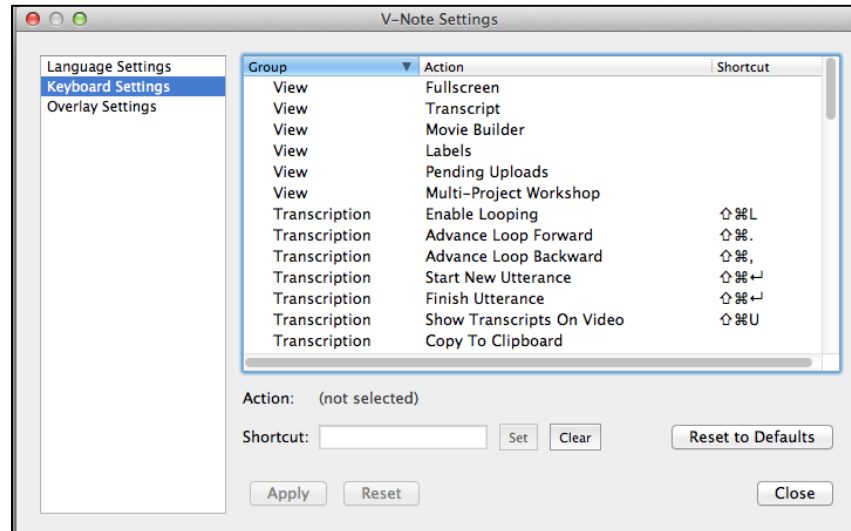


## Changing Function Keys

You can change the keys used to control certain functions in V-Note. When viewing “Preferences,” accessed as described above, select “Keyboard Settings.”

For example, Saving a project (CTRL + S; ⌘ + S in MacOS), Beginning and ending an utterance when transcribing (CTRL + Shift + Enter; ⌘ + Shift + Enter in MacOS) can all be given new key combinations. Note however, that single alpha-numeric keys should be avoided,

as these may be used when typing words in transcriptions, for example.

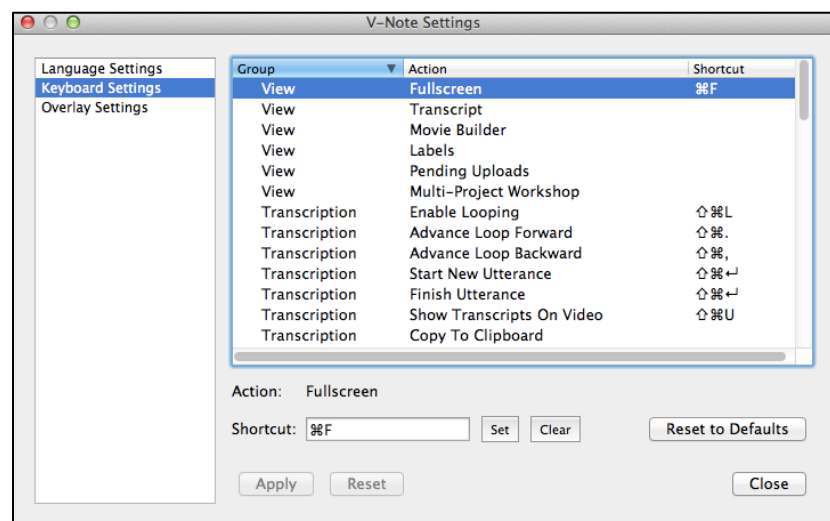


To change key settings, simply select a function with the mouse from the list, place the cursor in the typing space below the list, and press the key combination of your choice – pressing keys all at once.

## Changing Function Keys: An Example

If you wanted to change “View - Full Screen” (the first one in the list), from unassigned (as is default) to CTRL + F (⌘ + F on Mac OS), then select “View - Full Screen” with the mouse so that it becomes highlighted. Next, type the key combination of your choice into the text bar below the list next to the word “Shortcut.” Finally, click on the “Set” button.

Once the change is made, CTRL + F (⌘ + F on Mac OS), when





pressed, will toggle full screen on and off.  
**Overlay Settings – Adjusting Subtitles**

Overlay settings allow you to select a font, a font color, and font size for your subtitles, which display over top of the video.

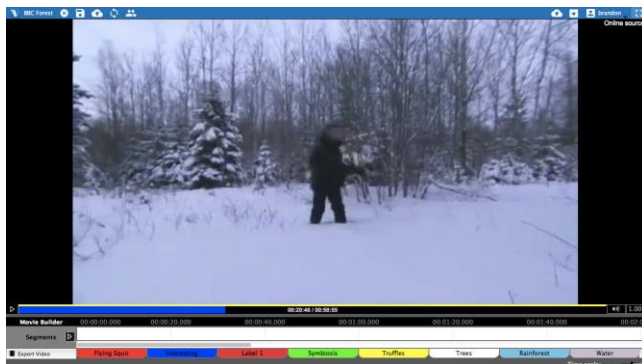
## Adjusting the Size of the Windows

You can adjust the size of your video play window, the transcription window, and the timeline window but simply placing your mouse's cursor between any two windows, clicking, and dragging in the direction you choose. The Movie Builder window and top blue bar are not able to be reduced in size.

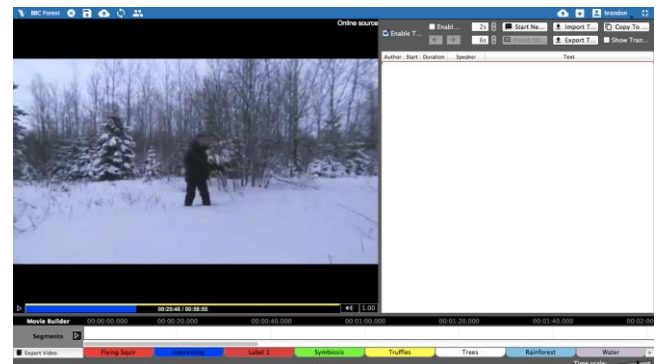
This allows you to emphasize the function of your choice at any given time. For example, you can make the video play window or transcript window nearly full screen if you desire.

You can even make the transcription and timeline windows disappear by continuing to drag the video window's edge all the way through the other windows. You can still continue to use hotkeys even if the timeline window is shrunk from view, for example. These can be useful when using an audio-only project for example. Example screen setups are shown below.

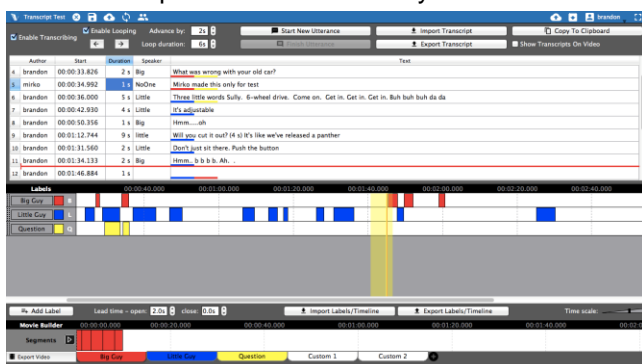
Nearly Full Screen Video



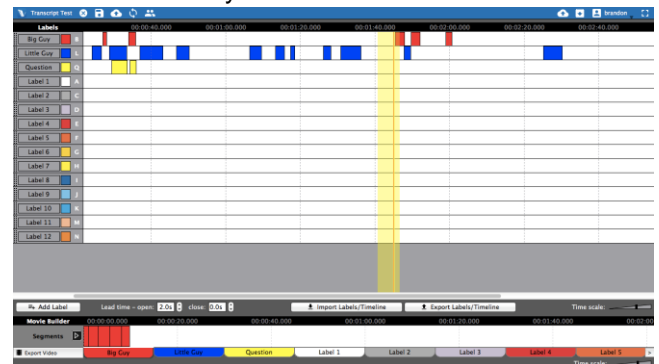
Half-Screen Video, No Timelines



Transcripts and Timelines Only

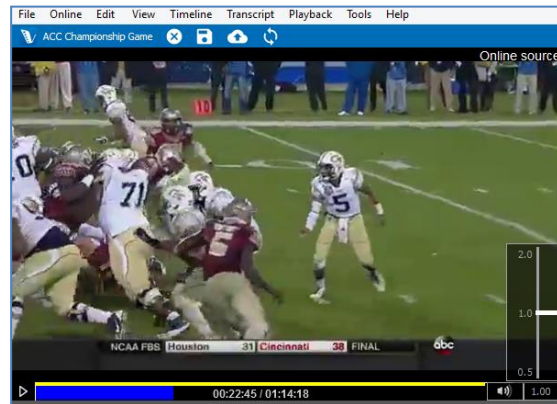


Timelines Only



## Adjusting Playback Speed

Playback speed can be adjusted to be made faster or slower. Simply, click on the 1.00 button in the lower right of the video play window and adjust the slider up for faster play or down for slower play. 1.0, in the middle, is normal play speed.

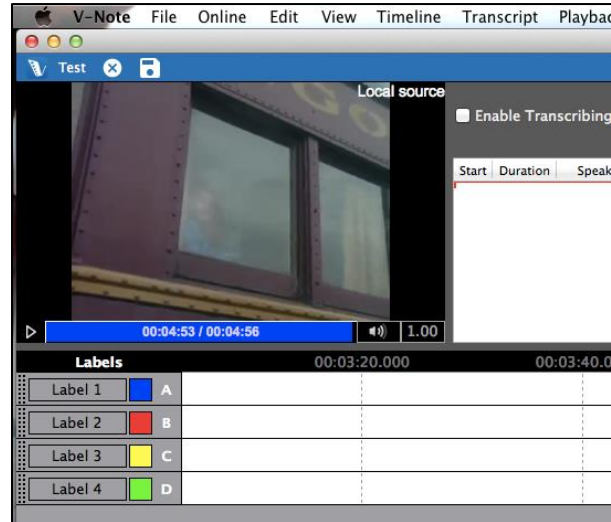


## Chapter 2: Timelines and Labels

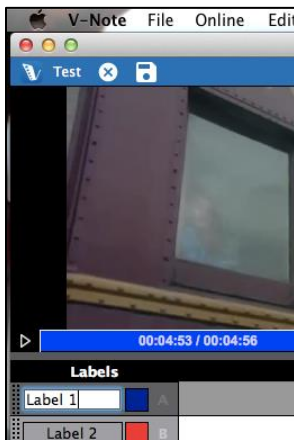
### What are Timelines, Labels?

When V-Note first opens, there are four timelines with four labels that are open by default. The default labels, shown in the image to the right, are “Label 1,” “Label 2,” “Label 3,” and “Label 4.” These are just to the left of their corresponding timelines, which are white and punctuated by times above on the black bar (i.e., 00:03:20.000).

If you want to bring the play head to 3 minutes and 20 seconds, a double click at this point on the timelines (anywhere outside of a labeled instance) will bring the play head to this position.

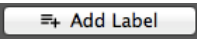


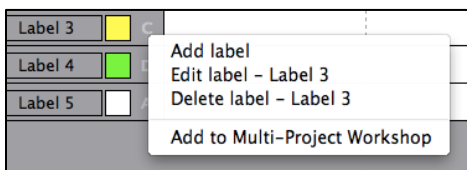
### Creating, Changing, and Deleting Labels



Labels, including the default ones, can be changed, deleted or added. To modify a default label (or any other), simply click on the text to edit and type in a new label, as shown to the left. This could be anything you might wish to mark in the video (e.g., a name of a person, questions, interesting points, etc.).

You can also assign or change a hot key – the key that is pressed to begin and end coding (i.e., marking a labeled instance) on the video – by clicking on the hot key (e.g., A, B, C, etc.). Similarly, clicking on the color square allows you to change the color of the label.

To add a new label, click on the “Add Label” button.  New labels will appear below existing labels. These can be changed in label, color, hot key, in the same way shown above.



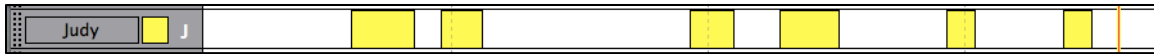
To delete a label (including the default ones), a right click over the label (or Control + Click on a Mac) provides the option to Delete Label.

## Labeling Instances of Video

To label an instance of video – for example, parts of the video where Judy is talking – first create a label for Judy with the hot key “J,” for example.

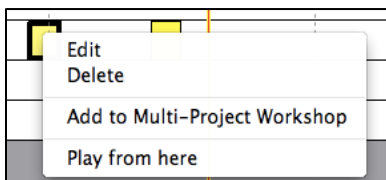


Next, watch the video. Whenever Judy speaks, simply press the “J” key to start and stop the label on the time line for Judy. The resulting labeled instances on the timeline will look something like this:



## Changing, Editing, and Deleting Labeled Instances

Labeled instances can be changed, edited, or deleted. Also notes can be made on them.

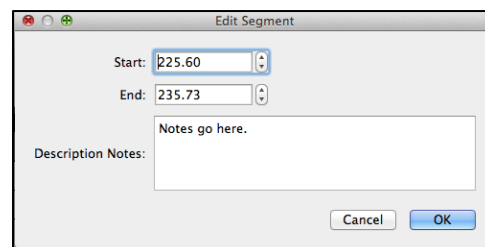


A right click over a labeled instance bar allows a user to delete a labeled instance as shown to the left.

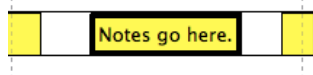
Holding the mouse over center of the labeled instance, makes the mouse cursor into a +. This allows you to move the labeled instance left and right.

Holding the mouse cursor over the left and right edges allows you to stretch or compress the labeled instance from that side by dragging the edge left or right.

To make notes on the labeled instance, double-click it. You will see this window:



The note will appear in the labeled instance as shown:



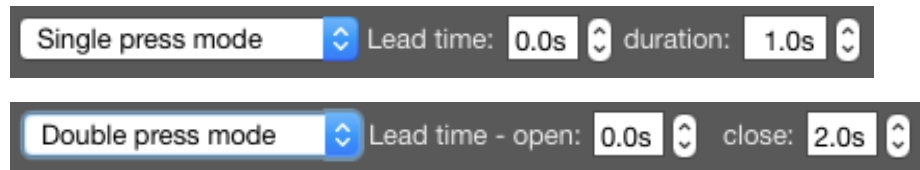
Any notes extending beyond the labeled instance box will be elided.

## Adjusting the Function of Making Labeled Instances

Directly below the timelines is the option to change how labeled instances are made. There are two general choices: Double Press Mode and Single Press Mode. When watching and coding a video, if you would like to start and stop the labeling of the

instances with two presses of the hotkey (i.e., one to start and the other to finish), then

choose “Double Press Mode.” If, however, your instances are all about the same time, you can choose “Single Press Mode” and preselect a time for all labeled instances. You will then only need to press the key once to create (i.e., start and stop) a labeled instance on your timeline.



The lead-time of labeled instances can be set for both. When watching and coding a video you may need a few seconds, for example, to recognize that a goal was indeed scored. By setting the lead-time open to 2.0 seconds, for example, when a hotkey is pressed, the beginning of the labeled instance is placed 2 seconds before you hit the hotkey. Similarly, the close lead-time (only on “Double press mode”) can place the end the labeled instance before the time at which you pressed the hot key.

## Exporting and Repurposing Labels and Timelines Only

If you would like to reuse the same labels (e.g., players’ names, teaching rating categories, etc.) in multiple projects, V-Note makes it easy. There are two buttons under the timelines called: “Import Labels/Timelines” and “Export Labels/Timelines.”

These buttons allow you to export and import (i.e., reapply to another project) your labels and/or timelines.



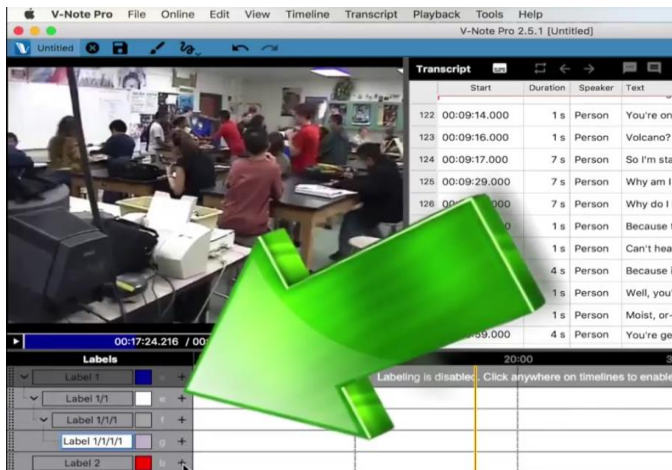
When you click on “Export Labels/Timelines” you can choose only to export the labels (these are the buttons and hotkeys on the left) or both the buttons and the timelines. This, latter option, may be useful if, for example, you have videos from multiple angles of the same event; this way the timeline labels would line up in the same way. If you do not have the same event to apply these to, you will likely want to only export the labels to be applied to another video (e.g., another teacher, another week’s game, etc).

Note: the distinction must be made between these choices only when exporting. Once exported, these will appear as a .vntl file, which can only be opened by V-Note. When browsing via the “Import Labels/Timeline” these files will become visible and able to be chosen for importing into a new project.



## Nested (Hierarchical) Labels (Codes)

Depending on your goals, you may find it helpful to use nested labels (codes) in your video analysis work. You can benefit in two ways: a quick visual scan of the timelines within V-Note reveals relationships of hierarchy; and you can analyze and compare codes within the hierarchy with our built-in descriptive statistics for nested codes.



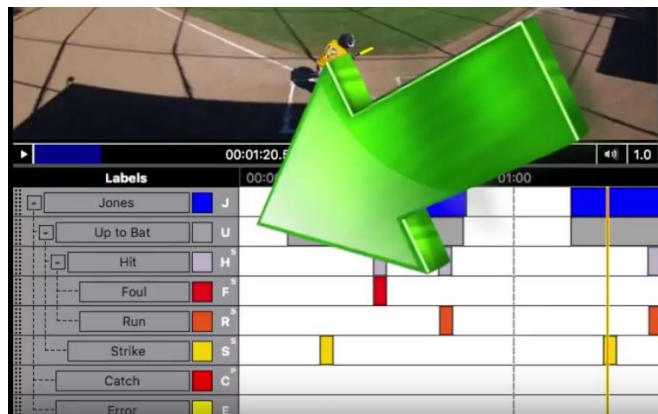
### To Make Nested Labels:

- Click on the “+” to the right of the label name, color and hot key as shown in the image to the left
- Or
- Right click in the gray space near and around the label name and choose “Add Sub-Label”

Below are shown an example of nested codes for a baseball player. Note that “Jones” is the name of the player and other labels (codes) appear below. “Up to bat” is one such code; below it are things that must happen when he is up to bat (i.e., sub-codes or nested labels) including: hit, foul, run, strike. “Catch” while still under “Jones” is not going to occur while up to bat, and this is shown by the labels’ organization.

Sub-sub-labels and even further levels can also be made in the same way as described above. Note the labels to the right.

Analyzing your nested labeled instances can be done with our built-in descriptive statistics. Please see Chapter 15 for more on this feature.





## Chapter 3: Working With Projects

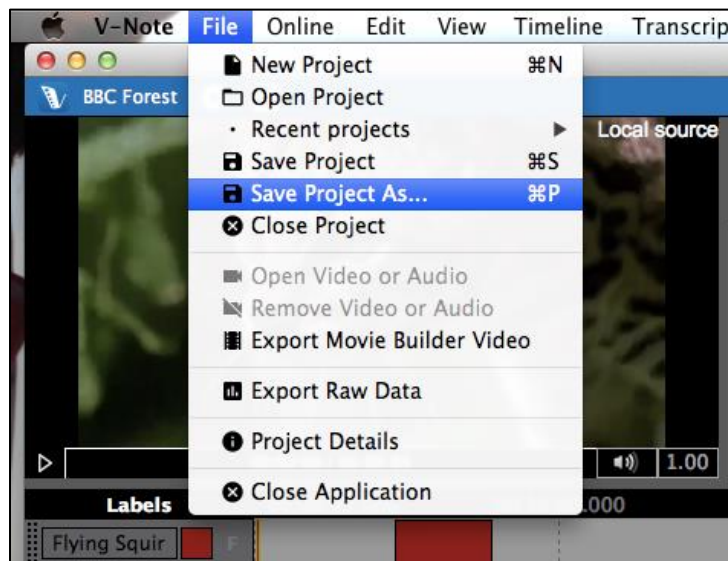
### What is a Project?

A project in V-Note links together your video and all related parts into one file.

When a project is opened in V-Note, it opens: your video, any transcripts made previously, any labels and labeled instances on timelines made previously.

### Saving and Opening a Project Locally

If you have opened a video in V-Note and added some labels and labeled instances as described previously, you can create a project by clicking the “File” menu and “Save Project As...” This will prompt a browse window where you can select a title and folder for saving.



The icon of the saved project will appear as below. The extension on V-Note project files is .vpnr. When this project is opened in the future, it will immediately open your video and any parts added to the project such as transcripts or labeled instances.

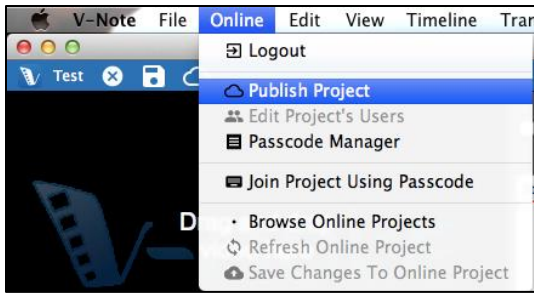


### Publishing a Project Online

Once a project has been saved locally, it can be saved, or published, online for sharing with others or for easy access from multiple devices.

To save a project to V-Note's online servers you must have a V-Note storage and streaming account with open time remaining. If you would like to create a storage and streaming account with V-Note, you can do so here:

[http://v-note.org/create\\_account](http://v-note.org/create_account)

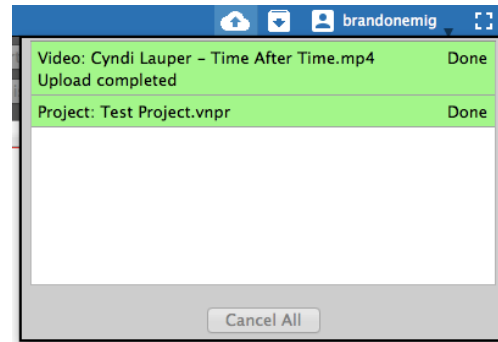


Once your account has been created and you have logged in, you can click the “Online” menu on top and “Publish Project.”

Depending on the size of the video file and the speed of your Internet connection the upload may take from several minutes to several hours. Progress of the upload can

be seen in the upper right part of the screen by clicking the cloud with the up arrow. When they show as “Done” and turn green, the uploads have completed successfully.

Note: uploaded videos will be converted to .mp4 file types of about 400 kbps for better streaming performance. Audio will be converted to mono 64 kbps (equivalent sound quality to the common standard of 128kbps stereo).

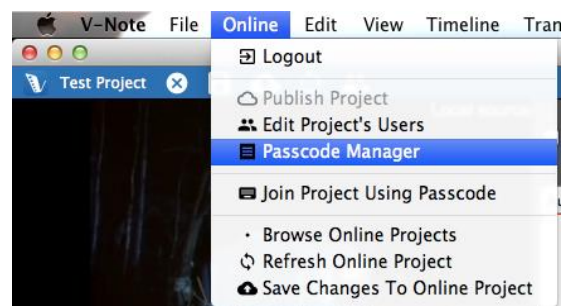


Your videos and projects are stored securely on our server, to be accessed only with your password behind an SSL certificate that provides encryption and secure transmission to your device and only your device. Note that your locally stored (on your computer's hard drive) videos and projects are viewable without a password. To protect your local videos and projects you should restrict access to your device or encrypt and password protect your hard drive. Furthermore, when you share access to others working on the same project, they will have access to the video also.

## Sharing a Project with Others

There are two ways to share projects with others. The first is to create a code that others can use to access your projects and provide input. The second way is to add a user or users directly to your project manually with their user name.

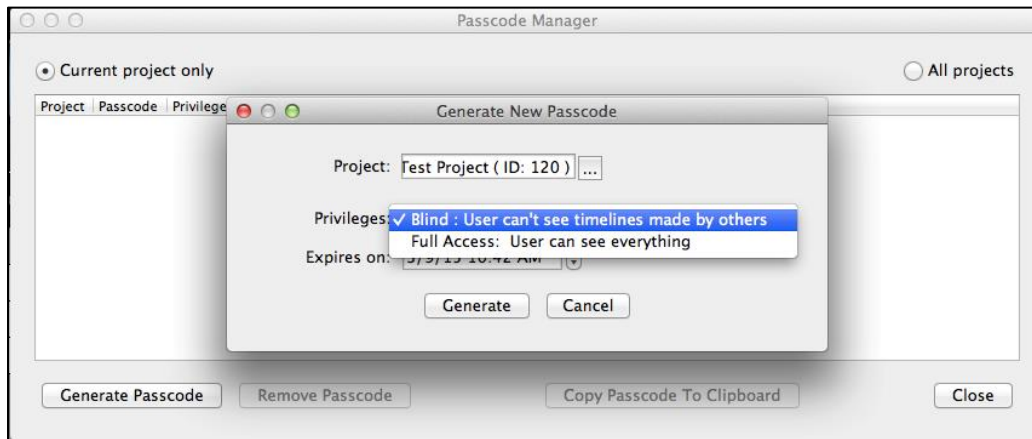
To create a code for sharing your project, first make sure your video has been uploaded to V-Note's online storage and streaming service. You can set up a free account or purchase space at [v-note.org](http://v-note.org). Next, choose the “Online” top menu, then “Passcode Manager.”



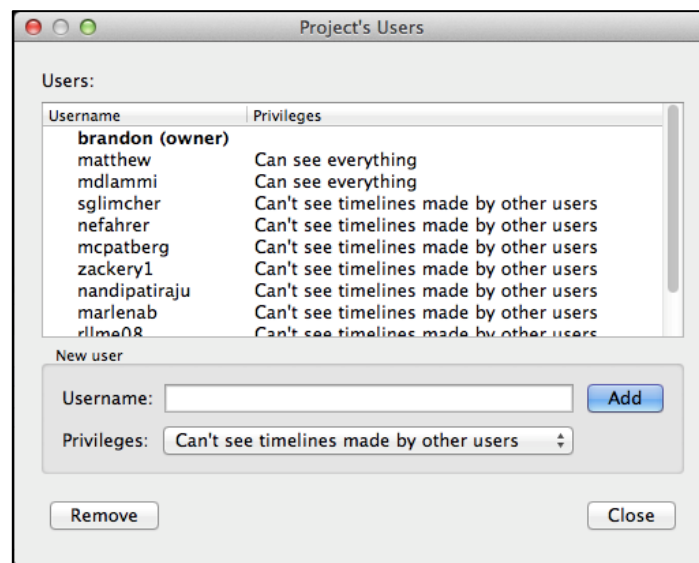
A dialog opens. Select “Generate Passcode.” You will have two choices for the new user's permission level. The first choice, “Full Access: User can see everything,” allows the user to see everything in the project including: pre-existing labeled instances, labels and hot keys, transcripts.



The second choice, “Blind: User cannot see timelines made by others,” allows a user to see everything except any pre-existing labeled instances (i.e., codes) others may have made. This allows for a truly independent video coding experience in which one user is not affected by other users’ codes. A user joining with this setting will still see the labels and hot keys that are pre-existing and be able to add codes to these same timelines (although these are differentiated; more on this later).



An expiration date for using the code to join the project is also able to be set. The default time is 1 week from the time the code is made, but this can be changed. This is the time before which the code must be used to join the project. After this the code is no longer valid. A new code can be made at any time. Note: a user will not automatically be removed from the project when the passcode expires if s/he has joined. However, the passcode will cease to function for new users. Multiple codes having different permission levels and different expiration dates can be made for the same project.



To add or remove users manually, select the “Online” top menu and then “Edit Project’s Users.” The dialog to the right appears, which allows for the selection, addition and removal of users.

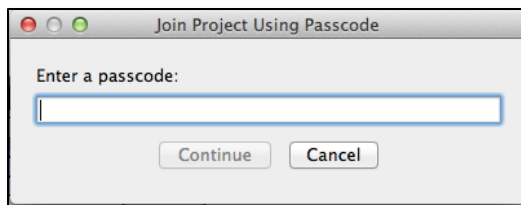
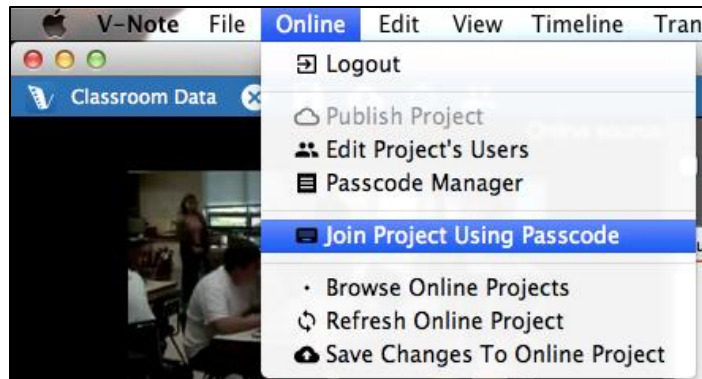
To remove a user, select his or her name and then “Remove.” This will also remove all data contributed by that user, including: labels, labeled instances, and transcript utterances.

To add a user type his or her user name into the white bar marked “Username.” Note that a username is specific to V-Note and may be different that his or her actual name or email. Verify the username with the person before adding him or her.

To change the permissions of a user, the user name can be doubled clicked and the choice made.

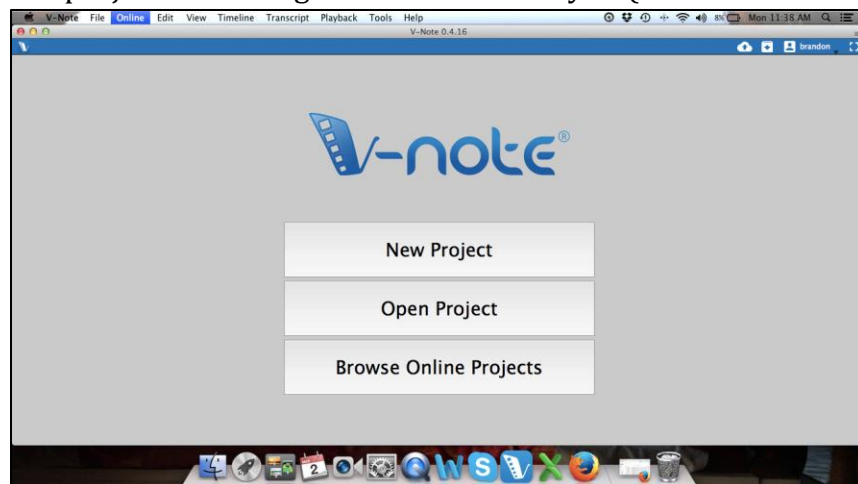
## Accessing Online Projects

To access a project for the first time that has been shared with you by another V-Note user, log on to V-Note, then choose from the “Online” top menu “Join Project Using Passcode.” You will be prompted to enter or paste the code in.



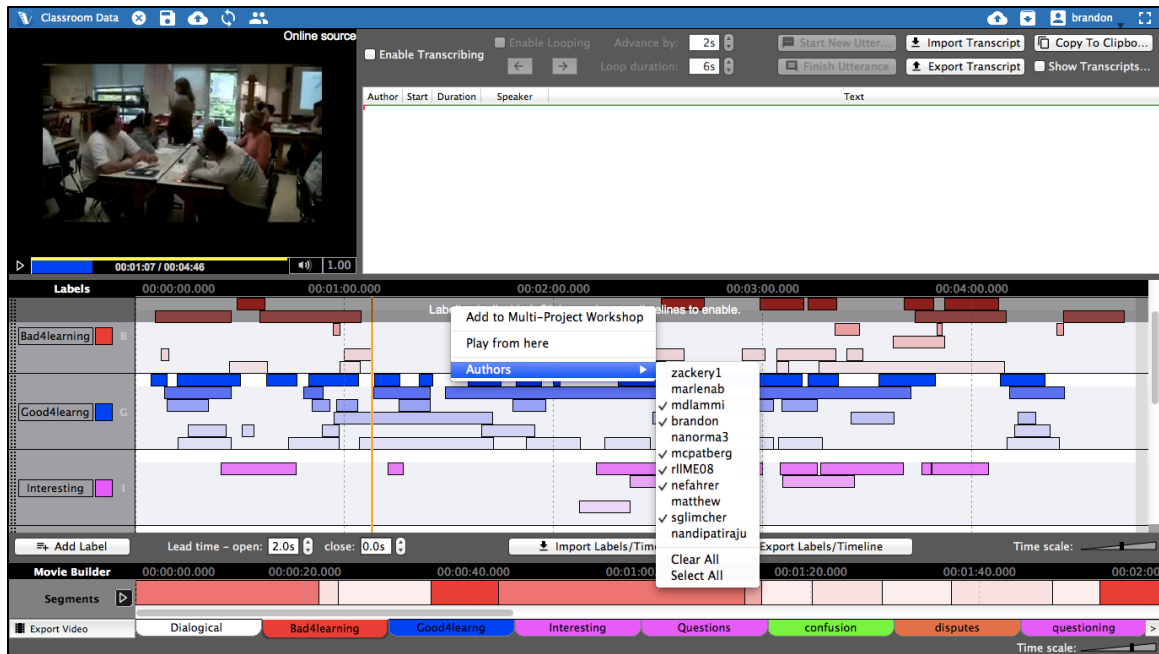
Once entered, click “Continue,” and you will open the project and be ready to begin working. You will never need to enter the code again. Rather, the project will appear in your list of online projects accessed in the manner described below.

To access all your online projects including those shared with you (whether manually shared or shared and previously joined by passcode) and those you own, simply click “Browse Online Projects” from the screen displayed when V-Note first opens. A list of projects will appear. Double click on a project to select and open it.



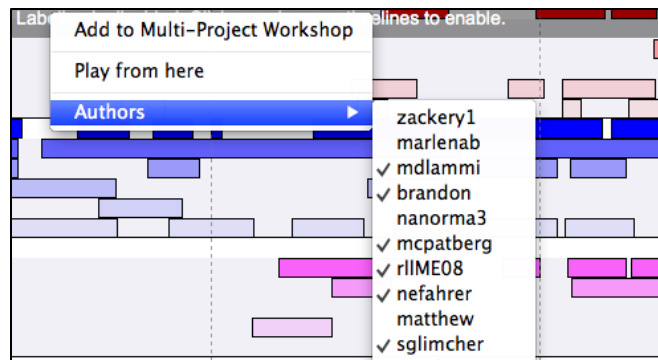
## Viewing Data from Other Users

Once other users have contributed labeled instances (i.e., codes) or transcripts to the video, these will appear in the projects of any user that has full permissions to see them. This can be useful to look for clusters of similar/different interpretations or interest from among video coders at particular times on the video.



By default, all users' labeled instances are visible. For a given label and timeline, for example, Interesting (I), each user's labeled instances will appear in the same timeline and in approximately the same color. Colors get a bit lighter as one goes down screen to aid in differentiating users' data. Holding the mouse cursor over any labeled instance for a second or so will reveal its author.

Right clicking over the timelines and selecting "Authors" will provide a list of all users and allow one or more users' data to be toggled on and off of view. A checkmark indicates that a user's data is displayed.



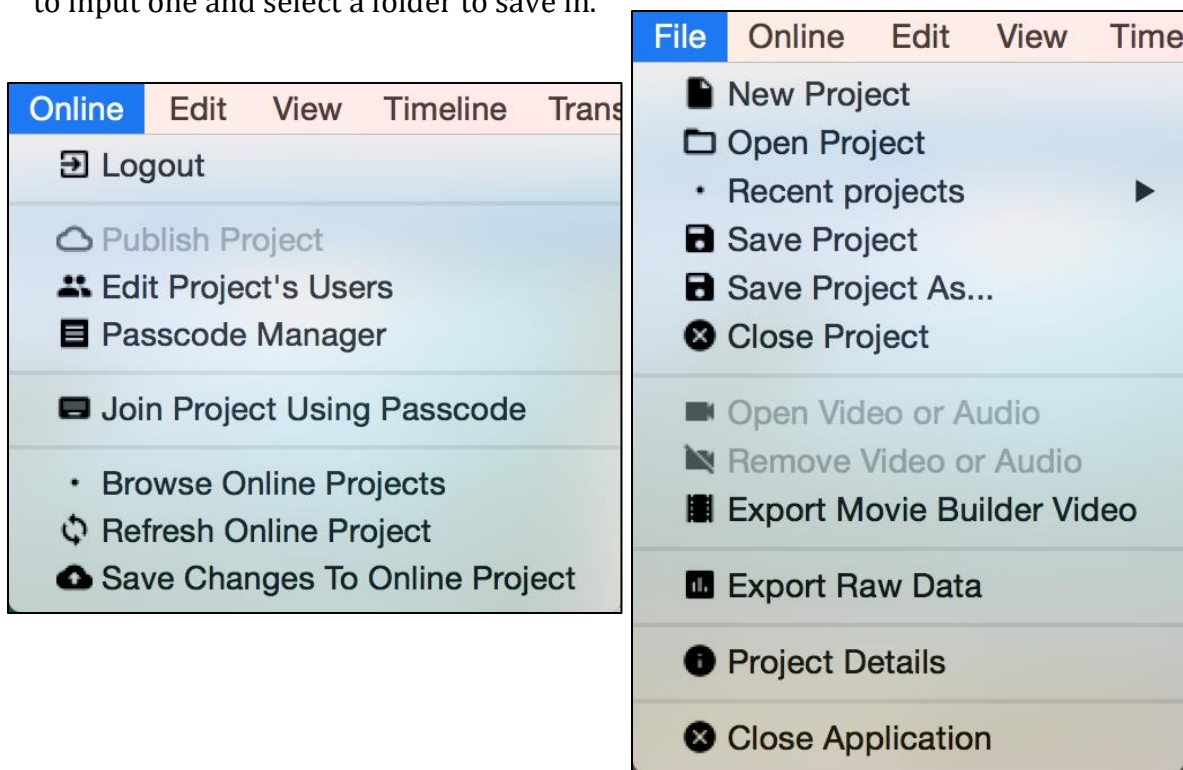
Similarly, transcripts added by other users can be toggled off of view with a similar checklist of users. This can be accessed by right-clicking over the transcripts anywhere. Users' transcripts are visible if his or her name is checked.

## Saving and Publishing Projects Locally and Online

To save your projects in V-Note there are more options than in most programs. For example, you can save locally or online. You can use the shortcut buttons on the top blue bar or the File and Online Menus.



To save locally (e.g., to your hard-drive or local media), you can click on the disk icon in the blue bar. Alternatively, you can go through the menus as follows: File > Save Project (As). Either way, if you have not yet provided a title, you will be asked to input one and select a folder to save in.



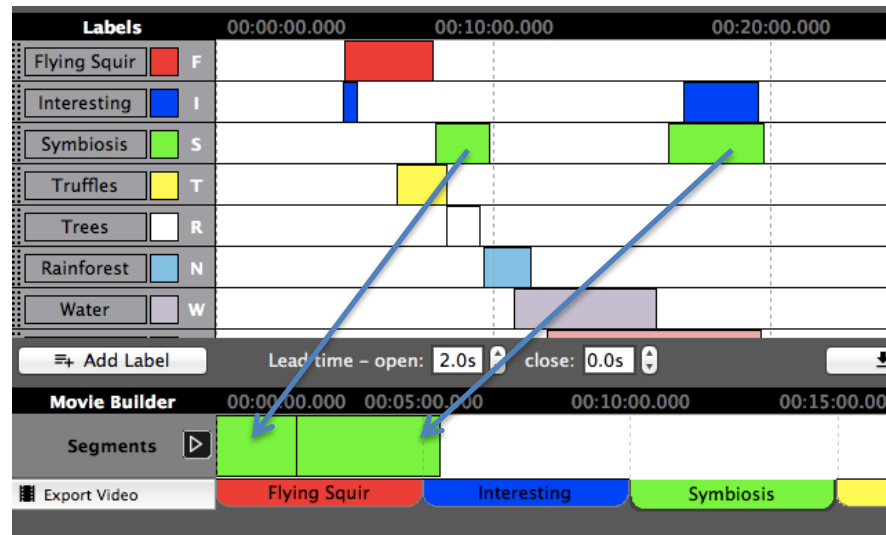
If you would like to publish a project online for storage or for sharing, you can the “cloud / up-arrow” button or go through menus: Online > Publish Project. If your project already published to V-Notes Cloud services and you want to push your recent changes to the online file, the same blue button will work, or you can use menus: Online > Save Changes to Online Project.

If others make updates and push them online while you are working, these will not appear automatically in order that you not be distracted. Rather, V-Note will display a notification in the blue bar, which will not interrupt your work. Whenever you would like to update your local project with changes others have made, you can click the double curved arrow icon on the blue bar or click the file menu item “Refresh Online Project.”

## Chapter 4: Movie Builder

### What is Movie Builder?

Movie Builder, at the bottom of the V-Note screen, is the place where labeled instances become clips. For example, if “symbiosis” were given a label (and timeline), and every time symbiosis occurred in the video, the instance were labeled, all these labeled instances would be aggregated automatically at the bottom on the “symbiosis” tab. To hit the play button would play only instances labeled as symbiosis; no other parts of the video would play.



### Navigating Tabs

Other tabs work similarly. All tabs bear the same names as the labels above to the left of the timelines. When a tab is clicked it reveals all the labeled instances – now clips to be played – placed side by side without the parts of video between them.

### Custom Movie Builder Tabs

The “Custom 1” tab (and subsequent custom tabs) work a bit differently. These are blank by default, but they can accept labeled instances to be dragged in from any timeline. These can then be reordered once dragged in.

### Playing Videos in Movie Builder

The Movie Builder allows you to rapidly play, scan, and compare clips from a given category or label. It also allows you to make and export new videos from these clips.

The Play button (triangle) to the left of the Movie Builder can start and stop the play of clips on a given tab. A double click at any point over the labeled instances in the Movie Builder can bring the play head immediately to that point.

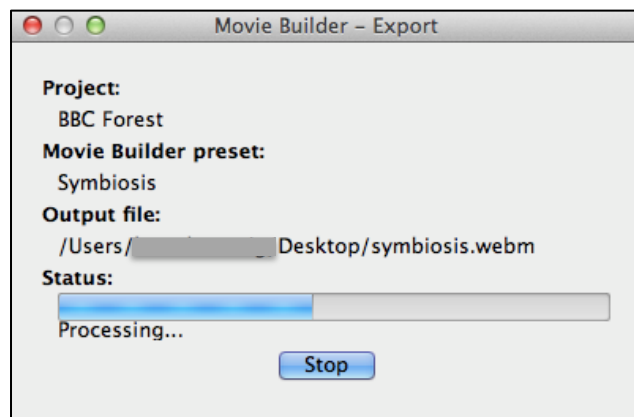
During Movie-Builder play, other functions, such as labeling, using the timelines above, and transcription are disabled until Movie Builder play is stopped.

Any given instance playing in the movie builder is also highlighted above in the timelines so it can be identified in its original context.

## Exporting Videos

To export a video, select the tab you want or arrange a custom tab as you would like, then click the “Export Video” to the left of the tabs. Browse to a folder where you would like to save the new video and give the video a title.

This is processor intensive and can take some time. The processing time is on the order of the total time of the video clips. In other words, if the total time of the clips is 5 minutes, you can expect that the time to output the file will be about 5 minutes. This may vary depending on your processor speed and other processes your computer is performing. You can use V-Note while this process is occurring in the background, or you can use your computer for other things, although this may increase time required to export the video.



The output video format is .webm (also called .vp8). This is a commonly supported format and should play without problem on a current web browser as well as on other media players. Due to licensing restrictions we were unable to offer output to other formats.

Should you desire a video in another format, numerous products exist, many of them free, that can convert .webm to other video formats such as .mp4, for example.



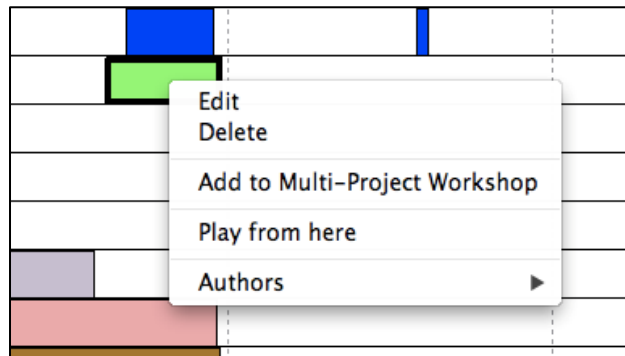
## Chapter 5: The Multi-Project Workshop

### What is Multi-Project Workshop?

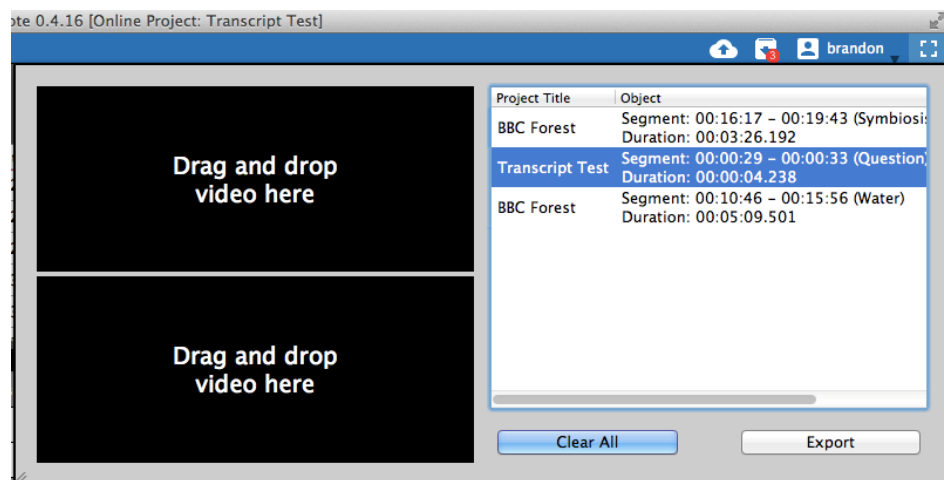
The Multi-Project Workshop is similar to the Movie Builder in some ways but it is also very different. Unlike the Movie-BUILDER, the Multi-Project Workshop allows for the creation of videos with clips from numerous V-Note projects, not just from one. For example, even over a whole season of games (each with its own V-Note project), every instance in which J. Smith gains possession of the ball can be put into one video for export using the Multi-Project Workshop. Also, the Multi-Project Workshop allows two video clips to be played at the same time.

### Adding Clips to the Multi-Project Workshop

To use the Multi-Project Workshop, open a project with some labeled instances and right click on one that you would like to add to the Multi-Project Workshop. Then, choose “Add to Multi-Project Workshop.” The clip will be placed in the Multi-Project Workshop Window at the top right of the screen. A red number will appear representing the number of clips (i.e., labeled instances) that have been placed into the Multi-Project Workshop. This can be seen in the image below.

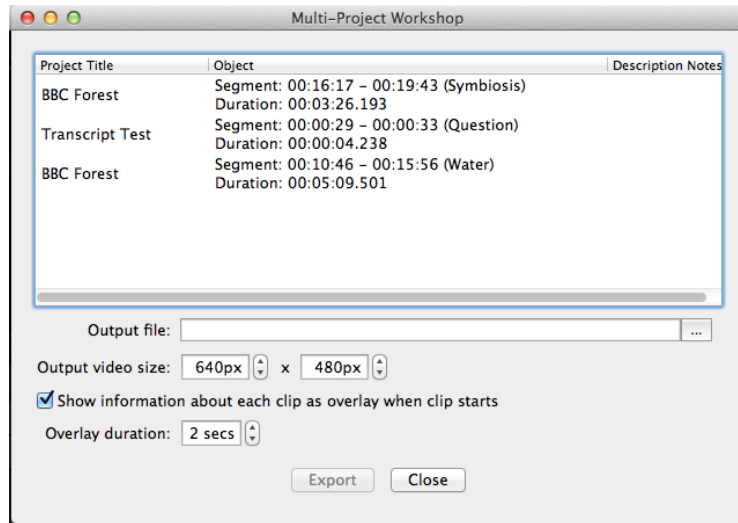


The contents of the Multi-Project Workshop can be viewed by clicking on its icon (a box with a downward arrow). The clips are listed, with their respective original project's title, the time location in original video, and original label applied. No thumbnails are available.



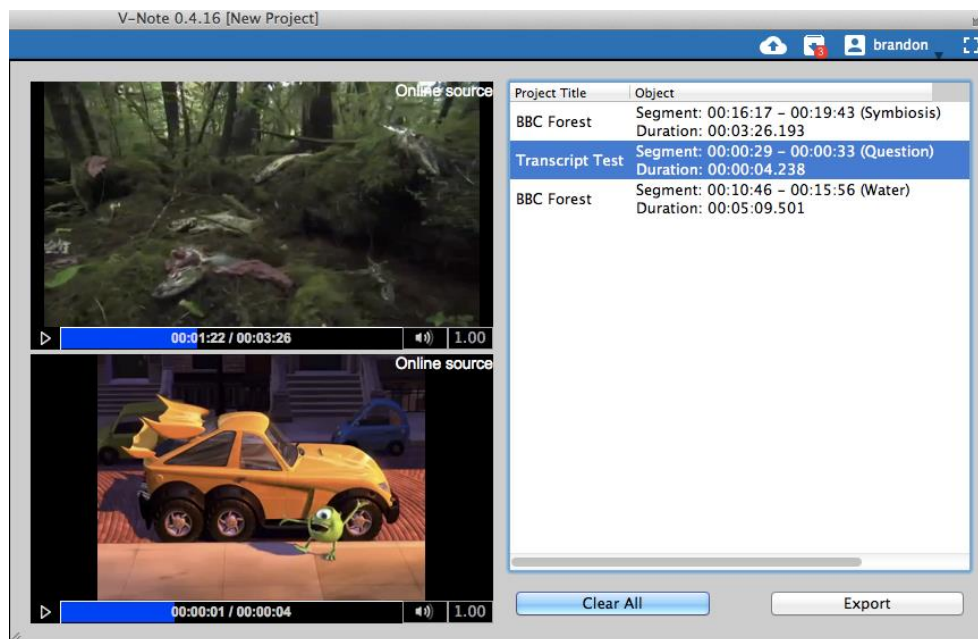
## Exporting a Video from the Multi-Project Workshop

The clips can be dragged up and down to the desired order. Once in order, they can be exported in similar fashion to the clips in the Movie-Builder described earlier in this chapter. One difference is that, given the varied origins of the clips, their original project's name and the time at which the clip was taken can be displayed at the beginning of each respective clip. This option can be toggled on or off with the check box at "Show information about each clip as overlay when clip starts." Overlay duration can also be modified. Default display is for 2 seconds.



Note that in order to export a video, the media on which all included clips' original media is stored must be connected (e.g., external drive, internet (if online project), etc.). These projects will need to be accessed to provide the clips.

## Playing Two Clips at One Time



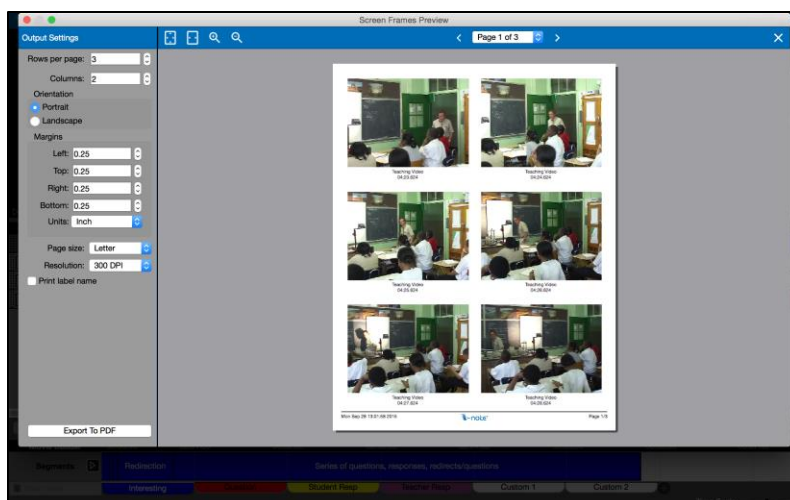
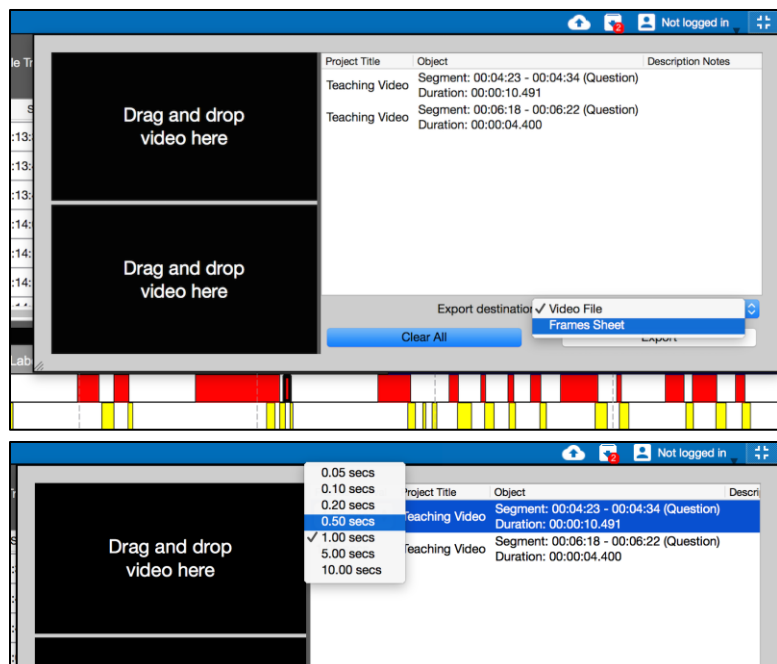


Playing two clips simultaneously, even at different speeds and at different volumes (or muted) can also be done in the Multi-Project Workshop by dragging the clip text into the video play window in which you would like it to play. The size of the Multi-Project Workshop can also be increased or decreased by dragging the bottom left corner.

Note that in order to play multiple clips, the media on which both included clips' original media is stored must be connected (e.g., external drive, internet (if online project), etc.). These projects will need to be accessed by the program to provide the clips.

## Exporting Screenshots

V-Note allows you to export screenshots as a PDF. In order to use this feature, first add the instances you would like screenshots of to the Multi-Project Workshop. Once opened, choose "Frames Sheet" from the bottom right of the dialogue box. You can now choose the frequency of the screenshots you would like from each video segment. You can get a frame from every .05 seconds to every 10 seconds.



Finally, you are able to choose the orientation (portrait or landscape) and arrangement (columns, rows, margins) of the screenshots. You can also preview the pages by scrolling through them at the top. When arranged as you like, click "Export to PDF" and you will have a PDF of your screenshots.

## Chapter 6: Transcribing

If you would like to add transcripts and captions to your video, V-Note is well equipped. One of our most important goals with V-Note was to make transcribing easier. V-Note allows you to use looping, a constant replay of usually about 5 seconds (you can adjust this) while advancing through the video by shifting it to the right about 2 seconds (also adjustable). V-Note also helps you to create organized, timeline related, transcripts and assigning utterances to speakers.

### Turning On Transcription

To turn on transcribing click the check boxes called “Enable Transcription” found in the transcription windows in the upper right of the screen.



### Transcribing

To transcribe, find a place you would like to transcribe in the video. Anywhere is fine (you can do earlier or later sections at any time and they will be put in the correct order and associated with the video timeline as well).

#### Starting and Stopping Utterances

Starting : **CTRL + Shift + Enter**

Stopping : **CTRL + Shift + Enter**

Note: on a Mac command replaces CTRL.

**Change this or any shortcut keys; See Ch. 1**

Once you find the first utterance you would like to transcribe, click “Enable Looping.” Wait until the red line (i.e., playhead) comes to just before your utterance, then, press CTRL + Shift + Enter (on a Mac command replaces CTRL). The utterance time will be marked by the position/time the playhead is at when you press CTRL + Shift + Enter. You can now begin typing the name of the speaker (blue below) and what you hear to make your first utterance on the transcript (red below).

A screenshot of the V-Note transcription interface. At the top is the same control bar as in the previous image. Below it is a table with columns for 'Start', 'Duration', 'Speaker', and 'Text'. The table contains five rows of data. The first row (index 9) has a start time of 00:01:55.664, a duration of 0 s, and a speaker named 'Guy'. The second row (index 10) has a start time of 00:01:56.579, a duration of 2 s, and a speaker named 'Guy'. The third row (index 11) has a start time of 00:01:59.100, a duration of 0 s, and a speaker named 'Guy'. The fourth row (index 12) has a start time of 00:02:00.856, a duration of 4 s, and a speaker named 'Guy'. The fifth row (index 13) has a start time of 00:14:41.859, a duration of 0 s, and a speaker named 'Guy'. The text for each row is: 'There really can't be', 'A more magical place', 'Anywhere on Earth.', 'To appreciate that dramatic transition between summer and winter.', and an empty field for the last row. The last row is highlighted in red, and the speaker field is highlighted in blue.

	Start	Duration	Speaker	Text
9	00:01:55.664	0 s	Guy	There really can't be
10	00:01:56.579	2 s	Guy	A more magical place
11	00:01:59.100	0 s	Guy	Anywhere on Earth.
12	00:02:00.856	4 s	Guy	To appreciate that dramatic transition between summer and winter.
13	00:14:41.859	0 s	Guy	

### Using Looping

Looping will repeat-play a short section of video outlined in yellow – by default about 6 seconds – over and over again.



This is to give you time to type what you hear, as speaking speed usually exceeds typing speed. As you complete typing the speech contained within your 6 seconds and wish to continue you can advance the loop and continue transcribing by hitting the CTRL + Shift + > keys all at the same time (note: on a Mac the CTRL key is replaced by the “command” key). In fact, you can also back up the loop on the timeline by hitting CTRL + Shift + < (again, the “command” key replacing CTRL on a Mac).

Flying Squir	F	
Grizzly	G	
Hare	H	
Interesting	I	
Label 1	B	
Lynx	L	
Predator	P	

Once you come to the end of your utterance (either by advancing or not), press CTRL + Shift + Enter once again to end the utterance. The utterance end time will be marked by the position of the red line (playhead) when pressed.

### Advancing the Loop

Forward : CTRL + Shift +



Backward : CTRL + Shift +



Note: on a Mac command replaces CTRL.

**Change this or any shortcut keys; See Ch. 1**

Advance the loop (CTRL + Shift + >) if necessary to find the beginning of your next utterance and repeat the steps outlined above.

## Changing Loop Duration and Advance

You can change the length of the audio loop from 6 seconds to a value of your choice in the “Loop Duration” setting at the top of the transcription window. Similarly, the “Advance By” setting changes the time of loop-advance (the same time also applies to the backing up).

Advance By:	2s	↑ ↓
Loop Duration:	6s	↑ ↓

## Manually Adjusting Start and Stop Times of Utterances

or	Start	Duration	Sp
on	00:00:24.274	9 s	Guy
on	00:00:33.889	9 s	Guy
on	00:00:43.318	9 s	Guy
on	00:00:52.797	2 s	Guy

To adjust the start time of an utterance after you have made it, simply click in the box indicating it's time (see left) where you can use the arrows to adjust the time or simply type in a new time.

## Reordering Utterances on a Transcript

You cannot drag an utterance up and down to reorder, as their order is determined automatically by their start times. If you would like to reorder utterances that are in close succession, you must adjust their times manually in this fashion. New utterances, even if between existing utterances, will also be placed in their proper order based on start time.

## Importing Transcripts from Other Sources

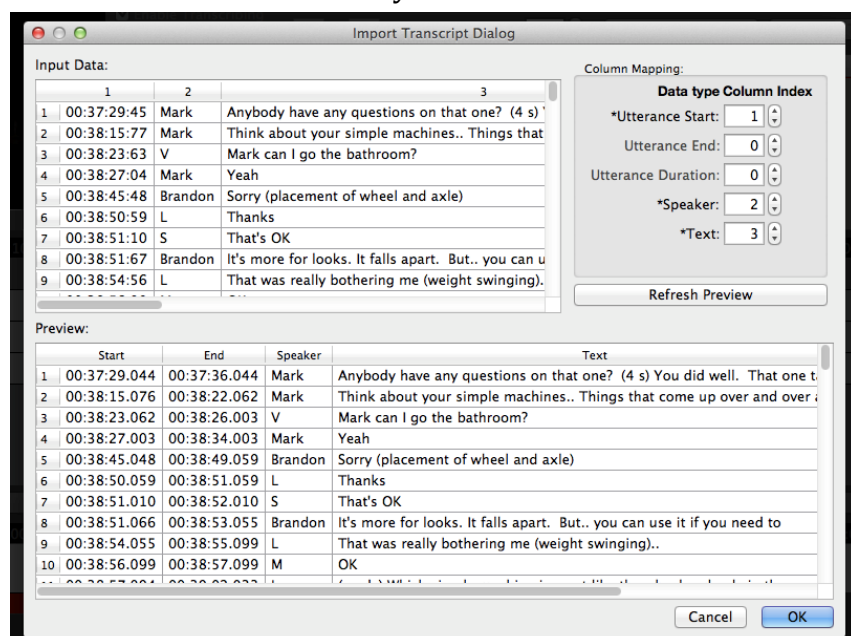
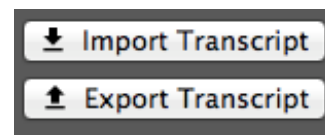
V-Note allows for the importing of transcripts from most other sources. These files must be in the format CSV (comma separated variables), XLS (Microsoft ® Excel ®) or SRT (a commonly used subtitle format). If you do not have your transcripts in these formats, you can usually make a suitable CSV or XLS file type for import in a program such as Microsoft ® Excel ® or similar spreadsheets.

Once you have your file with your transcripts, V-Note can import the file and will automatically associate the time with the video. If the times do not agree (for example, if you removed the first 20 minutes of video), you will need to modify your transcripts in a spreadsheet program. For example, subtract a time (20 minutes in the example from each utterance's start time and end time so that it aligns properly with the video in V-Note, for analysis and subtitle display purposes. Fortunately, spreadsheet programs such as Excel ® can make this easy and automatic by allowing you to apply a formula to the whole column. Consult the respective user manual for more information.

In order to begin the importing of the transcripts, click the button labeled "Import Transcript" in the transcription window near the top of the screen. This will allow you to browse for the file.

Once you find it (in CSV format) double click it and it will prompt the Import Transcript Dialog as shown below. V-Note attempts to assign the columns correctly and provide a sample rendering called a "preview" which is shown at bottom of the window.

In the event that V-Note does not



produce the “Preview” you desire, you can assign the columns manually (upper right of window). “Refresh Preview” will allow you to see how your data, as chosen, will look in V-Note once imported.

If you are still unable to import your transcript, you may need to reduce the quantity of extraneous (non-transcript) content in your files and/or verify continuous columns and rows of data.

## **Exporting Transcripts**

V-Note can also export transcripts. There are two ways to accomplish this: alone or with timeline labeled data (i.e., codes). Exporting transcripts alone will be discussed in this section. Exporting them with data will be discussed in the next section.

In order to export transcripts, simply click on the “Export Transcript” button near the top of the screen. Browse to a folder where you would like to save the file. Create a title. Finally click “Save.” The file will be saved as a CSV, SRT, or XLS file. XLS and CSF can be easily opened by Excel ® or other spreadsheet programs or imported by V-Note again. SRT-type files can be opened by traditional video players such as VLC. SRT-type can also be imported into V-Note.

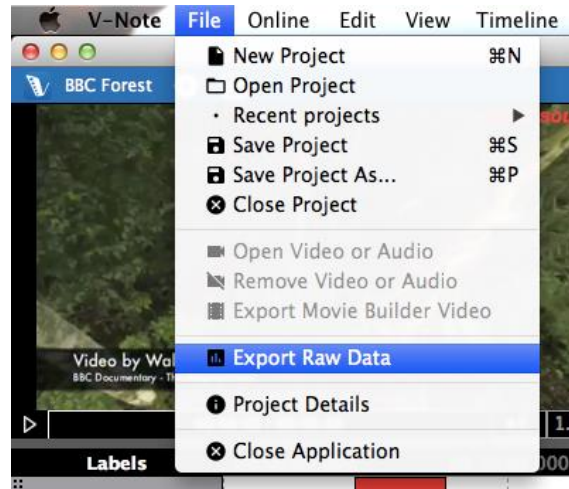
## Chapter 7: Raw Data Export

### Exporting Raw Data

Raw data including: labeled instances, notes, and transcripts can be exported from V-Note for use in other programs (e.g., spreadsheets, word processors, email, etc.).

To export raw data from V-Note, choose: File > Export Raw Data. You will have three options including:

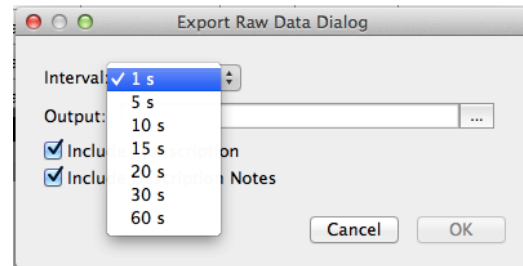
1. Interval for data rendering (from 1 second – 60 seconds)
2. To include transcripts
3. To include description notes (typed into labeled instances)



Once you have navigated to the folder where you will save and created a title, click "Save." Your file will be output as a CSV, which can be opened in spreadsheet programs such as Excel ®.

### Selecting an Interval for Your Data

Selecting an interval for rendering your data, will be like selecting a finer or coarser resolution. A 1-hour video rendered at 1 second intervals, for example, will have 3600 lines of data (60 seconds x 60 minutes = 3600 seconds) and will take many pages to print; whereas, that same 1-hour video, rendered at 60 second intervals, would have only 60 lines of data.



A sample set of the data rendered at 5-second intervals.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Label Name:	Big Guy		Big Guy		Little Guy		Little Guy		Question		Question					
2	Label Number:	1		1		2		2		3		3					
3	Labeler Name:	awisalgarni		brandon		awisalgarni		brandon		awisalgarni		brandon					
4	Labeler Number:	1		2		1		2		1		2					
5	Time																
6	0:00:00																
7	0:00:05																
8	0:00:10																
9	0:00:15																
10	0:00:20							1									
11	0:00:25			1				1				1		Little	OK. Come on. Follow the sultry sound		
12	0:00:30			1				1				1		Big	Mike..... Little	And open 'e	
13	0:00:35			1				1				1		Big	What was wrong with your old car?		
14	0:00:40							1						Little	Three little words Sully. 6-wheel drive		
15	0:00:45							1						Little	It's adjustable		
16	0:00:50							1									
17	0:00:55													Big	Hmm.....oh		
18	0:01:00																
19	0:01:05							1									
20	0:01:10							1						little	Will you cut it out? (4 s) It's like we've		
21	0:01:15							1									
22	0:01:20																
23	0:01:25							1									
24	0:01:30							1						Little	Don't just sit Big	Hmm.. b b t	
25	0:01:35							1									
26	0:01:40																
27	0:01:45			1				1								Big	I'll get it..
28	0:01:50			1													
29	0:01:55			1													
30	0:02:00			1													
31	0:02:05													Little	Hhhhhhh...		
32	0:02:10																
33	0:02:15													Little	Arrree.....hhhhh... doooo... Don't touc		
34	0:02:20							1									
35	0:02:25							1									
36	0:02:30																

That same data rendered at 20 second intervals

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Label Name:	Big Guy		Big Guy		Little Guy		Little Guy		Question		Question						
2	Label Number:	1		1		2		2		3		3						
3	Labeler Name:	awisalgarni		brandon		awisalgarni		brandon		awisalgarni		brandon						
4	Labeler Number:	1		2		1		2		1		2						
5	Time																	
6	0:00:00																	
7	0:00:20			1				1				1		Little	OK. Come on Big	Mike..... Little		
8	0:00:40							1						Little	It's adjustabl Big	Hmm.....oh		
9	0:01:00							1						Little	Will you cut it out? (4 s) It's like we've released a p			
10	0:01:20							1						Little	Don't just sit Big	Hmm... b b b. Ah. .		
11	0:01:40			1				1						Little	Big	I'll get it..		
12	0:02:00			1										Little	Hhhhhhh... Little	Arrree.....hhhhh... doo		
13	0:02:20							1										
14	0:02:40																	
15	0:03:00							1						Little	Get out of the car please.	Get out. Out Out Out Ou		
16	0:03:20													Little	I miss my old Little	You know... The vroom v		
17	0:03:40													Big	You... uhhhh Little	Yes.		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		

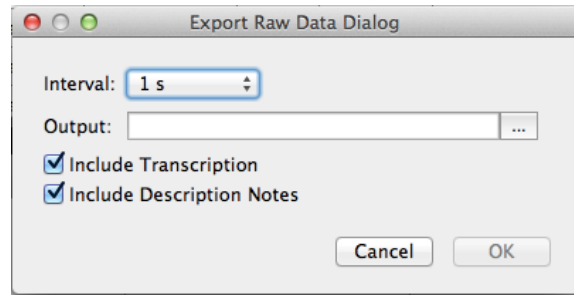
Note a few differences. Although it is the same data, the 20-second interval rendering takes up much less vertical space. Note, however, that no labeled instances are omitted. If a labeled instance is present, even for a fraction of a second during an interval, it will be shown on any output data, even at intervals of a minute. At 1-minute intervals, though, you will be not be able to determine its duration other than somewhere between 0 seconds and 1 minute. A smaller interval allows for better determining of durations of labeled instances.

Similarly, all transcripts are displayed regardless of interval. If, in a 1-minute interval rendering, multiple utterances appear during that minute, they will be stacked left to right; whereas they would be vertical in a smaller interval rendering such as 1-second.

You will need to balance the concerns of a high vs. low interval resolution for your data based upon your needs.

## Toggling On and Off Transcripts in Raw Data

The transcripts, shown to the right of the spreadsheet's raw data, can be toggled off by the check box "Include Transcription." Viewing transcripts and labeled instances side by side in a spreadsheet can be helpful in visualizing how they relate to one another.



Similarly, the description notes (i.e., what is typed in a labeled instance bar), appearing, immediately to the right of their respective speaker's labeled instance column, can also be toggled off. No description notes are present in the samples above.



## Chapter 8: Synchronizing Secondary Audio

You may sometimes need to add a secondary audio track to a video. This may be in case of a camera location that is far from a speaker and does not have adequate sound quality. Fortunately, V-Note makes adding a secondary sound track easier, and in many cases, automatic.

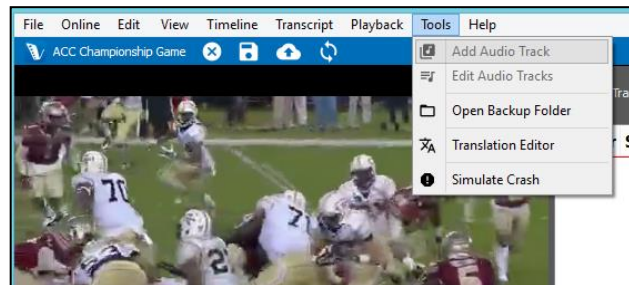
Once added, these tracks can be played at the same time with video playback, or one or the other, or at different volumes with both being audible but one being dominant.

For best results, the tracks should be similar. The computer will look for similarities in sounds and match them up according to time. They must have been recorded at the same event and have similar start and stop times. Note: for automatic synchronization to work best these may only differ by about 10% on either end.

V-Note can even correct for drift, which can occur when devices (i.e., camera and external audio recorder) record at slightly different rates. This normally results in audio that is synchronized early on in the video but becomes out of sync as the video plays.

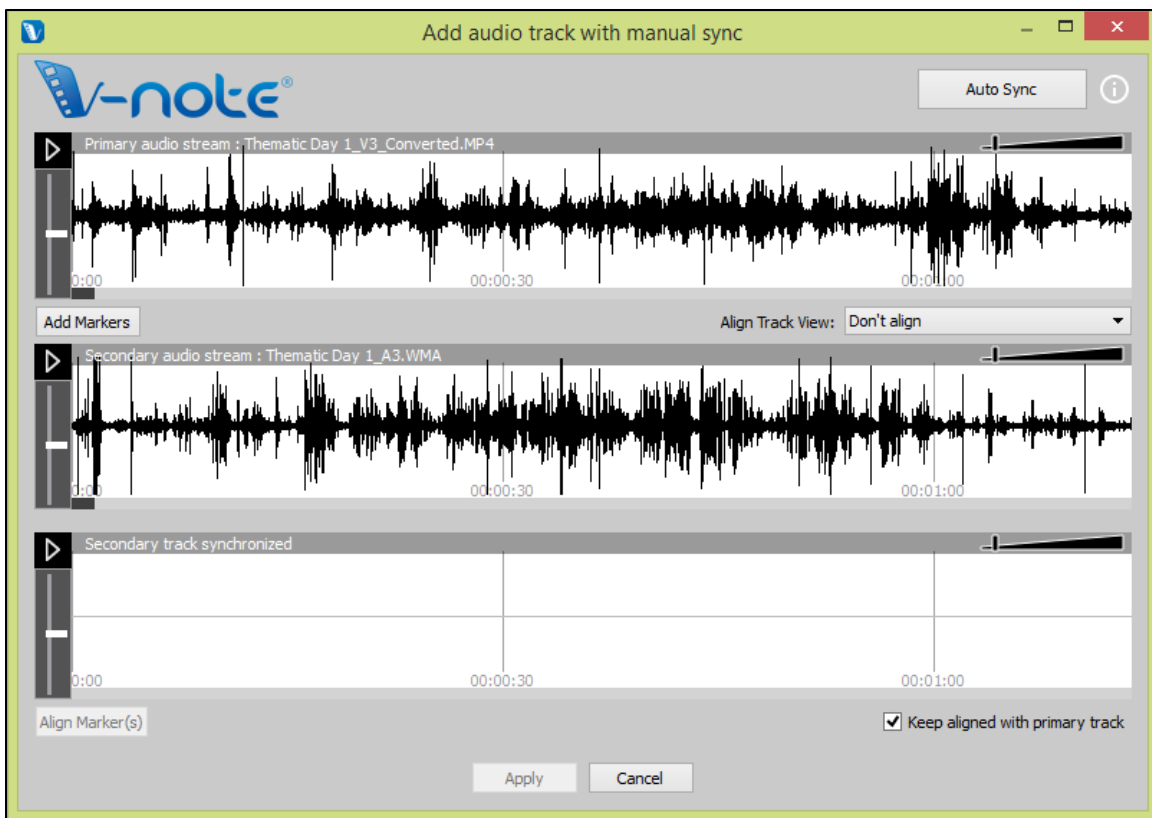
### Adding Secondary Audio Tracks

In order to add a secondary audio, first, add the video to the play window as described in Chapter 1 of this manual. Next, simply drag the audio track you wish to synchronize to the video play window where the video is displaying. Alternatively, you can click on the “Tools” top menu and select “Add Audio Track.”

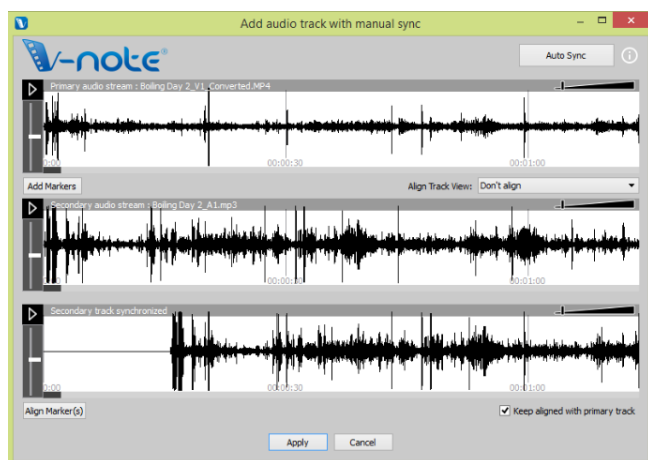


### Automatically Synchronizing Secondary Audio Tracks

Once you have added your audio track to your video, you may have to wait a few minutes while the data in the audio files is decoded. When decoding is finished, you will see a new window pop up like that on the next page. Displayed on the top white bar is the wave form for the video (i.e., the original audio track in the same file as the video). This is a representation of the audio track made by graphing volume across time. In the middle white bar is the wave form for the secondary audio track, or the one recorded by an external recorder. This is the new audio track (from, for example, a voice recorder or external microphone) that is to be associated with the video track and synchronized to its audio.



If your tracks have been recorded at approximately the same time at the same event, you can try to automatically synchronize them, by hitting the “Auto Sync” button at the top right. This will cause the computer to look for similarities between the two tracks and shift the secondary track left and right as needed to align the two. Once done, the third white space (the bottom one) will display a waveform also. This space will display the secondary track (the same one as in middle white space), but it will be aligned to the video. You can play them both at the same time by clicking either play button (top or bottom), and both will play at the same time. A double-click over the bottom track will bring the play head to the same respective position in both and begin play in both the top and bottom.



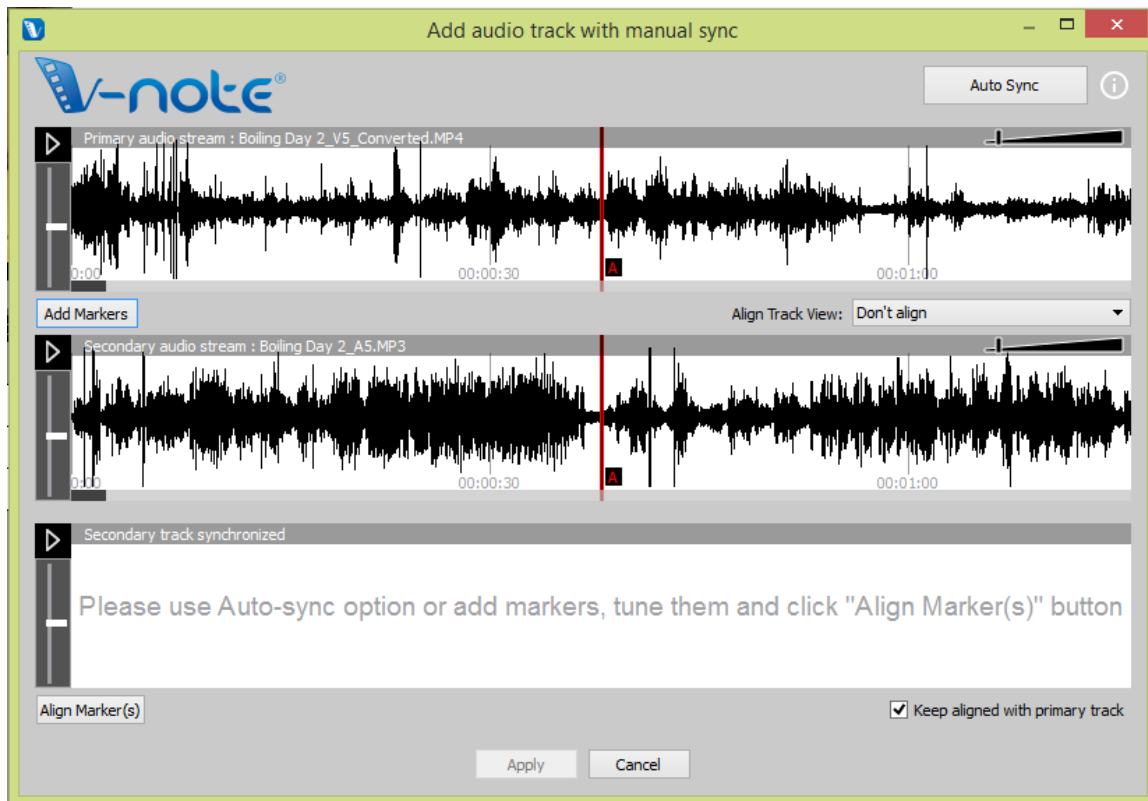
Once you have verified your tracks have been synchronized, simply press the “Apply” button at the bottom of the window. Your secondary audio track will then be added to the video file and the V-Note project. A copy of your original video will be saved for backup in the backup folder that will be displayed at the end of the process. You can also access any backups made at any time by selecting under “Tools” > “Open Backup Folder.”

If your tracks are sufficiently dissimilar (e.g., overlaid commentary, an announcer calling a game, an audio recorder that was too far away, etc.) pressing the “Auto Sync” button will prompt no action, and the tracks will remain unchanged. The computer cannot find (enough) instances that are the same in order to line up the tracks.

You can still synchronize them; however, this will be a manual process, as described in the next section.

## Manually Synchronizing Secondary Audio Tracks

If you are not able to automatically synchronize your tracks, you can synchronize them using V-Note’s manual synchronizing features.

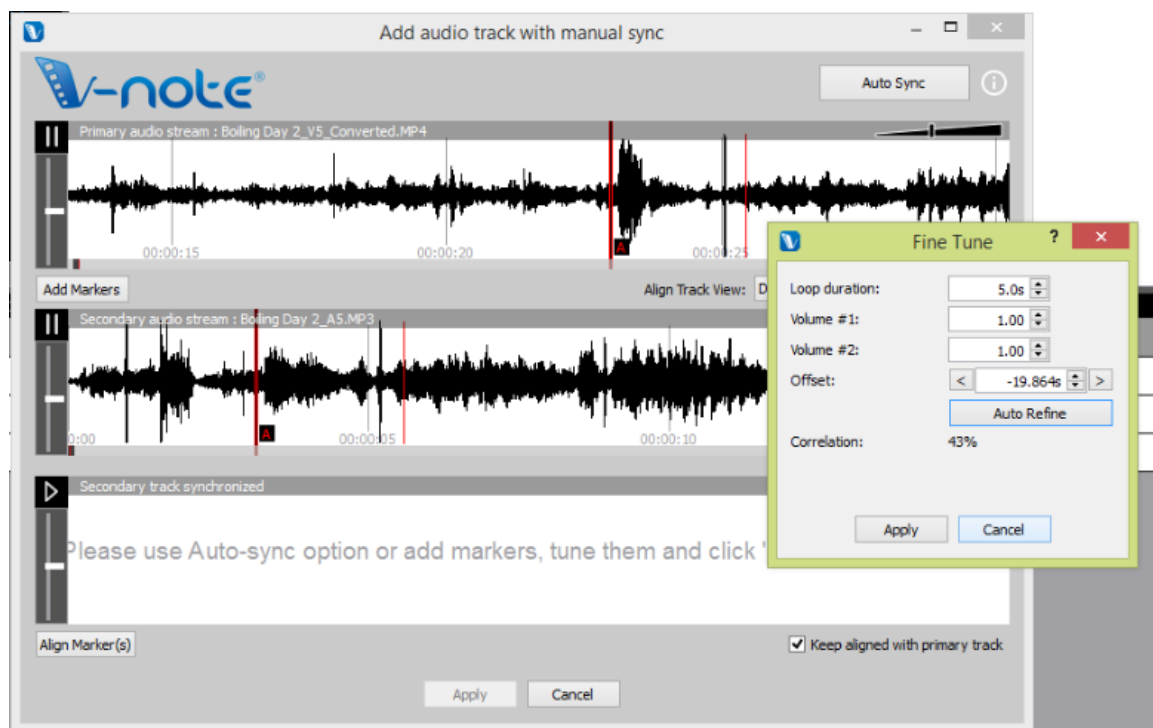


As with the automatic synchronization option, add your audio track to the project by dragging and dropping or by file menu (Tools > Add Audio Track). Once added, the same window appears. This time, however, you will need to select “Add Markers.”

Once this is done, two red lines (both labeled A) will appear over each waveform (as shown). These are the “A” markers. These can be played with their respective buttons. Through listening to both tracks and by looking at the waveforms (you can also zoom in with the slider bar), you should try to find a common point on the soundtrack (e.g., a clap, a cough, a hit, a run, a score, etc.). Once this is done, you can drag both “A” markers to the common points on each’s soundtrack. Do not worry that this be perfect.

You can fine tune it using the “Fine Tune” feature, which lets you loop (play again and again) the 5 seconds around the point you chose and nudge (offset) the tracks left and right while listening to both to ensure a good sync. Also, the correlation of the tracks will increase as they are nearer to being in sync.

Once the tracks sound in sync to you, hit the “Apply” button and the markers will be fixed. Next, exit the “Fine Tune” dialogue. Finally, click the “Align Markers” button and the tracks will be brought into synchronization at the point of the markers.



After “Align Markers” is pressed, the second track is added to the bottom row and shifted such that the two “A” markers now align. Playing the bottom one will also

play the top one at the same time. If done well, the two tracks will play in synchrony.

It is important to verify synchronicity at several spots during the video, however, as devices can record at slightly different rates resulting in a track that is in sync early become out of sync later in the track.

To fix drift, in the event there is some, you can add another marker (or many, in the event of very irregular recording speeds) to a new space in the secondary audio track (middle waveform) and repeat the steps outlined above. This will slightly stretch or compress the secondary waveform between the markers to ensure synchronicity with the primary audio track.

## Chapter 9: Drawing on Your Videos

Drawing on your videos can be a good way to record and share information about them. V-Note allows you to draw in real time on a playing video and then play that drawing back as it was made. The drawing is remade as the video is played again.

You can also share these drawings with others via our storage and streaming services. They are automatically uploaded when you publish your project online and can be shared with others in the same manner as transcripts and timeline data.

### Using Drawing Controls

To turn on drawing controls press the pen icon in the blue bar above the video play window. The tools will appear as shown below. You can choose the pen size and the color on the left side of the toolbar. On the right, the square button allows you to clear the current drawing from the current frame going forward, and the red x allows you to clear all drawings you have made. (Those of others, if present, will be unaffected.)



The squiggly line allows you to check which user's drawings are displayed. Only one user's drawings can be displayed at a time.

## Adding Drawings to Your Videos

In order to draw on your video, select a pen size and a color. Move the mouse cursor over the video to the spot where you would like to begin drawing. Hold down the right mouse button and begin to move the mouse. You are now drawing. When you release the mouse button, you can move to another spot without drawing. You can begin drawing over the video at any time.

The video can be playing or paused when you draw. If the video is paused, your drawing will appear in its entirety on that frame when the video is replayed.

If, however, you draw on your video while the video is playing, it will reappear that way; that is: it will be redrawn as the video is played for all future plays.

In order to erase the screen going forward, while still keeping your drawings in the past, you can click the square icon in the drawing tool bar. If you would like to erase all your drawings, click the red X icon.



## Sharing and Toggling Drawings

To share your drawings with others, simply upload the project as any other. The drawings will be contained within the project.

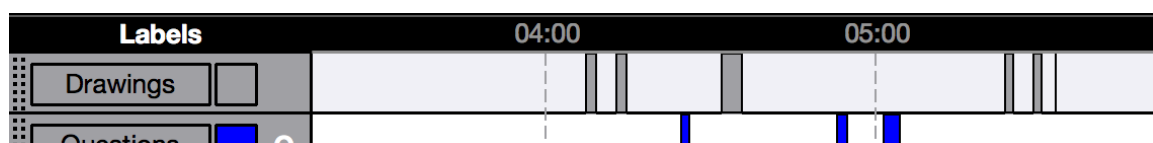
To toggle on your drawings or those that others have made, click on the squiggle and select the name of the user whose drawings you would like to see. Only one user's drawings can be displayed at any one time.



## Drawing Timeline

As you draw, a drawing timeline will automatically be created which displays at which points on the video the drawings appear. This feature can be turned on and off (i.e., displayed or not) on the top menu View > Drawings Label.

Note: no description notes can be typed into labeled instances on the drawings timeline.



## Chapter 10: Conversation Analysis

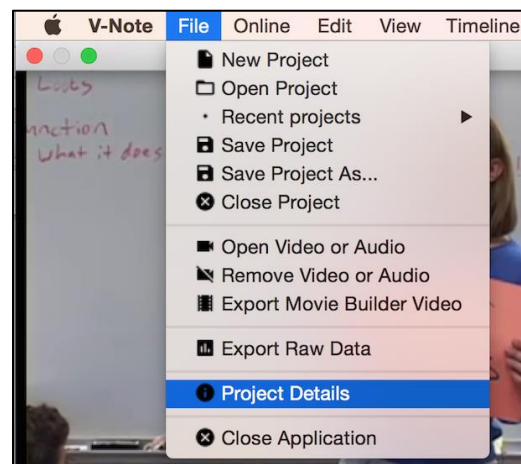
Conversation Analysis (CA) employs: Jeffersonian Notation (a formalized system of notation including arrows and other characters), sound waveforms, and a Courier font, which can be exported as it appears on screen for uniformity of text positioning. This can be used for linguistic analysis and that of other fields.

CA features can be toggled on or off per user preferences.

### Turning On Conversation Analysis Features

Conversation Analysis features can be turned on or off by clicking: File > Project Details (or also by clicking the title of the project in the upper blue bar of the project).

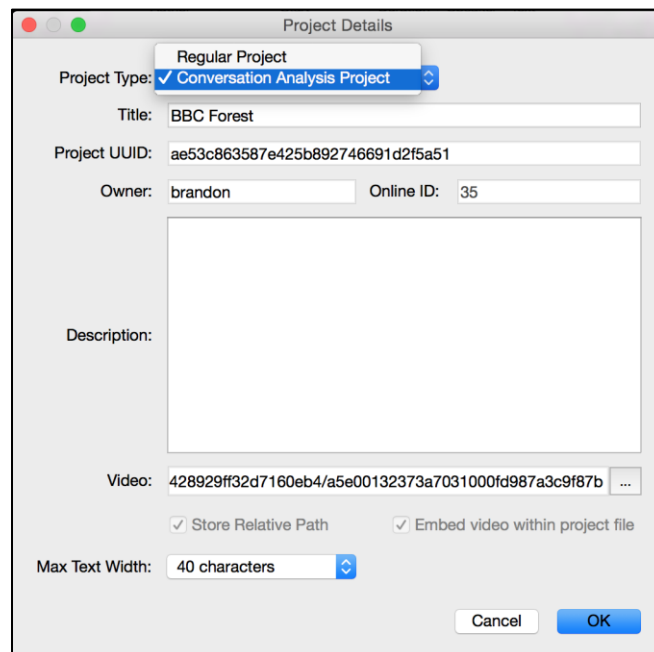
Once clicked the dialogue below appears. Near the top, under “Project Type,” you can select “Regular Project” or “Conversation Analysis Project.”



### Changing Column Width

Turning on CA will allow you to craft the look of your output (or printed) transcript as well (for example, if you need to fit your text into a single column of a journal article). In this same dialogue box, near the bottom, you can select “Max Text Width,” to choose how many characters wide the text of your transcripts will be.

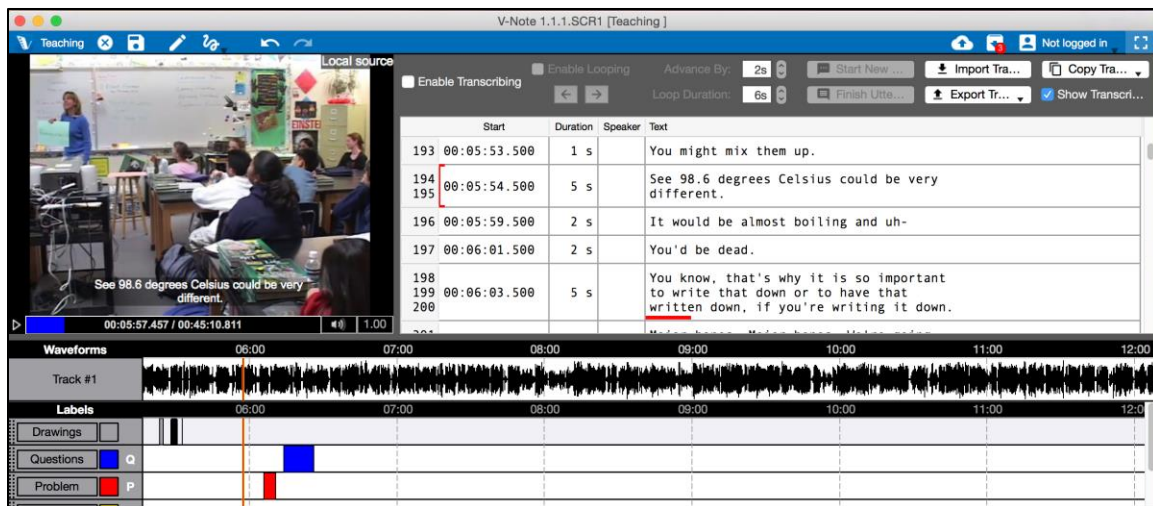
You can experiment with the width, as it can be changed at any time later. 40 characters may be a good starting point.





## Sound Waveforms: Toggling On and Off

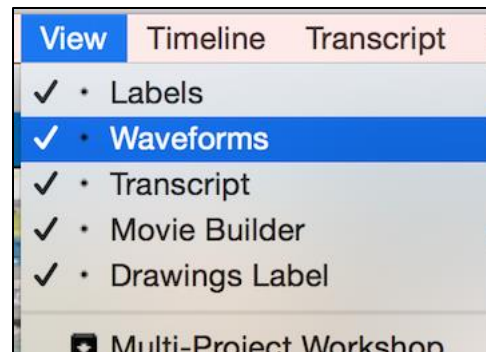
Waveforms (i.e., representations of volume along the sound track) can be toggled on or off regardless of whether or not CA features are being used. In the image below the waveform is the black squiggly line between the video/transcript on top and the timelines on bottom. These can help you to identify activities in the video and measure periods of silence or talk. On the other hand, you may wish to turn it off in order to use the space for a larger video window or more timelines.



To toggle the waveform on or off, click:

View (top menu) > Waveforms.

When the checkmark appear, the waveform will be displayed.



## Video Change Graph

Similar to the waveform, the video change graph permits you to gain an overview of the entire video, but with an emphasis on the visual rather than on sound. Toggled on and off in the same manner as the waveform, the video change graph is shown in the same place as the waveform, directly below the video play window and the transcript window.

# Chapter 11: Linking Text Documents to Your Projects

## Why Link Text Documents to Your Video Projects?

Generally, the text-link feature of V-NOTE allows a user to drag and drop labeled instances of video from timelines into a cell of a table or list in order to create an association between these. These associations (i.e., the text link raw data) may be explored and analyzed in V-Note or exported to a spreadsheet or other program. The text-link feature view replaces the transcript view in the upper right of V-Note.

Linking text documents to V-Note video projects can be useful on many levels. Sports-focused users may wish to link playbooks. Any user may want to categorize, link a rubric, or score labeled instances from the timeline. Researchers may want to compare categorization across multiple users in order to calculate interrater reliability.

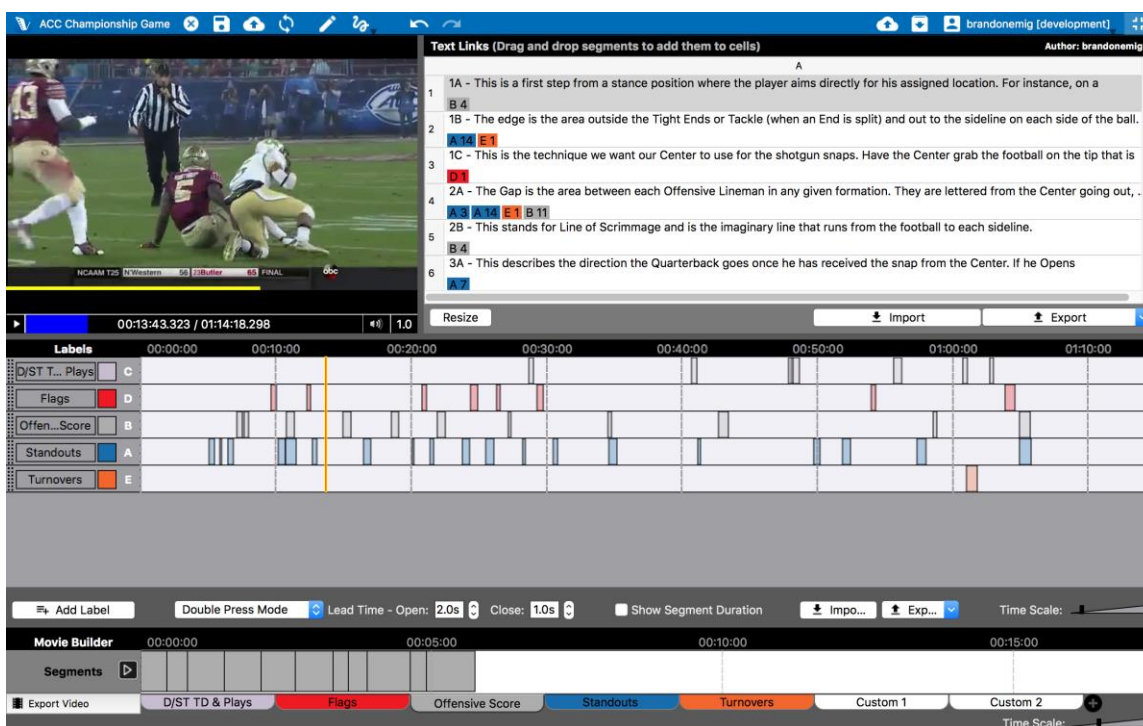
The screenshot displays the V-Note interface with the 'Text Links' view active. The top section shows a video player with a teacher speaking. To the right of the video is a table titled 'Text Links (Drag and drop segments to add them to cells)'. The table has columns A through E and rows 1 through 6. The data in the table is as follows:

	A	B	C	D	E
1 Score		3 - High Quality	2 - Medium Quality	1 - Needs Improvement	0 - Not Observed
2 Organization					
3 Problems		I 4, 3, 1, 2, 3			
4 Time Use			R 15	T 17	
5 Interest Level		2, 3		R 19	
6			T 19		

Below the table is a timeline with various labels: Interesting (I), Question (Q), Student Resp (R), Teacher Resp (T), and Redire. The timeline shows segments of video with these labels. At the bottom, there is a 'Movie Builder' section with a 'Segments' track and a 'Time Scale'.

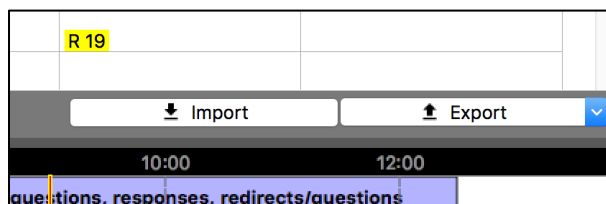
## Turning On Text Links

To turn on text links in V-Note, click on the "View" menu on top. Then, choose, "Text Links." This will replace the transcript view. (It is not possible to view both simultaneously.) To view the transcripts again, simply select "Transcript."

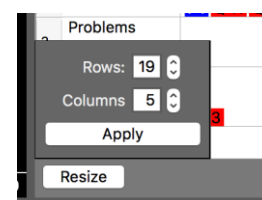


## Entering and Importing Text Data

It is possible to add data (e.g., rubric, table, playbook, list, etc) to your text-link window for linking in three ways. You can double click a cell for direct typing within V-Note. Alternatively, data in the form of a table or list (i.e., in cells) can be copied from a spreadsheet program (e.g., Excel®) or table and pasted into V-Note by right clicking. And finally, by clicking on “Import” just below the text-link window, you can import your data from either a .CSV (comma separated variable) or .XLSX (Excel®) file type.

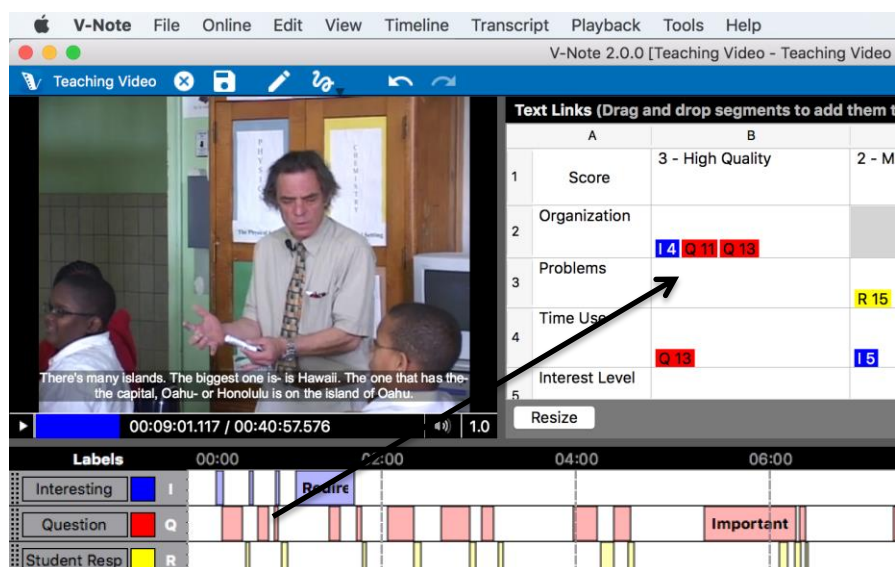


Altering cell sizes and the number of rows or columns can also be done. In order to alter row or column size, simply place your mouse cursor over the lines between the numbers or letters. The cursor changes to a double-arrow which allows for the stretching or compressing of a cell. To change the number of rows and/or columns, click on “Resize.” Once you’ve selected the numbers, click “Apply,” and the table will resize. For lists (e.g., playbooks), choose 1 column. NOTE: if you import or copy and paste a table into V-Note, the table will be automatically sized correctly.



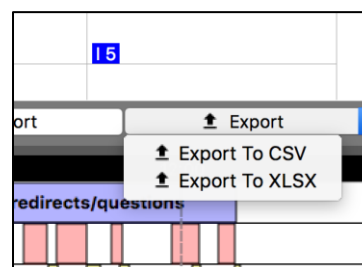
## Linking Text to Videos

In order to link your labeled instances to your text-link data, simply drag an instance from the timeline to the chosen cell. For example, if you judge your second labeled instance on the “Question” timeline to propose high quality problem to your students, you might drag it to the appropriate column for in your text-link window. Sports example: if you found your team’s second score was a good example of Play AQ3, they it could be dragged to the appropriate space on the list.



## Exporting Text Link Data

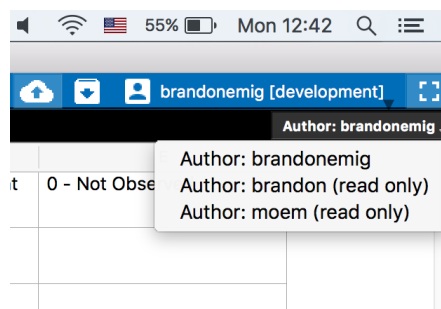
Near the bottom right of the Text-Link window is the “Export” button. This will allow you to export the data you have entered (both text and linked instances). This data can be exported in either .CSV or .XLSX format. The file will render as shown below. Data from additional users (if a V-Note project has been shared with others) will need to be exported into another file, if needed. This is discussed in the next section.



	A	B	C	D	E
1	Score	3 - High Quality	2 - Medium Quality	1 - Needs Improvement	0 - Not Observed
2	Organization	Segments --- I 4 - Interesting (00:01:08-00:01:44) Q 11 -	Segments --- R 15 - Student Resp (00:08:15-00:08:25)	Segments --- T 17 - Teacher Resp (00:10:10-00:10:36)	
3	Problems		Segments --- I 5 - Interesting (00:07:28-00:12:30)	Segments --- R 19 - Student Resp (00:09:48-00:09:56)	Segments
4	Time Use	Segments --- Q 13 - Question (00:07:16-00:07:39)	Segments --- T 19 - Teacher Resp (00:11:32-00:11:56)		
5	Interest Level				
6					

## Multiple Users' Text-Link Data

Similarly to other V-Note features (e.g., drawings, timelines data, transcripts, etc), the data from other users' text-links is available. The text-link display can be toggled between users by clicking on “Author” in the black bar



in the upper right of the text-link window. When clicked, a list of all users with whom the project is shared will appear. When the user's name is clicked, his or her text-link data will appear and can be viewed and exported.

### **Interrater Reliability**

The V-Note Team is currently working on an in-app automatic solution for interrater reliability, which will calculate Cohen's kappa and percent agreement. Currently, however, the easiest solution for calculating this is to invite all users' with whom a project is shared to categorize instances (possibly marked with notes within the labeled instances) by dragging them into a text-link corresponding to one category (e.g., a given column or cell) among possible choices on their own.

Additional users are able to copy the table data from the owner by right clicking anywhere over the text-link window. Exporting these data files from all users can allow for comparison and calculation of interrater reliability.

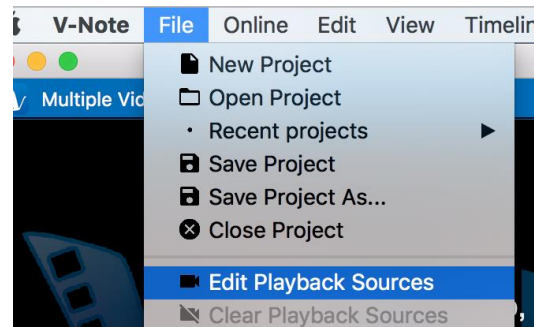
Note: it is also possible to compare various users' timelines directly to calculate agreement, however, given the likelihood of labeled instances overlapping to varying degrees – from slightly to completely – this could make for ambiguous results. This type of agreement might make for a constrained, initial qualitative-type round of analysis, for those wishing to take a more quantitative tack eventually.

## Chapter 12: Using Multiple Videos

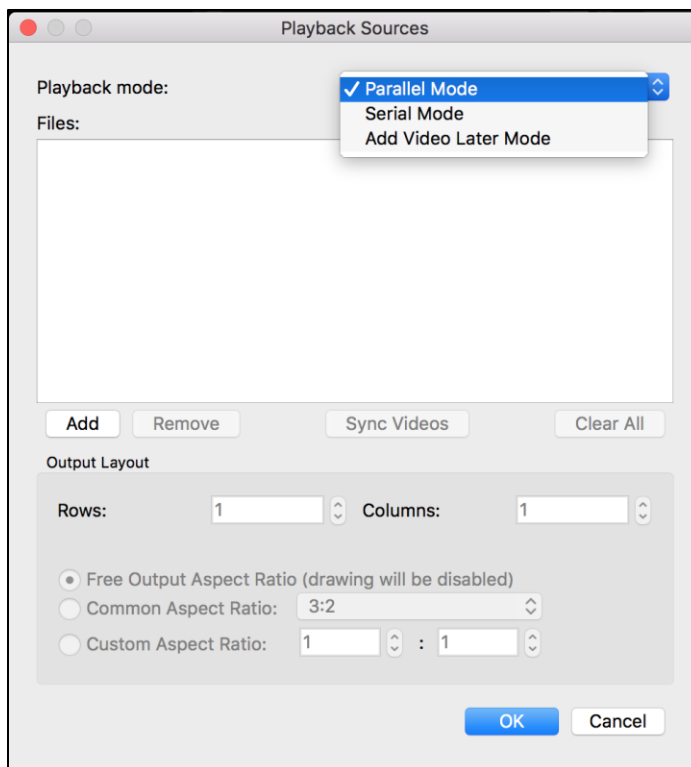
### Managing Multiple Videos in V-Note

V-Note Full Version supports the use of multiple videos played together in the same project either in series (i.e., one after the other) or in parallel (i.e., all playing on the screen at the same time). In the latter case, the videos can even be automatically synchronized by their soundtracks (provided they are recorded of the same event at approximately the same time.) This can save many hours of time otherwise spent manual synchronizing.

If you have the full version of V-Note, simply click on > “File” (on top menu) > “Edit Playback Sources” to access the ability to manage how your videos are played.



Once clicked, you will see the dialog below. In the upper right, there is a list available for clicking including: “Parallel Mode,” “Serial Mode,” and “Add Video Later Mode.”



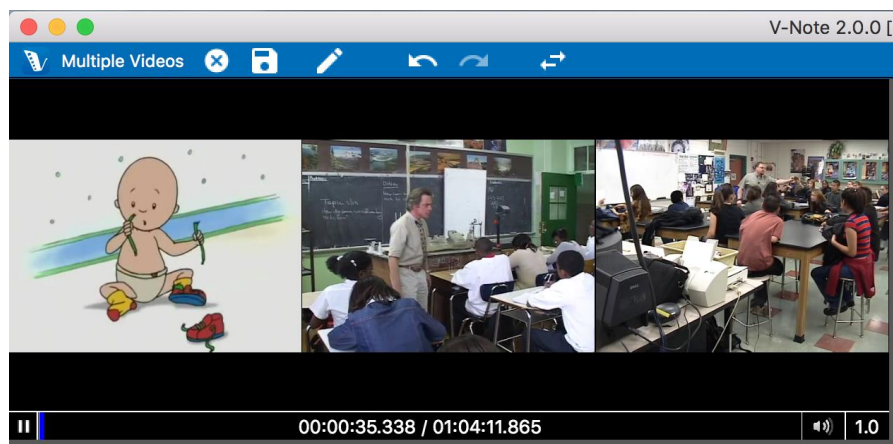
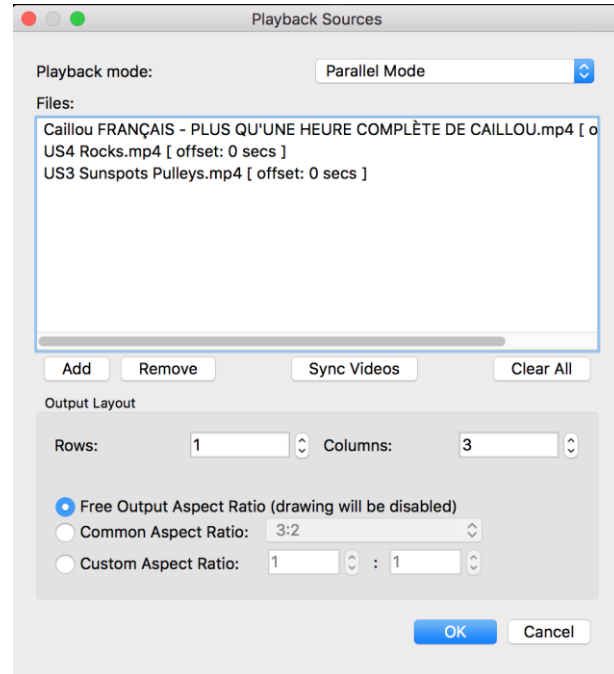
The “Add” button, when clicked, allows you to browse your video (or audio) files, which will be played in: parallel or series, per your choice.

“Add Video Later Mode” presents a black screen and a ticking clock, and can be used for live coding when a video is recording via one or more external cameras. Labeled instances can be made on timelines according to real live events. Then, adding the video(s) can be done later according to usual instructions.



## Parallel Mode

Once videos have been added via the browser and the parallel mode has been added, the orientation of the screen can be selected. Both images below show the same three videos added, but the top image shows 1 row and three columns, whereas the bottom image shows 2 columns and two rows. Playing in series mode allows only one video to be played at a time with second and third videos, etc, being played only after the first one finishes. It is not currently possible to mix and match, i.e., to have both series and parallel videos in one project.





V-Note does not arbitrarily limit the number of videos that can be played in parallel. At the time of testing, a computer with a 2.8 GHz quadcore processor is capable of simultaneously playing before stuttering:

- 5 highly compressed videos (approx. 180 Mbs / hour)
- 1 non-compressed 4K video (approx. 350 Gbs / hour)

Your computer will vary depending on many factors. If playback sound or image should stutter, please remove one video or compress them into a smaller format using another program for smoother operation.

## Aspect Ratio

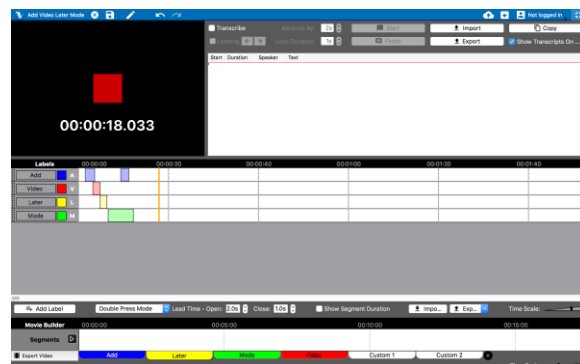
Please note that at the bottom of the dialog on the preceding page there is an option to adjust the aspect ratio. This is independent of the columns and rows, and can be thought of as a sort of canvas onto which the other videos are laid. This is to accommodate any drawings you may add to your projects. Drawings are overlaid onto the video(s); they are not rendered together into one file. You may set this ratio as needed to suit your own preference aesthetically before making any drawings. It is not, however, advisable to alter this aspect ratio once drawings have been made, as this would alter the drawings' relationship to the videos onto which they are superimposed.

## Serial Mode

Serial mode could be used in cases where it is ideal that labels/hotkeys be reused in exactly the same way over multiple events occurring over time (a season's games, a student teacher's lessons, etc.). This not only eliminates redundant work (e.g., creating new project, adding same labels over again, etc.), but it can also allow for easier creation of a player's score video history, for example. Similarly, a numerical data file that is output would have data from all the videos.

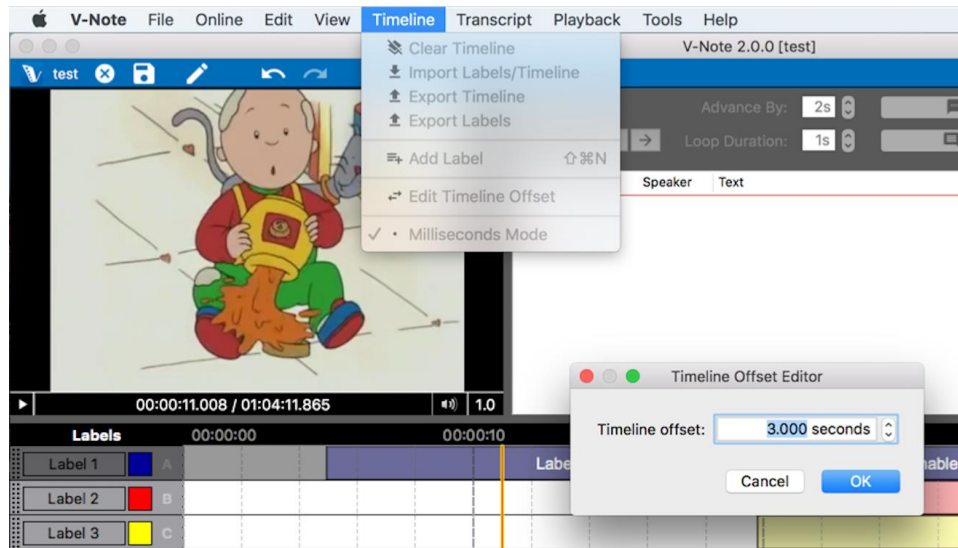
## Live Coding with Add-Video-Later Mode

As mentioned, live coding can be done (say, of a sporting event, or a demonstration lesson) by using "Add Video Later Mode." Make codes and apply them with hotkeys as usually, but rather than watching a video, you are watching the live event, to which you will add the video later. The video can later be shifted left or right vis-à-vis the timelines to align things if your labeling and video recorder(s) should start at different times.



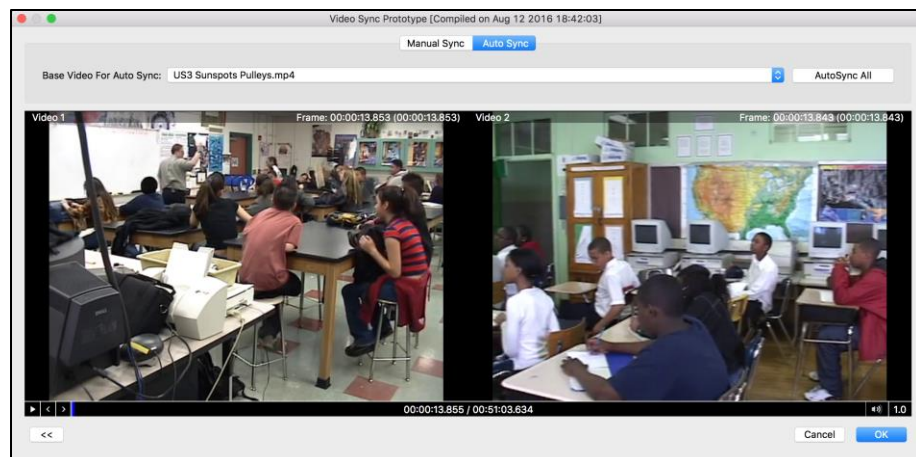
## Shifting Timelines With Respect to Videos

If your video recording and timeline labeling did not start at the same exact time, it is possible to shift the timeline left or right to correspond with the video. To do this, click > Timeline (top menu), then > Edit Timeline Offset. A dialog (shown in the image below) will appear. This will allow you to shift the timeline left and right to the millisecond in order to make it align with your video.



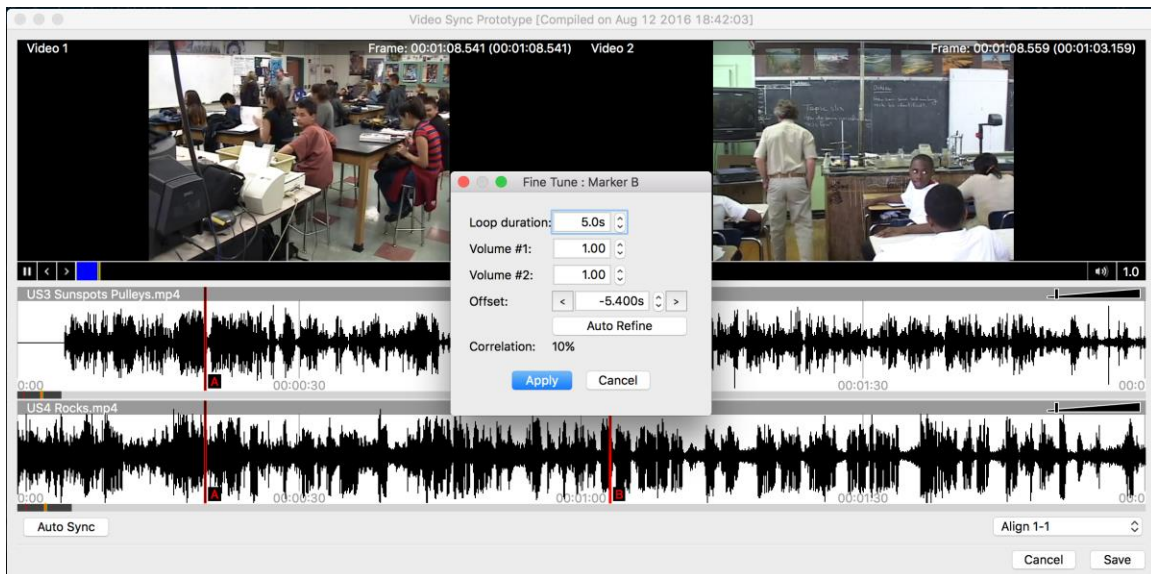
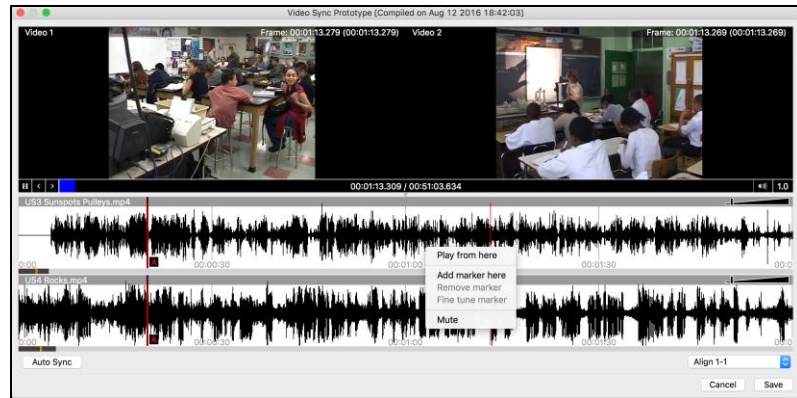
## Synchronizing Videos

If you click on “Sync Videos” in the Playback Sources dialog, you will be presented with two options: “Manual Sync” and “Auto Sync.” If your videos were recorded at the same event and recorded generally the same sounds but from different locations, you should try to auto-sync the videos. Simply click on “Auto Sync” at the top so that it is highlighted in blue, and then click on OK. The process will take several minutes or more depending on how many videos there are and the bitrate of each. Confirm that the tracks play together by adjusting the volume of each track to the middle from the V-Note Main Screen so that both are audible. If they are not well-synced, you should try to manually synchronize the tracks.



If your videos do not record the same sounds, but you still want them synchronized e.g., an announcer track, a narration track, same event but very different record locations, etc.), choose manual sync.

This will present a window in which the videos and their respective waveforms are visible. A right click will allow you to make red markers labeled A, B, etc. By playing the tracks, you should find an aligning event early in the files (e.g., a score, a noise, a transition, etc.). Then, drag the markers on each track to the same event. Next, repeat by adding another marker, B, and then finding a later event to align. Once the marker B is placed on an aligning event on both tracks, right click and select, “Fine Tune Markers.” The dialog below appears. While listening to a loop (short few second part over and over) of audio immediately around both markers, you can shift them with the shift arrows. Once you are satisfied with your alignment, you can choose, “Apply” which will align the tracks together in your V-Note project for all future playbacks. No further efforts should need to be made to synchronize the tracks.



If your videos are not continuous (e.g., one video has pauses or gaps different from the other(s)), they will not synchronize. V-Note looks for correlation of the waveform shapes of each video’s sound track and can stretch or compress to achieve synchronization.

## **Sharing Multiple-Video Projects with V-Note (Non-Pro) Users**

V-Note, our free version, does not support some features that our V-Note Pro version supports.

The playback of projects with multiple videos is supported on V-Note Pro but not on our free version. Nonetheless, projects made with multiple videos are somewhat compatible with V-Note (non-Pro). Only the first video (top of the list) will play in V-Note (non-Pro), however. If shared with V-Note (non-Pro) users, your projects with multiple videos should be arranged so that the most important one (best angle, etc.) is listed as the first one, as this is the one they will see.

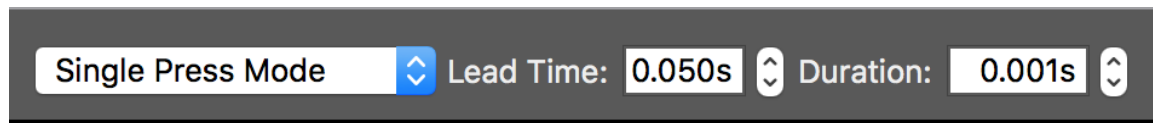
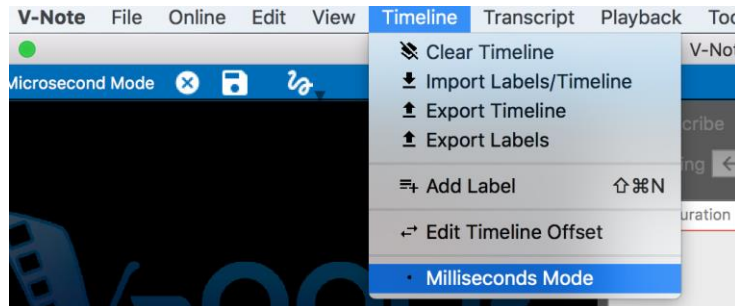
There are a few more features that are not available on V-Note (non-Pro) for shared products. These include: Inter-rater reliability (IRR), transcript exporting to Excel® or other programs.

## Chapter 13: Millisecond Mode

### Labeling by the Millisecond

Called “Millisecond Mode,” this mode allows one to label instances with a minimum duration of one millisecond. It can be enabled by clicking > “Timeline” (on the top menu) > “Milliseconds Mode.” Millisecond mode is only available on V-Note Full Edition. V-Note (non-Pro) users will see instances labeled correctly on shared projects, but cannot make them to the millisecond.

Once enabled, the minimum duration for a labeled instance is 0.001 seconds, or 1 millisecond. Without this mode enabled, the minimum duration is 1 second for a labeled instance. Obviously, any increment above 0.001 seconds is also available (e.g., 0.5 s, 0.01 s, etc.).



This can be useful when video is played back in slow motion, when it may be possible to label several instances of something in one second or less, or when labeling a race or other type of competition when milliseconds separate a winner from second place. Single Press Mode and Double Press Mode both work as before with Millisecond Mode.

### Outputting Data by the Millisecond

When outputting data, smaller units of export than 1 second may also be chosen. Each line in the numerical output file would correspond to 0.001 second, for example, of that unit were chosen. Also, when “Edit Interval” is clicked in the “Export Raw Data” dialog, a custom interval (e.g., 0.07 seconds, 0.53 seconds, etc.) can be set and saved. This can be useful in harmonizing your data to your labeled instances (e.g., you have set a single press label to 0.53 seconds to correspond to a phenomena of a given fixed length that you are evaluating).

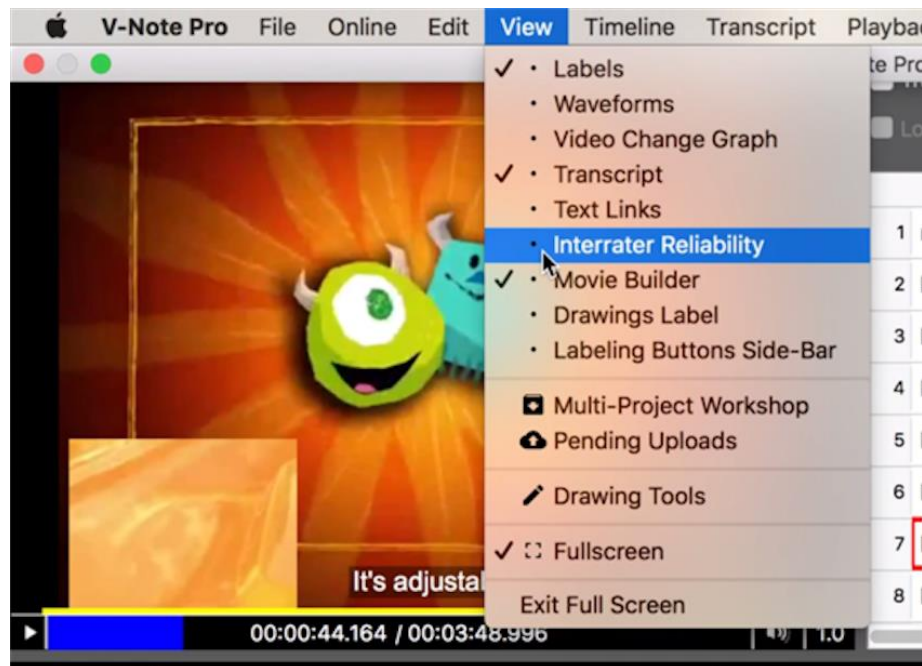


## Chapter 14: Inter-rater Reliability

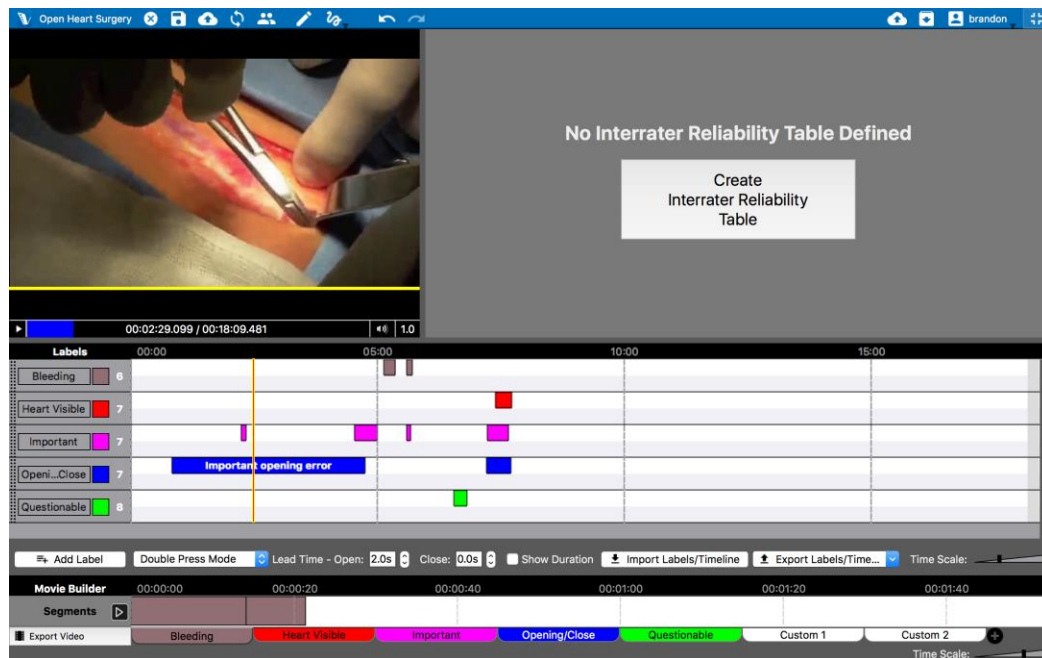
### Setting Up Inter-rater Reliability

V-Note Pro supports automatic inter-rater reliability (IRR) calculations. IRR is not calculated from timeline and label overlap between users, as ambiguous cases would no doubt be present from partially overlapping instances. Inter-rater reliability calculations require some constraints per convention. Particularly, an instance must be shared exactly between raters (i.e., same start and end time) and be assigned to one of a fixed number of categories (also shared between users). To these ends, V-Note provides an IRR-specific interface.

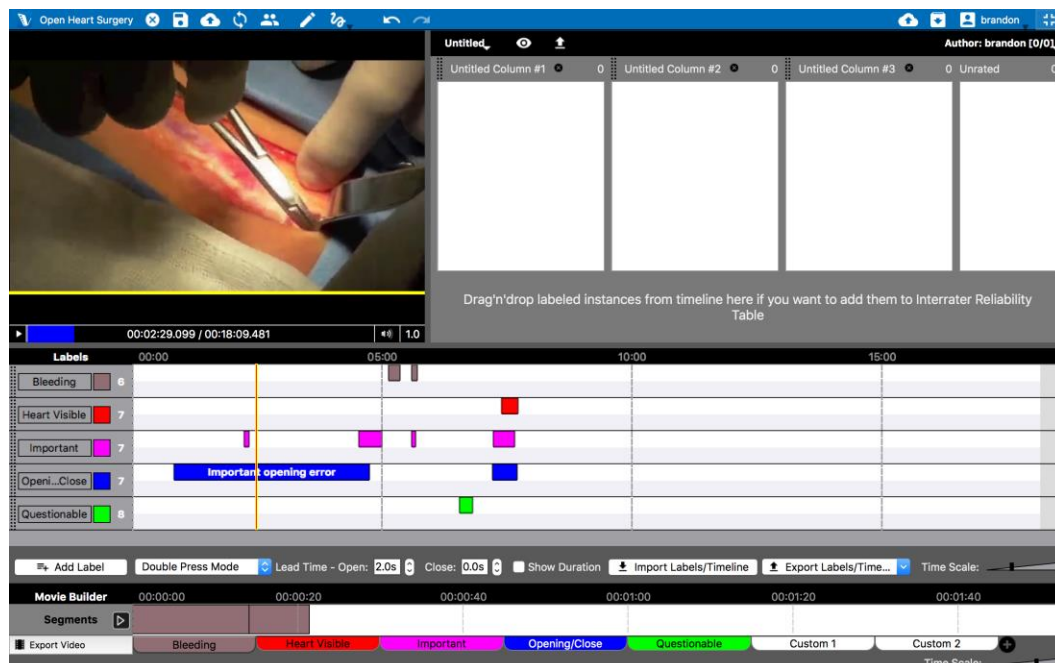
It can be accessed by clicking, on the top-menu, > View > Inter-rater Reliability. Please note: ONLY the owner of a project can set up IRR on their project; other users may not.



This changes the upper right portion of the screen as shown below. Click the large gray button that says “Create Inter-rater Reliability Table.”

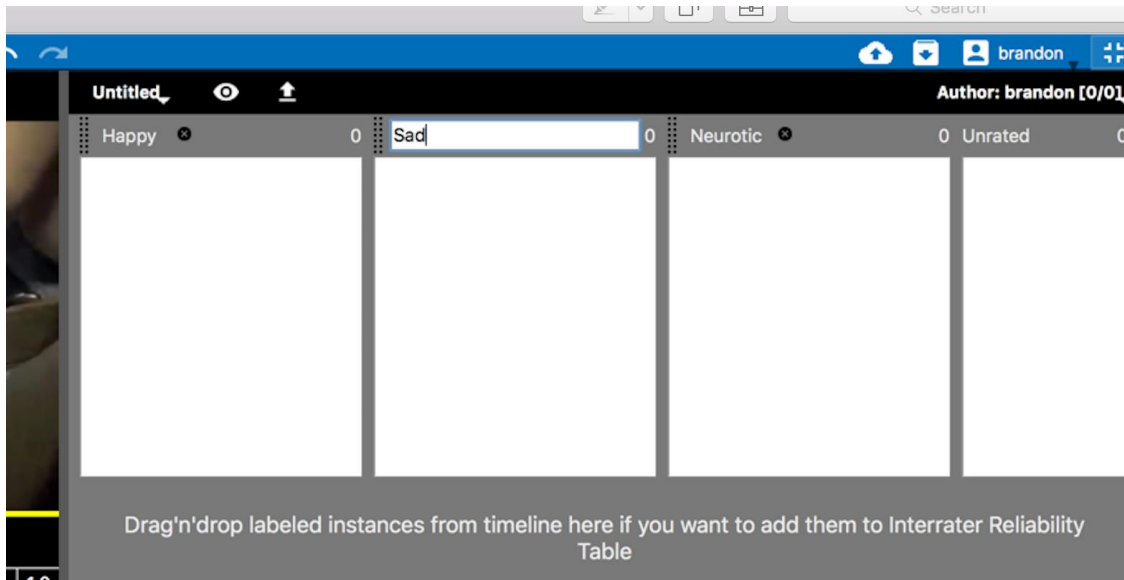


The upper right field will now change to the IRR field with columns, as shown below:

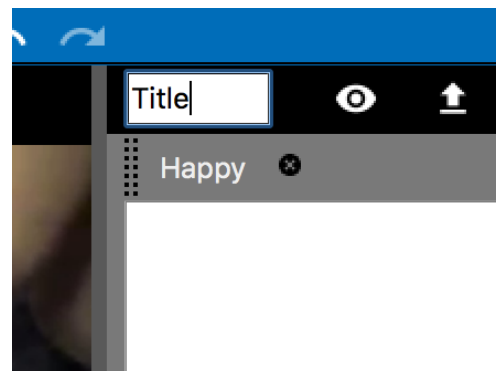
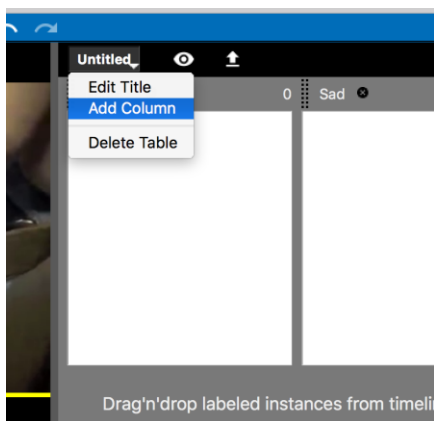


These columns are untitled by default. You can click on the “Untitled Column #X” titles to type to change them to your categories as shown below.





You can also add change the title of the IRR table and number of columns by clicking the “Untitled” part in the upper left of the IRR field as shown below.

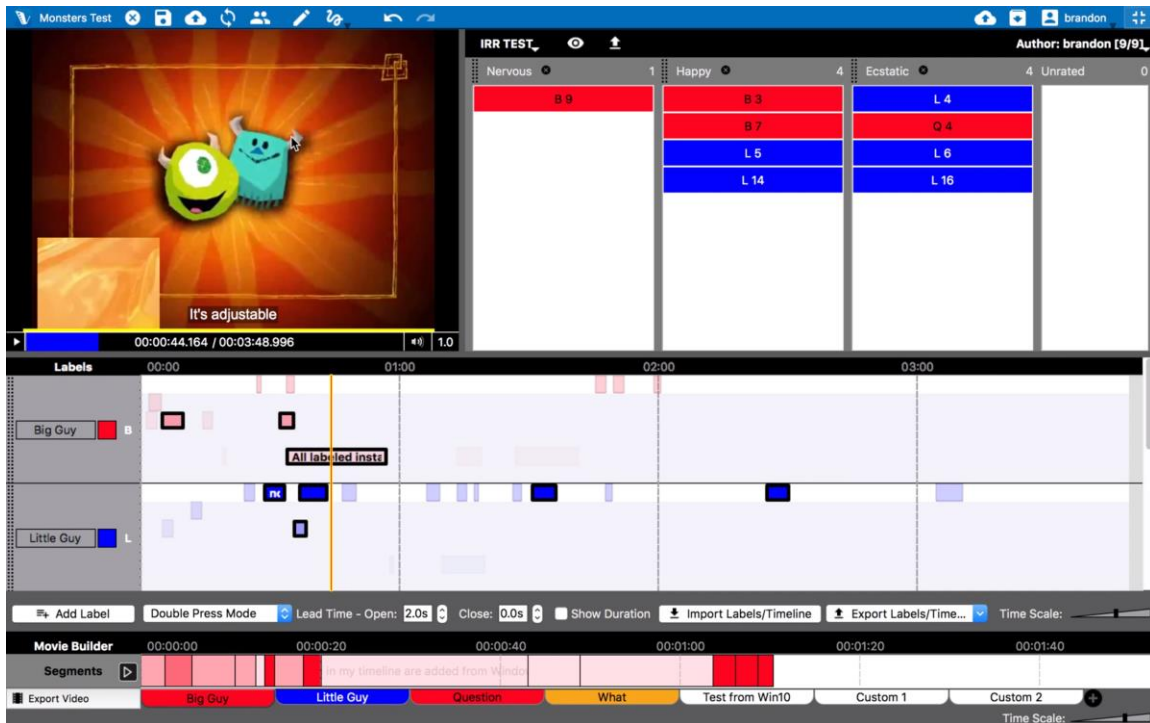


Once your IRR table has all the categories it will need, you can begin dragging up the labeled instances (yours or others’) to the columns (i.e., categories) per your judgment. The instances will be represented in their respective IRR columns where they can be removed or placed into another column from dragging and dropping.

As an owner of the project, you will NOT require the “Unrated” column, although if you would like to mark an instance to be rated by other users (or yourself later; maybe you are unsure how to rate it, for example), you can use this column. It will not be considered in calculations of IRR, however.

Users with whom you share will see, on their view, all the instances you have rated in the “Unrated” column, in order that they can see any remaining instances that need to be rated/categorized but they will NOT see your original category choice. This is by design so that ratings are truly independent.

All instances that an owner has dragged up to categorize are highlighted with respect to un-rated instances, so that they might be more easily identified and viewed in their original context. The image below shows these labeled instances on their timelines as darker than those which are not rated in IRR.

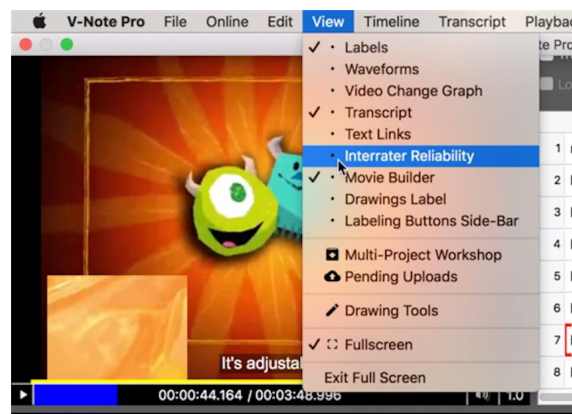


Again, all these instances will appear in other users' IRR field under the "Unrated" column. The specific categories the project's owner chose will NOT be visible to them in order that they can rate them independently.

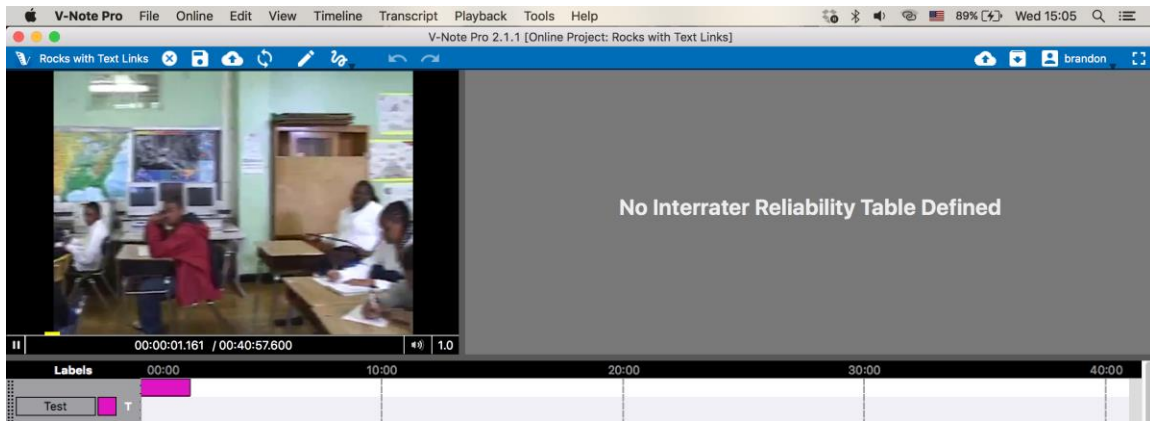
## Using Inter-rater Reliability with Shared Projects

If you would like to participate in rating a project shared with you by another user, you must first join and open the project if you have not yet done so. Details on how to do this are provided in chapter 3 beginning on page 14 of this manual.

Once you have opened the project, click on the top menu "View" > "Interrater Reliability." This will change your upper right field to that with IRR information.

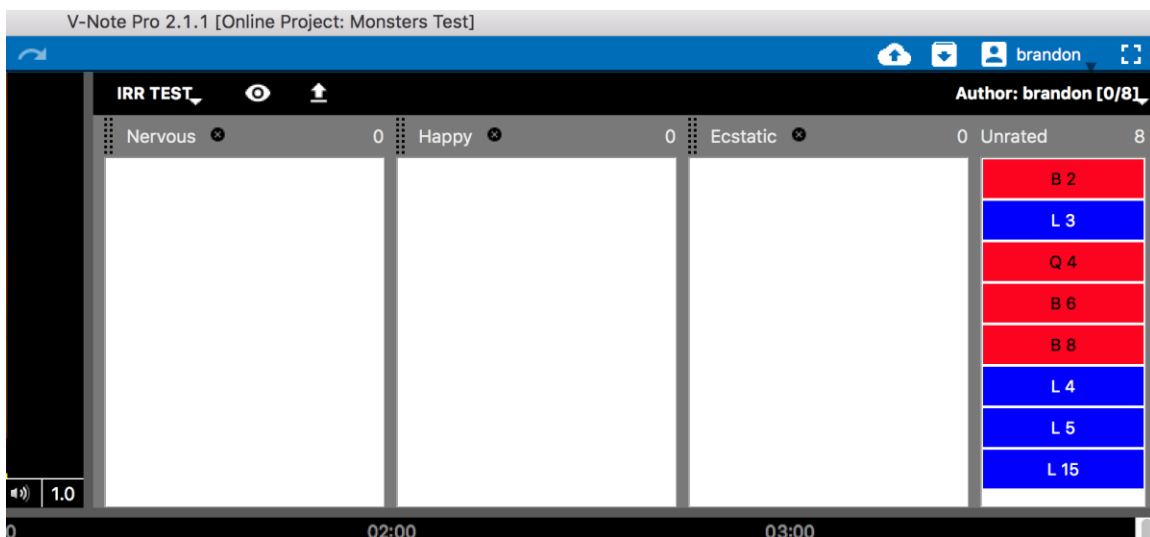


If the project's owner has not yet added any instances to be rated, you will see a statement: "No Interrater Reliability Table Defined." As a non-owner you will not be able to rate any instances. You will need to contact them to ask them to rate some instances and push these changes to V-Note's server.



If a project-owner has rated some instances, you will see all of them appear in your "Unrated" column at right, as shown below. You will not see into which particular categories s/he has placed them; this is by design so that rating is independent.

You can right click over these instances in the IRR field to locate them on the timeline or to begin playing them. When you think you know the category (e.g., happy, sad, nervous, etc) drag the instance in to the respective column, where it will appear. It will then disappear from the "Unrated" column. You can change these later.

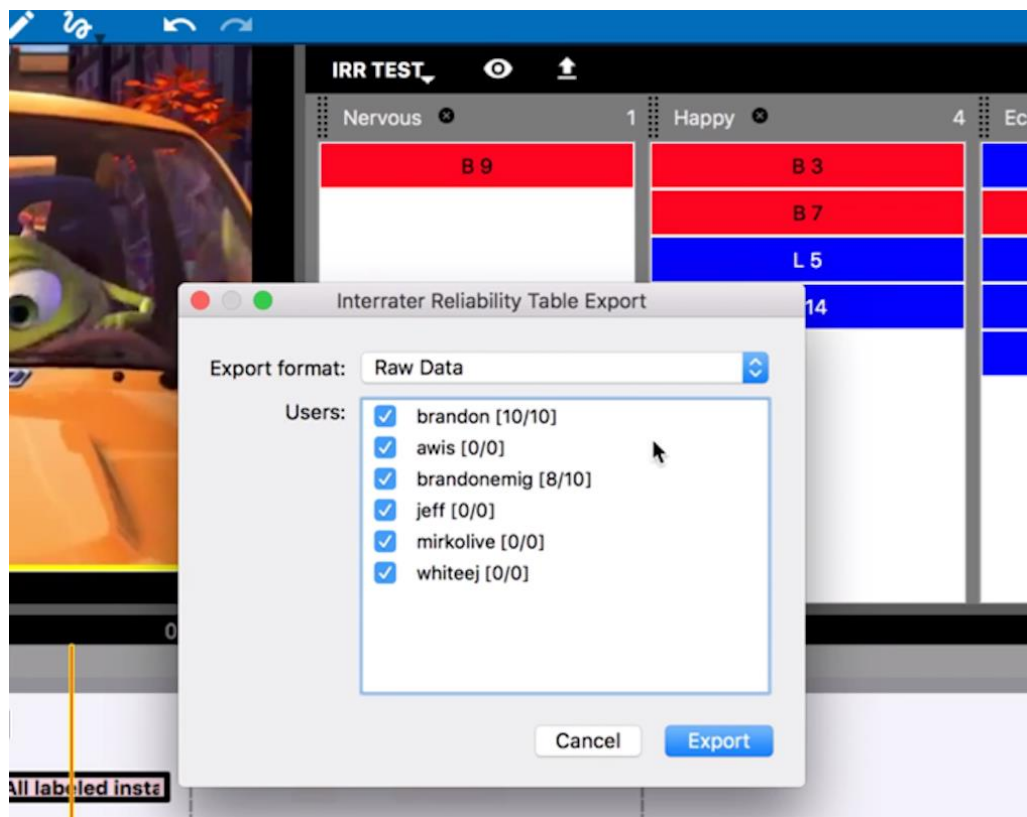


Once you have rated (i.e., categorized) all instances, your “Unrated” column will be empty. Please push changes to server using the button on the upper left on the blue bar, or on the “Online” top menu choose “Save Changes to Online Project.” This will include them in the calculations the owner of the project will make using V-Note.

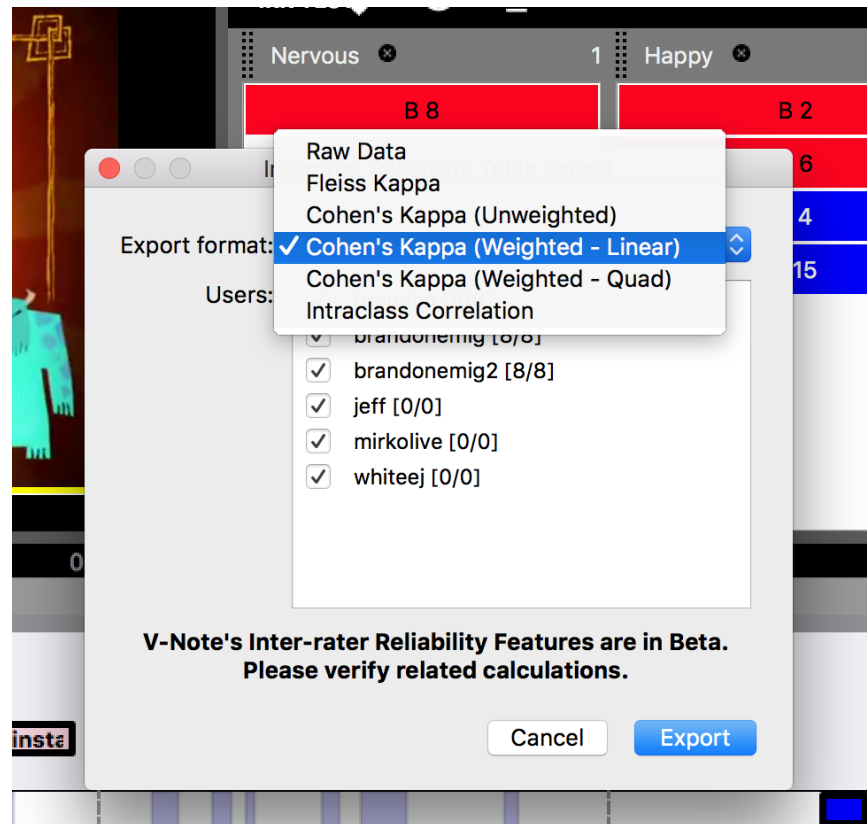
Please note, as a user (non-owner of the project), you are NOT able to select instances for IRR categorization that have not been selected by the project owner. If you would like to suggest a new instance for IRR consideration, please contact him or her directly noting the instance to him or her, and possibly adding a note within the instance on the timeline to this effect, (assuming it is yours and notes can be made in it).

## Exporting IRR Data

Once all users have rated the instances, you as an owner can export the data by clicking on the upward arrow in the IRR field near the top in the black bar. You will now be able to select the users whose data (IRR choices) you would like to include in your calculations as shown in the image below.



You can now select the export format you would like to use by clicking on the drop-down menu called “Export Format.” The choices are shown in the image on the next page.



You can choose: Raw Data, Fleiss Kappa, Cohen’s Kappa (unweighted), Cohen’s Kappa (Weighted Linear), Cohen’s Kappa (Weighted Quadratic), and Intraclass Correlation.

These differ in important respects and you should research elsewhere which is best used in your case.

A few important differences:

If you are using many raters (more than two), you may find it is best to use “Fleiss Kappa,” as Cohen’s Kappa can only compare two raters at one time. Note that it is still possible to use Cohen’s Kappa with more than 2 raters with V-Note, but data will be output which compares raters 1 & 2, raters 1 & 3, and raters 2 & 3, and so on, each on it’s own Excel® sheet. Fleiss Kappa data will include all users and render data on only one page.

“Unweighted” means there would be no expectation of central tendency (e.g., Likert-type data has central tendency). An example of unweighted data would be the

categories: neurotic, sad, happy, etc. There would not necessarily be a linear scale associated with these (i.e., one is greater in degree than another). “Weighted” data could be exemplified by categories such as: strongly agree, agree, neutral, disagree, strongly disagree, and the like.

All files are exported in XLXS (Microsoft® Excel®) format and can be opened directly by that application. When opened, the files will render as shown below.

	A	B	C	D	E	F
1	Labeled Instance	Nervous	Happy	Ecstatic	Unrated	P
2	B 2 [ Big Guy ] 00:00:05-00:00:10	0	2	1	0	0.333333
3	L 3 [ Little Guy ] 00:00:29-00:00:34	0	2	1	0	0.333333
4	Q 4 [ Question ] 00:00:29-00:00:34	0	1	2	0	0.333333
5	B 6 [ Big Guy ] 00:00:32-00:00:36	0	3	0	0	1
6	B 8 [ Big Guy ] 00:00:34-00:00:57	2	1	0	0	0.333333
7	L 4 [ Little Guy ] 00:00:36-00:00:39	1	1	1	0	0
8	L 5 [ Little Guy ] 00:00:37-00:00:43	0	1	2	0	0.333333
9	L 15 [ Little Guy ] 00:02:25-00:02:3	0	3	0	0	1
10	P	0.125	0.583333333	0.291666667	0	
11						
12	Fleiss Kappa:	0.031055901	Slight Agreement			

# Chapter 15: Statistics for Comparing Timelines

## Introduction to Statistics for Comparing Timelines

There may be times when you want to compare labeled instances between different timelines for overlap. In so doing, you can compare between different peoples' labeled instances or labeled instances between one or more of your own timelines. This can provide compelling data such as agreement or similarity between definitions (i.e., labels' meanings) or between the uniformity (or lack thereof) in how labeled instances (codes) are applied and understood between individuals.

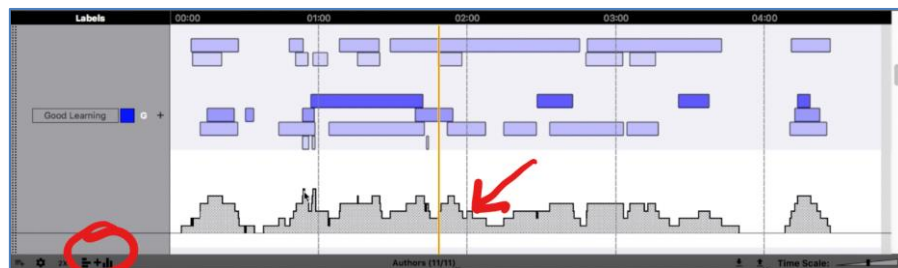
Unlike Inter-Reliability (IRR) calculations – discussed in Chapter 14 - which are built around common standards for reporting agreement statistical agreement, this type of statistic differs in two important ways. On the fortunate side, good agreement that occurs between users – particularly if users are blind to what others have coded (a “blind” setting is available when you share) – is more compelling, as instances are generated in a vacuum, as it were, by multiple users from the within the whole of the video. Good overlap of this type is not to be generally expected. IRR, on the other hand, employs discrete instances with beginning and end times established in advance. On the unfortunate side of things, however, you will need to describe fully and unpack what this means and how it was calculated to readers of your research or data who may not otherwise be familiar with V-Note and this type of overlap.

## Analyzing Overlap Between Users

Comparing how different users apply labels to instances (i.e., code video) can be useful in forming a shared sense of a definition, a shared sense of practice or technique, or in proposing novel models for human behavior. V-Note has thousands of users around the world who are primarily interested in this use, including: surgeons, consumer researchers, educators, teacher trainers, researchers in all fields of the humanities, psychologies, sports coaches, and more. V-Note can be an important driver of convergent thinking (i.e., getting everyone on the same page) in these use cases.

There are two ways to compare with respect to the user. The first is by displaying

a histogram by clicking at the bottom left of the timelines field (shown encircled above). The histogram is represented by the gray bars below the timelines in the screenshot. You can also export this to a spreadsheet by clicking on the right icon for exporting (bottom left of timelines field) and choosing “Histogram.”

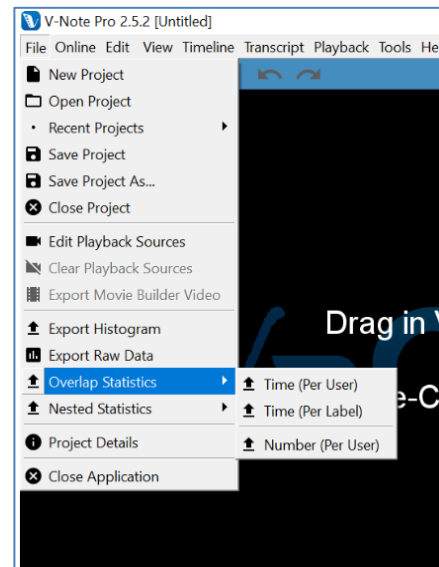




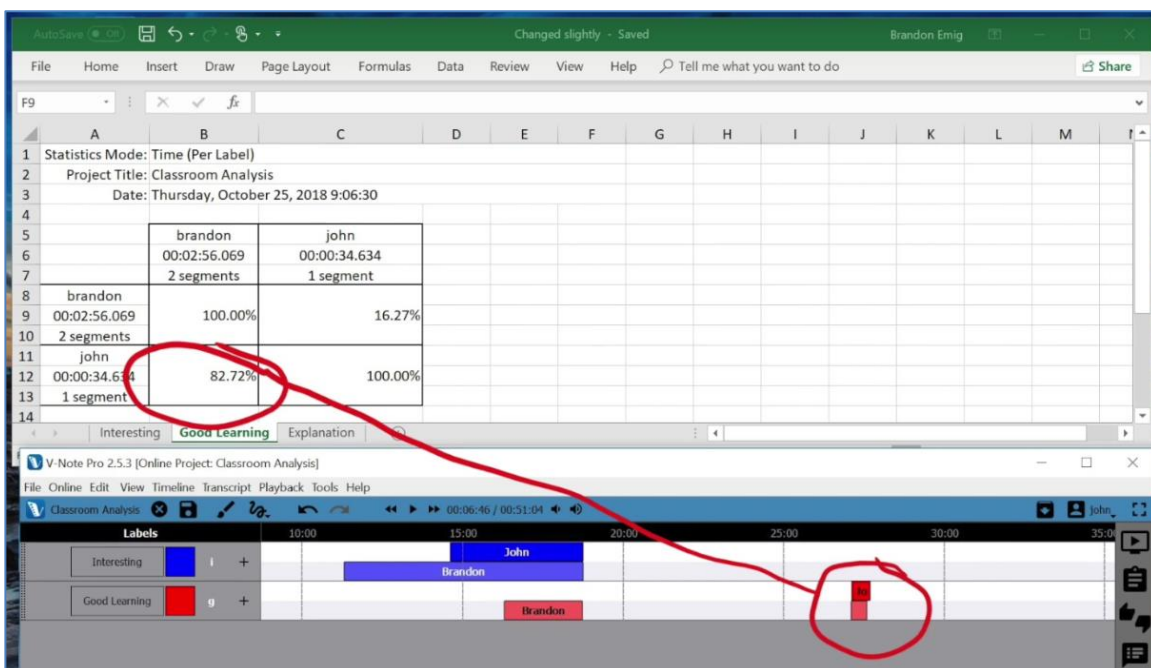


Scan QR Code for a Tutorial on Comparing Peoples' Codes

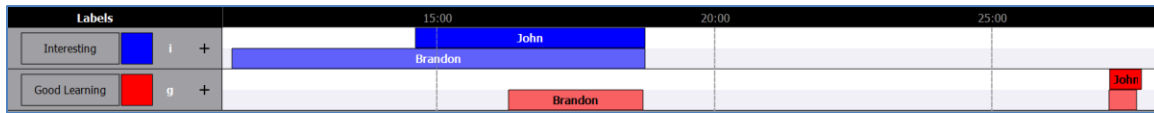
The second way to compare users' timelines is by exporting descriptive overlap statistics to a spreadsheet program such as Microsoft® Excel®. This can be done by as shown in the screenshot at right. To compare labeled instances between users, choose "Per Label." This way, each worksheet within the Excel® (or any spreadsheet program) project will bear the name of a label. When a single worksheet is opened, you will see data as shown below. The top of the screenshot shows an exported spreadsheet and the bottom shows timelines within V-Note.



We see that two individuals have labeled instances on timelines for "Interesting and Good Learning." These are the tabs for worksheets.



Consider just the “Good Learning” timelines. We can see that Brandon’s labeled instances are below those of John. We also see that there is good overlap between John’s single labeled instance and the second labeled instance of Brandon.



Looking at the spreadsheet data below, we can see that 82.72% of John’s labeled instance (aka coded instance) is overlapped by a labeled instance(s) of Brandon’s. On the other hand, looking at Brandon’s labeled instances, we can see that John’s labeled instance overlaps with only 16.27% of Brandon’s instances. Note that all instances are considered together as a summed total.

While this descriptive statistic is useful for conveying how liberal or conservative one person applies a given label when compared to another person, we must bear in mind that it can be necessary to convey both sides of the overlap: John:Brandon and Brandon:John, as described in the preceding paragraph.

	A	B	C
1	Statistics Mode:	Time (Per Label)	
2	Project Title:	Classroom Analysis	
3	Date:	Thursday, October 25, 2018 12:45:28	
4			
5		brandonemig	john
6		00:02:56.069	00:00:34.634
7		2 segments	1 segment
8	brandonemig		
9	00:02:56.069	100.00%	16.27%
10	2 segments		
11	john		
12	00:00:34.634	82.72%	100.00%
13	1 segment		
14			

Note that total times of the labeled instances and the number of total labeled instances are also shown in the table above and may be marshalled into comparison evidence per your needs.

Regardless of your goals for this type of statistic, you will need to explain it to your audience. Unlike Inter-Rater Reliability (a.k.a. IRR, discussed in Chapter 14), which is a standard set of statistics that are calculated and shared commonly, overlap described in this way does not have a long history of being shared and will need to be well unpacked for your audience – possibly with graphics similar to ours. If good agreement between labeled instances occurs without prior agreement (if a coder had the project shared “blind” to any prior codes of others) is very compelling and indicates uniform application of a label (code). In fact, high agreement of this type – i.e., generated in a vacuum - is more compelling than traditional IRR data and is worth the extra effort to explain. That said, we can expect it to be relatively rare.



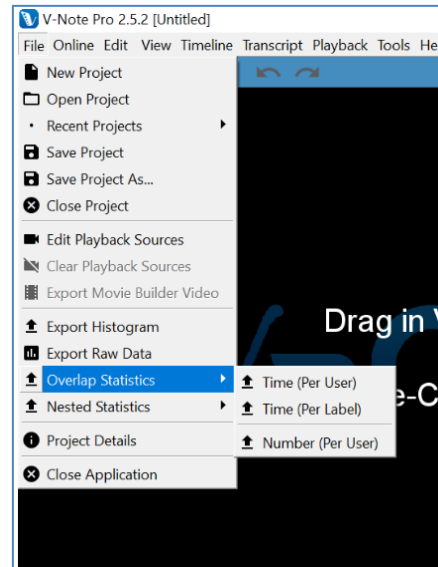
**Scan QR Code for a Tutorial on Inter-Rater Reliability**

## Analyzing Overlap Between Labeled Instances

You may desire to compare timelines and their respective labeled instances between labels (i.e., codes) rather than people. This can be useful in determining if the “Per User” selection is made, your spreadsheet pages (i.e., worksheets) will have tabs with the titles of the users. When you click a user’s tab for a given worksheet, you will be able to compare your (or another users’) codes to one another. This will allow you to look for conceptual overlap or keep score in a sporting event.



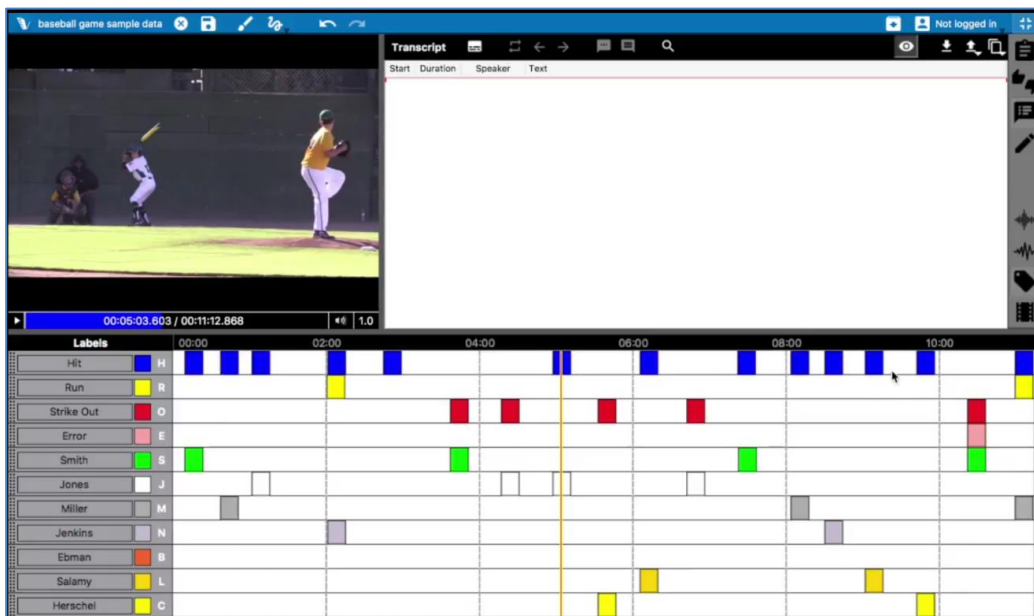
Scan QR Code for a Tutorial on Comparing Overlap of Labeled Instances Between Timelines



## Comparing Overlap by Number of Labeled Instances

The timelines in the screenshot below represent labeled instances made of a baseball game. In this case, all the hits are labeled on the first line. Players’ names are listed on the bottom part of the screen, beginning with “Smith.” By pressing two keys – corresponding to labels – at the same time, two labeled instances are laid down at the same time. A quick visual scan of the timelines shows who made a hit when.

### Labeled Instances on Timelines for a Baseball Game



The same data in the baseball screenshot above is rendered into a spreadsheet shown below by choosing: > File > Overlap Statistics > Number (Per User). This means that the user is held constant and we compare labeled instances between timelines (i.e., labels) for a given single user. In this case we compare only the number of labeled instances; we do not care about the duration of each codes or the total of all codes in this type of data rendering.

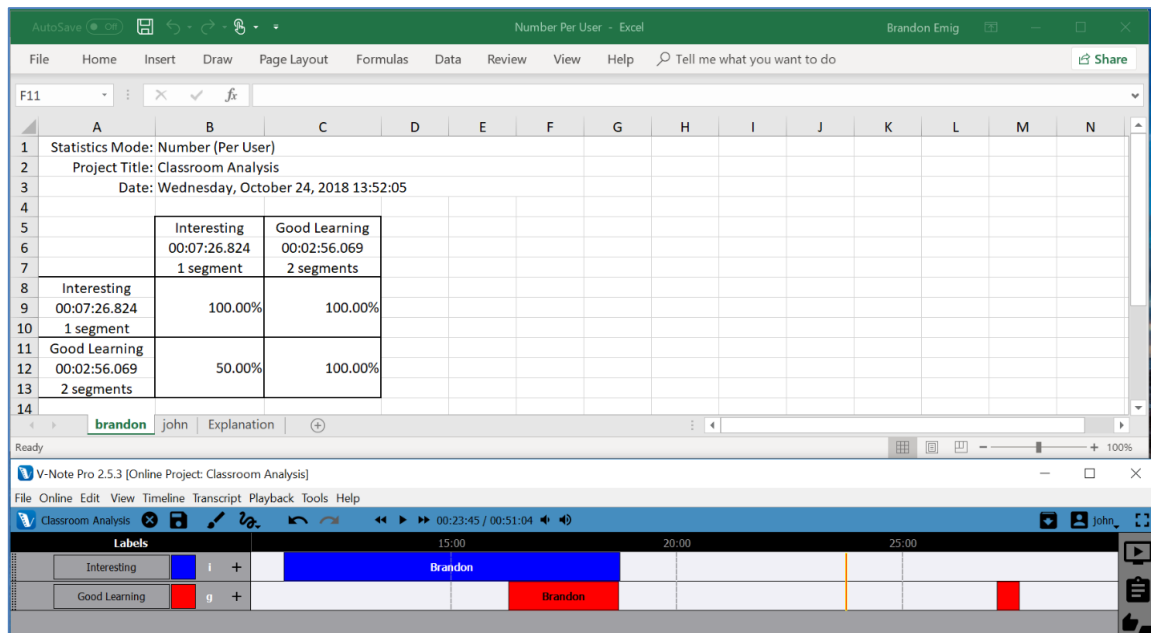
Note that as we go across the top row of data, called “Hits” (below the labels), we see the percentage of hits made by each player. Jones has 15.38%; Miller has 23.08%, etc. As we go down the hit column (column 1), on the other hand we see, the percent of the time that were hits from among all the times that the player was coded (others could be catches, for example). We can also see that 15.38% of all hits resulted in a run.

	Hit	Run	Strike Out	Error	Smith	Jones	Miller	Jenkins	Ebman	Salamy	Herschel
00:03:02.000	100.00%	15.38%	0.00%	0.00%	15.38%	15.38%	23.08%	15.38%	0.00%	15.38%	7.69%
00:00:28.000	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%
00:01:10.000	0.00%	0.00%	100.00%	20.00%	40.00%	40.00%	0.00%	0.00%	0.00%	0.00%	20.00%
00:00:14.000	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
00:00:56.000	50.00%	0.00%	50.00%	25.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
00:00:56.000	50.00%	0.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
00:00:42.000	100.00%	33.33%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%
00:00:28.000	100.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
00:00:00.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
00:00:28.000	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
00:00:28.000	50.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Tables such as this will produce extraneous data in addition to what you are seeking, so it is important to know how to interpret the data within them and verify that you have the correct data.

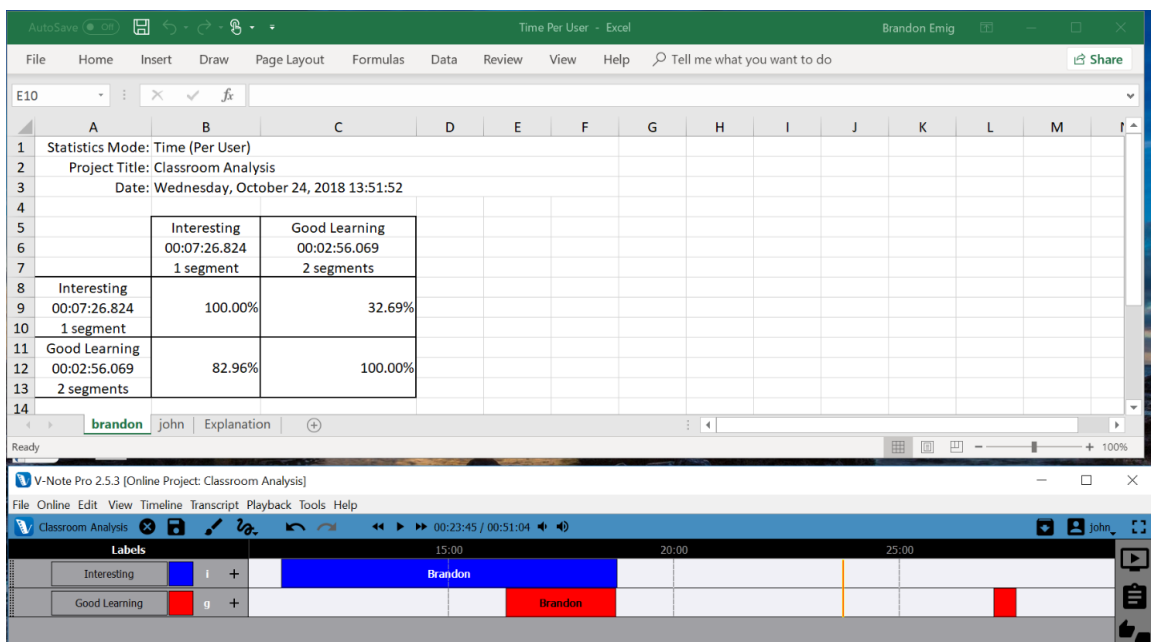
A simpler example of the same type of data rendering may be helpful. It is shown on the screenshot on the next page. Note that Brandon has 2 labeled instances for “good learning” and one for “interesting.” One of these “Good Learning” partially overlaps with the “Interesting” labeled instance; thus we see 50%. All “Interesting”

labeled instances (in effect, one of them, in this case) are overlapped, thus we see 100%. We also see 100% showing that each code overlaps 100% with itself.



## Comparing Overlap by Time of Labeled Instances

The prior example considers overlap but does not consider the duration of overlap. Any overlap whatsoever is counted as overlap in a binary way, i.e., 1 or 0. By choosing > File > Overlap Statistics > Time (Per User) we will consider only duration of the overlap between labeled instances on different timelines.



A simple example is shown at the bottom of the previous page using the same data just discussed. The top half of the screenshot represents spreadsheet data of the timelines in the bottom half, as before. The difference is that we see the overlap percentage in terms of duration. Gone is the binary: yes/no for overlap. Thus, we see that of all of the labeled instance *time* laid down (over multiple instances) for “good learning,” 82.96% of it is overlapped by another code, in this case “interesting.” 32.69% of the “interesting” labeled instance *time* is overlapped by “good learning.”

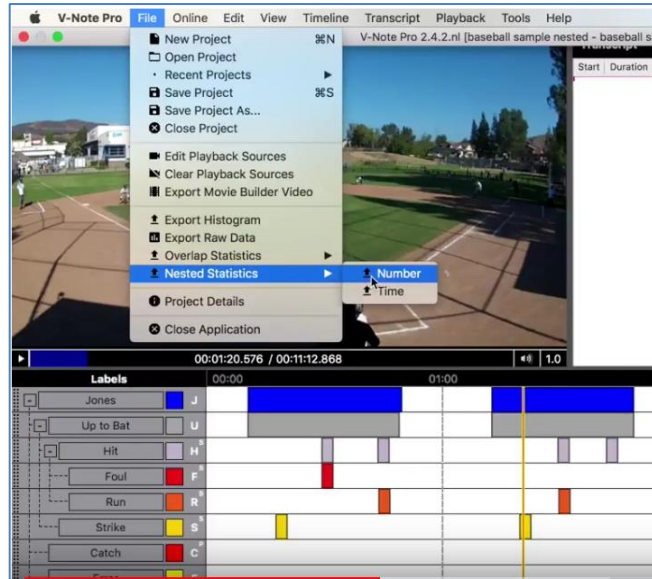
Here, too, it is important to ignore self-overlapping labeled instances (always 100%) and keep the orientation of one’s data straight: “interesting”:”good learning” versus “good learning”:”interesting.”

You may find it helpful or necessary for your argument to include and explain various types of data from among those discussed here: overlap time percentage, overlap number percentage, total number of labeled instances, total time duration of labeled instances, etc. Also, Inter-rater reliability (IRR) type data – (See Chapter 14) may be a simpler approach for your needs.



## Analyzing Your Nested Codes

Making and applying nested labels or nested codes is discussed in Chapter 2 (p. 14). Generally, when labels may have a hierarchical relationship with one another, nested codes are used. You may consider them to be sub-labels or sub-codes. For example, at right a baseball player is shown with various labels that apply only to him: up to bat, hit, foul, run, etc. These can be applied to other players in the same hierarchical manner also.



The use of nested codes provides a quick visual of the relationships between codes. Also, employing nested codes in V-Note allows us to use a special function of V-Note for determining descriptive statistical relationships between the codes.

Accessing these statistics is done as shown in the picture above. Choose “File” from the top menu. Next, choose “Nested Statistics.” You can then choose between “Number” and “Time.” Once selected, provide a name for your file. This will open in your favorite spreadsheet program, such as Microsoft® Excel®.

Number-type calculations are done with respect only number of labeled instances (e.g., 10% of pitches were hits); the amount of time of each instance or all together is not considered. Time-type calculations, on the other hand, are done only with respect to time of codes (e.g., Jones spent 5% of time up to bat); the number of individual labeled instances is not considered.

The screenshot on the next page shows an example of the Number-Type calculations. It shows that Jones was labeled (i.e., coded) three times and two of those times (i.e., 66.67%) of those times he was up to bat. (The other time he may have made a catch.) The exact labeled instances are circled in red. The calculation of the % is shown circled and linked, also in red.

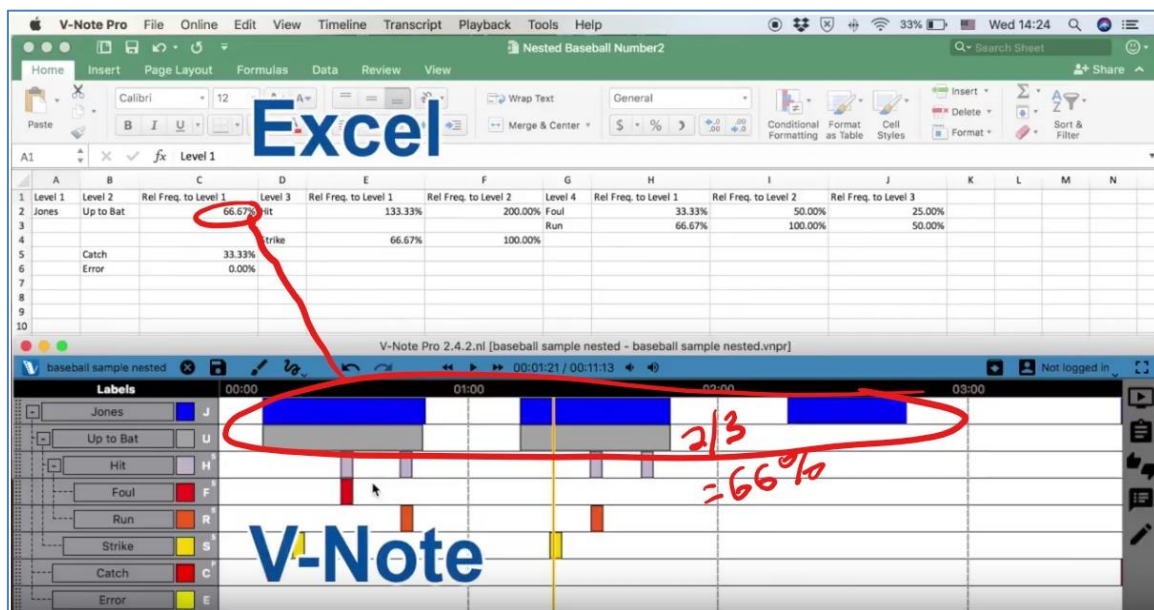


Note also that each level or labels is linked to all higher levels of codes. For example, “hits” is linked not only to “up to bat” but also to “Jones.” The relative frequency will be calculated with respect to the level labeled on top of the Excel ® document.

**Scan QR Code for Tutorial Video on Nested Labels & Statistics**

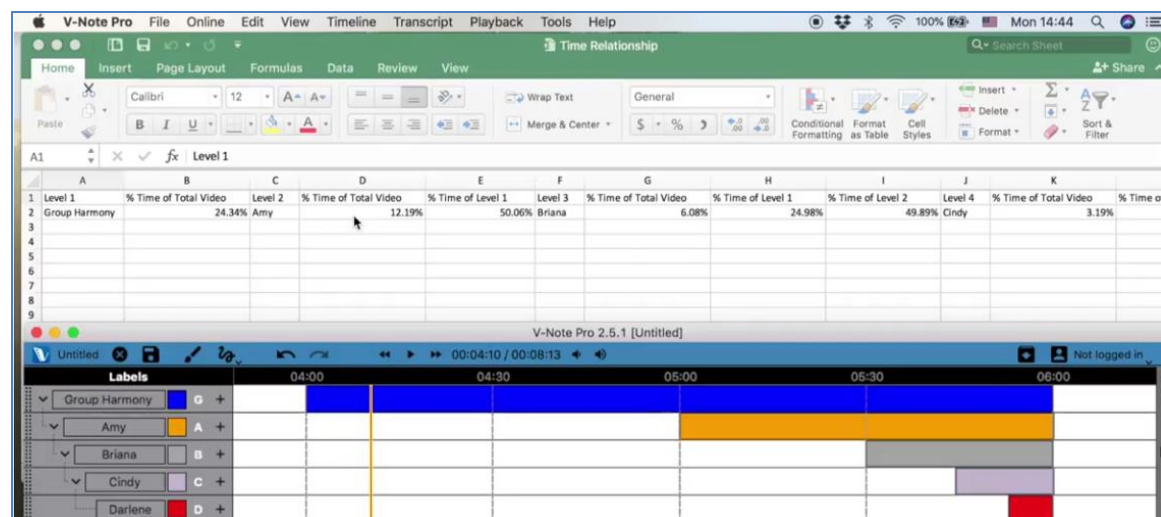


## Nested Codes Statistics Calculated by Number (Excel® on Top; V-Note on Bottom)



Nested code statistics calculated by Time are similarly created (except you click on "Time" instead of "Number" from the "File" top menu; see previous page) and similarly rendered as tabular data. The difference is that only the time (i.e., duration) of the labeled instances is considered. For example, 100 individual labeled instances totaling 2 minutes will be only considered as 2 minutes; the fact that there are 100 labeled instances has no effect here. See the screenshot below.

## Nested Codes Statistics Calculated by Time (Excel® on Top; V-Note on Bottom)



Shown in the screenshot is a group of singers. Their time spent singing in whole-group harmony is represented by the blue line on the top timeline. Amy takes lead for the latter half (about 50% of this the whole-group time). Each singer takes lead for a time that is roughly half of her predecessor until finally all are singing in harmony again when Darlene joins the lead.

As each singer leads about half of the time of her predecessor, we can understand the descriptive statistics in the Excel® spreadsheet above the timelines. In the data below, we see

that Briana sang for 6.08% of the time of

F	G	H	I	J
Level 3	% Time of Total Video	% Time of Level 1	% Time of Level 2	Level
% Briana	6.08%	24.98%	49.89%	Cind

the total video, 24.98% of the time of “Level 1” (aka group harmony) and about half (49.89%) of the time of the prior singer, Amy.

As levels of nested labels become deeper and deeper (i.e, more levels of sub-labels), with each successive level, another level of data is added: % Time of Level 1, 2, 3, 4, 5, and so on. This allows for cross comparisons of just the right data.

If you are interested in getting out the exact amount of time of each labeled instance out or of all them or the number of codes, see the section on exporting the raw data. You can also view the video here which provides details.

**Scan QR Code for Tutorial Video on Exporting Raw Data**  
(With Number and Total Time of Labeled Instances)



In summary, the two types of statistical calculations that can be output from V-Note for nested labels are very similar in the way they are rendered and exported to a spreadsheet document. They differ in that one way emphasizes duration or time of instances and the other way emphasizes the number of labeled instances. A careful consideration of your goals should lead you to determine which way will be of most benefit to you.