DAVINCI RESOLVE 20

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The Editor's Guide to DAVINCI RESOLVE 20

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Author: Chris Roberts

The Editor's Guide to

DAVINCI RESOLVE 20

The Editor's Guide to DaVinci Resolve 20

Chris Roberts

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Foreword

Welcome to The Editor's Guide to DaVinci Resolve 20.

DaVinci Resolve 20 is the only post-production solution that combines editing, color correction, visual effects, motion graphics, and audio post-production all in one software tool! Its elegant, modern interface is fast to learn for new users yet powerful enough for the most experienced professionals. DaVinci Resolve lets you work more efficiently because you don't have to learn multiple apps or switch software for different tasks. It's like having your own post-production studio in a single app!

DaVinci Resolve 20 adds editing with transcriptions from audio, film look creator and ColorSlice six vector grading, IntelliTrack AI for panning audio to match vision, broadcast replay for live multicamera broadcast editing, layout and replay with speed control, and so much more!

Best of all, Blackmagic Design offers a version of DaVinci Resolve 20 that is completely free! We've made sure that this version of DaVinci Resolve includes more features than any paid editing system. That's because at Blackmagic Design we believe everybody should have the tools to create professional, Hollywood caliber content without having to spend thousands of dollars.

I invite you to download your copy of DaVinci Resolve 20 today and look forward to seeing the amazing work you produce!

Grant Petty
Blackmagic Design

Acknowledgments

We would like to thank the following individuals for their contributions of media used throughout the book:

- Age of Airplanes

  Brian J. Terwilliger, Terwilliger Productions for Living in the Age of Airplanes
- Citizen Chain

  Citizen Chain footage
- Hyperlight

  Nguyen Anh Nguyen, Second Tomorrow Studios for Hyperlight
- Too Much Lift

  Kauai Film Academy (www.kauaifilmacademy.org) and Too Much Lift, the movie
- "I Don't Know Nothing" performance

  Roger Campo, "I Don't Know Nothing" music video and song

About the Author

Chris Roberts has spent nearly 30 years editing everything from online corporate promos to broadcast television, with editing credits that include the BAFTA Award-winning series The Great House Giveaway.

He has been delivering video editing training for over 20 years and has trained university students and staff, broadcast journalists, and sports, factual, and drama editors. As a Blackmagic Certified Master Trainer, he has been responsible for delivering DaVinci Resolve training to end users and other trainers around the world, both in person and remotely.

Over the years, he has also written articles on editing techniques and editing software for various magazines and online publications, as well as writing several other books, including The Beginner's Guide to DaVinci Resolve.

Chris lives in Worcestershire, UK, with his partner, Samantha. When not working, he enjoys reading post-apocalyptic fiction, listening to hard rock and blues music, and binge-watching the TV he has invariably missed.

This book is dedicated to the memory of his dearly loved and sadly missed parents, Frank and Maureen.

www.chrisroberts.info

Who This Book Is For

This book is designed for both beginners and professionals. Beginners will find clear and concise lessons to get up and running quickly. If you're a professional switching from another system, you'll find lessons that cover everything from basic editing and trimming to working with audio, adding text, using effects, and more. You'll also find dozens of pro tips and tricks that will help you make the switch to DaVinci Resolve!

Getting Started

Welcome to **The Editor's Guide to DaVinci Resolve 20**, the official Blackmagic Design Training and Certification book that teaches editors, artists, and students how to edit in DaVinci Resolve. All you need is a Mac or Windows computer, the free download version of DaVinci Resolve 20, and a passion to learn and tell your story!

This official step-by-step training guide covers the basics of editing video and audio content so you can start creating your own Hollywood-caliber film and video today!

About DaVinci Resolve 20

DaVinci Resolve is the world's fastest growing and most advanced post production software.

It also has a long history of being the world's most trusted application for color correction. With DaVinci Resolve 20, Blackmagic Design has added a complete 2D and 3D visual effects compositing and motion graphics environment that enables you to complete even the most challenging projects, using only one piece of software!

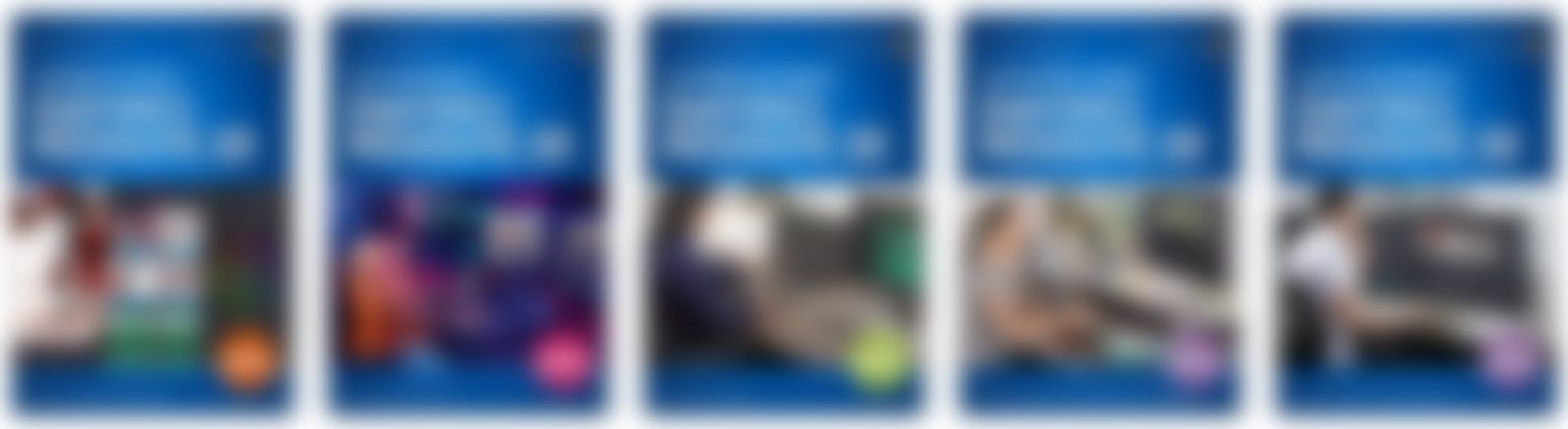
What You'll Learn

- Apply advanced editing and trimming techniques for multiple genres as used by professional editors around the world
- Generate and manage proxy media with the Blackmagic Proxy Generator
- Perform variable speed changes to enhance action
- Use trimming tricks and real-time dynamic trimming
- Apply multicamera syncing and editing techniques
- Organize large projects efficiently using metadata and smart bins
- Build complex composites on the edit page
- Use keyframes to create sophisticated animations
- Edit, mix, and optimize audio for different standards
- Create, import, and edit subtitles for different languages
- Deliver projects for online distribution, broadcast TV, and streaming services
- Discover dozens of tips and tricks throughout the book that will transform how you work!

The Blackmagic Design Training and Certification Program

Blackmagic Design publishes several training books that take your skills further in DaVinci Resolve 20. They include:

- The Beginner's Guide to DaVinci Resolve 20
- The Colorist Guide to DaVinci Resolve 20
- The Editor's Guide to DaVinci Resolve 20
- The Fairlight Audio Guide to DaVinci Resolve 20
- The Visual Effects Guide to DaVinci Resolve 20
- Advanced Visual Effects in DaVinci Resolve 20



Whether you want an introductory guide to DaVinci Resolve or want to learn more advanced editing techniques, color grading, sound mixing, or visual effects, our certified training program includes a learning path for you.

Getting Certified

After completing this book, you are encouraged to take a 1 hour, 50 question online proficiency exam to receive a Certificate of Completion from Blackmagic Design. The link to the online exam can be found on the Blackmagic Design training webpage. The webpage also provides additional information on our official Training and Certification Program. Please visit www.blackmagicdesign.com/products/davinciresolve/training.

System Requirements

This book supports DaVinci Resolve 20 for macOS and Windows. If you have an older version of DaVinci Resolve, you must upgrade to the current version to follow along with the lessons.

> **NOTE** The exercises in this book refer to file and resource locations that will differ if you are using the version of software from the Apple Mac App Store. For the purposes of this training book, we recommend that macOS users download and use the DaVinci Resolve software from the Blackmagic Design website rather than from the Mac App Store.

Download DaVinci Resolve

To download the free version of DaVinci Resolve 20 or later from the Blackmagic Design website:

1. Open a web browser on your Windows or macOS computer.
2. In the address field of your web browser, type www.blackmagicdesign.com/products/davinciresolve.
3. On the DaVinci Resolve landing page, click the Download button.
4. On the download page, click the button corresponding to your computer's operating system.
5. Follow the installation instructions to complete the DaVinci Resolve installation.

When you have completed the software installation, follow the instructions in the following sections to launch DaVinci Resolve and download the media files used throughout this book.

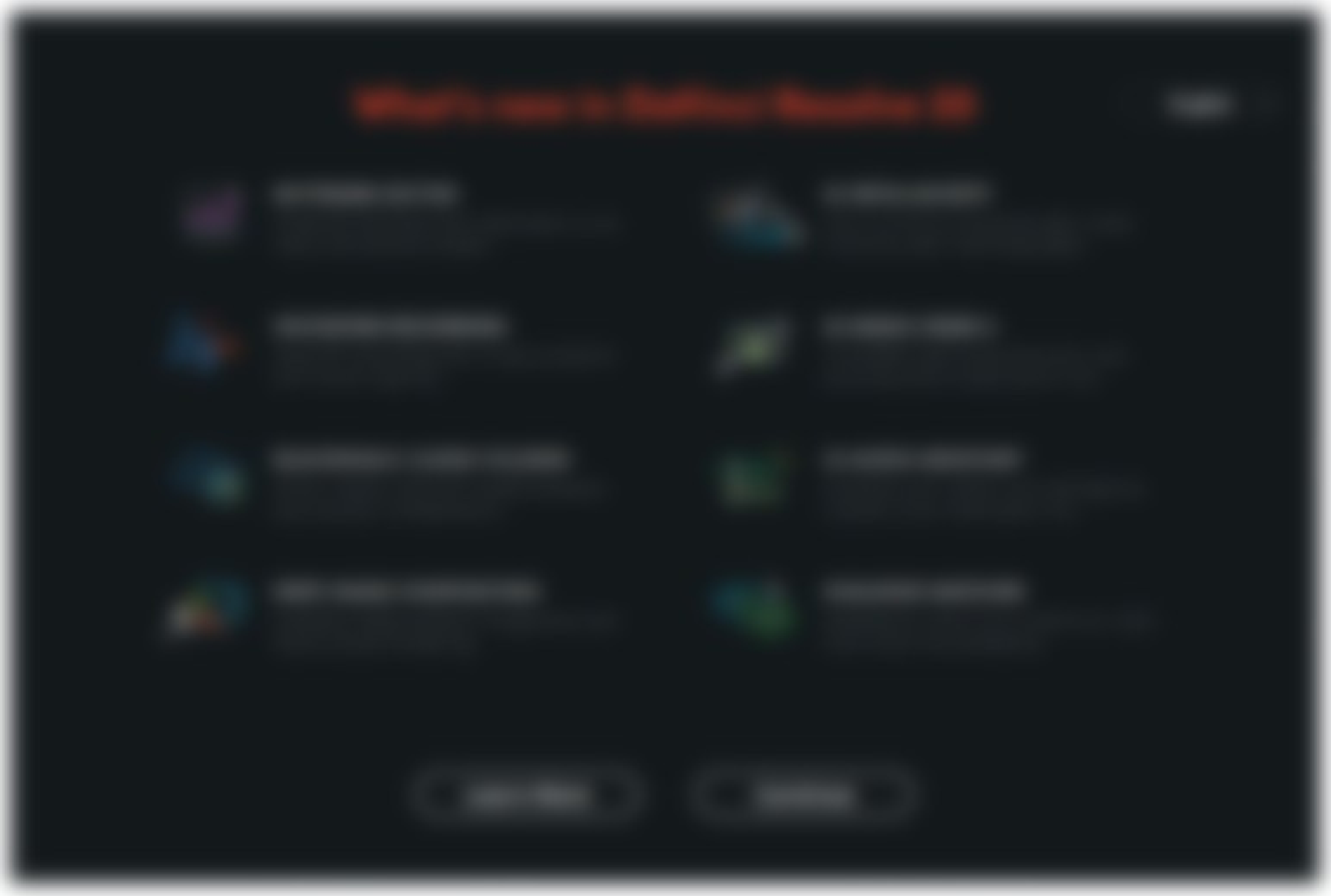
DaVinci Resolve 20 Quick Setup

When DaVinci Resolve 20 is successfully installed, you can launch the application for the first time.

macOS: users will find the DaVinci Resolve application in their Applications folder. Double click the DaVinci Resolve folder, and then double click the DaVinci Resolve application. Alternatively, you can use Launchpad or Spotlight search to locate and launch DaVinci Resolve.

Windows: users will find a shortcut has been added to their Desktop. Alternatively, click the Start menu, and search for "DaVinci Resolve" and press Enter to launch the application.

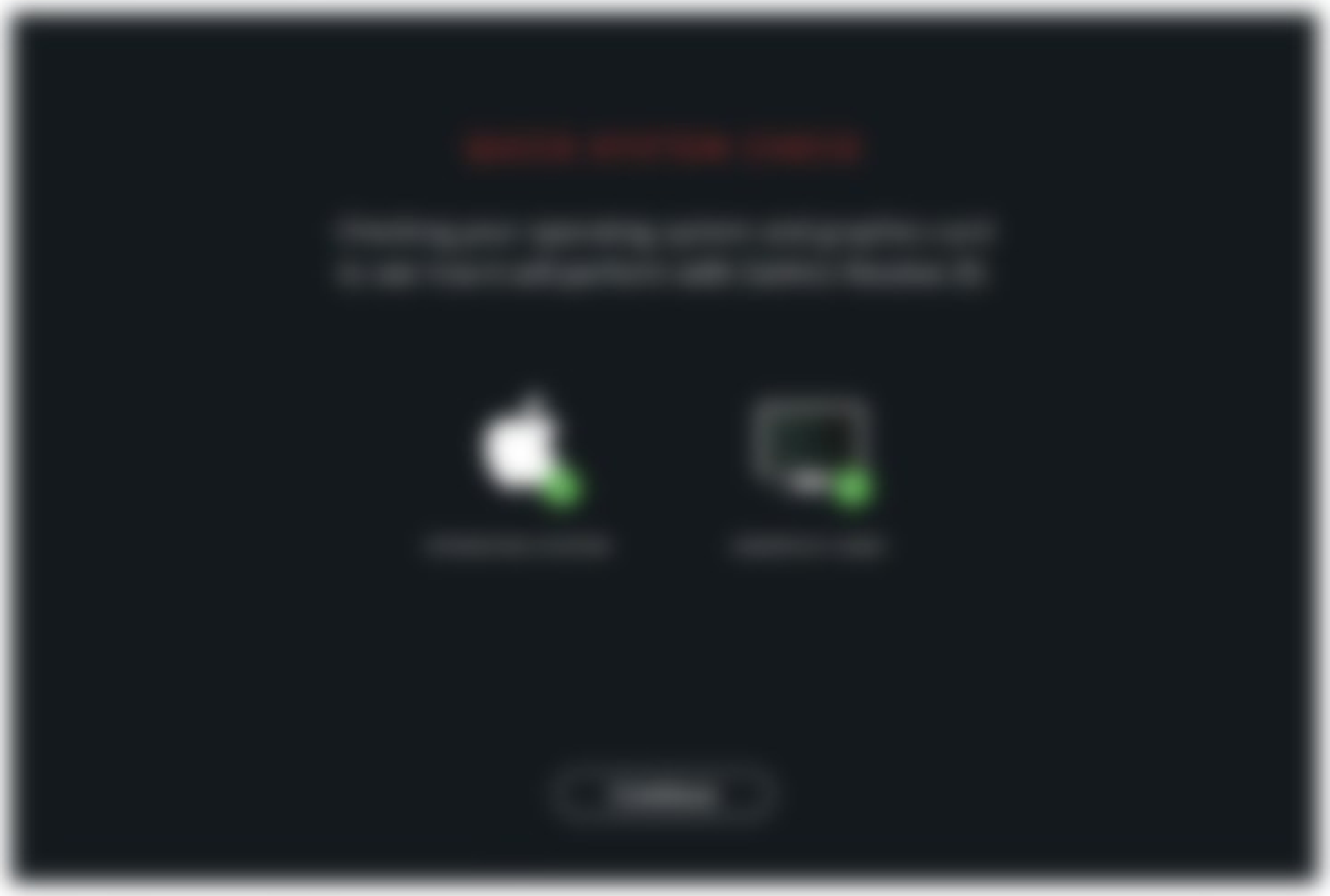
When DaVinci Resolve 20 opens for the first time, you'll see a Welcome splash screen detailing the new features available in the current version.



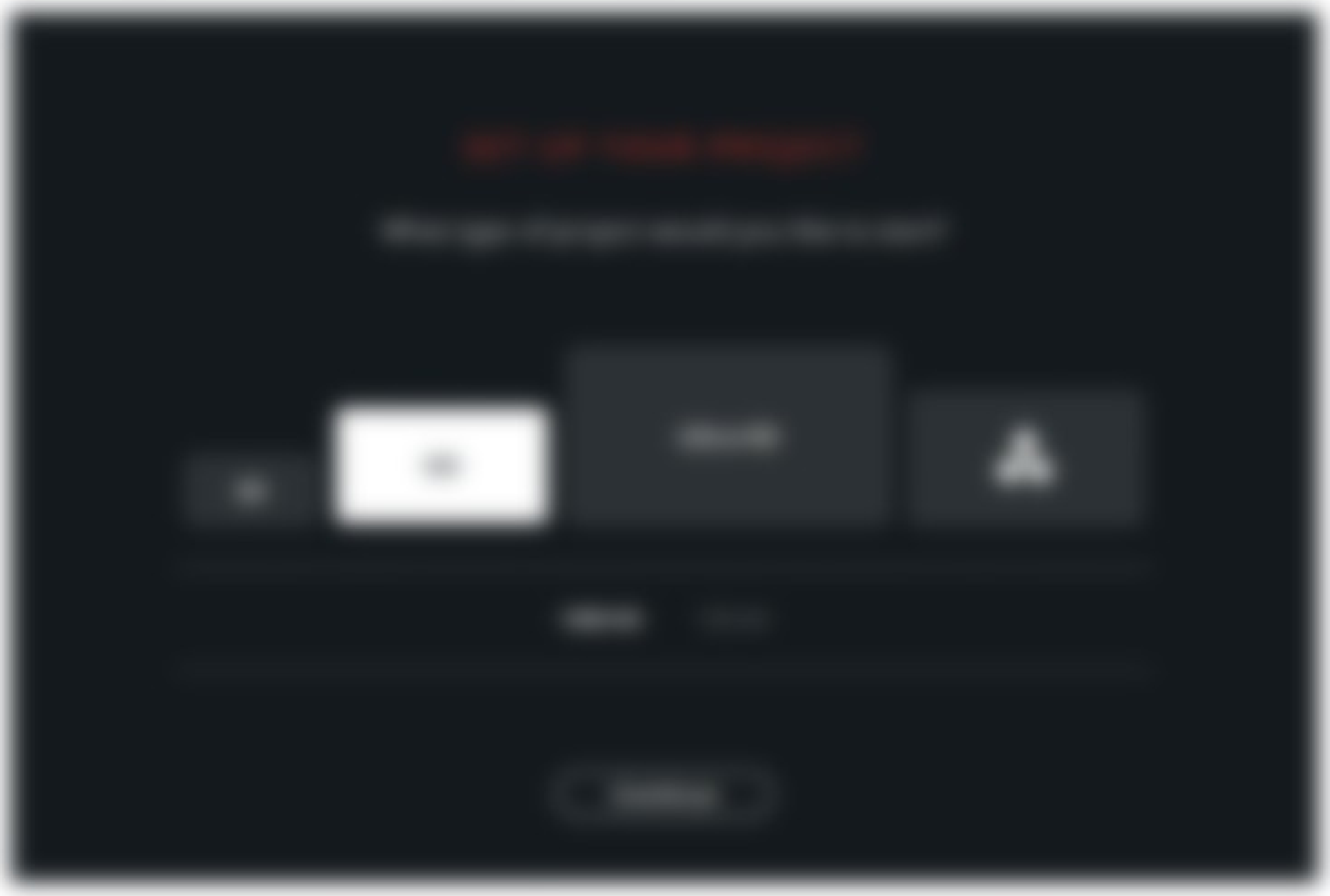
[illegible] If required, you can change the language used. You can also learn more about these and hundreds of other amazing features available in DaVinci Resolve [illegible] by clicking Learn More. Otherwise, click Continue.

Next, you are invited to go through the Quick Setup process. Experienced users can skip this process by clicking 'Skip and Start Right Now' but new users are advised to follow this process. It will only take a couple of minutes and is useful in understanding how Resolve is working.

- Click the Quick Setup button.

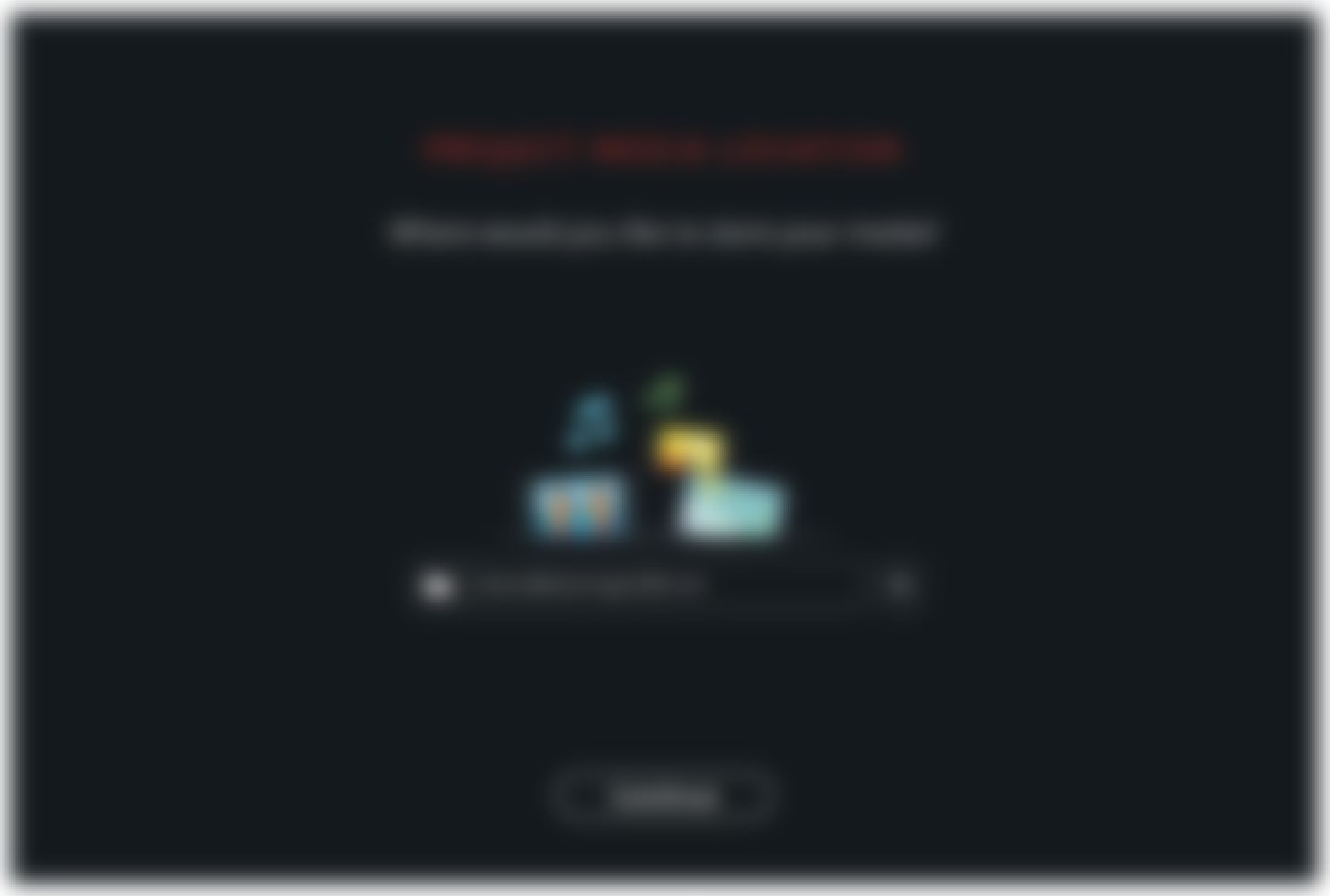


- DaVinci Resolve will check your system to ensure its operating system and graphics card will perform well. If both pass this test, click Continue.



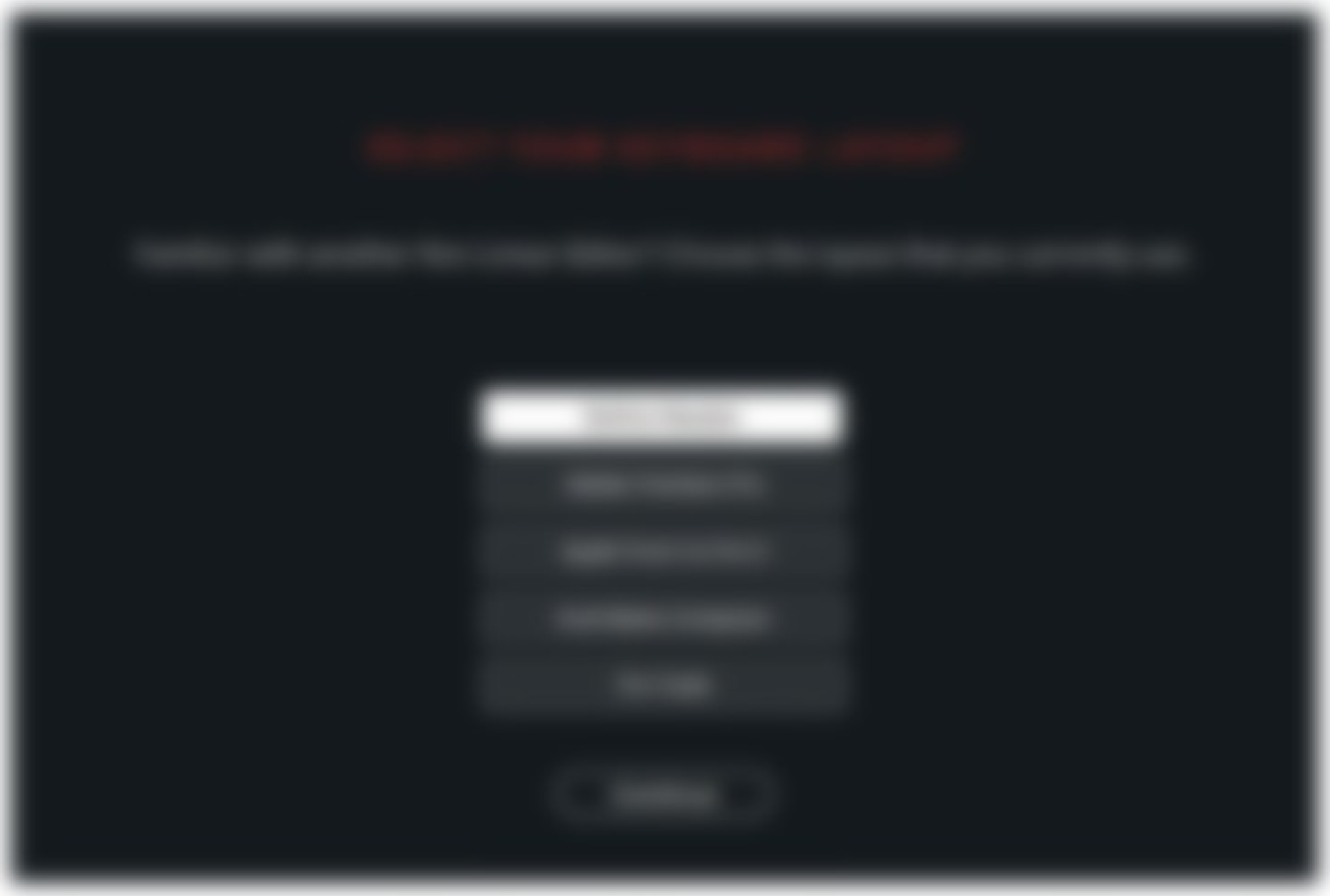
Next, you will be asked what type of project you would like to begin. DaVinci Resolve supports projects at different resolutions, from Standard Definition (SD) and High Definition (HD) to Ultra High Definition and beyond.

- If you know the resolution you commonly work with, you can set that here. Otherwise, leave the resolution set to 1080 HD and click Continue.



The next screen asks where you would like to store your media. This does not refer to the video, audio, and graphics files you'll edit and grade, but rather the ancillary files Resolve will need to create as you're working. This location is commonly referred to as a "scratch disk" and by default is set to your current user's Movies folder (macOS) or Videos folder (Windows).

- Leave this set to the default location and click Continue.

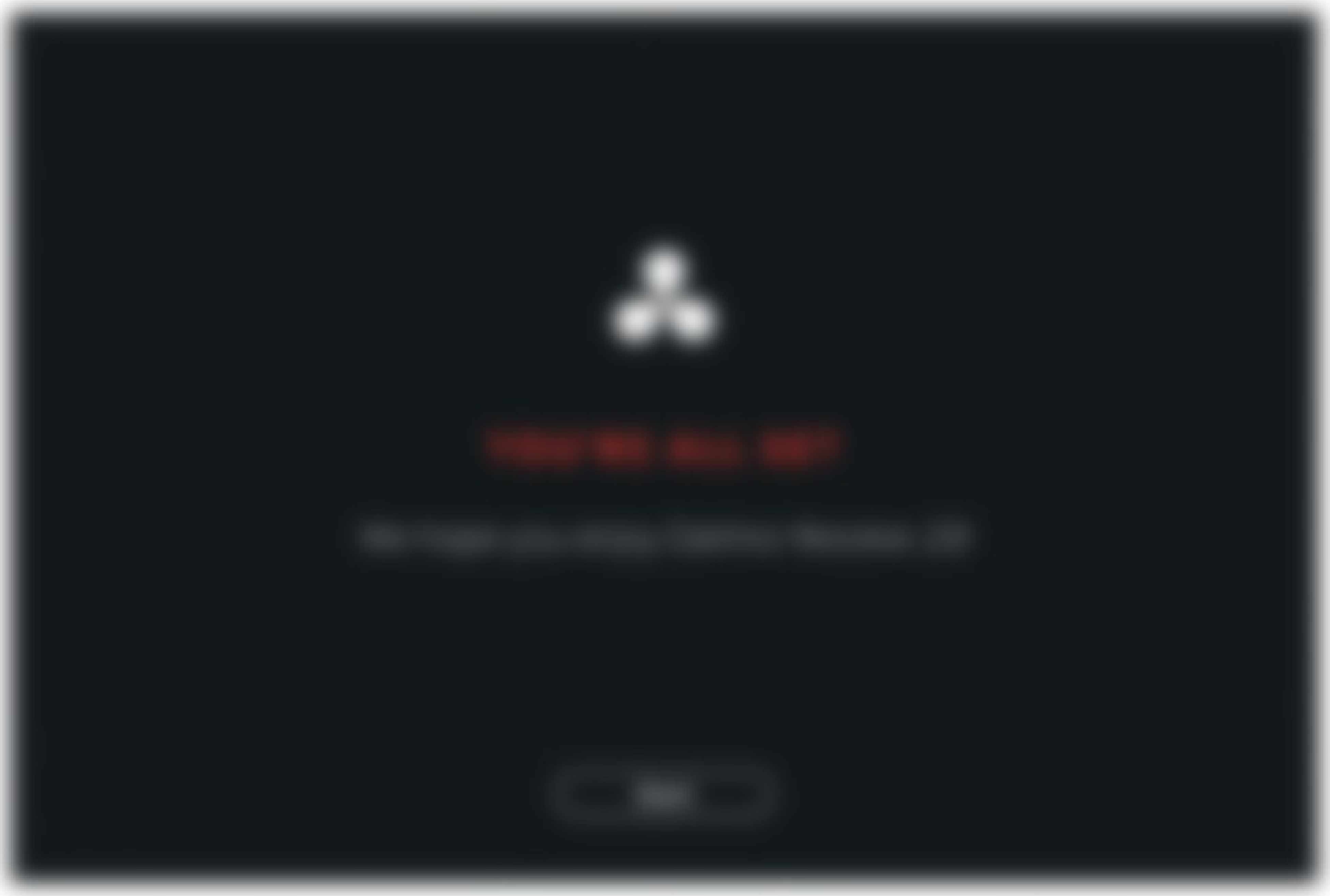


SELECT YOUR KEYBOARD LAYOUT

Familiar with another Non Linear Editor? Choose the layout that you currently use.

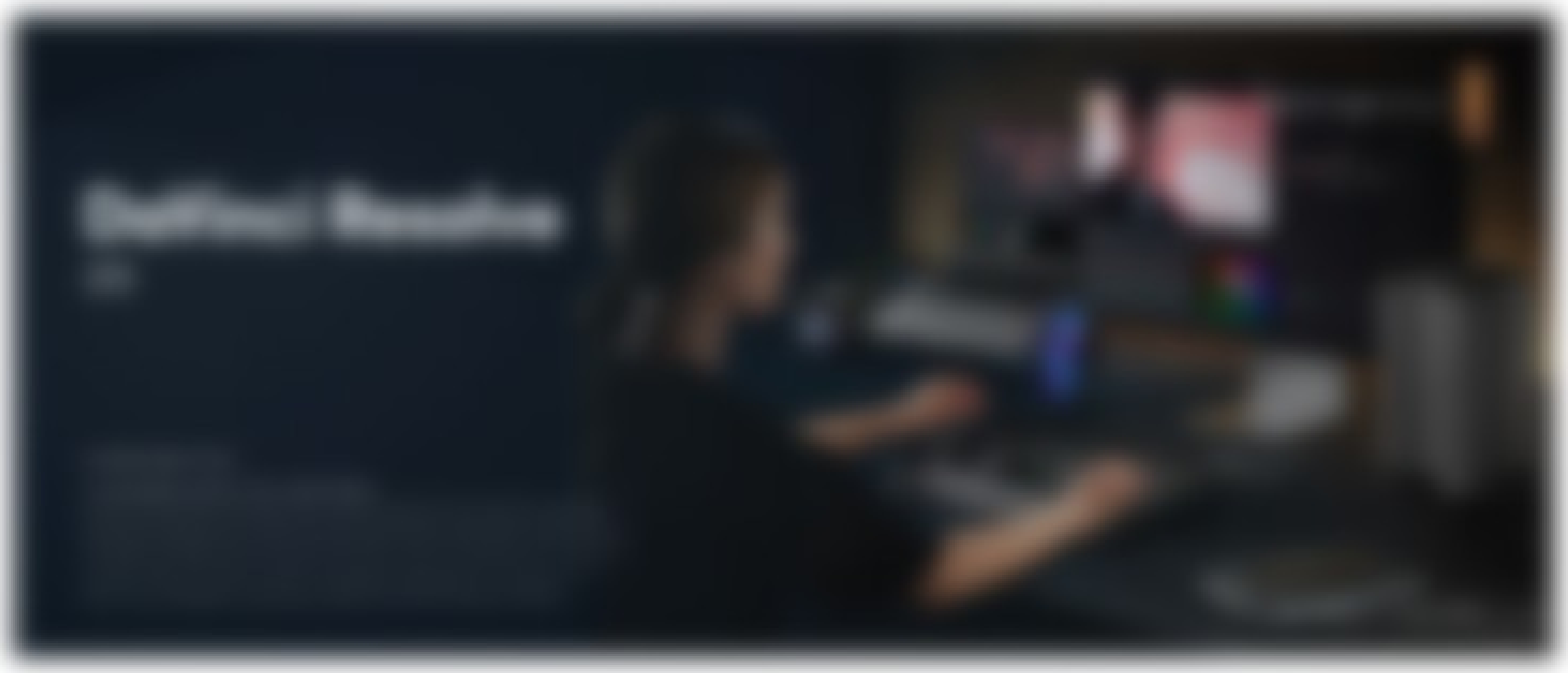
On the next screen, you will be asked which keyboard layout you would like to use. This is specifically relevant if you're familiar with using another nonlinear editor. However, throughout this Editor's Guide you will be introduced to keyboard shortcuts that use the DaVinci Resolve keyboard layout. So if you change the layout at this point, you may find those shortcuts won't work.

- For now, leave the layout set to DaVinci Resolve and click Continue.



Congratulations! You have completed the Quick Setup process and have changed precisely nothing in terms of DaVinci Resolve's default setup. Nevertheless, you have also gained an insight into some aspects of using DaVinci Resolve that will serve you well as you continue learning about the application and how it uses your system.

- Click Start to launch and begin enjoying DaVinci Resolve 20.



Once loaded, DaVinci Resolve will open to the cut page, which is the default starting page for all projects. However, this is not the usual place to begin working with DaVinci Resolve. Instead, you should now exit the application in readiness to begin the first lesson in this book.

- Choose DaVinci Resolve > Quit DaVinci Resolve or press Command-Q (macOS) or Ctrl-Q (Windows).

  DaVinci Resolve 20 will close.

Get the Lesson Files

To perform the steps detailed in the exercises throughout this book, the Editor's Guide lesson files must be downloaded to your macOS or Windows computer. After you save the files to your hard drive, extract the file, and copy the folder to your Movies folder (macOS) or Videos folder (Windows).

To Download and Install the DaVinci Resolve Lessons Files

When you are ready to download the lesson files, follow these steps:

1. Open a web browser on your Windows or macOS computer.
2. In the address field of your web browser, type www.blackmagicdesign.com/products/davinciresolve/training.
3. Scroll the page until you locate The Editor's Guide to DaVinci Resolve 20.
4. Click the Lesson Files Part 1 link to download the media. The file is roughly 14 GB.
5. After downloading the zip file to your macOS or Windows computer, open your Downloads folder and double-click R20 Editors Guide.zip to unzip it if it doesn't unzip automatically. You'll end up with a folder named R20 Editors Guide that contains all the content for this book.
6. From your Downloads folder, move or copy the R20 Editors Guide folder to a convenient location on your computer or an external hard drive. If in doubt, use your user's Movies folder (macOS) or Videos folder (Windows).

Once you have DaVinci Resolve 20 installed and the media files downloaded, you are ready to begin Lesson 1.

Introducing Blackmagic Cloud

DaVinci Resolve is the world's only complete post production solution that lets everyone work together on the same project at the same time. Traditionally, post production follows a linear workflow with each artist handing off to the next, introducing errors and mountains of change logs to keep track of through each stage. With DaVinci Resolve's collaboration features, each artist can work on the same project, in their own dedicated page with the tools they need.

Now Blackmagic Cloud lets editors, colorists, VFX artists, animators, and sound engineers work together simultaneously from anywhere in the world. Plus, they can review each other's changes without spending countless hours reconforming the timeline.

Simply create a Blackmagic Cloud ID, log in to the online DaVinci Resolve Project Server and follow the simple instructions to set up a new project library – all for one low monthly price!

Once the library is created, you can access it directly from the Cloud tab in the Project Manager to create as many projects as you need – all stored securely online. Then invite up to 10 other people to collaborate on a project with you. With a simple click, they can relink to local copies of the media files and start working on the project immediately, with all their changes automatically saved to the cloud.

Enabling Multiple User Collaboration for your project means that everyone can work on the same project at the same time – with assistants, editors, colorists, dialogue editors, and visual effects artists can now all collaborate wherever they are in the world in a way never before possible.

Media Sync with Blackmagic Cloud Store

Now you don't need to buy expensive proprietary storage that needs an entire IT team to manage! Blackmagic Cloud Store has been designed for multiple users and can handle the huge media files used by Hollywood feature films. You can also have multiple Blackmagic Cloud Stores syncing the media files with your Dropbox account so that everyone has access to the media files for the project.

To find out more about these exciting workflows, visit
www.blackmagicdesign.com/products/davinciresolve/collaboration

Lesson 1

Building the Rough Cut

Editing is so central to cinematic storytelling that director Francis Ford Coppola once said, "The essence of cinema is editing." This book explores this "essence" of cinema, as applied to the art and craft of editing and storytelling, through the robust and powerful editing features found in DaVinci Resolve.

Whether you're working on cutting the latest cinematic blockbuster, a fast-turnaround commercial spot, an episodic TV show, or an online web series, the tools, technology, and functionality available to you in DaVinci Resolve, together with the techniques discussed and demonstrated throughout this book, will help you cut and refine your footage to achieve your vision.

Time

This lesson takes approximately 70 minutes to complete.

Goals

Setting Up a Project 2
Exploring the Project 11
Assembling the Soundbites 20
Working with the Subclips 27
Insert and Append at End Edits 32
Placing the Soundbites 40
Adding the B-Roll Footage 49
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The edit page supports this approach to nonlinear editing that has been battle-tested by film and TV editors around the world for decades. In this lesson, you'll learn the basics of these techniques to build a rough cut for a 1-minute social media promo. In Lesson 2, you will then learn how to refine this rough cut, and in subsequent lessons, you'll learn techniques and approaches you can apply when cutting dramatic and multicamera footage.

So, make yourself comfortable as the opening titles roll…

Setting Up a Project

Editing is often an iterative process that requires you to build a coherent story from disparate pieces of footage. While there are many generally accepted workflows for assembling these sounds and pictures, unfortunately, there is no definitive "right way" to edit; every step the editor takes has its own unique aims, considerations, and consequences.

With that said, you'll start your exploration of editing in DaVinci Resolve by putting together a rough cut of a 1-minute social media promo for independent New Mexico outdoor clothing brand Organ Mountain Outfitters. Along the way, you'll gain an appreciation of some of the thought processes, insights, considerations, frustrations, and happy accidents that often occur daily in edit suites worldwide.

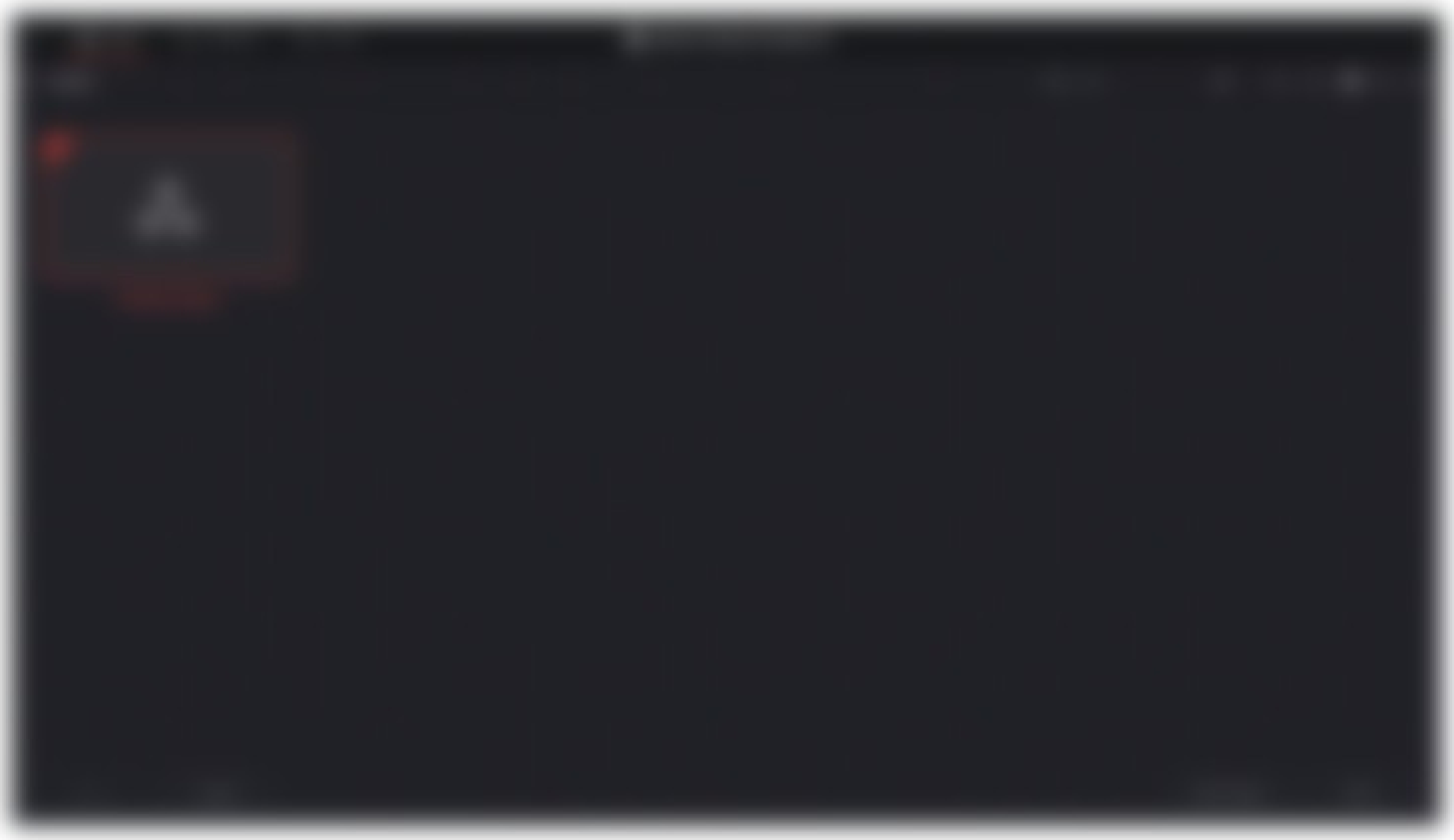
Of course, the editing process is only the tip of the post-production process. In almost all instances, much work has been done behind the scenes in preparing the media, setting up, and organizing the project before a single frame is actually cut. These roles are often carried out by data wranglers or digital intermediate technicians on location, as well as media managers or edit assistants in the post house. On smaller scale productions, this work might fall to the editors themselves. While you will gain an insight into these roles and processes in later lessons, you will start this lesson by using a project that has much of the work already completed for you so you can see how these important steps support the creative work of editing.

To begin with, and to keep the projects used in this book separate from any of your other current projects, you will create a new local project library on your system.

Project libraries are collections of projects that can reside locally on your computer, on a network location that can be shared by people on the same network, or in the Blackmagic Cloud, where access to project libraries can be restricted. Network and cloud-based project libraries also have the advantage of collaborating so that multiple DaVinci Resolve users can work on the same project simultaneously without the need for complex and expensive IT and hardware infrastructure.

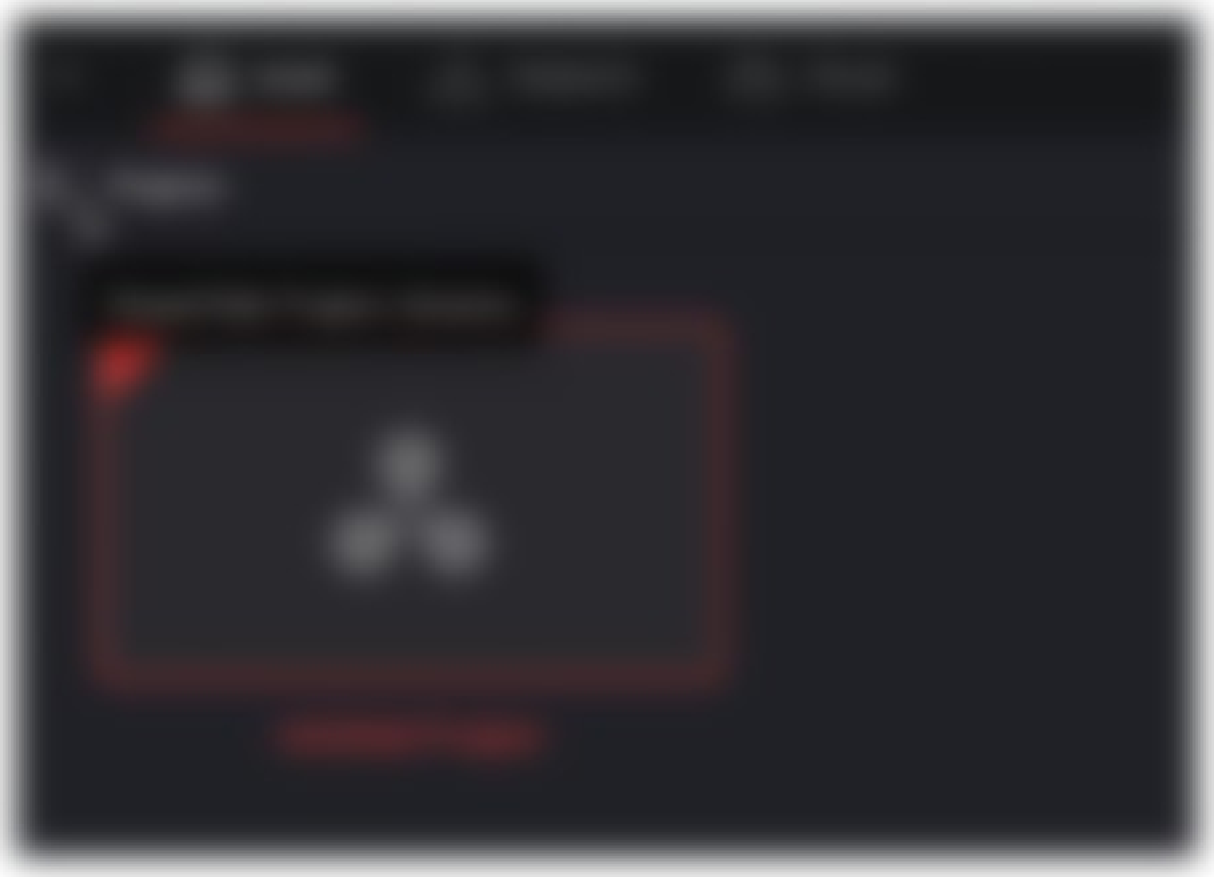
However, for the moment, you will create and work with a local project library.

1. Open DaVinci Resolve to display the Project Manager.

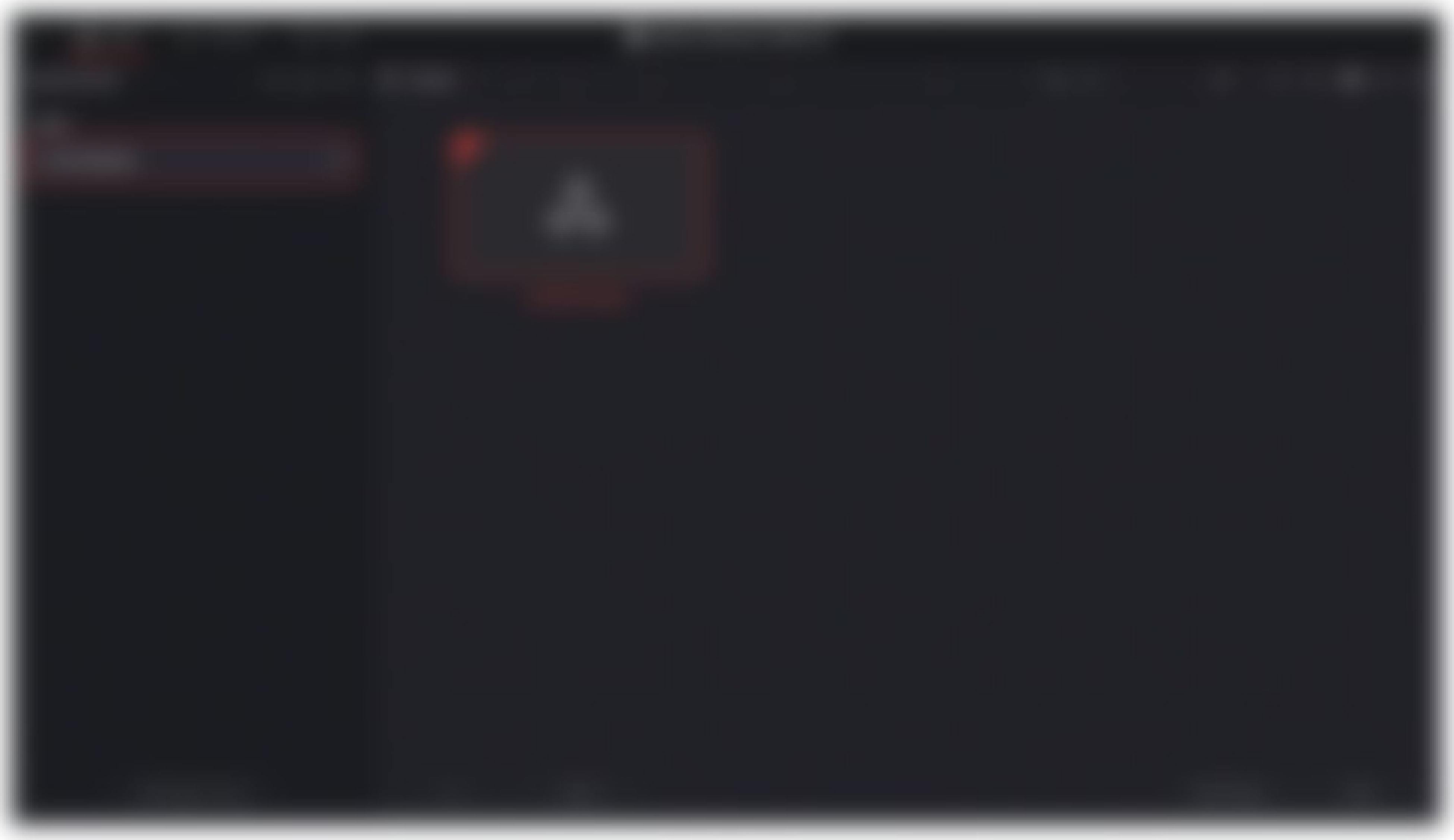


NOTE If the "What's new in DaVinci Resolve 20" splash screen appears, click Continue and then click Skip and Start Right Now on the Quick Setup screen. More details about the Quick Setup process can be found in *The Beginner's Guide to DaVinci Resolve 20*.

2. Ensure that Local is selected at the top of the Project Manager, and then click the Show/Hide Project Libraries button.

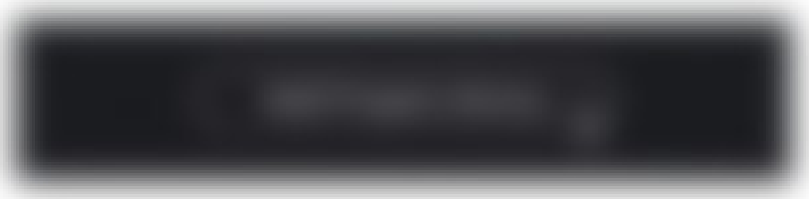


The list of local project libraries connected to your DaVinci Resolve system opens.

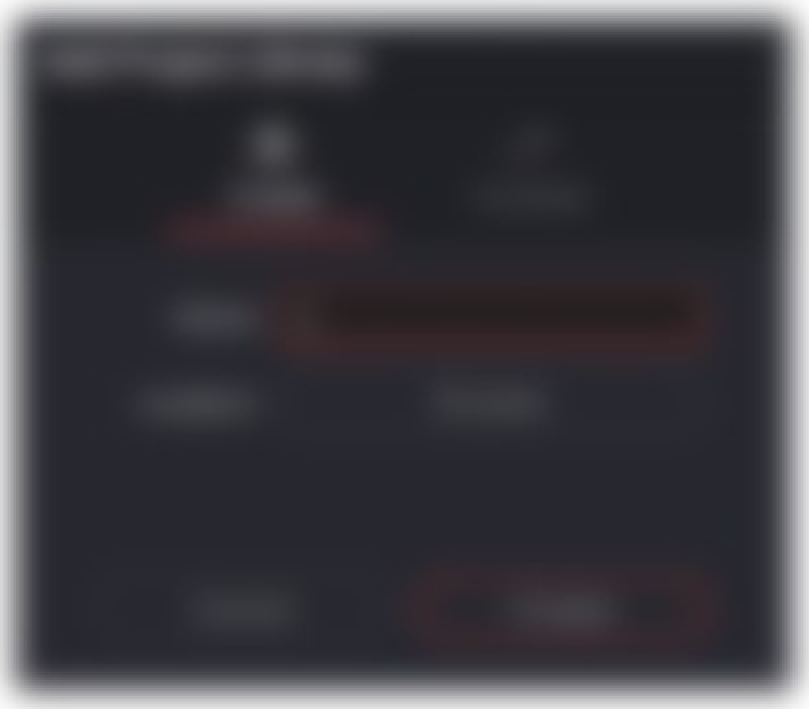


NOTE If you haven't yet created any project libraries, you will see only the default local project library, called "Local Database." In versions of DaVinci Resolve prior to version 18, project libraries were called databases.

- Click the Add Project Library button at the bottom of the project libraries list.



The Add Project Library window appears.



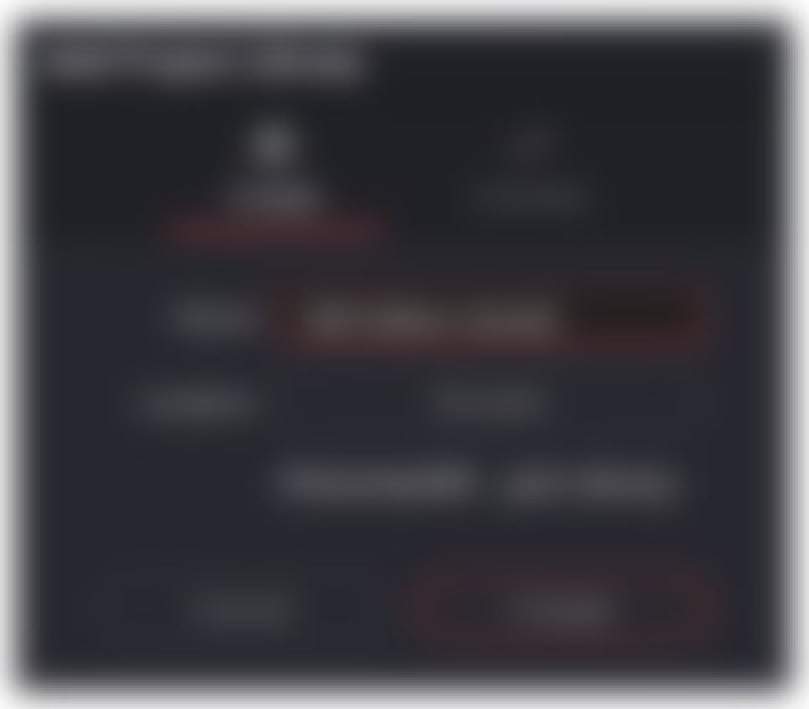
- In the Add Project Library window, click the Name field, type **R18 Editors Guide**, and then click the Browse button.

You'll need to select (or create) an empty directory on your system for a new project library. For the lessons in this book, you can use the folder provided in the downloaded R20 Editor's Guide folder.

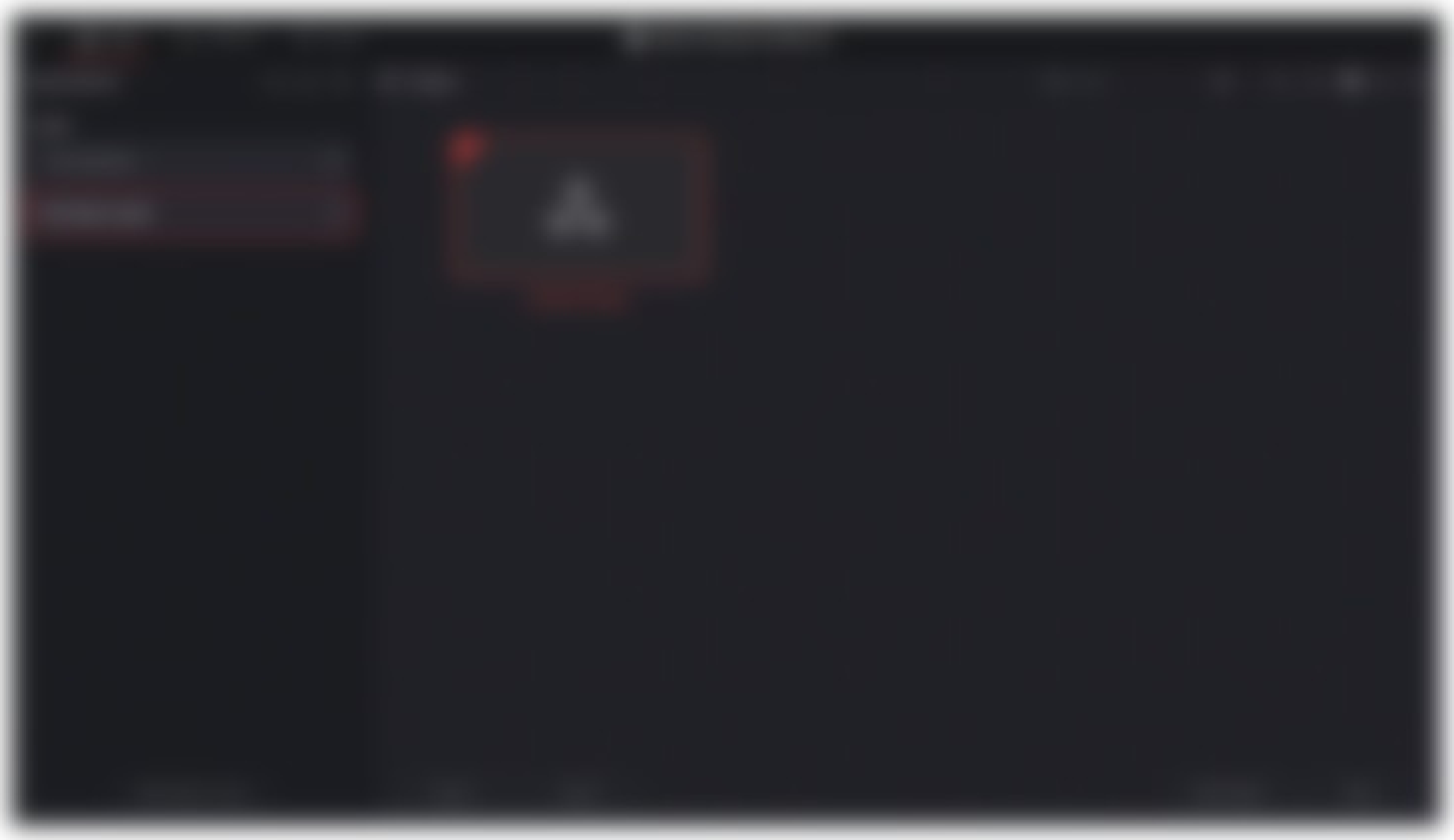
- Navigate to R20 Editor's Guide / Editor's Guide Project Library and click Open to select this folder as the location for your new project library.

> **NOTE** If this is not your first time working through the exercises, and you've already created a project library in this folder, simply create a new folder in the R20 Editor's Guide folder and choose that as the location for your new project library.

- In the Add Project Library window, click Create to create your new project library.



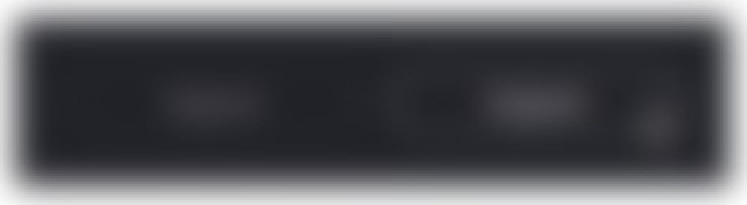
The new project library appears in the list of project libraries connected to DaVinci Resolve.



Tip To switch project libraries, simply click the desired project library from the list to reveal the projects contained within that library. Projects can be copied from one project library to another using the Copy Project To button at the top of the Project Manager.

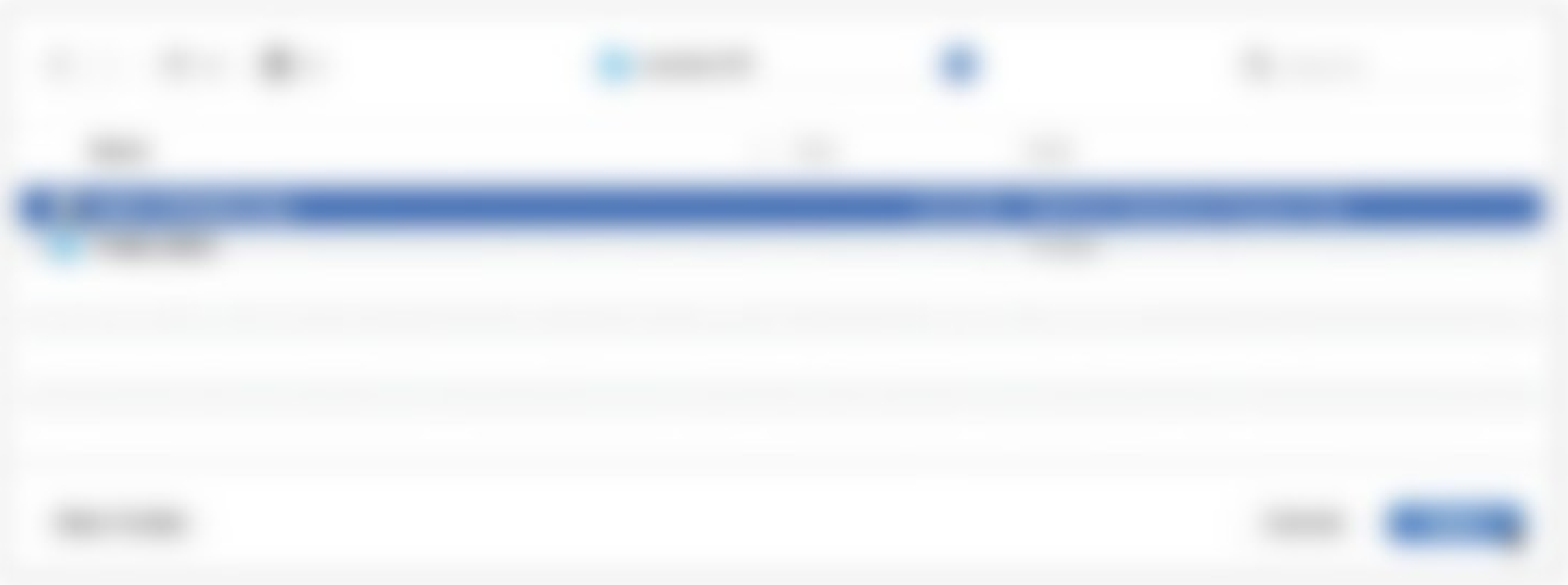
Having successfully created a new empty project library, you can import the project file needed for this first lesson.

1 Click the Import button.



2 Navigate to R20 Editor's Guide > Lesson 01.

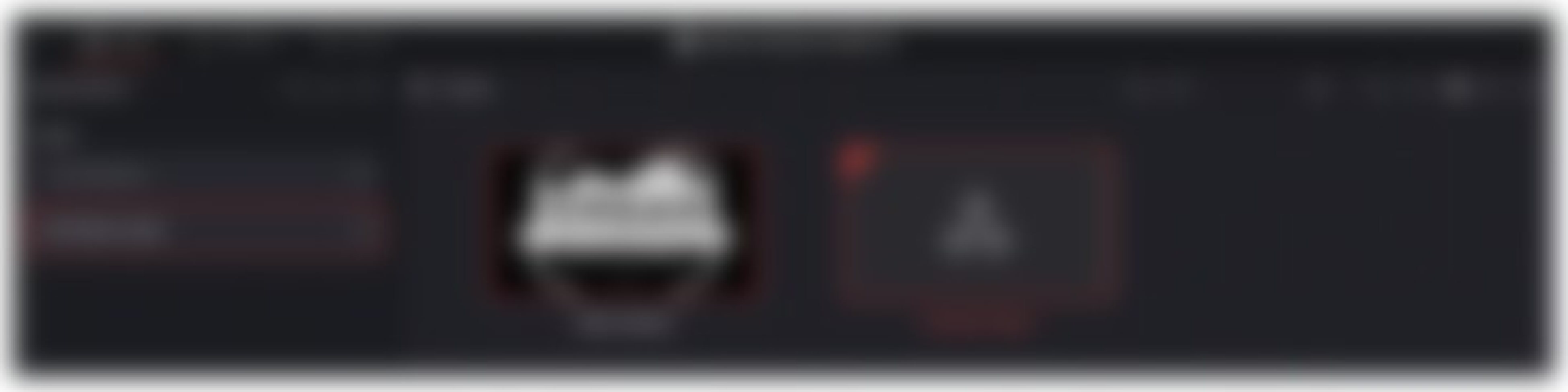
This folder contains a file called Indie Thriller.drp. Files using the extension .drp are DaVinci Resolve Project files. These files contain all the project's settings, organization, imported clips, and any timelines containing edited clips. However, due to their small file sizes, .drp files do not contain the media you edit with.



Tip Alternative ways of importing a project include dragging .drp files directly onto the Project Manager, right-clicking in an empty area of the Project Manager and choosing Import Project, or choosing File > Import Project. You can also double-click a .drp file in either the Finder (macOS) or File Explorer (Windows) to import the project into your current project library and open the project automatically.

9 Select the [illegible] file and click Open.

The project is imported into the project library and appears in the Project Manager.



Note that DaVinci Resolve does not "open" project files directly from your computer's directory. Instead, imported .drp files are copied into the current project library. It is this imported project that you will be able to open and make changes to, not the original .drp file you selected for import. Clicking the Export button allows you to export any selected project(s) from the project library as individual .drp files, but any further changes to the project can only be made to the project in the project library.

10 Double-click the [illegible] project to open it.

The project opens in DaVinci Resolve on the page last used in the application.

11 If necessary, click the Edit Page button.

12 Select Workspace > Reset UI Layout to reset the edit page workspace to the default configuration.

You have successfully imported and opened a project, but before you begin editing the clips in this project, you'll need to relink the clips in this project to their media files on your computer's hard drive.

Relinking the Media Files

The reason why clips may go offline is often because the storage containing the associated media files is unavailable, or the media files have been moved to a different source folder or drive. To prevent this from happening, once you have imported the clips, you should leave them in their original locations on your computer. If you need to move them for any reason, you can use DaVinci Resolve's Media Management feature. You'll learn more about media management in Lesson 8, "Delivering Projects."

In the meantime, DaVinci Resolve makes it easy to know if any of your project's media files are unexpectedly offline, allowing you to quickly relink them.

1 In the top left of the interface, above the media pool, click the red Relink Media button.

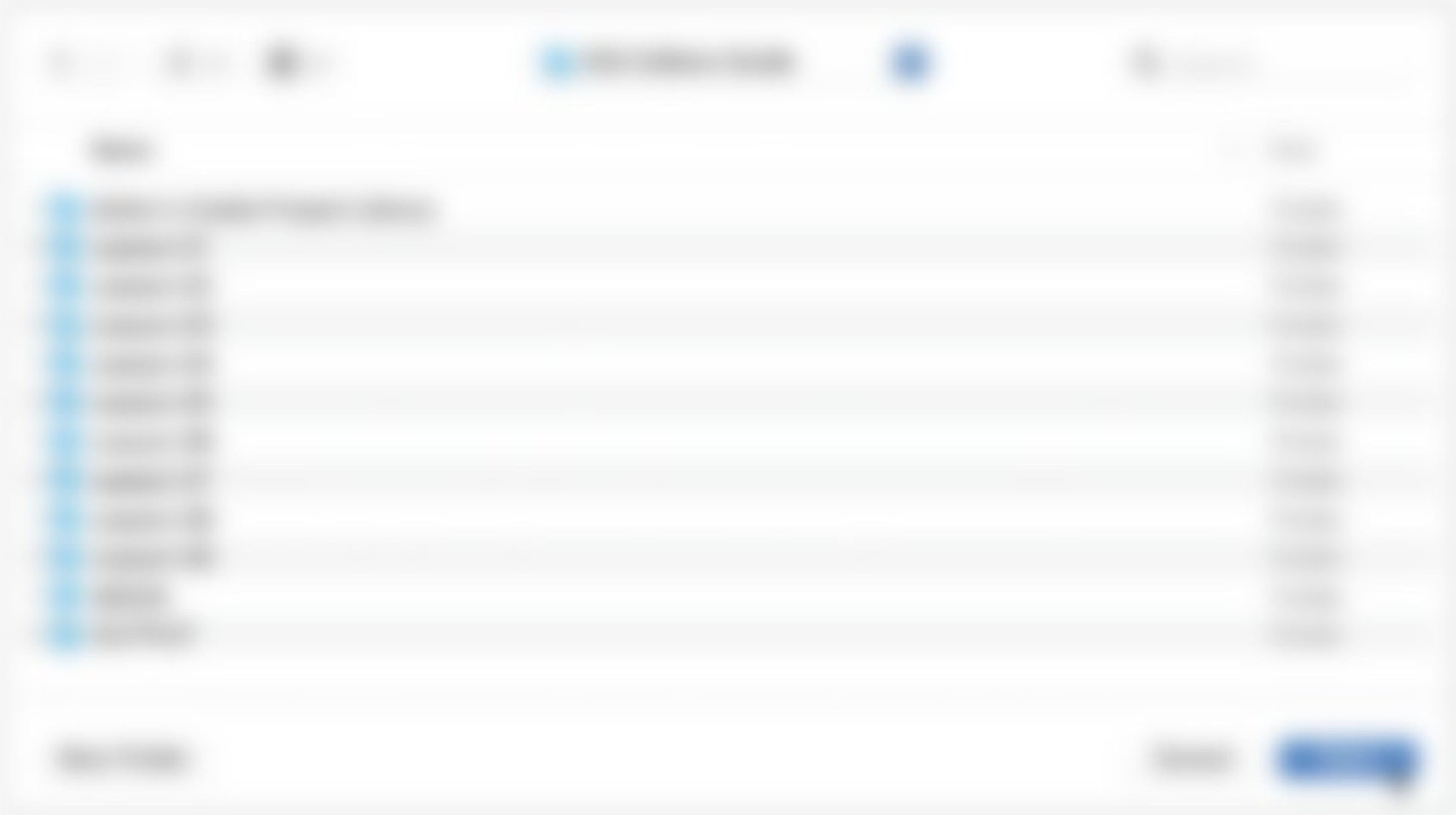
NOTE The Relink Media button will only appear red if there are any media files in the project that are unexpectedly missing. Media that has been deliberately unlinked is not included.

The Relink Media window appears, telling you how many files are currently missing.

Because this project was originally created for you, the media was stored on a specific media drive for that system. To deliver the files for training, the media has been copied and repackaged as part of the R20 Editor Guide files. Specifically, the media for the [illegible] PROMO project is stored in R20 Editor Guide / [illegible] / [illegible].

TIP Place your cursor over the location where Resolve expected to find the files. For more details about the original location of the files, you'll need to [illegible] them.

- Click the Locate button, and in the file window that appears, navigate to the R20 Editors Guide folder and click Open.



Resolve automatically searches and recognizes the file structure inside this folder.

Once the missing clips have been located, DaVinci Resolve relinks the media files to their new path.

NOTE In case Resolve cannot find the appropriate files, you can initiate a more comprehensive search from the Relink Media window using the Disk Search button. Be aware, though, that this search may take much longer if you have very large hard drives with lots of media files to search through.

Now that the clips have been successfully relinked, you can begin reviewing the first project.

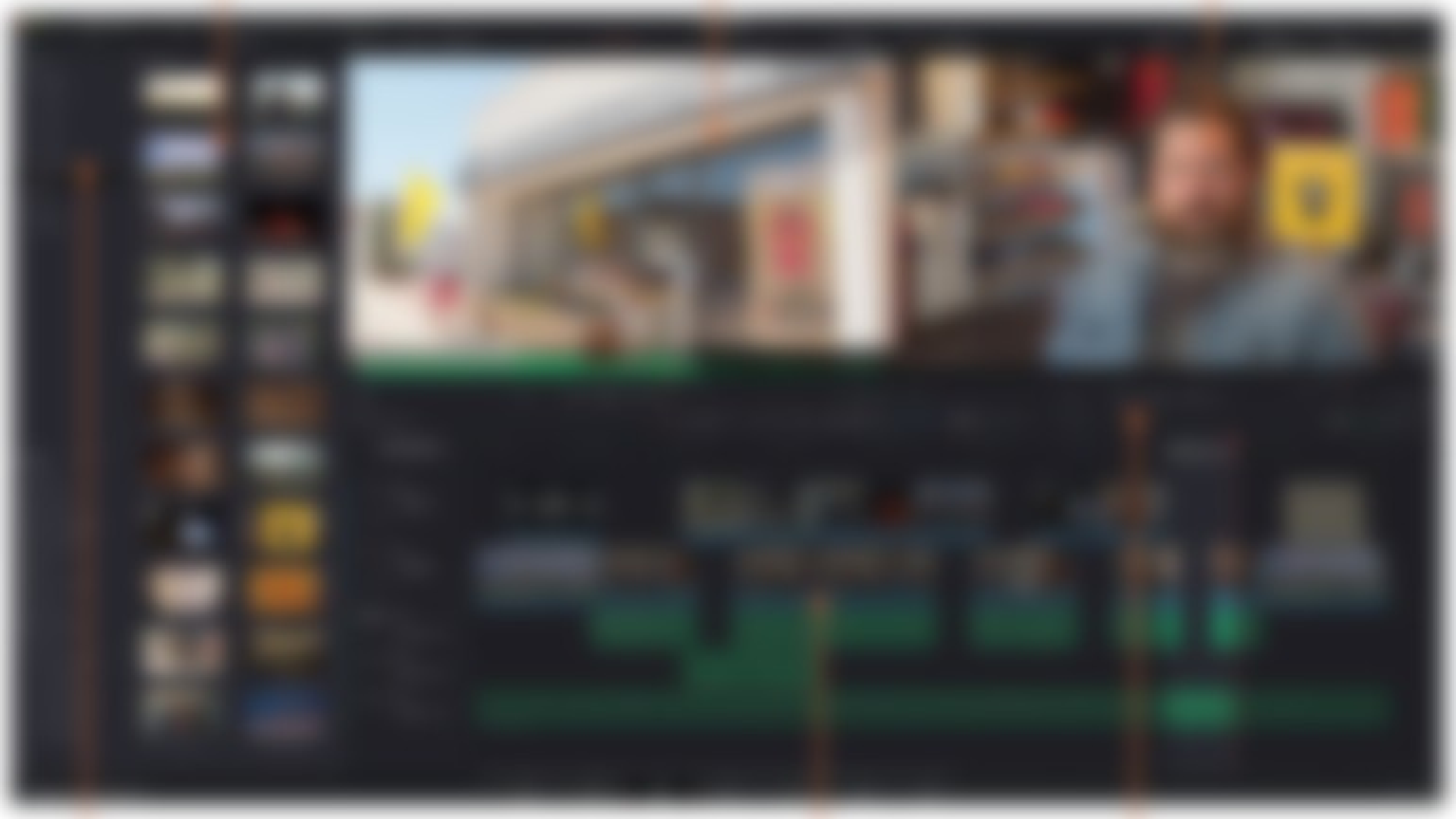
Exploring the Project

Whether you are new to video editing or you are already a seasoned professional looking to add DaVinci Resolve to your editing arsenal, the edit page is where you'll find all the tools you need to craft your story.

Media Pool – displays clips in the currently selected bin

Source Viewer – displays the unedited footage

Timeline Viewer – displays edited clips in the timeline



Bin List – allows you to easily select a bin to view its contents

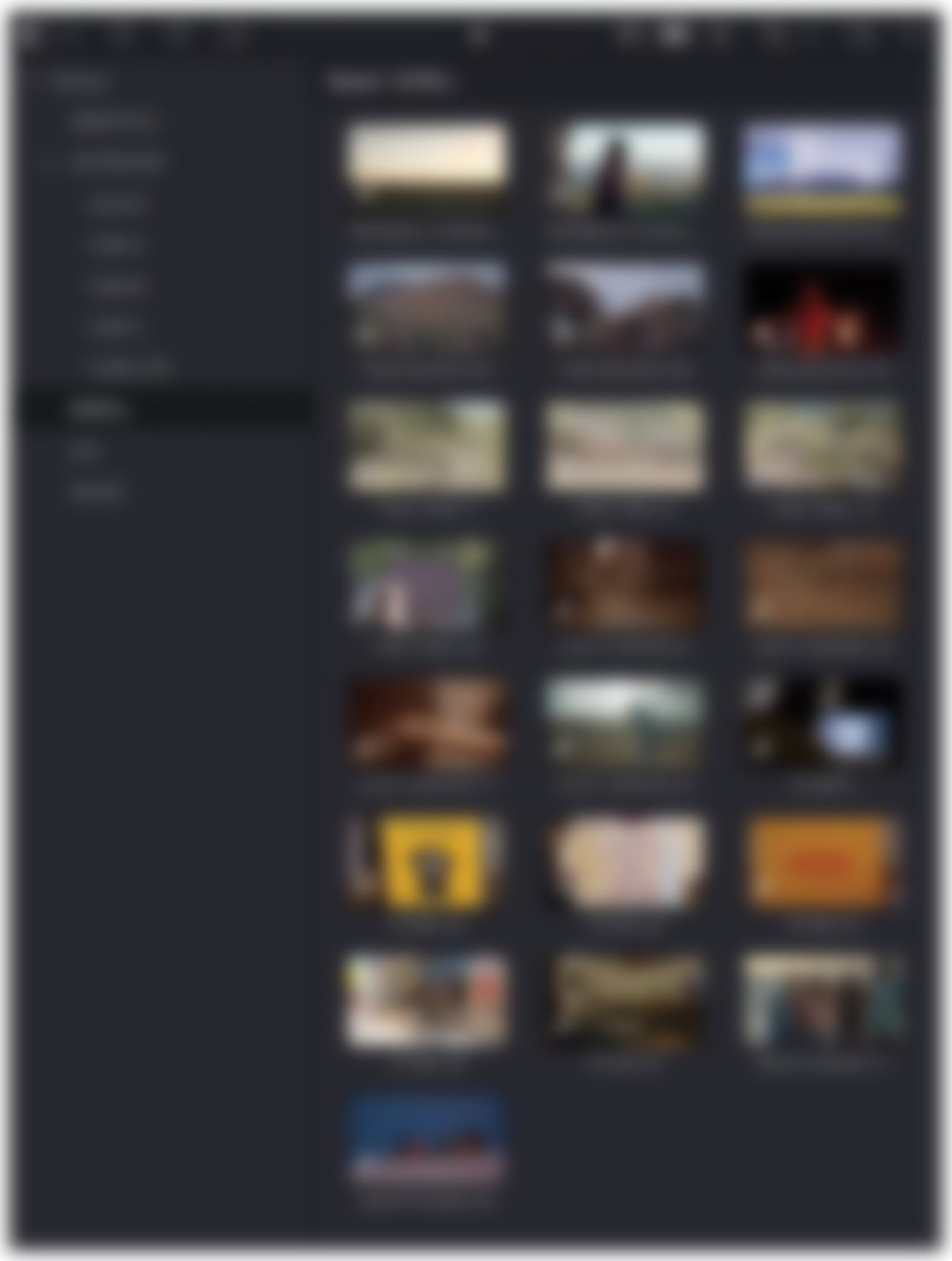
Timeline – where you to arrange and adjust clips used in the current edit

Timeline Toolbar – Selects timeline editing modes, editing functions and timeline zoom settings

As mentioned previously, the project for this lesson has already been set up and organized for you using a variety of techniques that you'll explore in later lessons.

The media pool is where imported video, audio, and graphic files are stored and organized in bins. Every project has a Master bin into which all the other project elements are placed. Although bins can be accessed in the main media pool window, they are also displayed hierarchically in the Bin List column, with the Master bin located at the top.

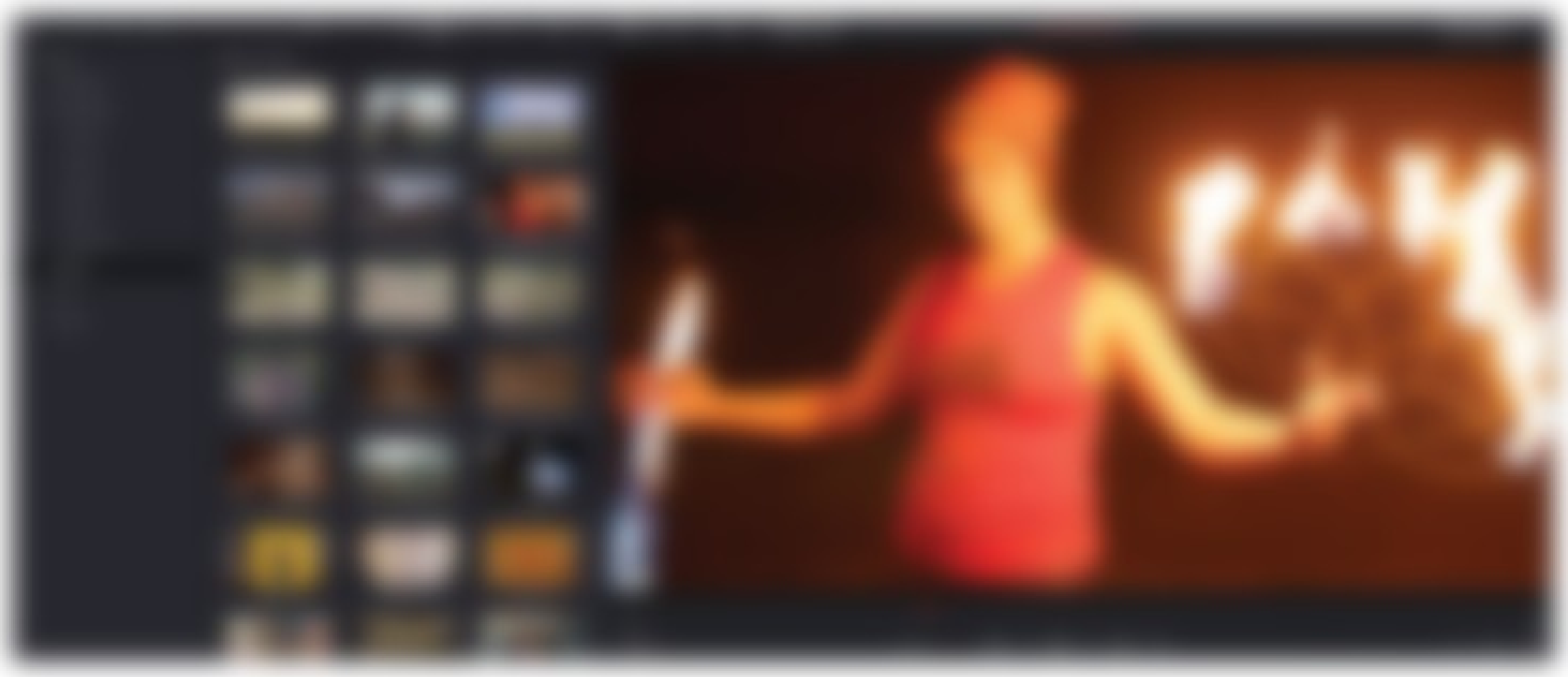
- Select the B-ROLL bin to see the clips contained in this bin in the main media pool window.



By default, clips are displayed as a series of thumbnail images, with each image representing the first frame of the clip.

TIP You can use the slider at the top of the media pool to resize the thumbnails to make them larger or smaller, according to your preferred view. You can also resize the media pool slightly by dragging the right side of the media pool panel.

Move your mouse pointer over the clips in the B-ROLL bin to preview each one in the source viewer to the right of the media pool.



In DaVinci Resolve, this process is called Live Media Preview. It is useful for quickly scrubbing through lots of footage in the media pool to quickly preview the clips without having to deliberately open each clip in the source viewer.

NOTE You can turn off Live Media Preview by clicking the Options (...) menu in the top right of the source viewer and deselecting Live Media Preview.

By default, as you are live previewing the clips in the bin, you are no doubt also hearing the audio being scrubbed through too. This can be a little distracting, although very useful on occasion. Thankfully, it's easy to toggle audio scrubbing off and on.

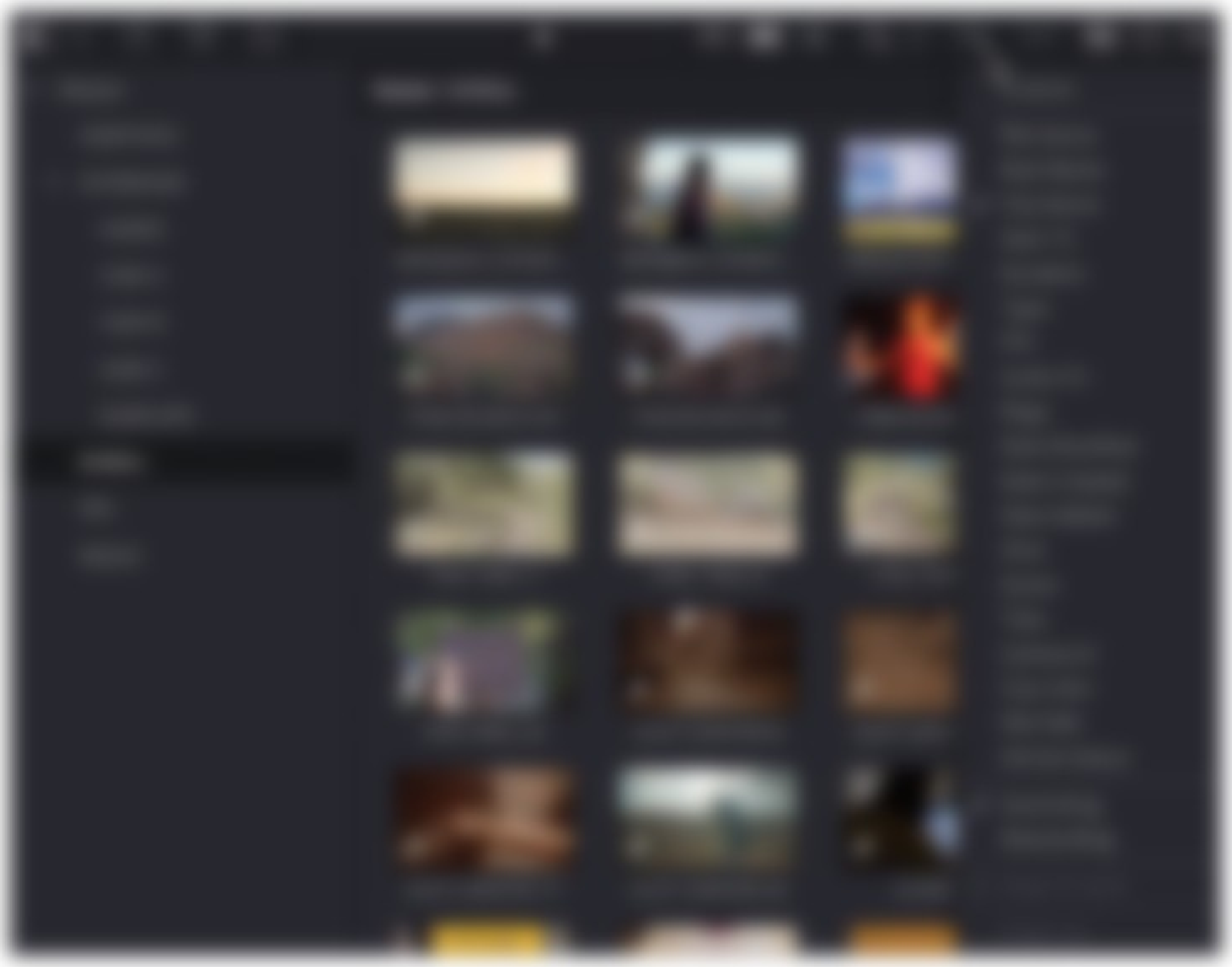
TIP You can easily identify clips containing audio by the presence of the audio icon in the bottom left of a clip's thumbnail.

- Choose Timeline > Audio Scrubbing or press Shift-S to disable audio scrubbing.
- Live preview some of the clips with audio again to verify that audio scrubbing has been disabled.

NOTE If you prefer to work with audio scrubbing enabled or simply want to enable audio scrubbing at a later time, simply choose Timeline > Audio Scrubbing or press Shift-S again.

You can also adjust the sort order of the clips in the media pool.

- Click the Sort menu at the top of the media pool.



Currently, the sort order of these clips is based on the name of the clips, in ascending alphanumerical order.

- Choose Start TC (Timecode).

The clips are now listed in chronological order from the earliest timecode value.

TIP Choose Custom from the Sort menu to arrange the clip thumbnails in whichever order you want in the media pool for easier storyboarding of your clips.

7 Click the Sort menu again and choose Clip Name to return the sorting based on the clips' names.

NOTE For this project, the names of the clips are different from the source filenames to aid the editing process. You will learn more about how to change clip names in Lesson 3, "Project Organization."

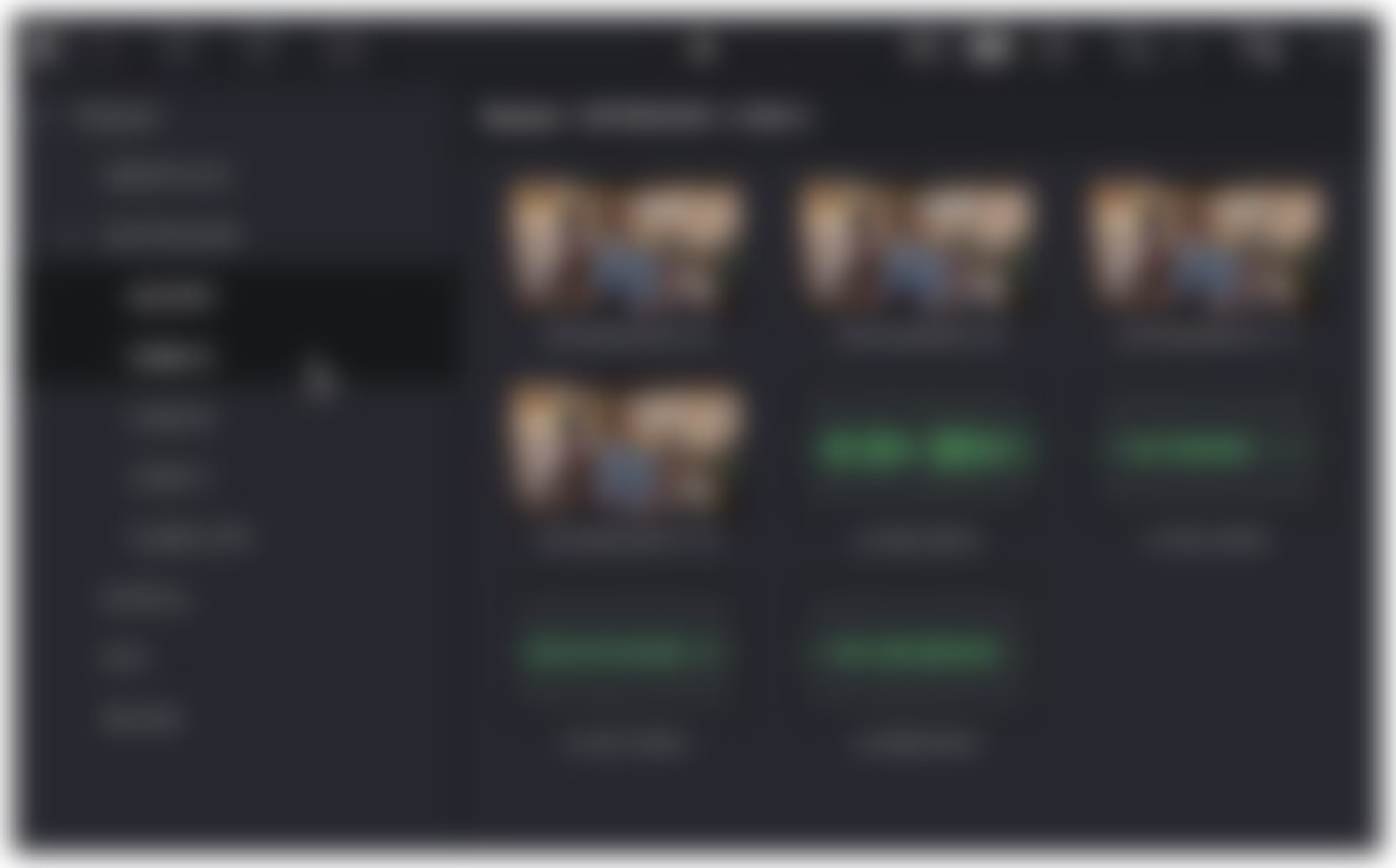
For additional levels of organization, bins can be placed inside other bins, and you can select and view the contents of multiple bins simultaneously.

8 If necessary, click the disclosure arrow to the left of the INTERVIEWS bin to reveal its contents, or select the INTERVIEWS bin to display its contents.

Inside this bin you'll see several additional bins: one for each camera used to shoot the interview (referred to as A, B, and C cameras for the purposes of this project), one for the audio clips that have already been synced to the interview clips, and one for a series of subclips that have been created to help make working with the interview easier.

NOTE You'll learn how to sync audio and video clips, create subclips, and edit multicamera footage in later lessons.

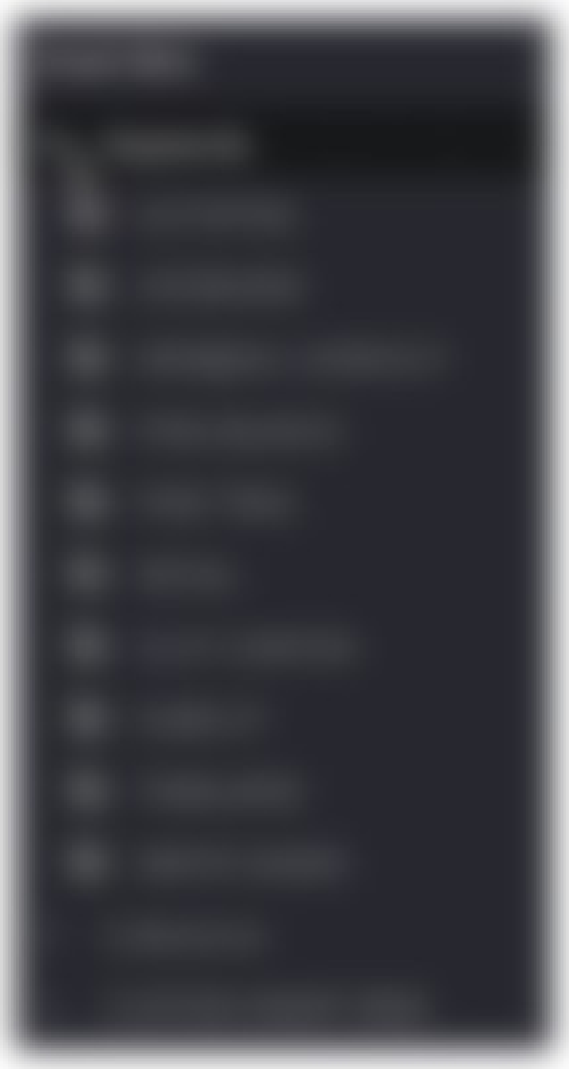
- Select the AUDIO bin and then Command-click (macOS) or Ctrl-click (Windows) the CAM A bin to display the clips of both bins together.



Being able to select multiple bins at the same time is a very useful feature of the media pool and provides a lot of flexibility when viewing your clips.

However, while bins are a useful way of organizing your footage, sometimes the sheer amount of footage you must work with can be overwhelming. That's why the media pool has additional levels of organization called smart bins, which allow you to organize the footage further using metadata.

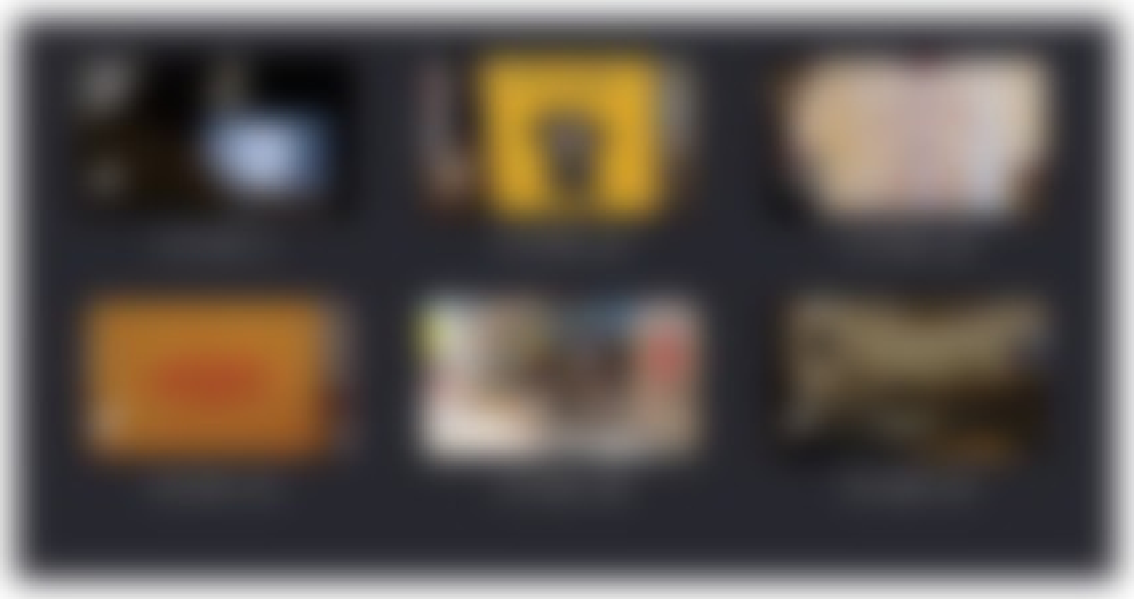
- In the Smart Bins section of the bin list, select the Keywords category and click the disclosure arrow to reveal the Keywords smart bins.



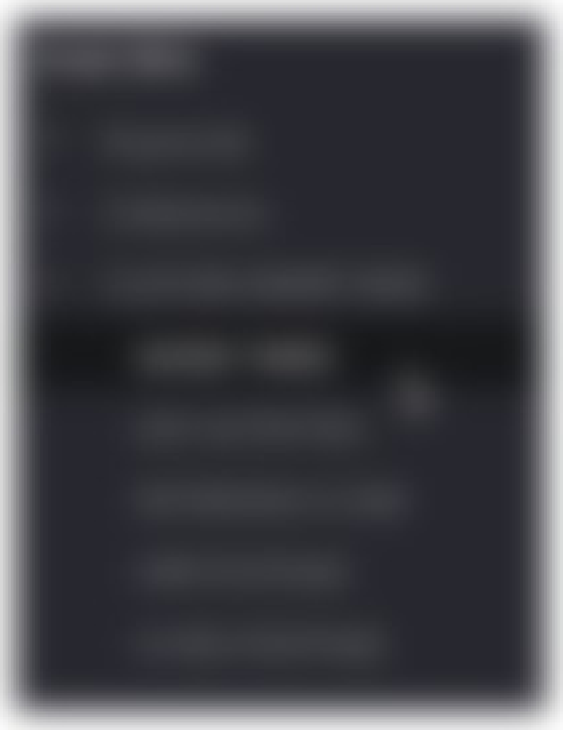
The Keywords smart bins are a set of automatic smart bins that appear whenever any clip has keyword metadata applied. You will learn more about viewing and working with clip metadata to create your own automatic and custom smart bins in Lesson 5.

> **TIP** You can reveal the Smart Bins area by dragging the dividing line at the top of the Smart Bins section of the bin list.

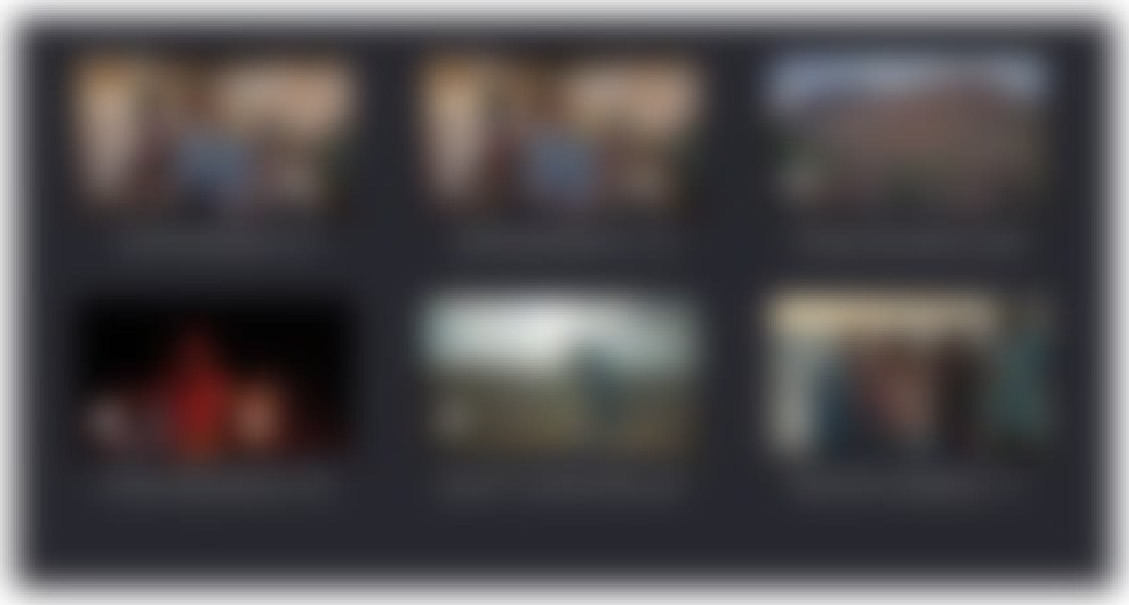
- Select the RETAIL smart bin, which lists just six clips from the B-ROLL bin with the keyword "RETAIL" applied.



- Click the disclosure arrow for the Keywords category again to collapse it, and then click the disclosure triangle for the CUSTOM SMART BINS category and select the GOOD TAKES smart bin.



This is a manually created smart bin that contains four clips from the B-Roll bin and two interview clips that have been marked as good takes.

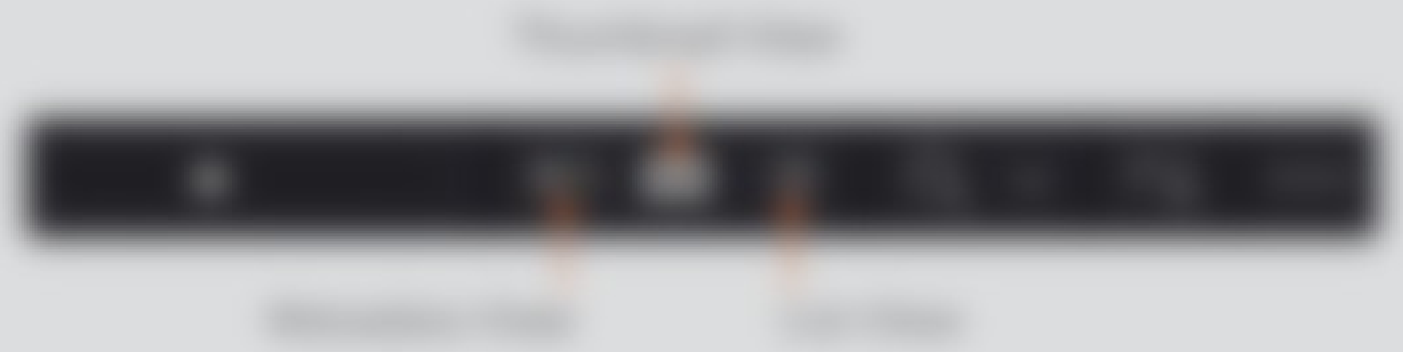


- Click the CUSTOM SMART BINS disclosure arrow again to close the custom smart bins category.

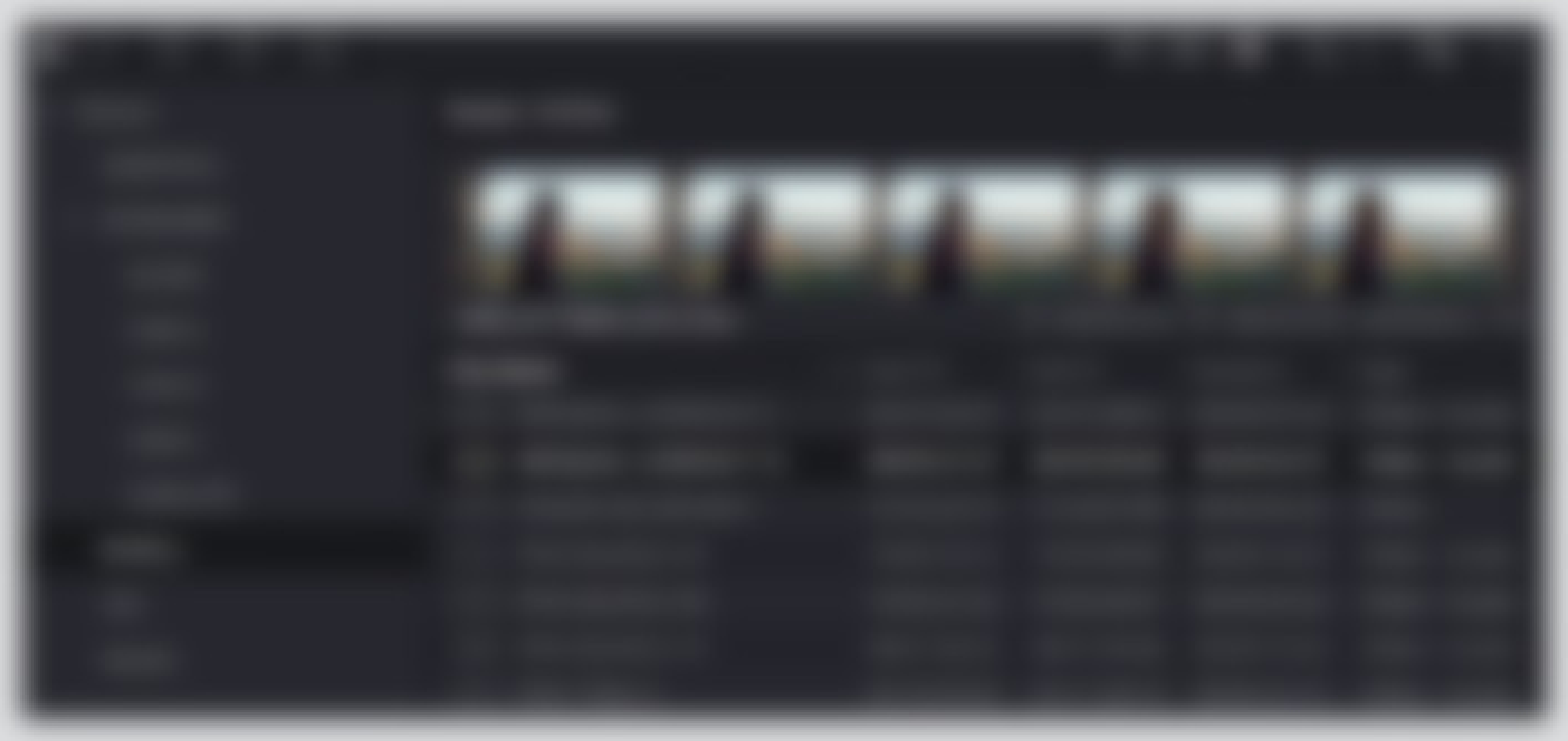
Now that you have a sense of the footage and organization of the project, it's time to start editing the rough cut for the Organ Mountain Outfitters promo.

Changing Media Pool Views

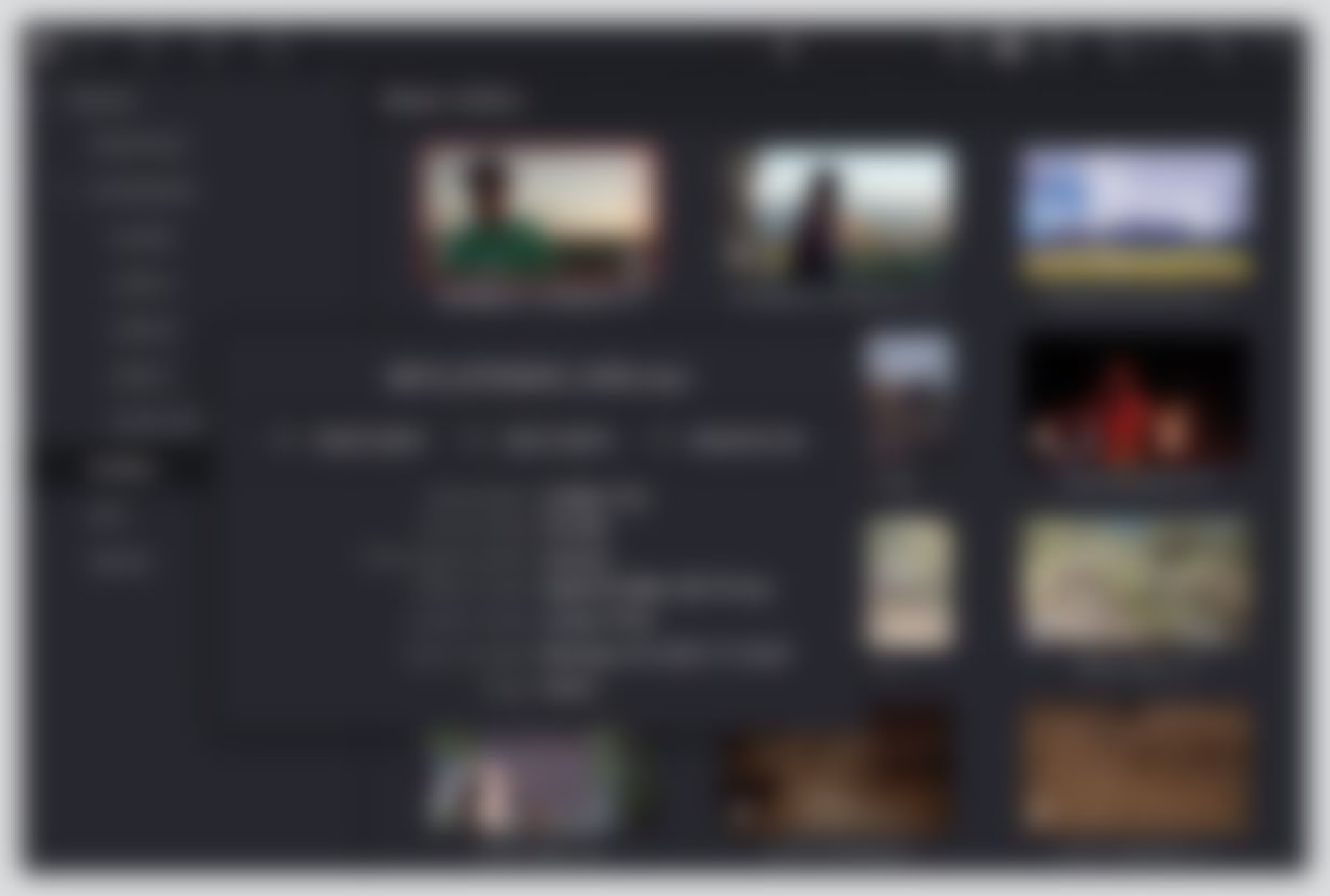
Although thumbnails are a visual way of accessing the clips in the media pool, they are not the only way of viewing your clips.



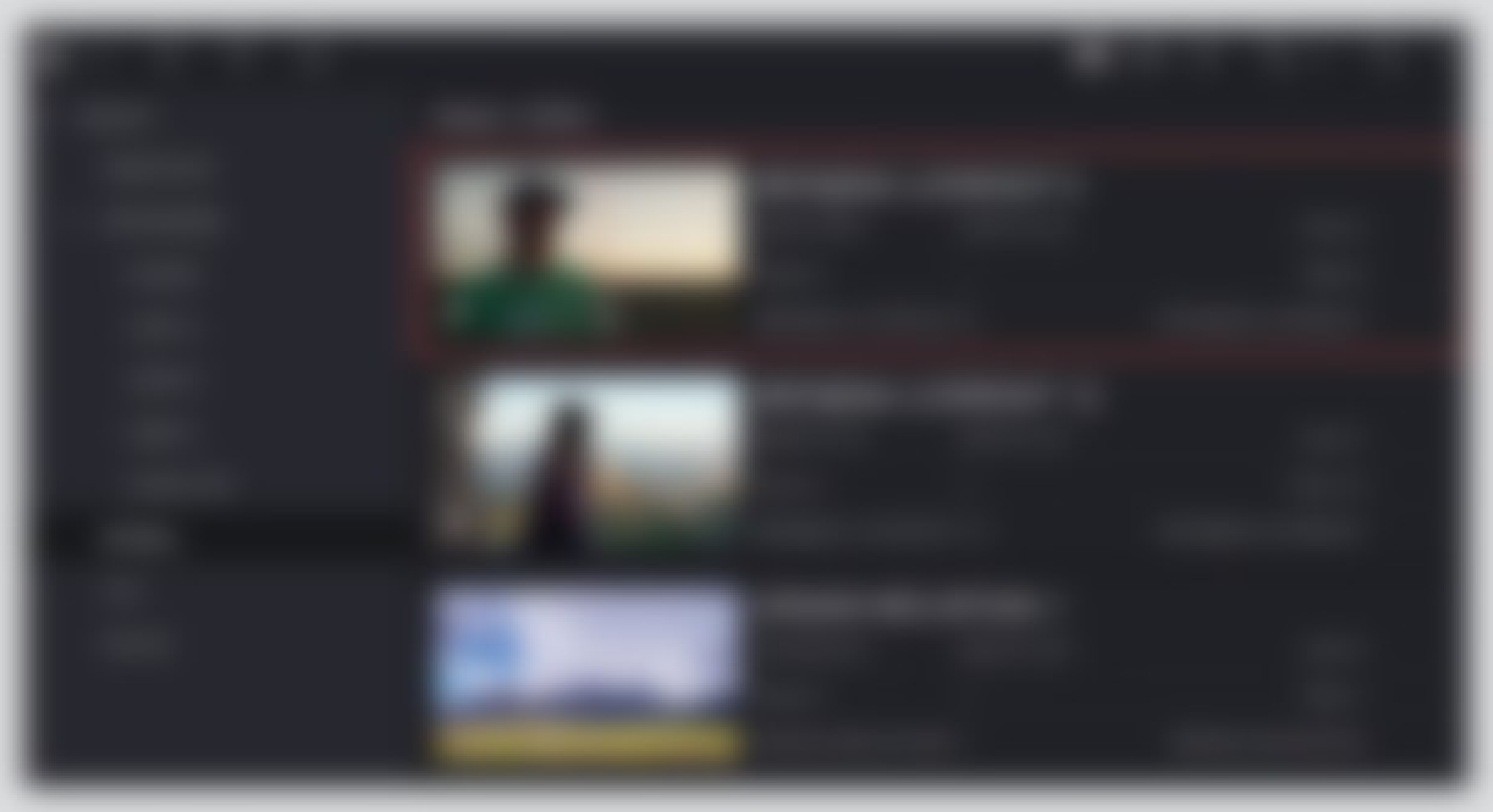
List View This view shows much more information, or metadata, about the specific clips displayed in the media pool than the Thumbnail view. Many editors prefer this view, as it shows lots of helpful information about lots of clips in a compact layout, but each clip needs to be manually selected and opened in the source viewer in order to view it. You can sort the clips by clicking any of the column headings and add or remove columns by right-clicking any of the column headers. You can also enable a filmstrip of the selected clip, so you can Live Preview it by clicking the Options menu (...) in the top right of the media pool and choosing Show Filmstrip.



Thumbnail View As you've already seen, Thumbnail view is a very visual way of organizing your media pool, allowing you to scrub and Live Preview your clips. While this is an intuitive way of viewing clips in the media pool, the only other piece of information readily available about the clip is the clip name. However, if you click the ... button at the bottom right of the thumbnail, a pop-up window will show more information about the clip, including the source media's filename, resolution, frame rate, and codec.



Metadata View — This media pool view is a mixture of the List and Thumbnail views. It allows the live previewing of clips like the Thumbnail view but also shows more metadata about the clips, with one field displayed prominently. Click the Sort menu to choose the order in which the clips are displayed in Metadata view, along with the prominent metadata field.



Throughout this book, the media pool will be primarily displayed in Thumbnail view. However, you are welcome to use whichever view you prefer when working through the lessons in this book.

For further flexibility, the media pool can be split into two views in the edit page or up to four in the media page. To enable this, click the Options menu (...) on the media pool and choose Enable Dual Pane Media Pool. Once enabled, each pane can have its own view settings and selected bins.

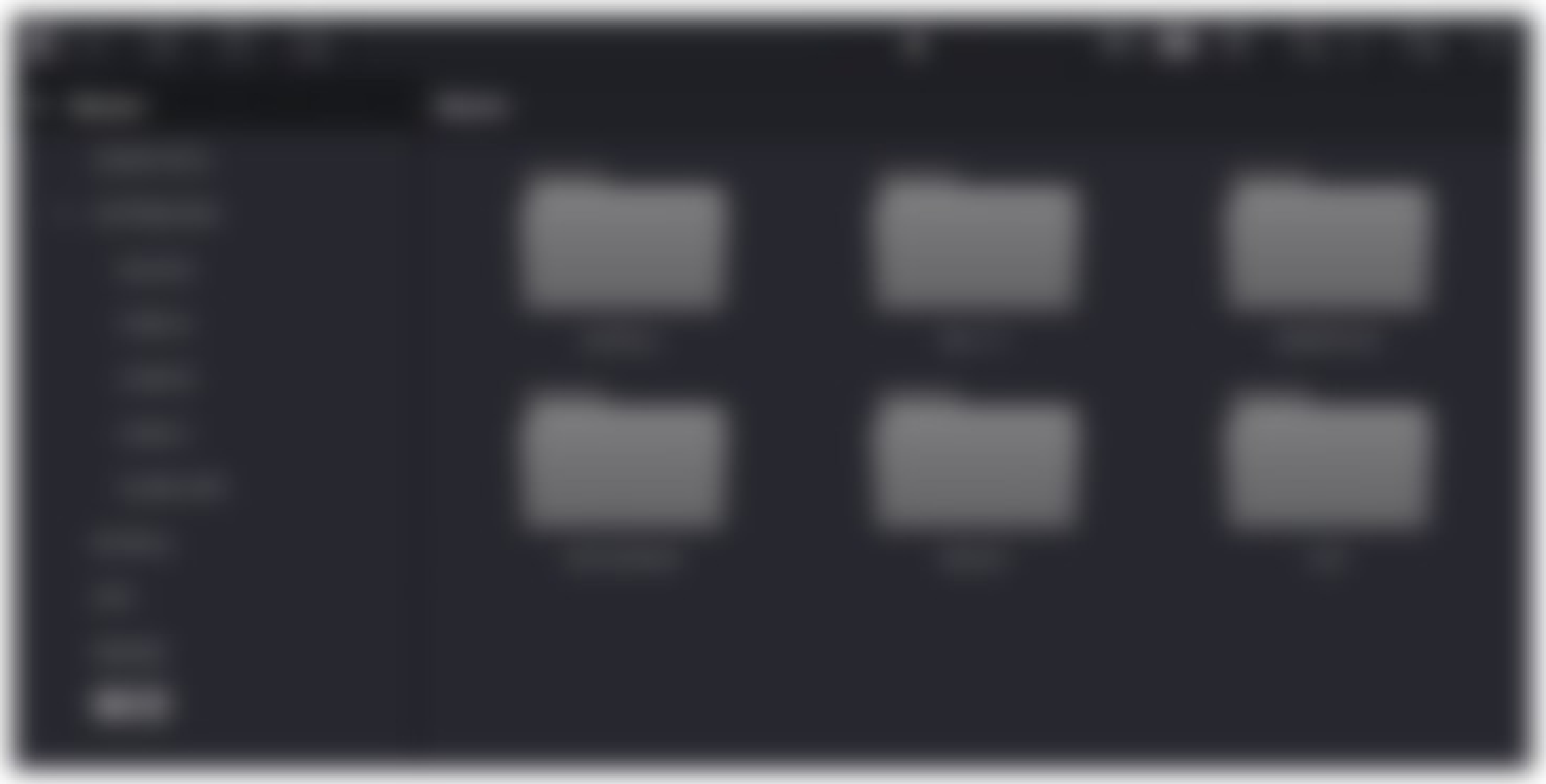
Assembling the Soundbites

Someone once said that the hardest part of writing a book is starting the first chapter. Indeed, the same is true for editing but with sounds and moving pictures in a timeline rather than words on a page. Placing those first few clips into an empty timeline can be quite daunting; you never quite know where you should start or where you will ultimately end up. However, once you have begun assembling the footage, the shape of the edit will slowly reveal itself and you'll begin to see what's working, what doesn't work, and what might be coaxed into working with a bit of effort.

You'll begin by editing some soundbites from the main interview with the proprietor of Organ Mountain Outfitters, Chris Long. While not every edit relies on spoken dialogue, it can be a useful starting point since it will start to reveal the story you want to tell and provide a structure you can build the edit around.

To start this exciting and creative process, you'll need an empty timeline, and to keep the project organized, you will place this timeline in its own bin.

1 In the bin list, select the Master bin and choose File > New Bin, or press Shift-Command-N (macOS) or Shift-Ctrl-N (Windows).



A new bin called "Bin 1" is created, appearing at the bottom of the bin list and in the Master bin in the media pool.

- [illegible]

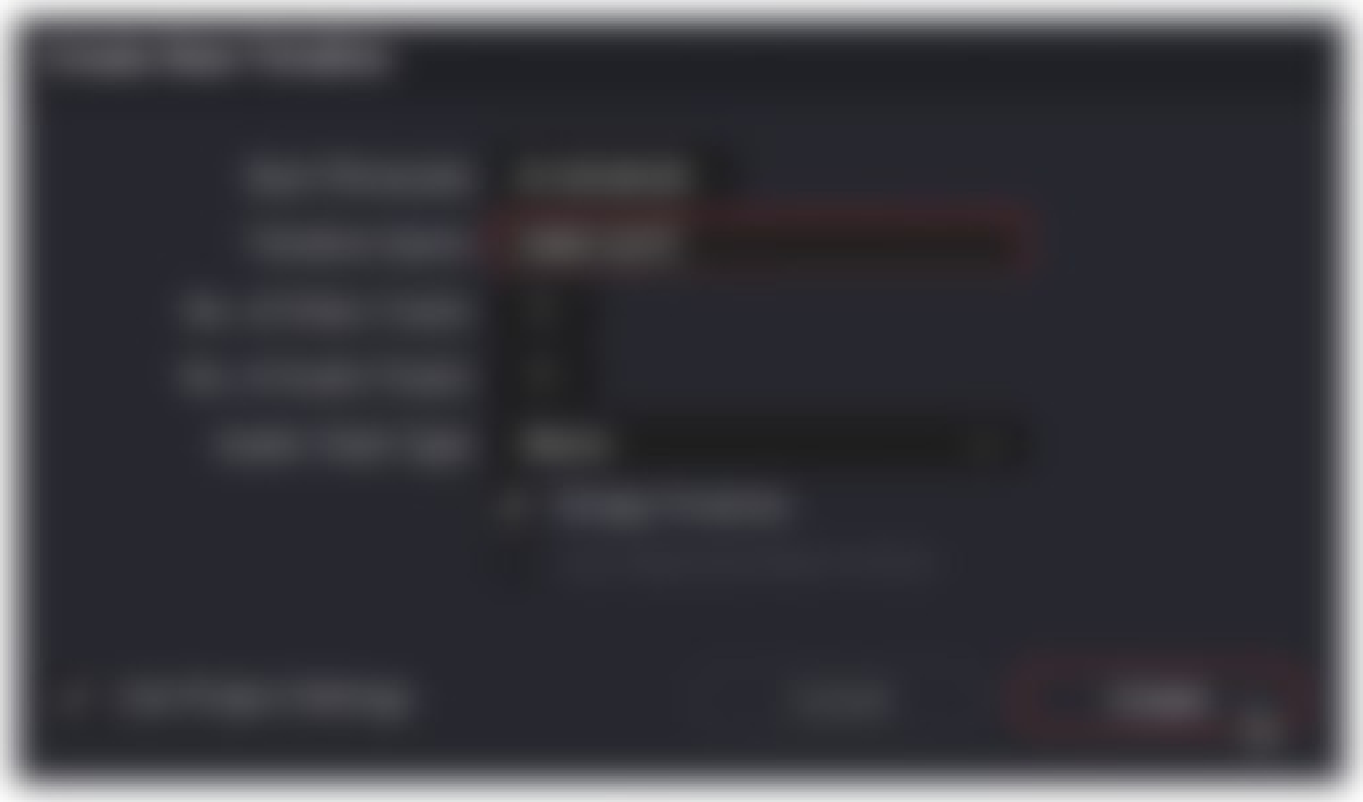
[illegible]

[illegible]

- [illegible]

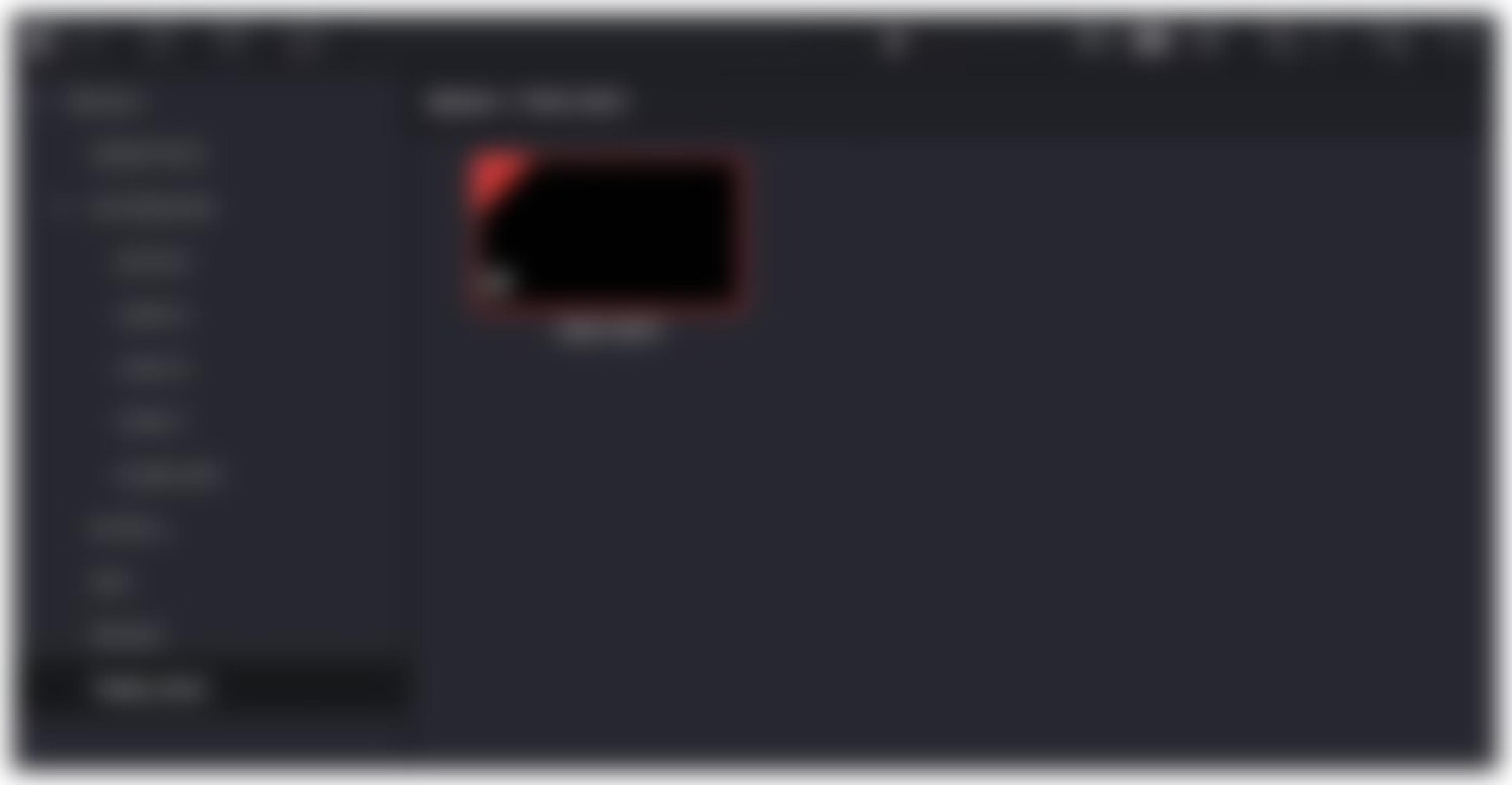
[illegible]

- In the Timeline Name field, type **[illegible]**, change the Audio Track Type to Mono (because the audio for the interviews is set to mono), and click Create.



NOTE You will learn more about syncing and configuring audio for clips in Lesson 5.

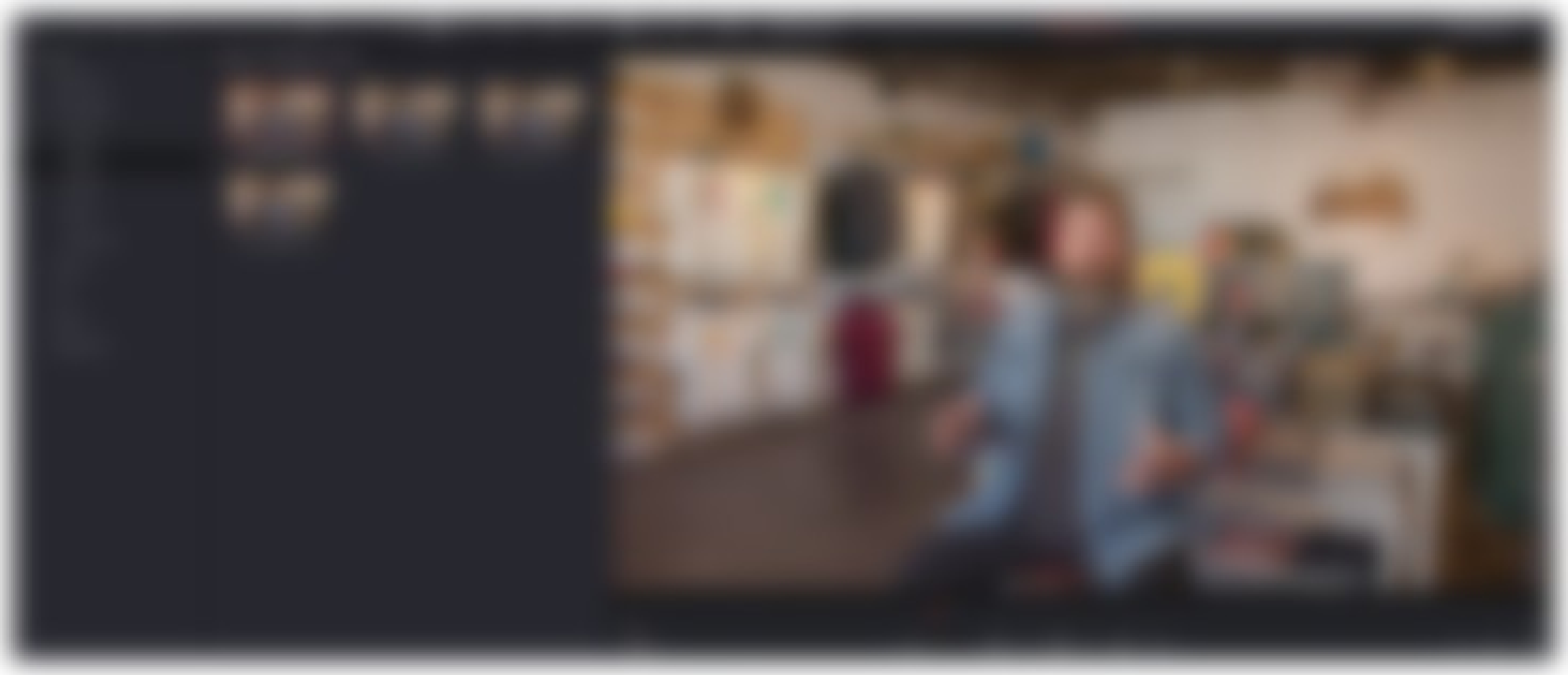
A new timeline is created in the selected bin, and additional controls appear in the timeline window.



NOTE You can set the default starting timecode, number of video and audio tracks, and audio track type for new timelines in the editing section of the User Preferences.

Now that you have the timeline, you can begin assembling the soundbites from Chris's interview.

- In the bin list, select the A CAM bin to reveal the interview clips shot on this camera.
- Double-click the first clip in the bin, [illegible], to open it in the source viewer.



- Press Home or move the playhead back to the start of the clip and press the Spacebar to begin playing the clip from the beginning.

  As you'll probably realize very quickly, this interview clip is rather long and encompasses several answers to different questions. In the top left corner of the source viewer, you will see the clip's total duration in timecode format: 00:01:01:13 (1 min, 1 sec, and 13 frames).

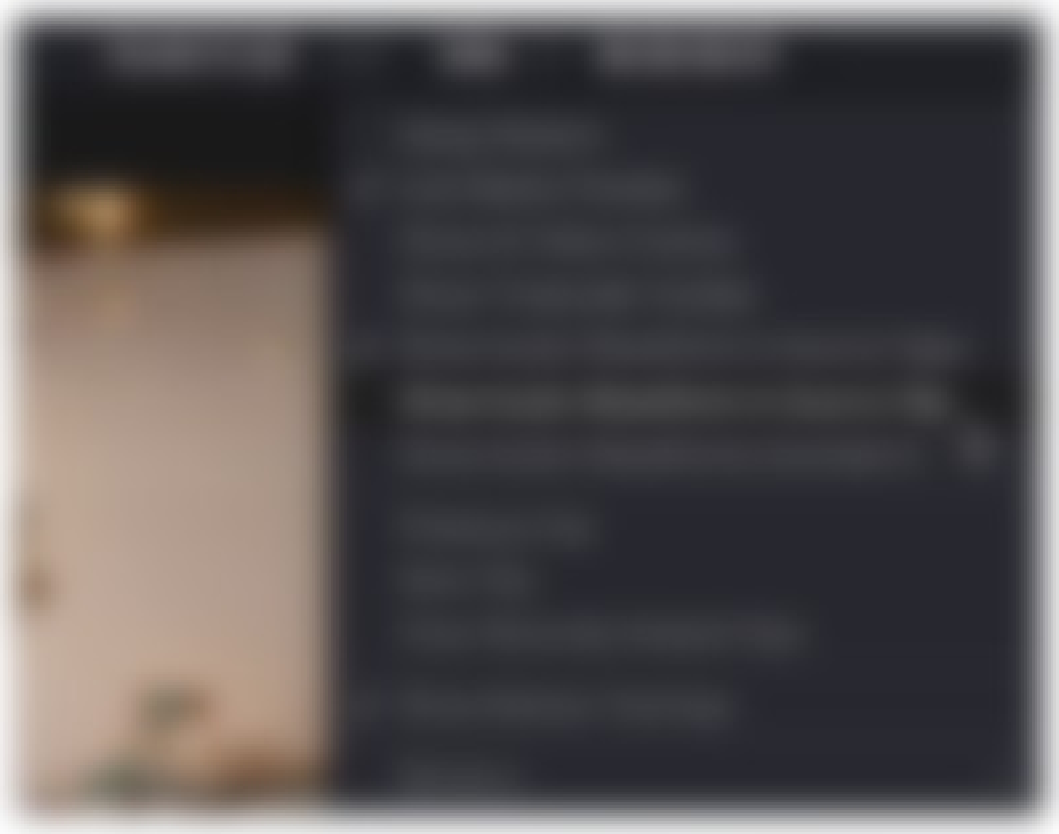
  You certainly don't want to use this entire clip. Instead, you will use just a small soundbite.

> **NOTE** A soundbite is a short, often memorable part of a longer spoken recording. Soundbites are generally only a few seconds long and are chosen as a way of communicating information, ideas, and arguments in a concise format. They are used a lot when editing interviews for news broadcasts and social media promos, for example, because they are often impactful and attention grabbing. However, they should be used carefully so as not to misrepresent the person speaking or oversimplify complex subjects.

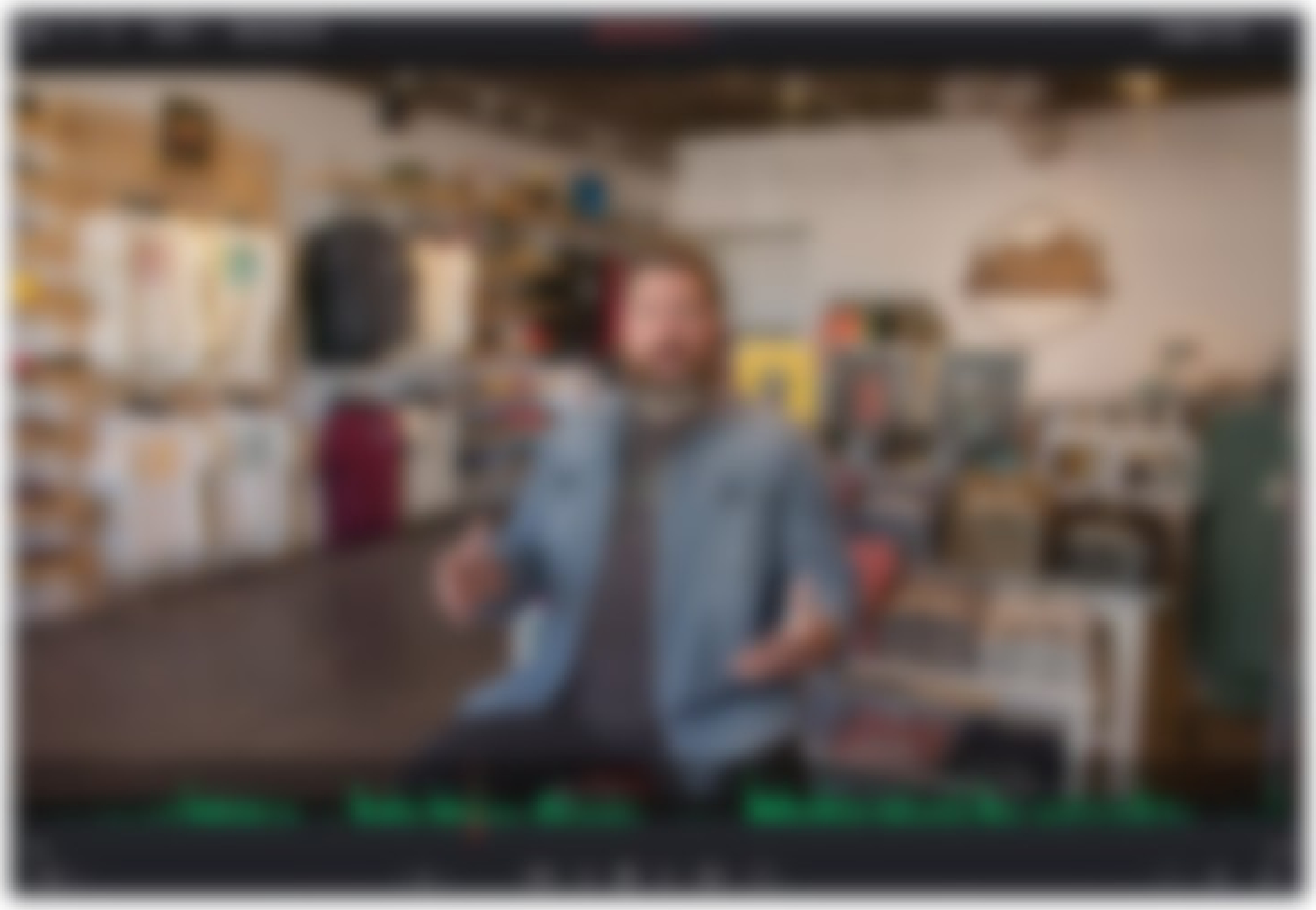
- If you haven't already, press the Spacebar again to stop playback.

  To help you locate the soundbite, you can display the clip's audio waveform along with the source video.

- Click the source viewer's Options menu (…) and choose Show Audio Waveform on Source Clip.

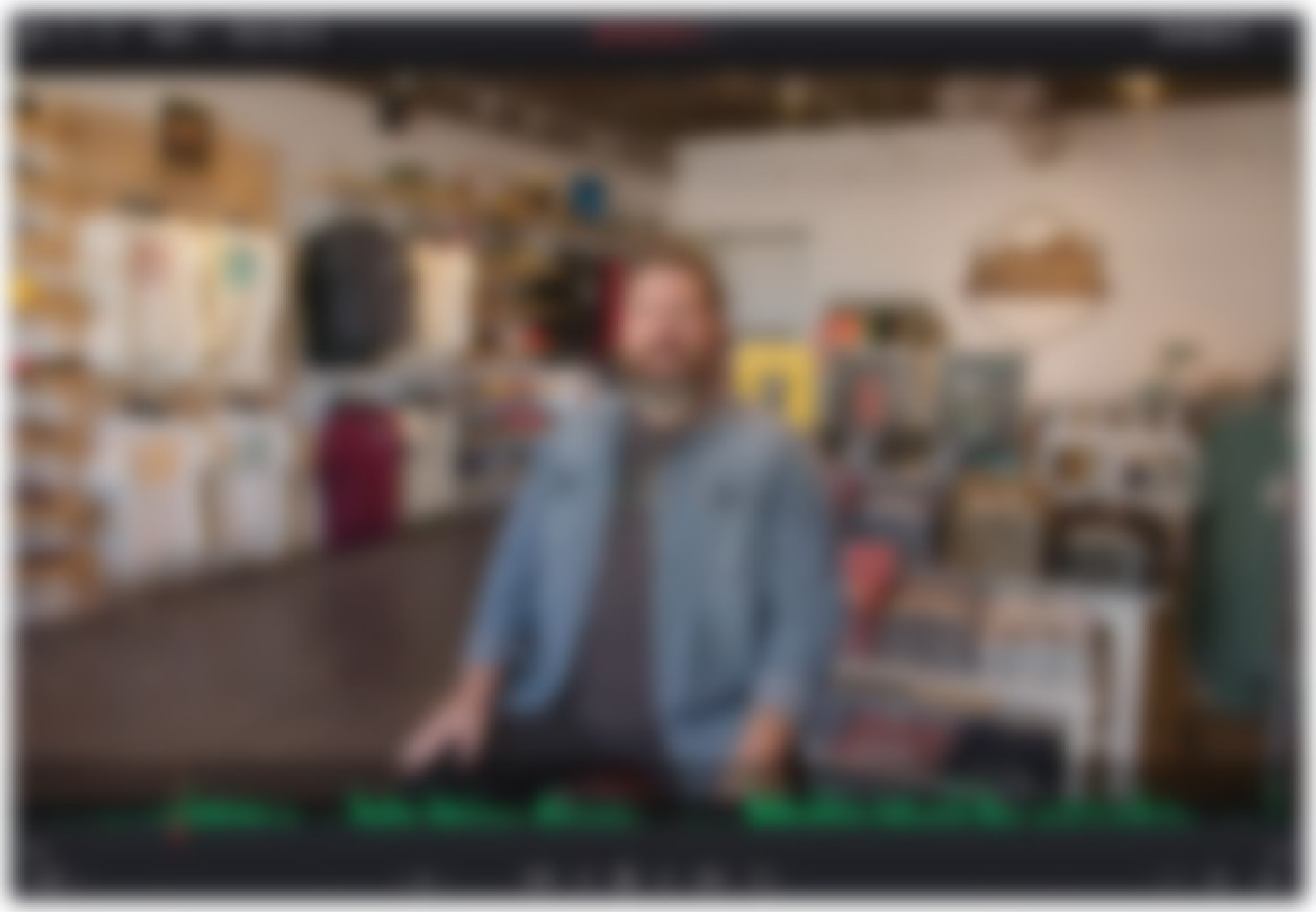


A green waveform appears along the bottom of the source viewer.



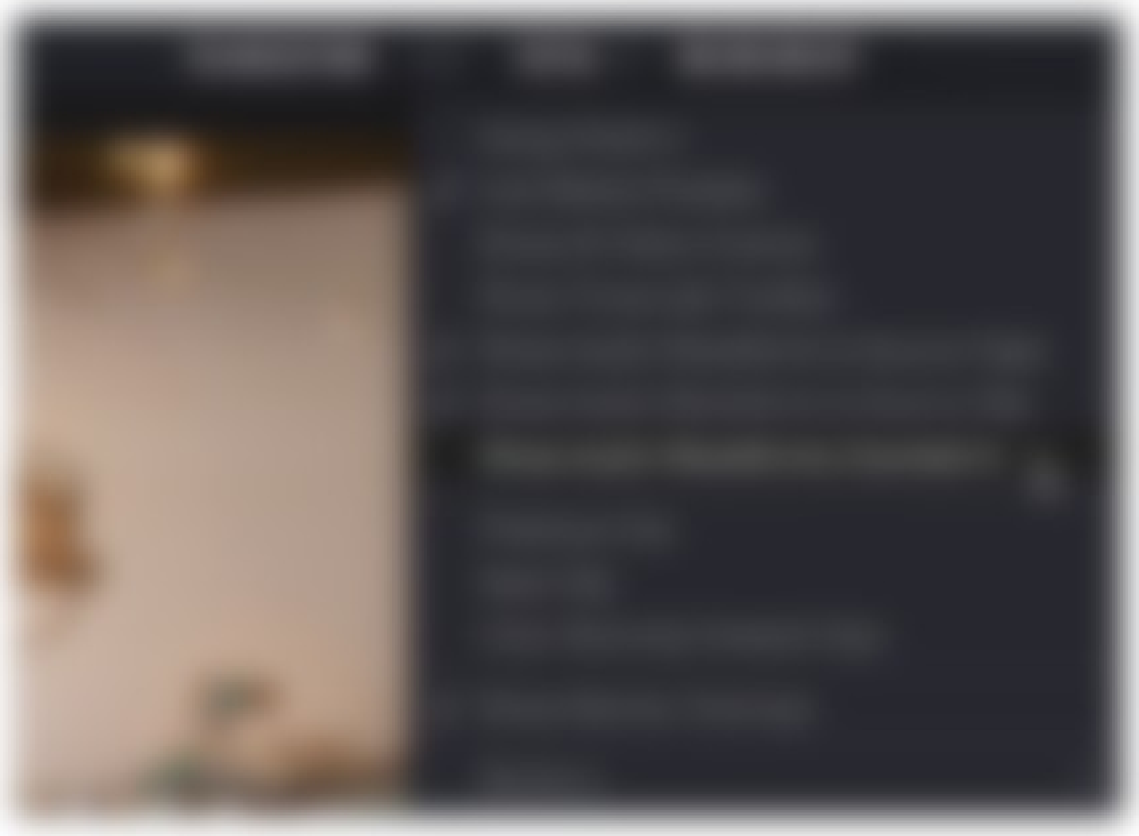
TIP For a more detailed waveform that displays separate audio channels, you can change the source viewer "mode dropdown" menu to Audio Track.

- Return the playhead back to the beginning of the clip and start playing the interview again.
- Just after Chris laughs, but before he says, "I'm Chris Lang...," stop playback.

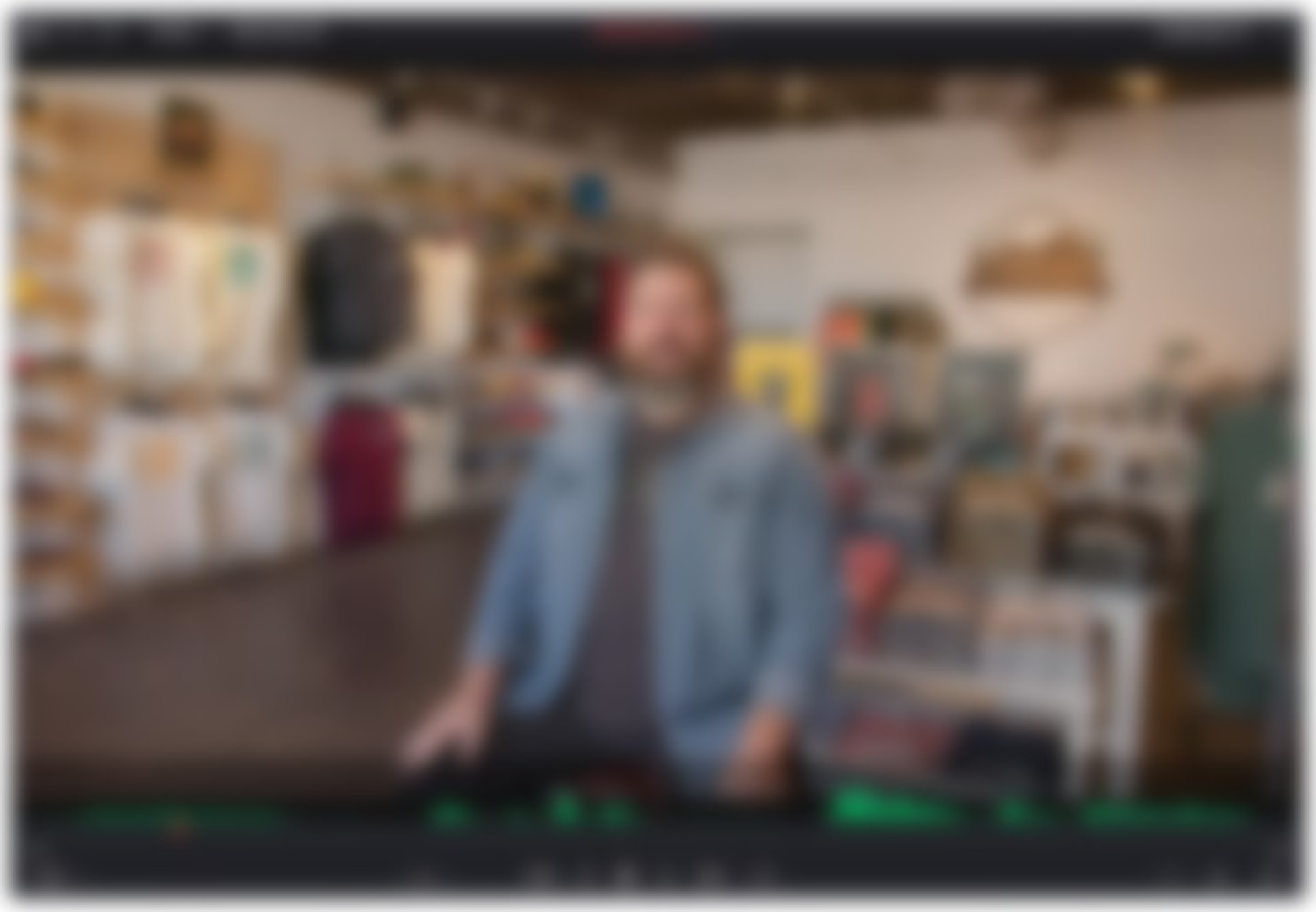


You should be able to judge where Chris starts to introduce himself based on the audio waveform in the display. However, there is a second waveform display that can help you refine the position of the playhead, particularly for a tricky clip such as this.

- Click the source viewer's Options menu (...) and choose Show Audio Waveforms Zoomed In.



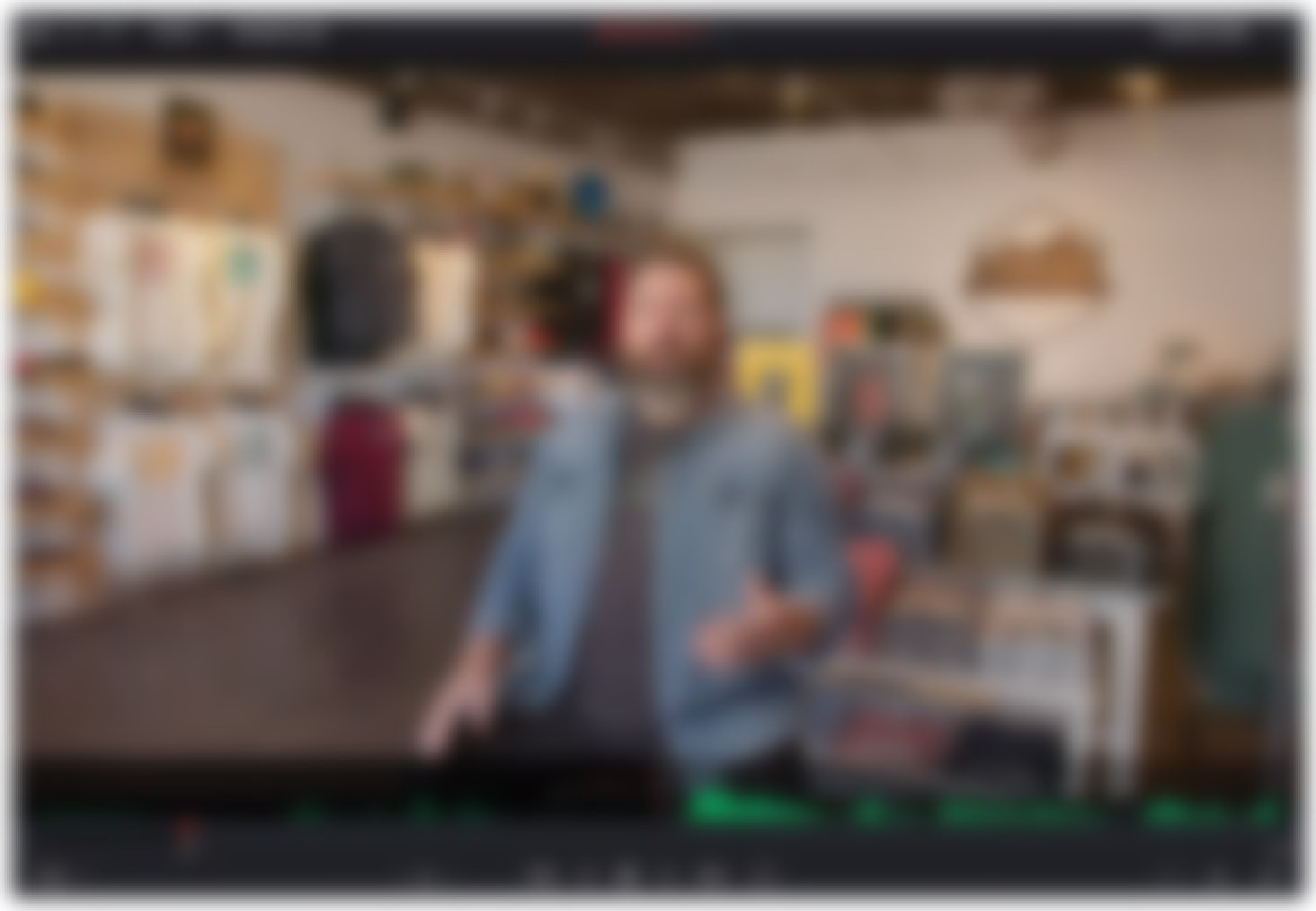
The waveform now displays a zoomed in view of the waveforms.



[illegible] Press the Left or Right Arrow keys on your keyboard to refine the position of the playhead (as indicated by the red line in the waveform display) to just before the start of the waveform.

> [illegible] If you disabled audio scrubbing previously, press Shift-S to enable audio scrubbing to help you refine the position to just before Chris starts speaking.

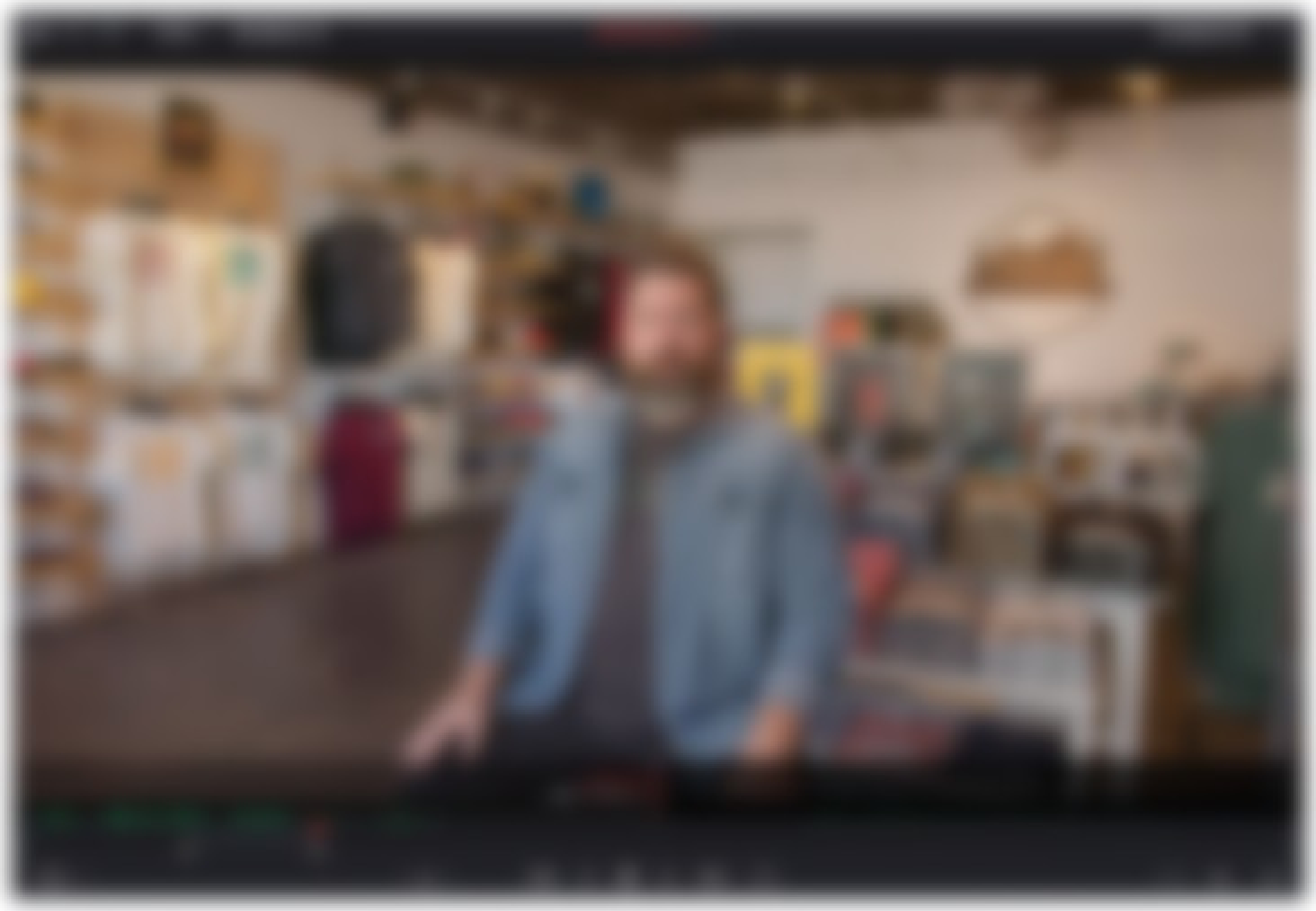
- When you're happy that the playhead is positioned just before Chris says, "I'm Chris Lang...," choose Mark > Mark In or press I to add an In point to specify where you want this clip to start.



NOTE The duration field updates with a new, shorter value: the duration from the In point to the end of the clip. The exact value will differ depending on where you chose to add the In point.

- Press the Spacebar to continue playing the clip until Chris says, "...in Las Cruces, New Mexico," and then stop playback.

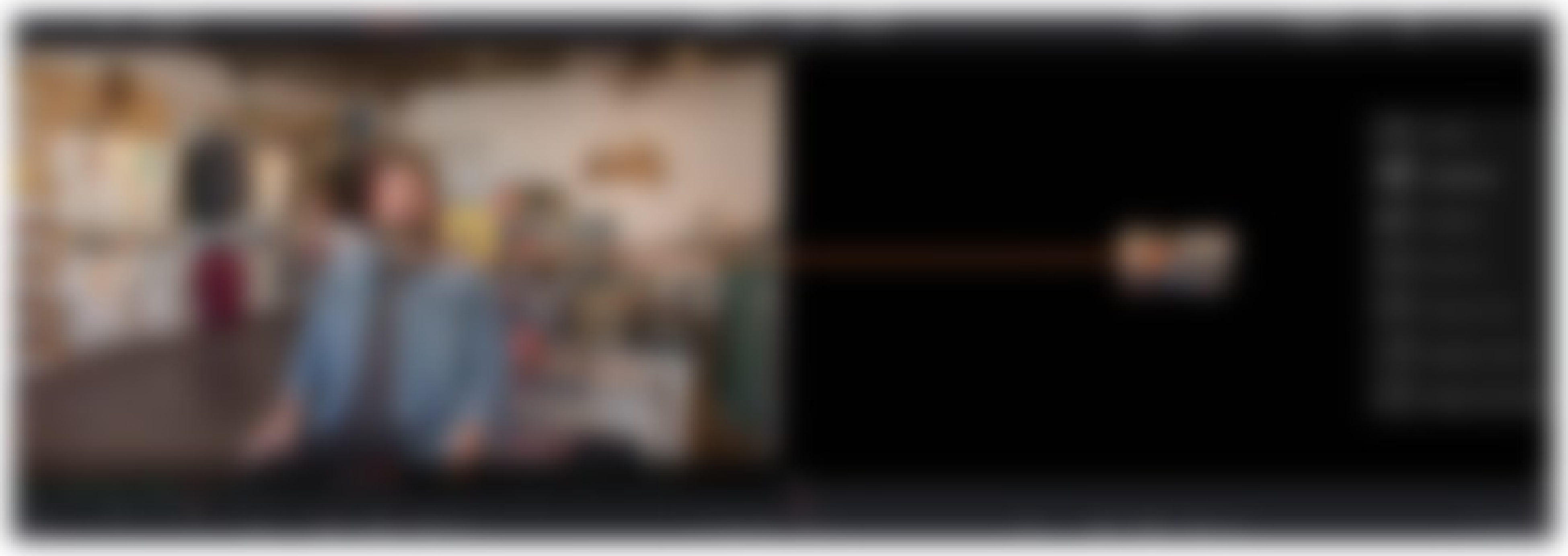
- Again, use the Left / Right Arrow keys to refine the playhead's position to just before Chris blinks, and choose Mark > Mark Out or press O to add an Out point to specify where you want this clip to end.



NOTE The Duration field updates again with a much shorter duration, this time measuring the duration between your In and Out points. Again, the duration you marked may differ from the values in the image above.

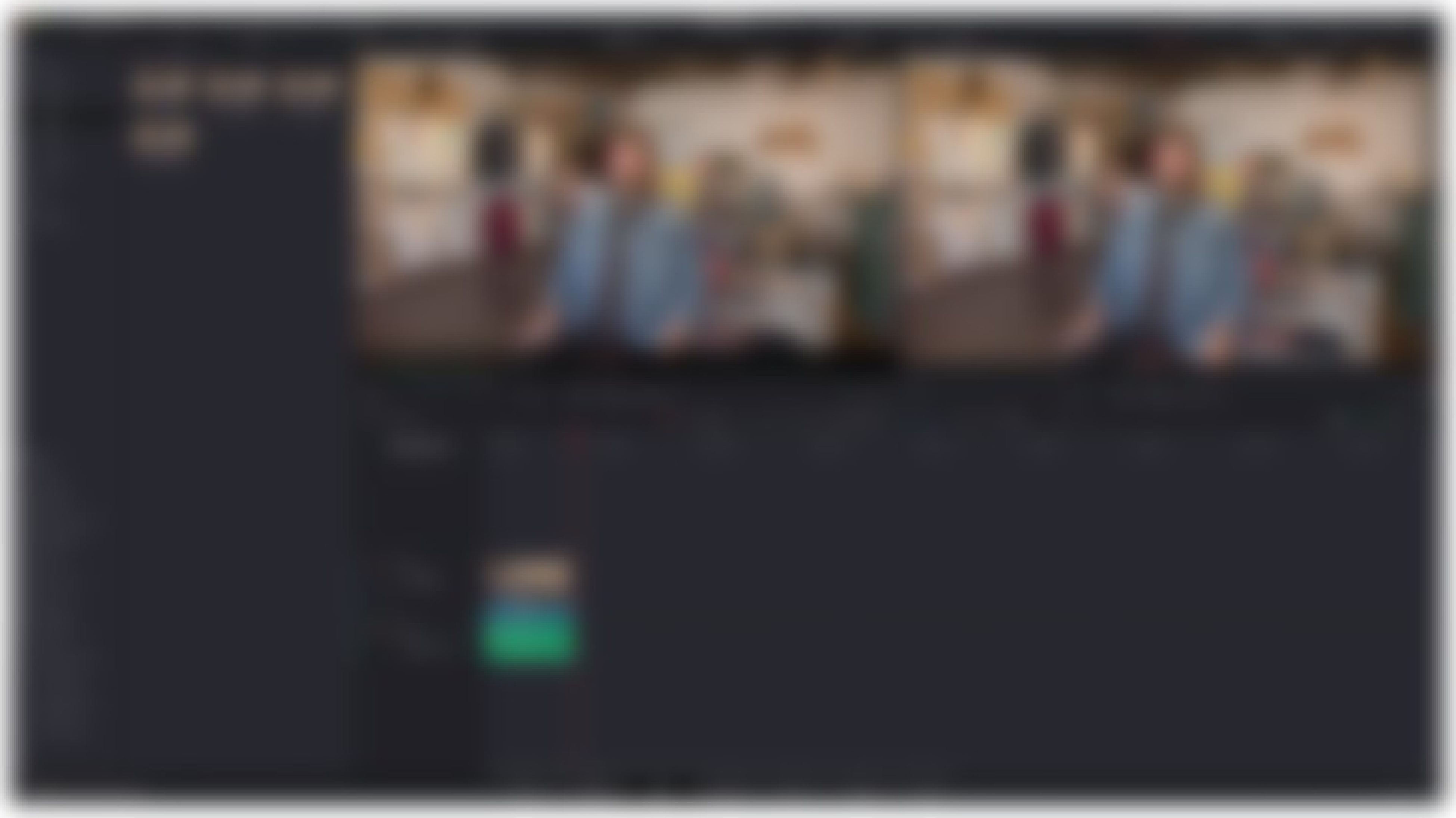
Having marked the soundbite you want to use, you can now edit it into the timeline.

- Drag the clip from the source viewer to the timeline viewer.



A series of editing overlays appears, detailing the different types of edits available to you in DaVinci Resolve. Seasoned editors will probably recognize many of these options from other nonlinear editors (NLEs), although some are specific to DaVinci Resolve. The default is Overwrite.

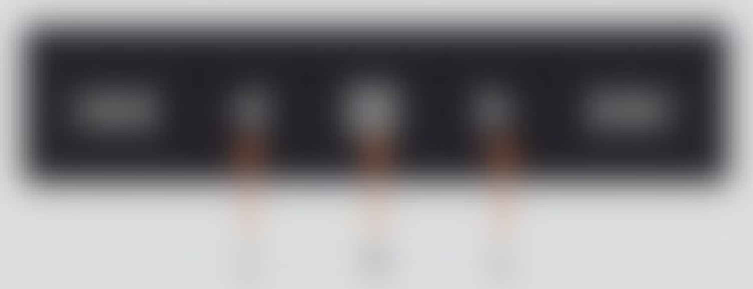
- With the Overwrite edit overlay highlighted, release the mouse button to edit the first clip into the timeline.



Controlling Playback

An important part of editing is learning how to control the playback of your video. While you could use the transport controls below the source or timeline viewers, keyboard shortcuts are much more efficient. DaVinci Resolve's default keyboard layout supports all the usual shortcuts for playback that professional editors around the world will recognize. You can use the Spacebar to start and stop playback and the Left and Right Arrow keys to move forward and backward one frame at a time. More experienced users will be happy to know that the J, K, and L keys also control playback at different speeds, a staple of NLE systems.

The order of the JKL keys matches the layout of the Play Reverse, Stop, and Play transport controls in both the source and timeline viewers.



Try the following to practice controlling the playback of the source or timeline viewer:

- Press L to play forward.
- Press J to play backward.
- Press K to stop playback.

You can keep tapping the J or L keys to increase the shuttling speed up to 64x normal speed.

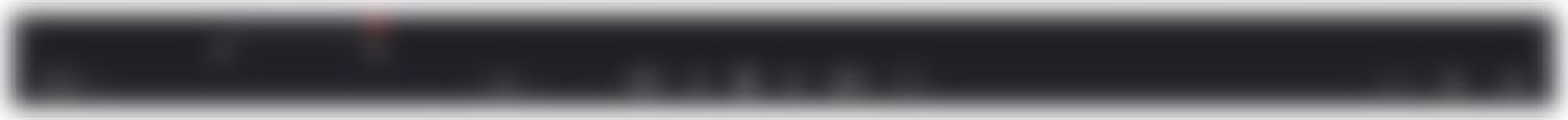
Press L twice to shuttle forward at 2x normal speed.
Press J twice to shuttle backward at 2x normal speed.

You can also use the same keys to jog back and forth to precisely locate a specific frame:

- Hold K and tap L to jog forward one frame.
- Hold K and tap J to jog backward one frame.
- Hold K and hold L to scroll forward.
- Hold K and hold J to scroll backward.

Working with the Subclips

Before you start adding additional soundbites to this timeline, it's worth considering just how much of that first clip you used. If you look at where you added the In and Out points on the clip in the source viewer, you'll see that it's only a small portion of a much longer clip – only about 6 or 7 seconds of a clip that is around a minute long.



This disparity between the amount of footage shot and the amount used in the edit is not unusual and is often referred to as the shooting ratio. Depending on what's being edited, shooting ratios can vary wildly; a typical news piece might have a shooting ratio of 3:1 (for every 3 minutes shot, 1 minute was used), whereas some reality shows might have a shooting ratio of around 600:1, if not more!

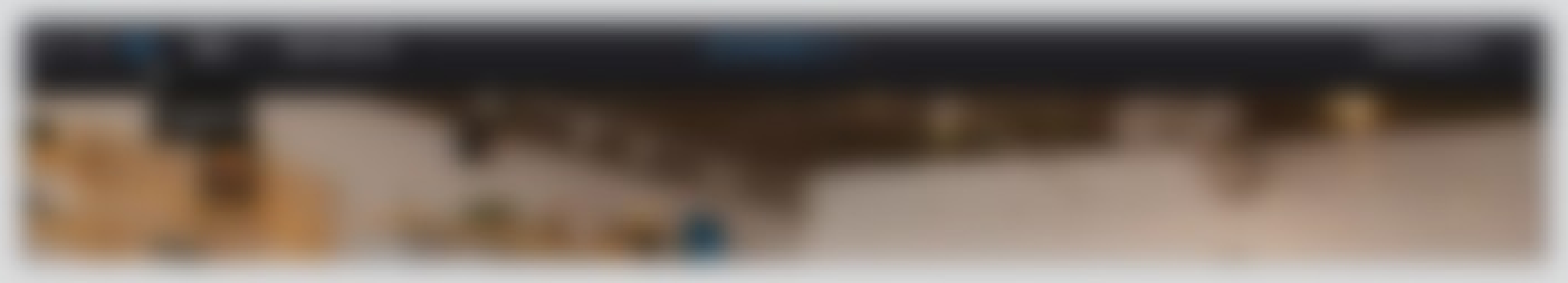
With so much footage being captured and needing to be edited, it can sometimes be helpful to just focus on a much smaller, relevant portion. This is where subclips come in.

Subclips are discrete clips that have been isolated from a much longer clip, but because they are still referencing the original media file, they are not taking up any additional storage space on your system. You will learn how to create and manage your own subclips in Lesson 5. For this lesson, your edit assistant has already created a series of subclips on your behalf of relevant soundbites from the much longer interview clips.

Opening Clips in the Source Timeline

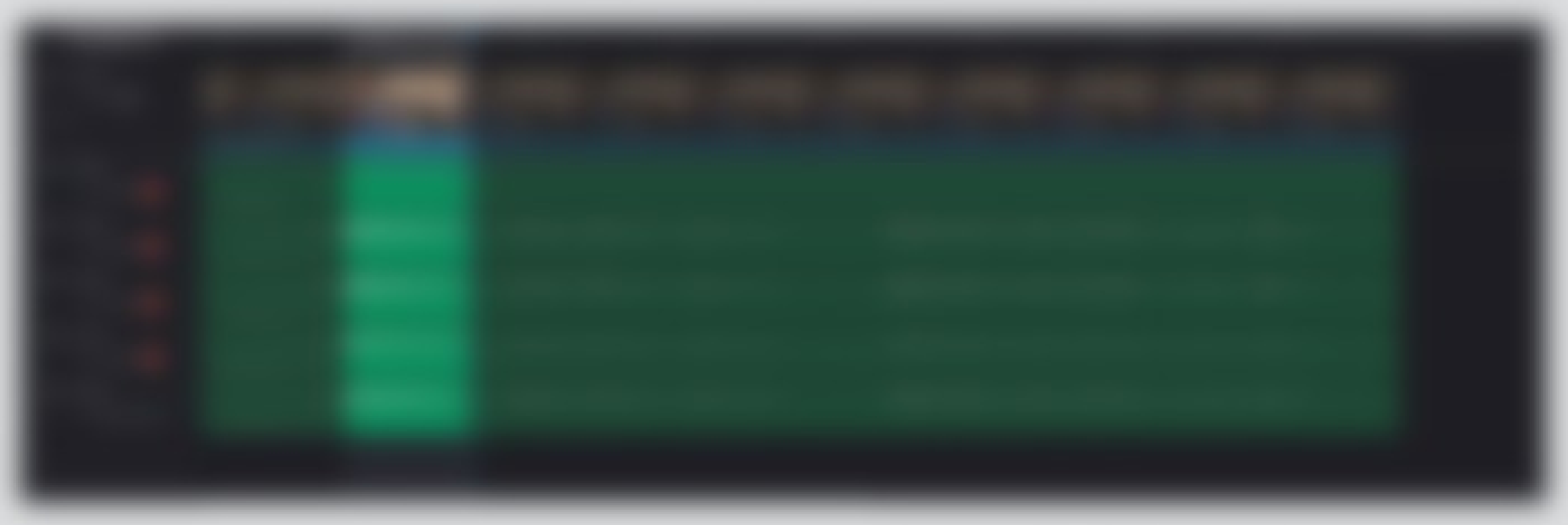
While subclips are one way of dealing with long clips, DaVinci Resolve has another tool to help you navigate through long clips such as Chris's interview.

Clicking the Timeline button at the top of the source viewer will show the current clip in its own timeline.



continues

This can be useful for easily finding parts of a clip since you can zoom in and out and move around the footage just like in a regular timeline (see "Timeline Zoom and Scroll" later in this lesson).

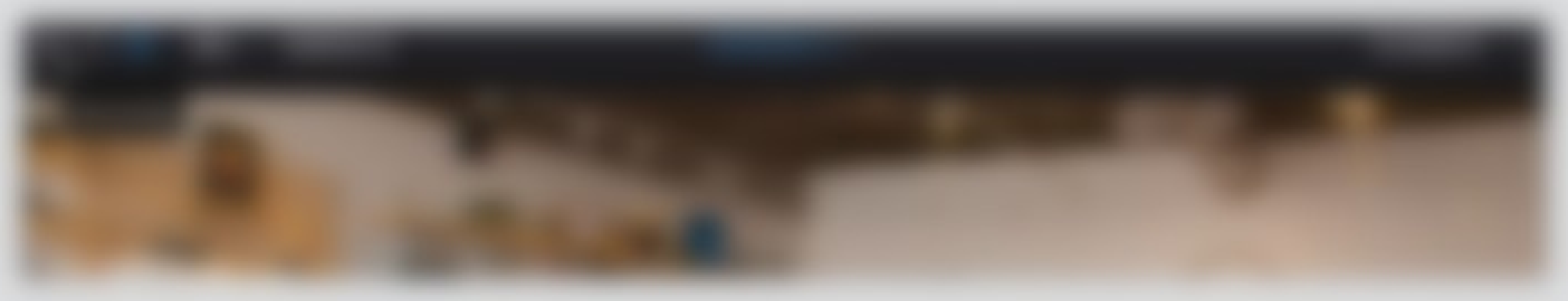


Opening a timeline from the source viewer makes it read only, which is represented by a blue clip name at the top of the source viewer and a blue timeline playhead. Read only timelines cannot be edited. However, you can add in and out points and other markers to help you edit footage more efficiently.

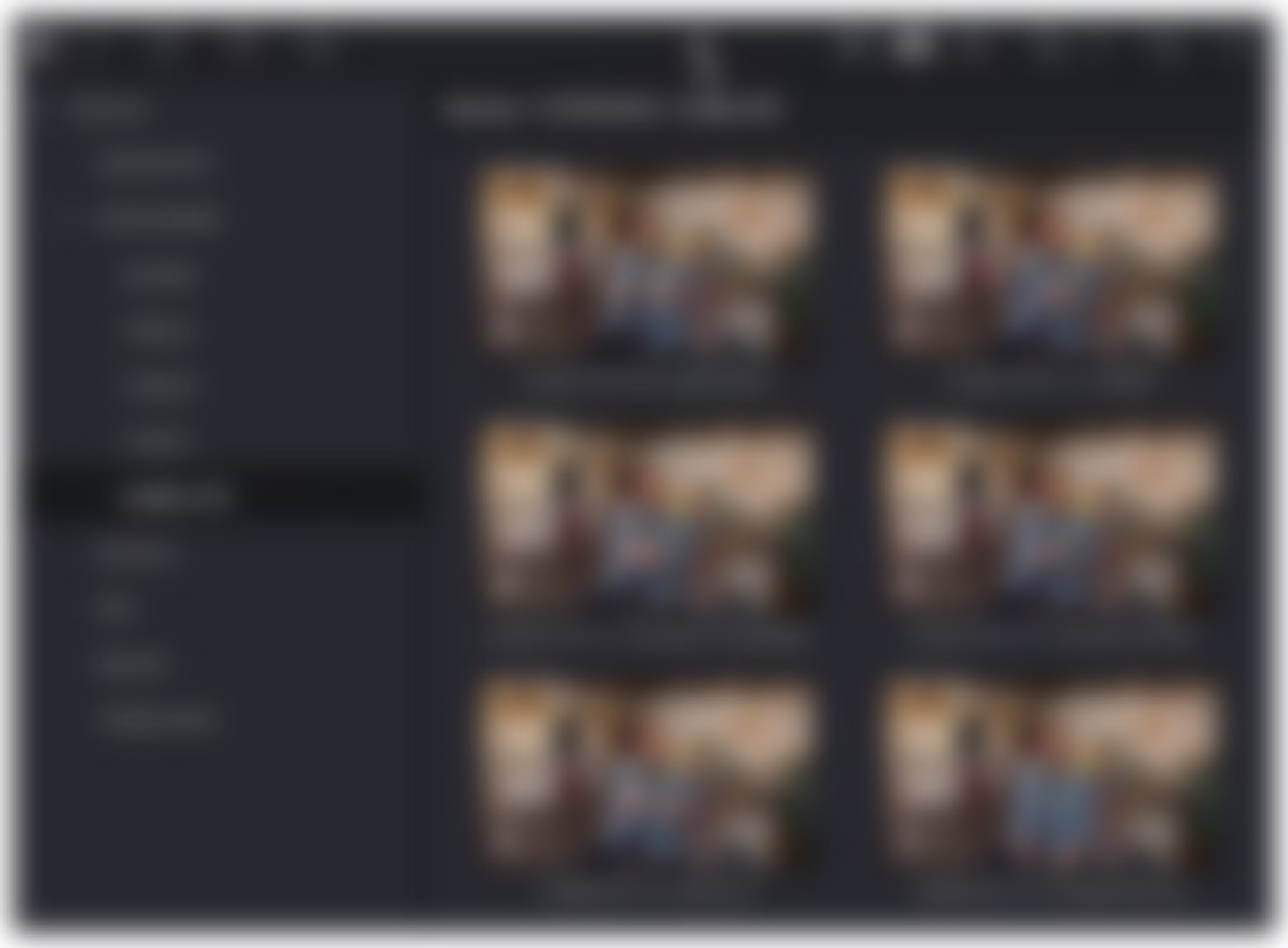
Note that the source clip displayed in the timeline shows multiple audio channels, many of which are muted. You will learn more about managing the source audio channels for a clip in Lesson 5.

To switch from the source timeline to your main editing timeline, simply click the relevant viewer or press Q.

To return to the regular clip view, click the Source Clip button at the top of the viewer.



- In the bin list, select the SUBCLIPS bin to view the subclips for this project, adjusting the thumbnail size if necessary to see the full clip names.

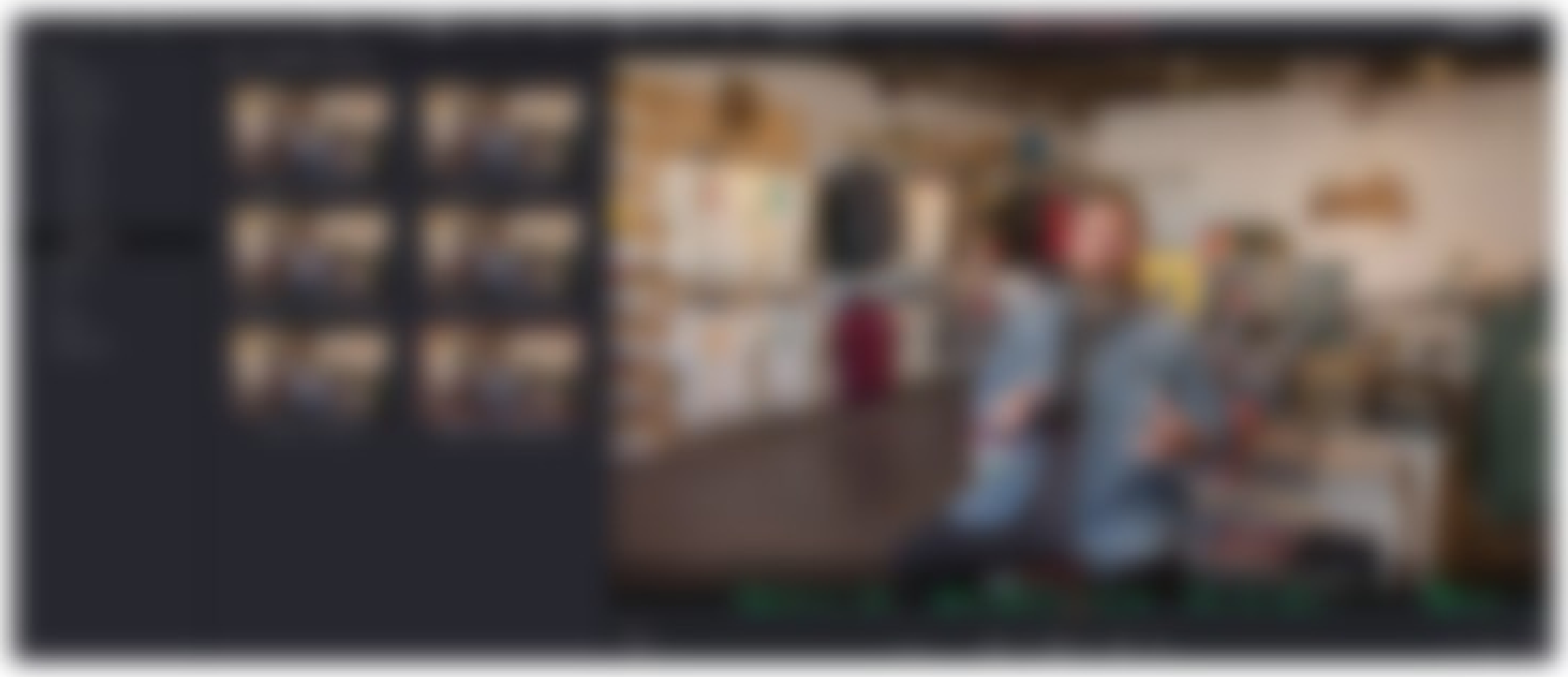


Each subclip has its own name that references which clip the subclip was originally created from (e.g., "9-1" refers to Cam 9, take 1), along with a summary of what is said in that soundbite (e.g., "Inspiration," "Sense of Old," "Brand," etc.) You will learn how to create friendly clip names like this in Lesson 5.

- Double-click the clip **SUBCLIP 9-1 Inspiration** to open it in the source monitor and play the clip through from the start.

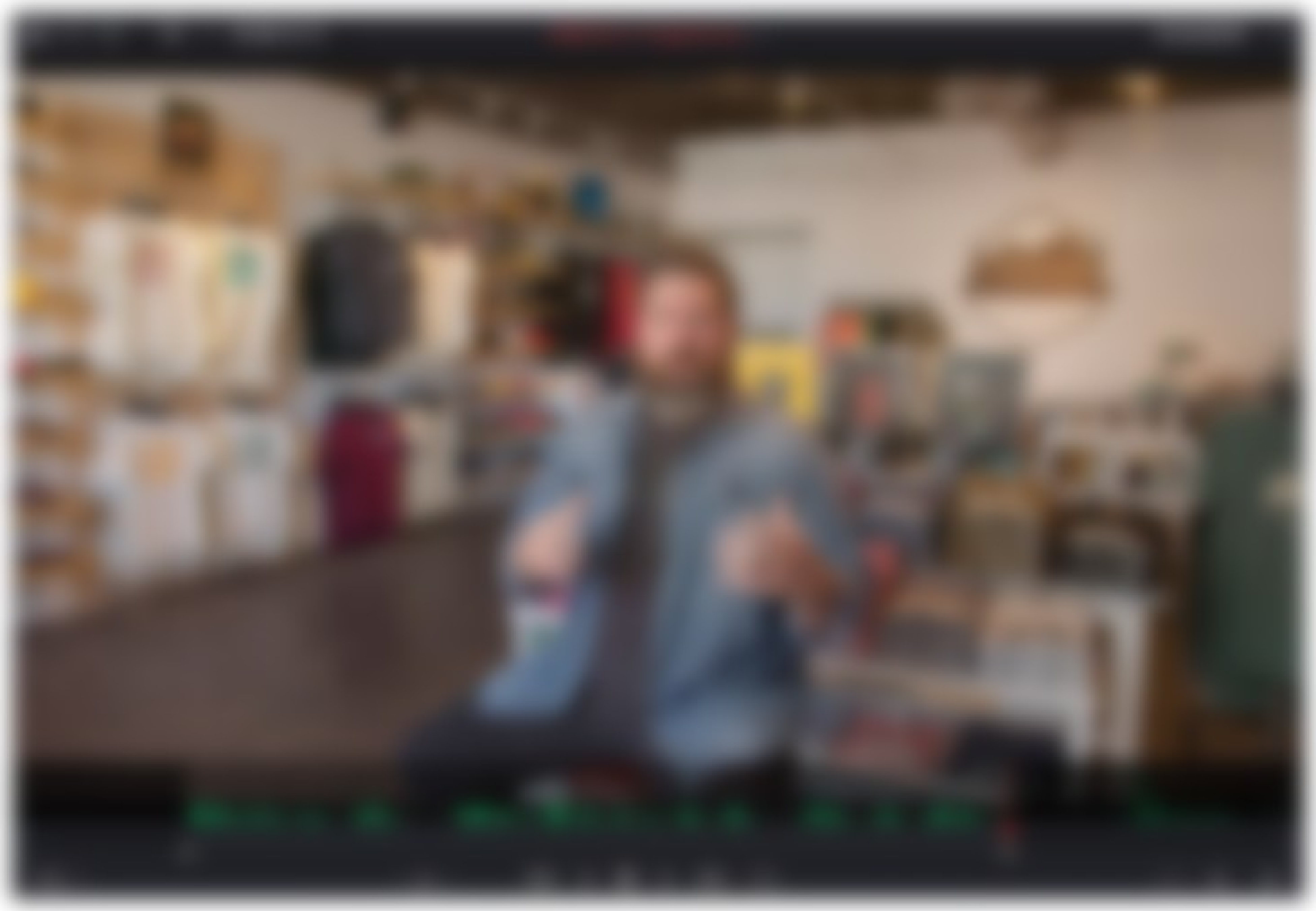
Since this subclip is a much more manageable duration ([illegible]), it's easier to see the waveform represented over the duration of the subclip.

- Click the source viewer's Options menu ([illegible]) and deselect Show Audio Waveforms (Zoomed In).

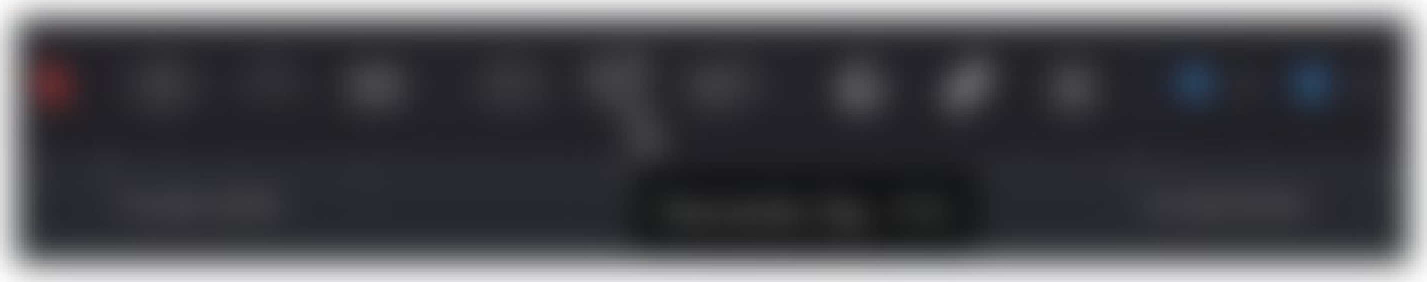


Even though this is still only a 30-second portion of a much longer interview clip in the A-CAM bin, you will only need to use a portion of it.

- Move the playhead to just before Chris starts speaking and press I to add an In point.
- Press L to play through the clip and then stop after Chris has said "…the landscapes" but before he looks away from the interviewer, and press O to add an Out point.

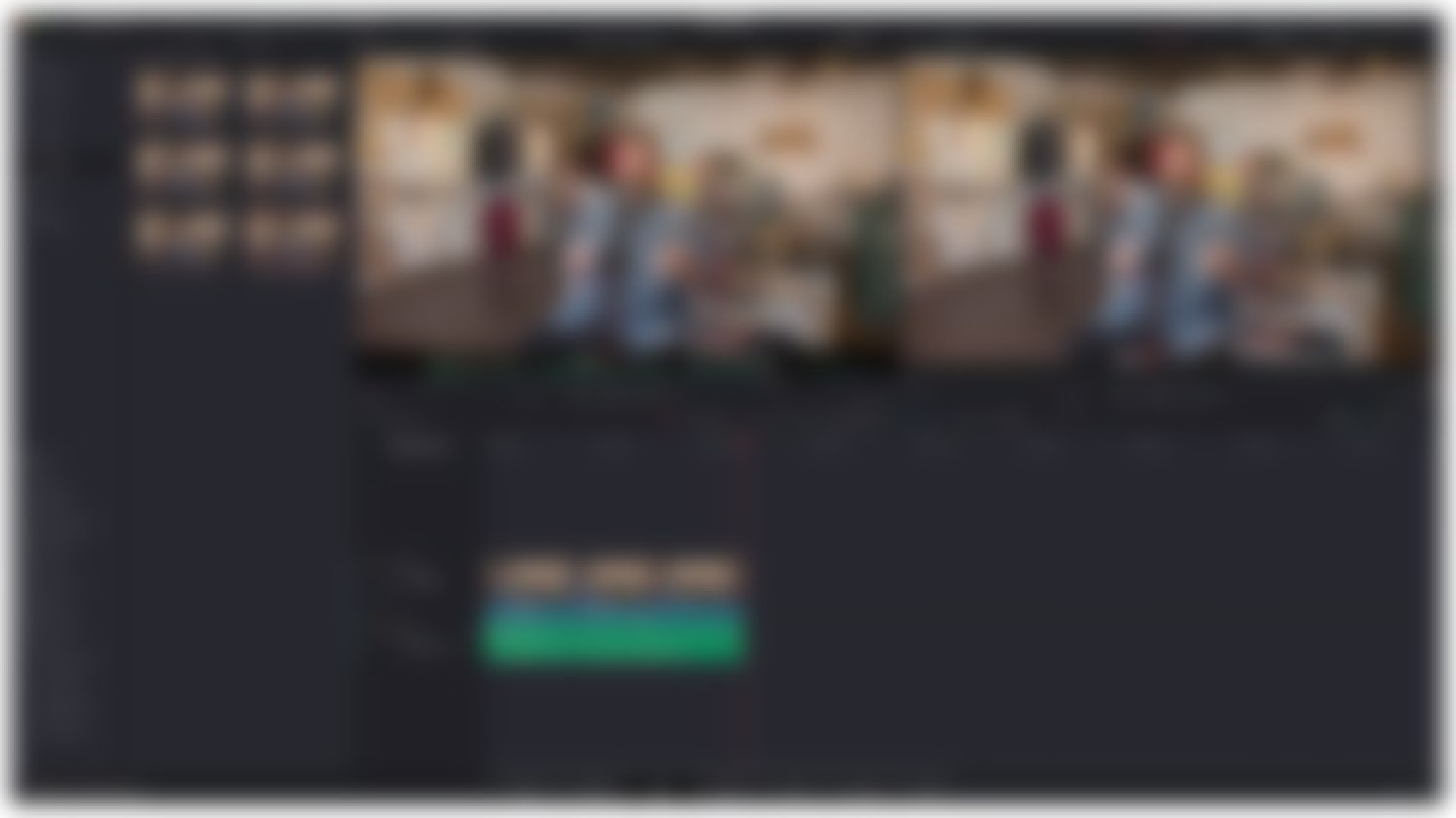


- In the timeline toolbar, click the Overwrite Clip button or press F10.



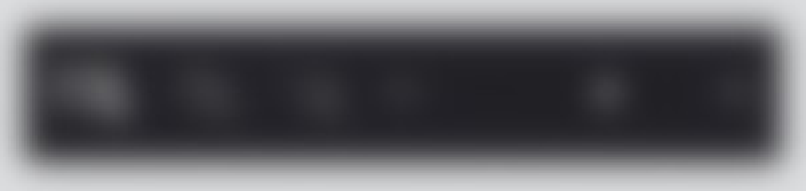
NOTE If you're using DaVinci Resolve on macOS, you might need to configure your keyboard settings in System Settings to "use F1, F2, etc. keys as standard function keys" to use the default editing shortcuts. Alternatively, you can use the Fn key with any F key to override the macOS shortcuts.

The second interview clip is added into the timeline, starting at the position of the timeline playhead and using only the portion marked between the In and Out points in the source.

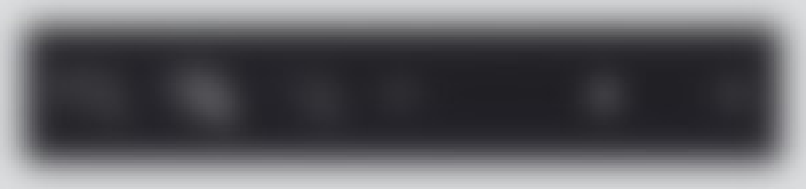


Timeline Zoom and Scroll

The edit page has three options for controlling the zoom level for clips in the timeline.

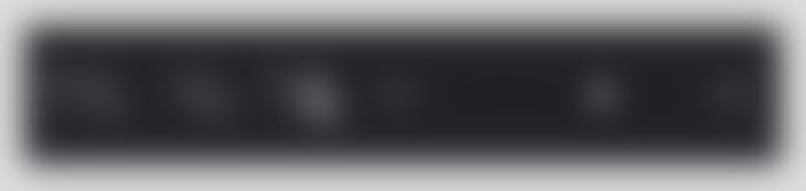


- **Full Extent Zoom** will always display the whole duration of your timeline in the timeline window, automatically adjusting the zoom to keep everything in sight. This is most useful for seeing a bird's eye view of your edit and allows you to navigate anywhere within the timeline.



- **Detail Zoom** scales the timeline to a closer, zoomed view, which initially centers on the playhead. This option is most useful when you want to step into the timeline to select a specific clip or edit point to make fine adjustments.

continued



- **Custom Zoom** provides the most flexibility since it allows you to set your own zoom scale in the timeline. You can use the slider to zoom in and out of the playhead location or hold Option (macOS) or Alt (Windows) and use the scroll function on your mouse (or trackpad) to adjust the zoom of the timeline dynamically, centered on the playhead.

Useful keyboard shortcuts for zooming the timeline include:

- Command-= (equals) in macOS or Ctrl-= (equals) in Windows to zoom in to the position of the timeline playhead.
- Command-- (minus) in macOS or Ctrl-- (minus) in Windows to zoom out of the position of the timeline playhead.
- Shift-Z toggles between fitting the timeline to the timeline window and returning you to the previous zoom level.

Timeline track heights can be adjusted using the Timeline View Options menu, or by holding Shift and using the mouse scroll wheel over either the audio or video tracks of the timeline.

The timeline can also be scrolled left and right using the scrollbar at the bottom of the timeline window or by holding Command (macOS) or Ctrl (Windows) and using the scroll function on your mouse.

Adding the Final Soundbites

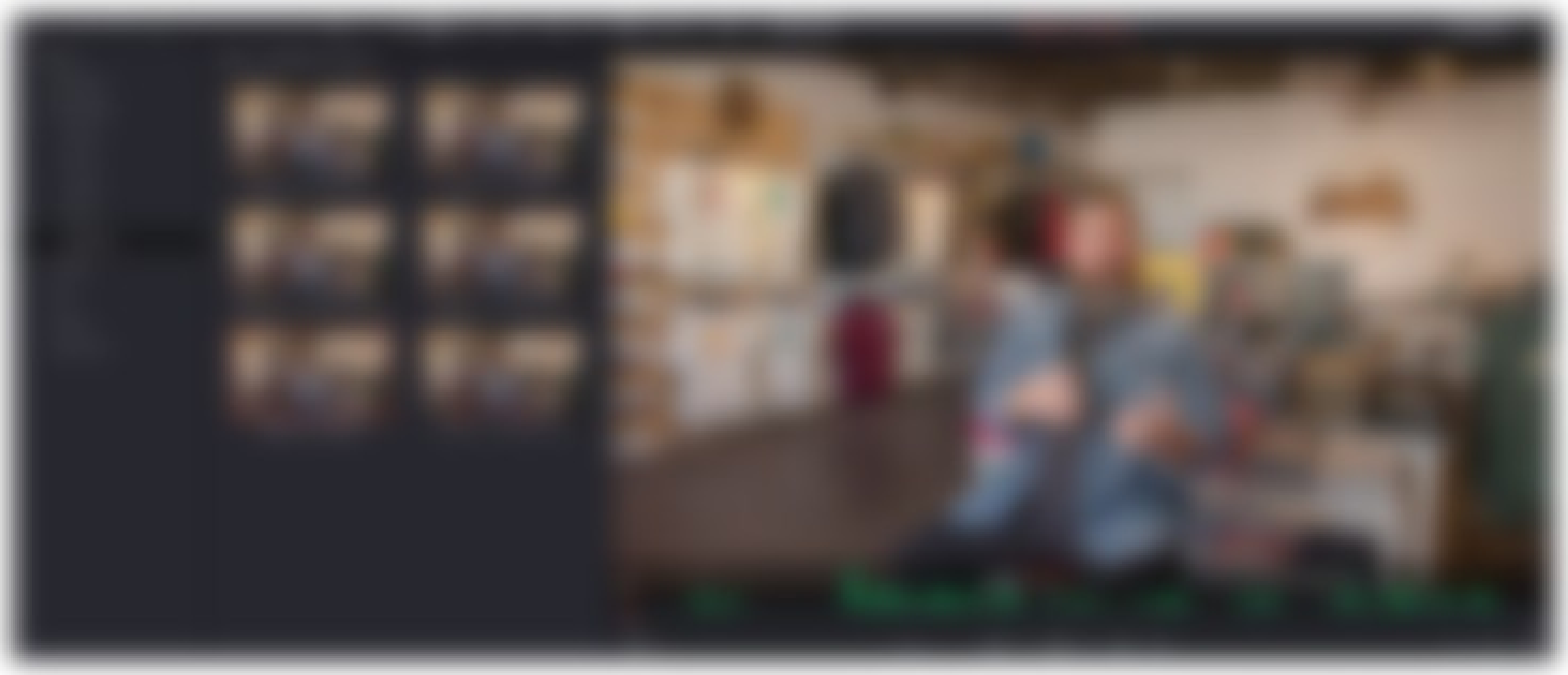
You will now continue to add the rest of the soundbites for this promo using a variety of editing functions.

1. In the timeline, click the Full Extent Zoom button to have the two timeline clips fit the timeline window.

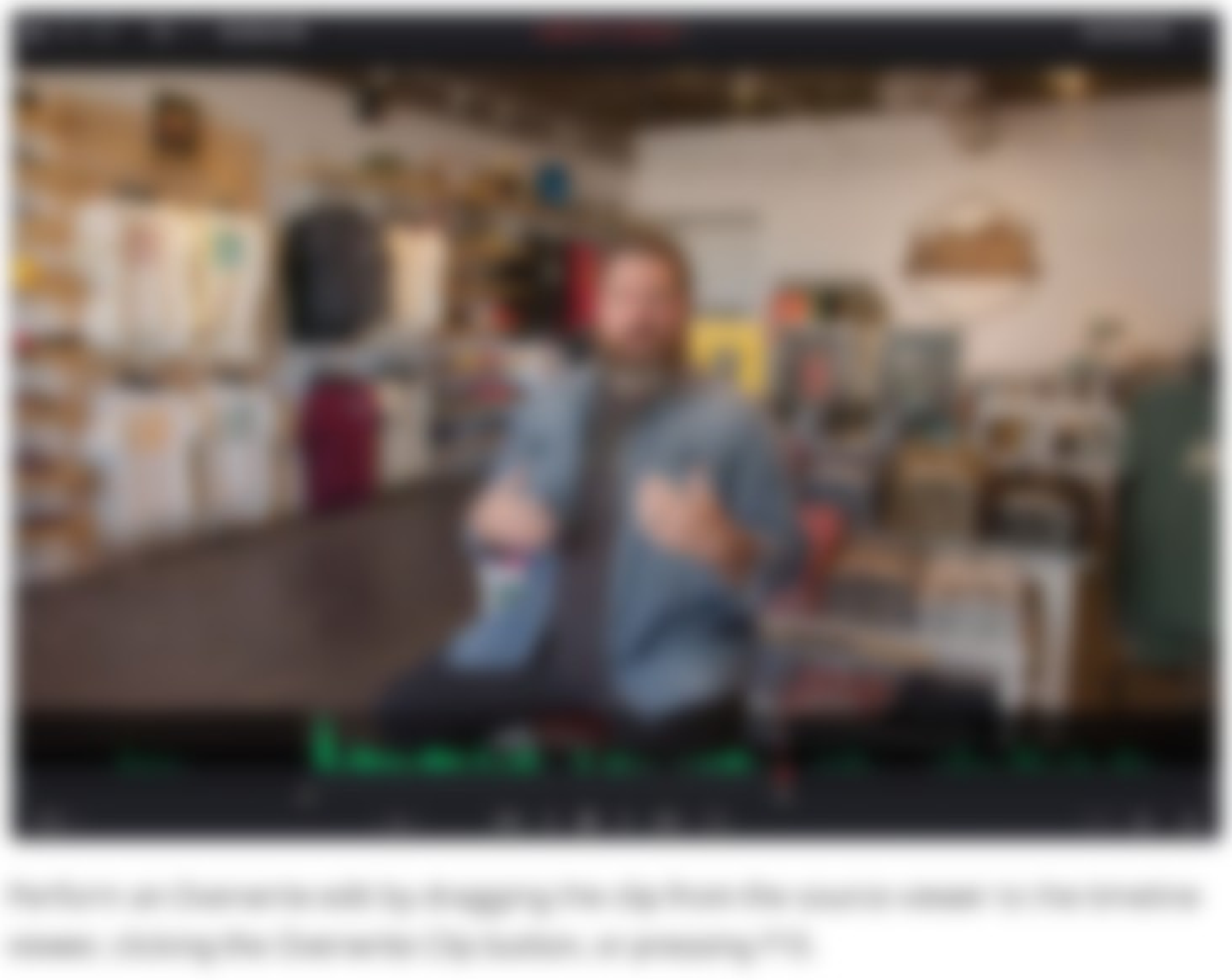
2. Select the source viewer to make it active.

TIP Press Q to quickly switch between the timeline and source viewers.

- Press Up Arrow to move to the previous clip in the media pool – [illegible] – and, if necessary, press Home to return to the start of the clip.

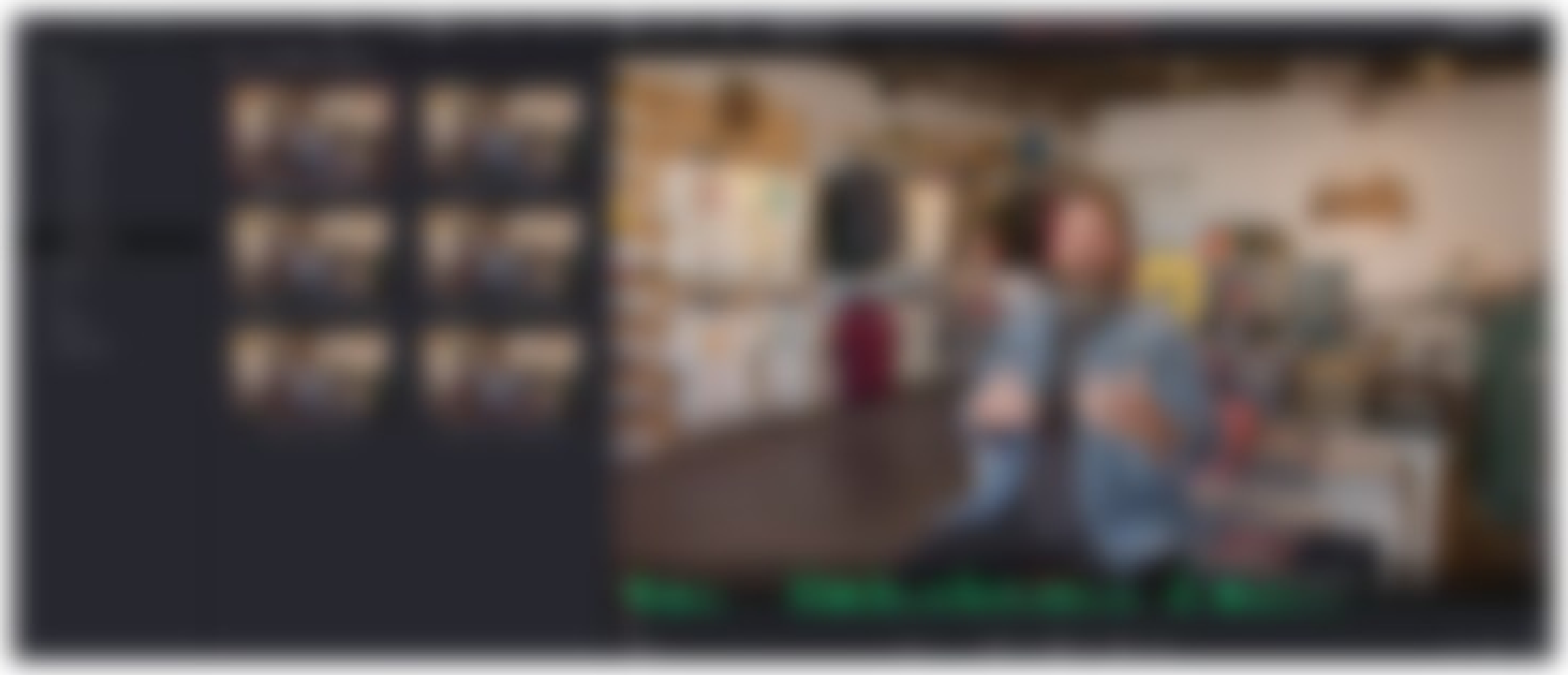


- Play the clip in the source viewer and add In and Out points around the portion of the interview where Chris says: "Our brand is really a reflection of our community, who we are."



- Perform an Overwrite edit by dragging the clip from the source viewer to the timeline viewer, clicking the Overwrite Clip button, or pressing F10.

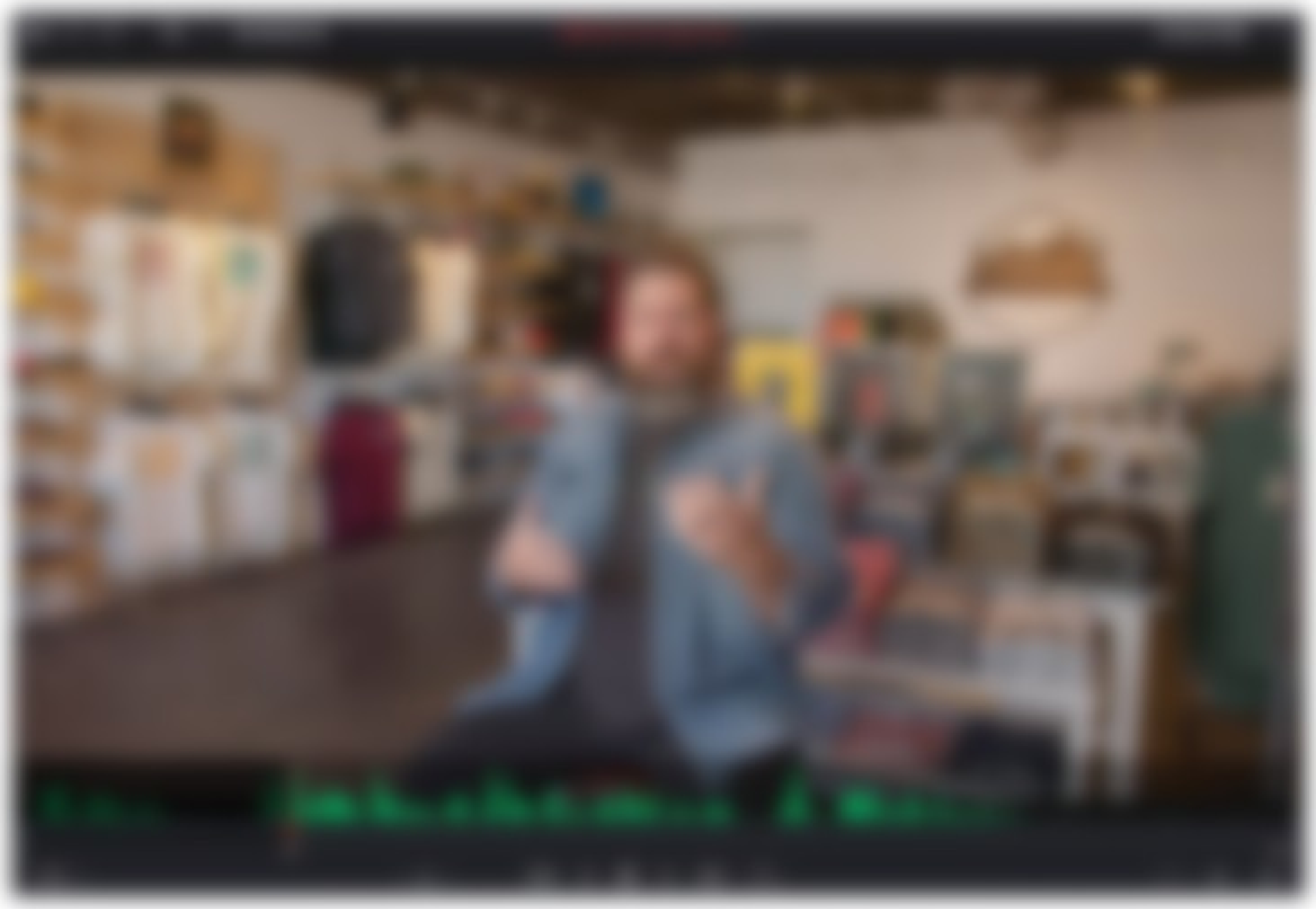
- Press Q to switch back to the source viewer and press Up Arrow until the first clip in the SUBCLIPS bin, [illegible] is selected and open in the source viewer. Then press Home to return the playhead to the start of the clip.



- Play the subclip to review the soundbite.

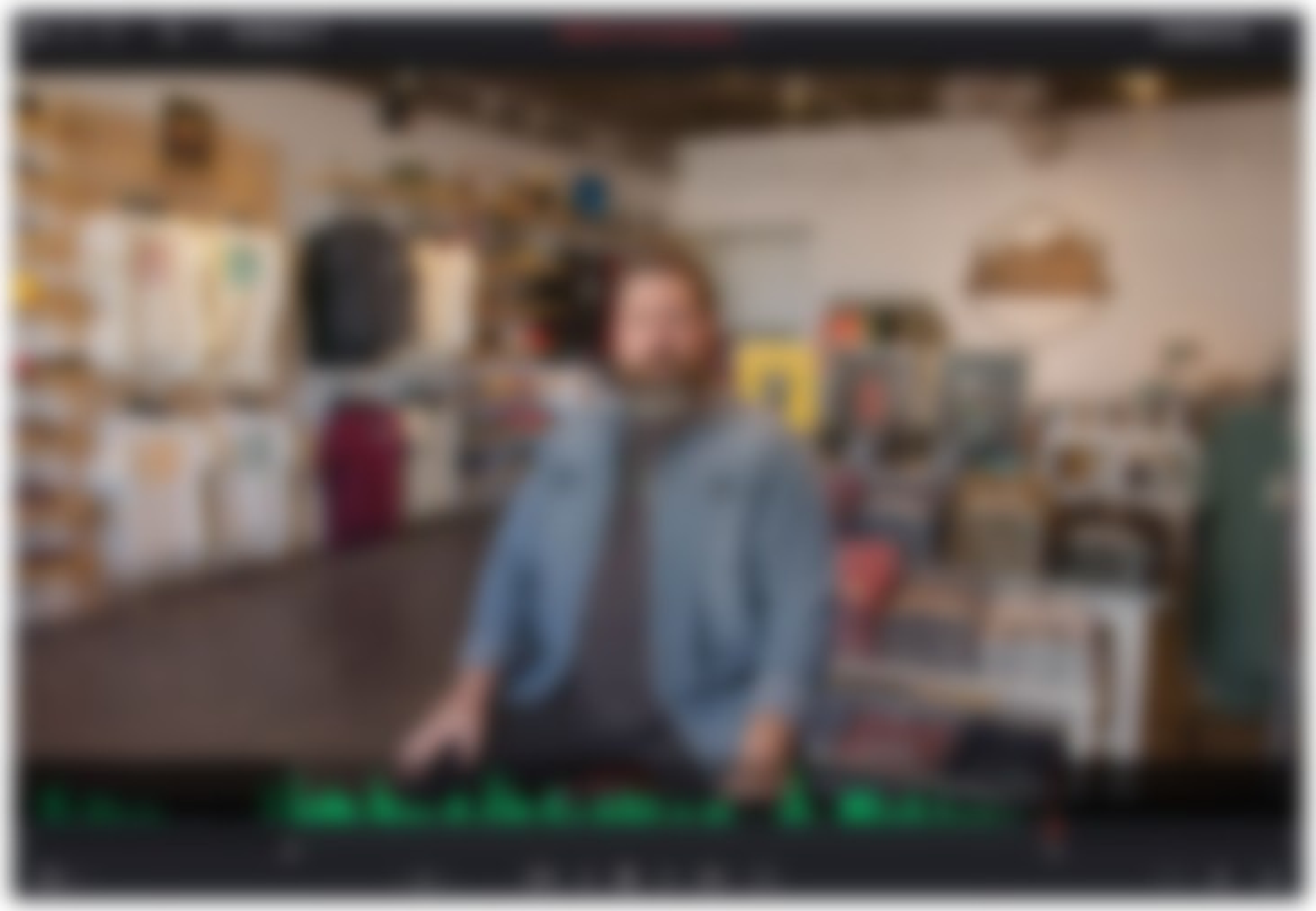
  This is the next soundbite you will add to the timeline, but it's a bit of a tight edit to find the In point as Chris stumbles slightly and says, "that" twice. However, using the audio waveform will make it much easier to locate the short pause between the two "thats" quickly and accurately for a clean start to the soundbite.

- Place the playhead after the first "that" but before the second "that," and press I to add an In point.



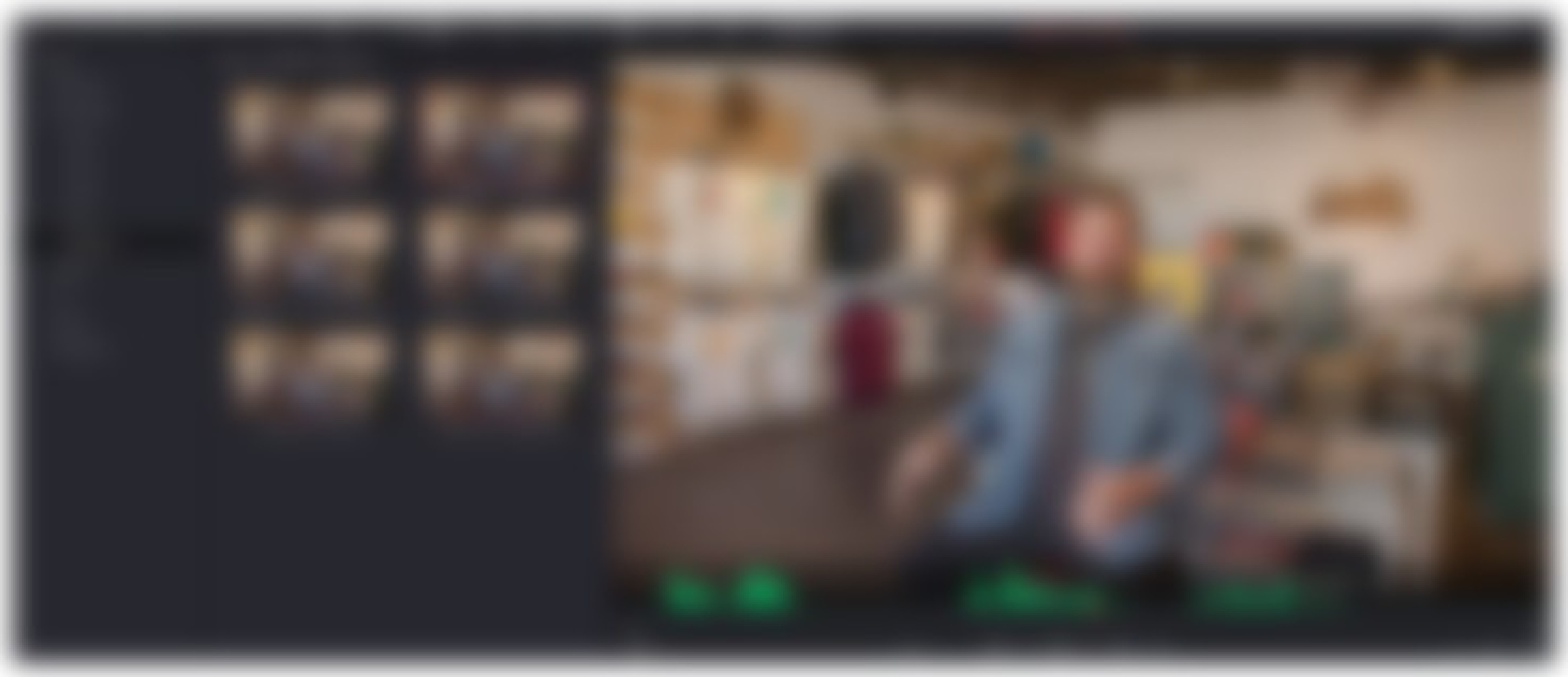
TIP Use the Zoom Audio Waveform to more easily see the gap between [illegible] [illegible]

[illegible] Continue playing the clip in the source viewer and add an Out point after Chris says, "... that's really where the design process starts."

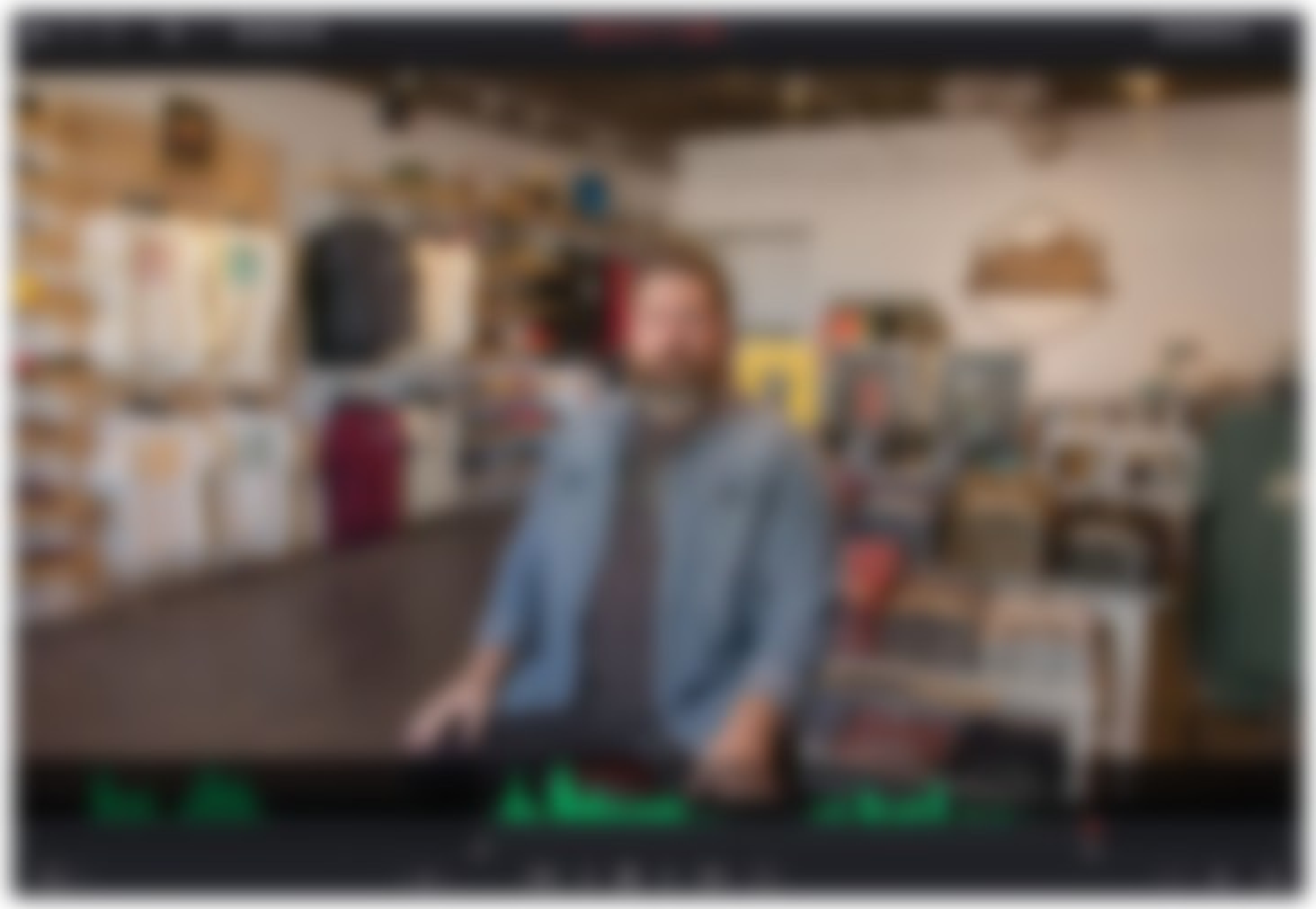


[illegible] Perform an Overwrite edit to add this clip to the timeline at the current playhead position.

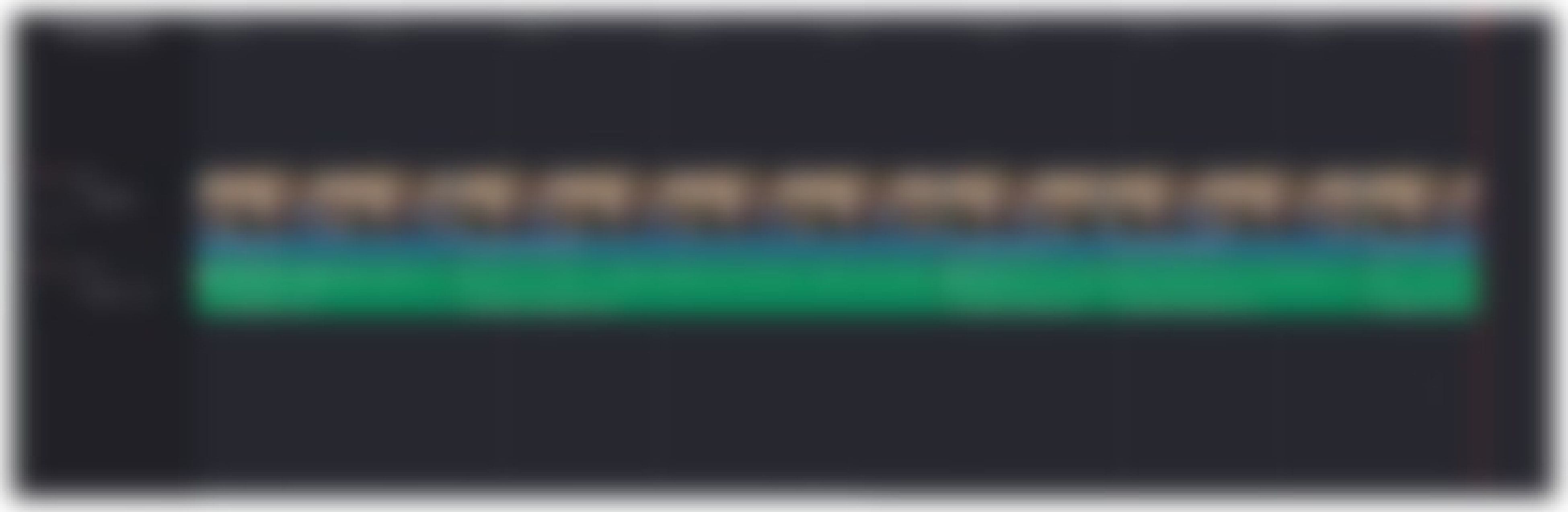
[illegible] Press Q to switch back to the source viewer and press Down Arrow to move to the subclip, [illegible]



- Add In and Out points around the final soundbite of this interview where Chris says, "That's why we say experience the southwest."



- Again, perform an Overwrite edit to add this clip to the timeline.



- Move the playhead back to the beginning of the timeline and play through to review the soundbites.

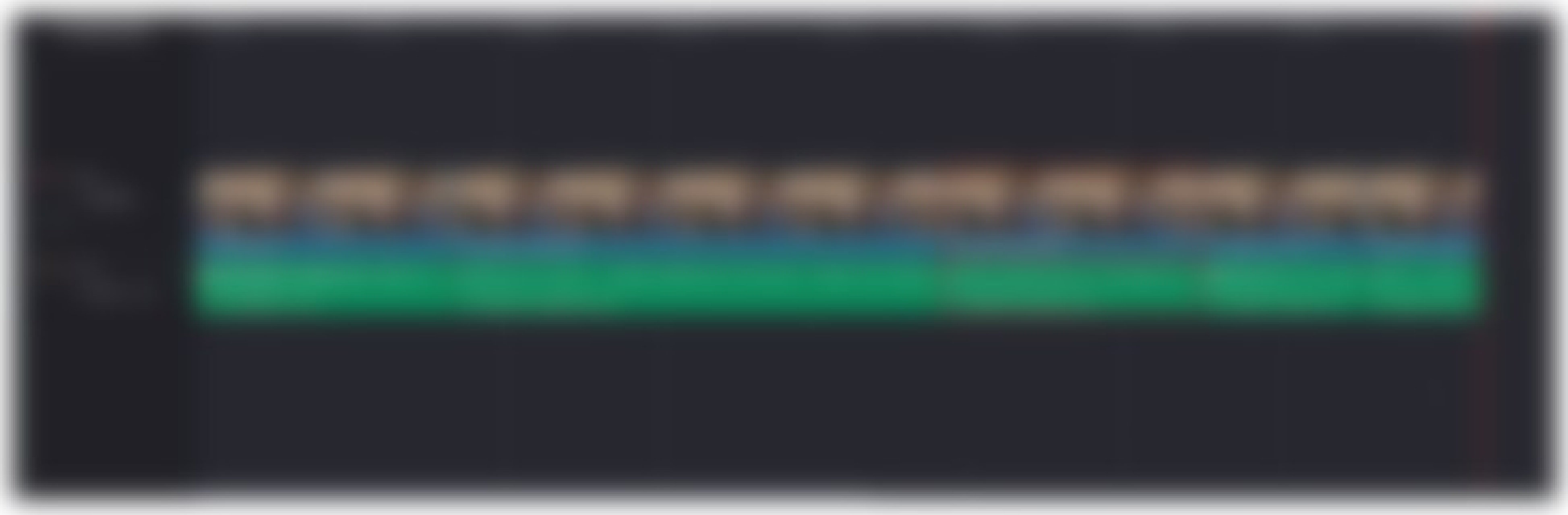
Reordering Timeline Clips

After listening to the edited soundbites, you may want to change the order of the clips in the timeline. If this is the case, you can use the Swap Clips command.

1. Listen carefully to the soundbites, particularly the third and fourth clips: **[illegible]** and **[illegible]**.

   It would probably make more sense to have these two clips the other way around: **[illegible]** before **[illegible]**.

2. Select **[illegible]** in the timeline and choose Edit > Swap Clips Towards Left or press Shift-Command-, (comma) in macOS or Shift-Ctrl-, (Windows) to swap the clip's position with the preceding clip, **[illegible]**.

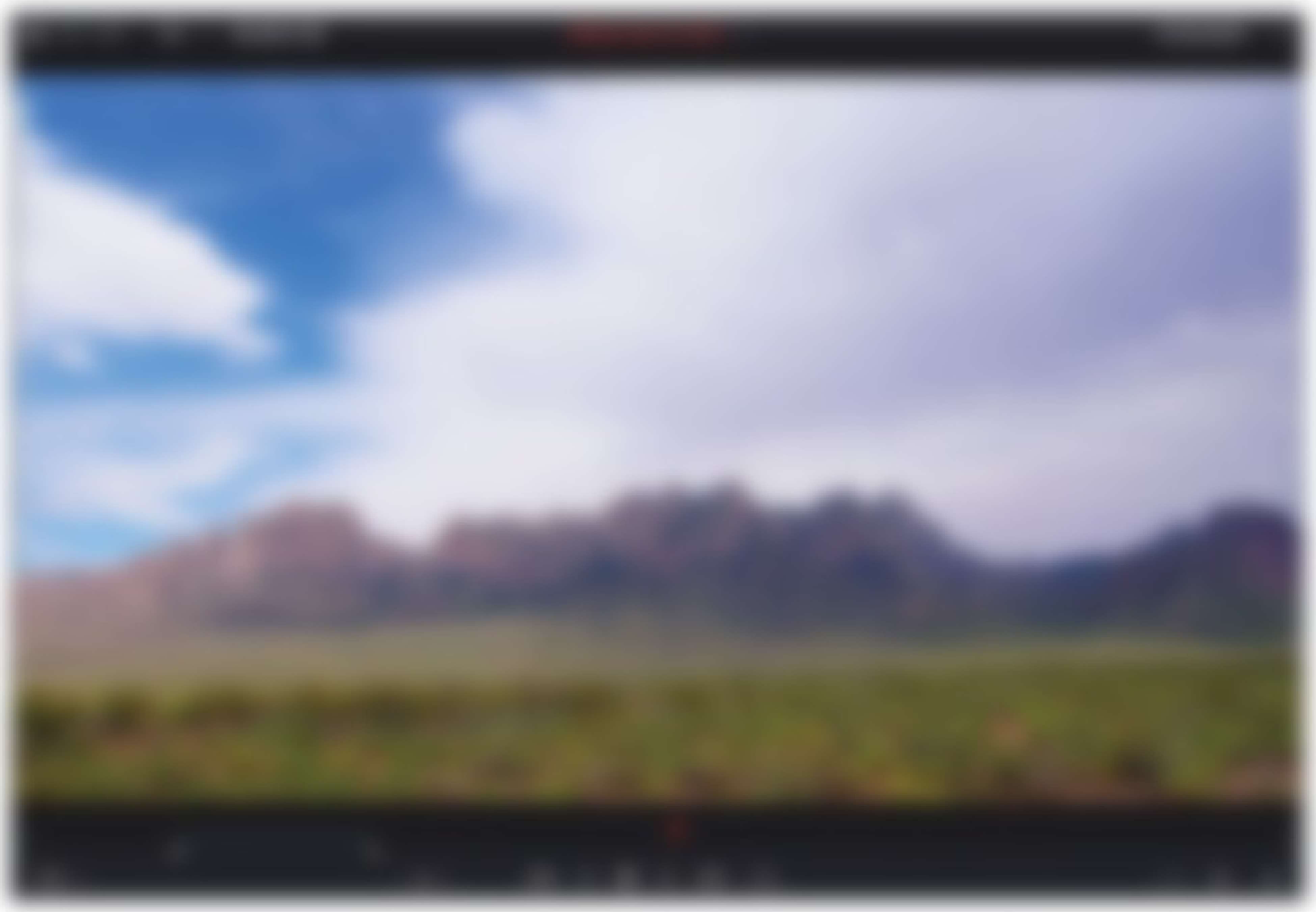


NOTE To swap a clip with the next clip in the timeline, choose Edit > Swap Clips Towards Right or press Shift-Command-. (period) in macOS or Shift-Ctrl-. (period) in Windows. You can also select multiple clips and use the same commands to swap their position with the clips that either precede or follow the selection.

Insert and Append at End Edits

Now that you have the soundbites in the timeline, you can begin building out the story with some of the B-roll footage. You will start by adding a timelapse shot at the start and end of the edit, which will eventually be used as a background for the opening and closing titles.

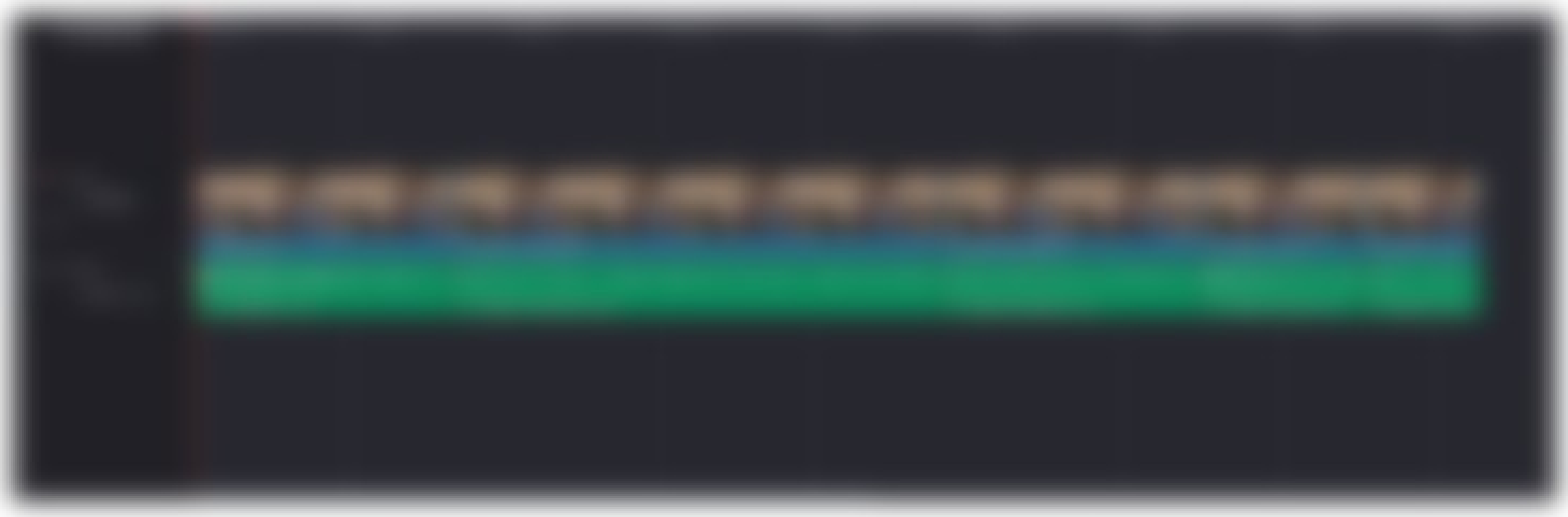
- In the Smart Bins list, click the disclosure arrow for the Keywords category, select the TIMELAPSE smart bin, and double-click the ORGAN MOUNTAINS 1 clip to open it in the source viewer.



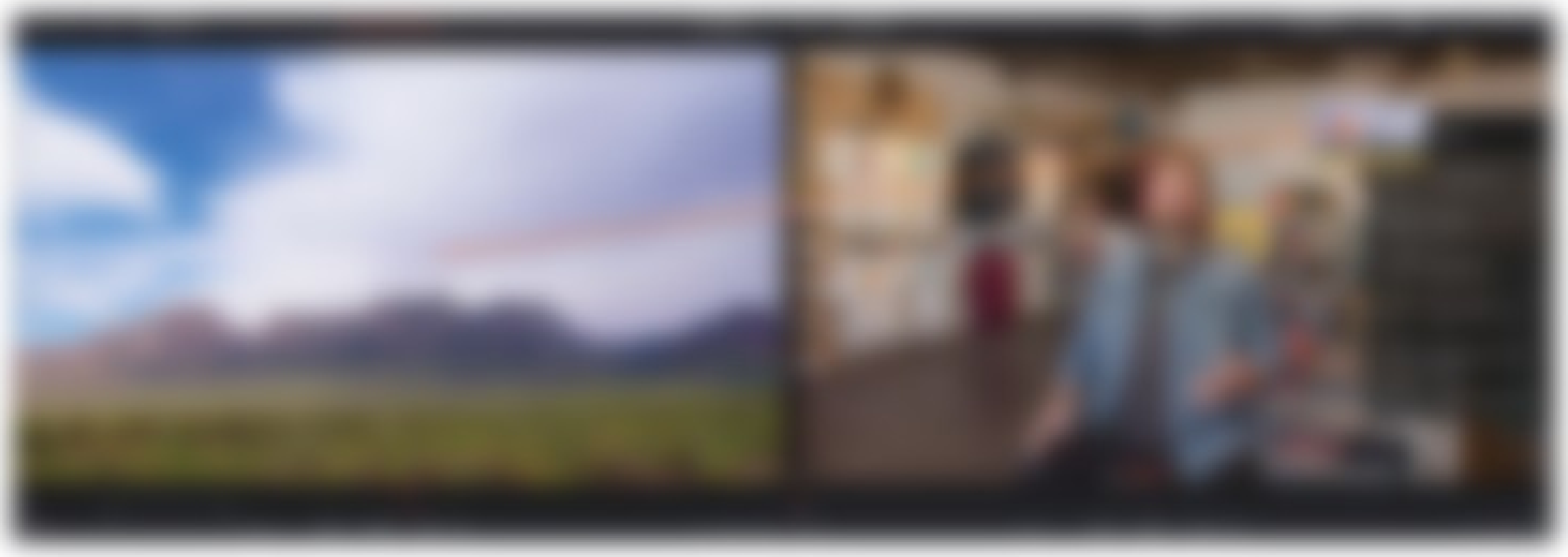
This is a timelapse shot of the eponymous Organ Mountain and will serve well as a background to the opening graphic and closing titles you will add later. Notice that In and Out points have already been applied for you at a duration of 7 seconds (07:00).

To insert this at the beginning of your timeline, you will need to move the timeline playhead to the appropriate point.

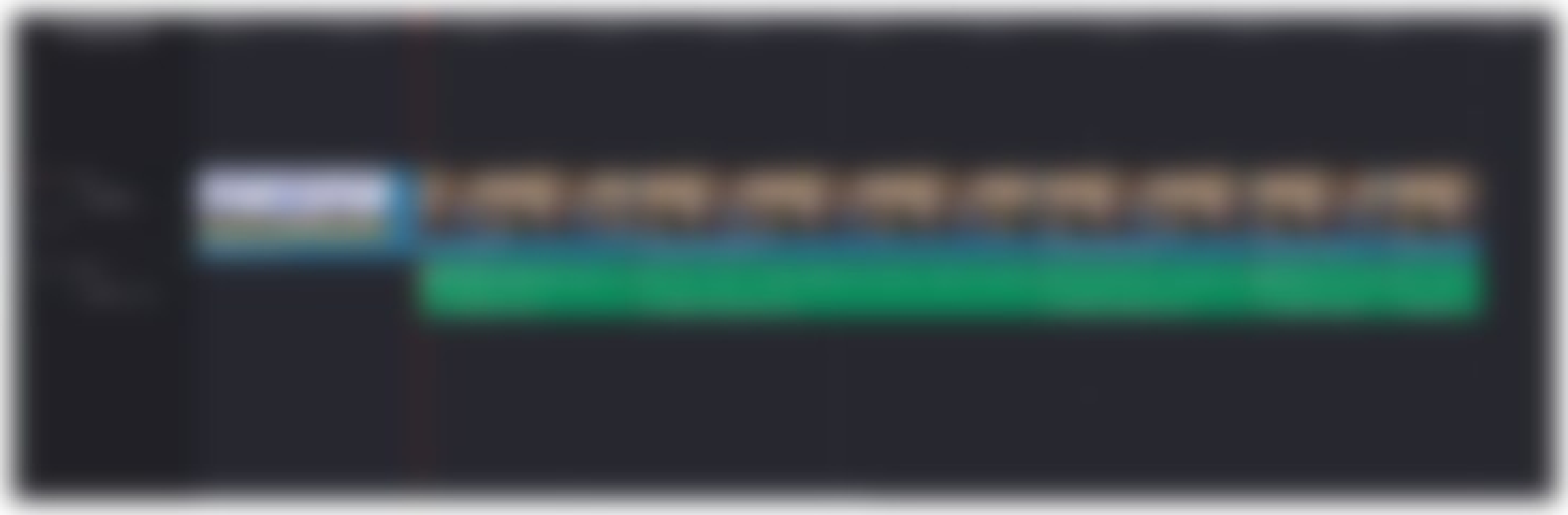
- In the timeline, deselect any selected clips and press Home to move the playhead to the start of the timeline.



- Drag the clip from the source viewer to the timeline viewer, placing it on the Insert overlay before releasing your mouse button.



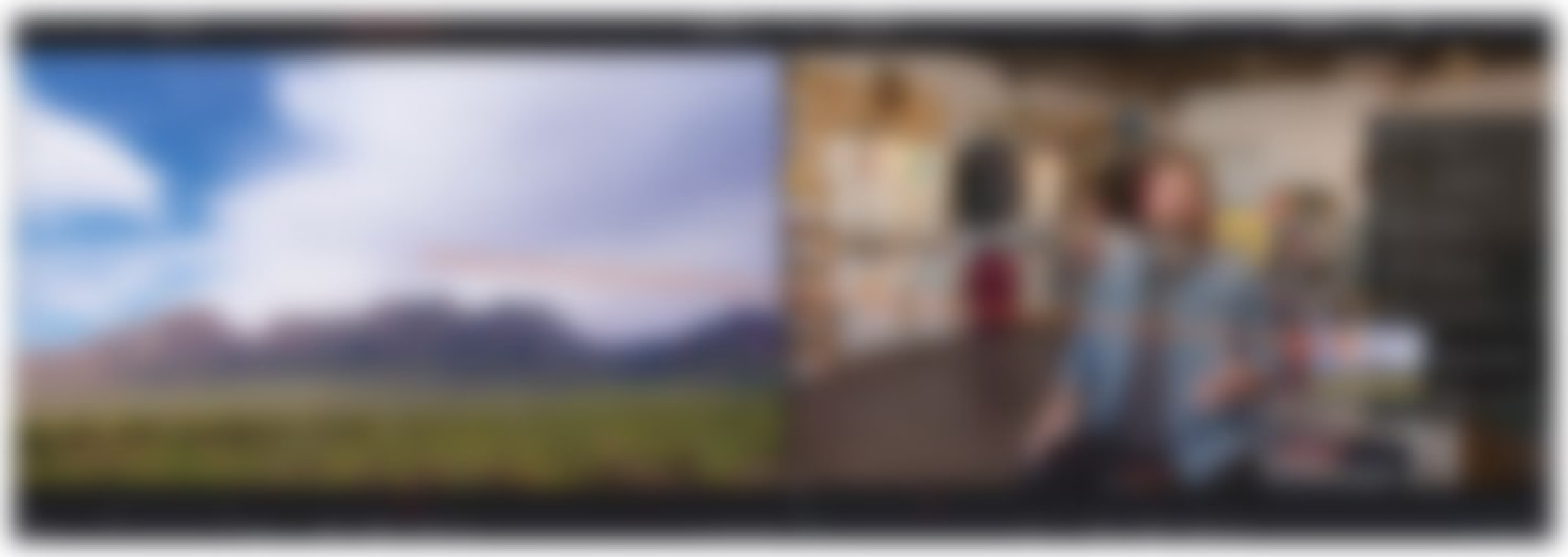
The clip is inserted at the playhead position in the timeline.



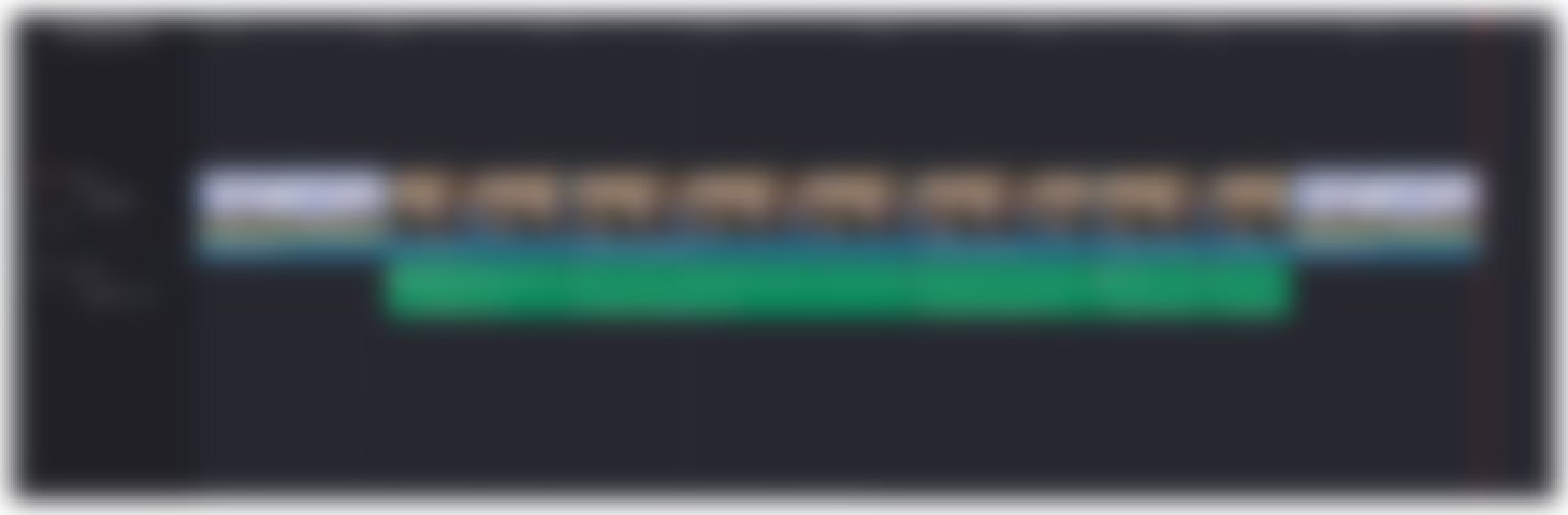
TIP You can also insert a clip in the timeline by clicking the Insert Clip button next to the Overwrite Clip button in the timeline toolbar, or by pressing F9.

Another useful editing function is the Append at End edit. This does exactly what it says: it adds the new clip after the last clip in the timeline.

- Drag the clip from the source viewer to the timeline viewer, placing it on the Append At End overlay.



The same 7-second clip is added to the end of the timeline.



NOTE Although there isn't a specific button for Append at End edits in the timeline toolbar, you can still access the same command by choosing Edit > Append to End of Timeline or by pressing Shift-F12.

The "Rules" of Three-Point Editing

Every edit you'll make in this lesson is referred to as a three-point edit. This means that DaVinci Resolve can assess the duration of what you want to be edited and where you want it added in the timeline.

In the previous steps, the In and Out points you marked in the source viewer were the first two points required; the third point was the position of the playhead in the timeline, where the In point of the clip in the source viewer will be placed when you make the edit.

Even if you don't add any In or Out points to a clip prior to editing it to the timeline, you're still following the rules of three-point editing because DaVinci Resolve uses the clip in the source viewer from the beginning (the implied In point) to the end (the implied Out point).

Even if you drag a clip directly to the timeline, you are still using the rules of three-point editing because the clip you drag into the timeline will be limited by any In and Out points you'd added to the clip in the source viewer, but you are manually overriding the default third point (where the clip will start) by deciding where to place the clip prior to releasing the mouse button.

Is the Append at End edit a three-point edit? Yes! It still adhered to the rules of three-point editing by utilizing the In and Out points in the source viewer, but although the Append at End edit didn't use the timeline playhead position, it still had a third point that it was following: the end of the last clip in the timeline.

Later in this lesson, you'll learn how to make much more complex three-point edits by placing different combinations of In and Out points in the source viewer and timeline, so try to work out the rules of three-point editing that DaVinci Resolve is following and how the In and Out points (real or implied) are being used to complete these edits.

Of course, there are always exceptions to every rule, and in later lessons, you'll make some four-point edits that use In and Out points in unique and specific ways!

NOTE If you need to catch up before moving to the next step, select the TIMELINES bin and choose File > Import > Timeline, navigate to R20 Editor's Guide / Lesson 01 > Timelines, select [illegible] and click Open.

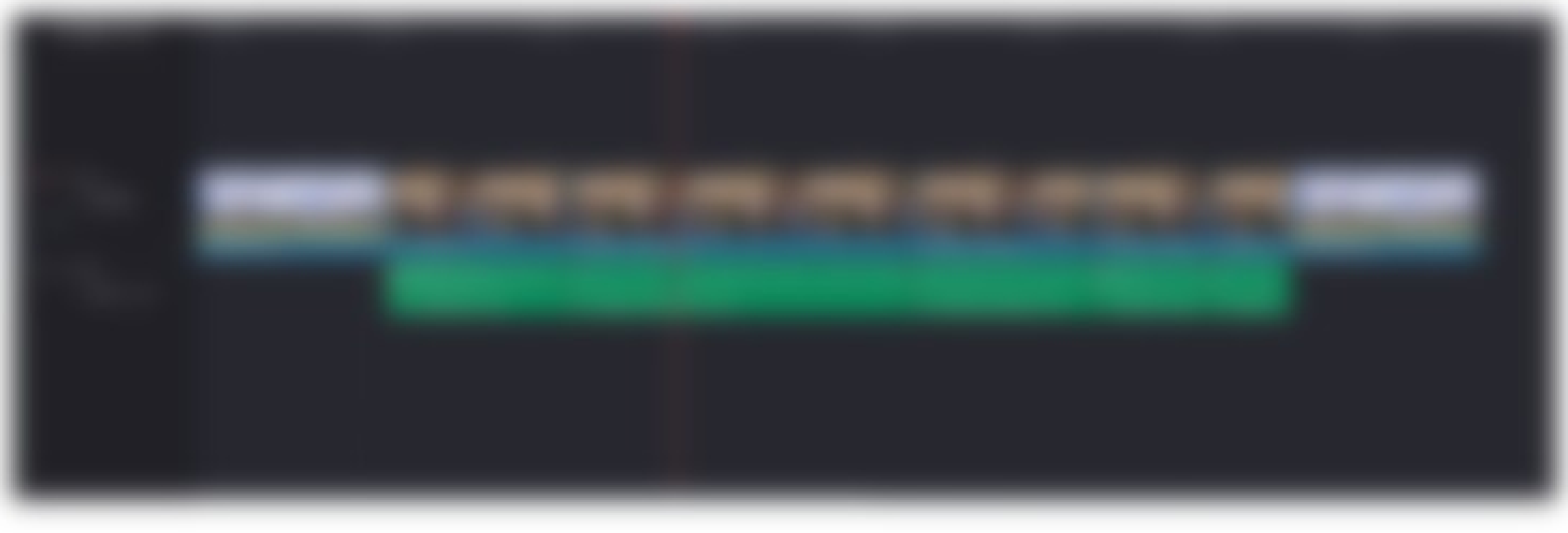
Note that whenever you import a [illegible] timeline using clips with synced audio, DaVinci Resolve will attempt to re-import the separate audio clips and ask you to search for the media files to relink. This is not necessary. Click Cancel and remove the offline clips that have been added to the bin with the imported timeline.

Pacing the Soundbites

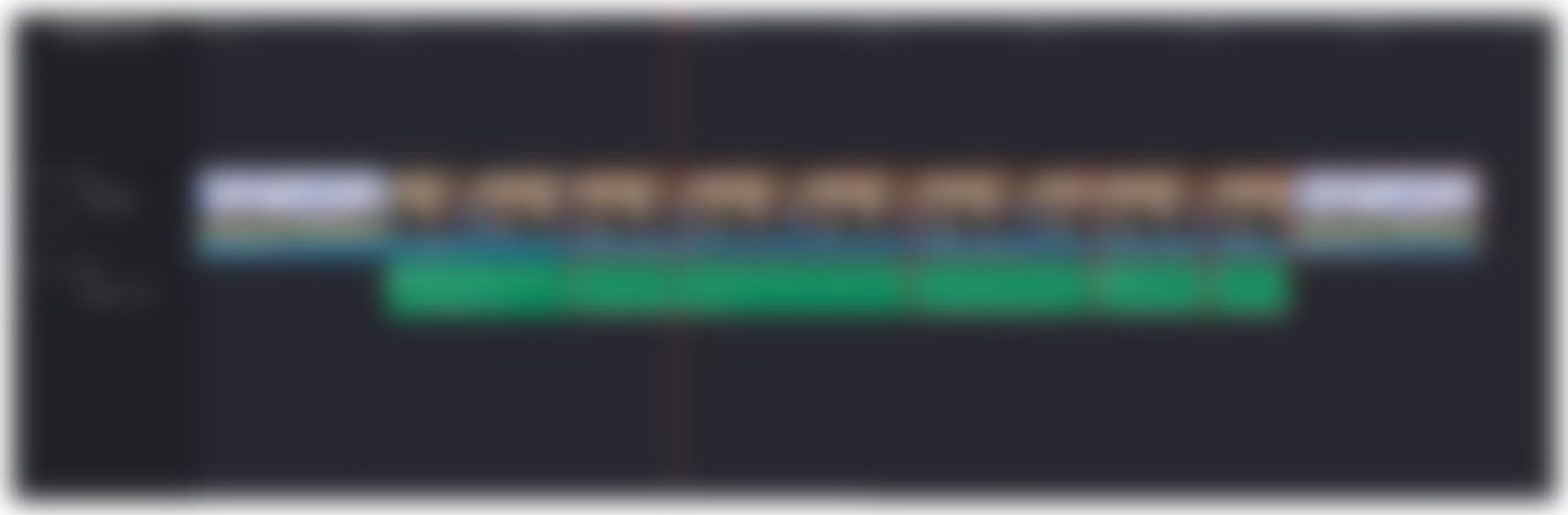
The timeline is starting to take shape, but all the clips are currently tightly edited, meaning there's no "breathing space" between the soundbites. The "breathing space" is important for two reasons. First, it makes the interview sound natural and doesn't distract the audience. This best reflects how people normally speak; very rarely does someone speak out loud without having to take a breath every once in a while, unlike a voiceover artist reading the terms and conditions in a commercial. Second, it allows the audience to actually process what's been said! If you hit them too early with the next piece of information, the audience might feel overwhelmed and might not take in the story or messages you're trying to convey, just like when a voiceover artist reads the terms and conditions in a commercial.

You'll introduce a short gap between each clip to make the soundbites sound natural. The best way to do this is to move the rest of the clips up in the timeline. Of course, this will leave uncomfortable black gaps in the timeline, which will eventually be bridged by the addition of B-roll footage. As with most creative processes, it requires a little imagination, having a feel for the material you're working with, and an understanding of the shape of the final piece.

1 Move the timeline playhead so it sits anywhere over the third clip in the timeline.



- Choose Timeline > Select Clips Forward > Select Clips Forward on this Track, or press Y.

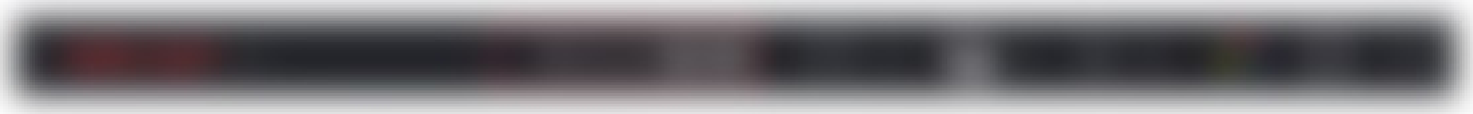


This command selects all the clips forward from the timeline playhead for the targeted track(s). You will learn more about targeting tracks in Lesson 2, "Refining the Rough Cut."

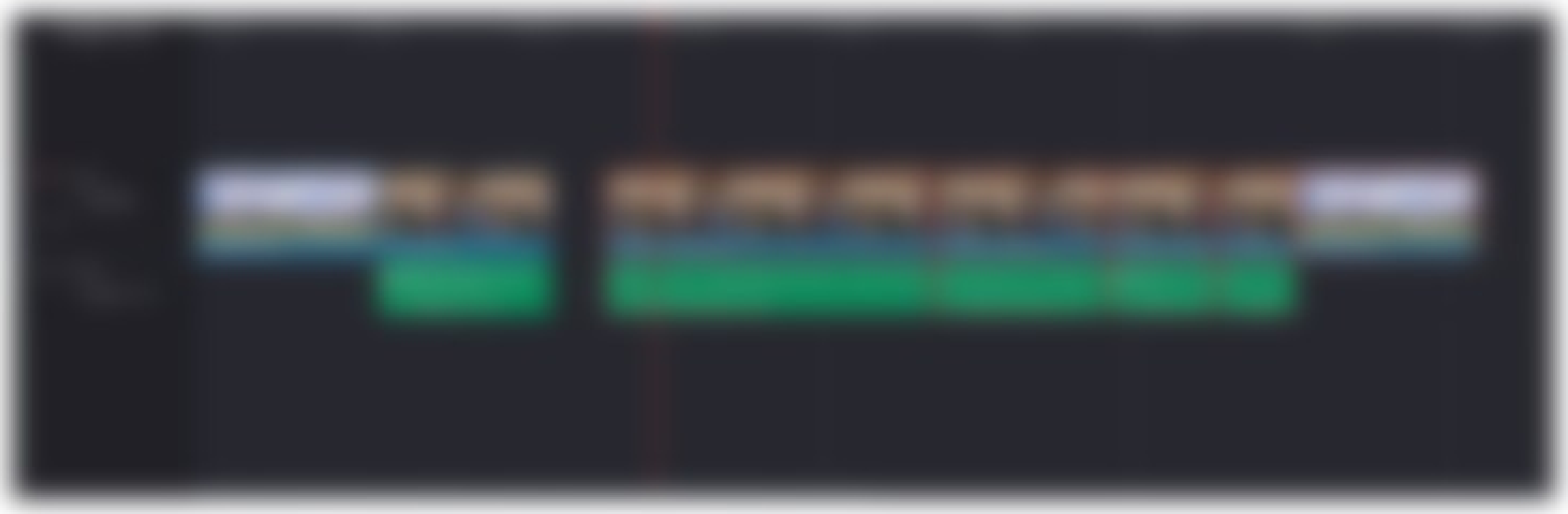
TIP If you have clips on multiple tracks, you can choose Timeline > Select Clips Forward > Select Clips Forward on All Tracks or press Option-Y (macOS) or Alt-Y (Windows).

With all the clips selected, it's easy to move them together.

- With the clips still selected, type **+200** into the timeline viewer's timecode field and press Enter (Return).

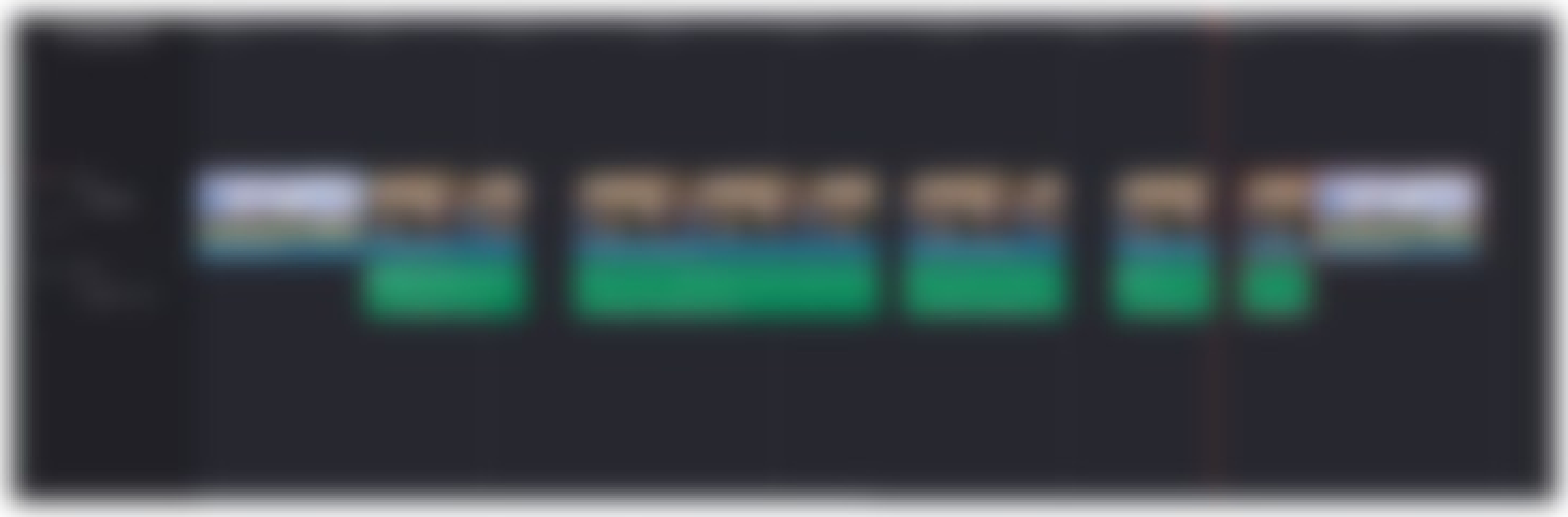


This moves the selected clips forward by 2 seconds, leaving a gap. This is an arbitrary amount that might need to be adjusted later when you're refining the edit.



NOTE You can also use the number keys of an extended keyboard to quickly enter timecode values directly.

4. Press the Down Arrow key to move to the next edit in the timeline (which places the playhead on the first frame of the third interview clip) and press Y to select all clips along the targeted track.
5. Type **+100** and press Enter (Return) to add another 1 second gap between the second and third interview clips.
6. Move the playhead anywhere over the fifth clip in the timeline and press Y to select all clips forward from the playhead.
7. Again, type **+200** and Enter (Return) to have the last three clips move forward by 2 seconds, leaving another gap on the timeline.
8. Finally, place your playhead over the final soundbite and press Y.
9. Type **+100** and press Enter (Return) to create a 1 second gap before the payoff of the video, where Chris recites the tagline, "Experience the southwest."



10. Click in an empty space in the timeline to deselect all the clips in the timeline and play the timeline to review the current edit.

It might seem a little strange to leave gaps like this in the timeline. However, once you've filled the gaps with some of the B-roll footage, Chris's interview will sound more natural and better paced. Think of it as the movie-making equivalent of punctuation!

Adding the B-Roll Footage

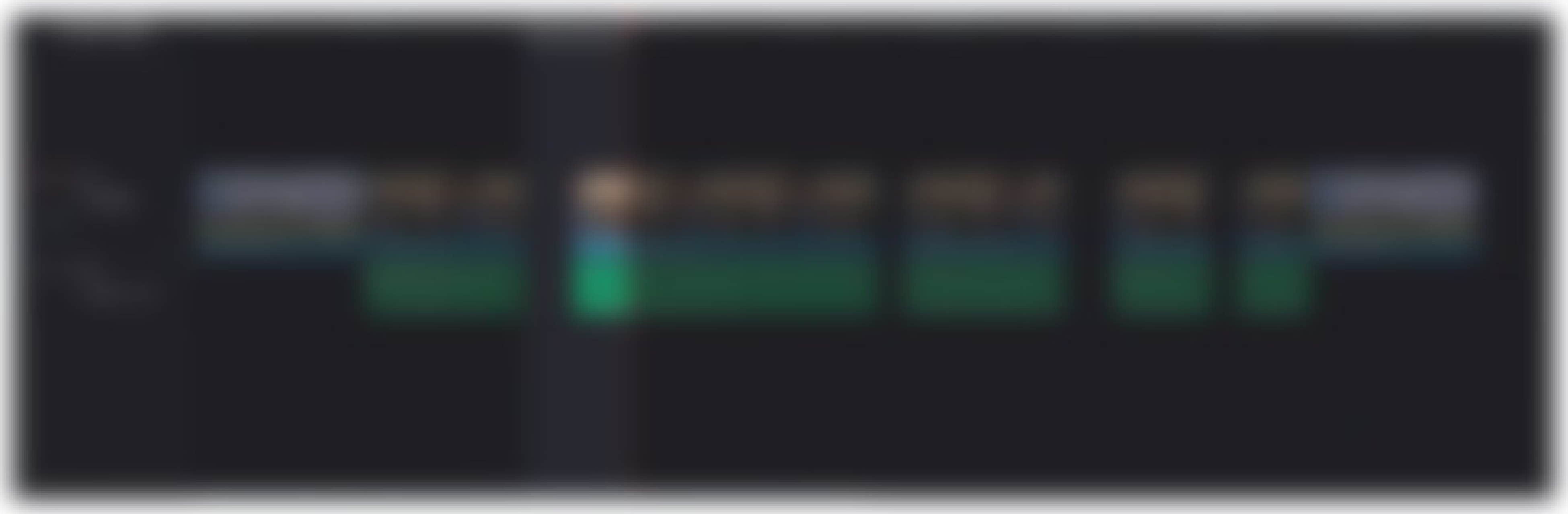
Now that you have the general structure of the edit in place, you can start adding the B-roll. This performs the dual role of covering the gaps between the soundbites and adding visuals to make Chris's soundbites come alive, pulling the edit into a cohesive whole. This process is often referred to as painting since you are primarily enhancing the story Chris is telling through additional pictures (and sounds, of course). To achieve this efficiently, you will set In and Out points in the timeline to specify the duration of the shots you'll need.

1 Move the playhead so that it snaps to the end of the second clip in the timeline, where the first gap starts.

> **TIP** Press N to enable or disable the timeline snapping function.

2 Press I to add an In point here in the timeline.

3 Play the timeline until Chris has said "... experience the southwest because ..." stop playback, and press O to add an Out point here in the timeline.

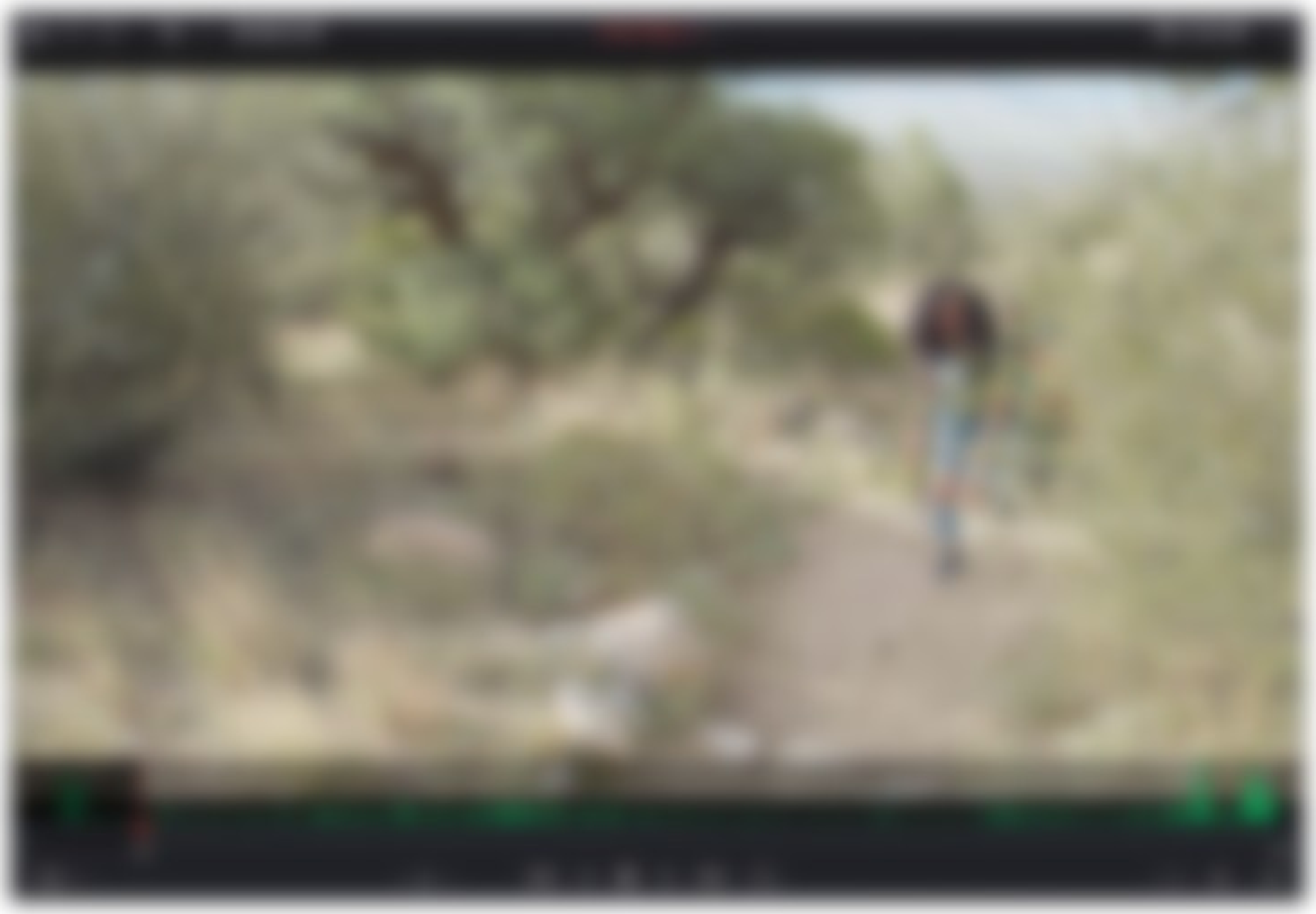


You have now marked a portion of the timeline where you want the first B-roll clip to be added.

4 From the PINE TRAIL smart bin, double-click the clip PINE TRAIL 4 to open it in the source viewer.

This is a shot of three friends, attired in Organ Mountain Outfitters clothing, walking in the foothills of the mountains.

- Play the clip from the beginning and add an In point after you hear the director shout, "Go ahead!" and the girl is about to take her second step.

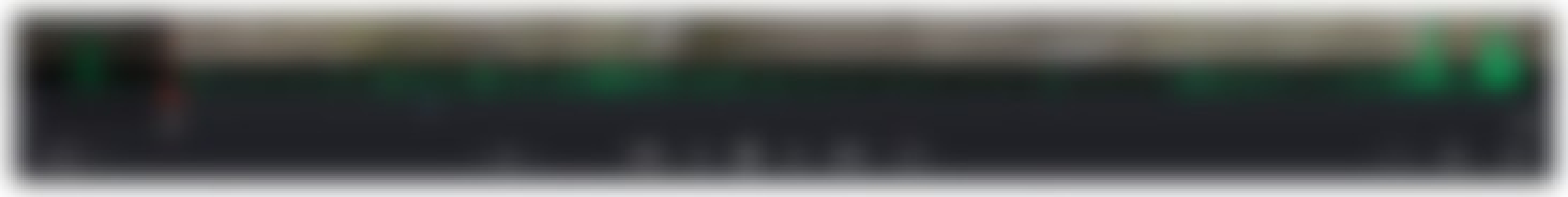


Take a moment and check how many In and Out points you've added in total for this edit — Three, right? The In and Out points in the timeline are the first two, and the In point in the source viewer is the third.

To help you envision how these In and Out points are working together, you can enable preview marks.

- Choose View > Preview Marks.

A small blue indicator appears in the source viewer, showing the implied Out point for this clip based on the current timeline In and Out points.



- In the source viewer, press Shift-O to jump to the implied Out point where the preview mark is.

This is the frame where you would have needed to set the Out point to have the shot fit the portion of the timeline. You don't need to do this, of course, because you have already added the Out point in the timeline.

You can also manually adjust the preview mark to affect the position of the Out point it's referencing in the timeline.

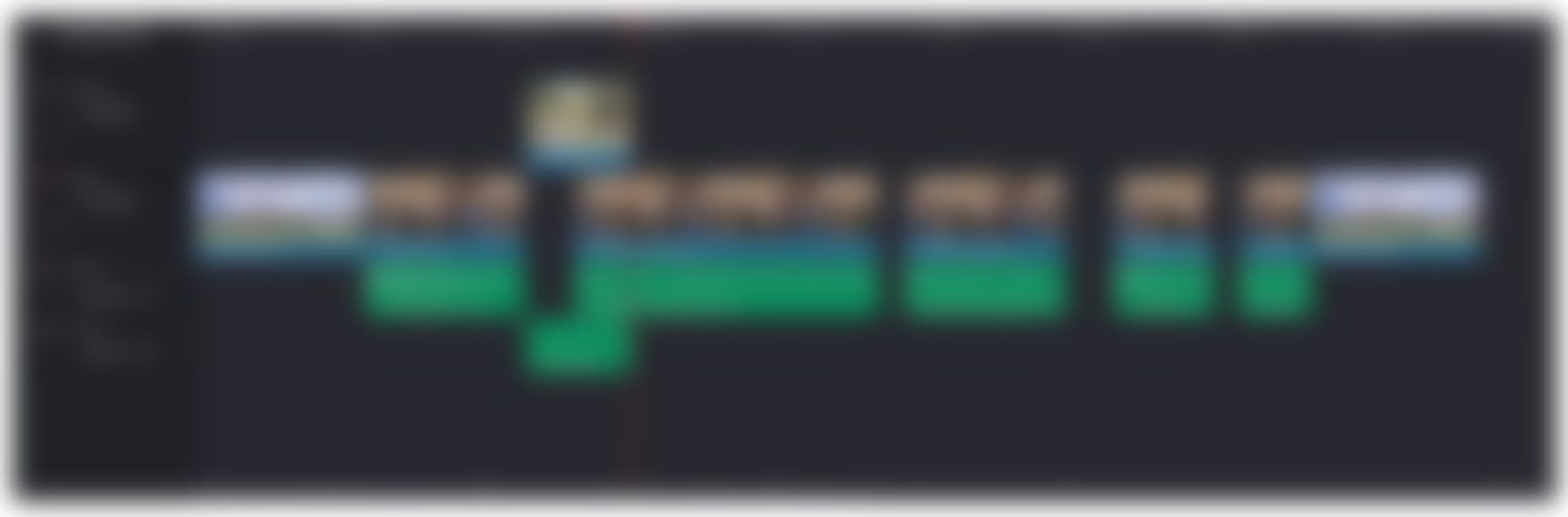
- Press Shift-I to move the source viewer playhead to the In point you'd previously added.
- Click and hold the preview mark, drag it left and right, and notice how the position of the Out point in the timeline changes.
- Choose Edit > Undo or press Command-Z (macOS) or Ctrl-Z (Windows) to undo the last step and return the timeline Out point to the original position where you added it.

> **NOTE** To prevent them from being an undue distraction, preview marks only appear once you've explicitly marked a combination of three In and Out points in the source viewer and timeline, so they won't appear if you're just using the timeline playhead as in the earlier steps.

Typically, B-roll shots like this need to be added on top of the interview already in the timeline as a cutaway. DaVinci Resolve provides an editing function to make this as easy as possible.

[illegible] Drag the [illegible] clip to the Place on Top function in the timeline viewer overlays.

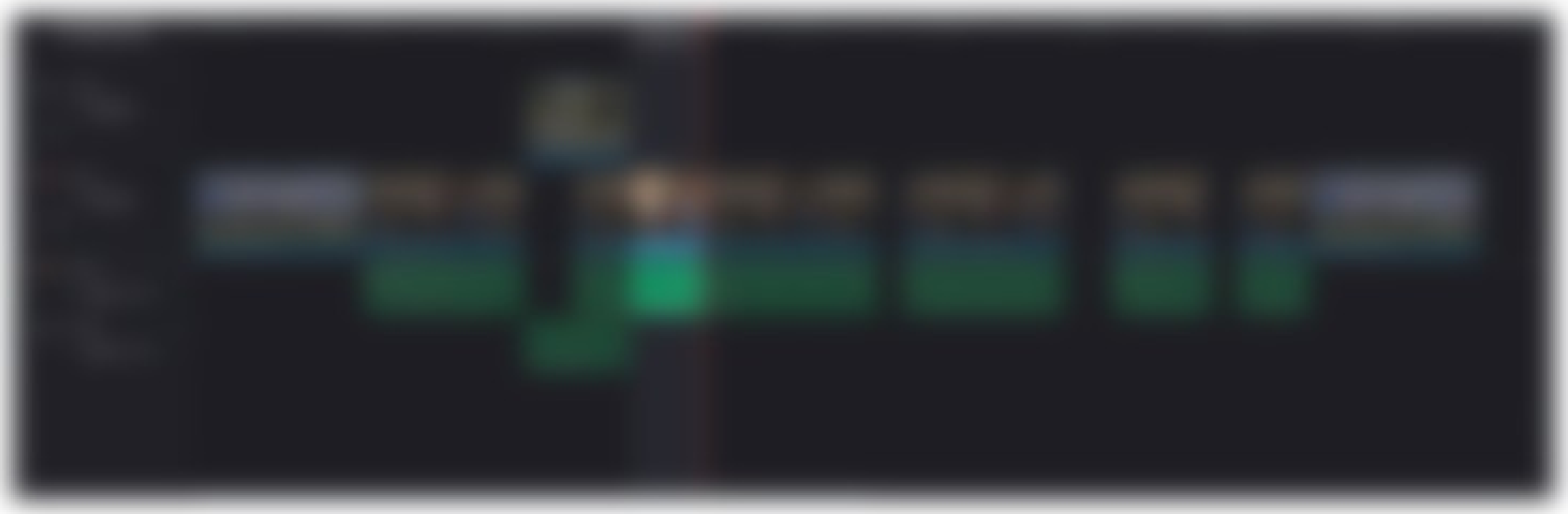
Thanks to the rules of three point editing, the clip is edited between the In and Out points in the timeline, starting at the In point you set in the viewer. The Place on Top edit also created an extra video and audio track to accommodate the new clip without overwriting any existing footage.



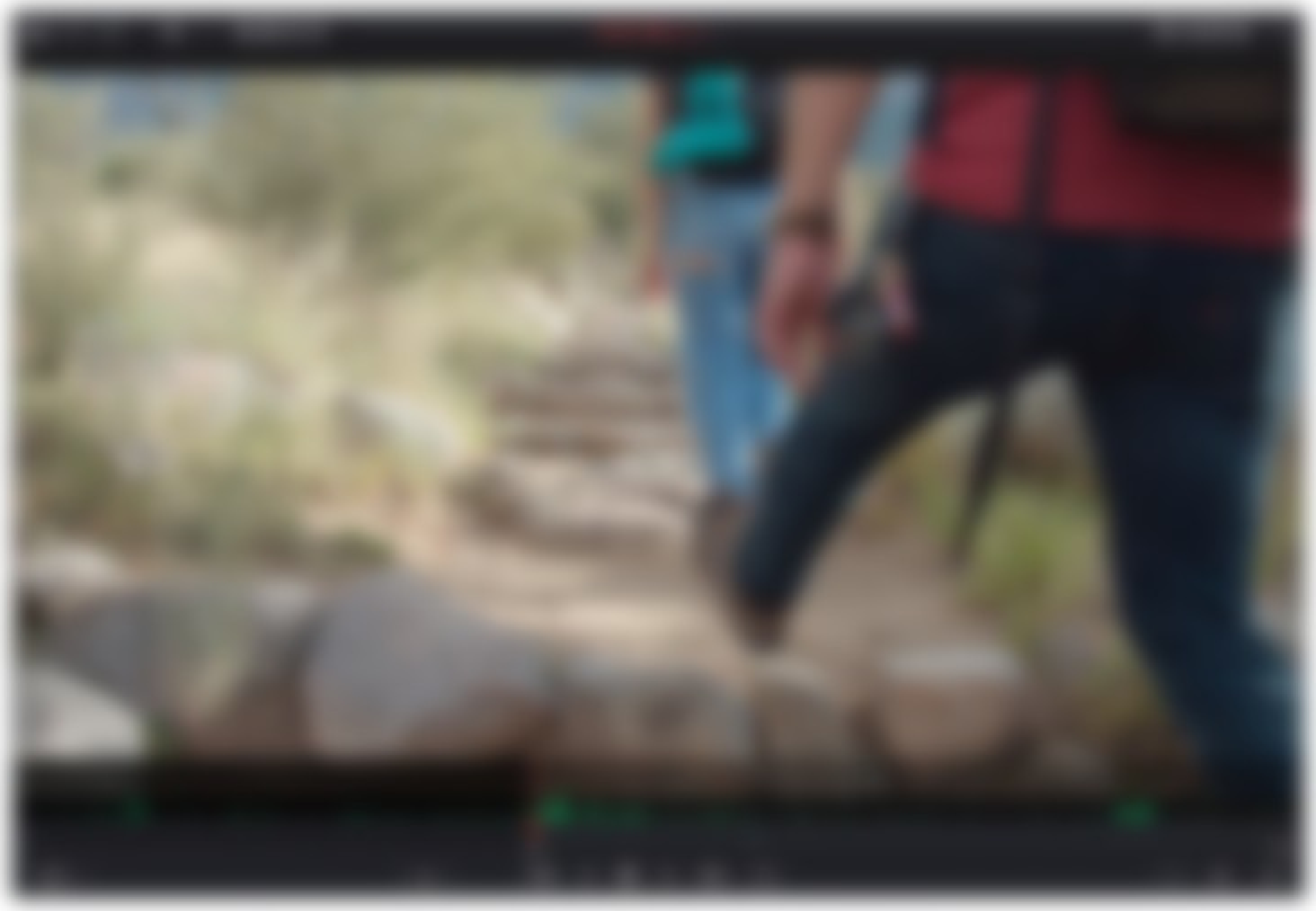
As before, the timeline viewer is now the active window, and the playhead is automatically positioned at the end of the clip you just added to the timeline, ready for you to specify where the next edit should be.

[illegible] Without moving the timeline playhead, press I to add an In point to the timeline.

- Play the timeline and add an Out point after Chris says, "…there's nothing like it…"

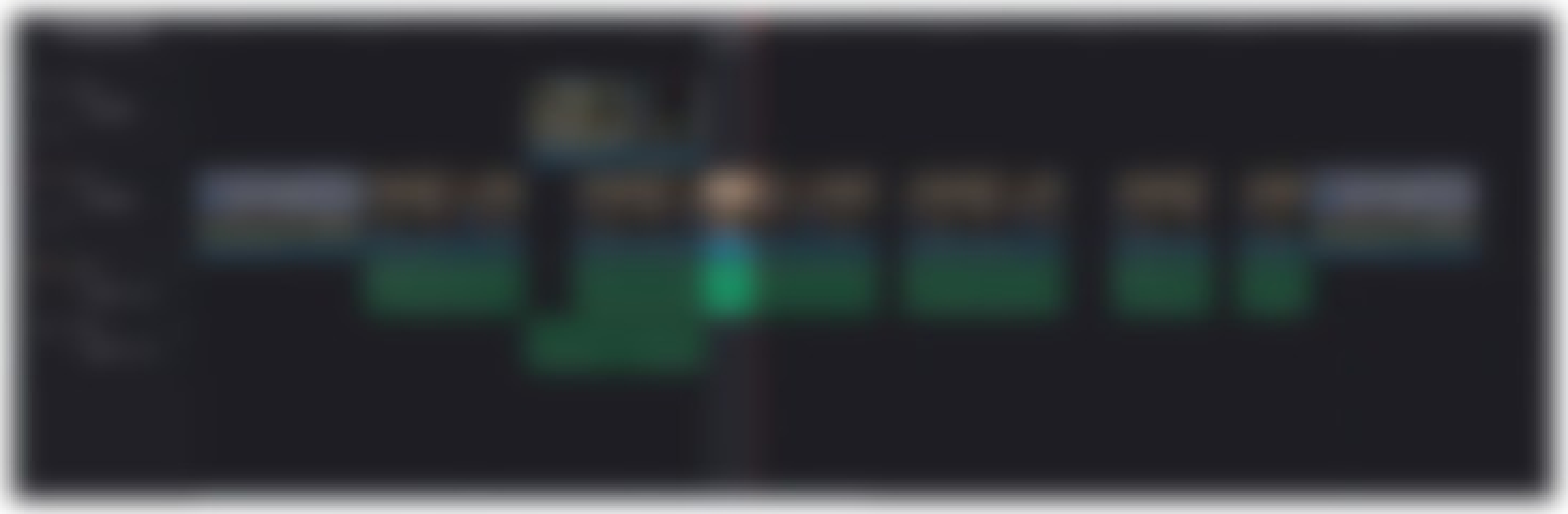


- Press Q to switch back to the source viewer and press the Down Arrow key twice to open the subsequent shot of the friends walking up the steps, Hiker Feet 3.
- Set an In point just as the second guy enters the frame and has his left leg outstretched.



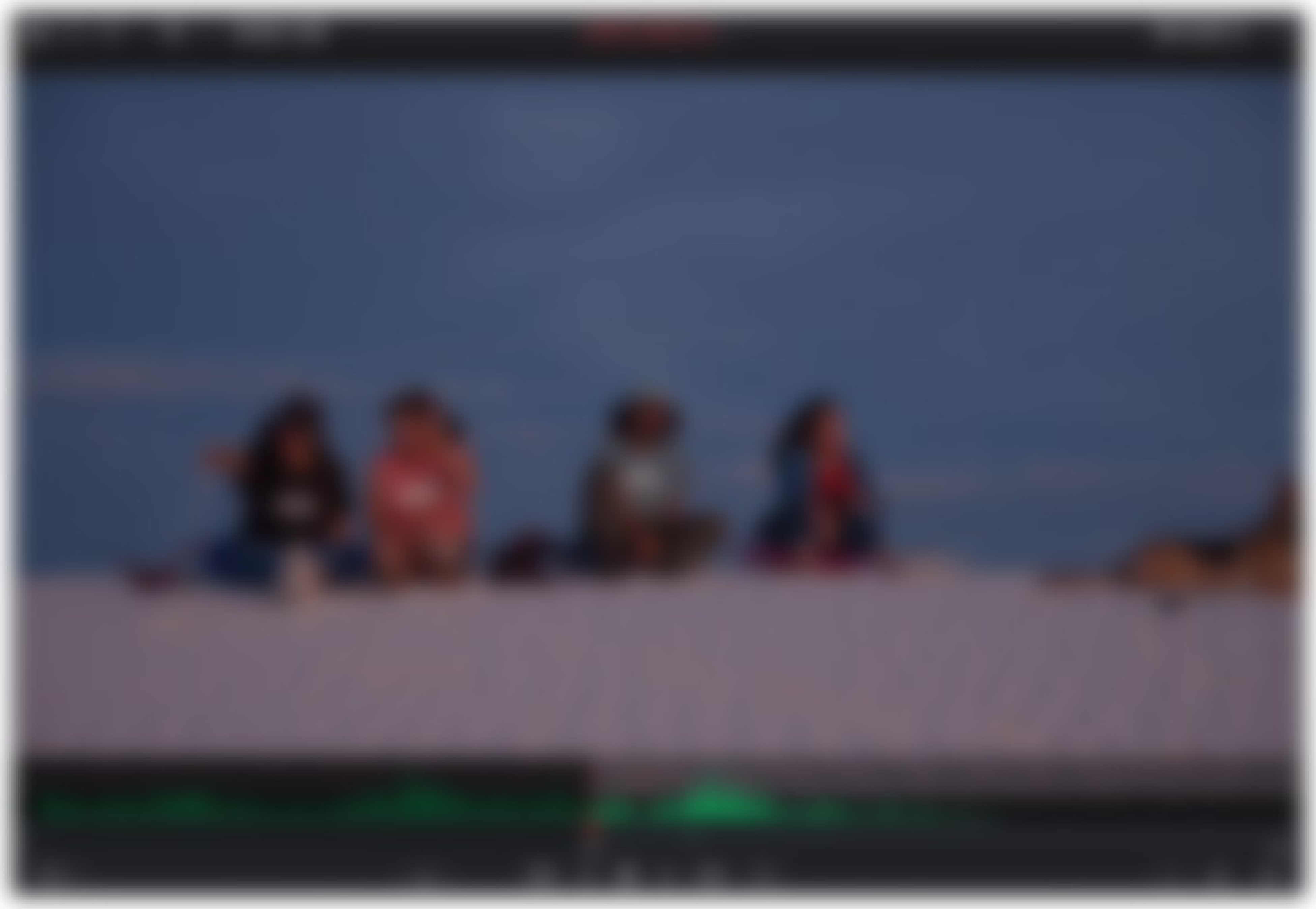
- Choose Edit > Place on Top or press F12 to add the audio and video of the clip to the same tracks as the previous cutaway.

With the timeline active, press I to add an In point in the timeline, play forward, and add an Out point after "Once again, I … ever experienced?"



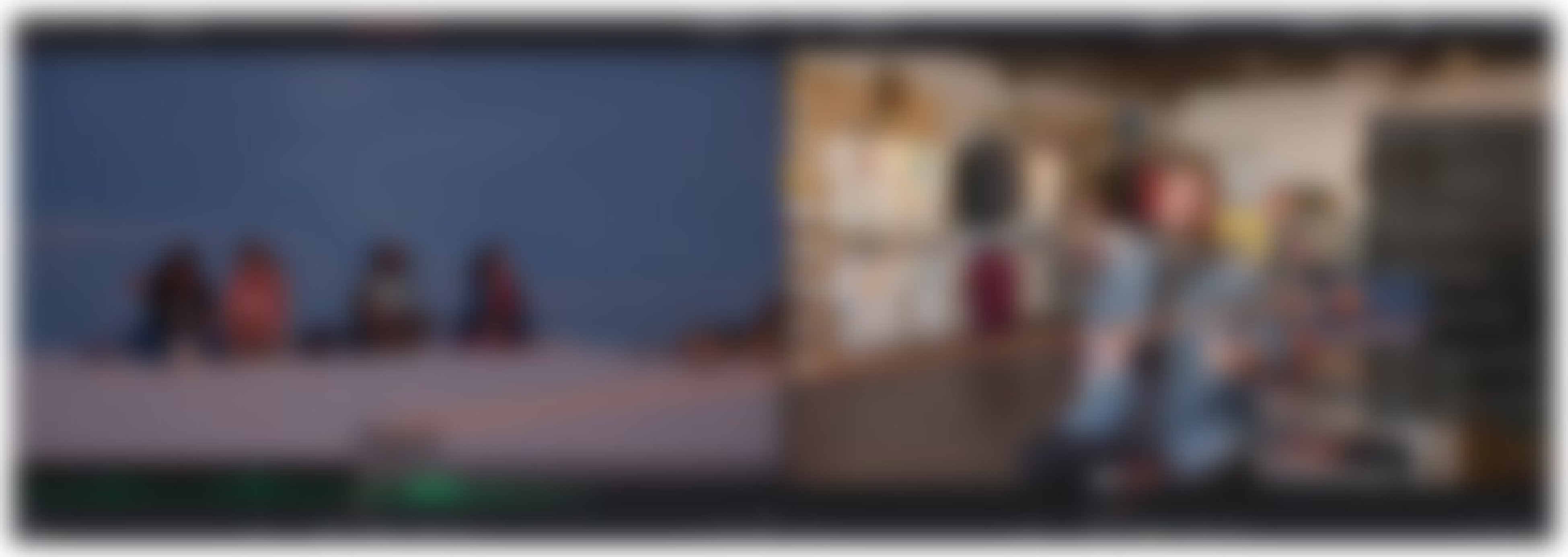
In the smart bin list, select the WHITE SANDS smart bin and double-click the clip **WHITE SANDS 08** to open it in the source viewer.

Add an In point to this shot after the girl in the pink top starts to move her hair behind her ear.

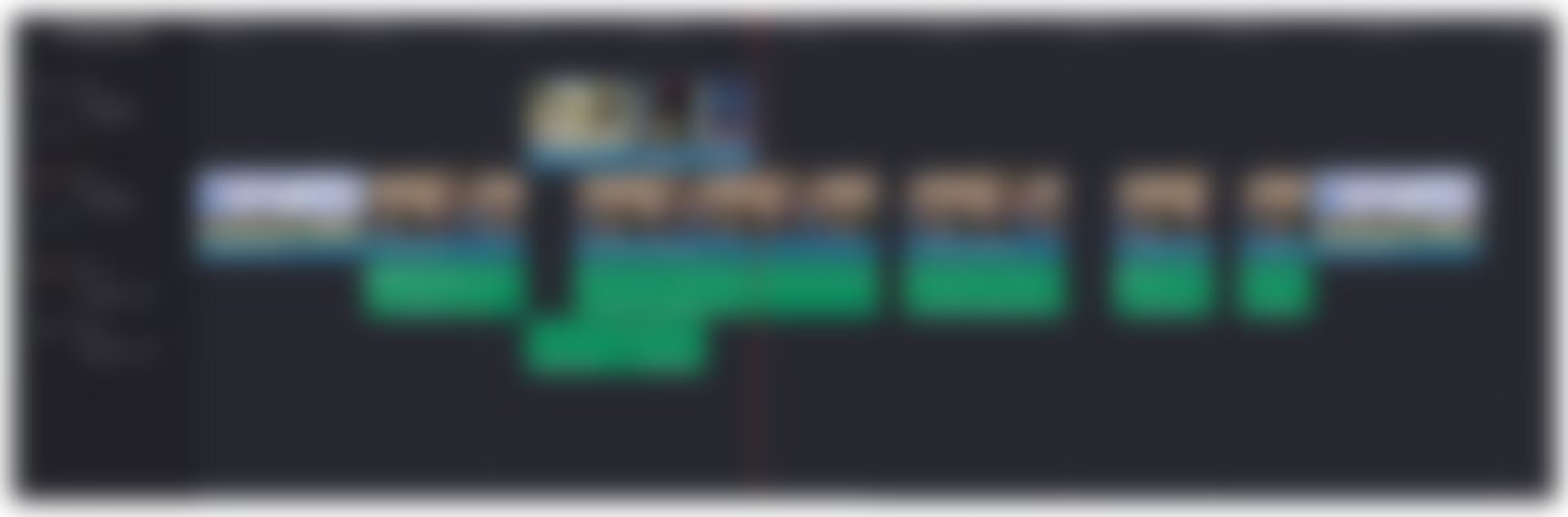


The wind noise against the camera microphone is a little off-putting for this shot. You will use the Video Only overlay in the source viewer to edit just the video portion of the clip into the timeline.

[illegible] In the source viewer, click the video only overlay and drag to the Place on Top overlay in the timeline viewer.

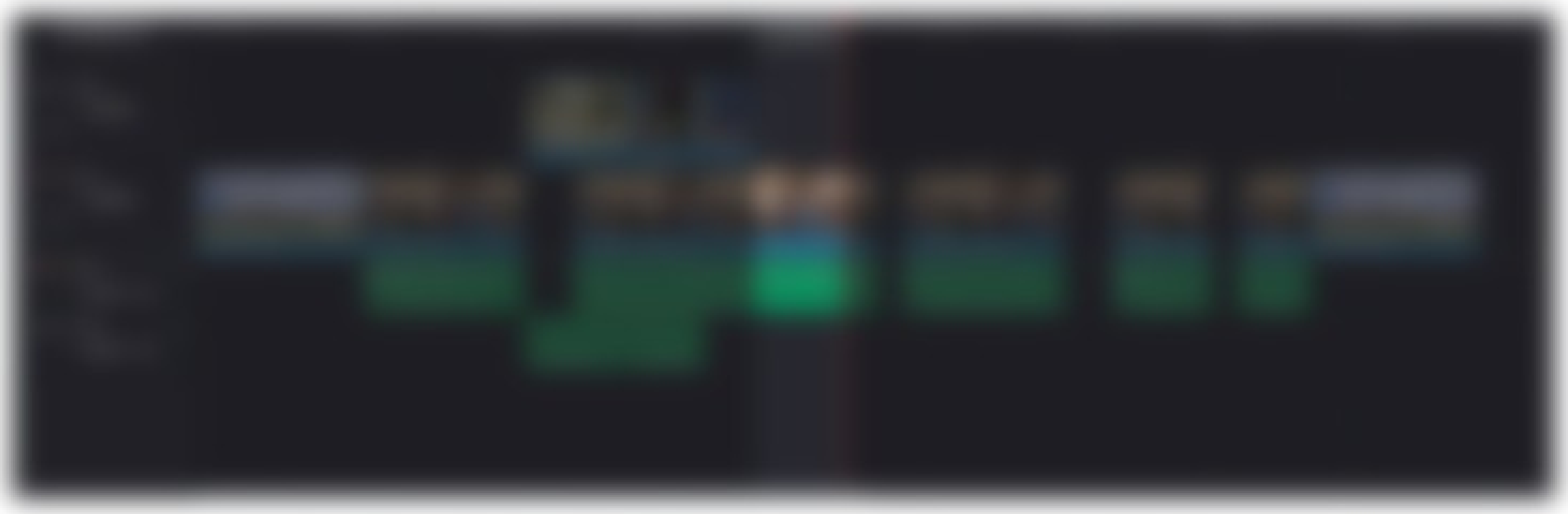


Using the video only overlay edits only the video portion of the clip into the timeline, not the audio.

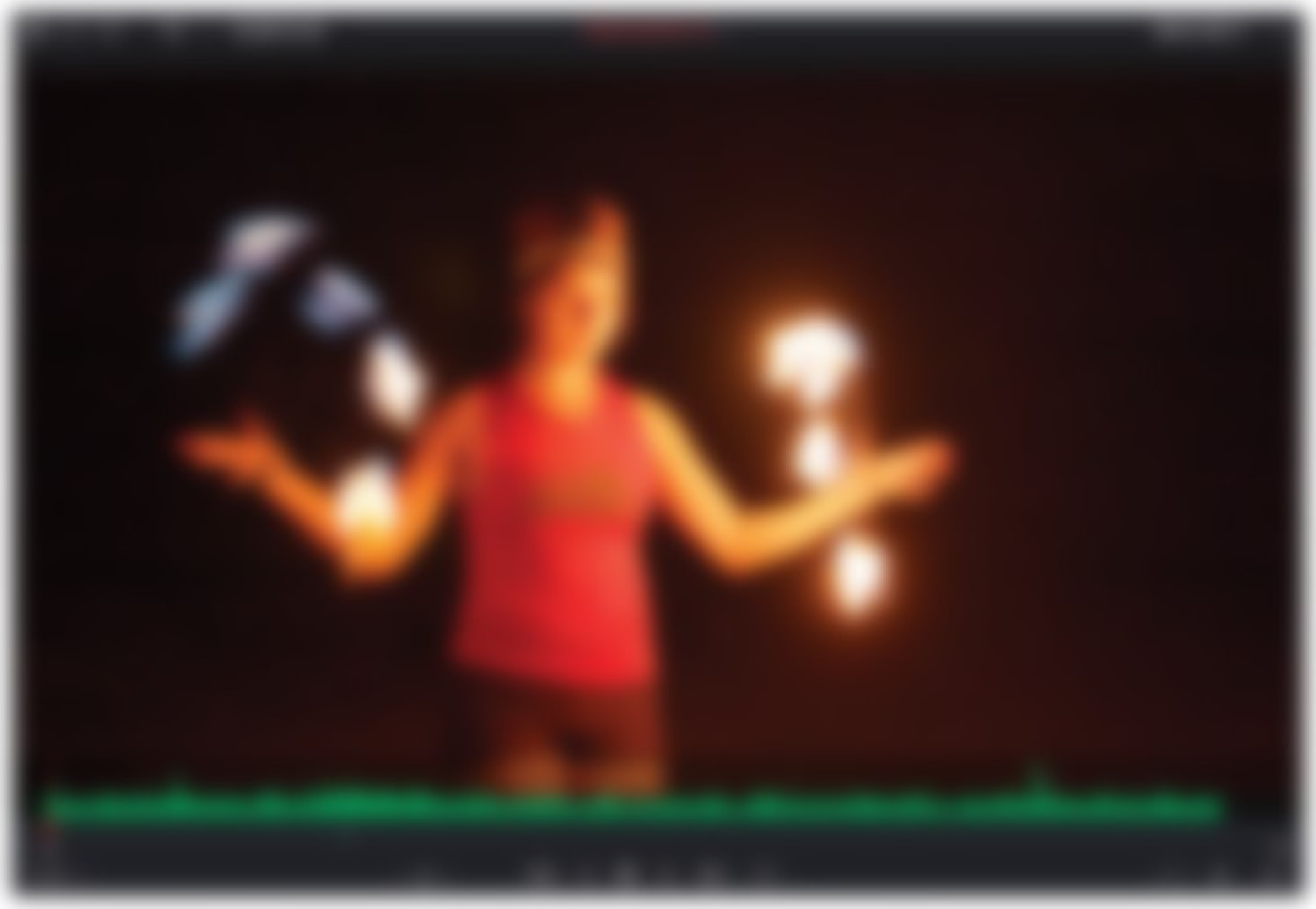


Unfortunately, this technique only works when dragging a clip from the source viewer into either the timeline viewer overlays or the timeline itself. If you want to use shortcuts or editing buttons in the timeline toolbar (if available), you must use a slightly different control.

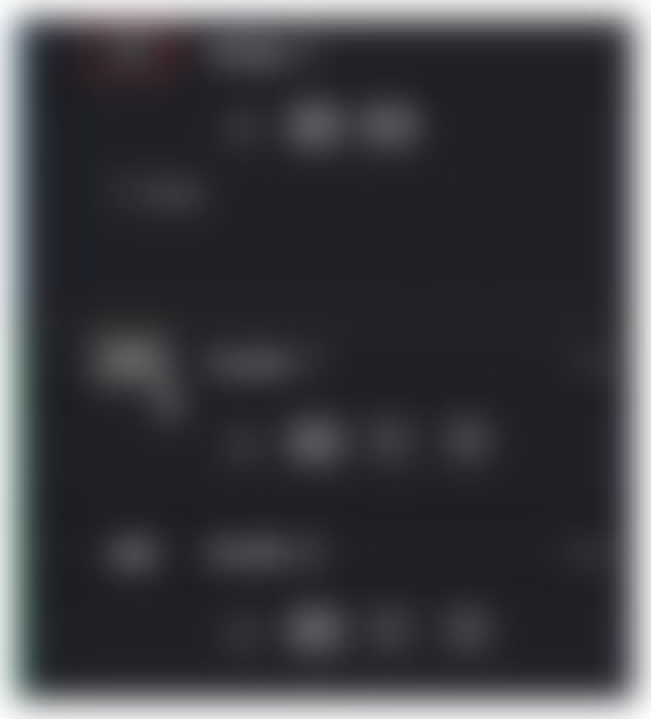
[illegible] Add an In point at the playhead position in the timeline and an Out point after [illegible]



[illegible] In the media pool, select the [illegible] smart bin, open the clip [illegible] in the source viewer, and add an In point near the top of the clip where the girl is spinning the flaming torches.



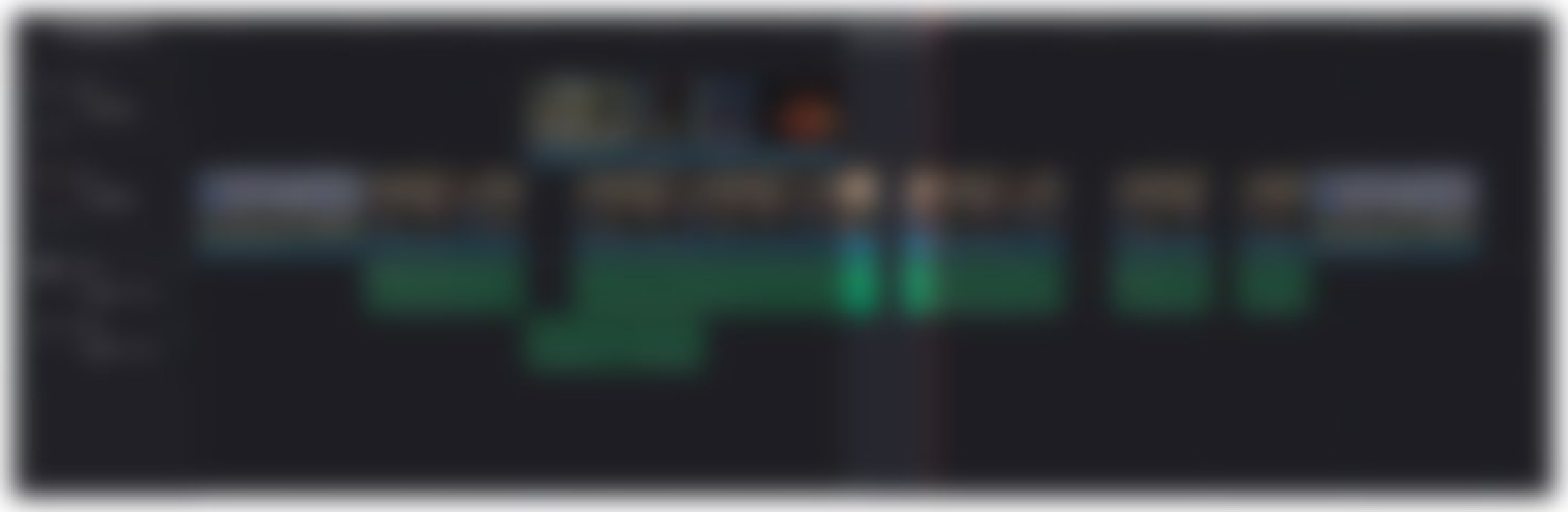
- In the timeline, click the A1 destination control next to the Audio 1 track to disable it.



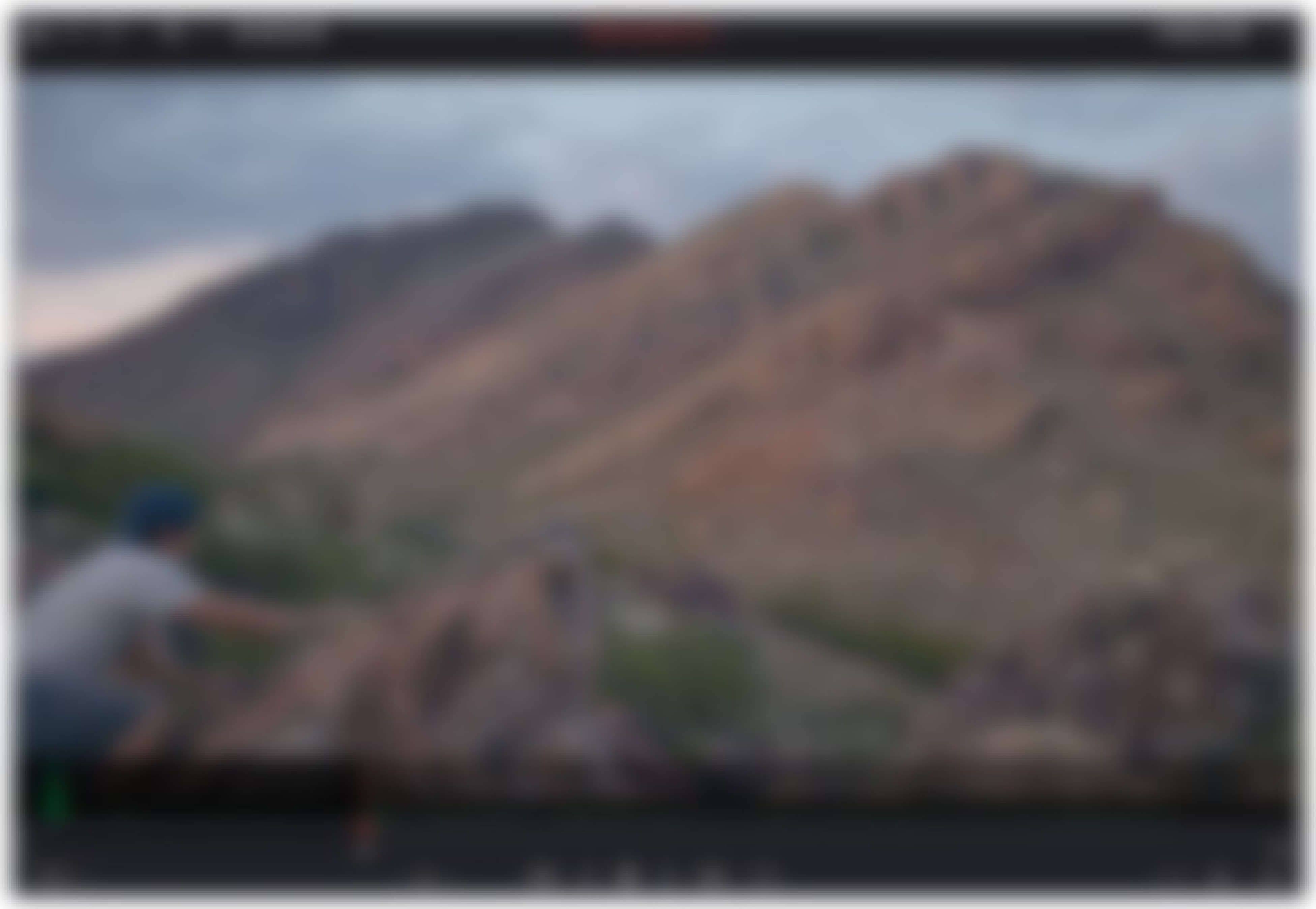
Turning off this control prevents the audio from the source clip from being added into the timeline while allowing you to use editing shortcuts.

NOTE This control can be a little confusing as you will see in the next lesson when you begin targeting specific tracks in the timeline. However, the basic principle is that if the A1 control has a red box around it, then the destination control is active for that track, so the audio from that track from the clip in the source viewer will be edited to the track in the timeline. If the A1 control is gray, then the destination control is disabled as in this example. For clips that have multiple audio tracks in the source viewer, you will have multiple destination controls.

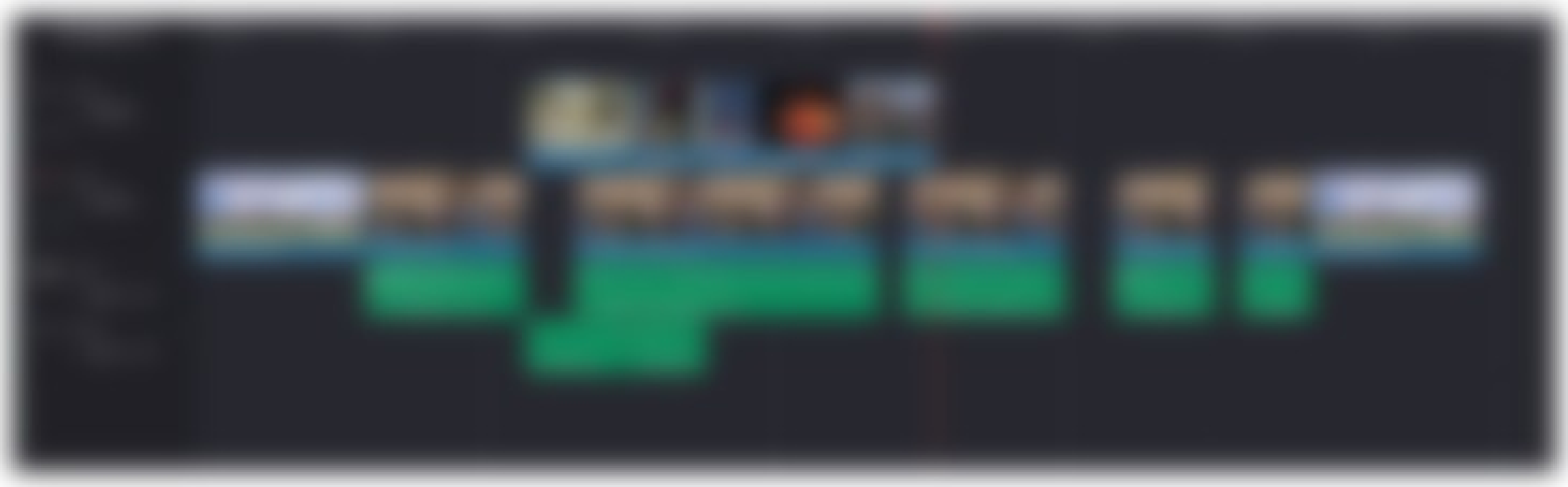
- Press F12 to make a Place on Top edit to add the new clip without the audio.
- Add an In point to the timeline and an Out point after Chris says, "... really inspires us..."



[illegible] Press Q to switch to the source viewer and press the Up Arrow key to navigate to the clip [illegible] and add an In point when the guy is about to jump onto the rock.



[illegible] Press F12 to make a Place on Top edit.

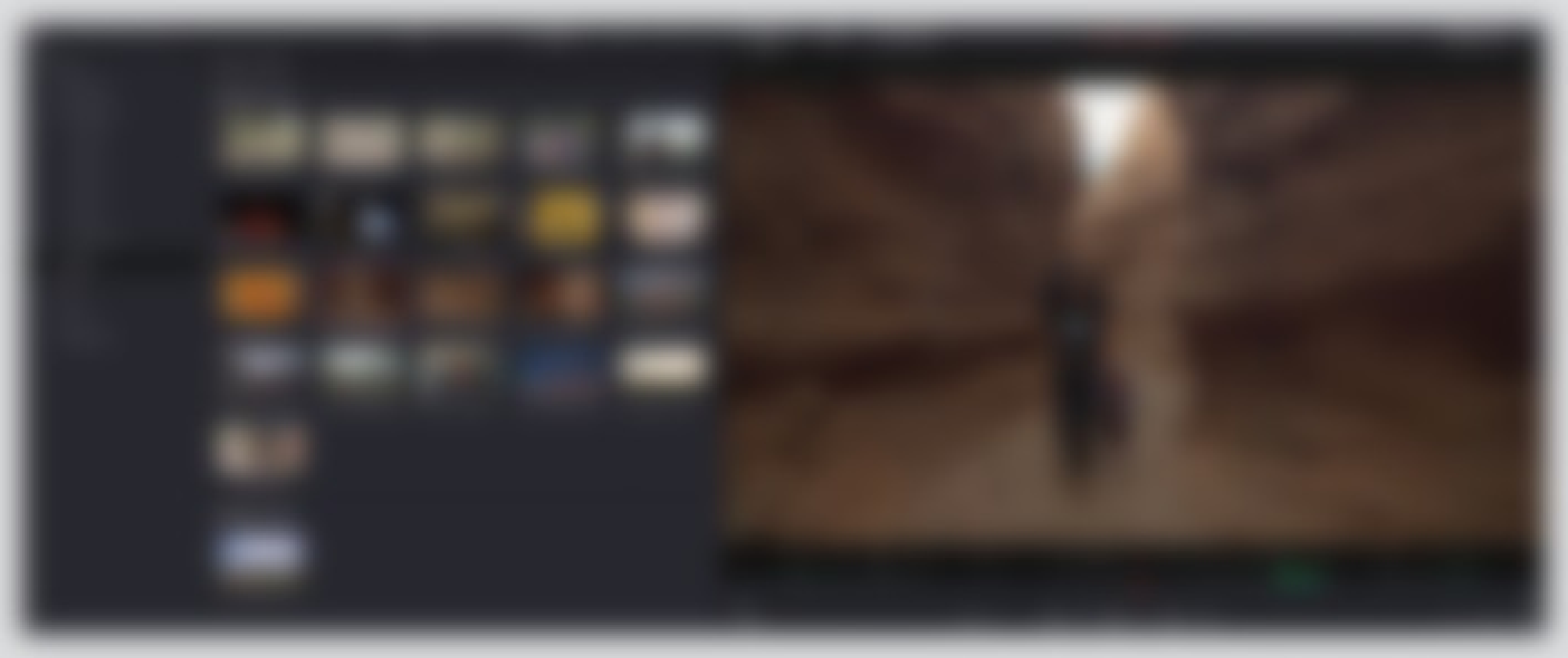


Hopefully, you can see just how powerful three-point editing techniques can be to quickly add a series of cutaways like this. These cutaways will likely need trimming, but before you turn your attention to that, you will add a few more cutaways to the end of this interview using a variation of the technique you've just been using.

NOTE If you need to catch up before moving to the next step, select the Timelines bin and choose File > Import > Timeline, navigate to R18 Editor's Guide Lesson 01 > Timelines, select [illegible] and click Open.

Using Source Tape

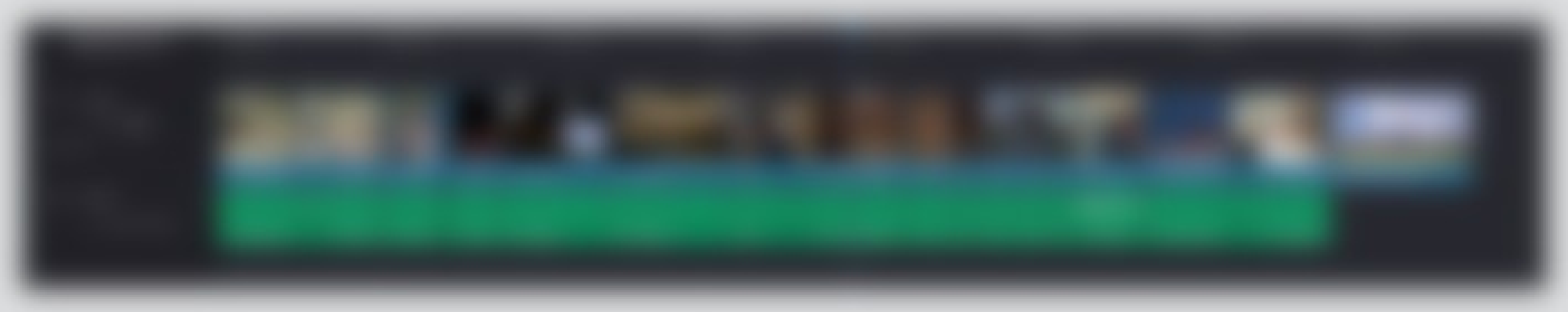
If you're working with a series of clips in the media pool, instead of opening each clip in turn as you have been doing in the last few steps, you can open all the clips in the currently selected bin(s) in the source viewer's Source Tape mode. Simply click the Source Tape button to view all clips in the current bin's order.



Source Tape allows you to browse through large amounts of clips effortlessly without having to manually open each one in turn. You can add In and Out points as you have been doing in the previous steps.

Enabling Timeline mode after Source Tape enables you to open the Source Tape in the timeline, giving you greater control when navigating around the footage in the Source Tape and, again, allowing you to add In and Out points with more precision.

To switch from the Source Tape timeline to your main editing timeline, simply click the relevant viewer or press Q.

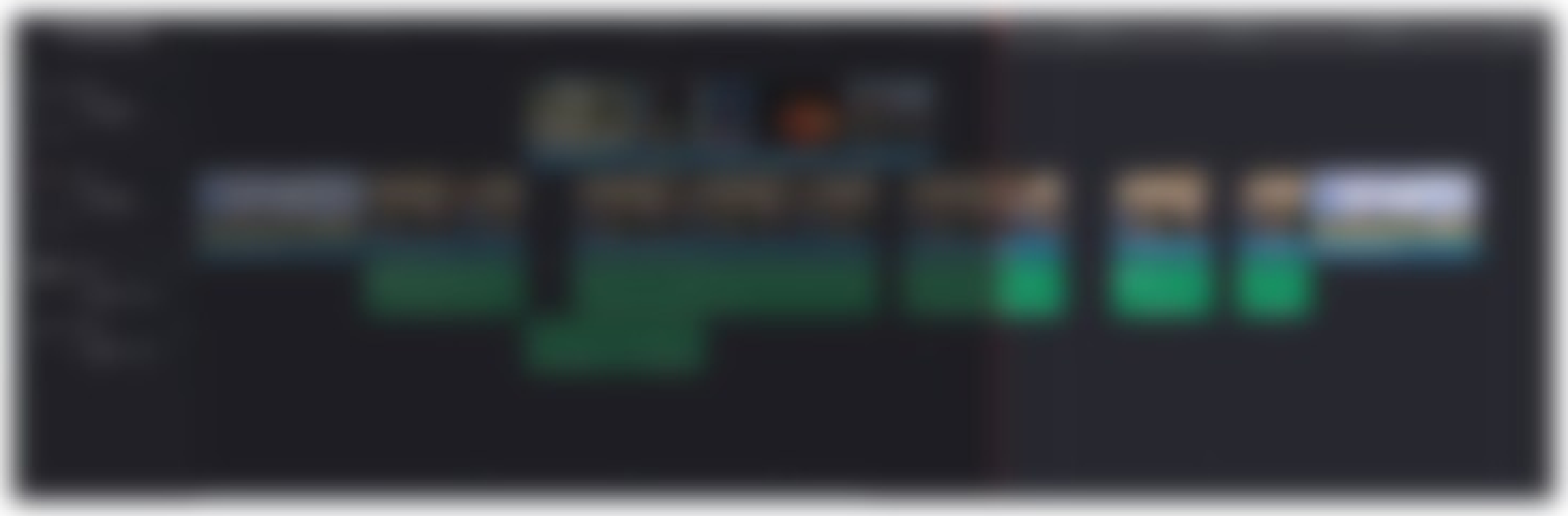


To return to the regular clip view, click the Source Clip button at the top of the viewer.

Backtiming Edits

When you were adding the first set of cutaways to Chris's interview, you specified where each of those shots would start based on the placement of the In point on the clip in the source viewer. However, there are certain circumstances when you'll want to edit a clip into the timeline and specify where that shot should end. This process is often referred to as backtiming and is easy to understand when you follow the rules of three-point editing and have the preview marks enabled.

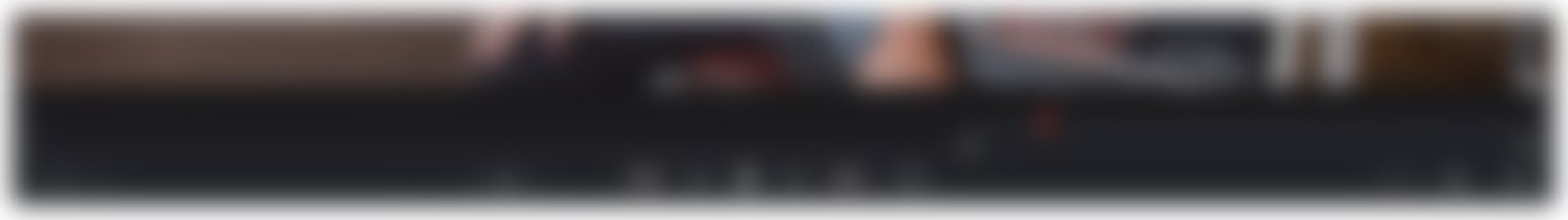
- Play the third interview clip in the timeline, adding an In point just after Chris says, "…we bring it back to the store…"



To quickly add an Out point to the end of this clip, you can use a command to jump to the Out point of the clip under the playhead. This is different from simply jumping forward to the next edit because it places the playhead on the last frame of the current clip rather than on the first frame of the next clip so that you can add the Out point precisely.

- Choose Playback > Go To > Last Frame or press ' (apostrophe).

The playhead jumps to the last frame of the clip, which you can see by the presence of an Out point symbol in the bottom right of the timeline viewer.



TIP To use this command for clips on tracks other than the Video 1 track, you must disable the Auto Track Selectors for all tracks lower than the track the clip is located on.

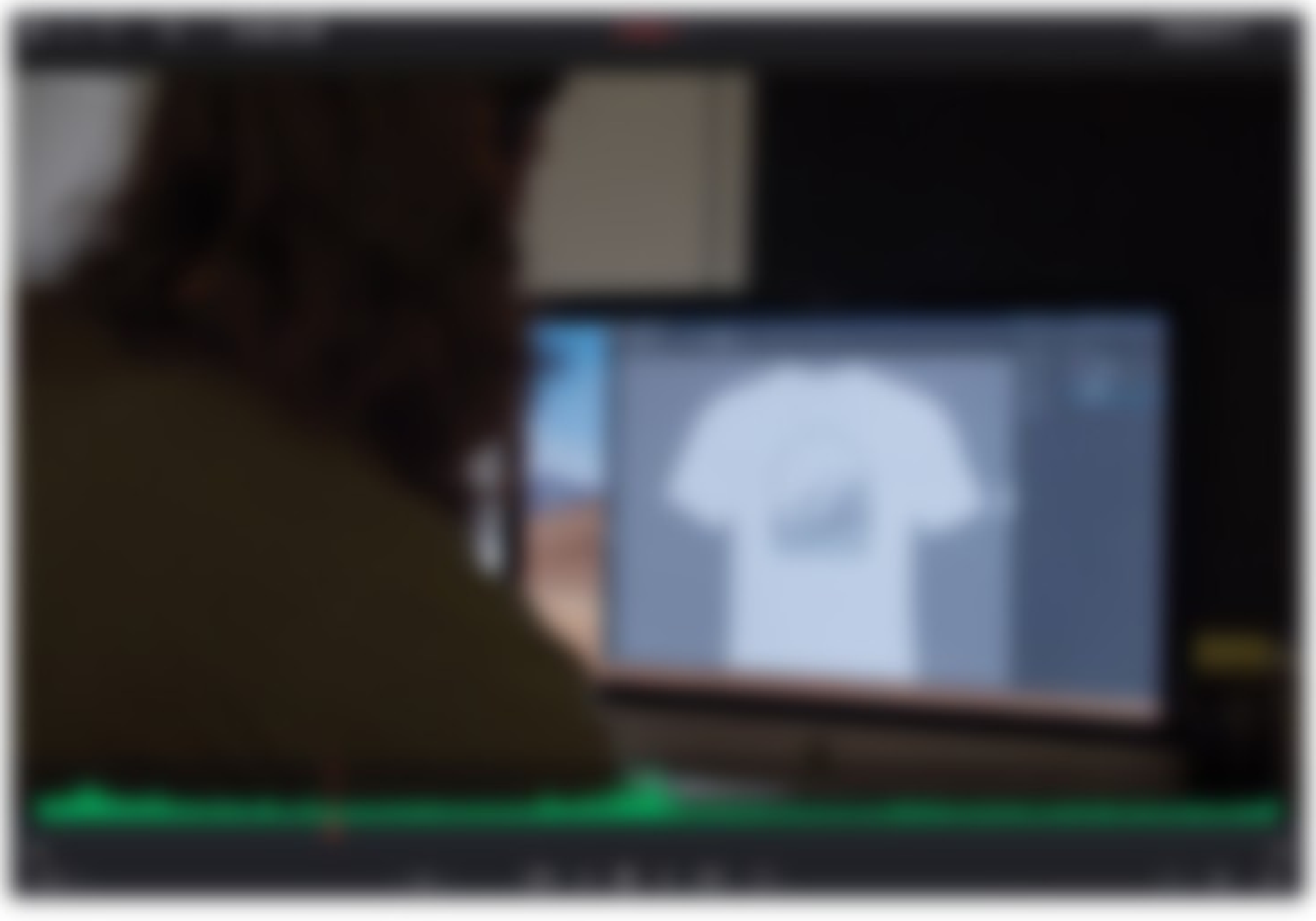
- Press O to add an Out point.

NOTE The playhead in DaVinci Resolve is inclusive of the current frame, which means that, in practice, In points are always added at the head, or start, of the frame, and Out points are always added at the tail, or end, of the frame. This means the minimum duration you can mark is one frame.

- From the RETAIL smart bin, locate the clip named [illegible] and open it in the source viewer.

  This is a clip of Organ Mountain Outfitters' lead designer creating their latest T-shirt design on the computer.

- Locate the frame near the beginning of the clip, just before the large black circle appears.



This is where you want this shot to end.

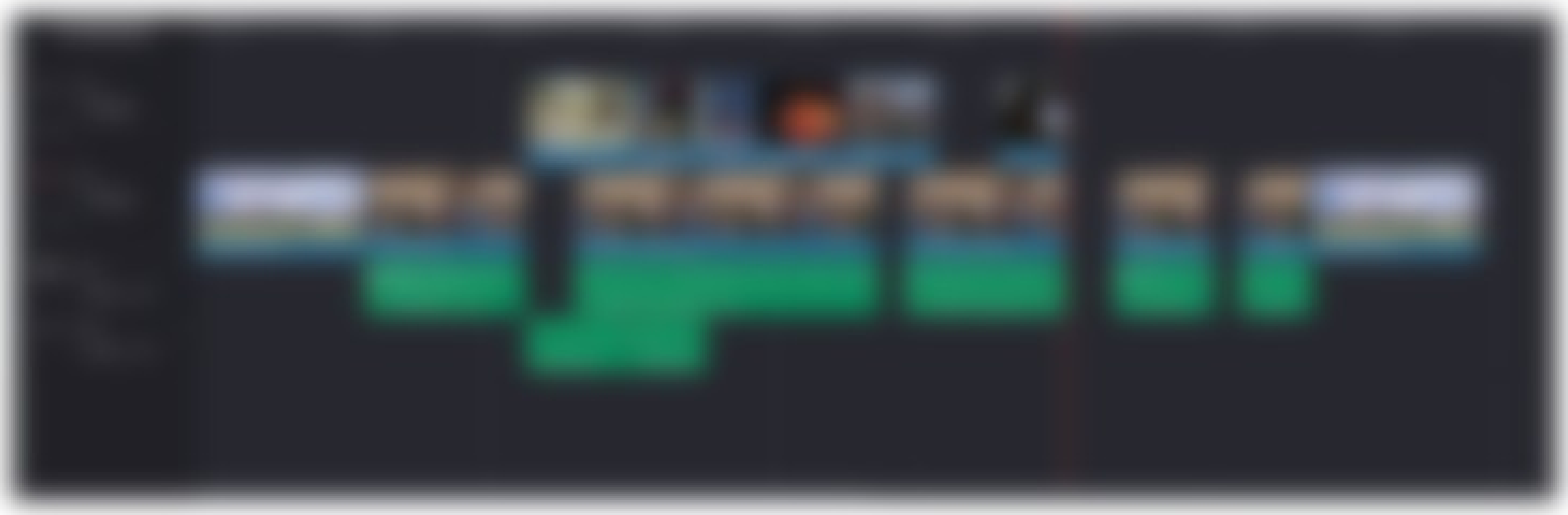
- [illegible]

[illegible]

[illegible]

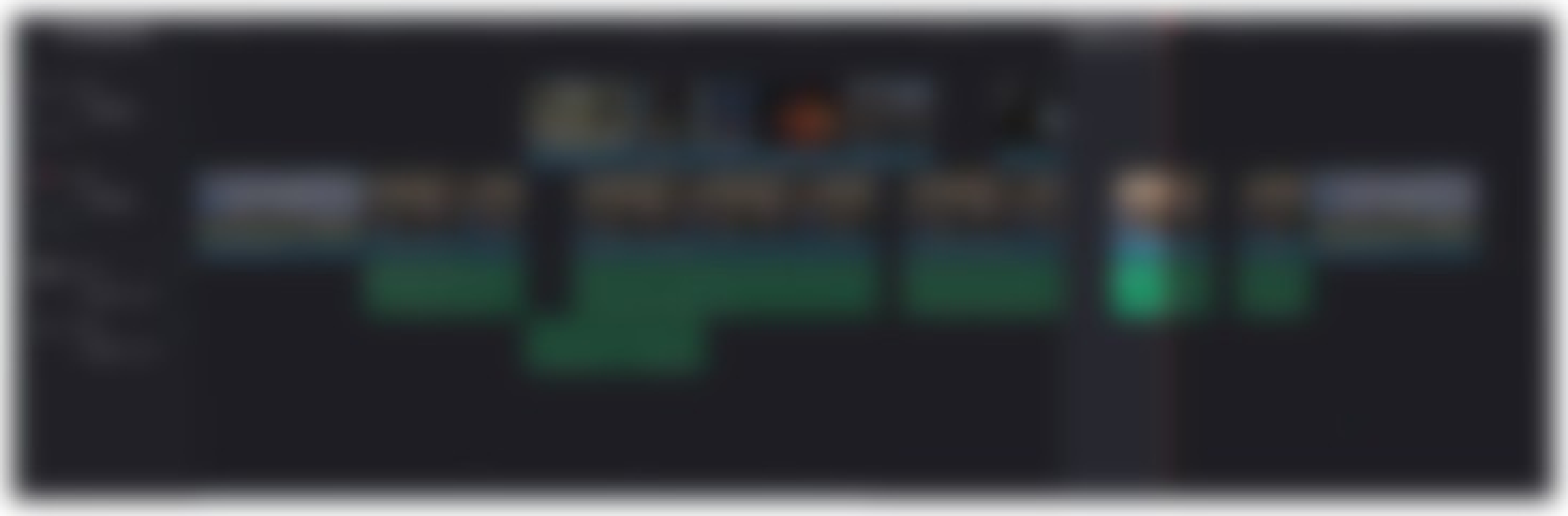
[illegible]

- Press F12 to make a Place on Top edit.



Next, you'll add a cutaway to help bridge the gap you created in the edit earlier.

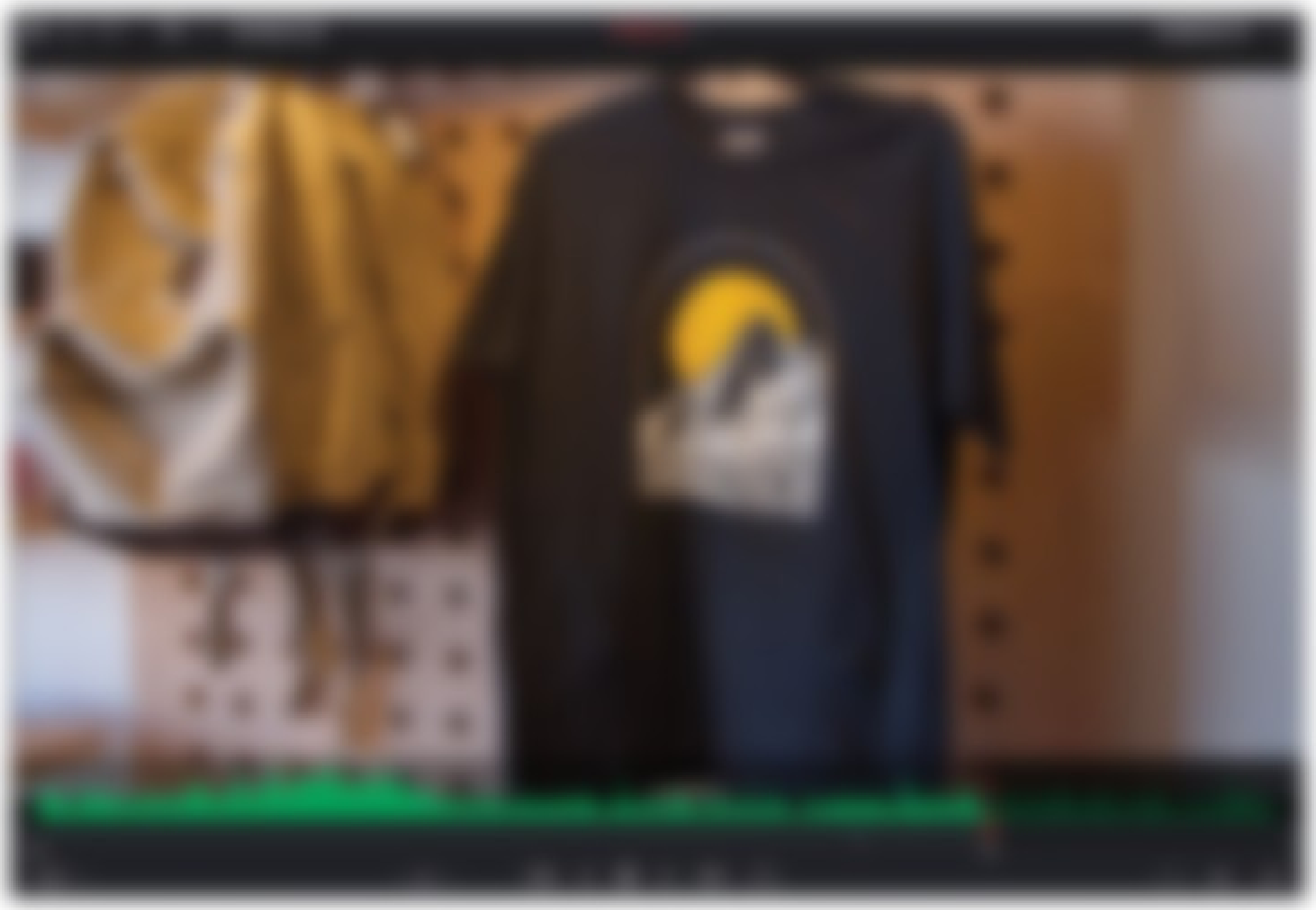
- Add an In point to the start of the gap in the timeline and an Out point after Chris says, "Our brand is just really a reflection of…"



- Press Q to switch back to the source viewer and press the Down Arrow key until the clip [illegible] is open in the source viewer.

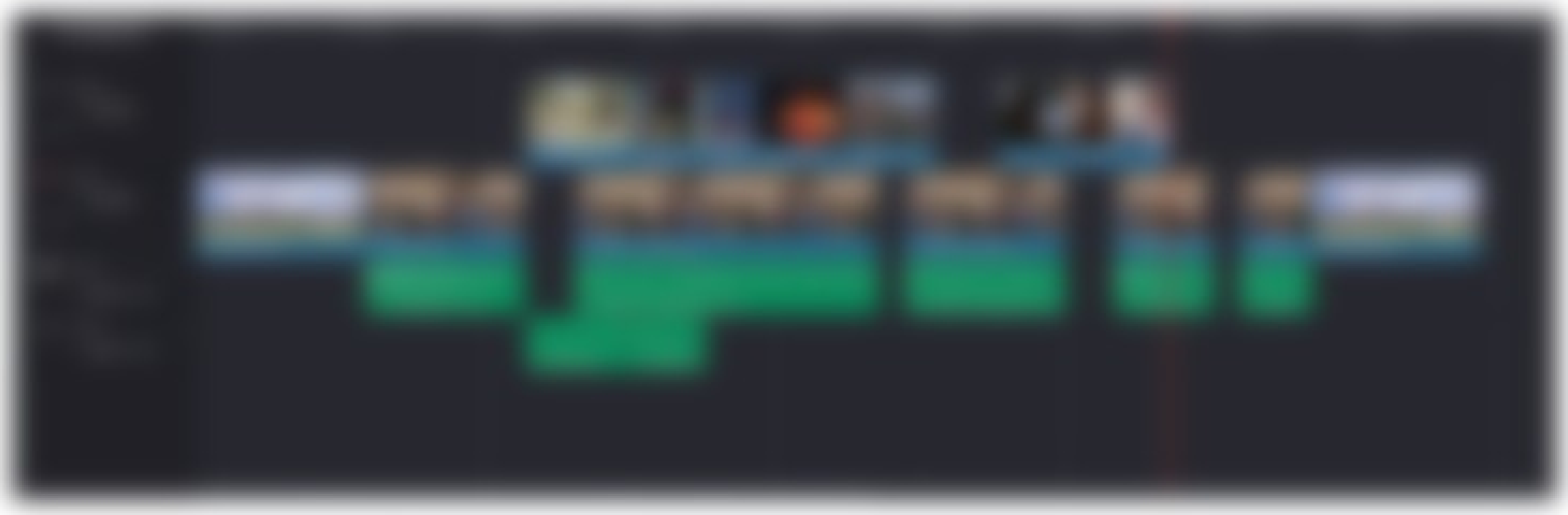
This clip is a lengthy sequence of a shirt making its way out from the design studio to the shop shelves. You only need the last part of this ambitious shot, though (apologies to the director!).

- In the source viewer, locate the frame where the girl hangs up the T-shirt and tap left the frame near the end of the clip and add an Out point.

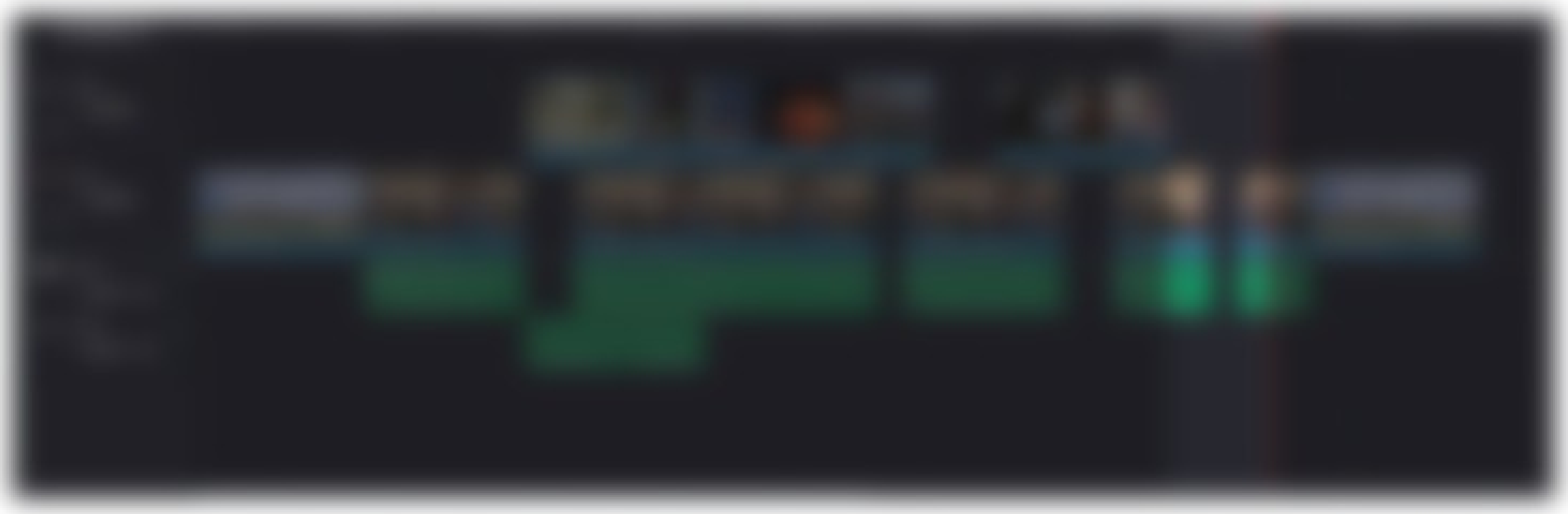


Again, the preview mark indicates the implied In point for this clip based on the timeline In and Out points.

- Press F12 to make a Place on Top edit.

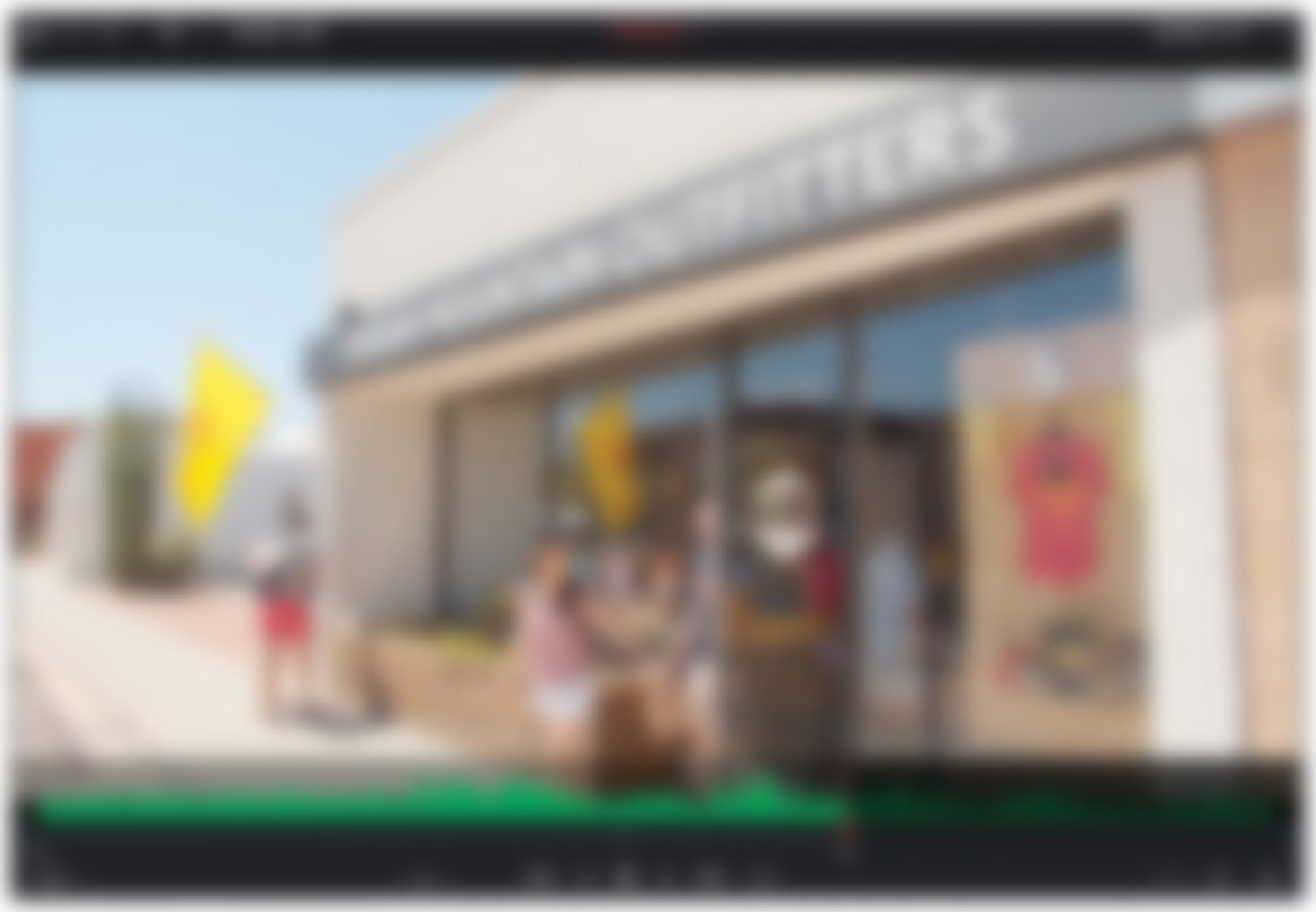


[illegible] Add an In point at the current playhead location in the timeline and an Out point after Chris says, "That's why we say..." and has lowered his hands to his knees.

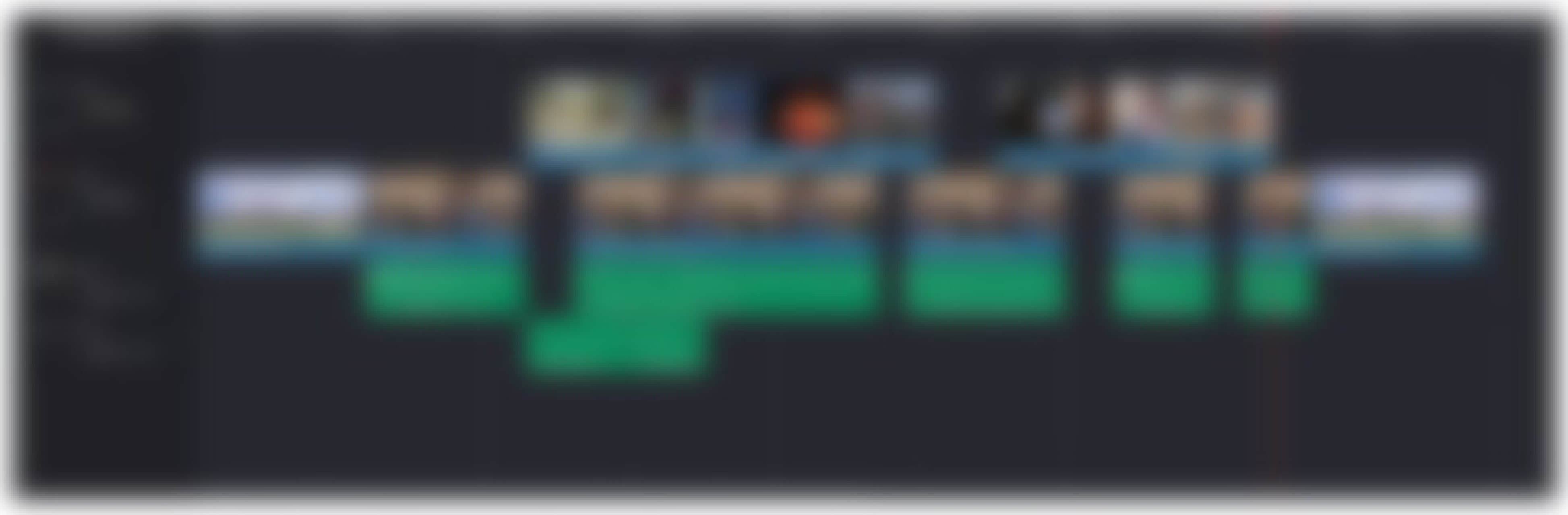


[illegible] Press Q to switch back to the source viewer and press Up Arrow so the clip **STORE 06** is open in the source viewer.

[illegible] Add an Out point on a frame after the zoom out, when you can see the whole of the Organ Mountain Outfitters sign, just after the girl in the black has released the door.



- Press F12 to make a Place on Top edit.



Excellent. With the final cutaway in place, all the jump cuts and gaps between Chris's soundbites have been covered. There's just a couple other elements to add to the timeline to complete the rough cut.

NOTE If you need to catch up before moving to the next step, select the TIMELINES bin and choose File > Import > Timeline, navigate to R18 Editor's Guide > Lesson 01 Timelines, select [illegible] and click Open.

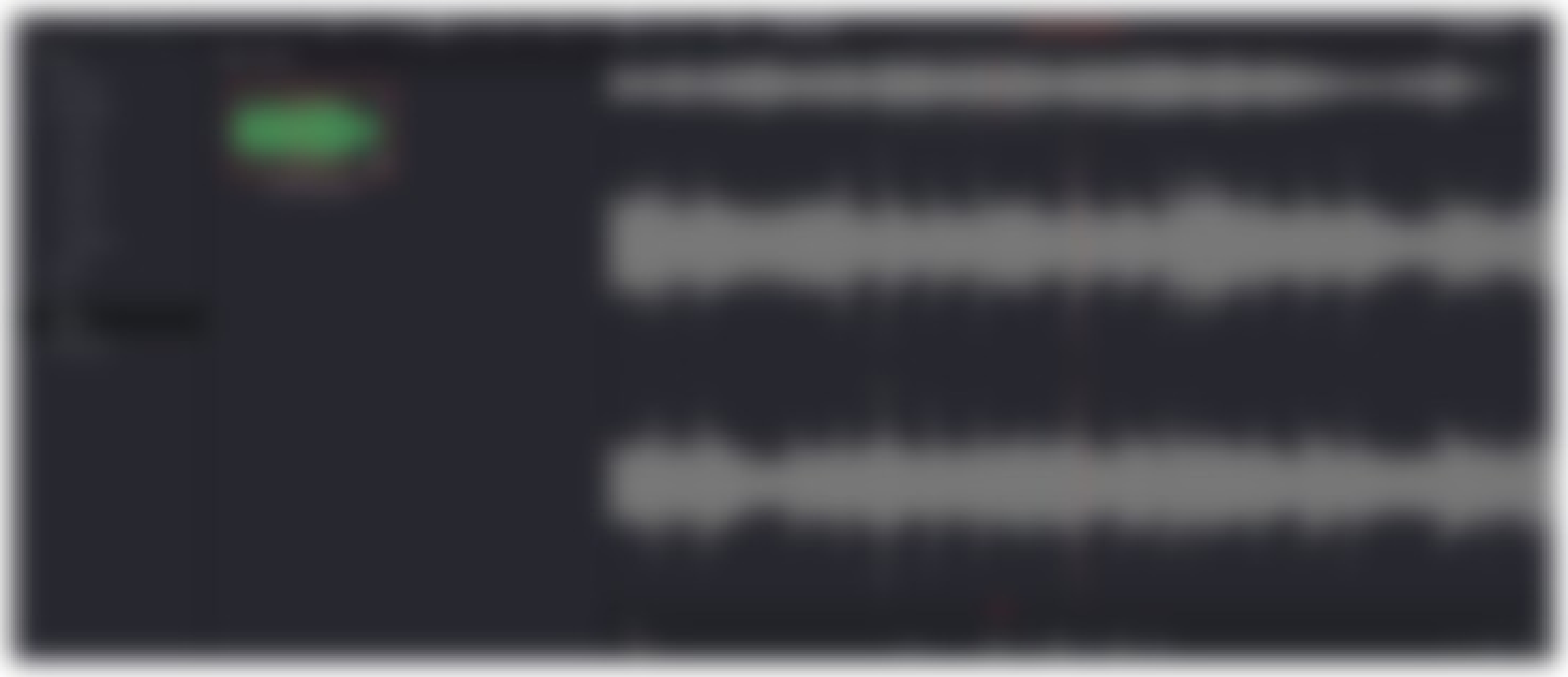
Adding the Music

Music is such an important part of many edits. Whereas the spoken word (scripted dialogue, interviews, or narration) will often convey what we need to know about a subject, music most often conveys what we should feel about a scene or subject. Get the music wrong, and the whole edit might communicate the wrong impression completely!

Thankfully, in this case, the music has been carefully chosen for you. All you have to do is add it to the current timeline.

- Ensure that the timeline viewer is selected and press Home to return the playhead to the start of the timeline.

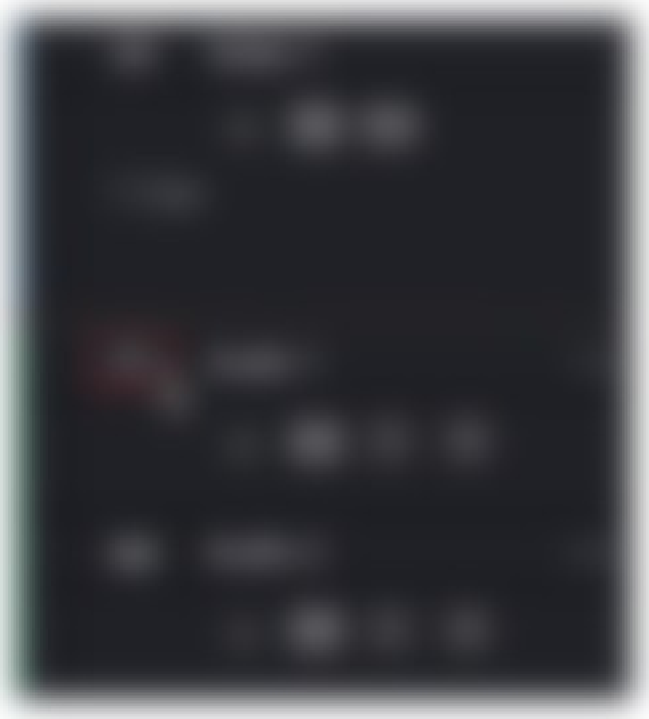
- Select the MUSIC bin from the bin list in the media pool and open the **[illegible]** clip in the source viewer.



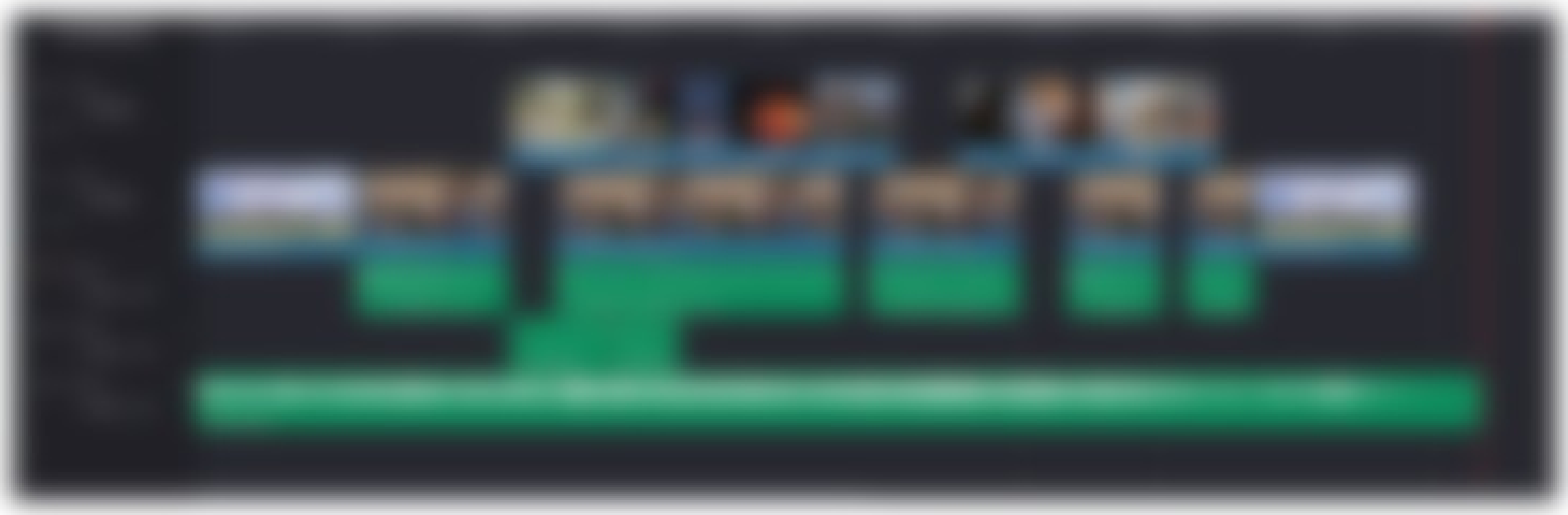
NOTE When viewing audio-only clips such as this, the source viewer automatically switches to audio mode.

You can add In and Out points to audio clips just as you've done throughout this lesson. In this case, though, it's unnecessary because the music is already just under a minute in length, which is the desired duration for the whole edit.

- In the timeline, click the A1 track destination control to enable audio to be edited into the timeline again.



- Press F12 to make a Place on Top edit to add the music clip to a new audio track.



The only thing left to do now is attenuate (reduce) the volume of the audio clip so that it more closely matches the rest of the audio in the timeline. It doesn't have to be exactly the right level at this time – just low enough that it doesn't overpower the other elements in the timeline as you continue to refine it in the next lesson.

- Place your cursor over the volume overlay for the audio clip in the timeline, which is represented by a thin white line running through the length of the clip.
- Click and hold the volume overlay and drag down to reduce the volume of the clip until the tooltip reads about -18 dB.

TIP Hold Shift while adjusting the volume overlay for more precise control.

- Press Home to return the playhead to the start of the timeline and play back the clip to review the rough cut.

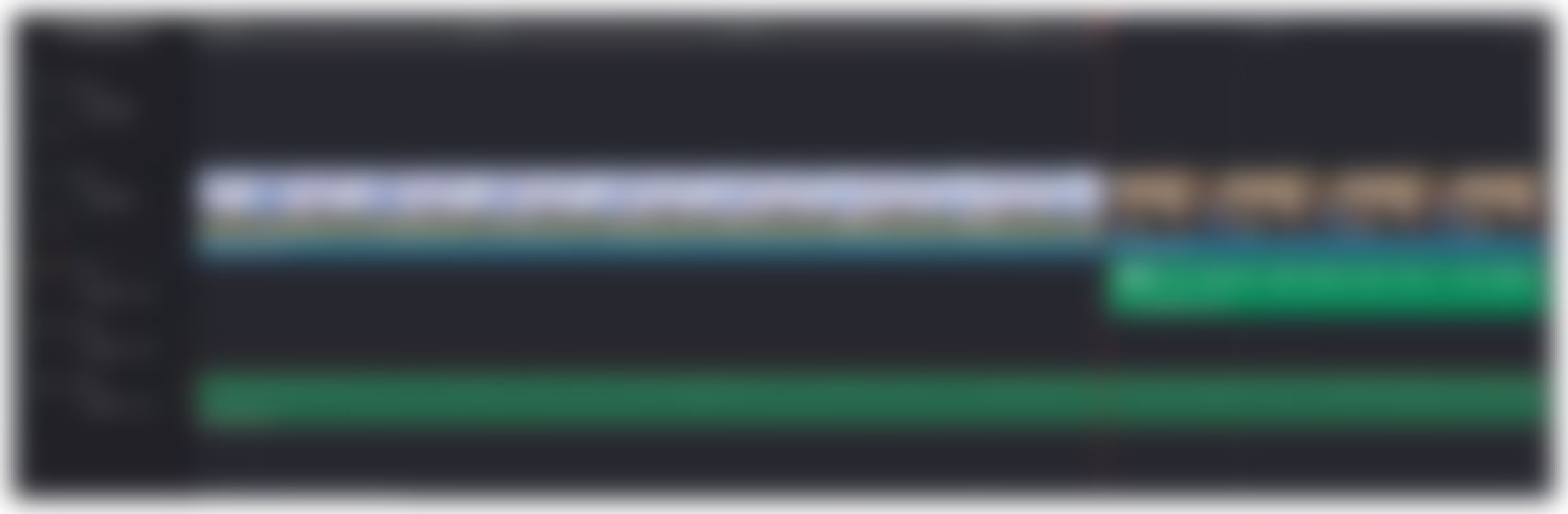
There's still some work to be done on mixing the audio, but at least you can now hear Chris's soundbites against the music, which is more than enough for this rough cut.

Adding the Logo

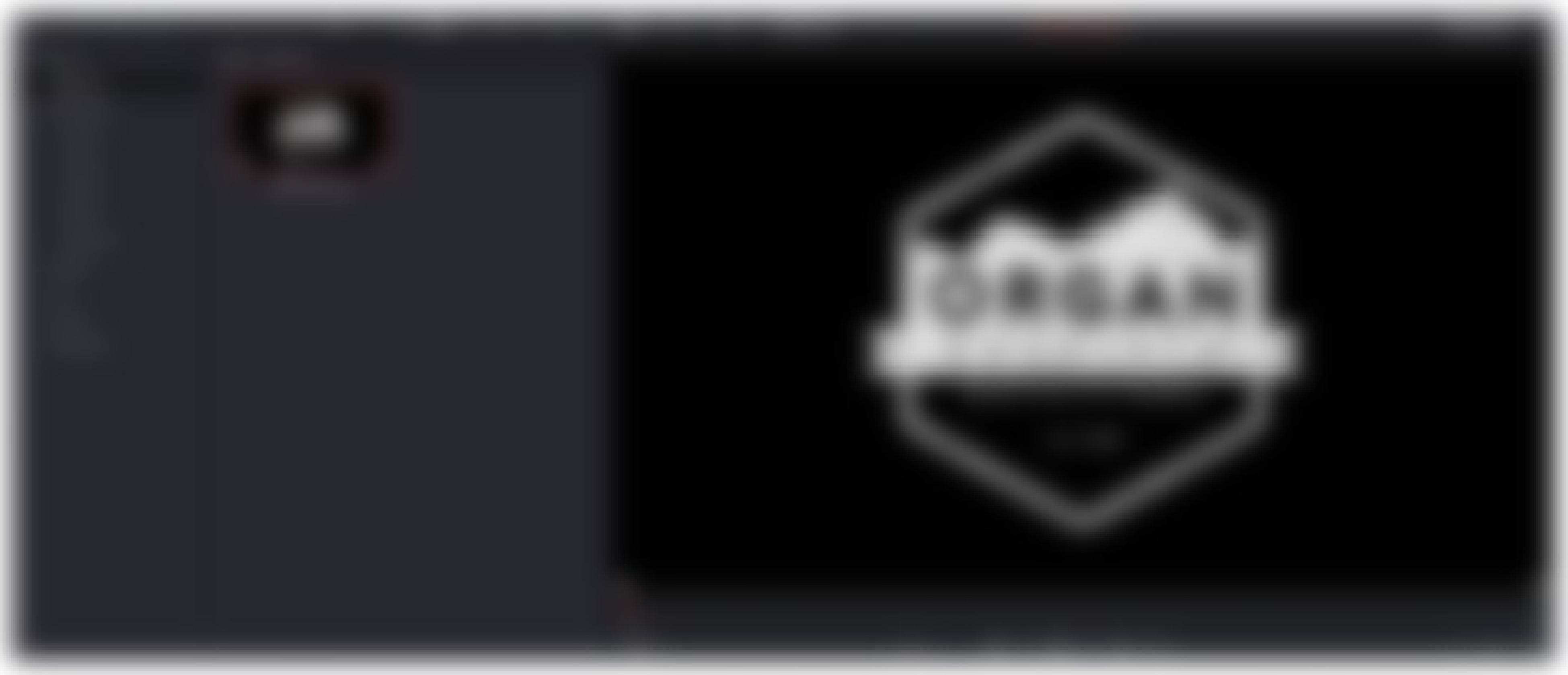
The last element to add in this lesson is the Organ Mountain Outfitters logo over the opening shot.

1. In the timeline, press Home to move the playhead to the start, over the **ORGAN MOUNTAIN 1** clip, and press the Detail Zoom button.

2. Choose Playback > Go To > Last Frame or press ' (apostrophe) to jump to the last frame of the **ORGAN MOUNTAIN 1** clip, and press O to set an Out point at this frame in the timeline.



3. In the media pool bin list, select the GRAPHICS bin and open the clip **OMO LOGO.png** in the source viewer.



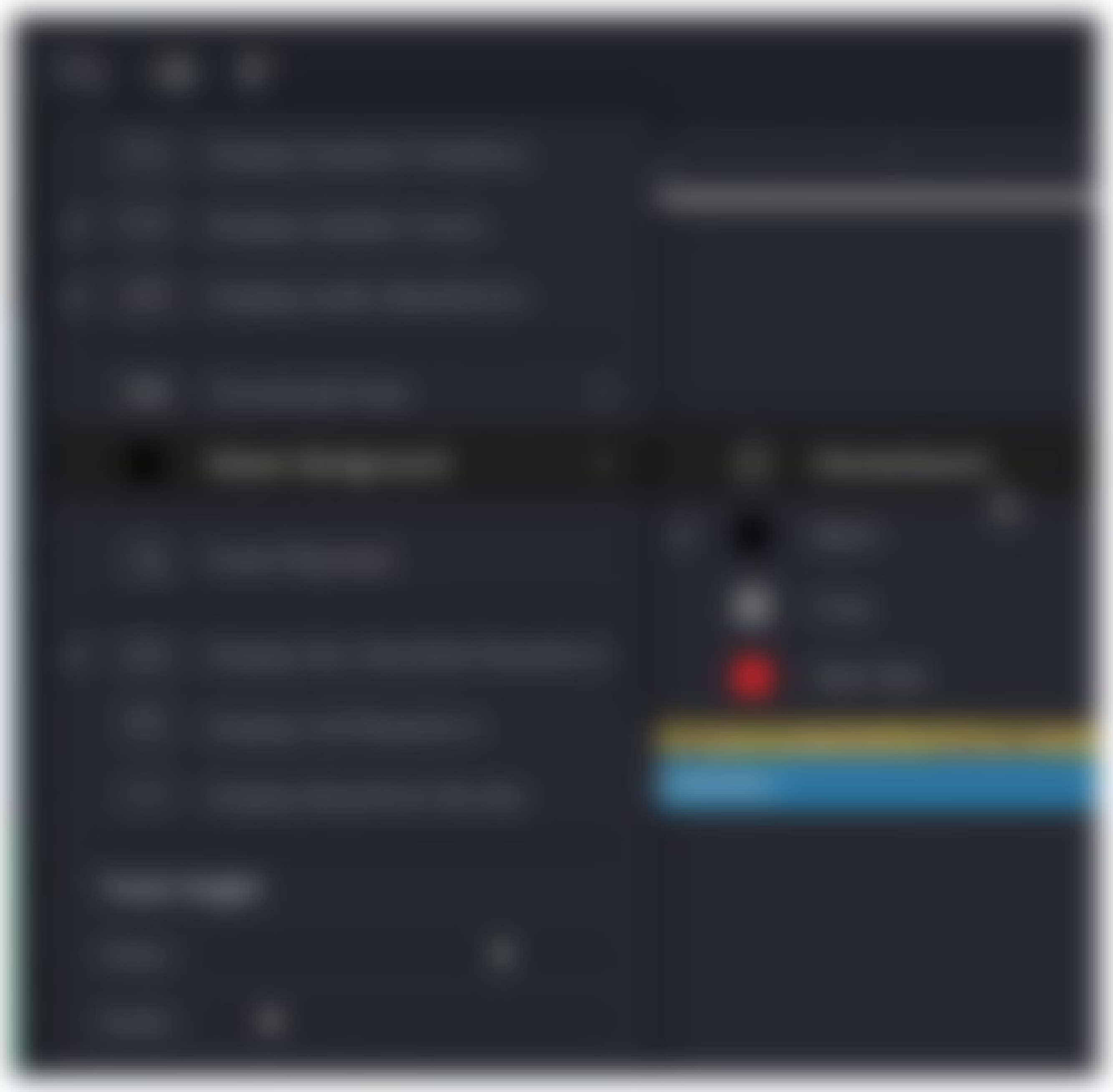
When using graphic files in DaVinci Resolve, the clips have a default "duration" of 5 seconds, which will be enough for this graphic. However, because graphic files are simply the same frame repeated, the clip can be trimmed to be as long or as short as needed.

NOTE You can adjust the default "duration" used for graphics or still images in the user Preferences > Editing category under "Standard still duration."

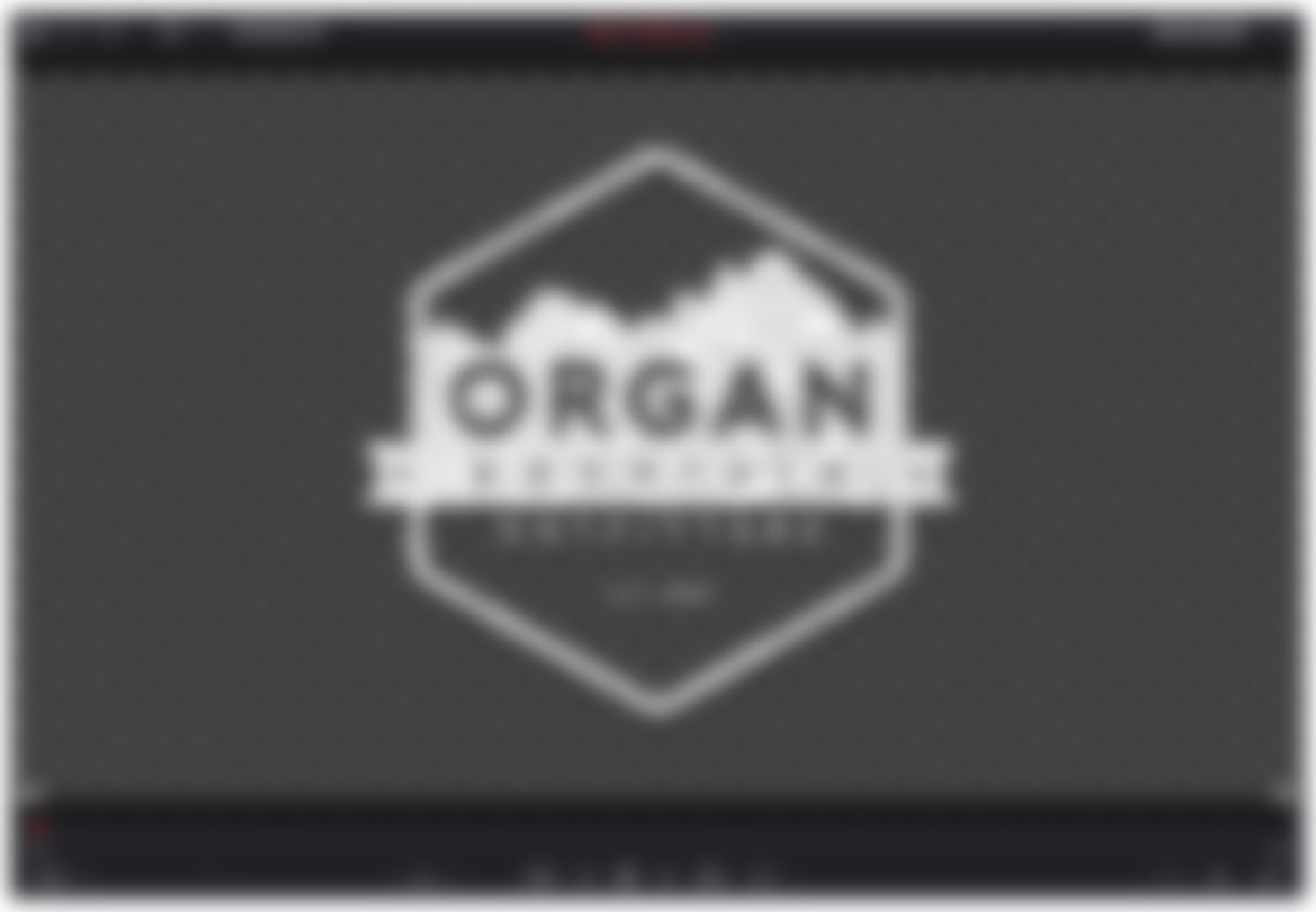
DaVinci Resolve can work with various graphic file formats as well as video and audio files. This image is a PNG (Portable Network Graphics) file that contains an alpha channel, a separate channel from the RGB picture information that determines which portions of the image are transparent. This is useful since it can be composited on top of other clips in the timeline without completely blocking the other images as the cutaways have been doing.

To verify that this channel is being used correctly, you can view a checkerboard background in the viewers.

- Click the Timeline View Options menu and choose Viewer Background > Checkerboard.



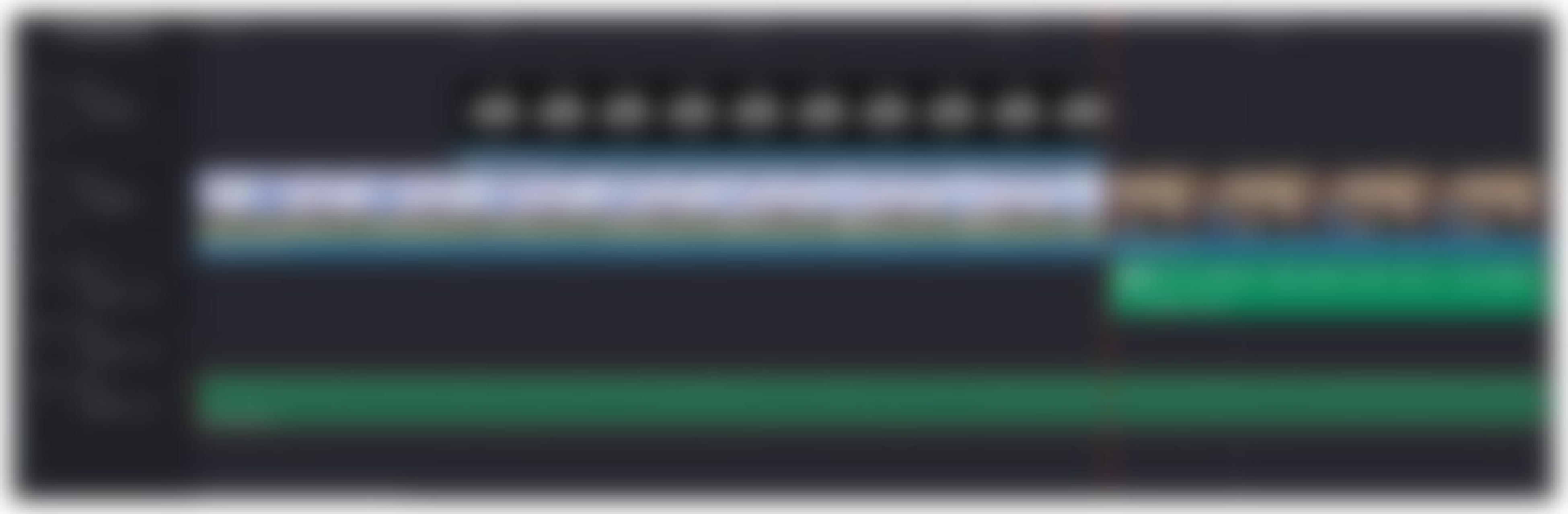
The black viewer background is replaced by the checkerboard background, denoting an alpha channel. These parts of the image will remain transparent when the clip is edited into the timeline, allowing the image to be composited over the background clip.



NOTE The term compositing is used when multiple clips occupy the same space onscreen at the same time. You will learn more about compositing techniques in the edit page in Lesson 7.

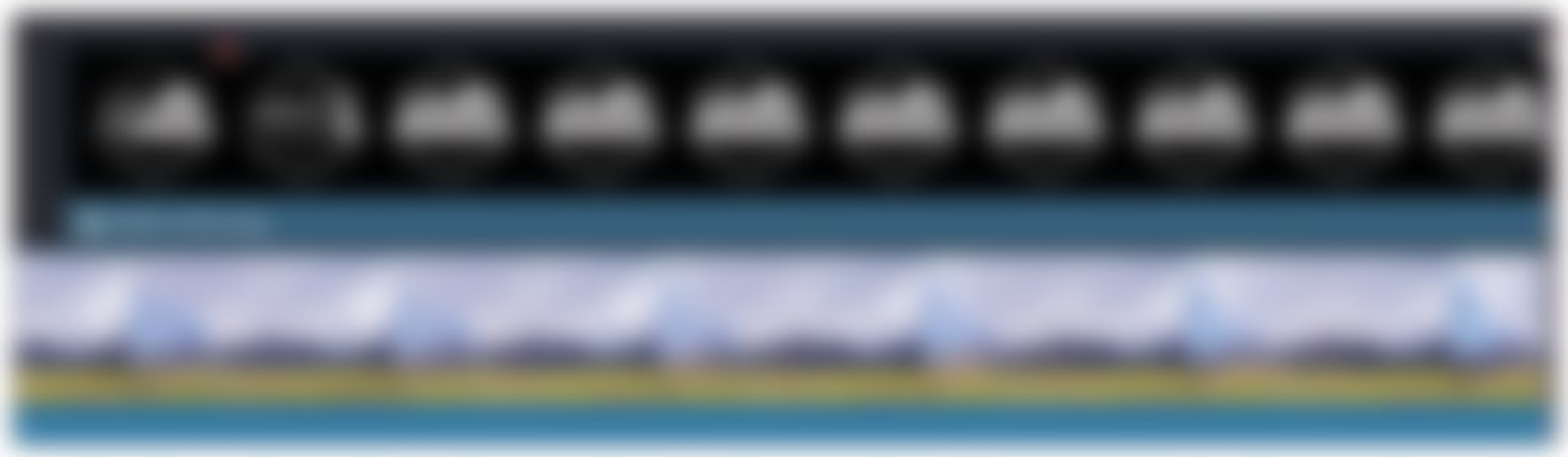
You will now overwrite the graphic into the timeline. Note that no preview marks are shown in the timeline to help you determine where the graphic will start. If you want to see this, you'll need to purposefully add In and Out points to the clip in the source viewer.

- Press F12 to perform a Place on Top and backtime the clip to the Video 2 track.



To ensure that the appearance of the logo isn't too jarring for the viewer, you will apply a short fade to the start of the graphic clip.

- In the timeline, drag the fade handle at the start of the logo clip to the right to apply a 12-frame fade (+00:12) in the tooltip.



- Click the Full Extent Zoom button, return the playhead to the start of the timeline, and review the rough cut you have edited over the course of this lesson!

Congratulations! You have completed the first lesson. Remember, this lesson was about being able to quickly put together a rough cut using the editing tools available in the edit page. Along the way, you should have acquired a firm grasp of the principles of three-point editing. However, there is still much, much more to do to refine this timeline before it's ready to show to the client at Organ Mountain Outfitters. This will be the focus of the next lesson.

Lesson Review

1. True or false? A rough cut is a polished timeline that requires no further work.
2. Which of the following is often used to separate parts of long clips into more manageable clips?
   a) Source Tape
   b) Source Timeline
   c) Subclips
3. True or false? The Place on Top and Append at End edit functions do not have keyboard shortcuts.
4. What is the minimum number of In and Out points you need to successfully complete a three-point edit?
   a) 4
   b) 2
   c) 3
5. What is the name given to an edit that uses a combination of two Out points and only one In point?
   a) Reversed edit
   b) Fit to Fill edit
   c) Backtimed edit

Answers

1. False. A rough cut is usually the first step in the editing process, where the overall structure of the edit is quickly built but still needs to be refined.
2. c) Subclips. Source Tape is useful for having multiple clips open sequentially in the source viewer. Source Timeline is useful for navigating through long clips.
3. False. The default keyboard shortcut for Place on Top is F12, and for Append at End, it's Shift-F12. Keyboard shortcuts for all the edit page editing functions can be seen in the Edit menu.
4. a) 3. Most editing functions are based on the rules of three-point editing, whether or not you add In or Out points to the timeline or source viewer. If no In or Out points are in the source viewer, the first frame of the clip is treated as the In point, and the last frame is treated as the Out point. If no In or Out points are in the timeline, the playhead generally becomes the timeline In point (except when making an Append at End edit). If you drag a clip directly to the timeline, you are manually locating the "third" point by choosing where to place the clip.
5. c) Backtimed edit.

Lesson 2

Refining the Rough Cut

In the previous lesson, you created a rough cut for a short promotional video for the outdoor clothing brand Organ Mountain Outfitters. For many, knowing how to quickly create an edit like this is often enough. However, for many editors, this is only the beginning. Now that the basic structure of the edit has revealed itself, it's time to precisely fine-tune each individual edit so that the piece is as polished as it can possibly be.

To appropriate the 80/20 rule, the rough cut you created in Lesson 1 has accomplished about 80% of the editing required for this promo, but this should be accomplished quickly—within 20% of the available editing time. The remaining 20% of the editing (fine trimming, audio mixing, graphics, etc.) will then take up the remaining 80% of the time! As you can see, the job is far from finished!

Time

This lesson takes approximately 60 minutes to complete.

Goals

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Of course, part of the job of the editor is to deliver the final project to meet a deadline — you wouldn't want to miss the movie's opening night! — so it's not surprising that many feel that a job is never really "completed"; it's more that you just run out of time and money!

Setting Up the Project

This lesson starts exactly where Lesson 1 finished. If you completed Lesson 1, you may proceed to the next section in this lesson, "Duplicating and Managing Timeline Backups."

If, however, you didn't fully complete the previous lesson, you can always import a catchup timeline to help you get started with this lesson.

> **NOTE** The following steps assume that you have at least completed the first part of Lesson 1 and that you have set up a new project library, imported the GMO PROMO.drp (Ginger Mountain Outfitters promo) project file, and relinked the offline clips. If you haven't completed those steps, please refer to the start of Lesson 1 before continuing with the following steps.

1. Open DaVinci Resolve.
2. In the Project Manager, select your R20 Editor's Guide project library and double-click the GMO PROMO project to open it in DaVinci Resolve.
3. If necessary, ensure that the edit page is selected.
4. In the bin list, select the TIMELINES bin and choose File > Import > Timeline.
5. Navigate to R20 Editor's Guide > Lesson 02 > Timelines, select the file GMO EDIT CATCHUP 1.drt, and click Open.

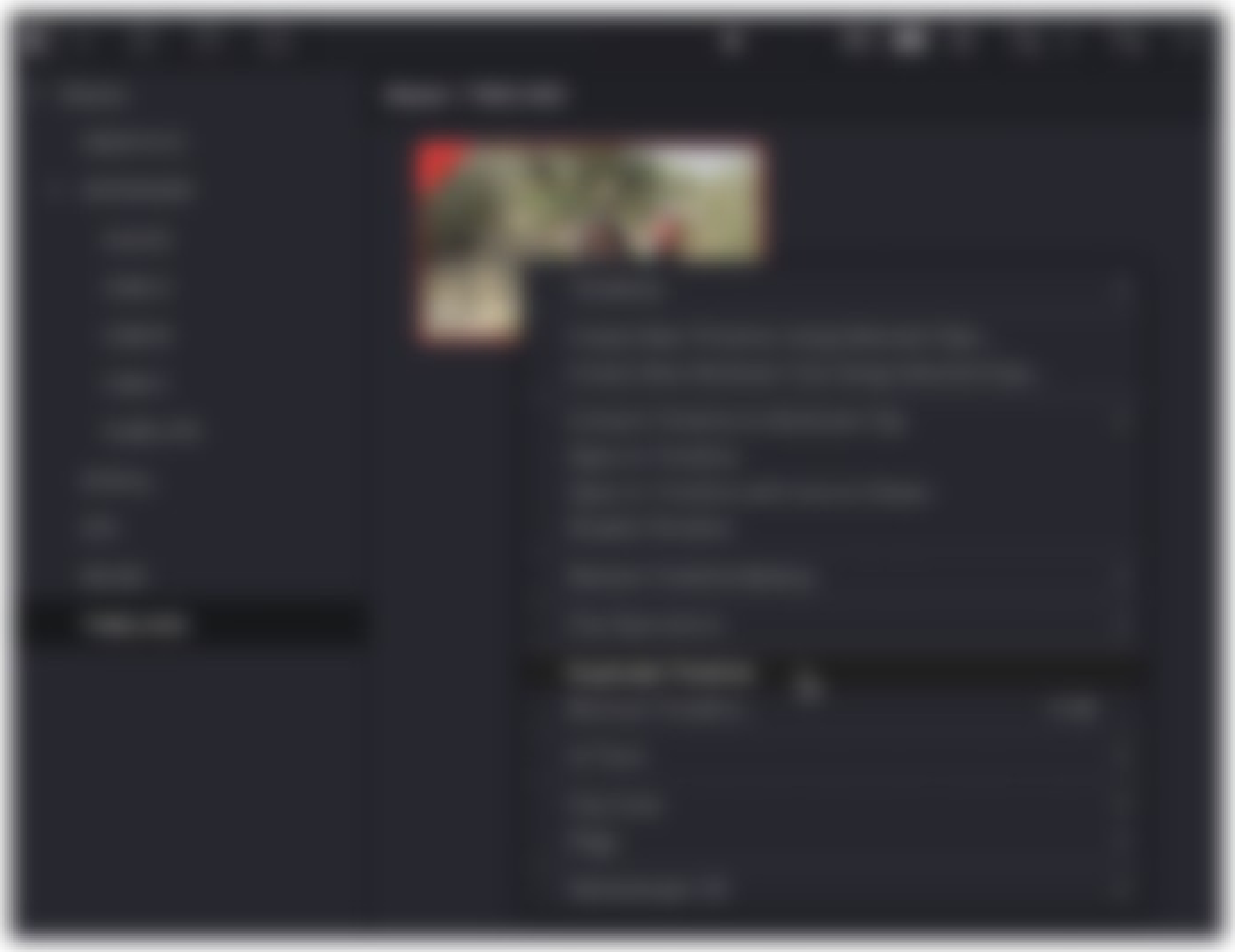
The timeline is imported into the selected bin in your project and automatically opens in the timeline viewer. You can now continue with this lesson.

Duplicating and Managing Timeline Backups

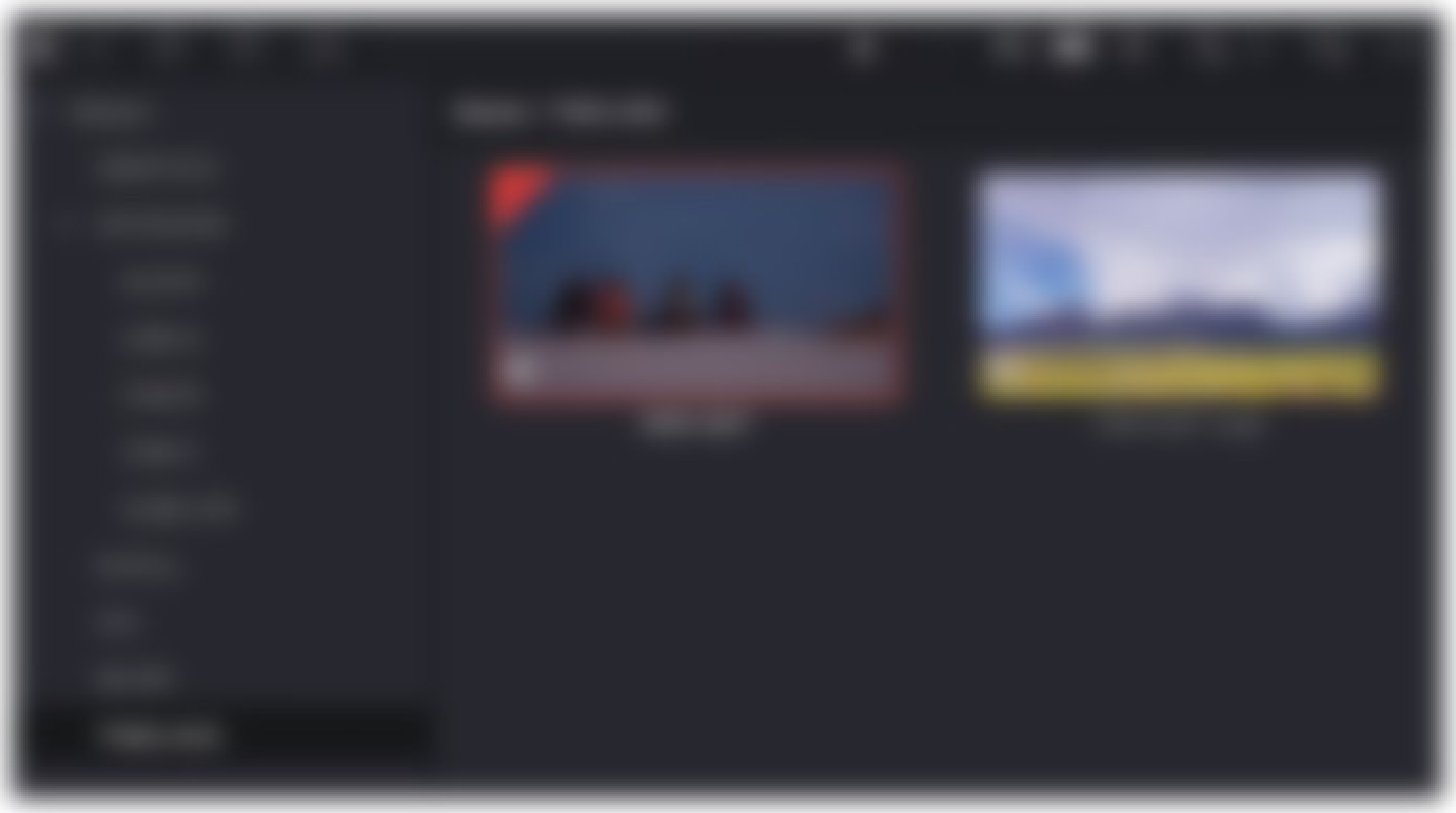
It's generally good practice to duplicate your current timeline before you start making major changes because if you (or your client/director) don't like the subsequent changes you make, you always have a backup copy of the timeline to return to.

4. Choose Timeline > Find Current Timeline in Media Pool to quickly reveal the currently active timeline in its bin.

5. Right-click the current timeline and choose Duplicate Timeline.



A copy of the timeline appears in the same bin as the original.



The duplicate of your active timeline has the same name but with the word copy added to the end to signify that this is the duplicated timeline.

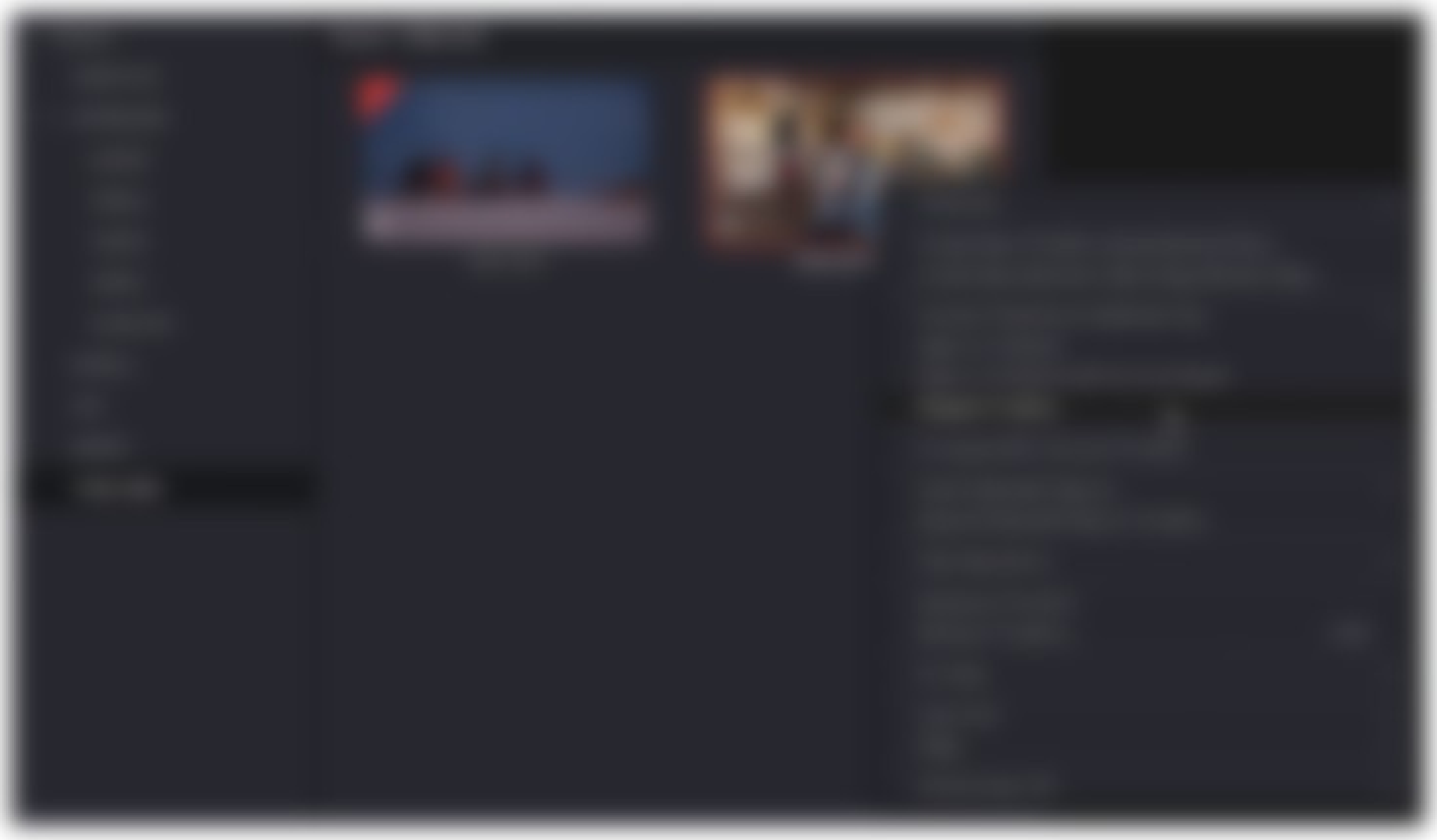
Many editors like to rename duplicated timelines, usually replacing "copy" with a version number (v1, v2, v3, etc.) so they know what they are looking at in the bin. However, if you leave the name of the duplicated timeline as is, subsequent duplication of the original timeline will result in the name of the new duplicated timeline being incrementally increased (copy, copy 1, copy 2, etc.). This is a useful technique since, firstly, it always means the version of the timeline you're working on is the latest, and secondly, the automatic names of the duplicated timelines can help to "backtrack" to a previous version of the timeline if needed.

NOTE If you need more detail about when a particular timeline or copy was created, you can click the "i" button in the bottom right of the timeline thumbnail. Alternatively, you can view the Date Modified column using List view in the media pool. Timelines will always be displayed as thumbnails at the top of the selected bin when the media pool is in Metadata view.

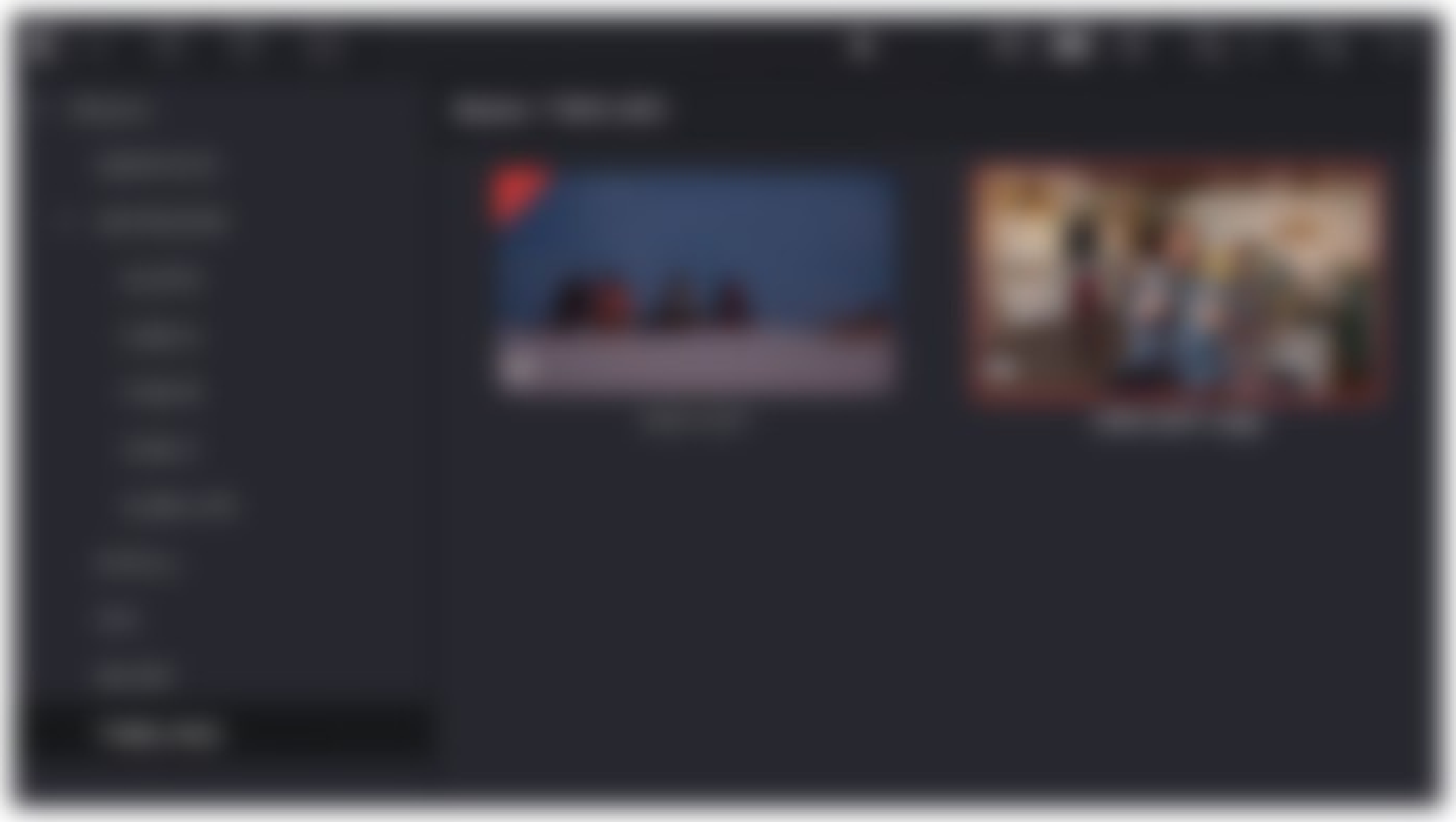
Projects may contain many timelines. You can use bins to help organize these duplicated timelines so that you always know which timeline you should be working on. Alternatively, you can always disable a timeline you're not using.

Since you only need a copy of your current timeline as insurance against any future mistakes or changes of heart, you can disable it for now.

[illegible] Right-click the duplicate of the current timeline you created in the previous step and choose Disable Timeline.



A struck-through eye symbol replaces the icon for this timeline, indicating the timeline is now disabled.



A disabled timeline cannot be opened without first re-enabling it by right-clicking it and choosing Enable Timeline. Furthermore, disabled timelines won't appear in the timeline viewer dropdown list (see Lesson 7, "Edit Page Effects," for more information on this feature).

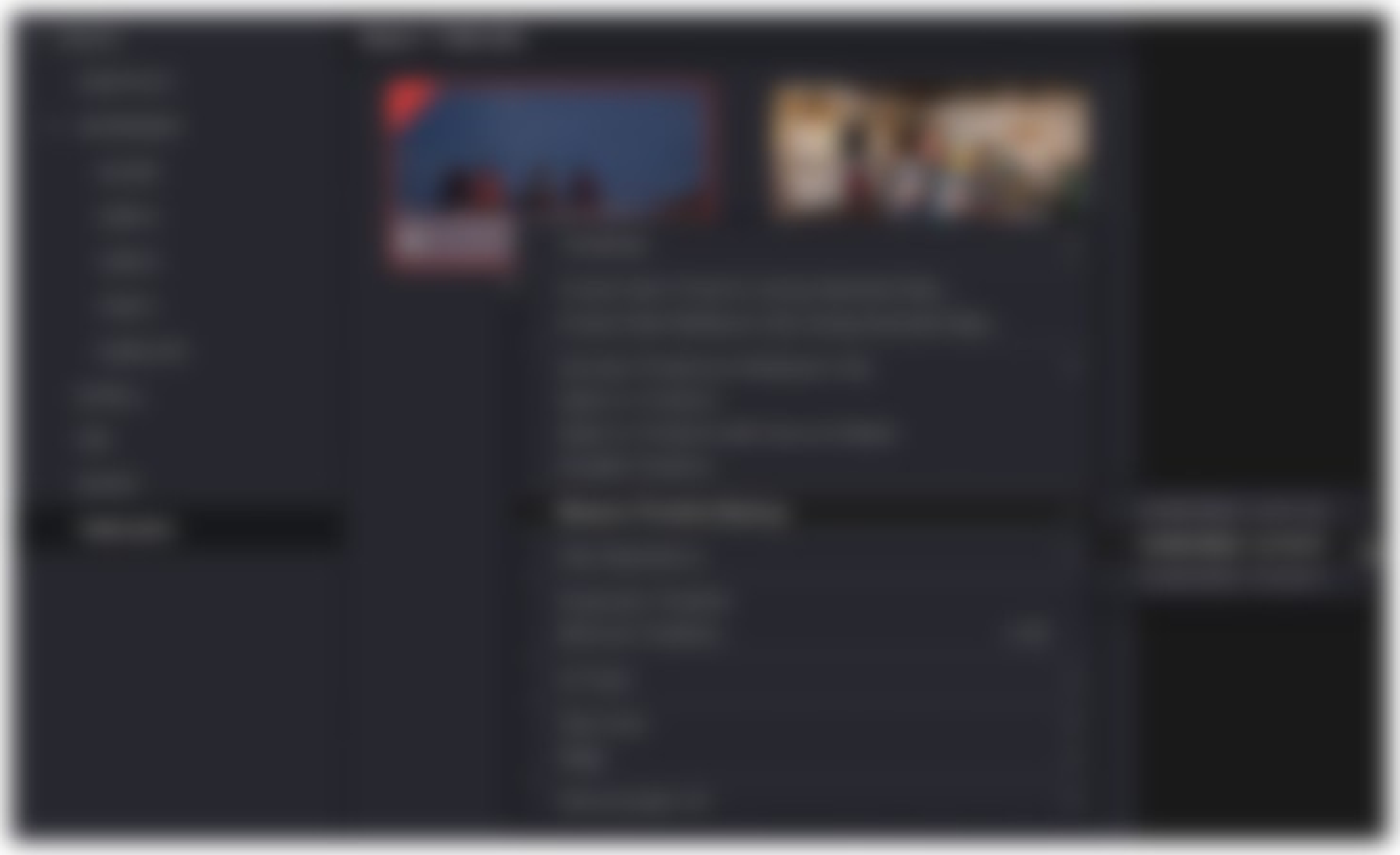
Restoring a Timeline Backup

Duplicating timelines is a useful step for the reasons outlined above, but it is a step you must undertake manually. Occasionally, you may find yourself in a situation where you've been so caught up in the creative process of editing that you have completely neglected to duplicate your timelines! In this case, it would be very difficult to rewind the clock and go back to an earlier version without having to use so many Undo commands that the Z key on your keyboard would wear away.

Never fear, though, because DaVinci Resolve has your back and is saving backups of your timelines as you work on them.

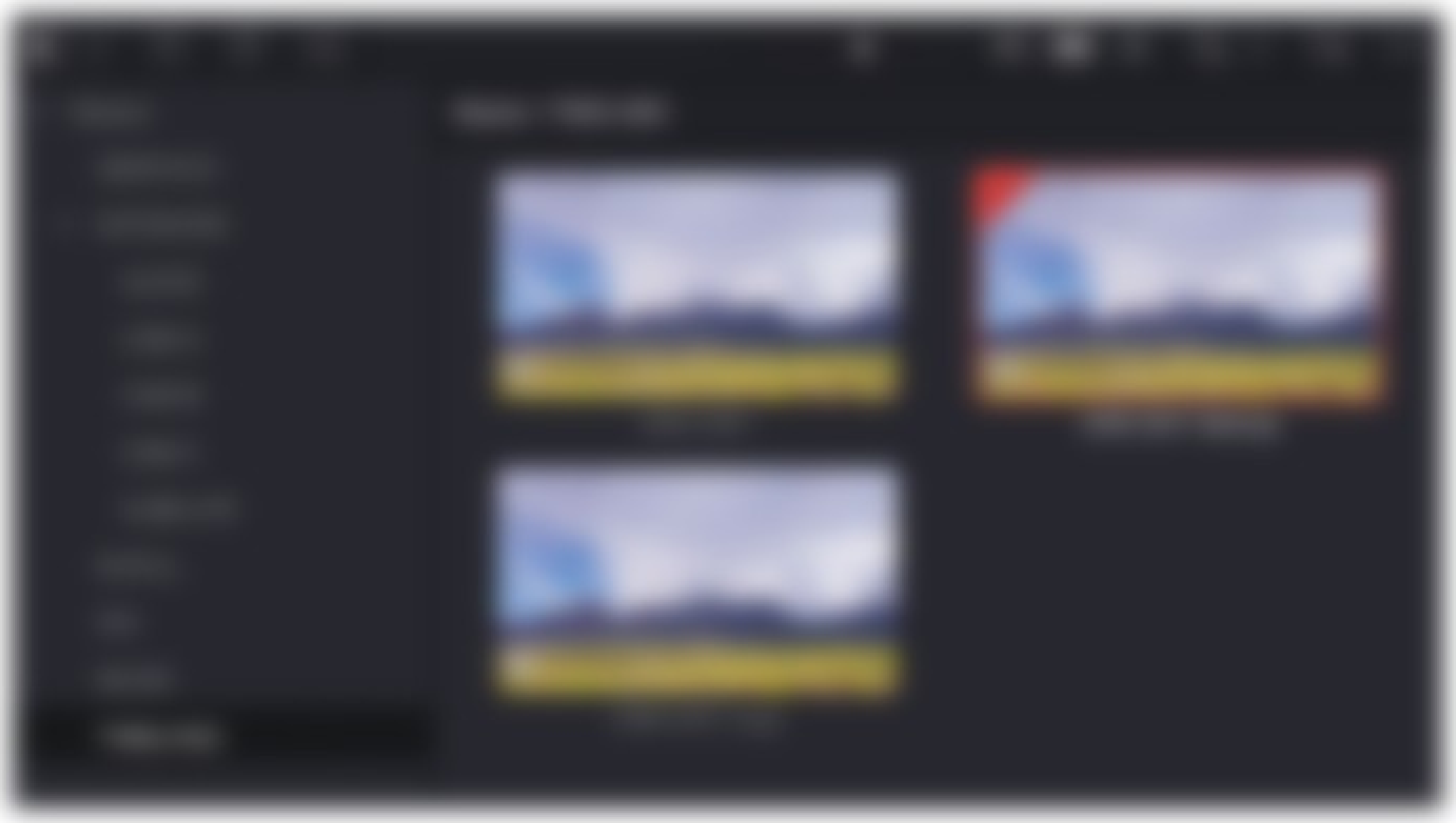
1 If necessary, choose Timeline > Find Current Timeline in Media Pool to reveal the active timeline in its bin.

- Right-click the current timeline and choose Restore Timeline Backup to reveal a list of backups, date- and time-stamped when the backup was created.



- Choose a backup to restore.

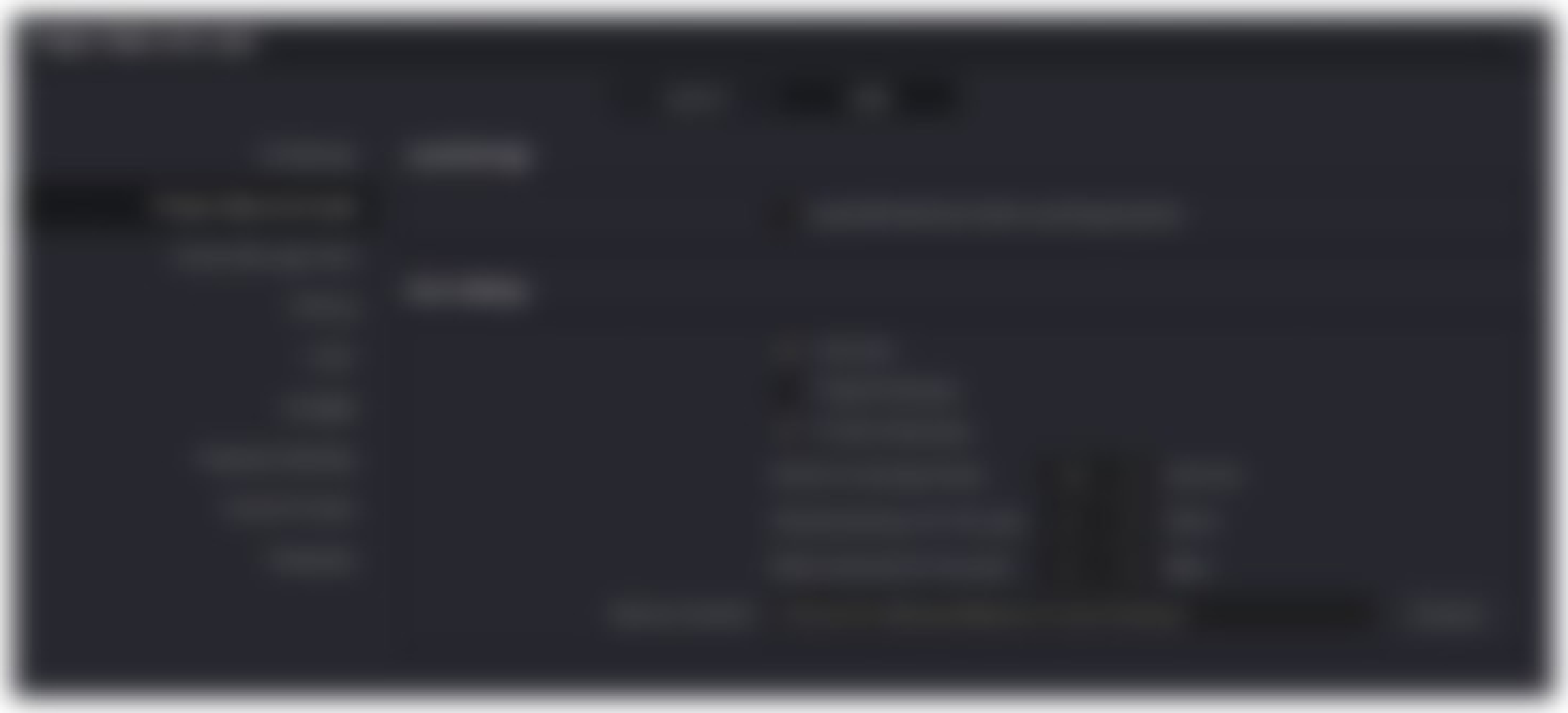
  The backup timeline doesn't overwrite the original timeline but adds the restored timeline to the current bin as a separate timeline with the word "Backup" added to the timeline name. The restored timeline also becomes the active timeline in the timeline window.



NOTE If the Restore Timeline Backup option isn't available, then no backups are available for that particular timeline. In this case, make a few changes and check again after a few minutes of work.

The time increments between each timeline backup can be viewed and adjusted by using DaVinci Resolve's User Preferences.

- Choose DaVinci Resolve > Preferences or press Command-, (comma) in macOS or Ctrl-, (comma) in Windows.
- In the Preferences window, select the User tab and the Project Save and Load settings.



The default is to save a timeline backup every 10 minutes. After an hour of backups has been reached (six backups at 10-minute intervals), an hourly backup is saved, and the older backups for the previous hour are discarded as new backups are created. This means you'll only ever have six backups for the last hour you've been working.

Once hourly backups start to be made, the Hourly Backups value becomes relevant. Again, the default is to save the previous two hourly backups, with older backups being discarded as newer ones are created.

The very last backup created on any given day then becomes the daily backup and, again, the previous two daily backups are saved, with older backups being discarded as newer ones are created. If you are working on a project over a longer stretch of time, you can always increase this value so you always have a daily backup stretching as far back as you feel comfortable.

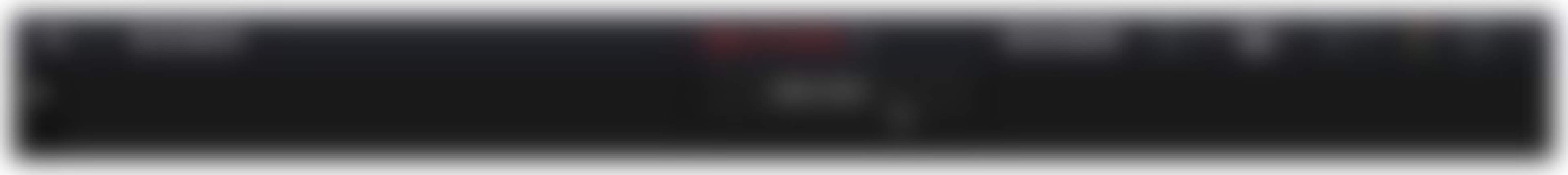
Timeline backups are saved in the Backup Location detailed here. However, there are no user-manageable files in this location, and timeline backups should always be restored as detailed above.

NOTE Although not enabled by default, if you want incremental backups of an entire project made automatically, simply enable the Project Backups option. Once enabled, projects are backed up using the same periodic intervals as timelines are backed up. To access available backups for a project that has this feature enabled, simply right-click the project in the Project Manager window and choose Project Backups, where you can choose to delete any unwanted backups or load a previously saved backup of the project. When loading a backup project, you will be prompted to name the project because, as with restoring timeline backups, Resolve will not overwrite the project's current version.

6 Click Cancel to close the Preferences window.

7 Disable any OMO EDIT Backup timelines you may have restored.

8 In the timeline viewer, click the dropdown menu that displays a list of all active timelines in your project and select the OMO EDIT timeline you were last working on.



You now have a greater degree of understanding when it comes to managing your working timelines and restoring backups. Ensure that you have at least one backup of the current OMO EDIT timeline in the media pool, and you can now continue to finesse the Organ Mountain Outfitters promo.

The Editor's Art

Trimming is the term given to adjusting a clip's In and Out points in the timeline and is arguably the most important skill an editor possesses. Trimming allows you to adjust the start of a clip, the end of a clip, the start and end of a clip, or, in certain circumstances, the start and end of other timeline clips. DaVinci Resolve has one of the most flexible, fully featured trimming toolsets of any nonlinear editor (NLE), allowing you to perform complex timeline adjustments intuitively and precisely. As such, over the next few lessons, you will become increasingly familiar with trimming techniques.

Beyond simply cutting a clip and removing large sections of unwanted footage, trimming in DaVinci Resolve generally occurs in one of two timeline modes: Selection mode and Trim Edit mode.

Selection mode allows you to move clips around the timeline and adjust their durations simply and easily. This is the most intuitive way to begin trimming clips in Resolve's timeline.

Trim Edit mode unlocks the true power of the trimming functions. In this mode, you can ripple edit points, slip the content of clips, and slide the position of clips in relation to neighboring clips.

All the trimming features in Resolve can also be applied to multiple clips or multiple edit points simultaneously and can be made by clicking and dragging with your mouse or using keyboard shortcuts or relative timecode values for the utmost precision.

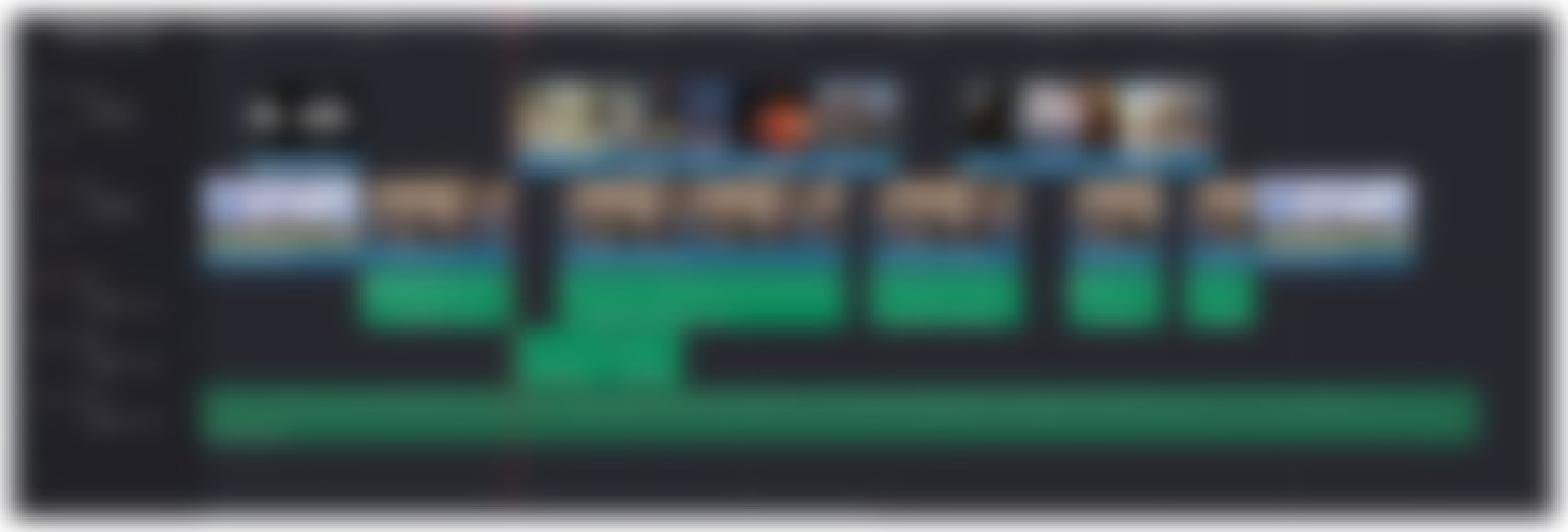
Both Selection mode and Trim Edit mode can also be used in conjunction with the Dynamic Trim mode. You'll learn more about dynamic trimming in Lesson 5, "Cutting a Dramatic Scene."

Trimming the Timeline Clips

In the previous lesson, you added a series of cutaways to the interview by adding In and Out points to the timeline and quickly editing the B-roll footage using the Place on Top edit. Following the steps in the lesson, you didn't spend much time reviewing each of those edits as you made them, focusing instead on just getting the material into the timeline to build the rough cut. Now, though, you will consider how those shots work together, trimming each one as appropriate.

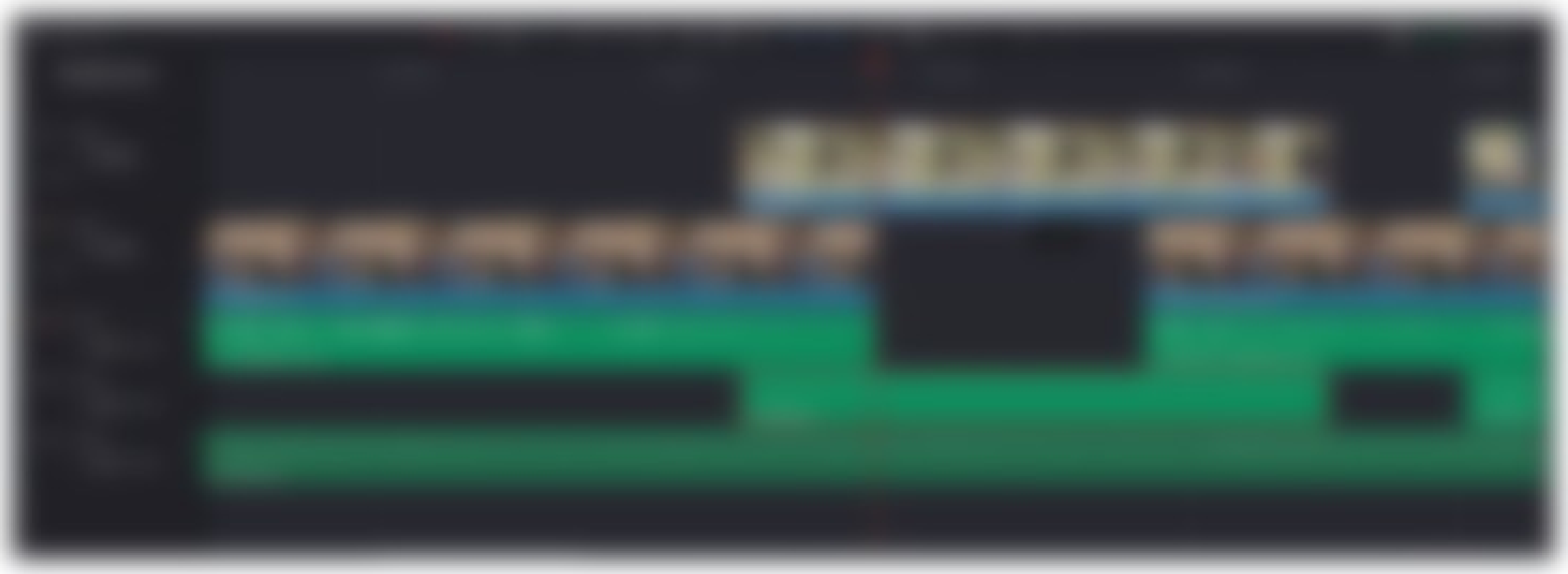
You will begin by trimming some of the clips in the DMO EDIT timeline using Selection mode.

- Place the timeline playhead at the beginning of the first interview clip and review the group of cutaways on the Video 2 track, starting with the clip **Hike Walk 1**.



The edit is functional but feels a little loose, especially coming out of the interview clip into the first cutaway of the friends walking up the path in the foothills.

- Return the playhead to the start of **Hike Walk 1** on Video 2.
- Click the Detail Zoom button to zoom in on the playhead position in the timeline.
- Select the clip on Video 2 and drag it backward by about a second (-01:00) in the tooltip.



TIP If you find that snapping is preventing you from accurately positioning the clip, you can temporarily disable it by pressing N while you move the clip. Snapping will be automatically re-enabled once you release the mouse button. Similarly, if you find that you have disabled snapping when you need it, you can temporarily re-enable it by pressing N while you move the clip. Snapping will then automatically be disabled once you release the mouse button.

Unfortunately, moving the clip like this has left a gap in the cutaways, which disconcertingly cuts back to the underlying clip of Chris's interview on V1. You will need to trim the start of the next clip on V2 to fill the gap.

[illegible] Scroll along the timeline slightly, click the start of the second clip on Video 2, and drag backward until it snaps to the end of the previous clip.

NOTE The white outline shows the available handles for the trimmed clip.

This process has lengthened the second clip by 1 second to fill the gap created when you moved the first clip.

Rolling Edits

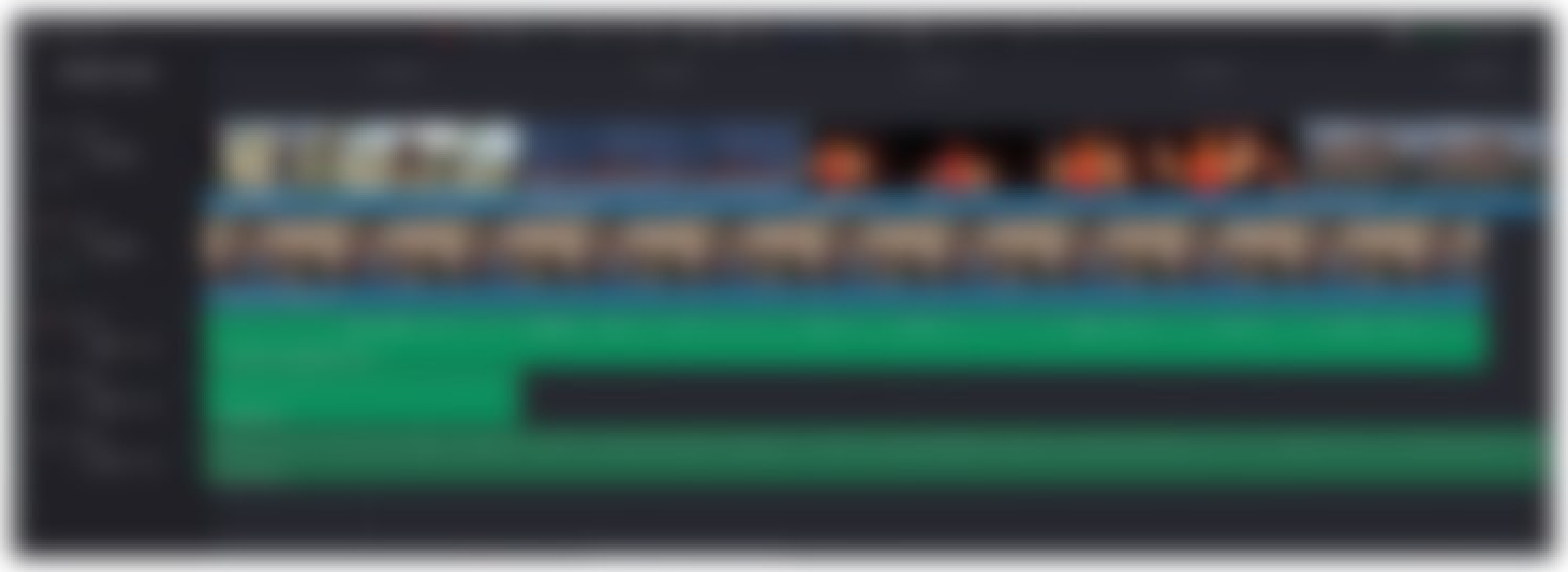
Another useful trimming function is the roll edit, which allows you to reposition an edit point by trimming the outgoing and incoming frames of two neighboring clips at the same time.

NOTE In DaVinci Resolve, roll edits can be made in both Selection mode and Trim Edit mode; the functionality is the same.

1. Position the timeline playhead at the start of [illegible] and play the next four cutaways.

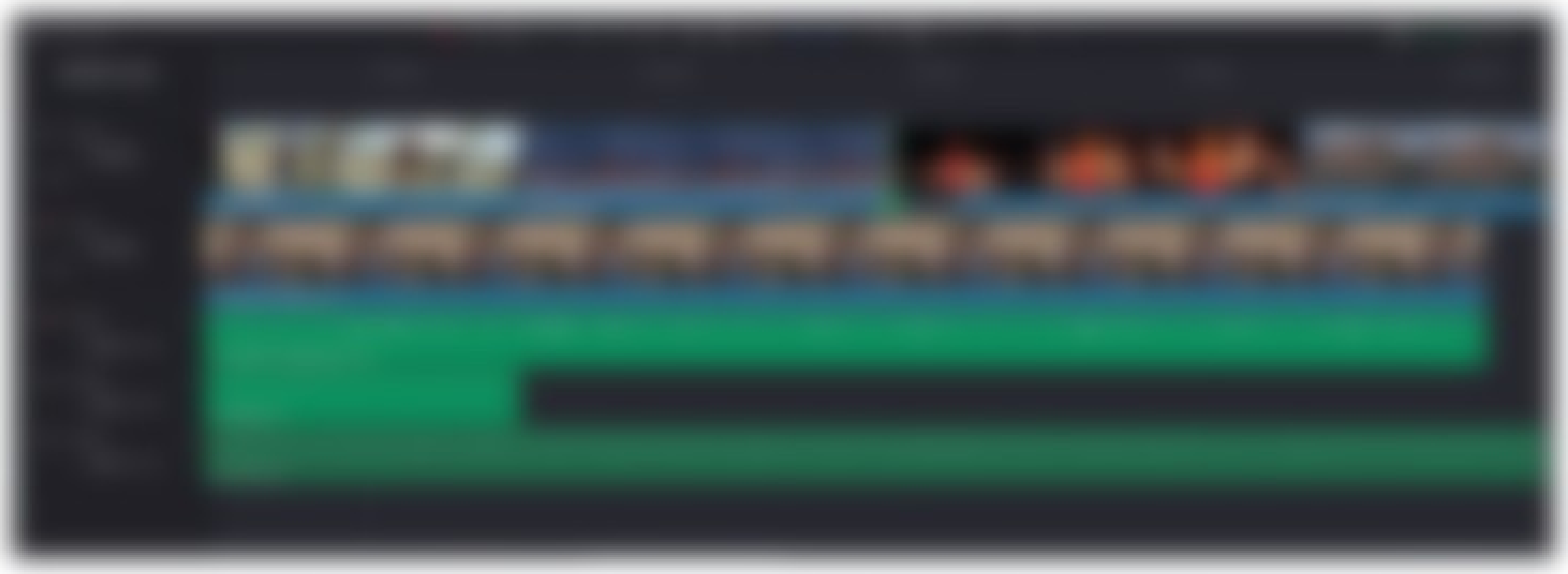
   The shot of the four friends smiling for the camera, [illegible], is a little short when viewed in context with the other cutaways.

2. Place your mouse pointer over the center of the edit between [illegible] and [illegible] so it displays the roll icon.



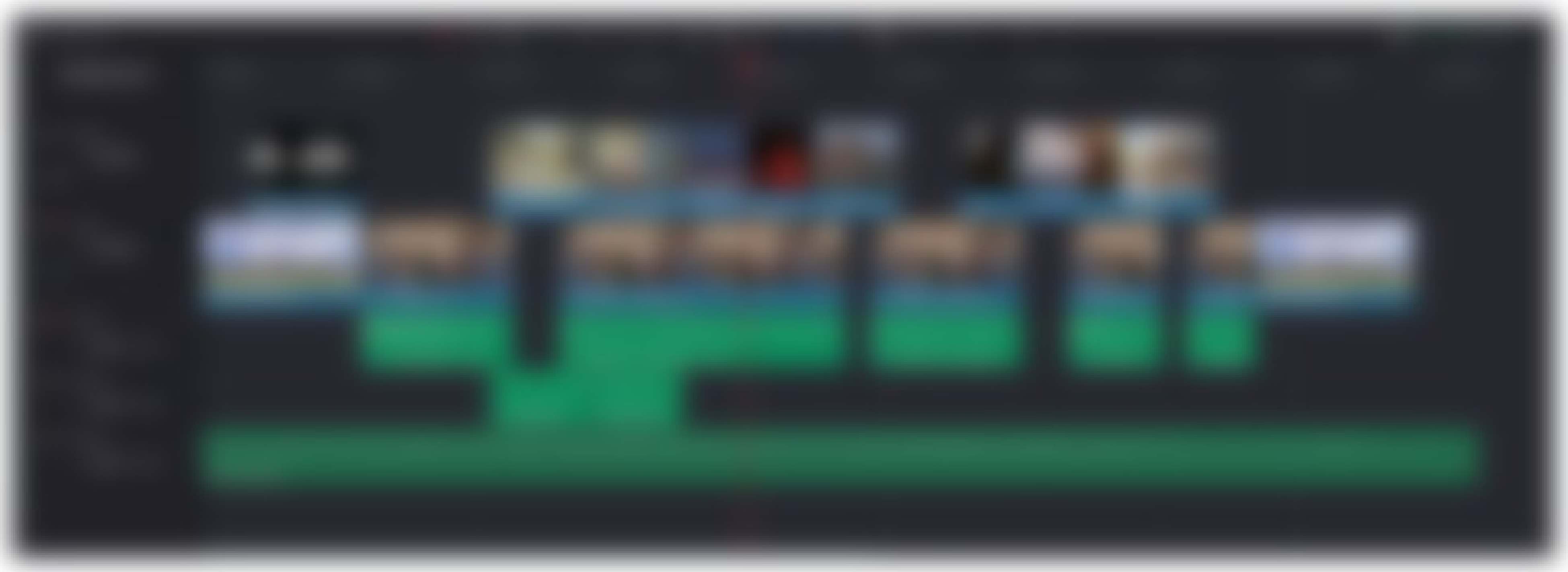
3. Click to select both sides of the edit: the end, or Out point, of [illegible] (the outgoing clip) and the start, or In point, of [illegible] (the incoming clip).

- Trim the selected edit to the right by around 18 frames (+00:18 in the tooltip) or until you think the duration of the [illegible] and the [illegible] clips are similar.



This editing trim adds footage to the end of the outgoing clip but also trims the same duration of footage from the start of the incoming clip so it doesn't leave a gap.

- Return the timeline playhead to the start of [illegible] and review the change you've just made.
- Roll the edit to change its position to your liking, and then deselect the edit point and click the Full Extent Zoom button to see the entire timeline once again.



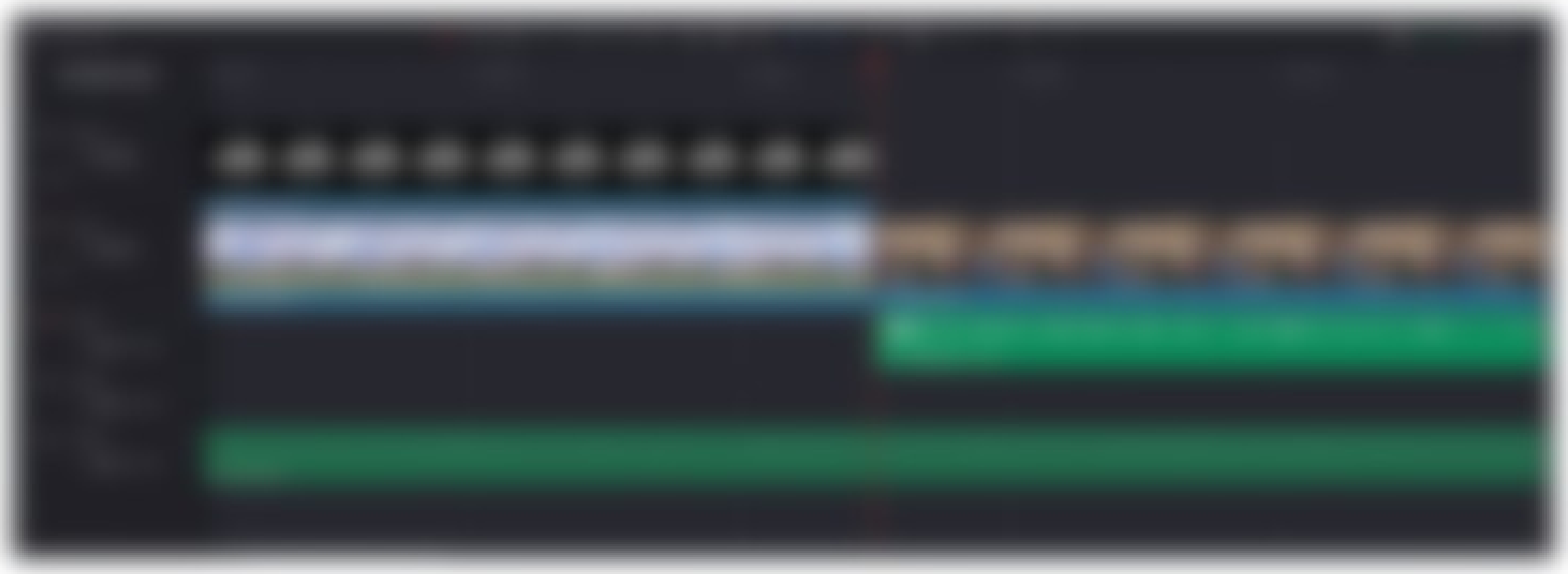
Creating Split Edits

Rolling edit points is most useful when creating split edits, the term used to refer to an edit for which the sound and picture are cut at different points in the timeline. Split edits are a powerful way of cutting between clips and are used by editors across all genres.

NOTE Technically, you have already made a basic split edit when you moved the [illegible] clip back a second, overlapping the end of [illegible] before Chris finishes speaking.

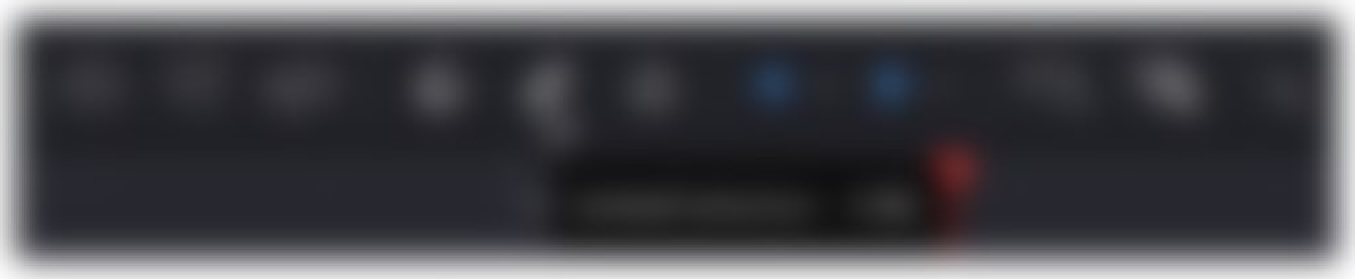
To see how split edits are created, you will roll the video edit between the opening shot and the first interview clip so that Chris starts his introduction while the viewer is still looking at Organ Mountain.

1. In the timeline, place the playhead on the edit of the opening timelapse shot of Organ Mountain, [illegible] and [illegible], and then click the Detail Zoom button to increase the timeline zoom so it's easier to concentrate on this edit.

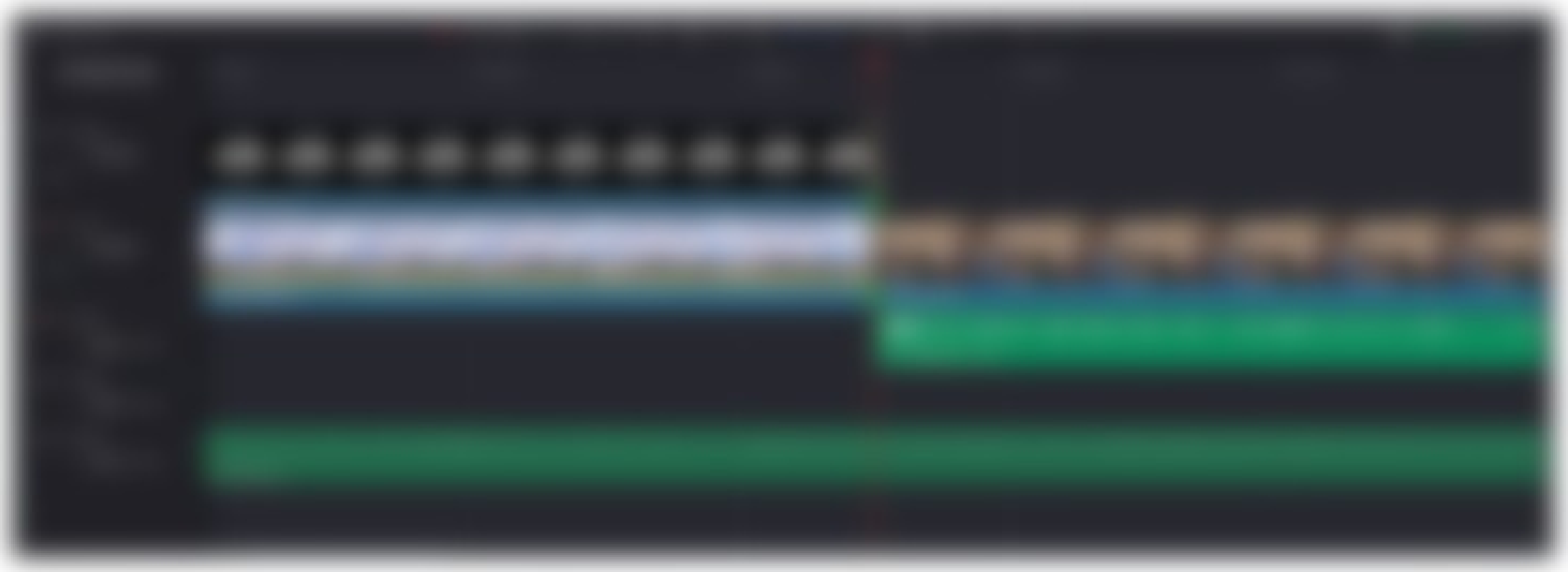
   At this point, you only want to adjust the video edit, not the audio edit.

2. In the timeline toolbar, click the Linked Selection button or press Shift-Command-L (macOS) or Shift-Ctrl-L (Windows).

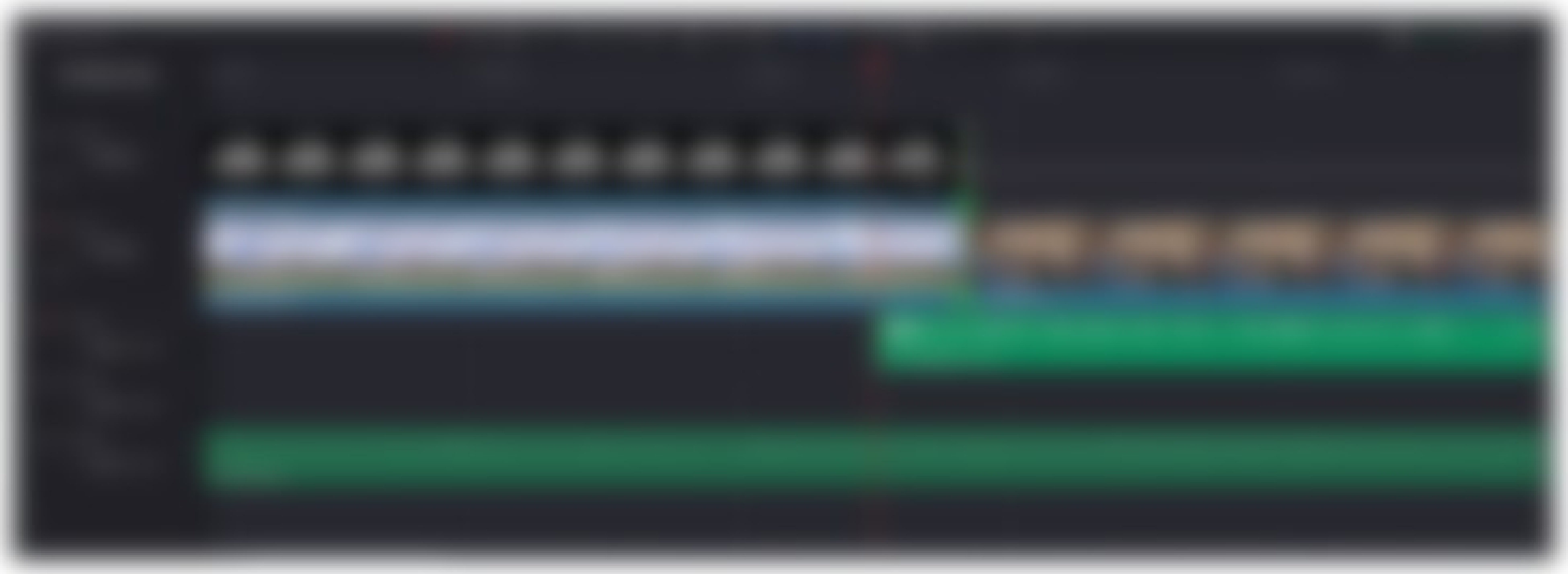
   

   Linked Selection is used to automatically select both the video and audio parts of linked timeline clips, making it easy to quickly trim both parts of a clip together. Linked clips are indicated by the presence of the chain icon before the clip name in the timeline.

- Click the edit point between the [illegible] and [illegible] clips to select just the video edit point, and then Command-click (macOS) or Ctrl-click (Windows) the outgoing edit point of the [illegible] clip on Video 2 to add it to the selection.



- Drag the selected edit points forward by about 15 frames (+00:15) in the tooltips until the incoming frame in the timeline viewer shows [illegible] has lowered his left hand to his knee.



This results in the [illegible] clip extending slightly into the [illegible] visuals while retaining the original audio edit.

- Once complete, review the change you've just made.
- Click the Linked Selection button or press Shift-Command-L (macOS) or Shift-Ctrl-L (Windows) to re-enable Linked Selection.
- Deselect the selected edit points and click the Full Extent Zoom button to view the entire timeline.

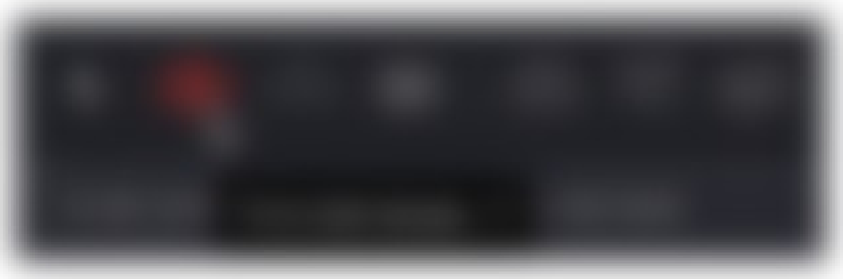
NOTE You will learn more about creating split edits in Lesson 5.

Split edits like this are very powerful since they help better knit an edit together. Rather than a clumsy sound and picture cut, you now have a sophisticated edit in which Chris's audio preempts the visual cut, making it feel a little less abrupt.

Slipping Clips

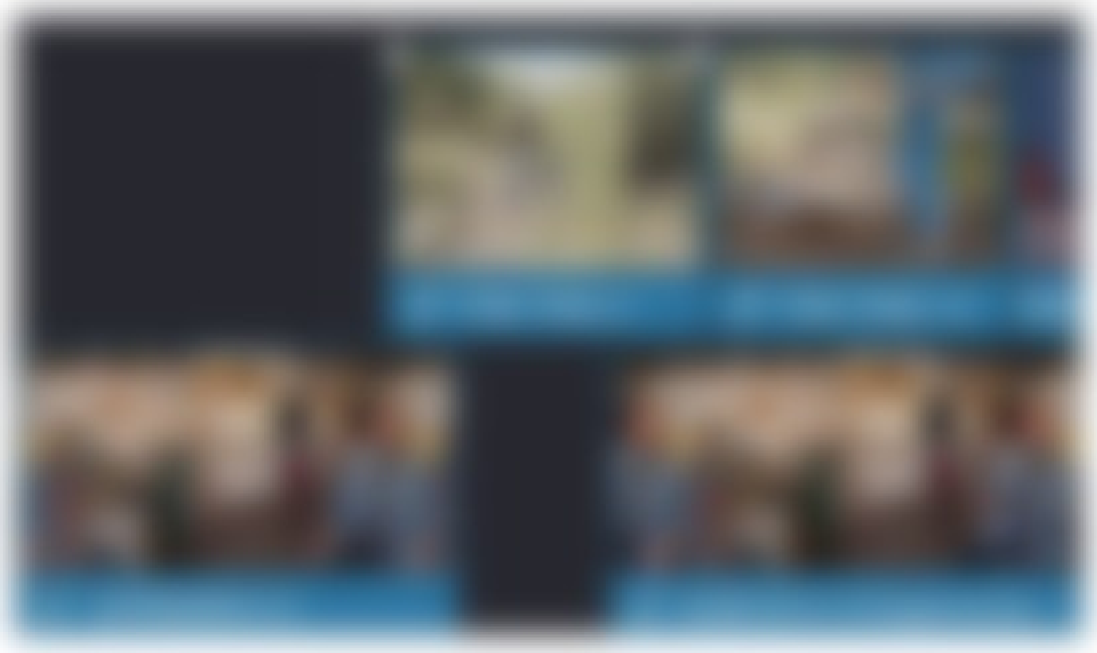
Simply bringing the cutaway at the end of the first soundbite in slightly earlier has made the edit feel a little "tighter." but the edit point between the first and second cutaway clip now feels a little more awkward because you've changed the point at which the second clip starts. To refine this, you will slip each shot in turn using Trim Edit mode.

- Click the Trim Edit Mode button in the timeline toolbar or press T.



The Trim Edit button turns red to indicate that Trim Edit is now the selected timeline mode. You will also see that the mouse pointer has changed from the Selection mode arrow to a trim symbol.

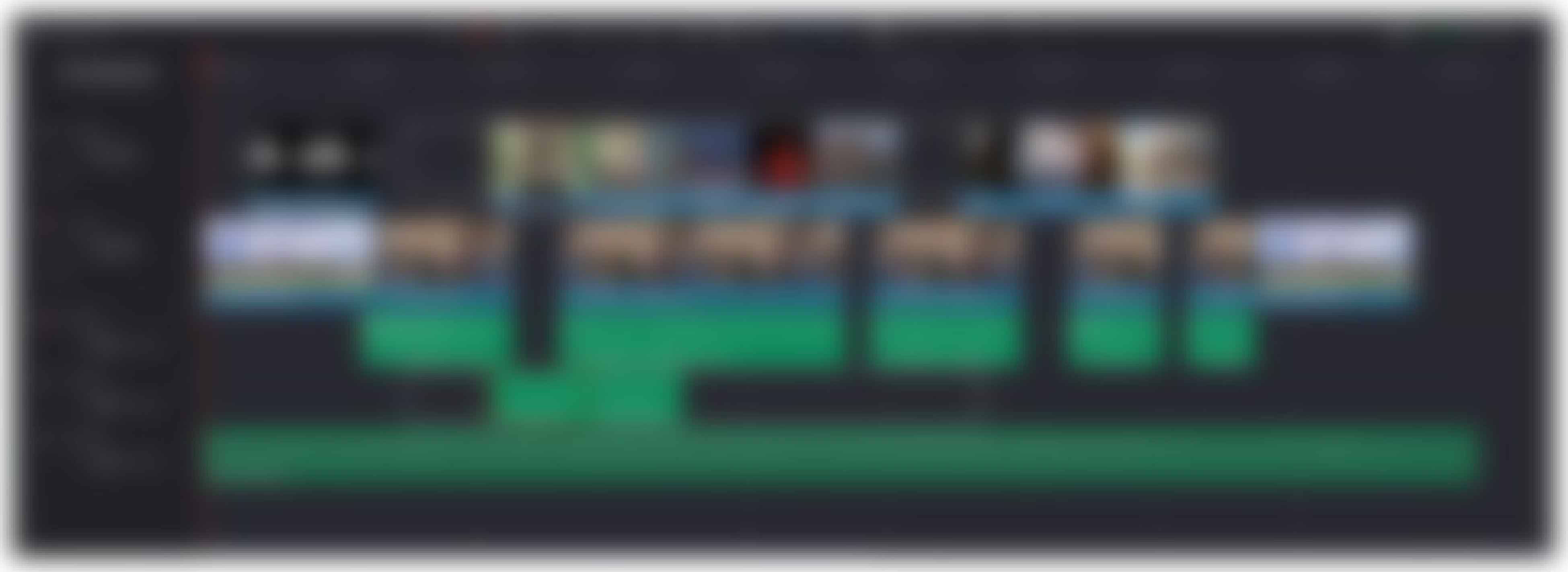
- Move your mouse pointer over the [illegible] clip on Video 2.



Trim Edit mode is contextual, meaning that it will have different functions depending on where you place your cursor. When you place your mouse pointer over the upper part of the clip, above the clip name area, the trim symbol changes to a slip icon to reflect the type of trim you are about to perform.

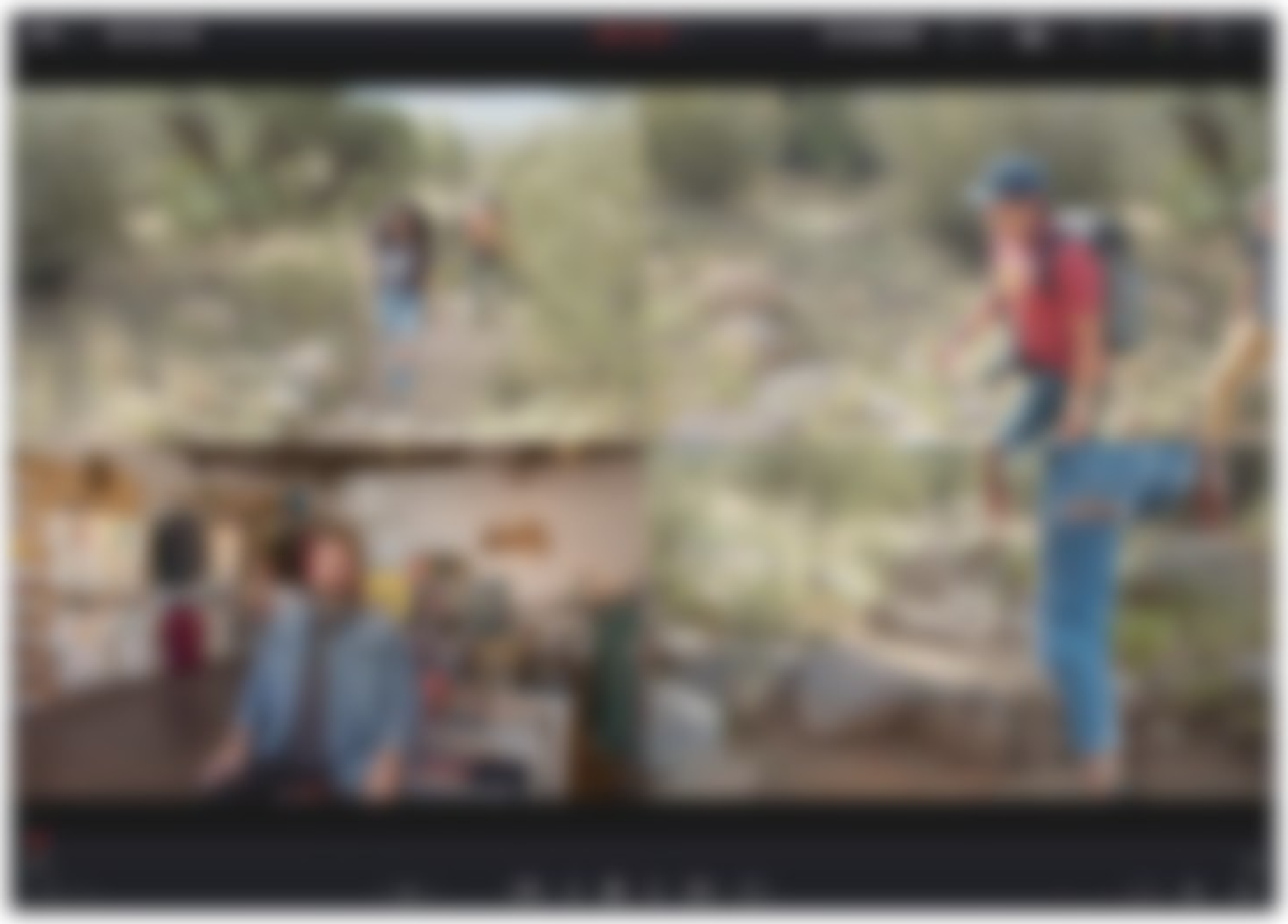
- With the slip icon displayed, click the clip and drag left.

This time, because you are in Trim Edit mode, the clip does not move in the timeline. Instead, you will see that you are slipping the clip within its own In and Out points.



In the timeline, you will also see a white outline extending from the start and end of the clip being slipped, showing the available handles for that clip – that is, the portion of the clip not currently being used in the timeline.

The timeline viewer has automatically changed to a 4-up multi-view preview of the change you're making.

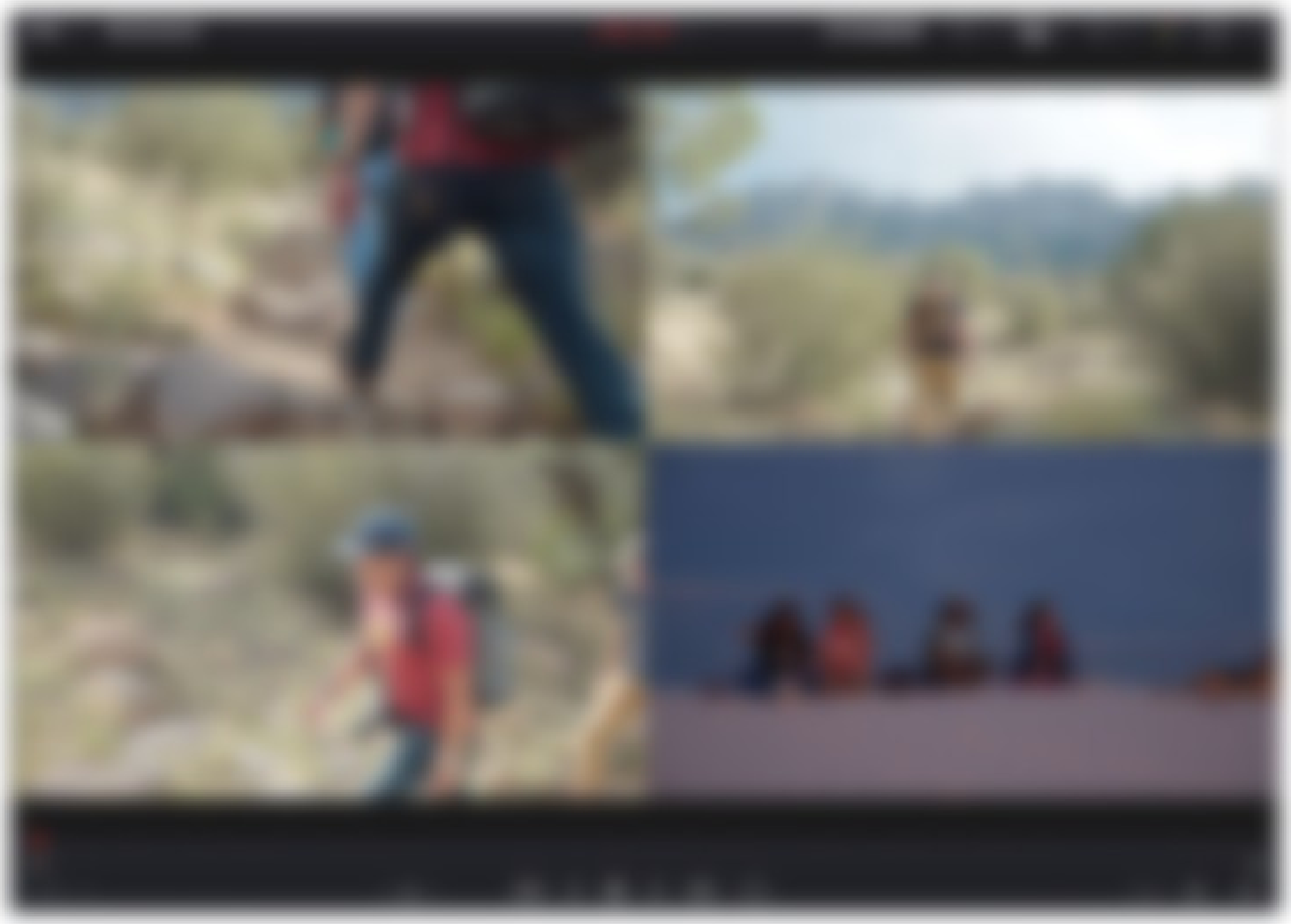


The top two images show the start and end (the In and Out points) of the currently selected clip, and the bottom two images show the last frame of the previous timeline clip (the first interview on Video 1) and the first frame of the following timeline clip (the following cutaway on Video 2).

- Continue slipping the clip until the top right image in the multi-view preview shows the guy in the red shirt stepping forward with his left leg forward (about -01:10 in the tooltip) and then play the first clip on Video 2 to review the change.

  Things seem to work well. However, it's always worth playing with an edit to see how it might be further improved.

- Slip the second cutaway clip to the left by about 1 second or so (-01:00 in the tooltip) until the top left image in the multi-view preview has the same guy with his left leg extended in a similar manner.



TIP You can use the lower left image (which now shows the last frame of the previous timeline clip) to help visually match the two shots.

- Deselect all selected clips in the timeline, return the timeline playhead to the beginning of the first interview clip on Video 1, and play back to review the changes you've just made.

Even though you haven't adjusted the timing of the gap between the two interview clips on V1, by trimming and finessing the edit between the 2 cutaway shots, the edit looks better because the action is consistent across the two shots and feels tighter as a result.

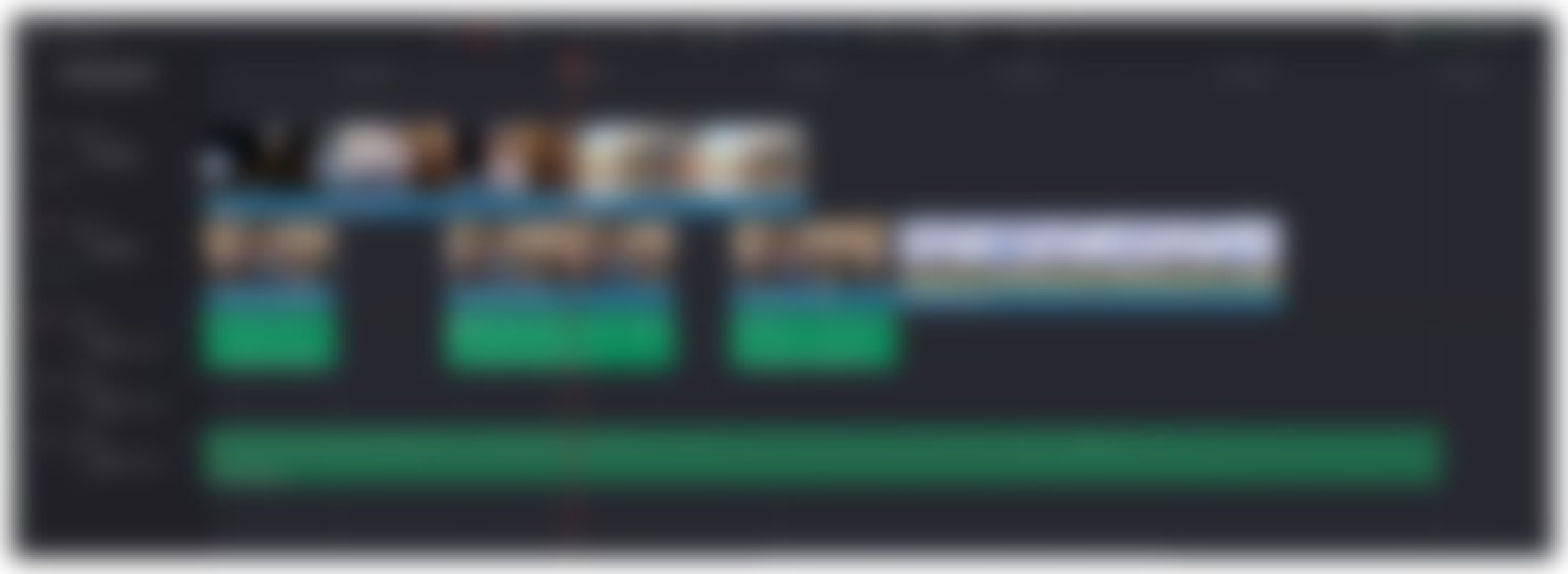
NOTE Most often, you will find that you need to use different trimming operations in combination. In the previous steps, you trimmed the start of one clip but then needed to slip both clips to refine how the first shot cut to the second. As you will see, this is common to most trimming operations.

Ripple Trimming

Another powerful function of the timeline's Trim Edit mode is the ability to ripple edit points. Rippling edits is very useful when you want to refine the timing or pacing of clips because, unlike with Selection mode, the changes you make ripple through the rest of the timeline.

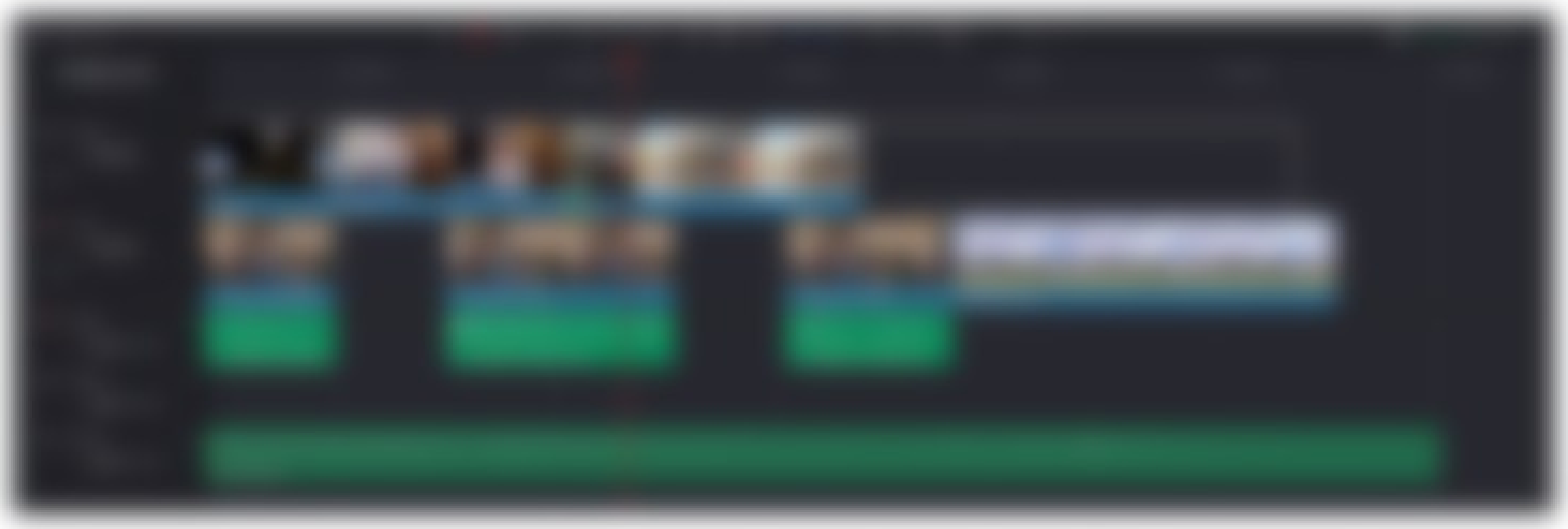
You will start by rippling the start on a clip to understand how this trimming function affects other clips in the timeline.

1. Move the timeline playhead to the start of the last cutaway clip on Video 2 and click the Detail Zoom button, adjusting the zoom level of the timeline so you can comfortably see the last few clips in the timeline.



2. Ensure that you are still in Trim Edit mode and select the incoming side of the edit between the last two clips on Video 2.

- Drag the selected edit to the left by about a second (-01:00) on the tooltip.



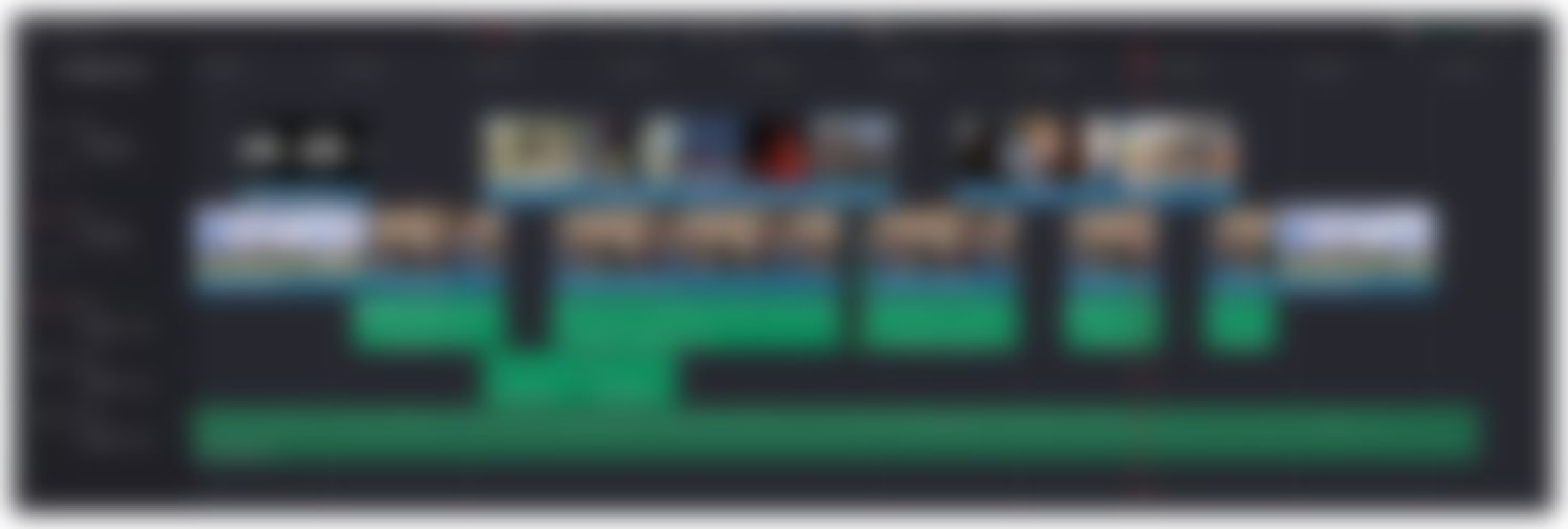
Notice how, by ripple trimming the start of the clip on Video 2, all the clips after this point are affected, which in turn affects the duration of the gap between the interview clips on Video 1. This is the power of the ripple trim. If you had followed the same steps when the timeline was in Selection Mode, then the start of [illegible] would have been trimmed back over the end of the previous clip, [illegible].

> **NOTE** Ripple trimming edit points like this will affect all clips that start on or after this point in the timeline on all tracks that have the Auto Track Selector enabled and/or the Track Lock turned off.

Ripple Trimming Multiple Edit Points

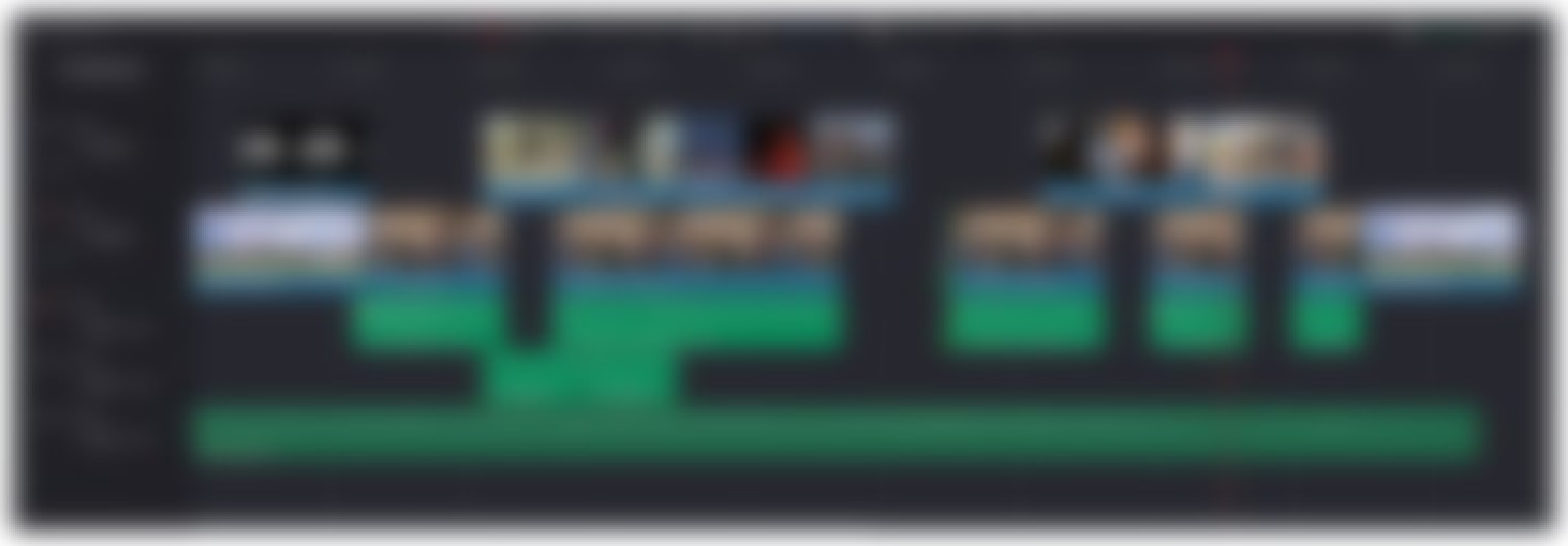
You can also use a ripple trim to further refine the pacing of the gaps between the interview clips.

- Deselect the selected edit and click the Full Screen Zoom button to view the entire timeline.
- With Trim Edit mode still selected, click to the left of the start of the third interview clip on Video 1 to select the "outgoing" part of the gap.



NOTE On a laptop, you might want to zoom in closer to the edit to select it effectively.

- Drag the selected edit point to the right to begin lengthening the gap.



As you do this, you'll notice that all the other clips starting after the selected edit are also rippling based on the change you're making. However, [illegible] and [illegible] aren't included in this change because those clips start before the selected edit.

- Release the mouse button and choose Edit > Undo or press Command-Z (macOS) or Ctrl-Z (Windows) to undo any changes that you might have made to this edit.

TIP The Undo command is one of the most useful commands available in any software. It means you can always step back when you make mistakes. Use Edit > Undo > History to view a list of the last 25 steps you've taken. For a complete list of the steps you can undo and redo, choose Edit > History > Open History Window.

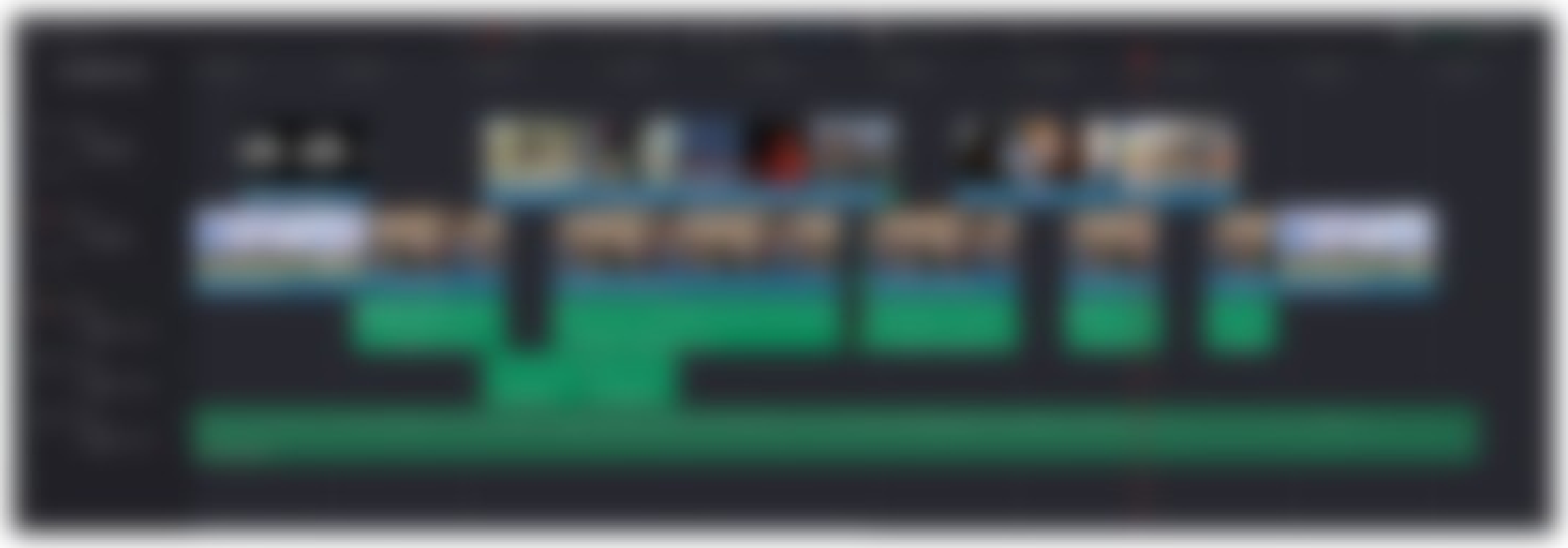
Take a moment to consider how you might make this change in the easiest manner.

Sure, it should be no problem to ripple the gap and then roll the end of the cutaway of the guy on the trail back out to the correct point.

Alternatively, trimming the start of this clip in the same way you rippled the previous shot is another way of ensuring that the cutaway ends at the correct place regarding the soundbite on Video 1, but that also changes the point at which the cutaway will start, which necessitates slipping the shot afterward to correct for the change.

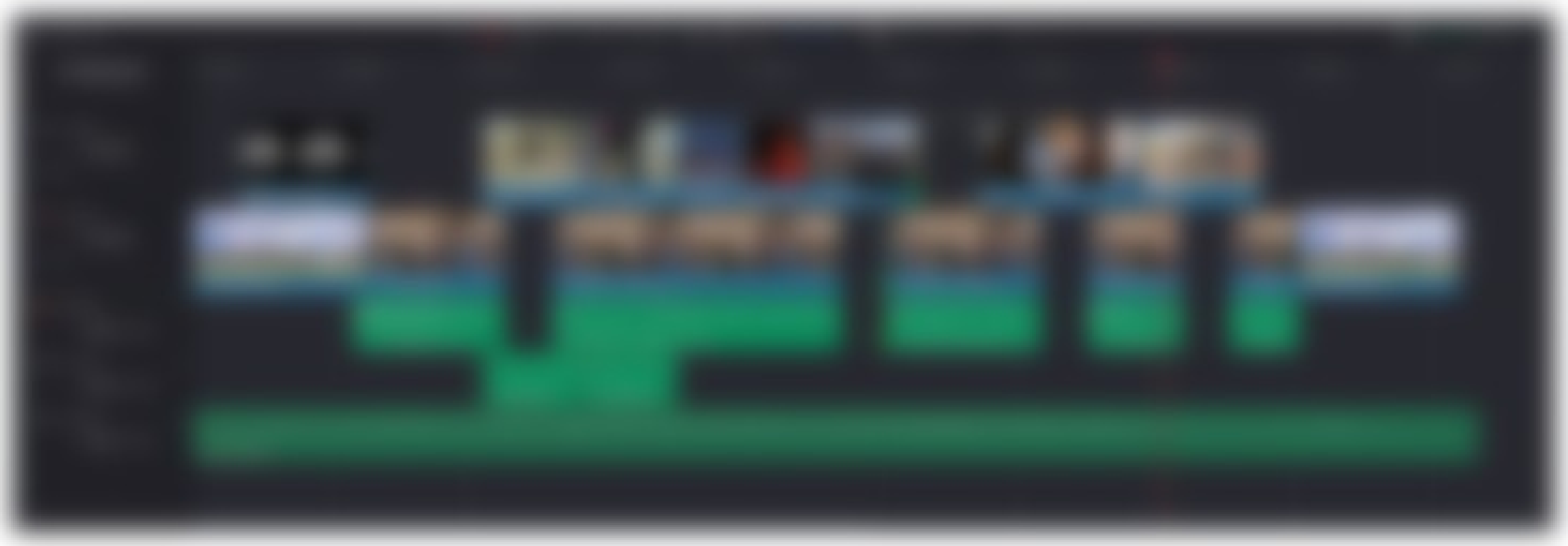
See the conundrum? Thankfully, there are never any right or wrong ways of achieving the results you're looking for. There are, however, more efficient ways of achieving that result, and in this case, you can trim the end of the cutaway clip while rippling the duration of the gap.

- Once again, select the outgoing part of the gap and Command-click (macOS) or Ctrl-click (Windows) the outgoing part of the cutaway on Video 2.



By selecting both edit points, you can now trim them together.

- Drag the selected edits to the right to add about 1 second (+01:00) on the overlap to the duration of this clip and the selected gap below.



- With the edits still selected, choose Playback > Play Around/To > Play Around Current Selection or press / (forward slash) to review the change.
- Deselect all selected edits in the timeline.

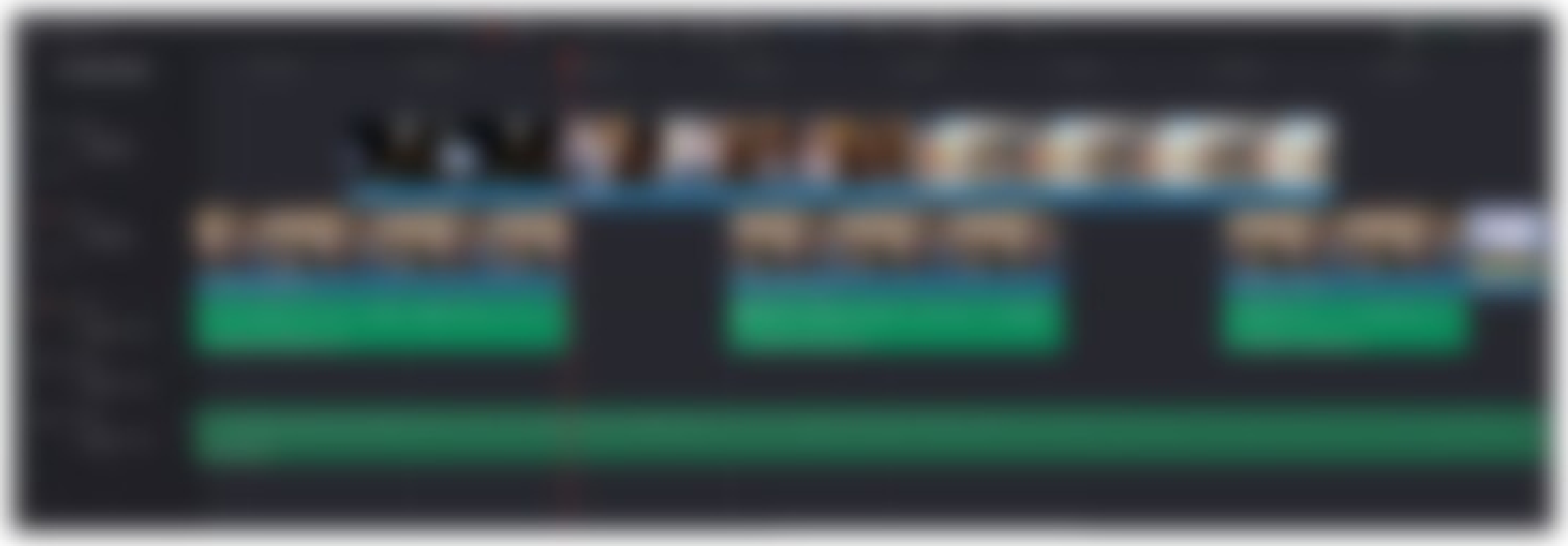
The ability to select and trim multiple edit points and clips is a powerful feature of DaVinci Resolve's trimming functions and provides enormous flexibility when it comes to refining clips in a timeline.

Slide Edits

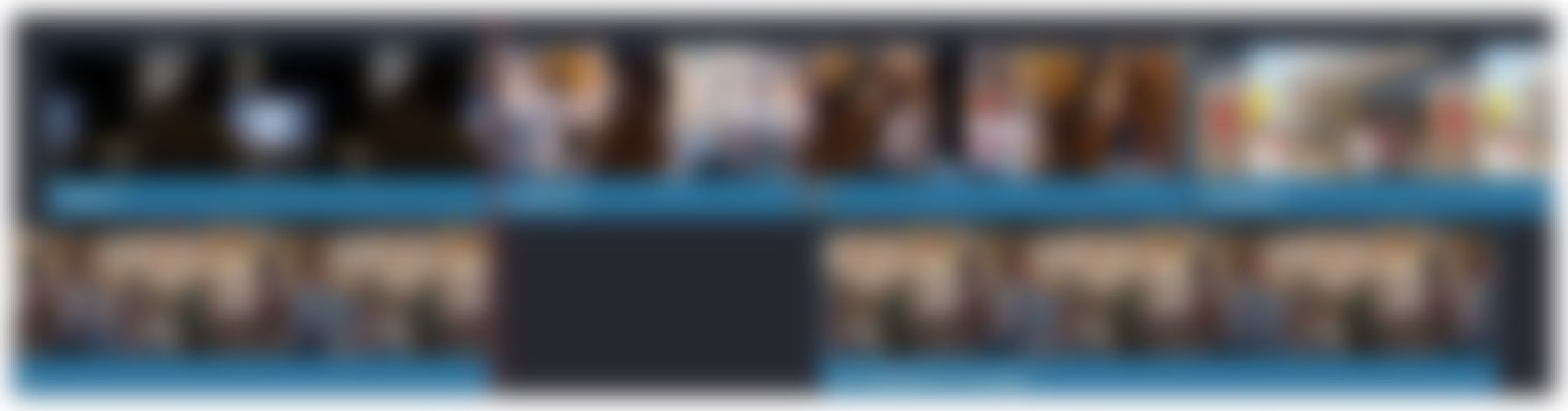
The fourth type of trim that you can make in Trim Edit mode is the slide edit. Slide edits are probably the least used of all the trimming operations, but it's still useful to know that they're available to you.

Like a slip edit, slide edits are made to selected clips, but they affect the outgoing and incoming clips on either side of the selected clip(s).

1. If necessary, click the Full Extent Zoom button and place the timeline playhead over the second to last clip on the Video 2 track. (Shift-Z)
2. Click the Detail Zoom button and, if necessary, adjust the timeline zoom and scroll so you can see the last three clips on Video 2 comfortably.

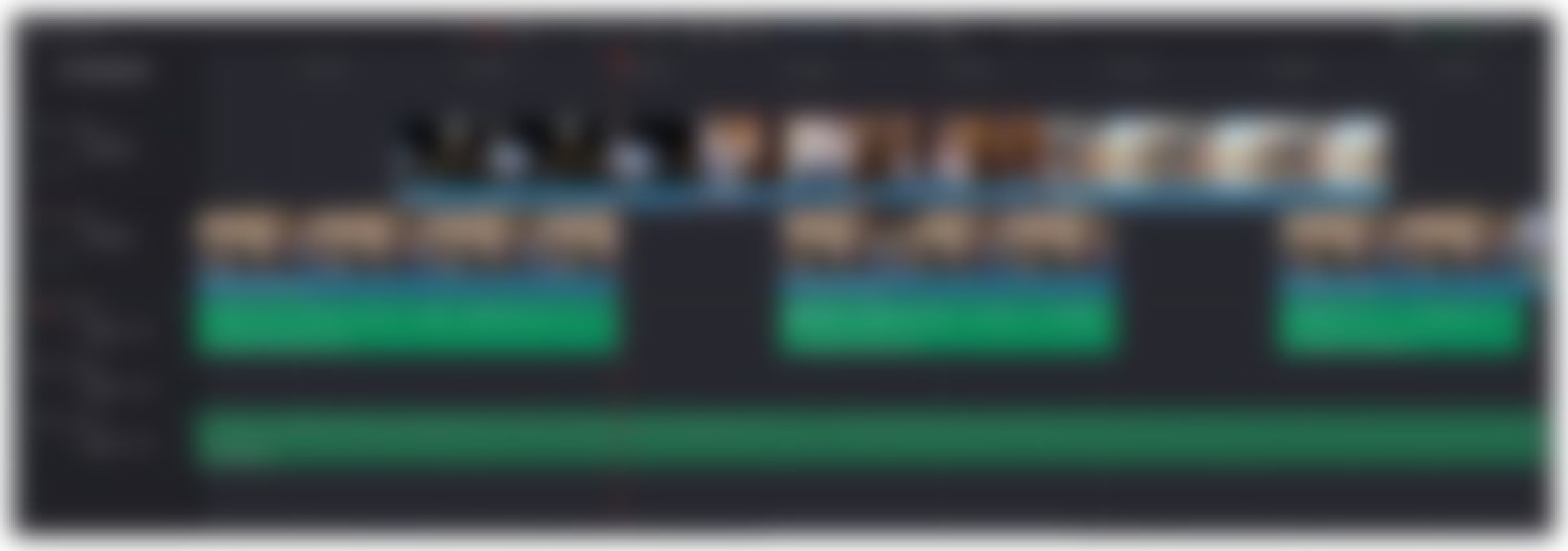


3. Ensure that the timeline is still in Trim Edit mode and place your mouse pointer over the lower part of the second of the final three middle cutaways, where the name of the clip is.

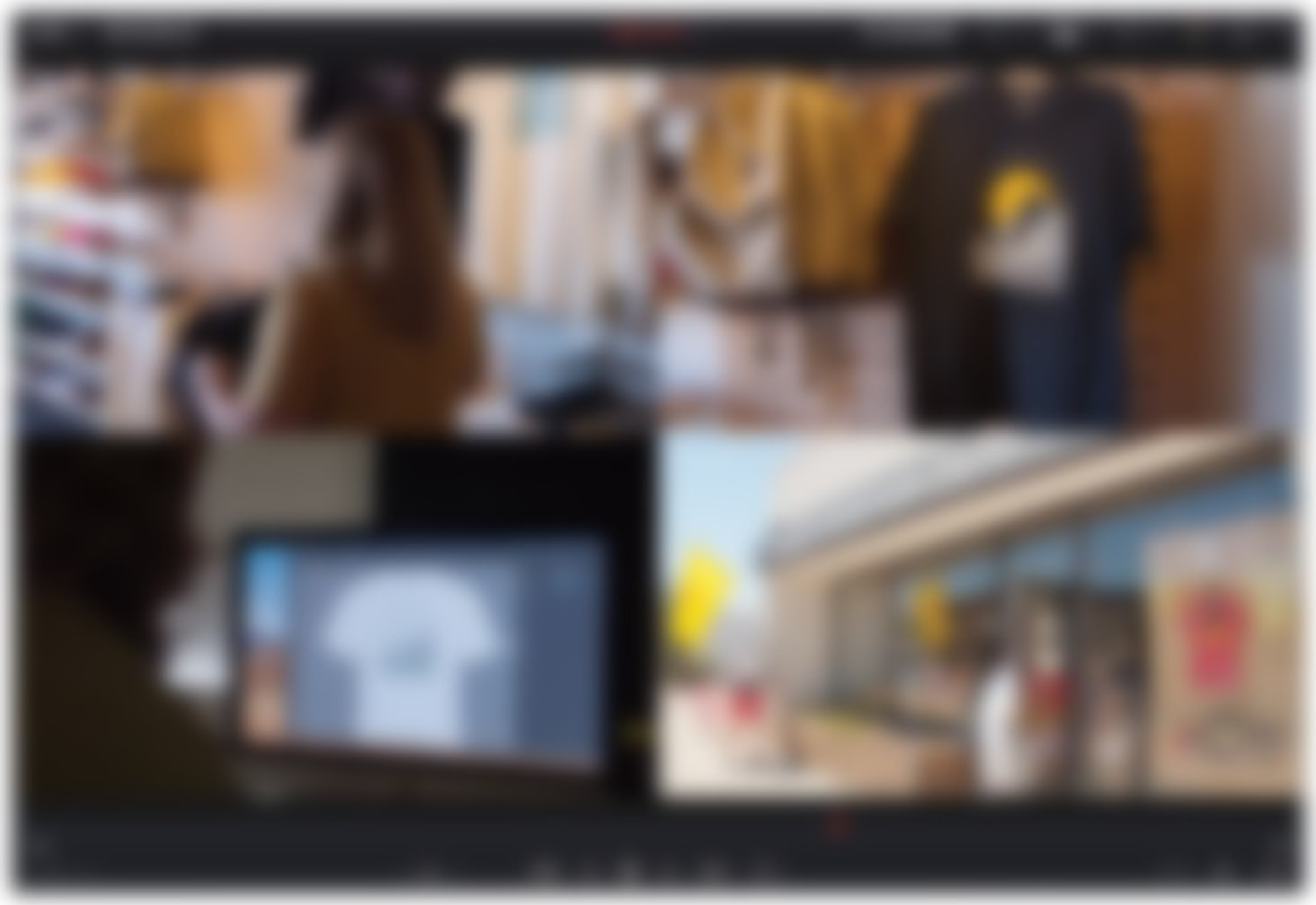


When in Trim Edit mode, the cursor changes to the slide icon when placed over a clip's name bar.

- With the slide icon displayed, select the clip and drag it to the right, pressing N to disable snapping if necessary to slide the clip by [illegible] in the tooltip.



When sliding the clip, you'll notice that in the four-up preview in the timeline viewer, the two lower clips are being adjusted.



These are the outgoing and incoming frames of the two clips on either side of **[illegible]** in the timeline: **[illegible]** and **[illegible]**, respectively. So you can see that the slide function is moving the selected clip(s) between the surrounding clips by trimming the latter's incoming and outgoing frames.

- Deselect all selected clips and click the Full Extent Zoom button to return to viewing the entire timeline.

Excellent! You should now have a fuller understanding of how the Trim Edit mode functions in practice. However, as with many functions, it takes practice to learn how to apply these operations. Always try and think of different ways you can tackle a trimming operation and you'll begin to find how easy it becomes to switch between ripple, roll, slip, and slide operations!

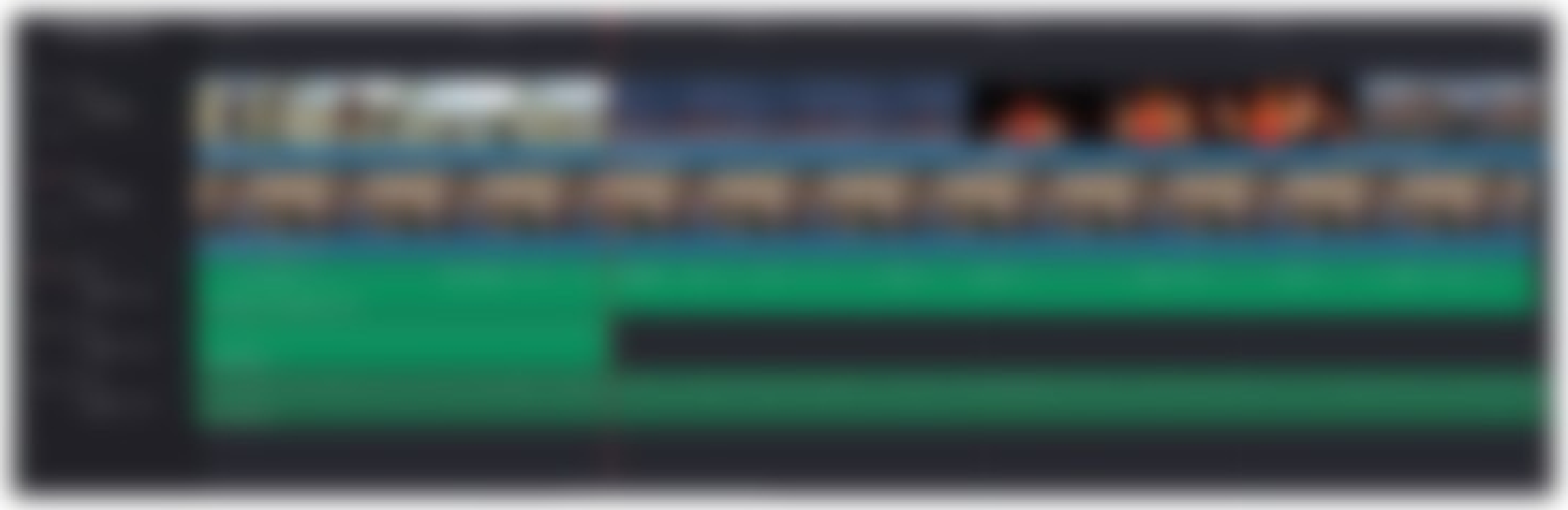
NOTE If you need to catch up before moving to the next step, select the TIMELINES bin and choose File > Import > Timeline, navigate to [illegible] Editors Guide Lessons 03 > Timelines, select [illegible] and click Open.

Replacing Clips

Another useful function that can help you finesse the edit is the replace edit. This type of edit allows you to quickly change an existing clip in the timeline for alternative takes or even completely different shots.

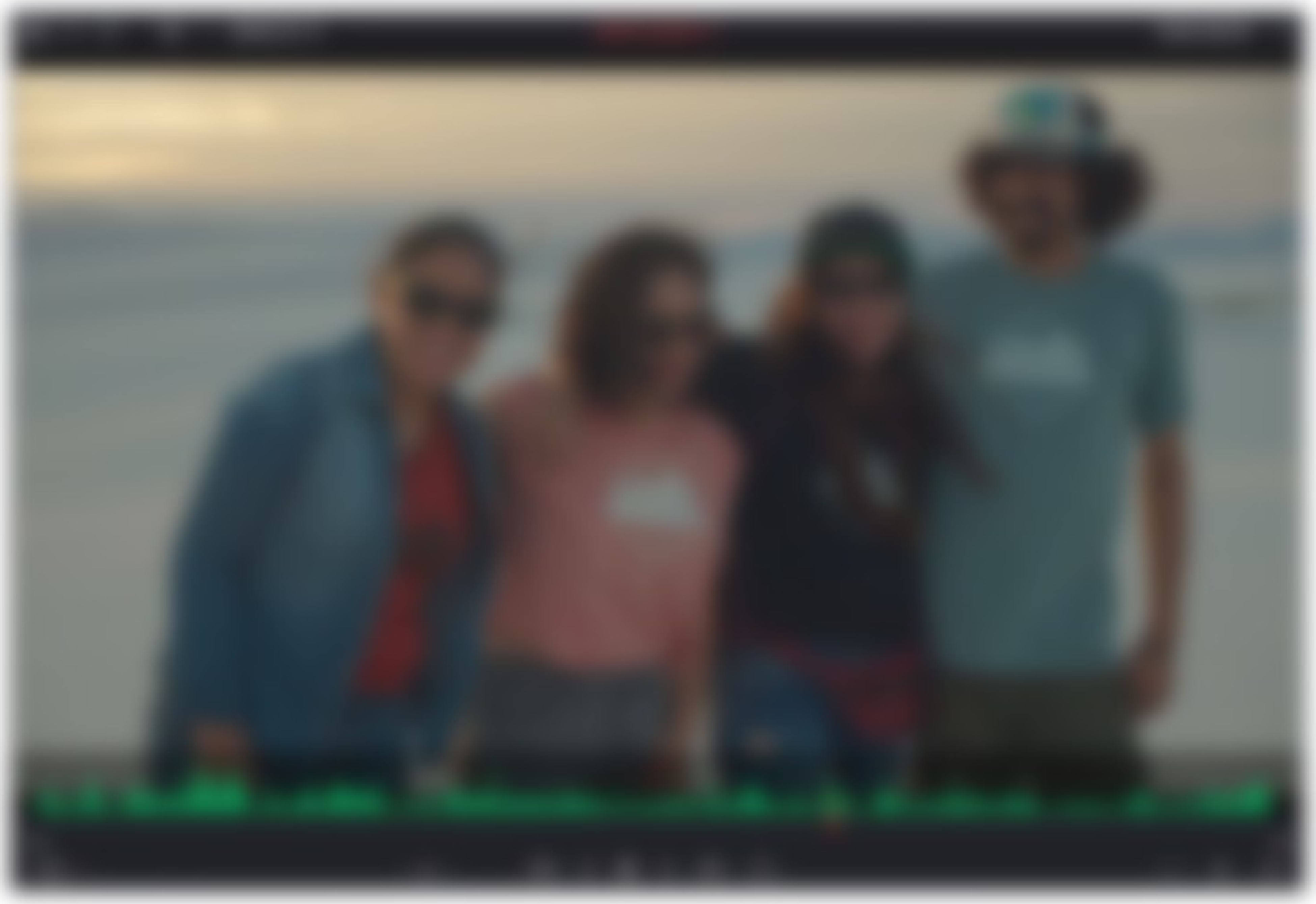
The replace edit is slightly different from the editing functions you've been using up until now because it primarily uses the positions of the timeline and source playheads to align the edits rather than In and Out points (although you can still use In and Out points in the timeline, as you will see).

[illegible] In the timeline, place your playhead over the start of clip [illegible] and click the Detail Zoom button to zoom in on this part of the timeline.



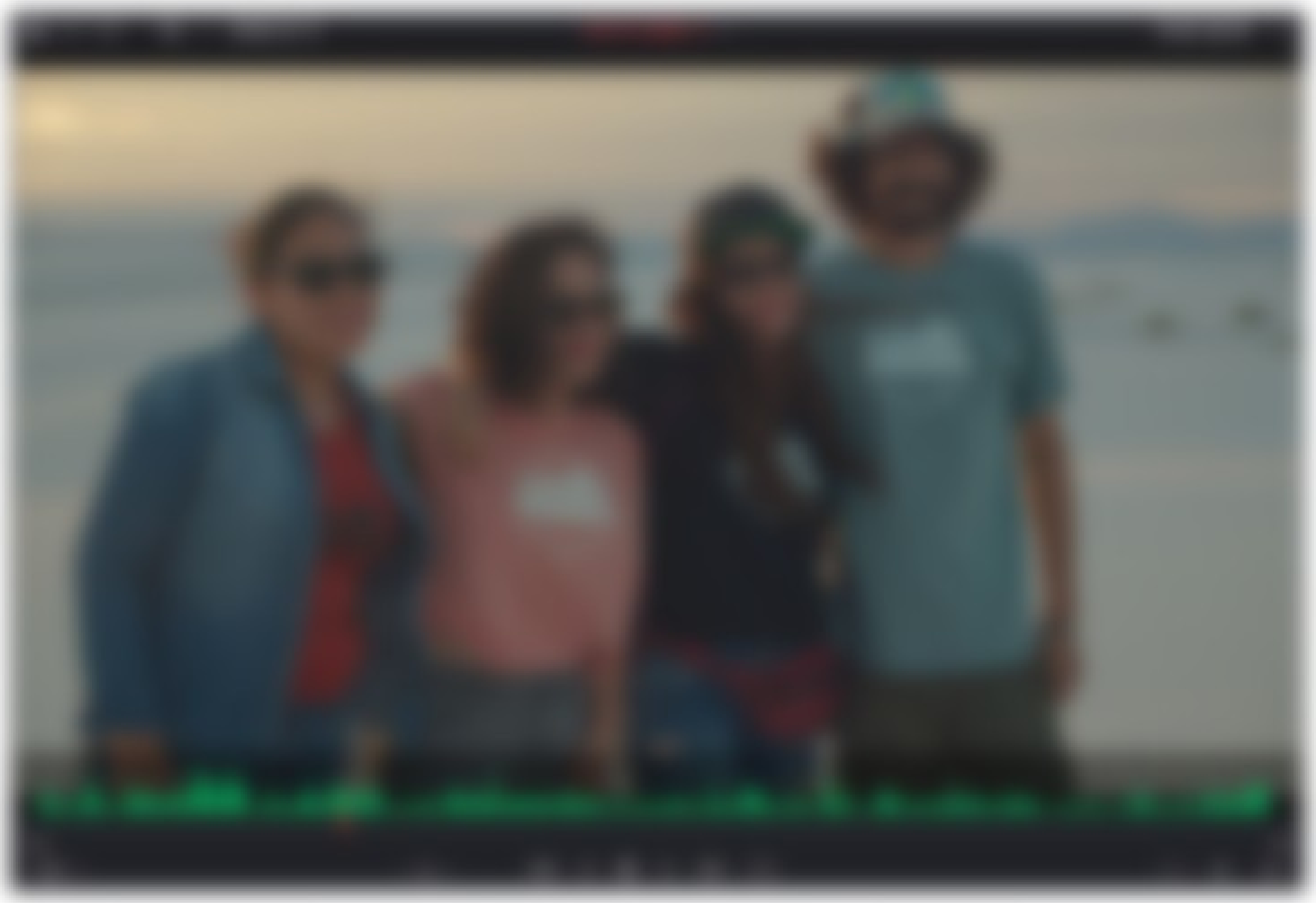
This shot is OK, but there's another shot that might work better. Time for a replace edit!

[illegible] In the media pool smart bin list, select the WHITE SANDS keyword smart bin and open the [illegible] clip in the source viewer.



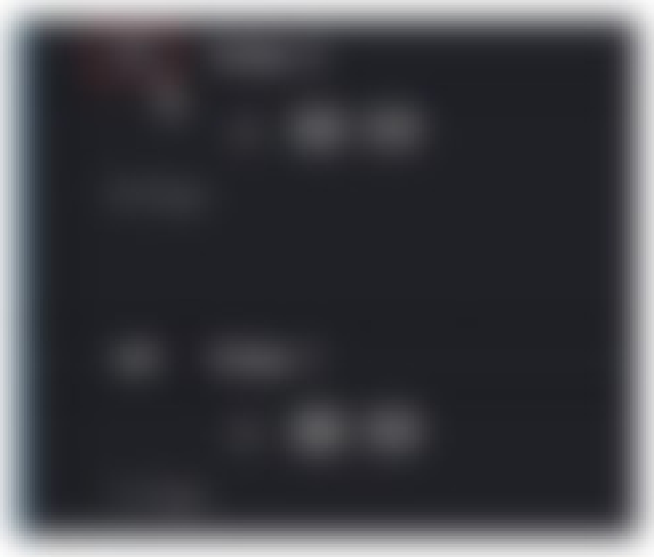
This is a much better version of the friends snapping themselves while wearing Organ Mountain Outfitters clothing.

- In the source viewer, place the playhead at the point where the girl on the left raises her head and smiles.



You may need to change the timeline destination controls to target the clip on the Video 2 track.

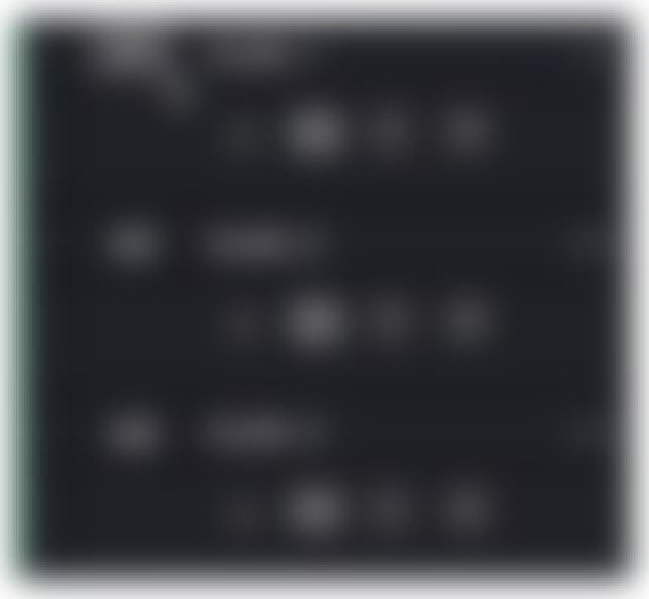
- In the timeline, click the V2 destination control to change the V1 destination control to the Video 2 track.



NOTE If you have a source clip with multiple video or audio sources (such as a source timeline as explained in Lesson [illegible], "[illegible]"), then you can right-click a track's destination control and choose from the available sources.

However, you don't want to use the audio from this clip in the source viewer. The wind noise is too distracting.

- Click the A1 destination control to disable audio editing.



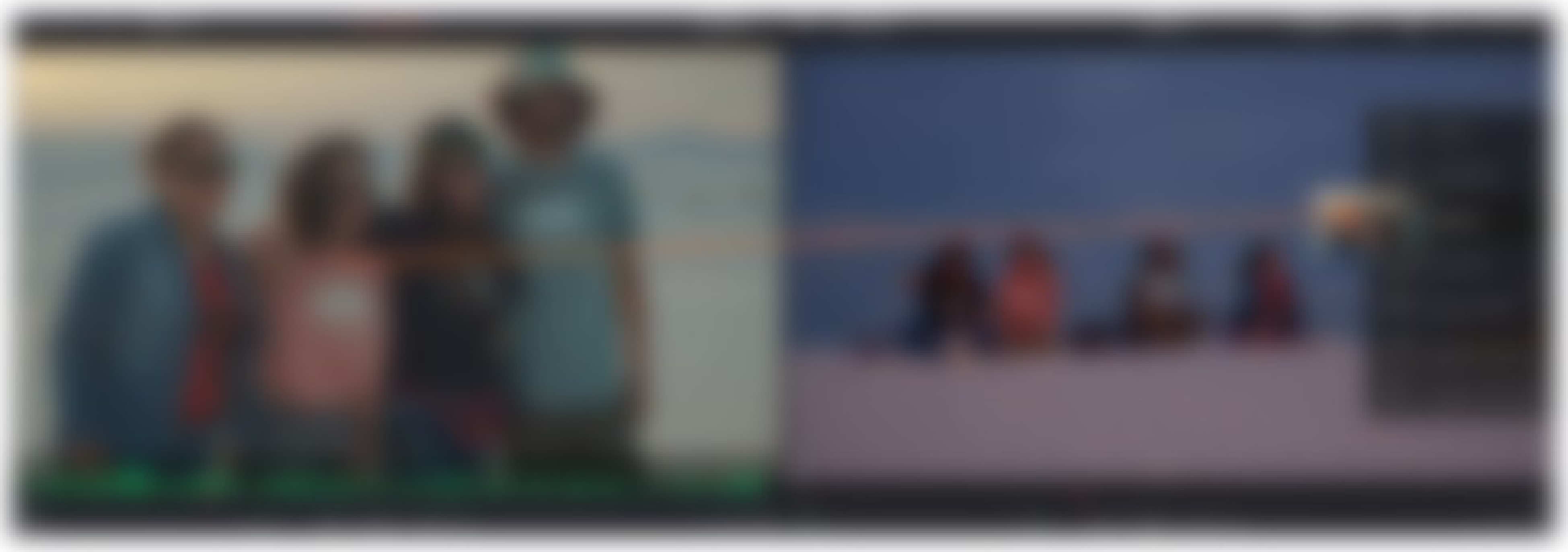
TIP A series of commands and keyboard shortcuts for changing the various video and audio destination controls can be found by choosing Timeline > Track Destination Selection.

Before you go further, it is important to note that the replace edit is a powerful editing function, but it does not follow the standard rules of three-point editing. The replace edit uses the position of the two playheads in the source and timeline viewers to determine how the source clip should be aligned in the timeline and, in the absence of any timeline In or Out points, will use the timeline clip's start and end points on the targeted track to determine the duration of the clip.

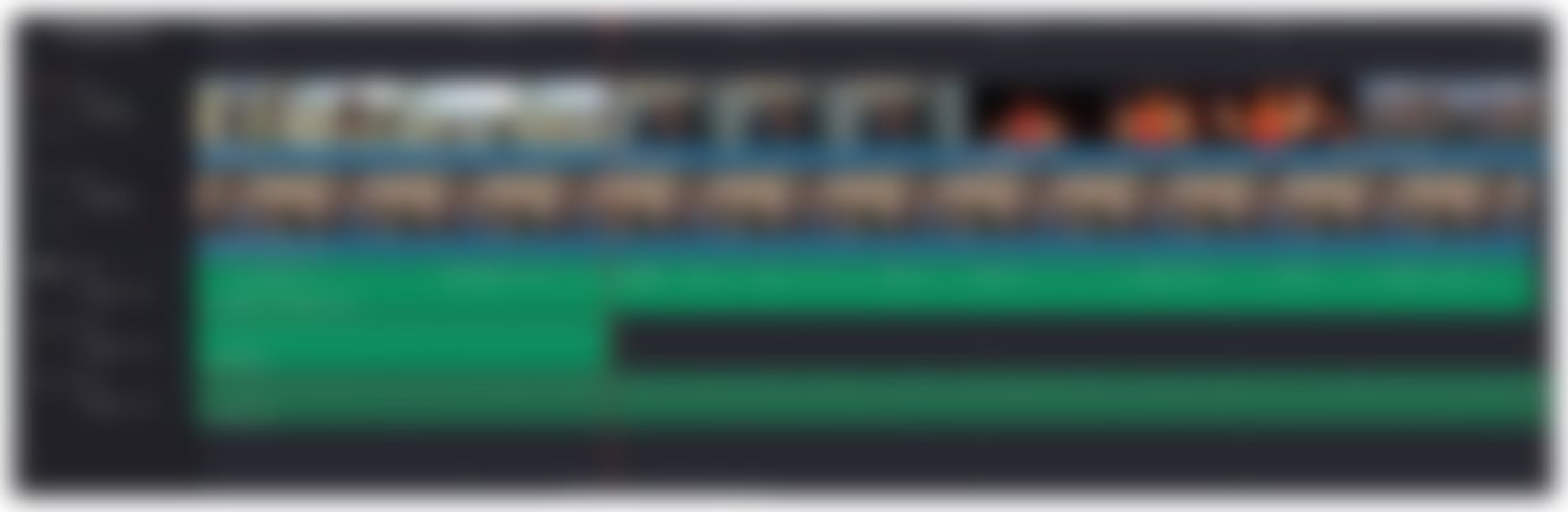
It can be a little confusing at first but remember that the replace edit is the first of the four-point edits you can perform in DaVinci Resolve's edit page. The two playheads are the first two points, and the timeline clip's start and end points are the second two points.

NOTE Replace edits will always ignore any In or Out points set in the source viewer.

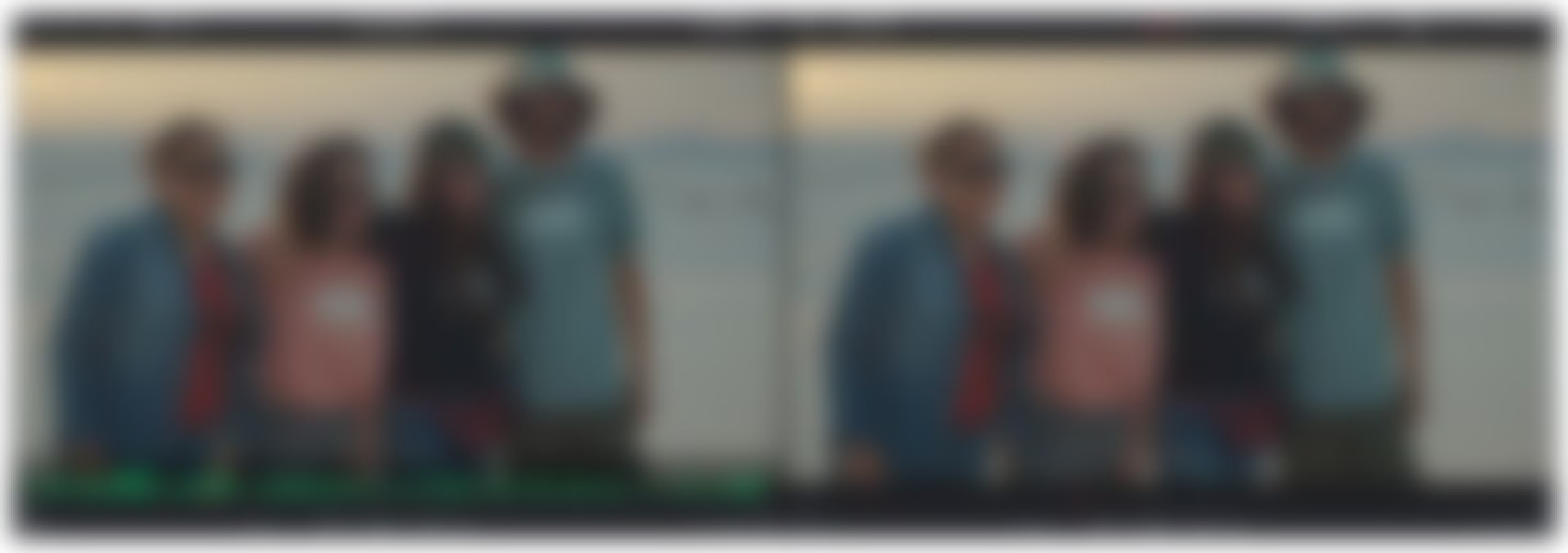
- Drag the clip from the source viewer to the Replace overlay in the timeline viewer.



The clip in the timeline is replaced with the new shot without you having to set any In or Out points.

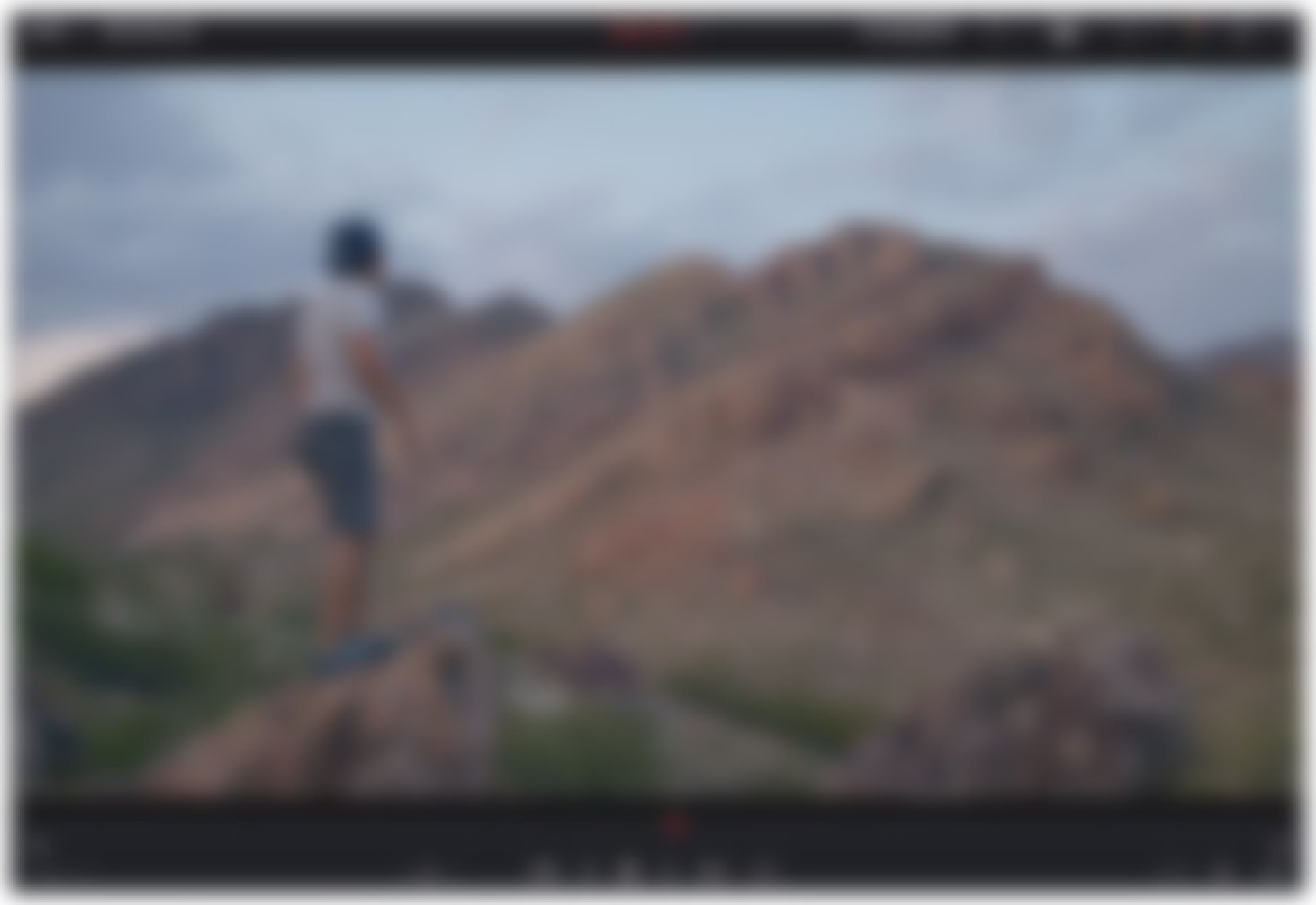


The source and timeline viewers will now display the same frame, which is usually a good indication that the replace edit has succeeded.



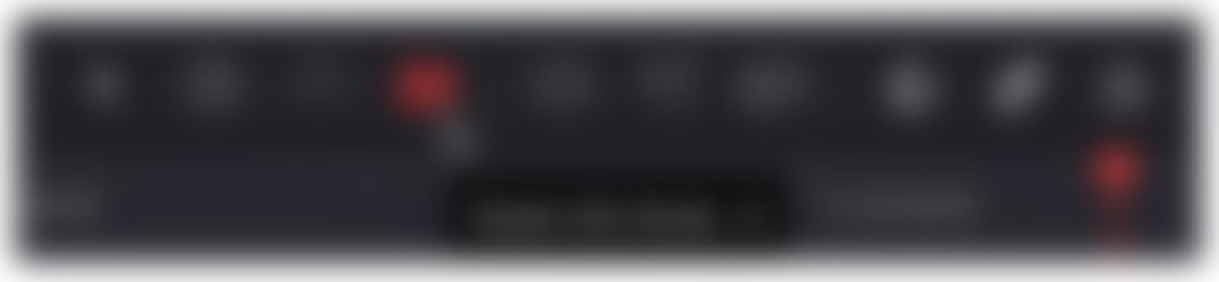
Replace edits are so powerful and quick, especially when you want to replace an entire clip on the timeline. However, sometimes you'll only want to replace a part of a clip.

- Scroll through the timeline and play the [illegible] clip, where the guy is jumping onto the rocks, stopping as the guy reaches the top of the rock.

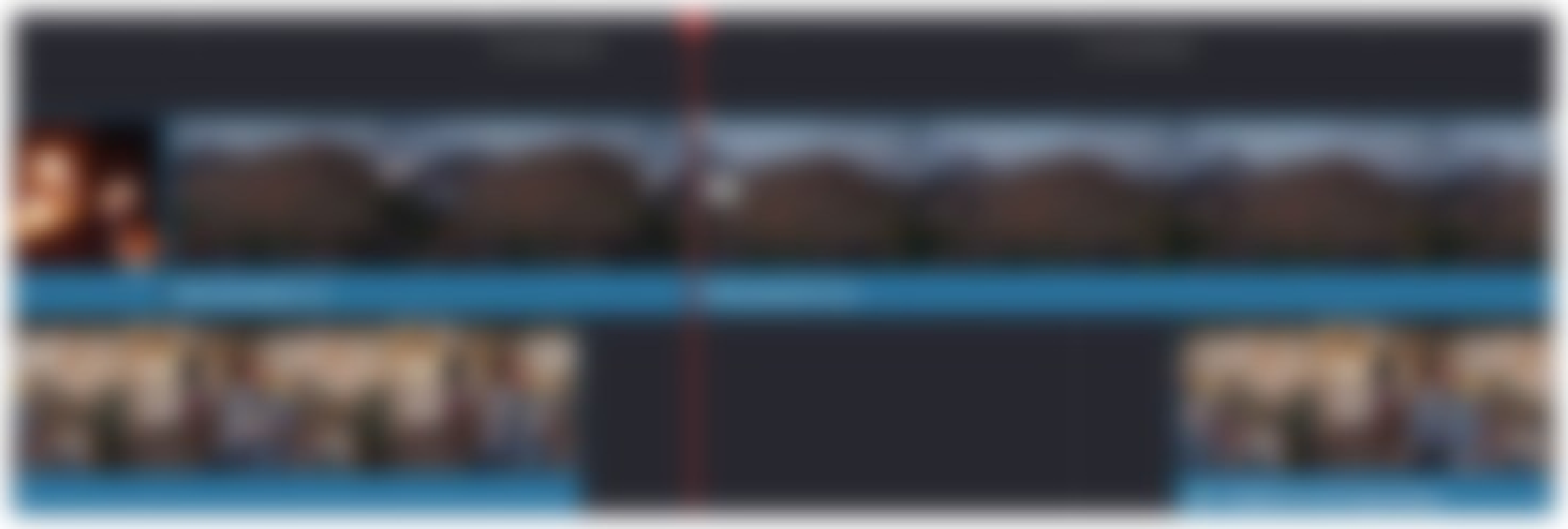


You will add an edit here to split the clip into two separate clips.

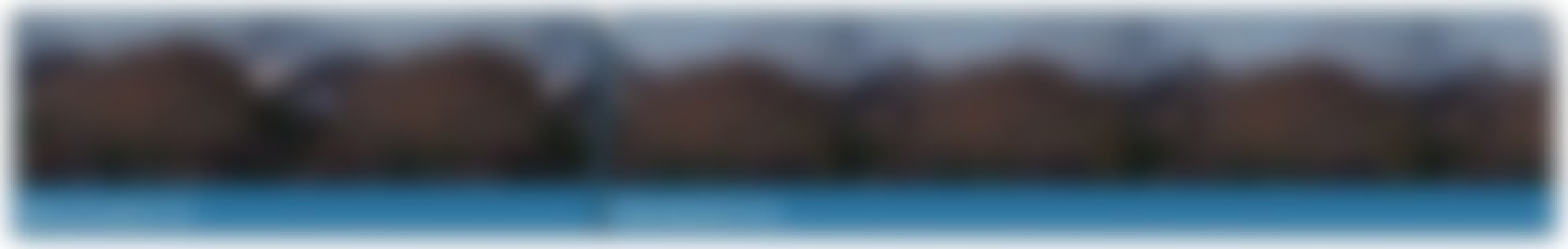
- Click the Blade Edit Mode button or press B to enable Blade Edit mode.



- Move your mouse pointer over the clip so it snaps to the playhead and click once to add an edit point.



The clip is split in two, with a dotted line signifying that this is a through edit. (You may need to move the playhead away from the edit to clearly see the through edit.)

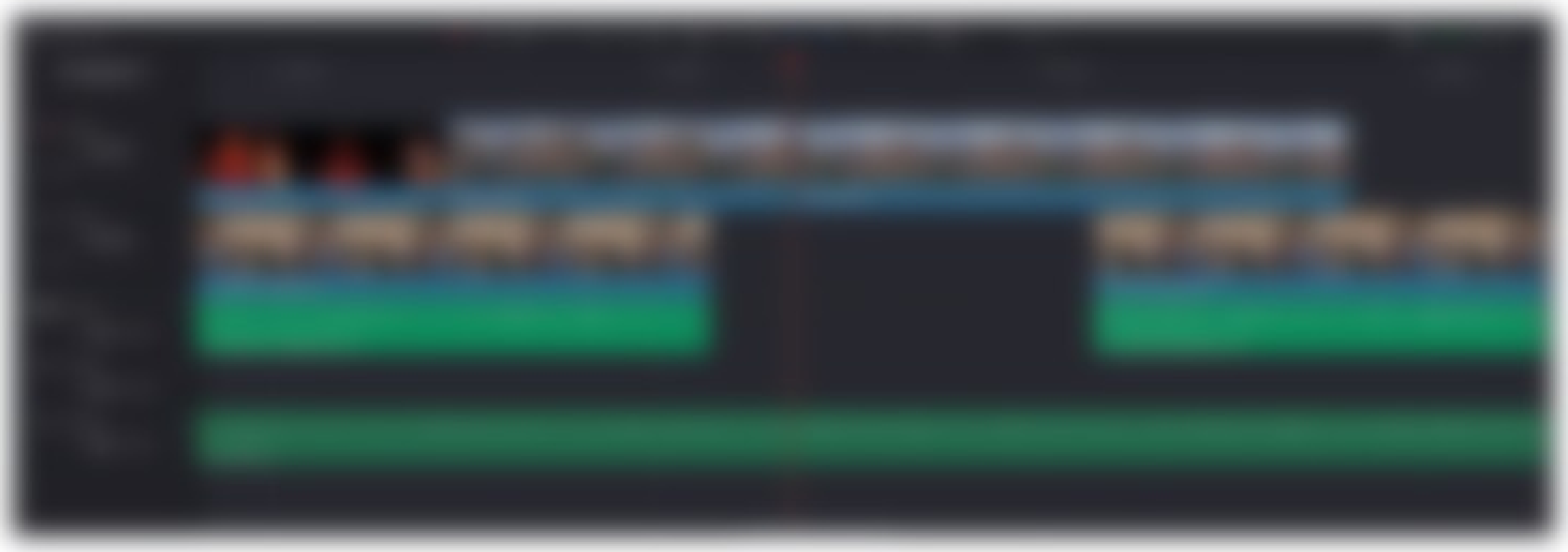


Through edits are edit points that are visible on the timeline but aren't noticeable during playback because no frames have been removed from either side of the cut.

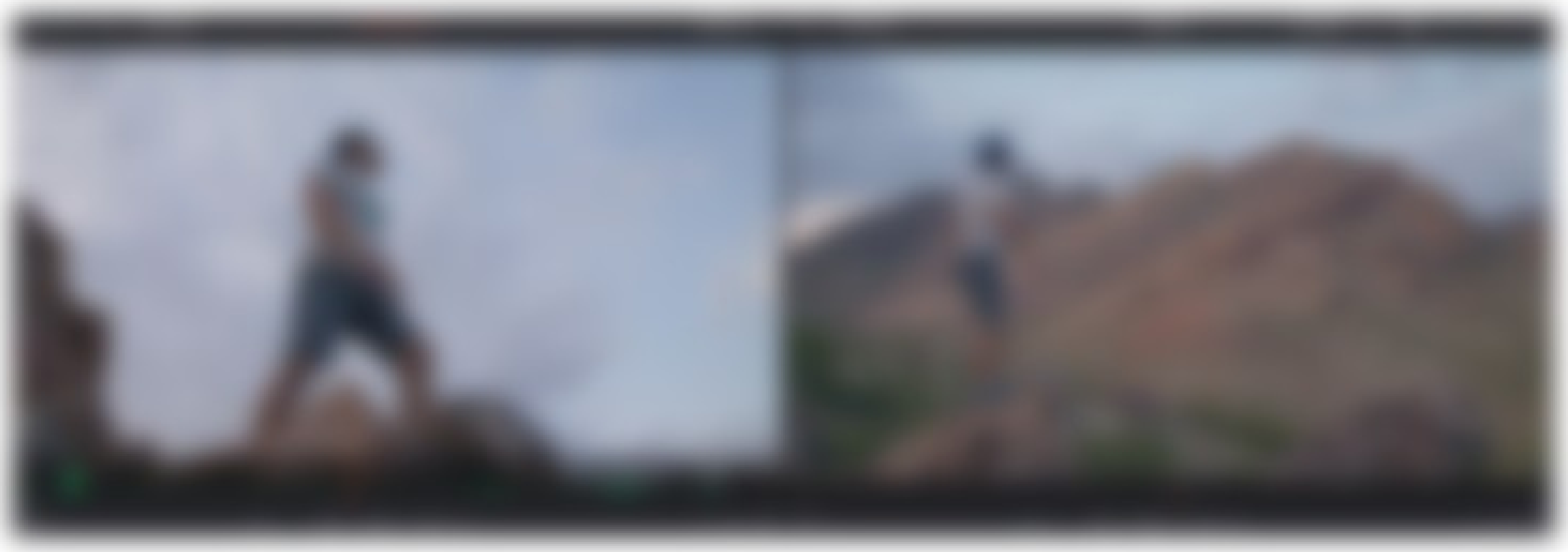
TIP You can remove unwanted through edits by selecting the edit as a clip, right-clicking it, and choosing Delete Through Edit or by pressing Delete (Backspace).

- Click the Selection Mode button or press A to return to Selection mode.

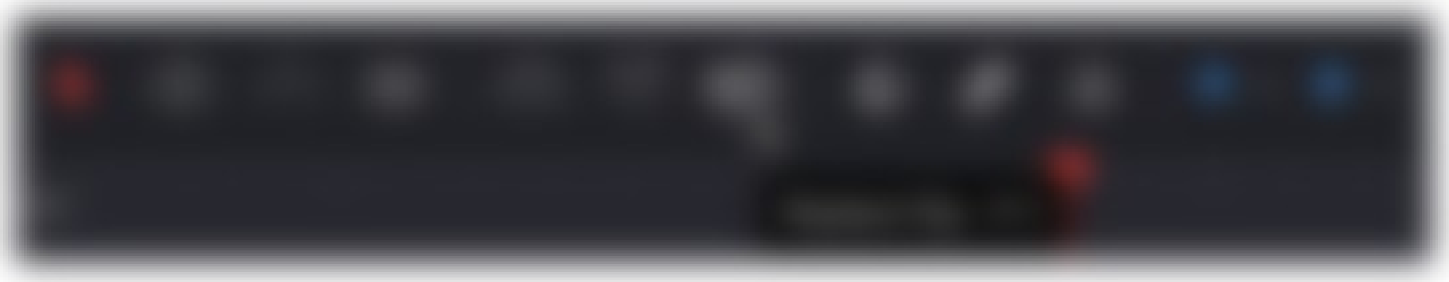
- Move your playhead back one frame from the edit point so it's sitting on the outgoing frame of the clip before the through edit.



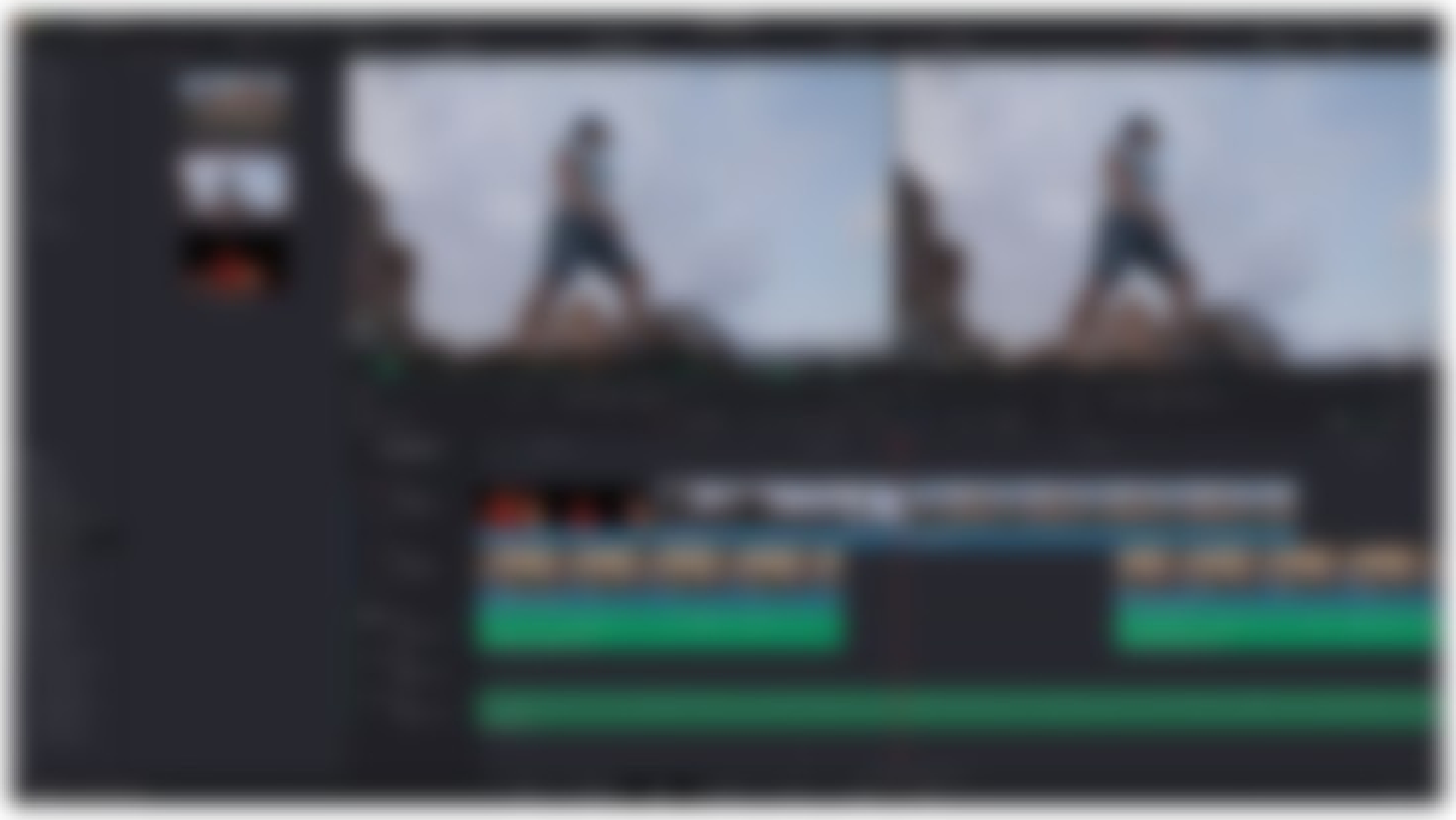
[illegible] From the [illegible] smart bin, open the [illegible] clip in the source viewer and locate a frame about halfway through the clip that most closely matches the frame in the timeline viewer.



[illegible] Click the Replace Clip button in the timeline toolbar or press F11 to perform a replace edit.



In the timeline, the first clip of [illegible] has been replaced by [illegible] and the frames displayed in the timeline viewer will match.



NOTE On macOS systems, you might need to make a further change to the default keyboard functions in order to use F11 as the shortcut for replace edits. Open System Preferences and choose Keyboard > Shortcuts > Mission Control, and either deselect or change the shortcut used for Show Desktop. Alternatively, you can press Fn-F11 instead.

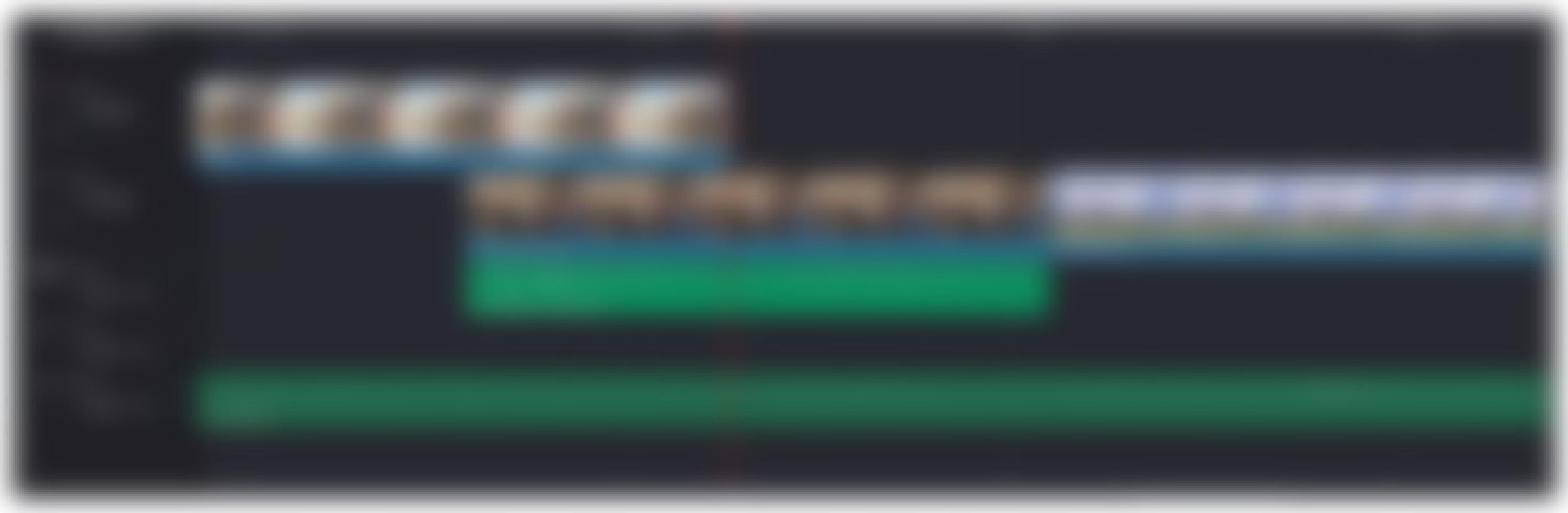
14 Press / (forward slash) to review the changes you just made.

Of course, you could have achieved the same result by adding In and Out points in the timeline, an Out point in the source, and backtiming the clip using an Overwrite edit. However, an advantage of using the replace edit is that you don't need to add any In or Out points in the source viewer or timeline. This makes it a much more efficient editing function in this situation.

Replacing Clips with Matching Timecode

In this next exercise, you will use the replace edit to change some of the existing soundbite clips for alternative camera angles. The following examples use clips with matching timecode to aid the replacement of clips with alternative angles. This is not the same as using the full multicam editing workflow but shows the flexibility of DaVinci Resolve as an NLE. You will, however, explore how to sync, cut, and switch between the different angles of multicamera footage in Lesson 4, "Multicamera Editing."

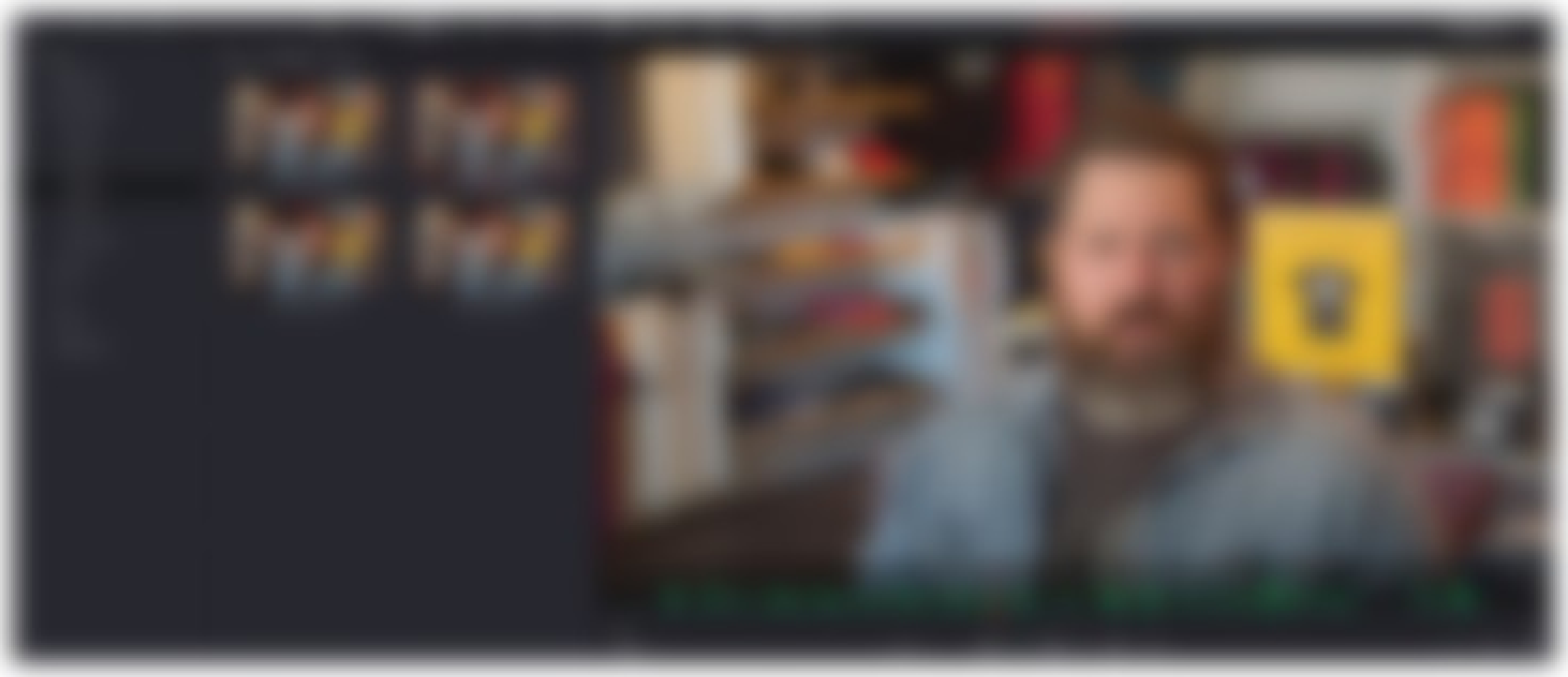
1 Place the timeline playhead so that it snaps to the end of the cutaway over the first interview clip.



The director wants the soundbite clip to be replaced with a closer shot. From the name of the subclip in the timeline, you can identify that this soundbite comes from take 11 of the interview.

NOTE You will learn more about clip names and how to use them with clip metadata in Lesson 3, "Project Organization."

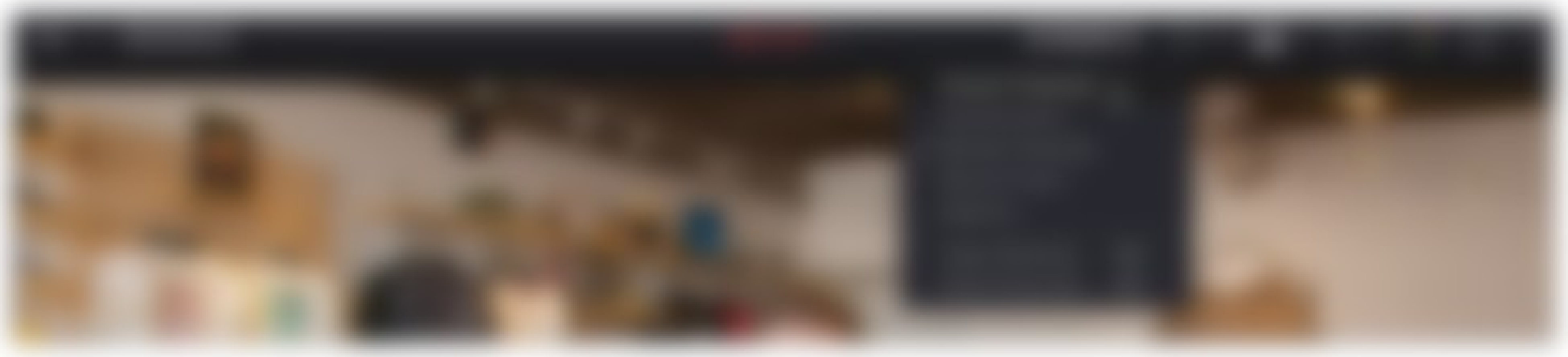
- In the media pool, select the [illegible] bin and double-click the clip [illegible] to open it in the source viewer.



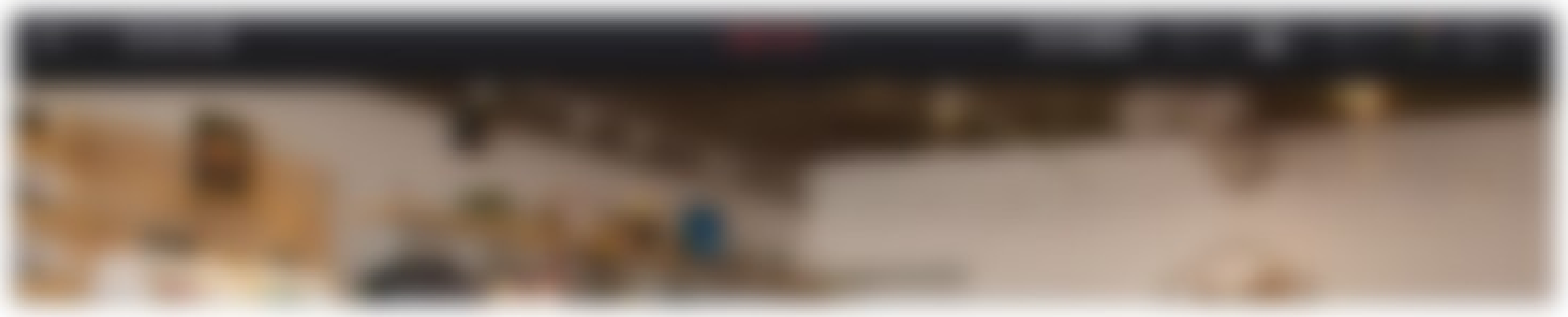
OK, so you've identified which clip you want to use, but finding the correct soundbite in the whole take might take some time, especially since the interview clip itself is over 1 minute in duration!

Thankfully, the three cameras were all timecode synced when the interview was originally shot, meaning that all the interview clips have the same timecode.

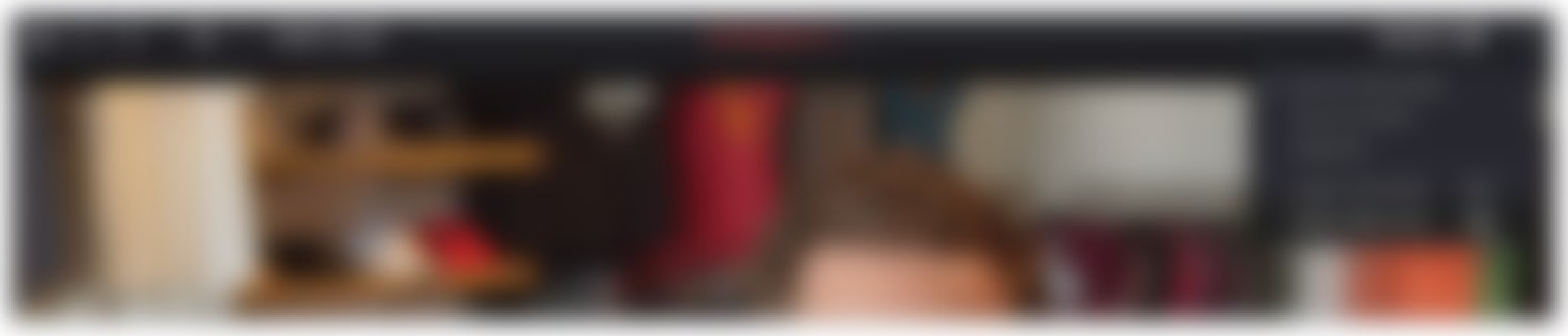
- In the timeline viewer, right-click the current timecode field and choose Source Timecode.



The current timecode field now displays the source timecode for the clip that is currently displayed in the timeline.



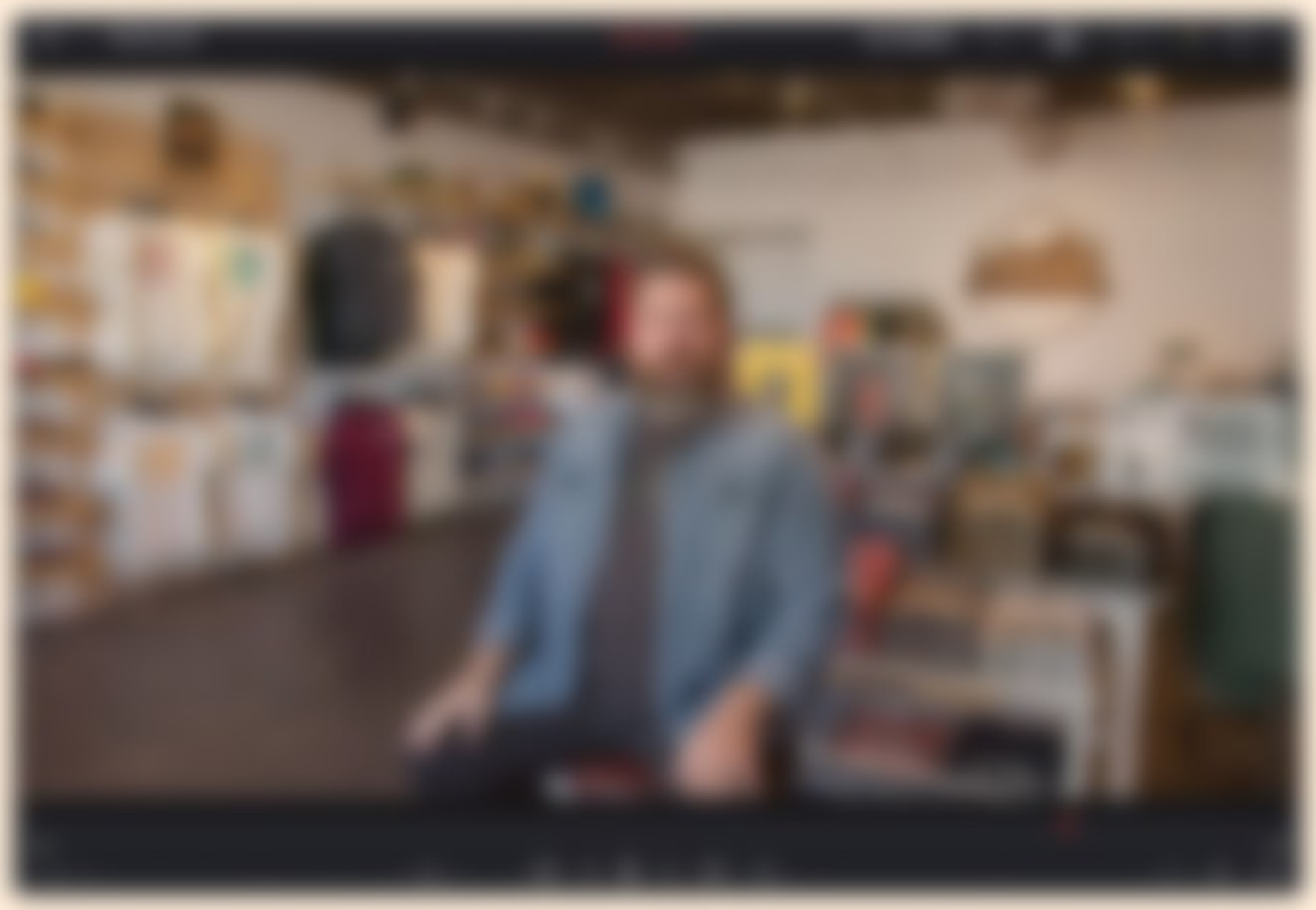
- Right-click the timecode field again and choose Copy Timecode.
- Right-click the source viewer's current timecode field and choose Paste Timecode.



The playhead jumps directly to the pasted timecode in the source viewer.

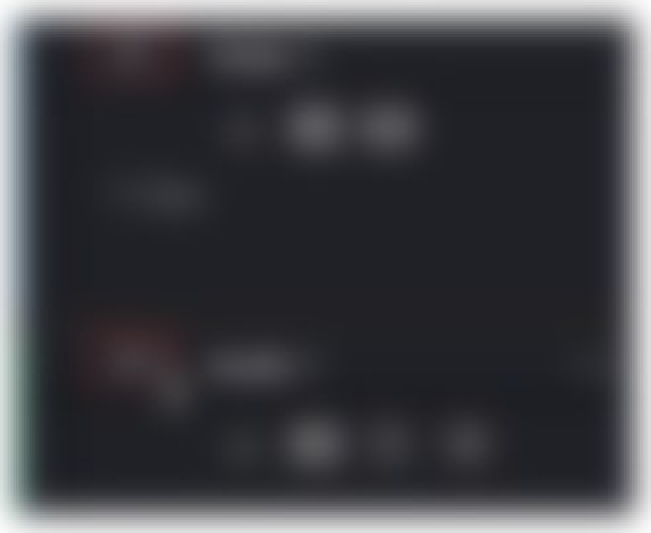
- Press / (forward slash) with the source viewer active to preview a couple of seconds on either side of the playhead's location to verify it's the correct part of the interview you're looking for.

  TIP You can see the current source timecode for each clip at the current playhead position by selecting the timeline viewer's Options menu (...) and choosing Show Timecode Overlays.

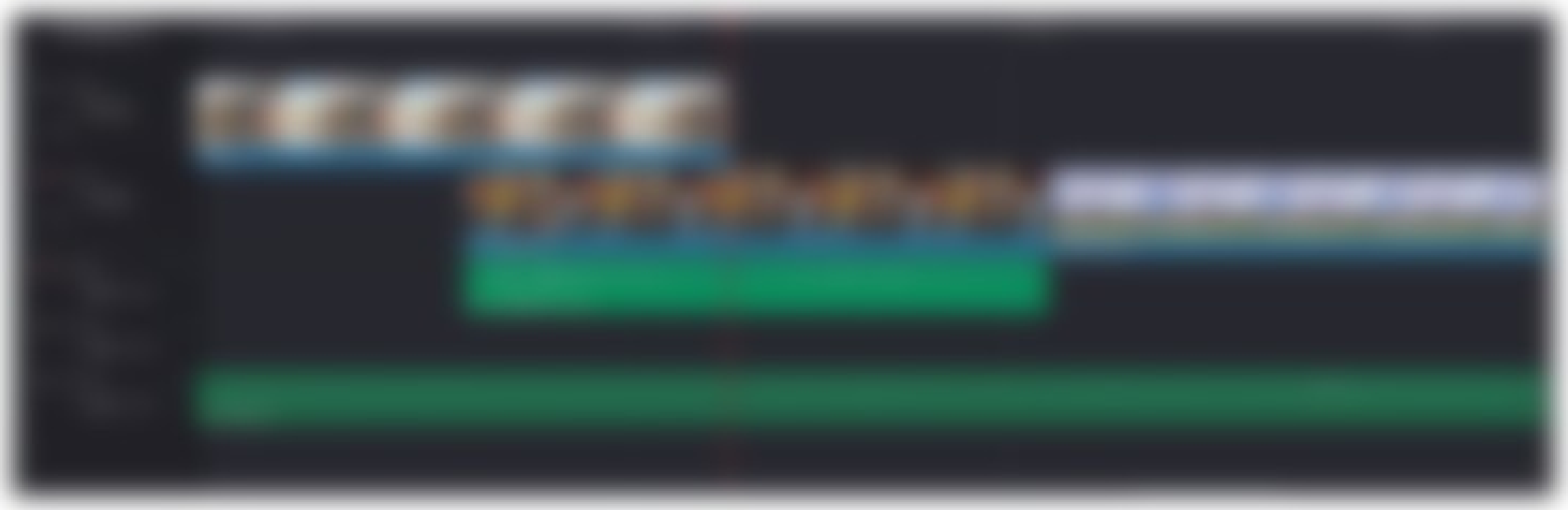
  

  While these overlays are for reference only and cannot be copied directly, you can use them to check the source timecode for the clip on a specific track and then manually type the timecode in the source viewer's current timecode field.

- In the timeline, change the V1 and A1 destination controls back to Video 1 and Audio 1 tracks, respectively, because the clip you want to replace is located on those tracks.



8 Click the Replace Clip button in the timeline toolbar or press F11 to perform a replace edit.



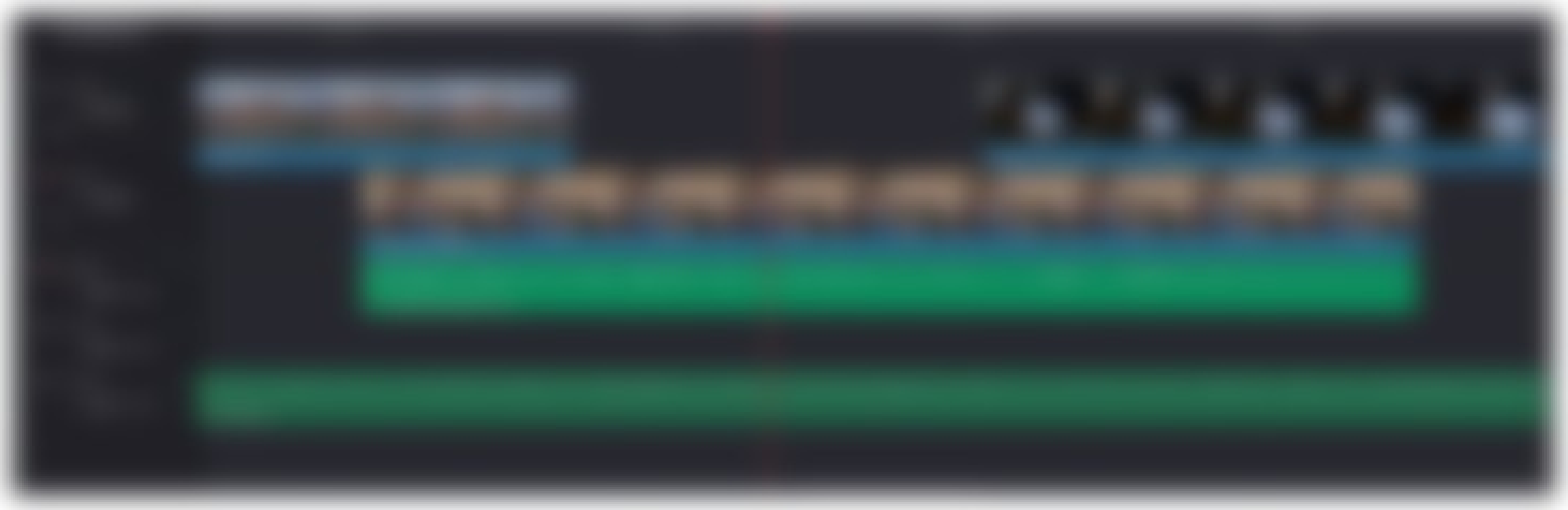
The close-up from the B camera replaces the wide shot in the timeline, with the source and timeline viewers now both displaying the same frame.

9 Press / (forward slash) to preview the new clip in the timeline.

It is as if, by magic, the audio and video of the soundbite clip you originally edited into the timeline have been replaced with the audio and video from a slightly closer camera angle! Such is the power of the replace edit and accurate timecode!

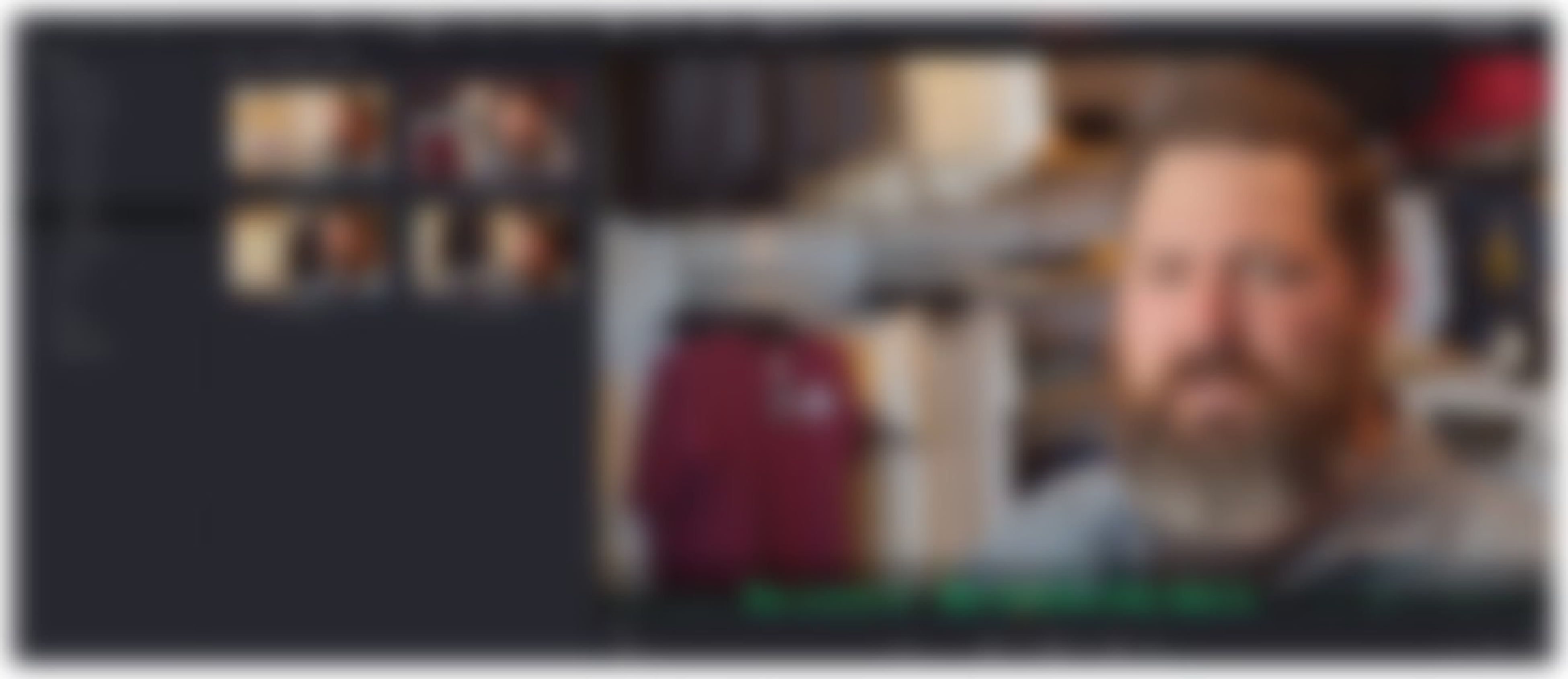
You will continue replacing parts of the interview using a couple of different techniques.

10 Place the timeline playhead in the middle of the third interview clip, just after Chris says, "...we take that inspiration..."



- [illegible]

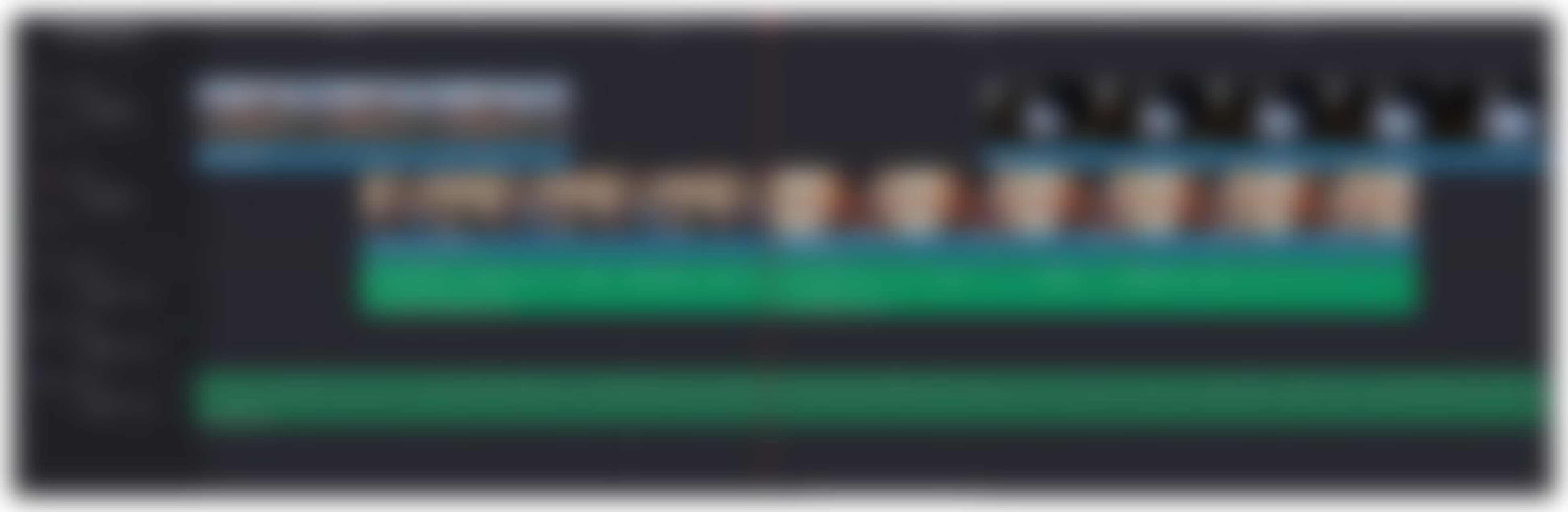
- [illegible]
- [illegible]



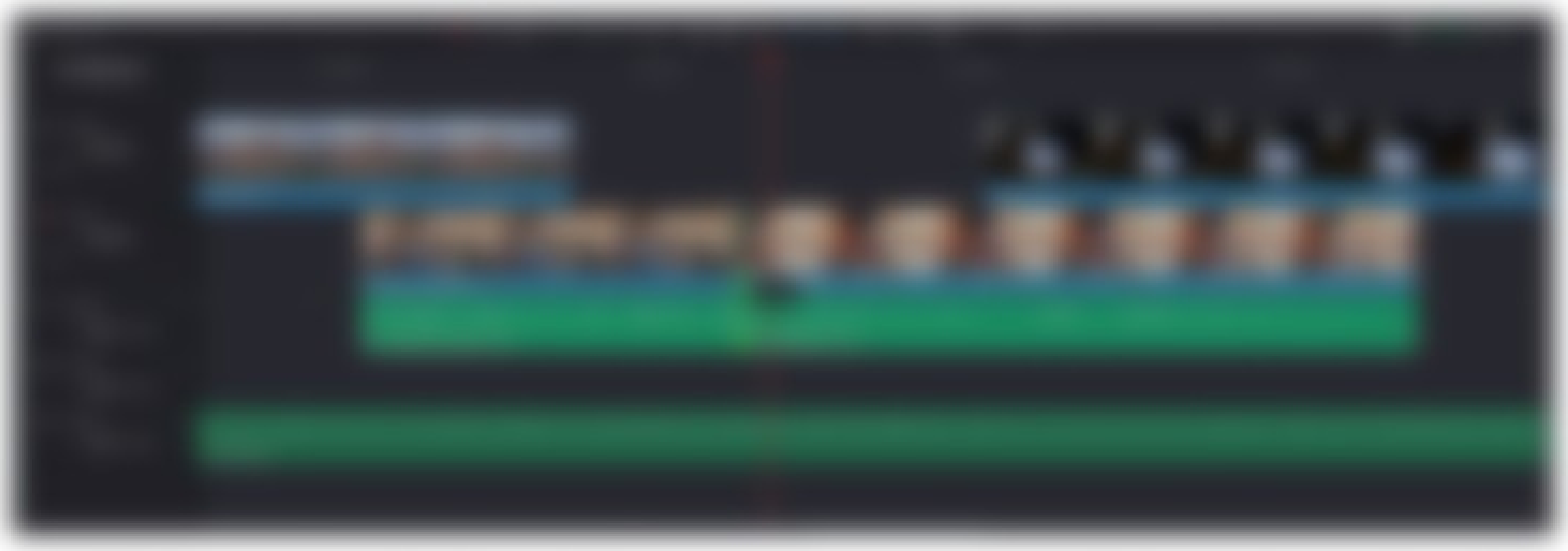
- [illegible]

- Press / (forward slash) to preview the portion of the clip in the source viewer around the playhead position.

- Perform a replace edit to replace the timeline clip after the edit.



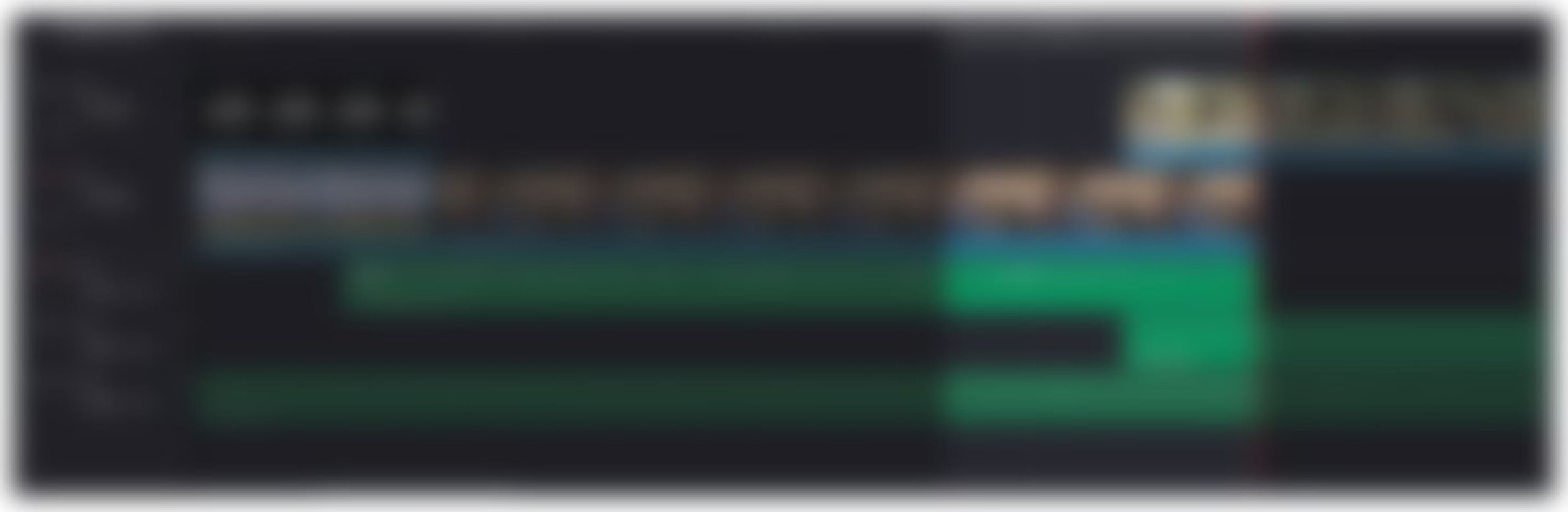
- Press / (forward slash) to preview the edit. If necessary, roll the edit point to refine the position of the cut (especially if you added the edit on a frame where his eyes were closed, as in the images above), pressing / (forward slash) again to review your changes.



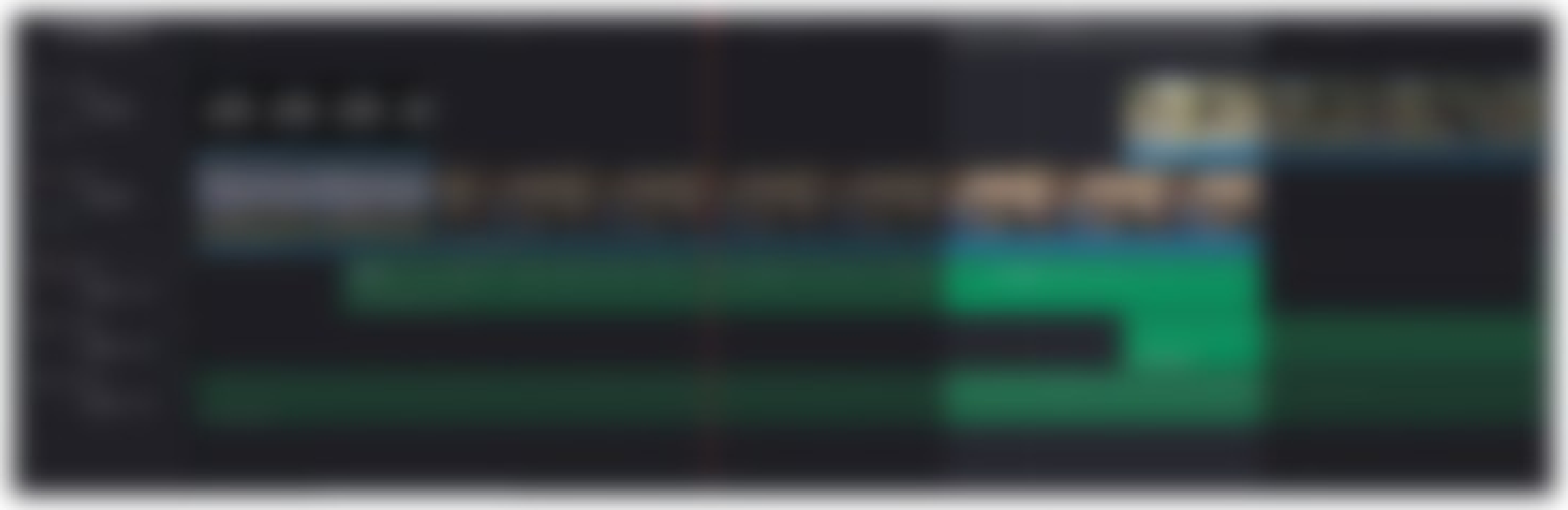
You can also use timeline In and Out points in conjunction with the replace edit to limit the amount of footage replaced in the timeline as well as utilizing the track destination controls to specify whether to replace the video or audio parts of a clip.

- Scroll backward toward the beginning of the timeline, play the first interview clip, and add an In point just after Chris says, "We are located in our store…"

- Choose Playback > Go To > Last Frame or press ' (apostrophe) to jump to the last frame of this clip and add an Out point.

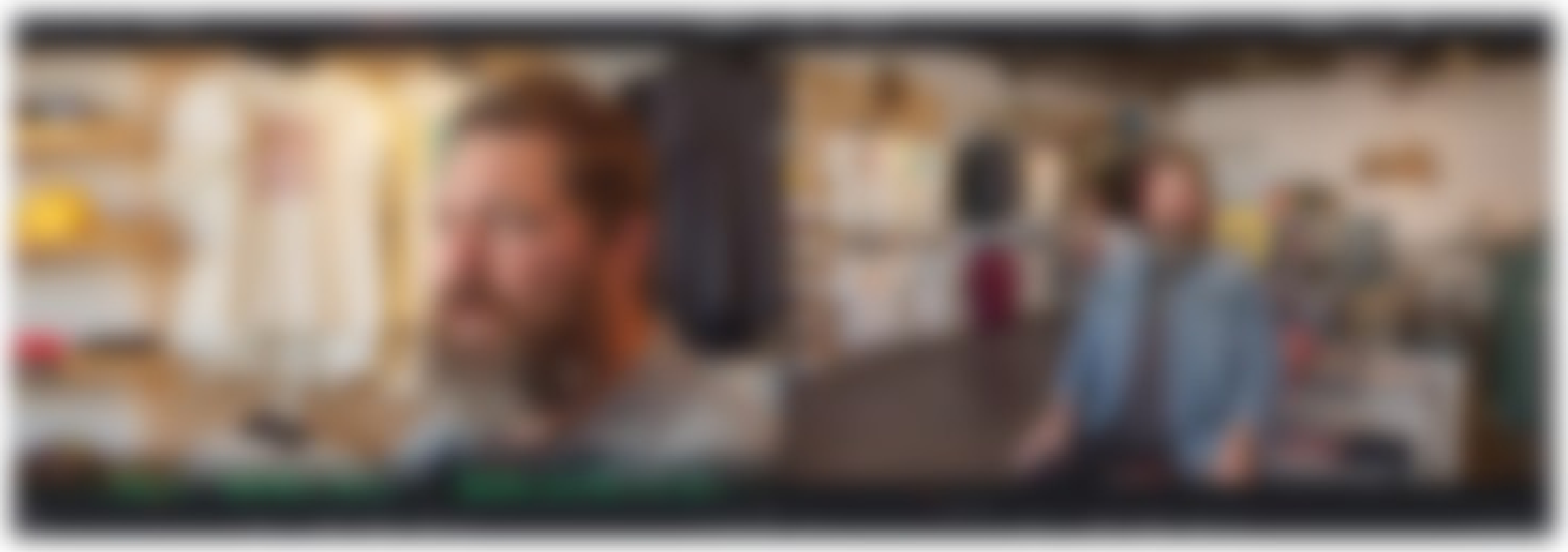


- Move the playhead back so that you can see the interview clip. It doesn't have to be between the In and Out points; anywhere over the clip is sufficient.



- Select the current timecode field in the timeline viewer and press Command-C (macOS) or Ctrl-C (Windows) to copy the current timecode.

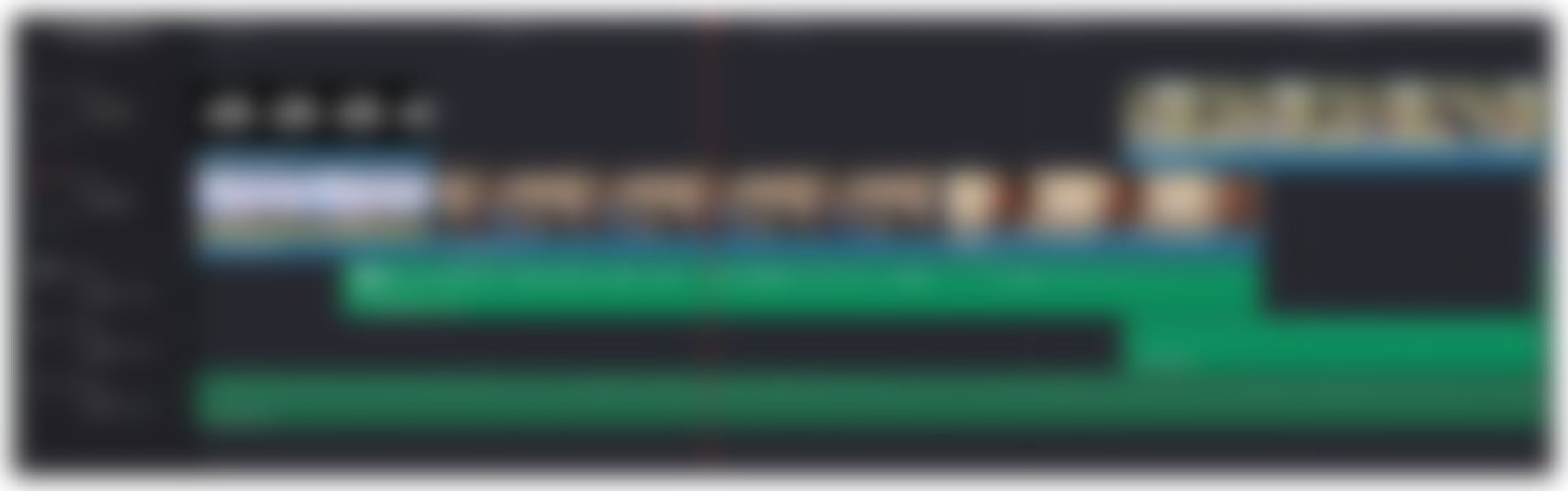
- From the CAM 1 bin, open the [illegible] clip into the source viewer, paste the copied timecode into the current timecode field, and then press / (forward slash) to ensure you're at the right place on the right clip.



For this edit, you'll just use the video part of this clip, so you'll need to specify that the audio shouldn't be used to replace the audio already in the timeline.

Click the A1 destination control to disable audio editing or press Command-Option-1 (macOS) or Ctrl-Alt-1 (Windows).

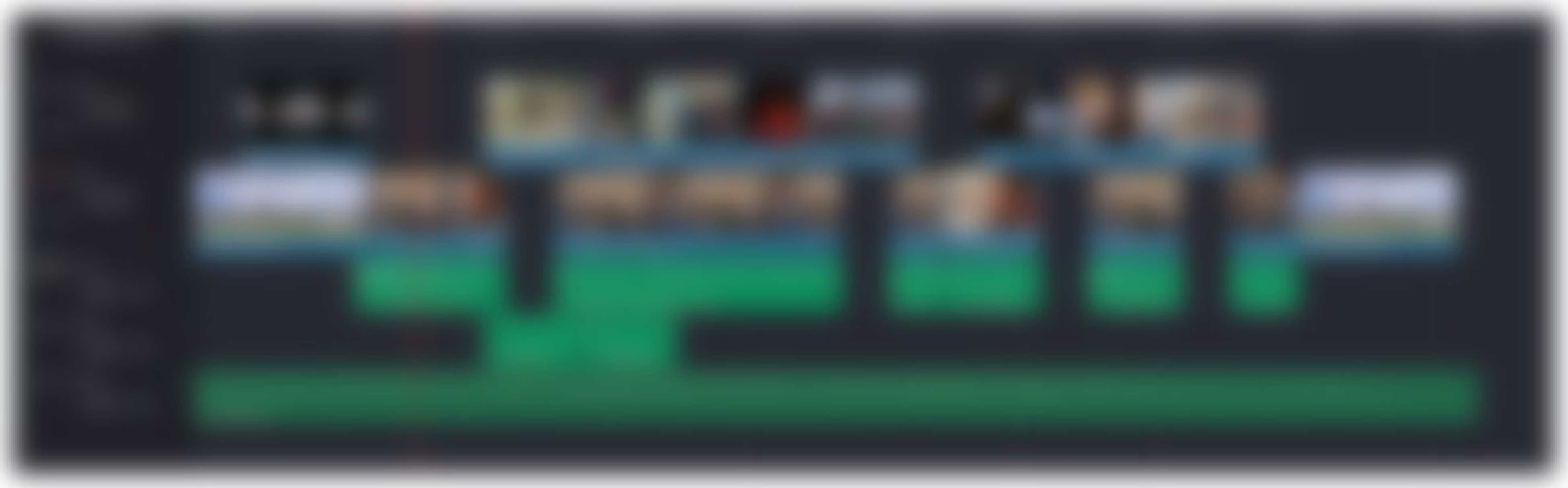
Press F11 to make the replace edit, replacing only the video part of the clip in the timeline.



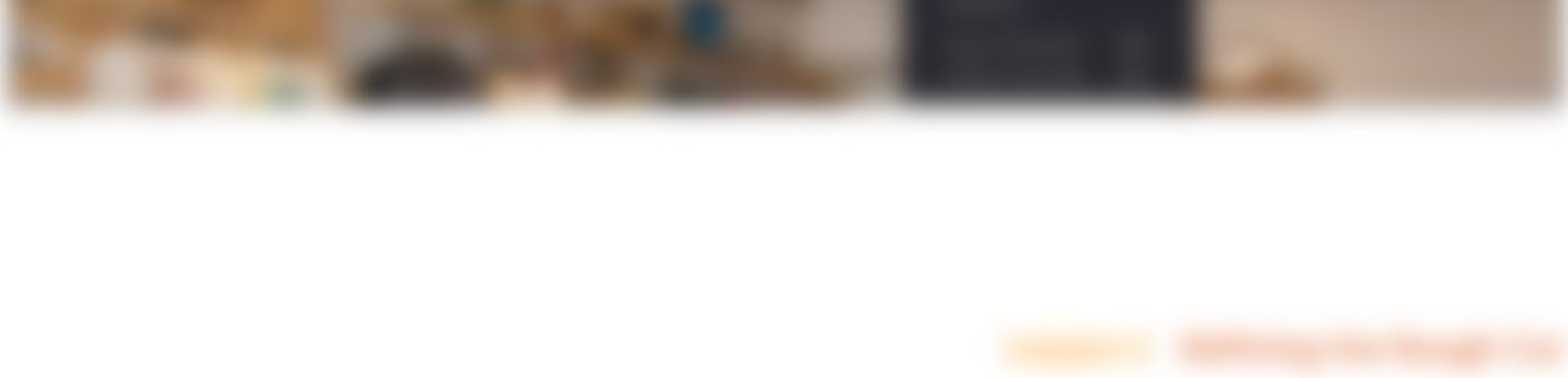
Select the new clip in the timeline and press / (forward slash) to review the change you've just made, rolling the video edit as you see fit.

NOTE Even though you have replaced the video at the end of the first soundbite, the audio is still linked to the remaining video clip. To effectively roll the edit between the two video clips without affecting the audio clip, ensure that Linked Selection is disabled before selecting the edit point.

Click the Full Extent Zoom button to view the entire timeline.



In the timeline viewer, right-click the current timecode field and choose Record Timecode to return to viewing the timeline's timecode.



Placing In and Out points in the timeline allows you to limit the portion of timeline footage being replaced. However, the portion of the source footage used to complete the replace edit within the timeline In and Out points will still be calculated from the offset of the In and Out points from the playheads. Hopefully, you can see why the replace edit is one of the most powerful and flexible edit functions available.

NOTE If you need to catch up before moving to the next step, select the TIMELINES bin and choose File > Import > Timeline, navigate to R18 Editor's Guide / Lesson 03 > Timelines, select [illegible] and click Open.

Adding the Closing Titles

Next, it's time to add the call to action. For this, you will use one of Resolve's built-in Fusion Titles templates.

1. Zoom in on the final clip in the timeline, [illegible], and, using the audio waveforms of [illegible] as a guide, stop when you hear the final beat of the music.

DaVinci Resolve has numerous options for creating text, titles, and other graphic elements using a series of title generators and templates in the edit page as part of the Effects Library.

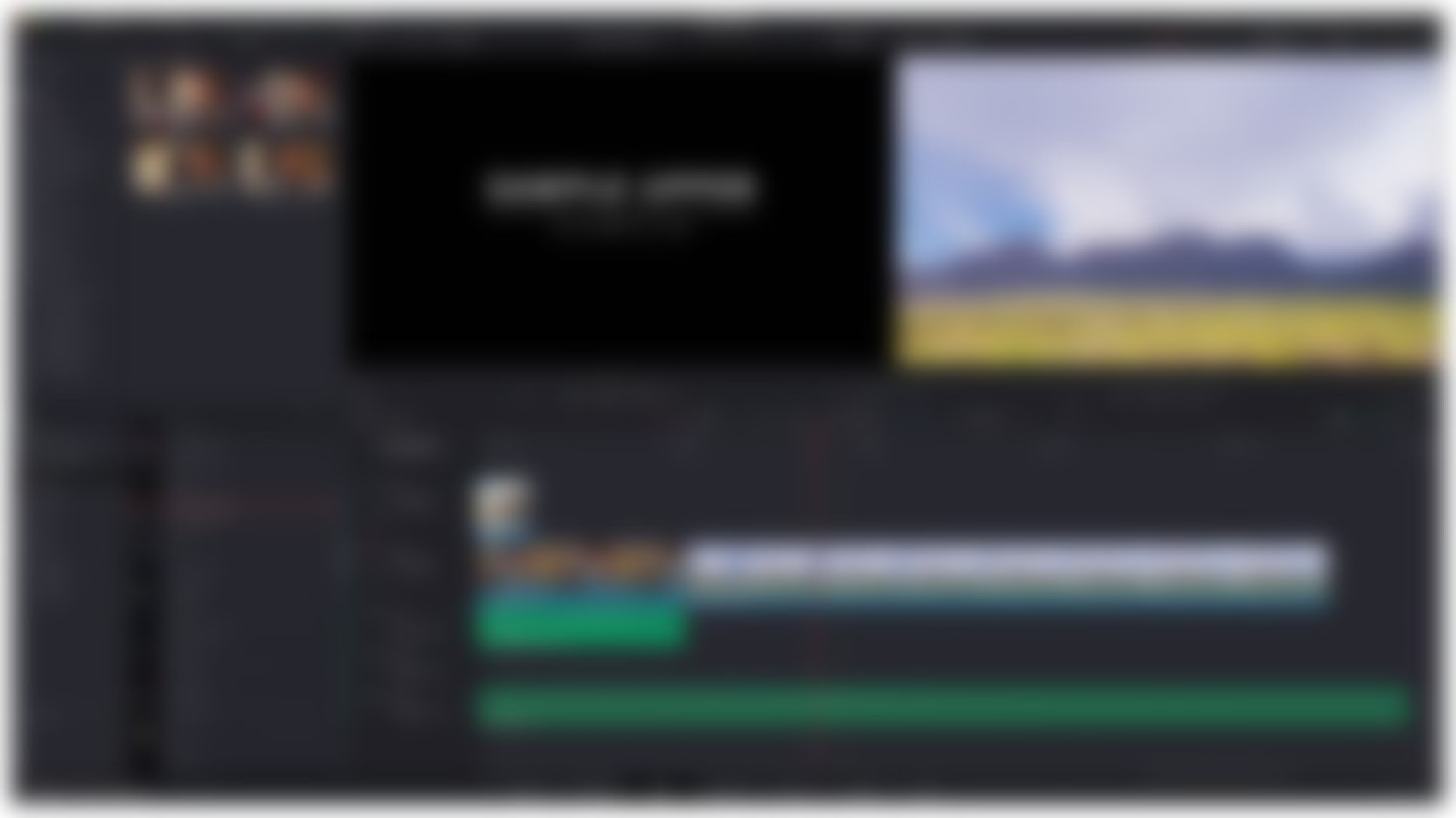
2. From the top left corner of the interface, click the Effects button to open the Effects Library.

[illegible] In the Effects Library, select the Titles category and scroll through the list of Fusion Titles to the **Horizontal Line Reveal** title.

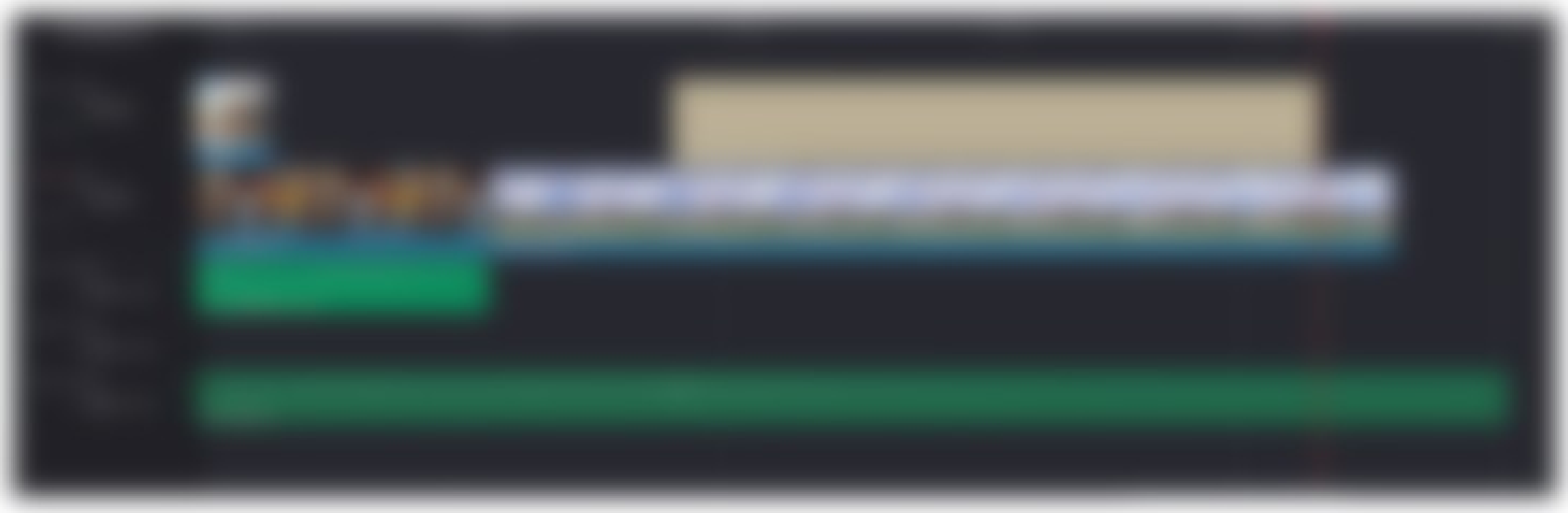
TIP You can live preview each of the Fusion Titles in the currently active viewer.

To add a title to your timeline, you could simply drag it to the location where you want it to appear. However, dragging clips into the timeline is quite limiting, and you may want to use other editing functions instead.

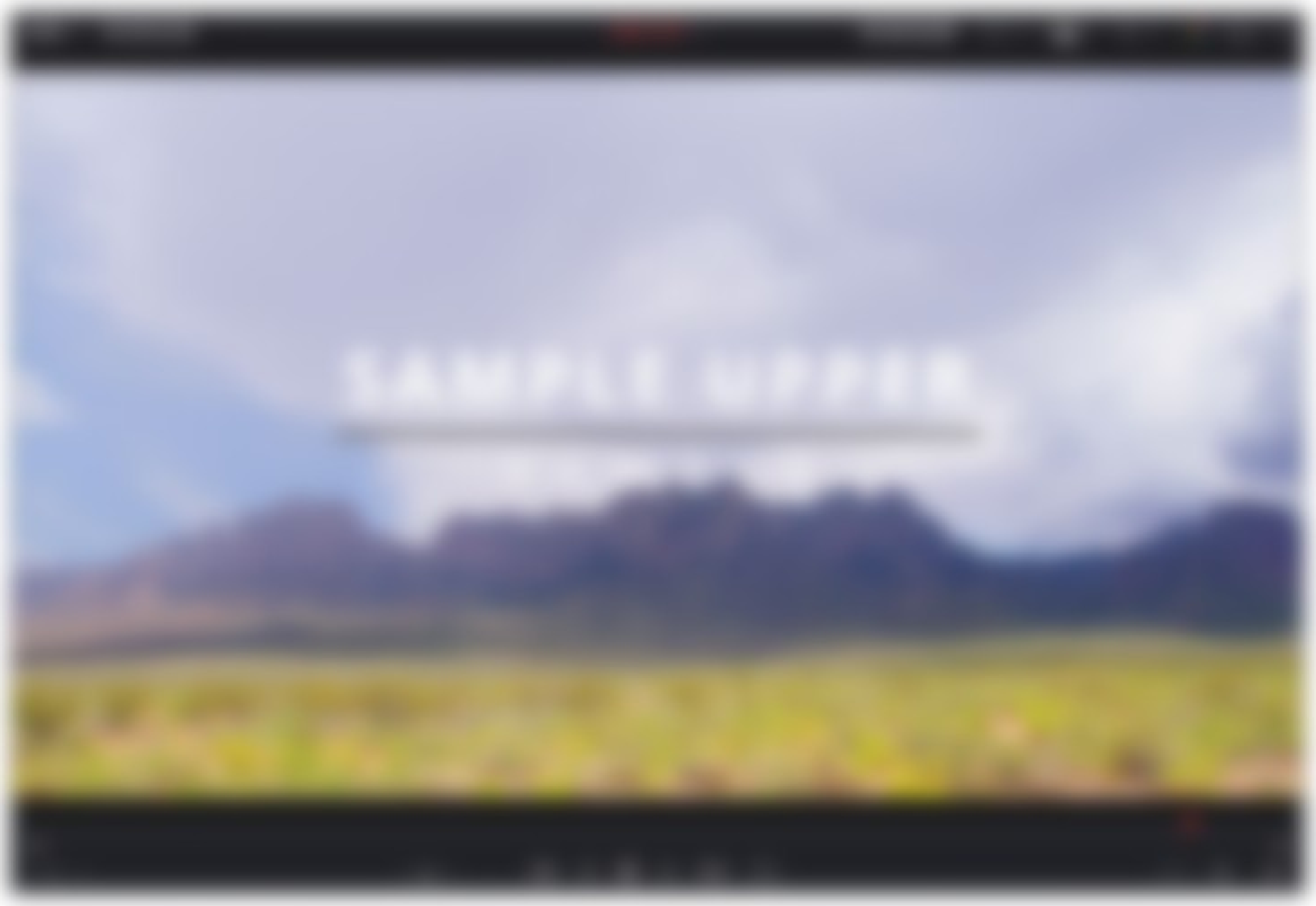
- Double-click the Horizontal Line Reveal title to open it directly in the source viewer where you can preview it in real time.



- Perform a Place on Top edit by dragging the title from the source viewer to the timeline viewer's edit overlays or by pressing F12, and then place the timeline playhead over the title clip in the timeline.

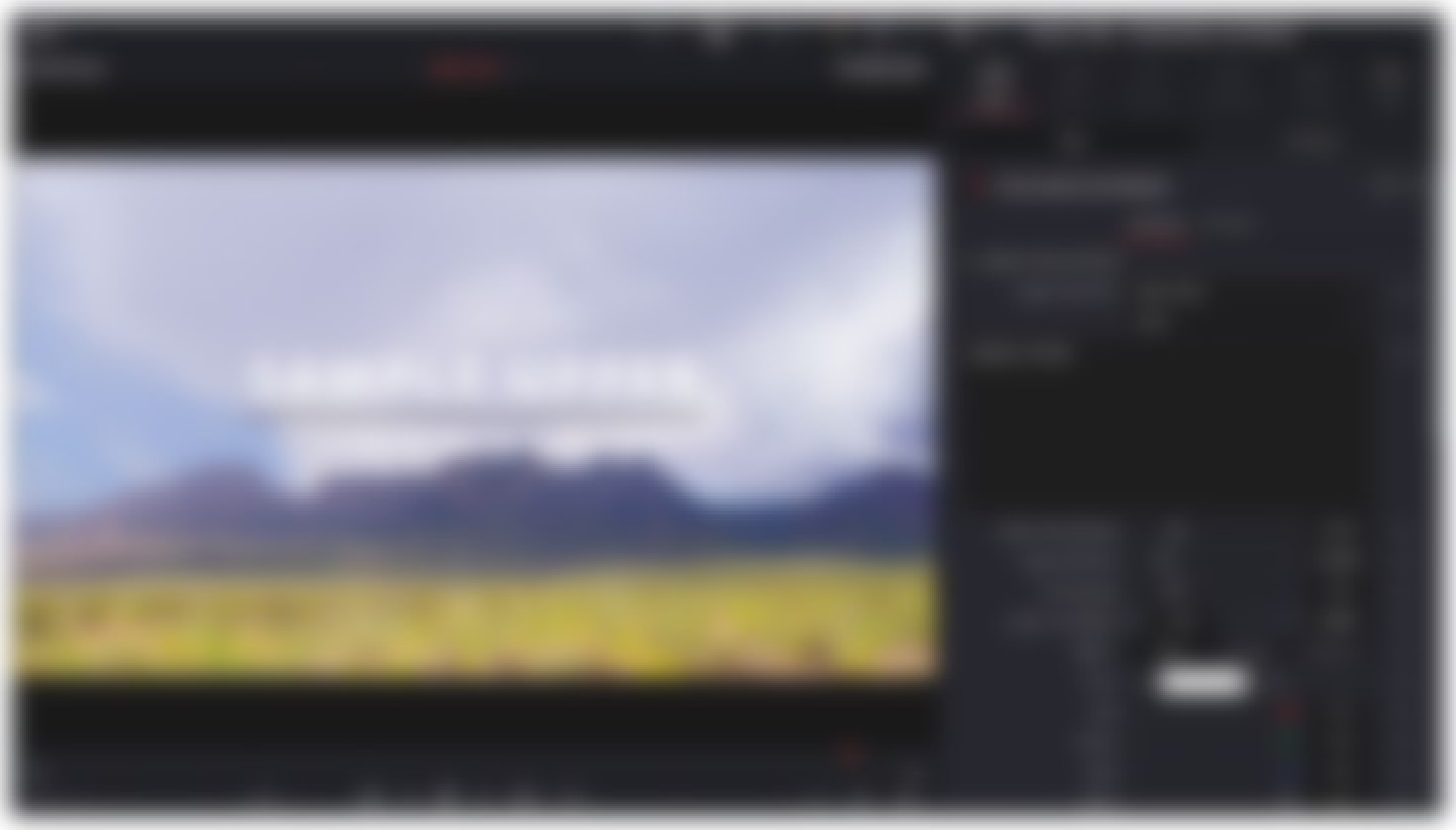


- Move the timeline playhead over the center of the title clip in the timeline to see the title composited over the footage of Organ Mountain in the timeline viewer.

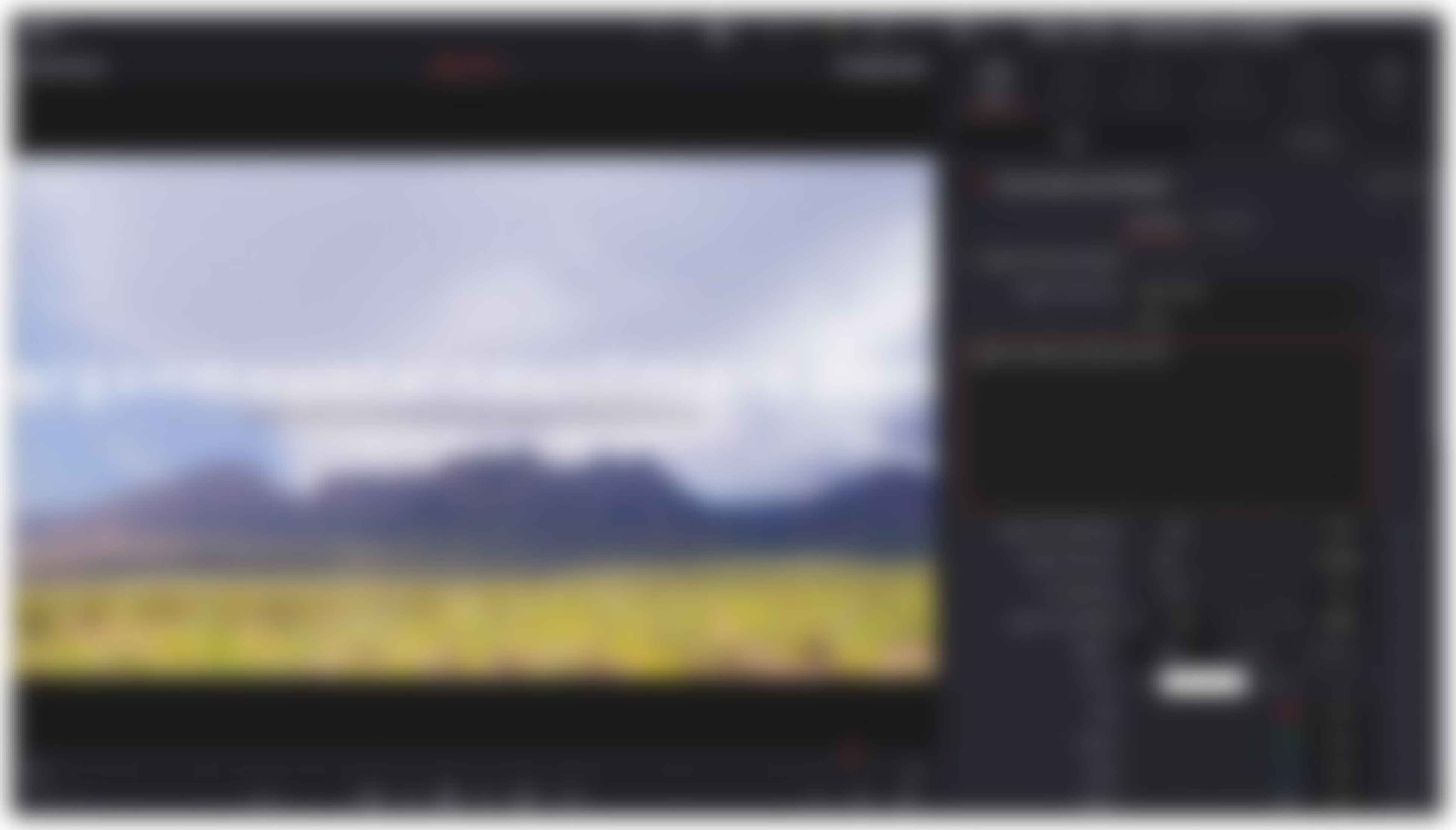


The best place to adjust the title's properties is in the Inspector.

- Click the Inspector button or double-click the title in the timeline to open the Title Inspector automatically.

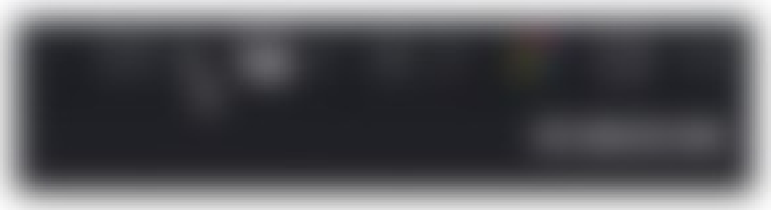


8 In the Title Inspector, select the SAMPLE UPPER text in the upper Text Controls and type [illegible].

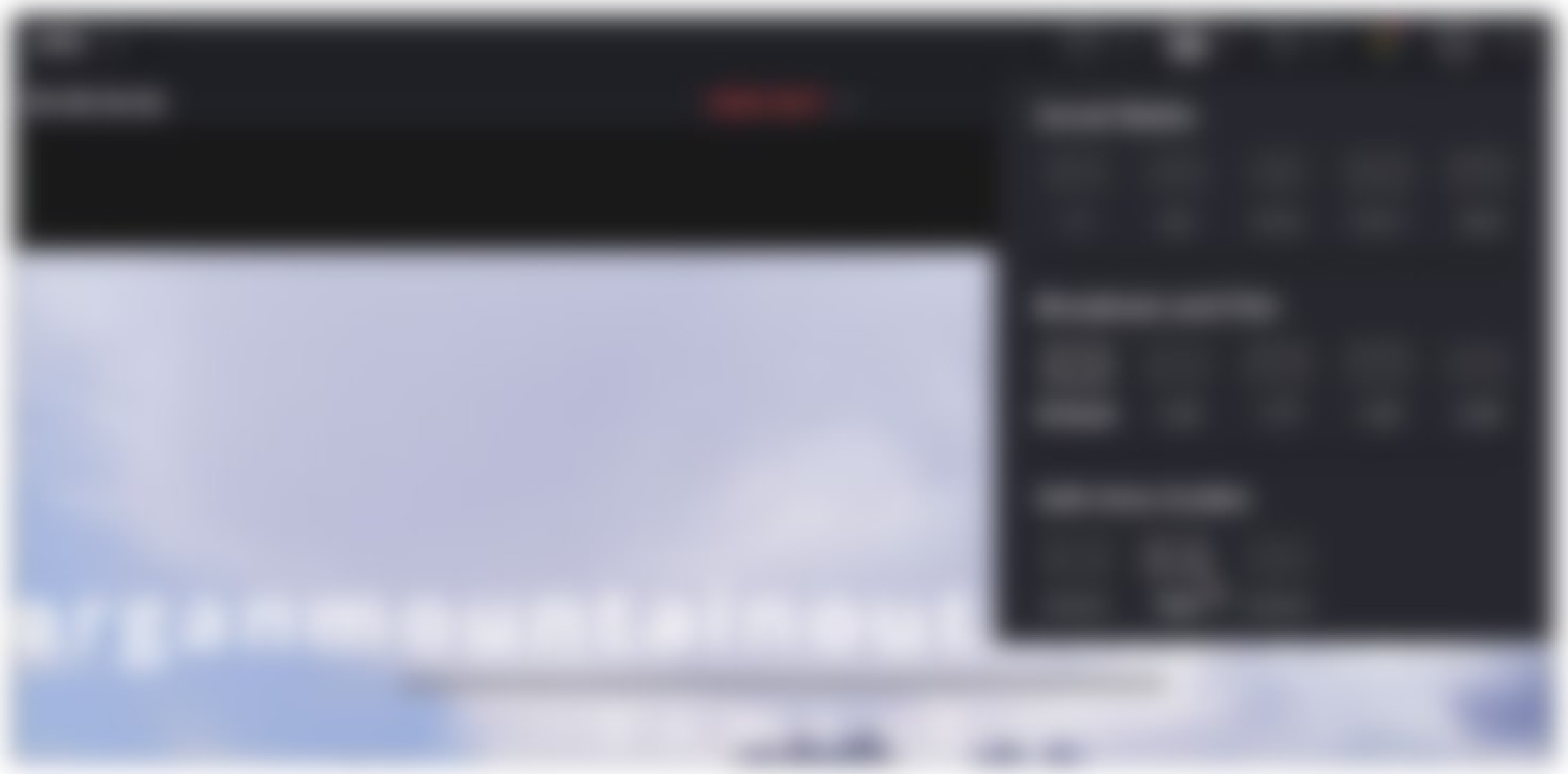


To ensure that the text isn't too large, you can use the safe areas as a guide. Safe areas are used to ensure that titles and graphics are properly displayed on screens that have an overscan and are typically required for broadcast TV programs.

9 Click the Safe Area Guides menu in the timeline viewer.



10 In the Safe Area Guides menu, enable the Title option in the Safe Area Guides category.

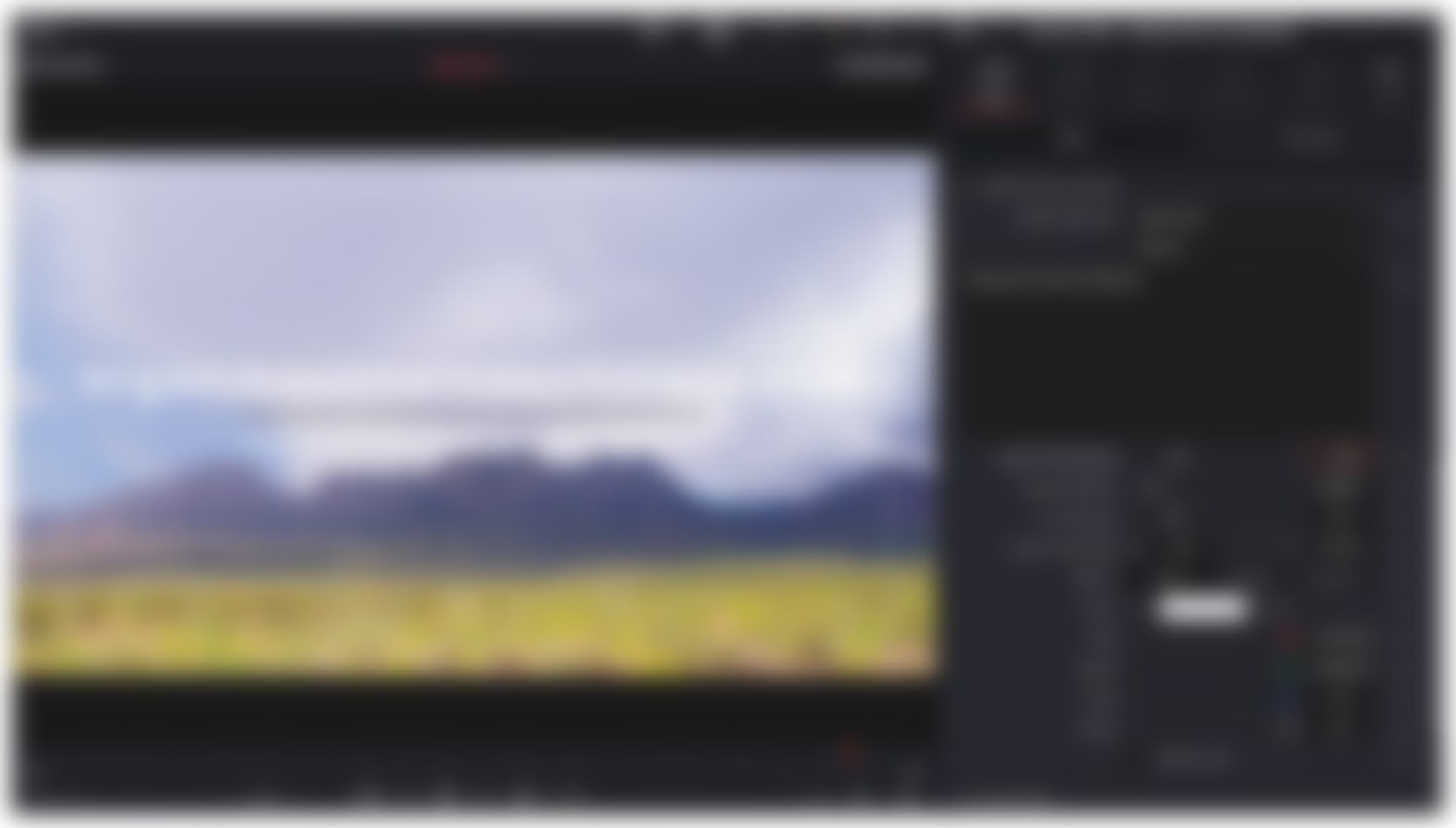


Ideally, you want the titles positioned inside the inner title safe box.

- Change the upper Text Size to about 0.08 so the title fits within the inner title safe area.

- Scroll down in the Inspector to the Lower Text Controls, highlight the SAMPLE text, and type **[illegible]**.

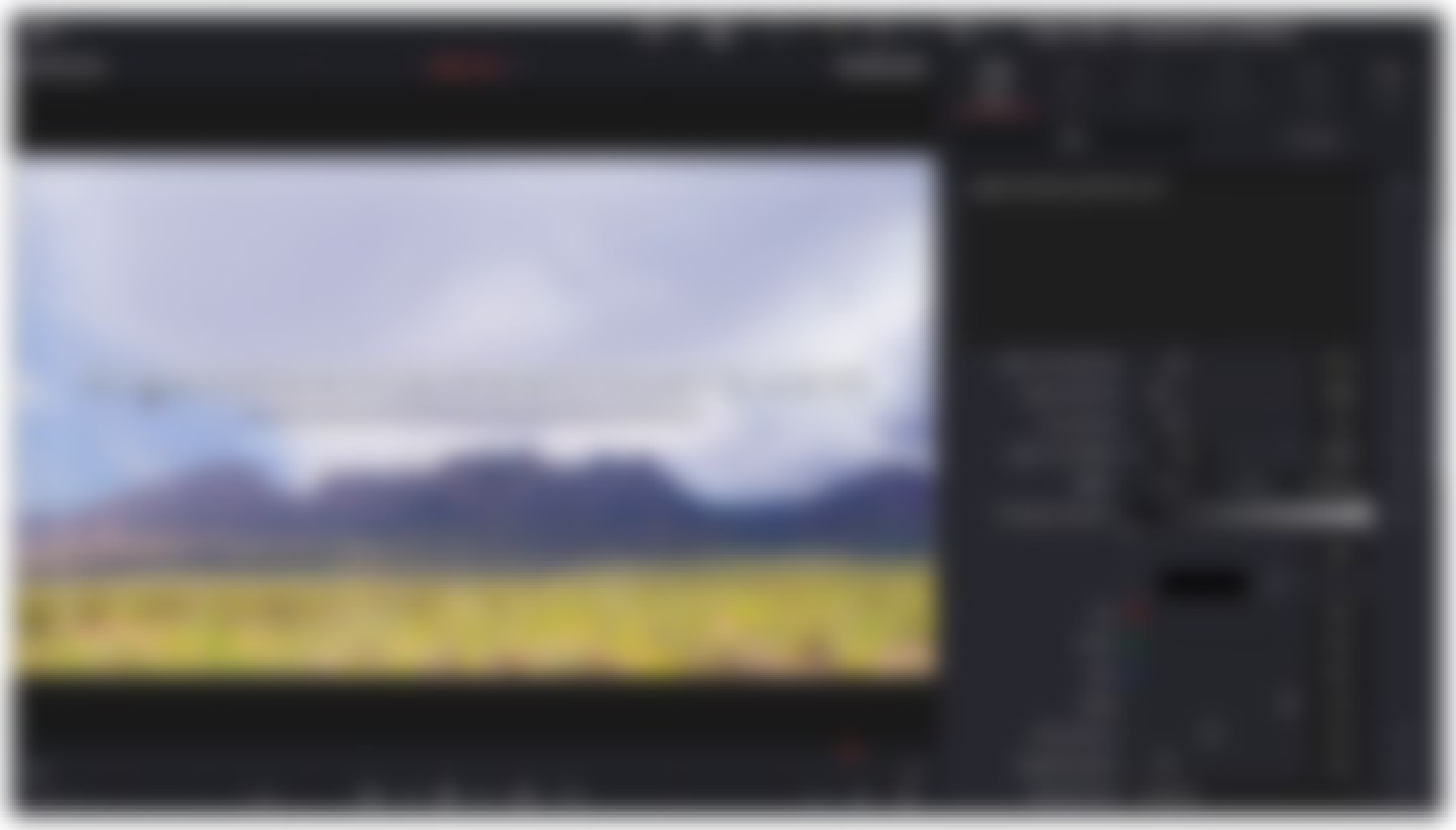
- Adjust the Lower Text Spacing to about 1.05 so the text is about the same length as the line.



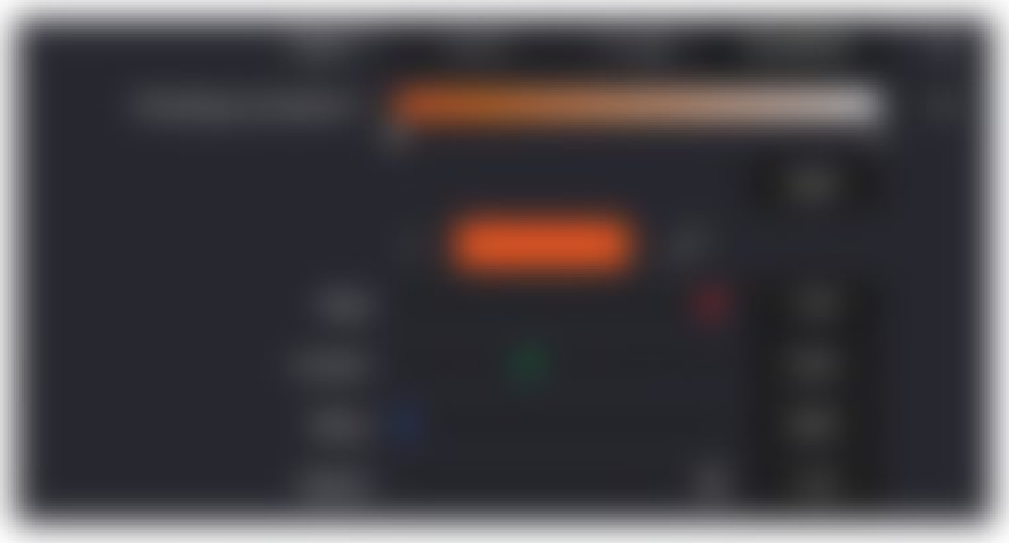
TIP You can press Up Arrow and Down Arrow to adjust the values of a selected field in the Inspector.

To make the text more eye-catching, you can adjust the colors.

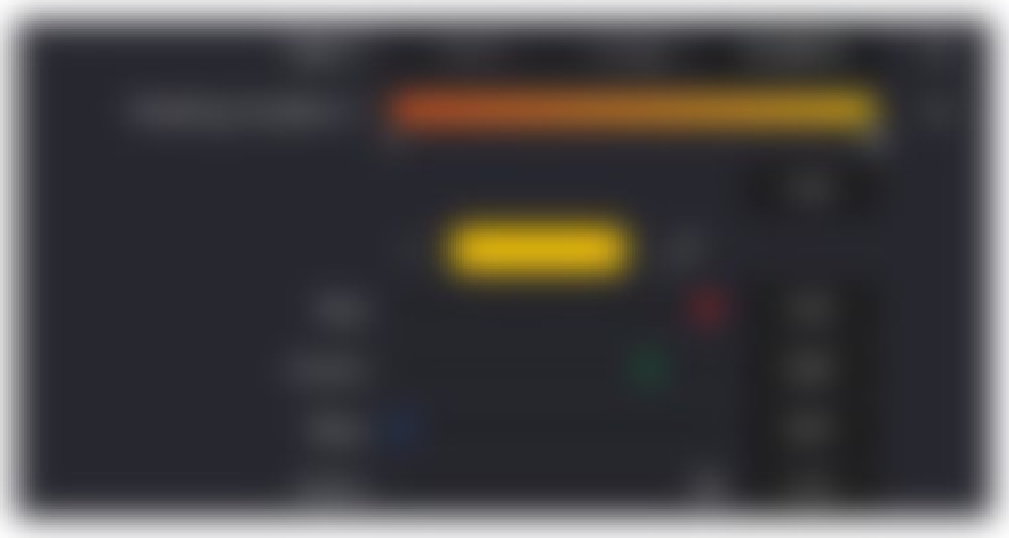
- Scroll back up to the Upper Text Controls.
- Change the Type 1 option to Gradient.



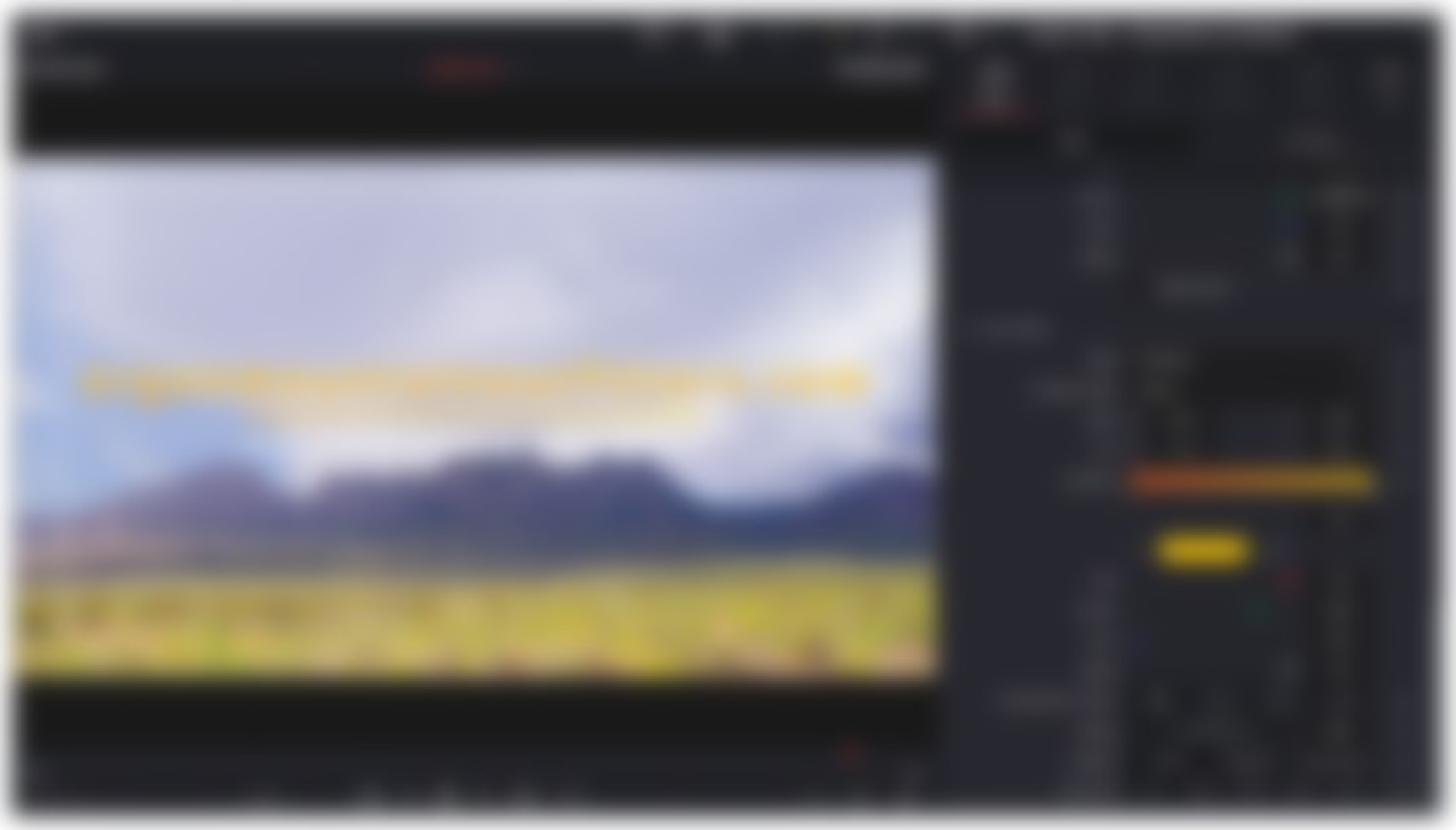
- Change the color for the gradient's left triangle control to a rich orange by increasing the Red slider to 1.0 and the Green slider to about 0.4.



- Click the right gradient triangle and change the color to a warm yellow by reducing the Blue slider to 0.0 and the Green slider to around 0.8.

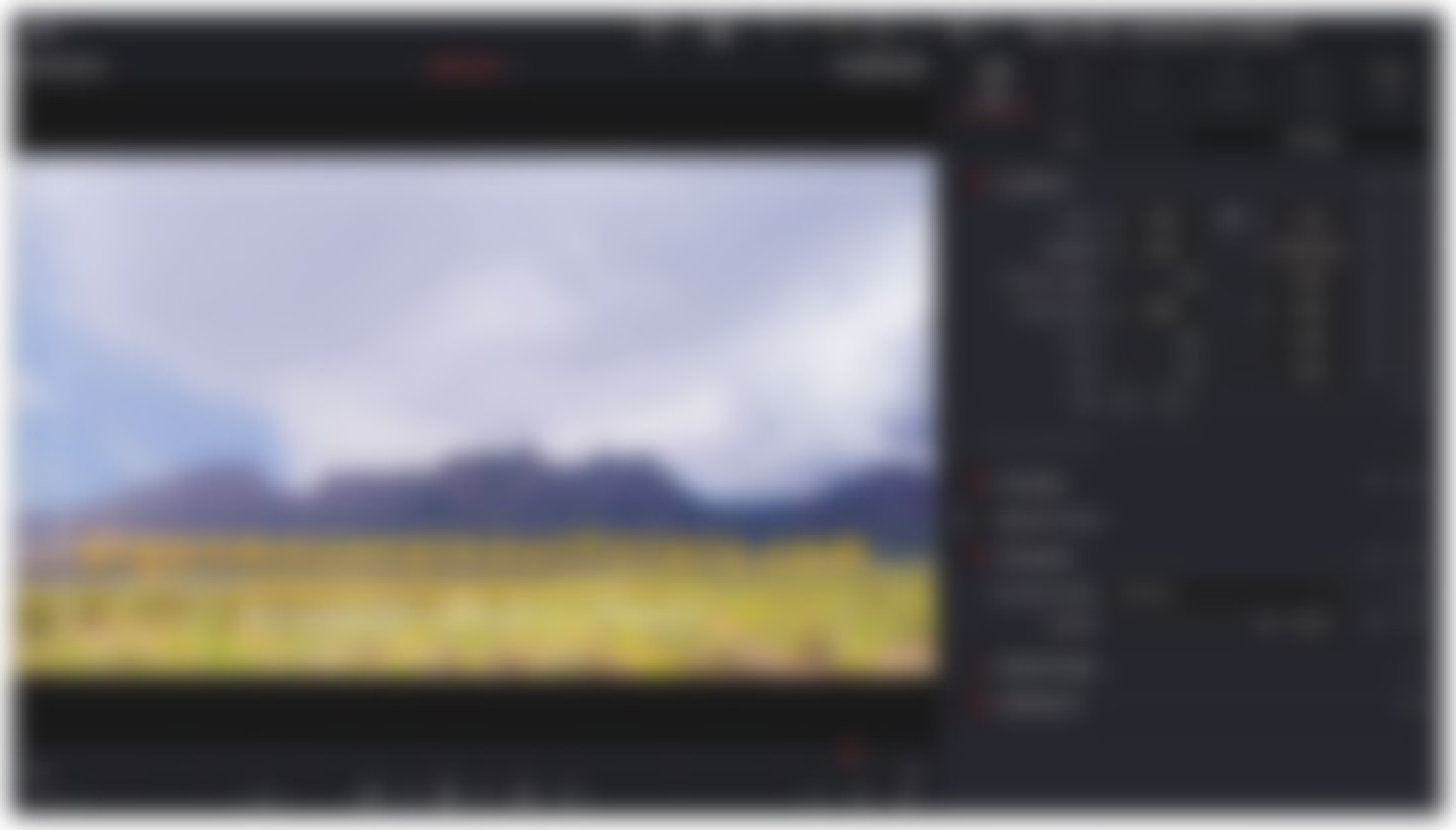


- Scroll to the bottom of the Inspector to the Line Color controls.
- Change the Type menu to Gradient to reveal similar controls.
- Adjust the left gradient control color to the same rich orange used in the Upper Text gradient (Red 1.0, Green 0.4, Blue 0.0) and adjust the right gradient control color to a similar warm yellow used in the Upper Text (Red 1.0, Green 0.8, Blue 0.0).

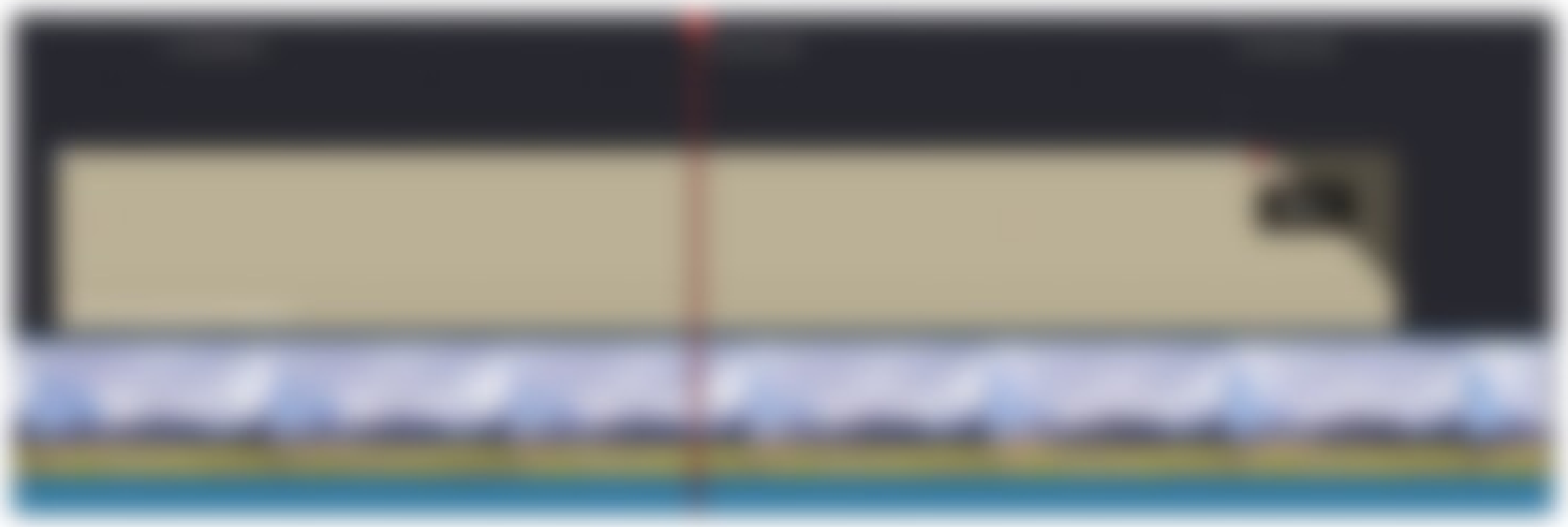


Click the Settings tab at the top of the Inspector.

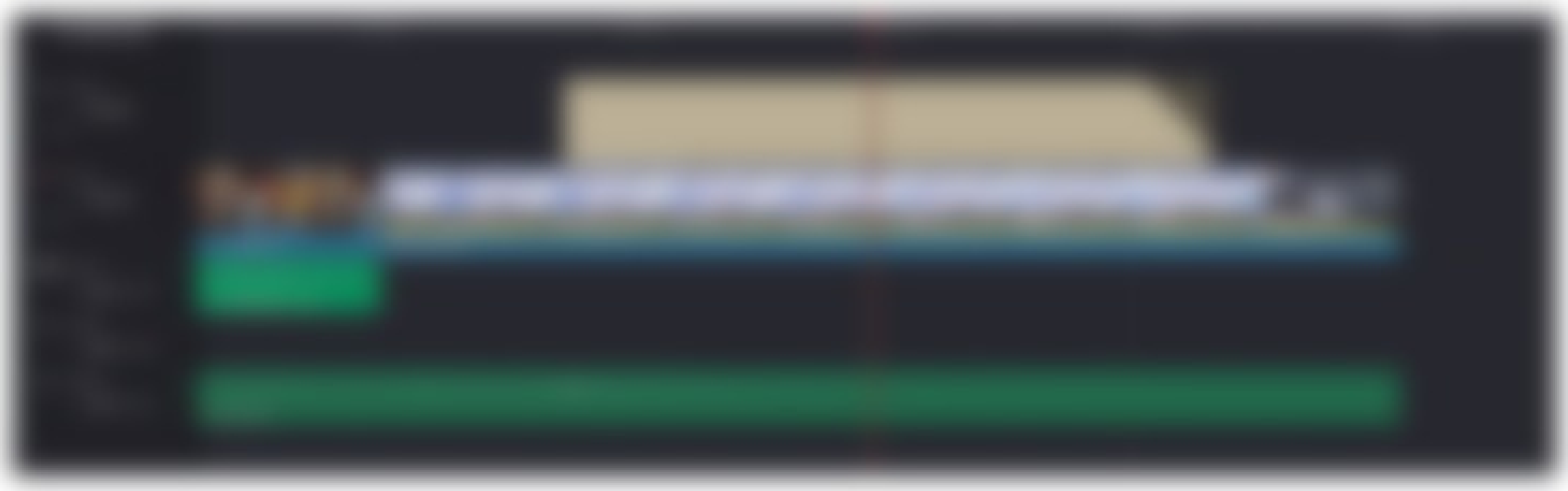
Change the Y Position value to about -380.00 to move the title down in the timeline viewer but still inside the inner title safe area.



In the timeline, use the title clip's fade handle to apply a 12-frame fade out (:00:12) to the overlay.



- Trim the end of the [illegible] clip on Video 1 so it snaps to the end of the audio clip on Audio 2 and apply a 1 second fade out [illegible] on the toolbar).



- Choose View > Safe Area > On or click the Safe Guides button in the timeline viewer to toggle the safe area overlay off and review the title in the timeline.

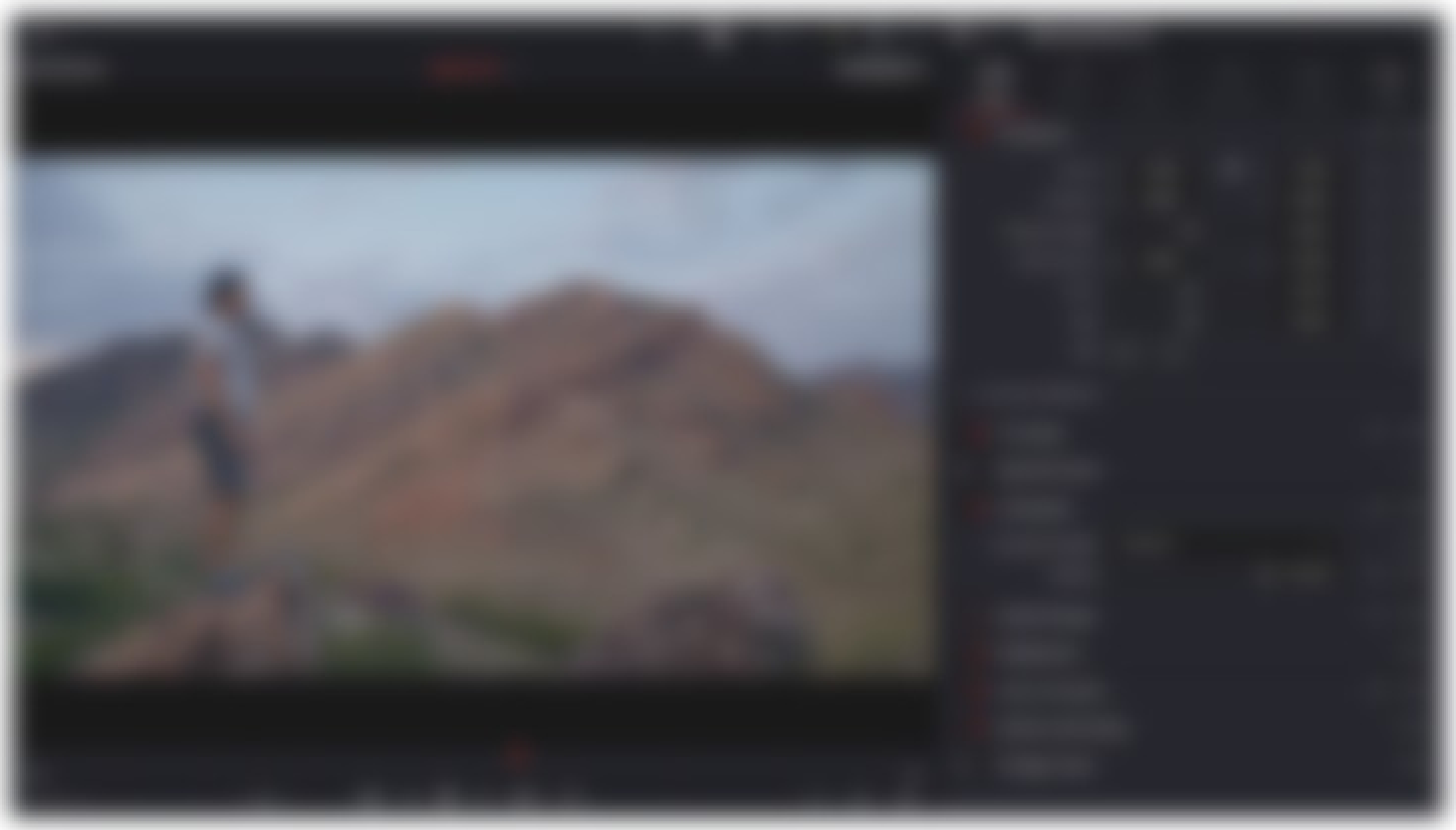
Additional Finessing

The rough cut for the DMO Promo is nearly complete and ready for the client to review, but there's time to make some final adjustments to refine some of the clips further. This includes stabilizing a shot and adding a simple animation to the opening graphic.

Stabilizing Shots

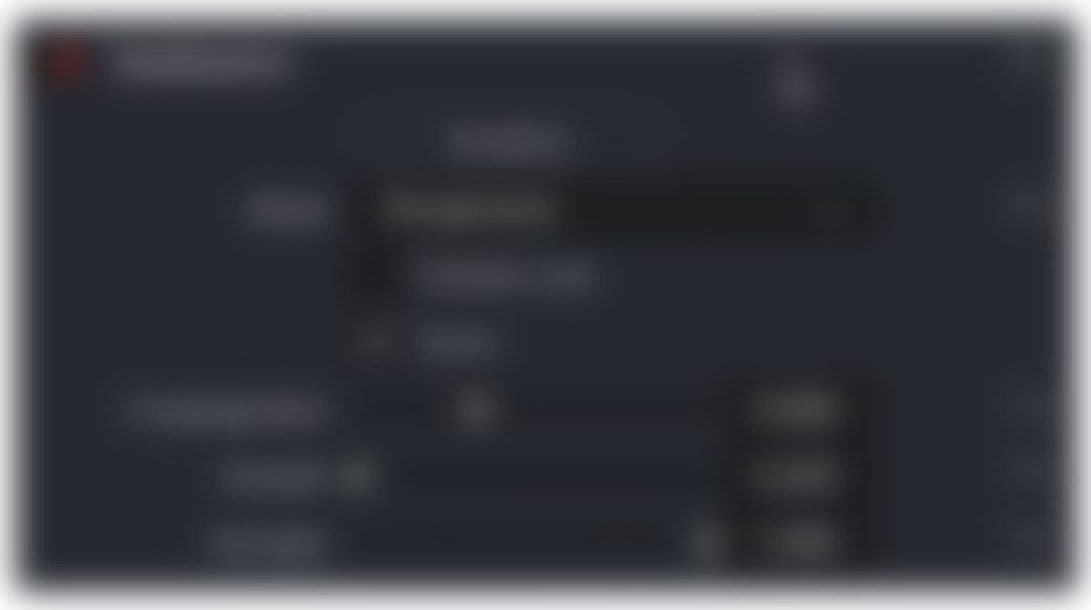
You will start by stabilizing the shot of the guy on the rocks.

1 In the timeline, play the second clip of the guy standing on the rock looking out over the mountains, [illegible].



The shake from the handheld camera on this shot is quite noticeable and detracts from an otherwise great shot.

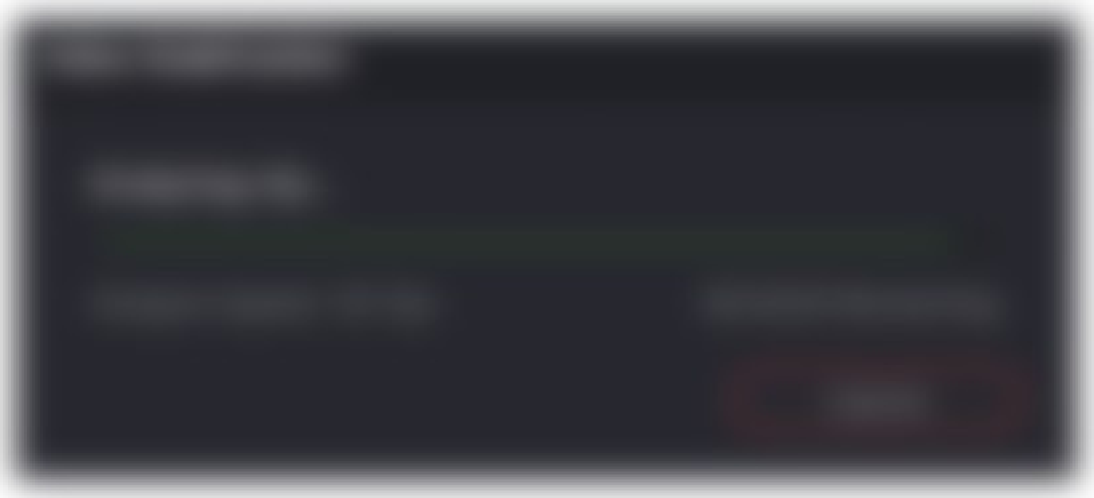
- Place your playhead over the clip in the timeline and, in the Inspector, click the Stabilize controls to expand them.



These controls will let you smooth out the unwanted camera motion of this clip.

NOTE These are the same stabilizer controls found in the Tracker palette in the color page (only without the tracker graph), and the results of any stabilization you perform here will be available in that part of the color page.

- Click the Stabilize button.



Resolve analyzes the clip and attempts to stabilize the shot.

- Once the analysis has completed, play the shot to review the changes.

The shot seems to be a little less shaky, but it doesn't completely smooth the camera movement.

- Increase the Smooth control to about 0.900 and click the Stabilize button again to apply the changes.

The increased smoothing value helps to reduce the camera shake even further, resulting in a much improved shot.

These settings seem to work well on this clip; however, the stabilization controls contain several options worth exploring, depending on the movement in the shot that you are trying to reduce, including the Mode option, which you can change from Perspective to Similarity for shots that only have unwanted movement in the horizontal and vertical directions, as well as rotations; or Translation which just stabilizes the clip for horizontal and vertical movements.

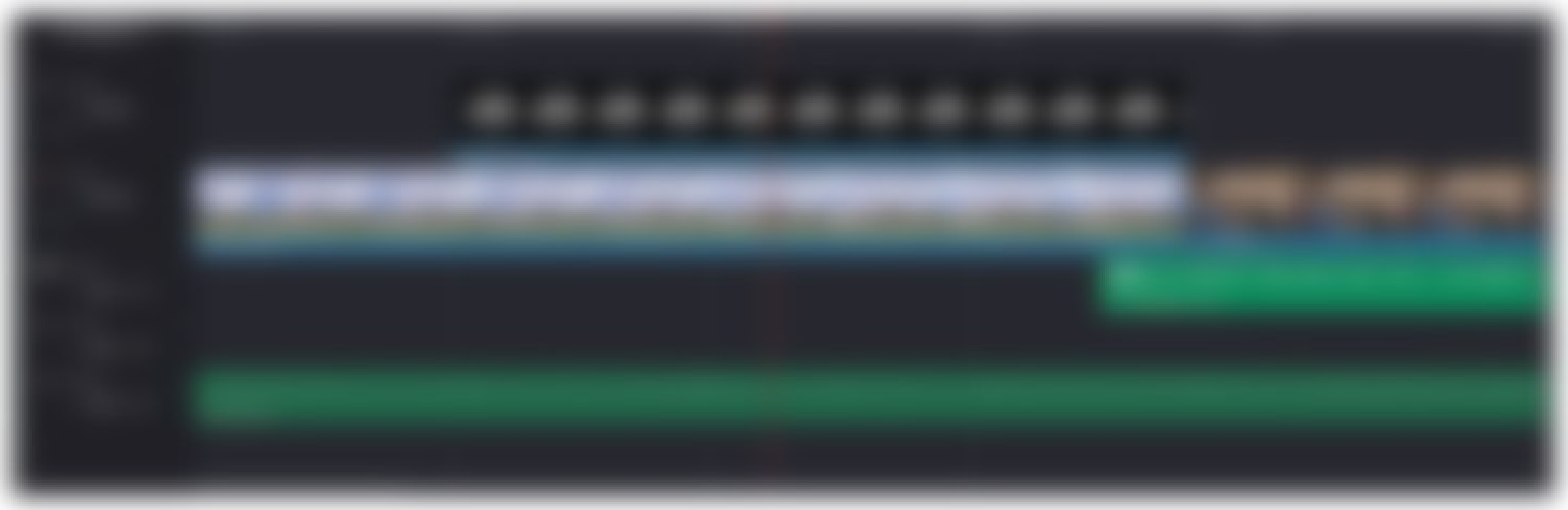
The Camera Lock control can also be used to try to "lock down" the shot by attempting to remove all camera motion.

- Click the Full Extent Zoom button.

Dynamic Zoom

Another small but impactful change you can make is applying an automatic movement to the otherwise still logo.

1. Place the timeline playhead over the [illegible] clip at the beginning of the timeline and click the Detail Zoom button.



2. In the Inspector, enable and expand the Dynamic Zoom controls.

The Dynamic Zoom controls make it fast and easy to create zoom and pan effects on a clip in the timeline without the need to resort to keyframes.

NOTE You will work more with keyframes to build complex animated composites in Lesson [illegible]

3. Press / (forward slash) to review the change in the timeline.

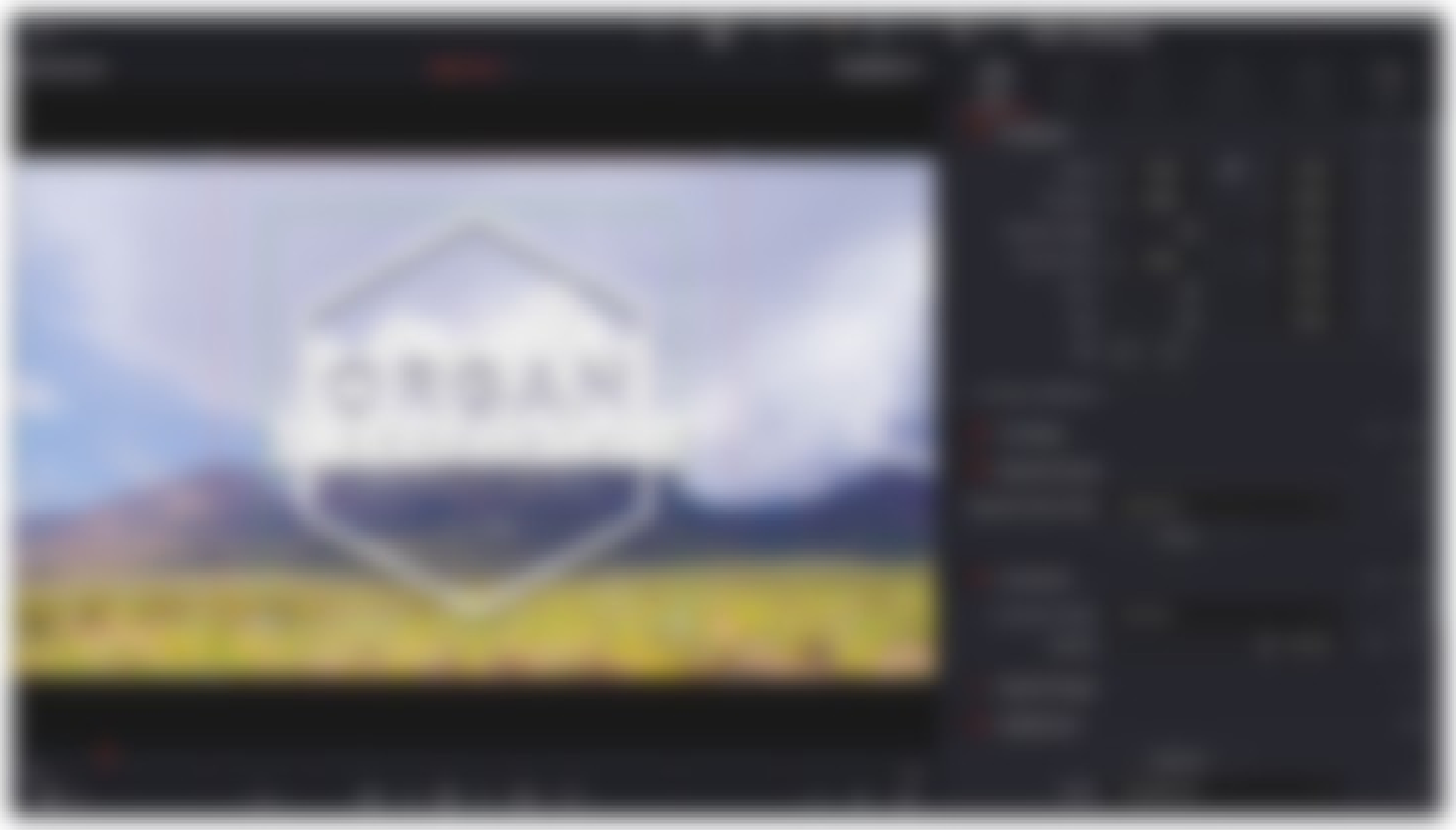
The graphic now reduces in size over its duration in the timeline.

4. Click the Dynamic Zoom control to expand the controls and change the Dynamic Zoom Ease menu to Ease Out.

5. Again, play the clip in the timeline to review the changes, noticing how the movement of the logo now comes to a gentle rest near the end of the clip in the timeline.

You can also refine the start and end framing for the dynamic zoom.

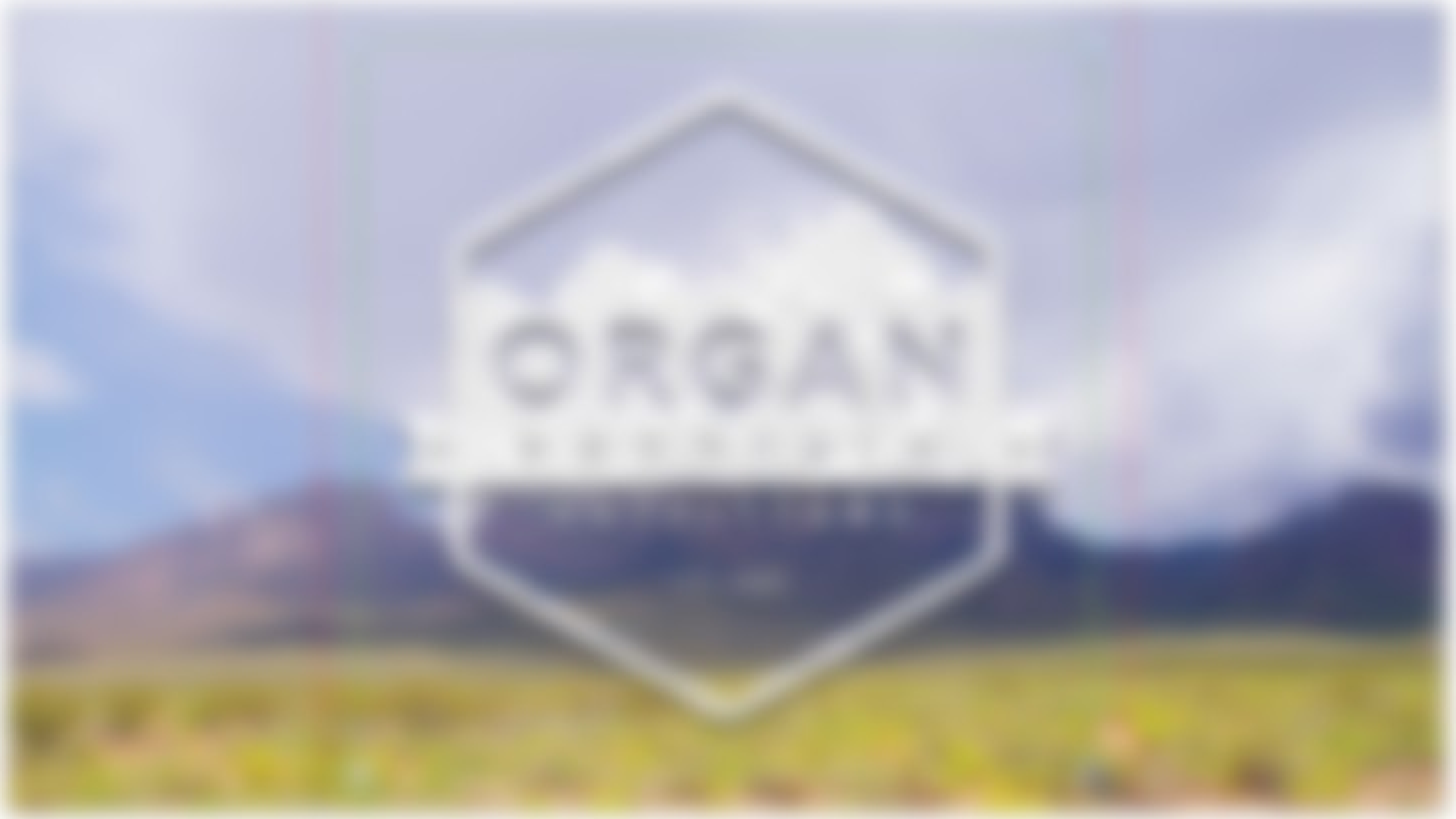
- Choose View > Viewer Overlay > Dynamic Zoom to reveal the onscreen controls for the dynamic zoom.



TIP You can also reveal the controls in the viewer overlay by clicking the Transform Mode dropdown menu in the timeline viewer.

The green box represents the start framing of the dynamic zoom, and the red box represents the end framing.

7. Drag one of the corners of the green outline box out slightly, away from the edges of the graphic, and review the change by playing back the clip in the timeline.



8. If necessary, adjust the red outline box to change the end framing of the graphic.
9. Select the OMO LOGO.png clip in the timeline and press / (forward slash) to review the entire animation, making further adjustments to your taste.
10. Once you are happy with both the start and end framing, choose View > Viewer Overlay > Toggle On/Off or press Shift-` (grave accent) to turn off the viewer overlays.
11. Click the Full Extent Zoom button.

> **TIP** You can also use the dynamic zoom controls to create panning shots by placing the green and red boxes on different parts of the image.

Excellent. By utilizing some of the built-in effects and controls in the Inspector, you have taken a simple still image and used it to create an eye-catching opening for the promo.

> **NOTE** If you need to catch up before moving to the next step, select the TIMELINES bin and choose File > Import > Timeline, navigate to R20 Editors Guide / Lesson 03 / Timelines, select **OMO PART 3 ROUGH CUT.drp**, and click Open.

Reviewing the Edit

Great work! You have successfully edited a fairly polished promo for Organ Mountain Outfitters using a variety of professional editing techniques and tools available to you in DaVinci Resolve's edit page. There's still a long way to go, but now is usually a good time to gather feedback from the director or client about how the edit is currently looking. There's no point in putting in a whole lot of work, precisely tweaking the edit to absolute perfection, if someone along the way isn't happy about something.

How you accomplish this depends on whether you and the director/client are in the same room, remote from each other but able to talk, or if they are in a completely different time zone and need to review your work in their own time.

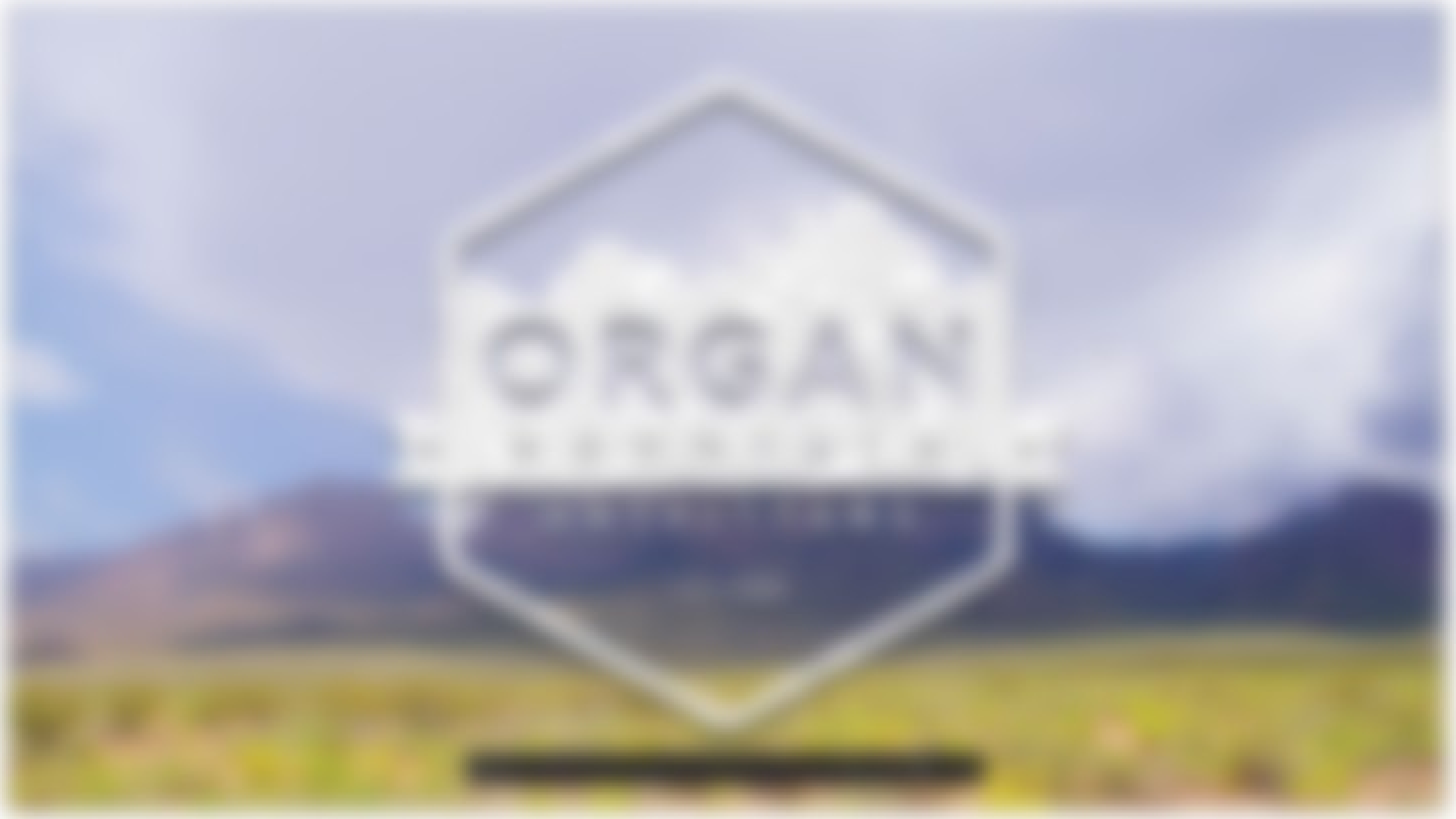
Either way, DaVinci Resolve offers several tools to help you with this process. You'll start with full-screen playback.

Full-Screen Playback

One of the most effective ways to review your edit is to watch the whole thing back at full screen. This can be very useful because it will allow you (and the director/client) to see the results of your efforts without being distracted by the "editing paraphernalia" of the interface.

While many edit suites have a dedicated "client monitor," which is a separate monitor showing the video output from DaVinci Resolve using a Blackmagic I/O device like an UltraStudio or DeckLink PCI Express card, not every system has one. Nevertheless, you can still watch your edit back in full screen even if you only have the screen of your laptop to work with.

- Choose Workspace > Viewer Mode > Cinema Viewer or press Command-F (macOS) or Ctrl-F (Windows).



DaVinci Resolve displays the current timeline in full screen. Simple onscreen navigation and playback controls are available as an overlay.

> **TIP** You can still use the keyboard shortcuts you're familiar with to navigate around the timeline in the Cinema Viewer. Use Home to return to the start of the edit, and use the J, K, and L keys for playback, etc.

- Use the onscreen controls to return to the start and begin playback. The controls and your mouse pointer will disappear after a few seconds.
- When you've finished watching your masterpiece, move the mouse slightly to display the controls again and click the Exit Fullscreen button or press Esc (Escape) to return to the full Resolve interface.

Playing back your timeline like this gives you an opportunity to see your edit the same way your viewers will. Watch carefully to see if there are any parts of the edit that might benefit from additional changes. If so, now is the time to make those adjustments.

NOTE If you have two monitors attached to your computer and you're using DaVinci Resolve Studio, you can use one for a dedicated clean feed output while you're working. Simply choose Workspace > Video Clean Feed and choose the monitor you'd like to view the clean feed on. To disable the clean feed, choose Workspace > Video Clean Feed > None.

Remote Monitoring

If the director/client isn't in the same room as you, you can instead allow them to monitor the output from DaVinci Resolve remotely using DaVinci Remote Monitor.

DaVinci Remote Monitor is a small application installed alongside the main DaVinci Resolve application, which you can use to monitor the output directly from DaVinci Resolve.

Therefore, your director/client needs access to this application. This can be on their desktop or laptop computer (Mac, Windows, or Linux) if they have DaVinci Resolve installed. Alternatively, they can install it for free on their iPhone or iPad by searching for "DaVinci Resolve Monitor" in the Apple App Store.

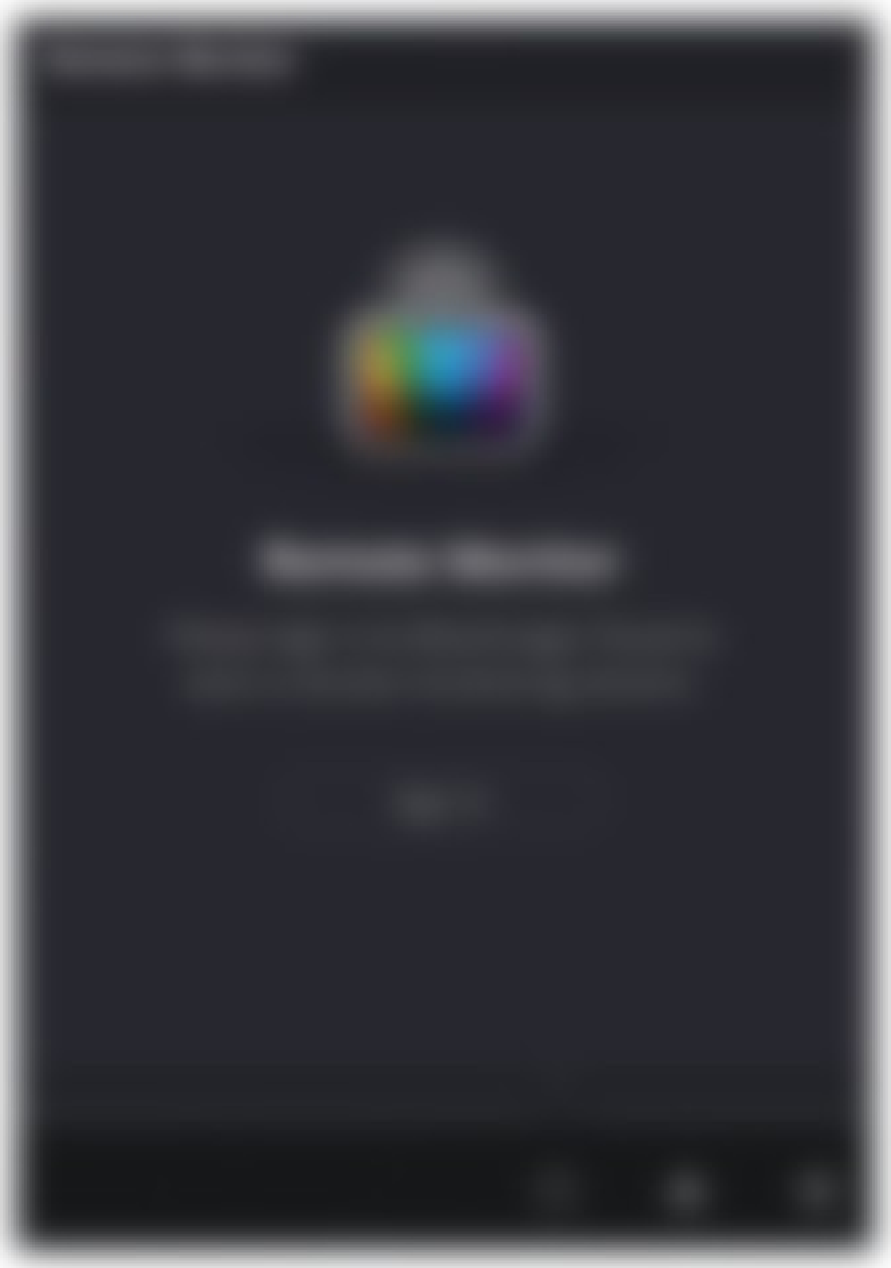
NOTE Specific system requirements for running DaVinci Remote Monitor are listed in the DaVinci Resolve Manual.

For ease of use using the built in Blackmagic Cloud Connection, DaVinci Remote Monitor requires the user to sign in using a Blackmagic Cloud account. Blackmagic Cloud accounts can be registered for free at https://cloud.blackmagicdesign.com.

NOTE Using remote monitoring without Blackmagic Cloud requires specific settings beyond the scope of this book. Full details can be found in the DaVinci Resolve Manual.

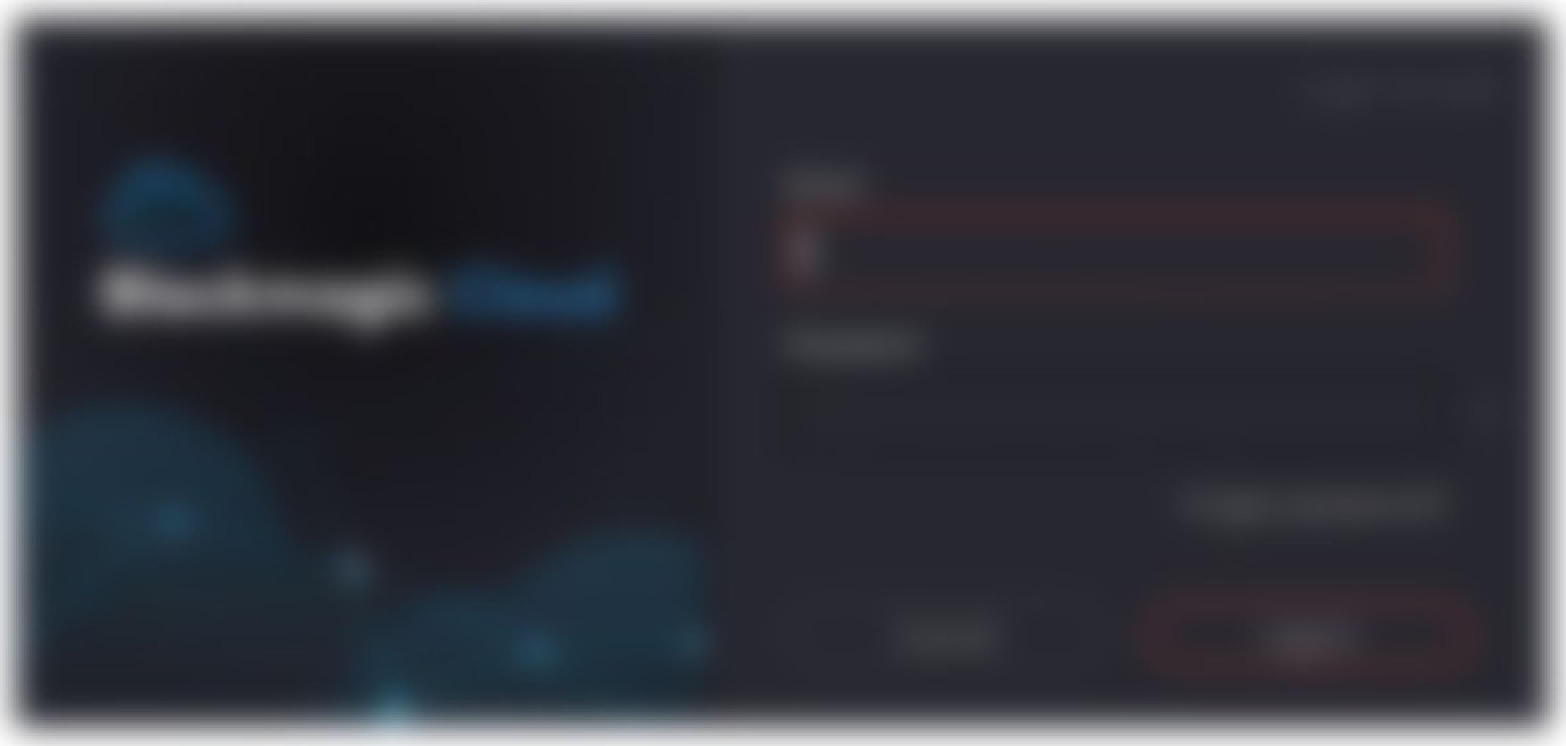
Once the user is signed in, they are ready to join your Remote Monitor session.

- In DaVinci Resolve, choose Workspace > Remote Monitoring.



The Remote Monitor window appears in the lower right corner of the interface. If you are already signed in to your Blackmagic Cloud account, you can proceed to Step 3 below.

- Click Sign In and enter your details to log in to your Blackmagic Cloud account.

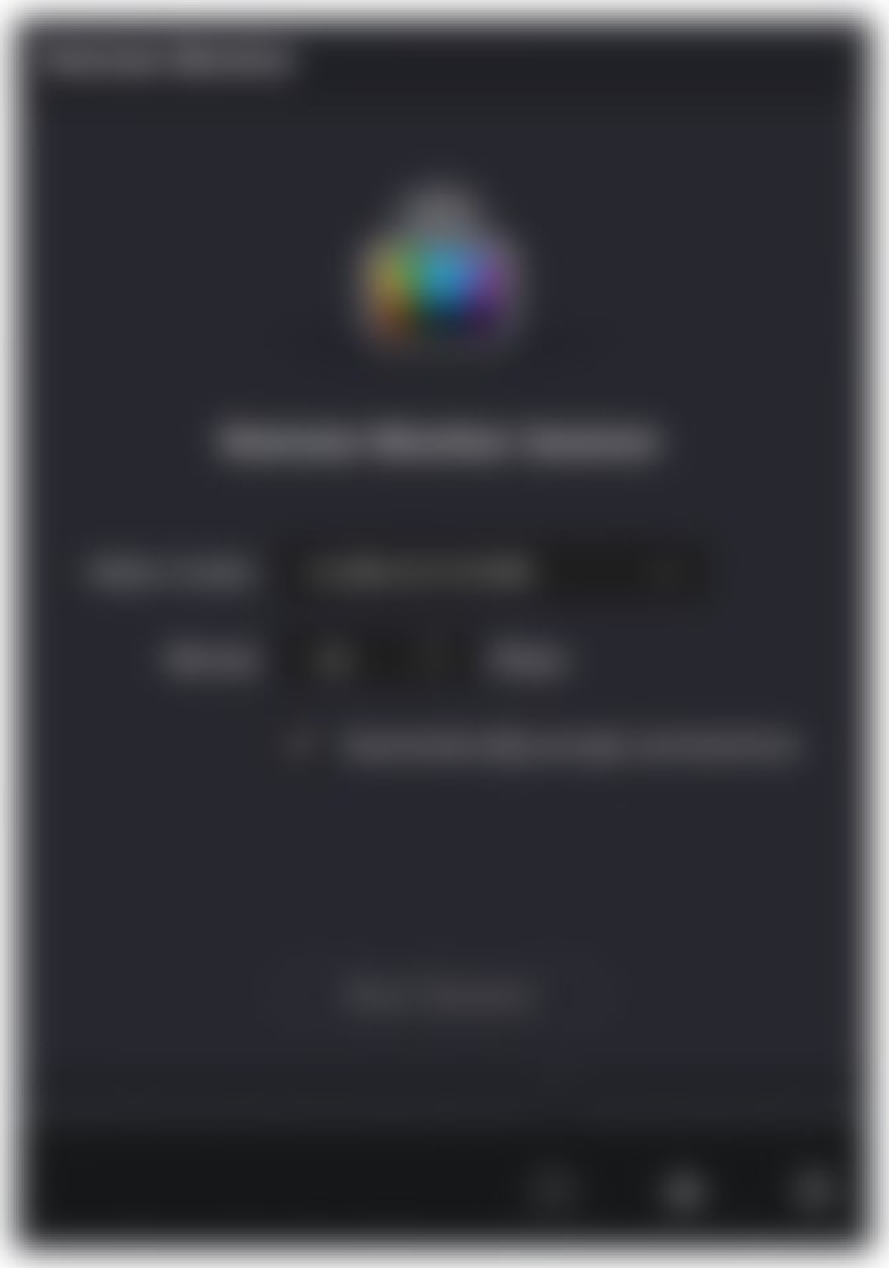


TIP If you use a password manager, you may find it easier to log in via a webpage. If this is the case, click Login via Web.

Once you are logged in to your Blackmagic Cloud account, you're ready to initiate the remote monitoring session.

NOTE You can sign out of your Blackmagic Cloud account in DaVinci Resolve Preferences > System > Internet Accounts.

- Click the Remote Monitoring icon in the lower right corner of the interface.

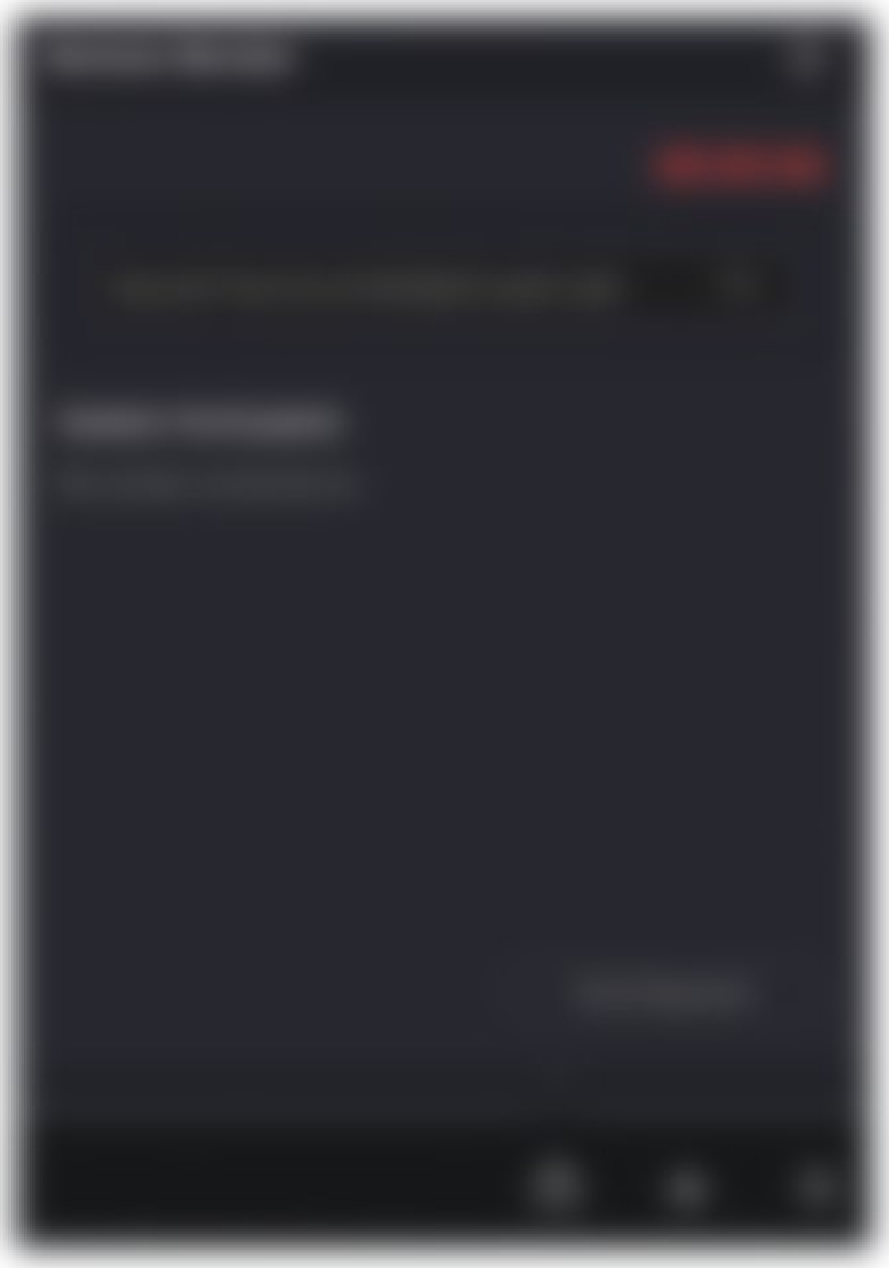


The Remote Monitoring window includes settings for the video codec and bitrate settings for the session. Leave these set to their defaults for now.

- Click the "Automatically accept connections" option.

> **NOTE** For added security you can leave this unchecked, meaning that you must approve each connection manually before the recipient can join the session.

- Click Start Session.

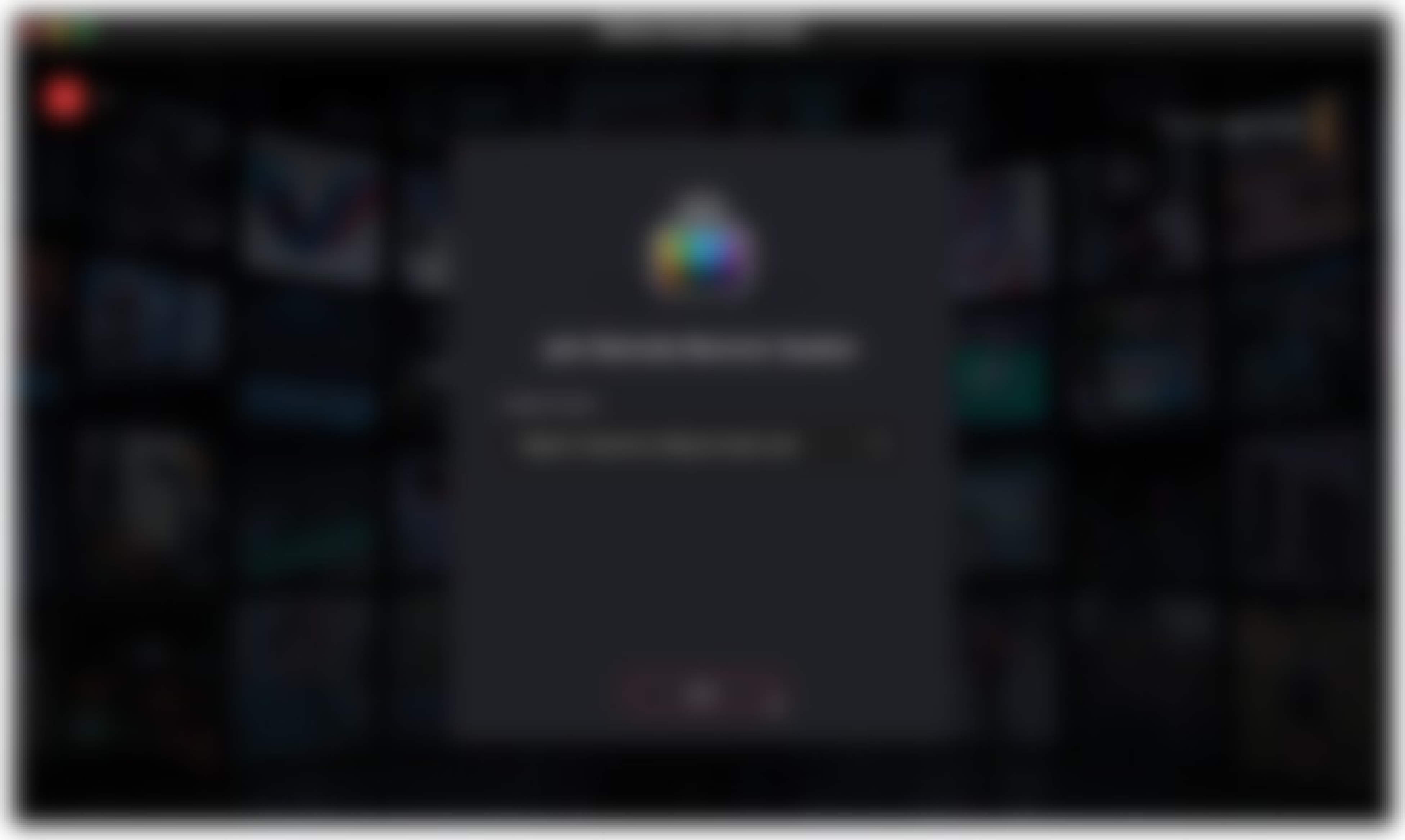


The Remote Monitor window now displays how long the session has been active, an alphanumeric code for the session, and a list of session participants.

- Click the box next to the session code to copy the code in its entirety.

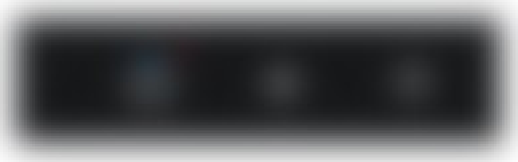
You now need to send the session code you have just copied to whoever you wish to join the session.

- Once they receive your session code, they must enter it in the Session Code field on the DaVinci Remote Monitor app on their computer, iPhone, or iPad, and then click join.

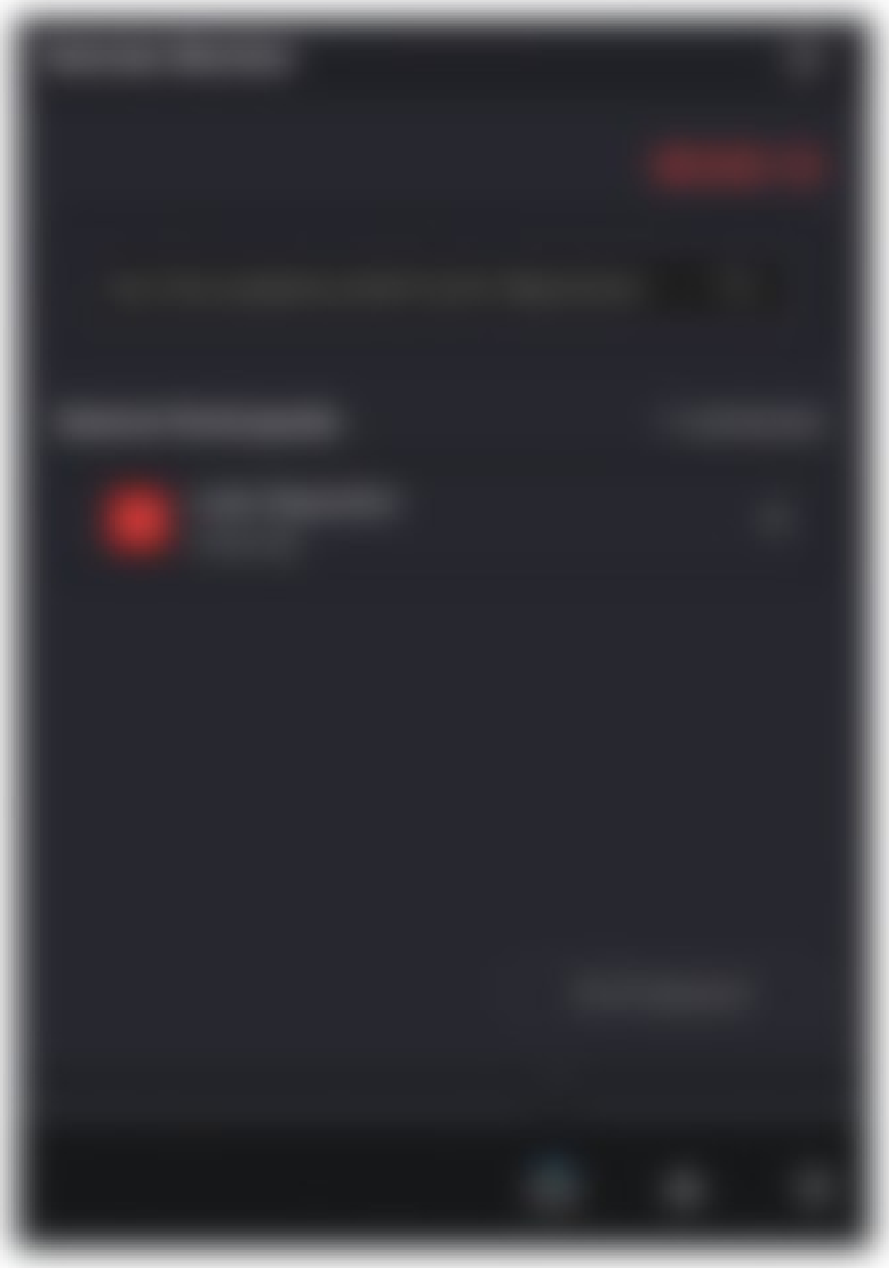


They will now see the video and audio output from your DaVinci Resolve system in real time.

The Remote Monitor icon indicates that a Remote Monitoring Session has active session participants.



- Click the Remote Monitoring icon to reveal details of the active session participants.



The session participants can now monitor the output of the source and timeline viewers as you are editing and playing footage, which is an excellent way of allowing someone to monitor remotely.

- To cancel the remote session, click the Remote Session icon and choose End Session.

The session will end, and any session participants will be disconnected.

- Choose Workspace > Remote Monitoring to turn off the Remote Monitoring feature for your system.

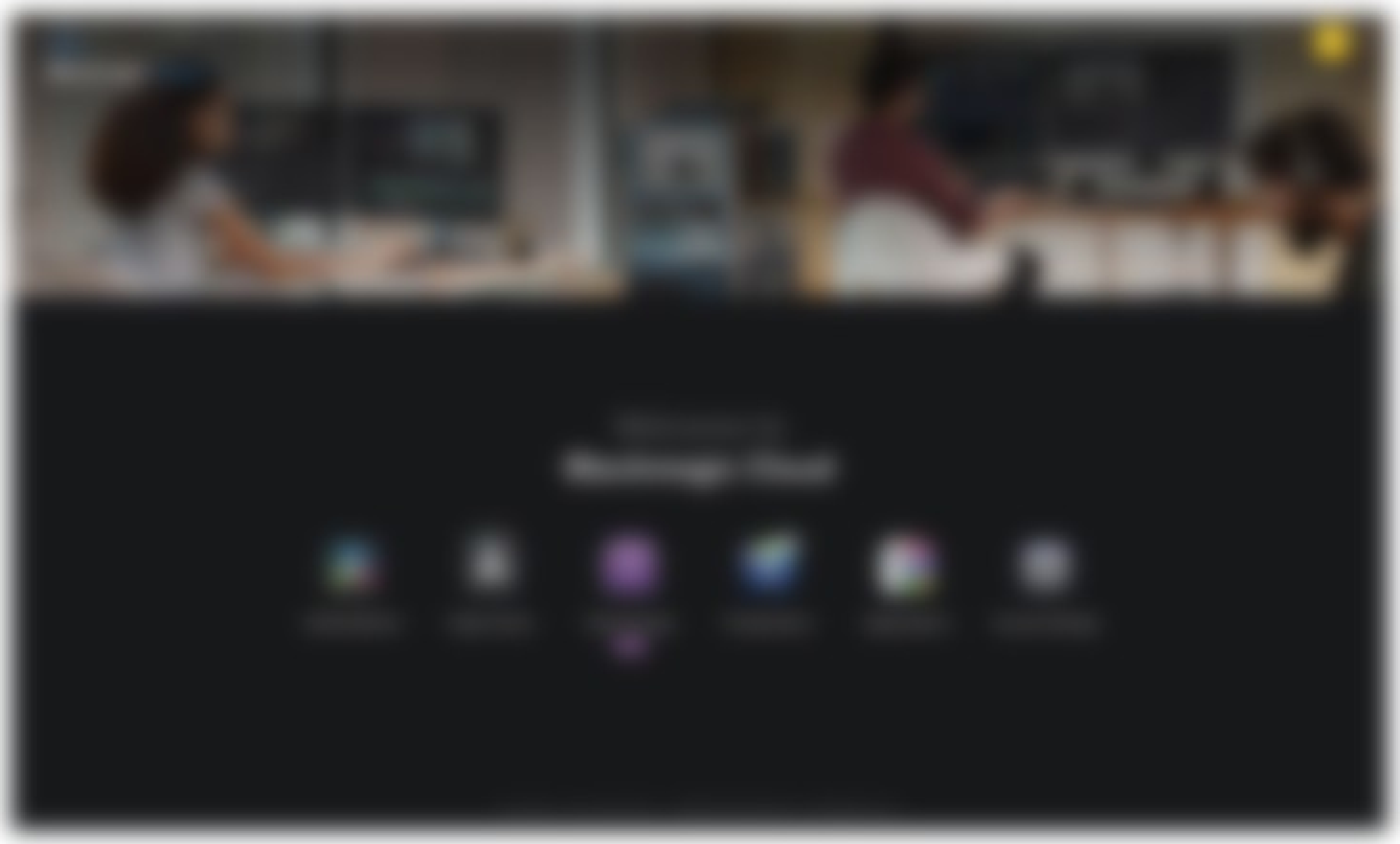
Using Blackmagic Cloud Presentations

Sometimes, you will want to review your work with the director or client, wherever you and they are in the world. The Presentations export preset can be used to upload a video file directly to Blackmagic Cloud. Once your file has been uploaded to the Cloud, you can invite other people to view, comment, and collaborate, either separately or together, in real time. What's more, comments can be added directly to the video as a series of time-stamped markers, which will automatically appear directly in your timeline in DaVinci Resolve.

To begin working with Presentations, though, you will need to log in to your Blackmagic Cloud account via a web browser.

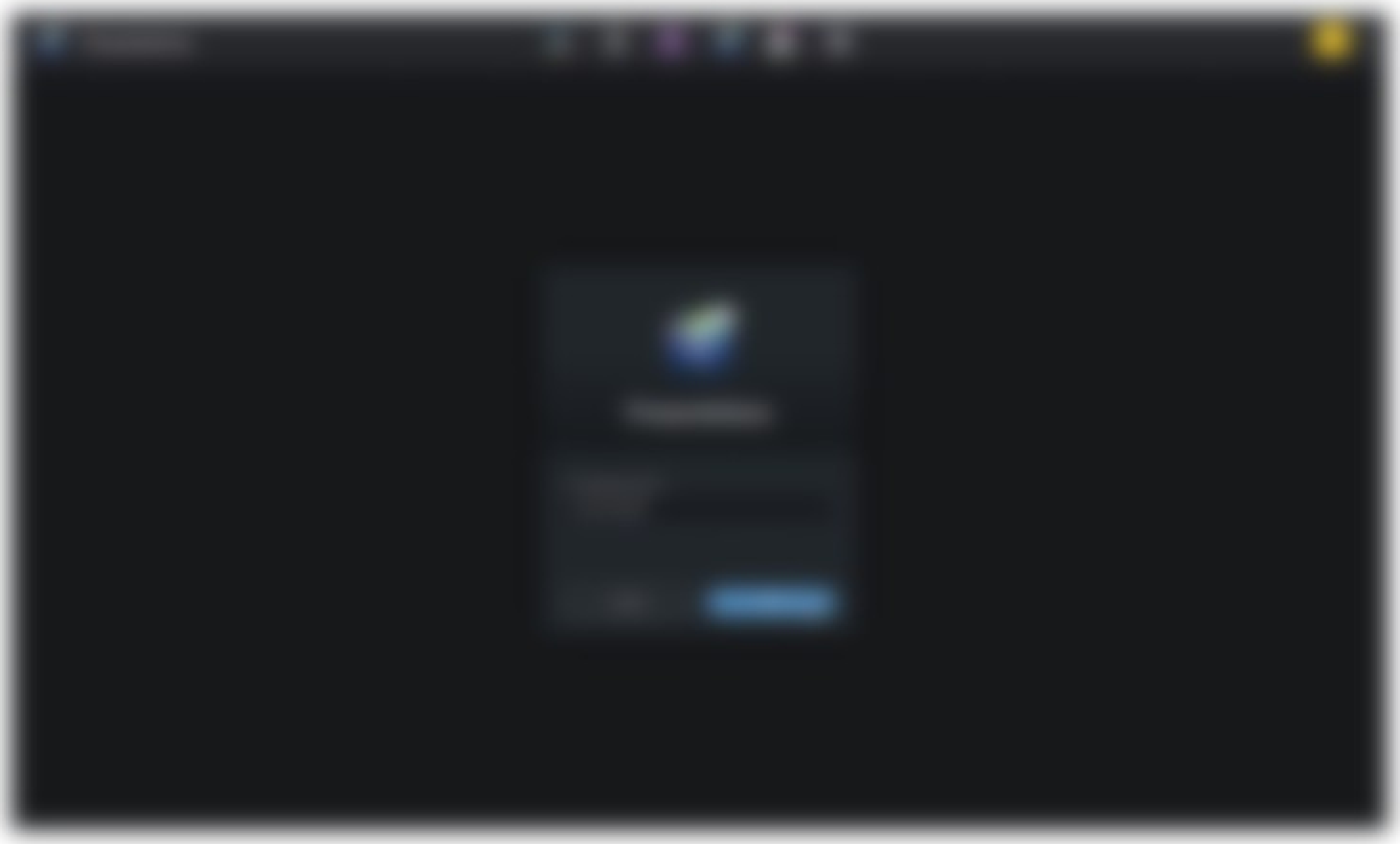
- Open a web browser, go to https://cloud.blackmagicdesign.com, and sign in to your Blackmagic Cloud account.

  Once you have signed in, you will see the Blackmagic Cloud Welcome screen.

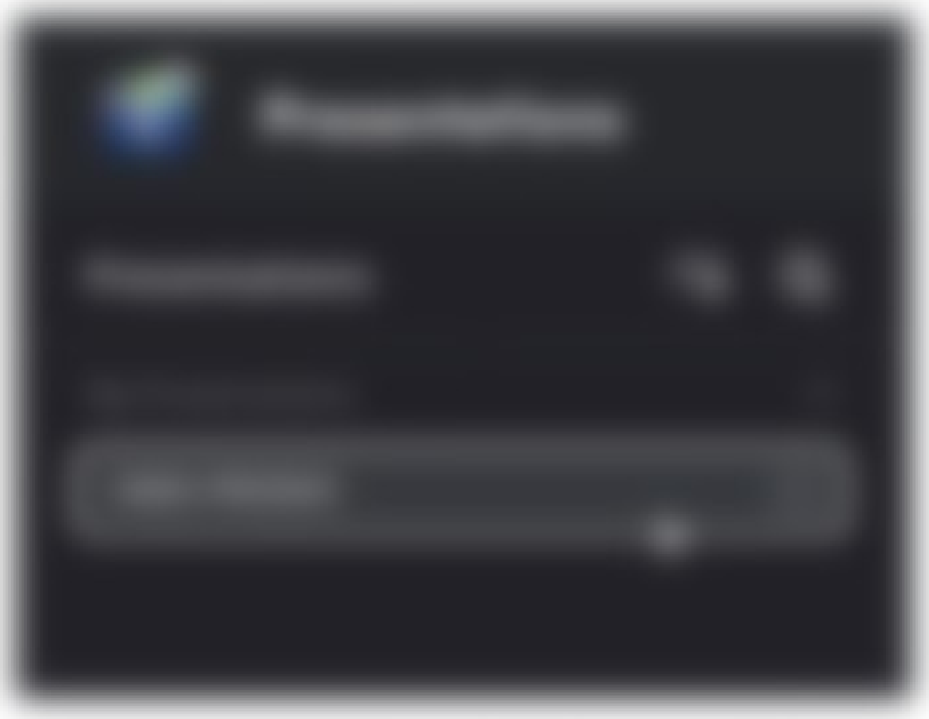
  

- Click the Presentations option.

- If this is your first Presentation, in the Presentation Name, type **DMO PROMO** and click Add; otherwise, click Add Presentation at the bottom of the Presentations list, name the new Presentation **DMO PROMO**, and click Add.

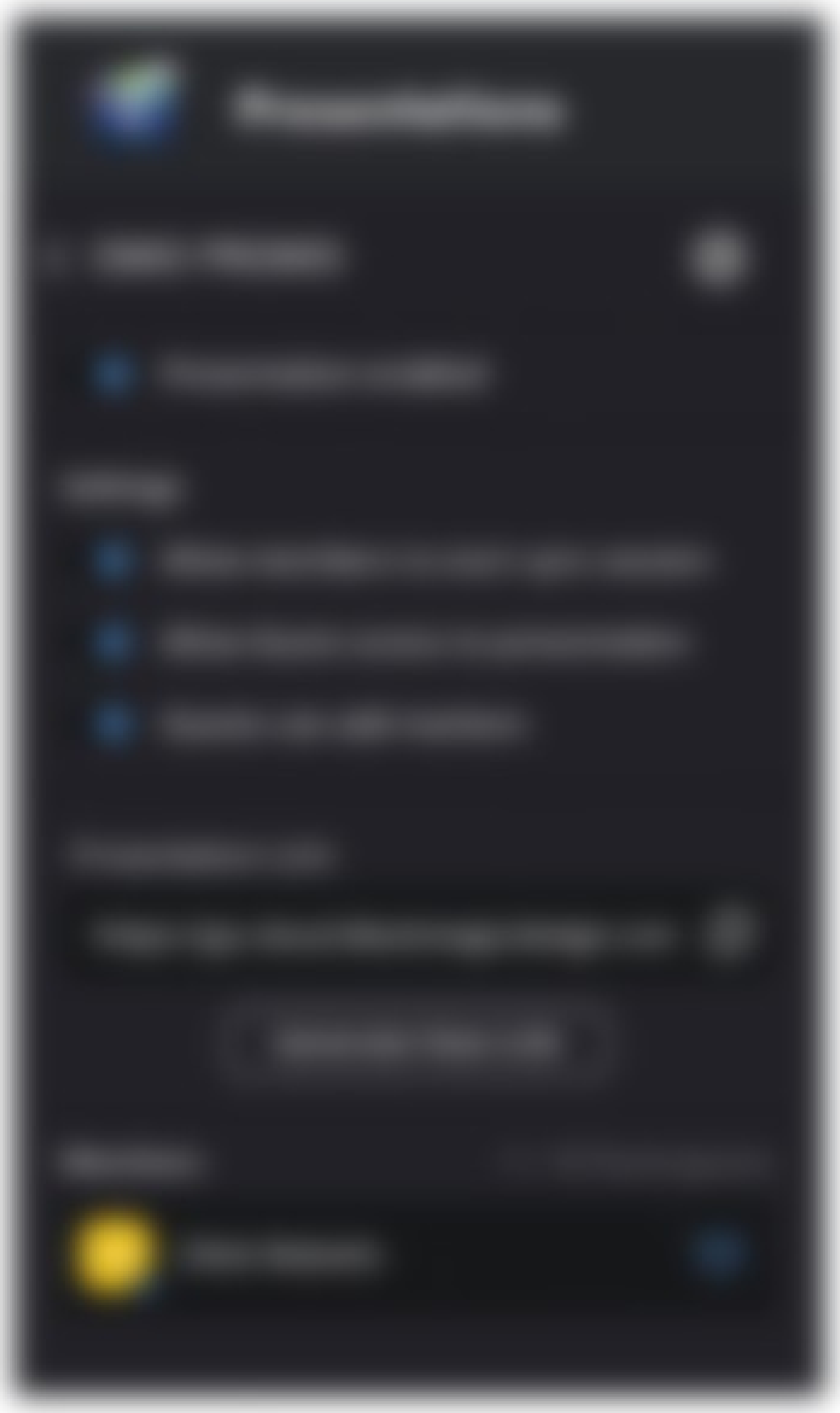


The DMO Promo presentation is added to the Presentations list.



- Click the [illegible] button next to your presentation.

- [illegible]



[illegible]

- [illegible]

[illegible]

[illegible]

[illegible]

- Return to DaVinci Resolve and click the Quick Export button in the top right corner of the edit page or choose File > Quick Export and select the Presentations preset.
- If necessary, sign in to your Blackmagic Account.

> **NOTE** You can sign in and out of your Blackmagic Cloud account using DaVinci Resolve > Preferences > Internet Accounts.

- In the "Upload to" menu, select the DMC Promo presentation.

- Click Export.

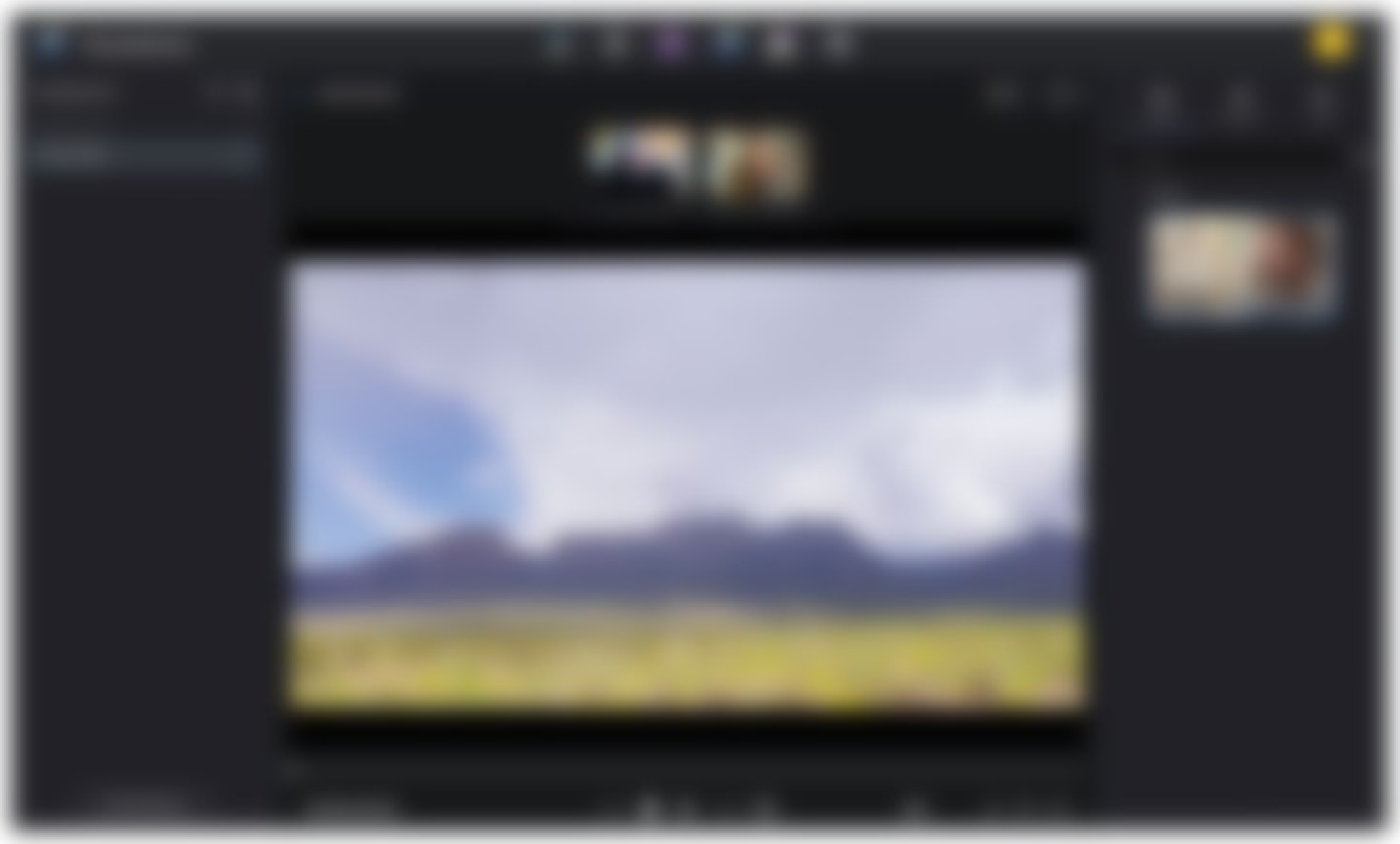
Quick Export will render the video file and then upload it directly to the specified presentation in your Blackmagic Cloud account.

Reviewing the Presentation

Once the file has been uploaded to the presentation, you and your invitees can review it and add comments.

1. Return to your web browser where you are still logged in to your Blackmagic Cloud account.

2. Click the camera and audio icons to start video and audio conferencing for anyone accessing the presentation.



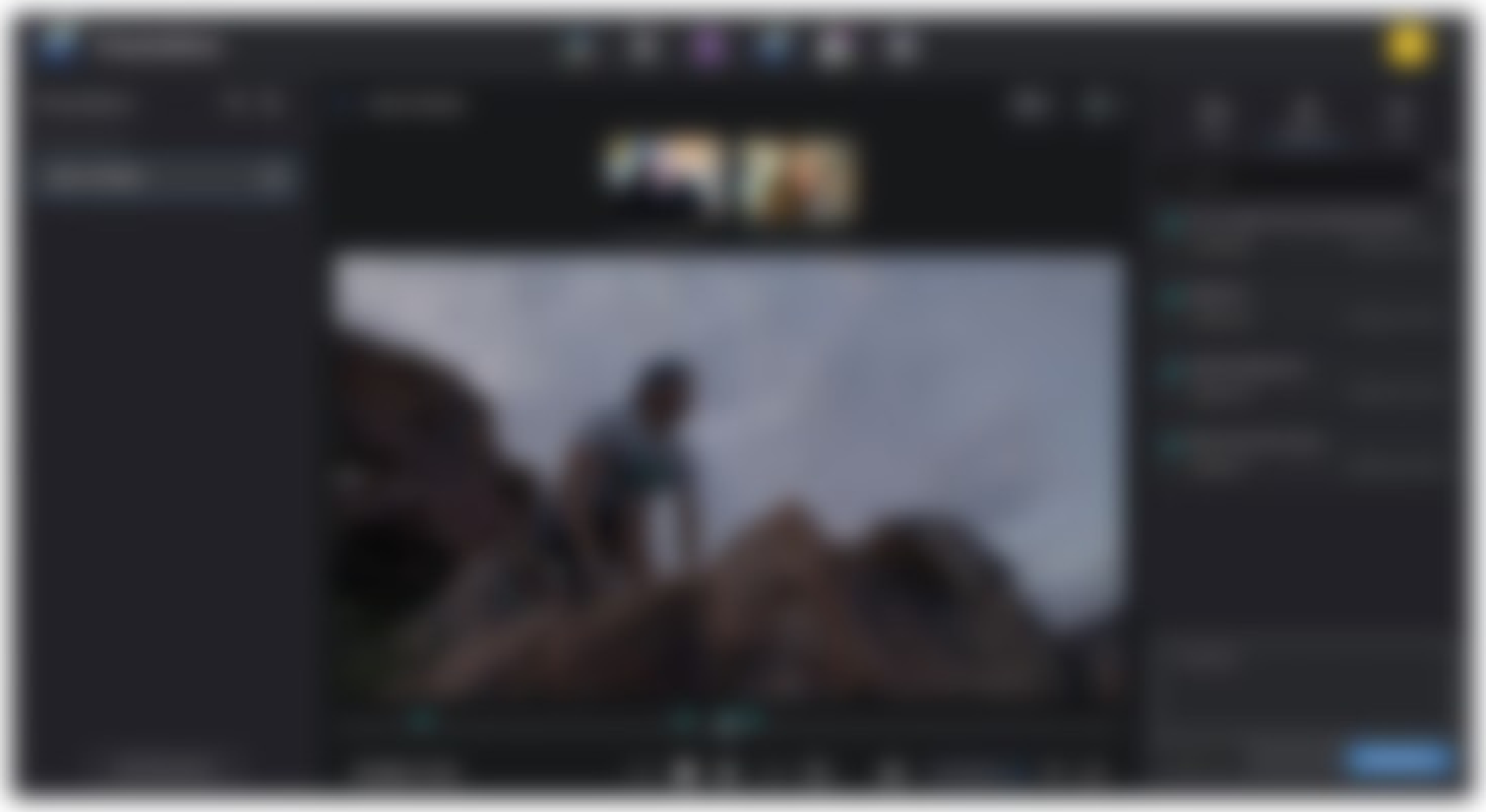
NOTE You might need to give permission for the website to access your camera and microphone through the web browser. You'll need to allow this if you want to collaborate live with other people on this and other presentations.

3. In the lower right corner of the player, click the Start Sync button so everyone's playback is synced.

NOTE The person who initiates the sync'd playback will then have sole control over the playback.

As the presentation is playing, you can leave comments as markers. These comments will then show up directly in the DaVinci Resolve timeline for easy reference and review.

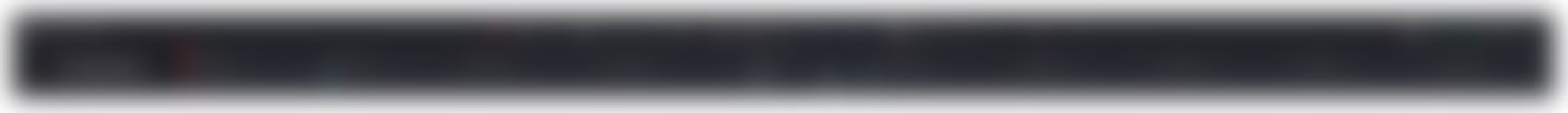
- As you review the presentation, stop playback and click the Markers option at the top of the right panel, type a comment in the Comments field, and click Add Marker.



The marker will be added to the current playhead location. The marker and its comments will appear in the markers list with a timestamp.

- Continue adding some more markers with comments to your presentation, returning to DaVinci Resolve when you have finished.

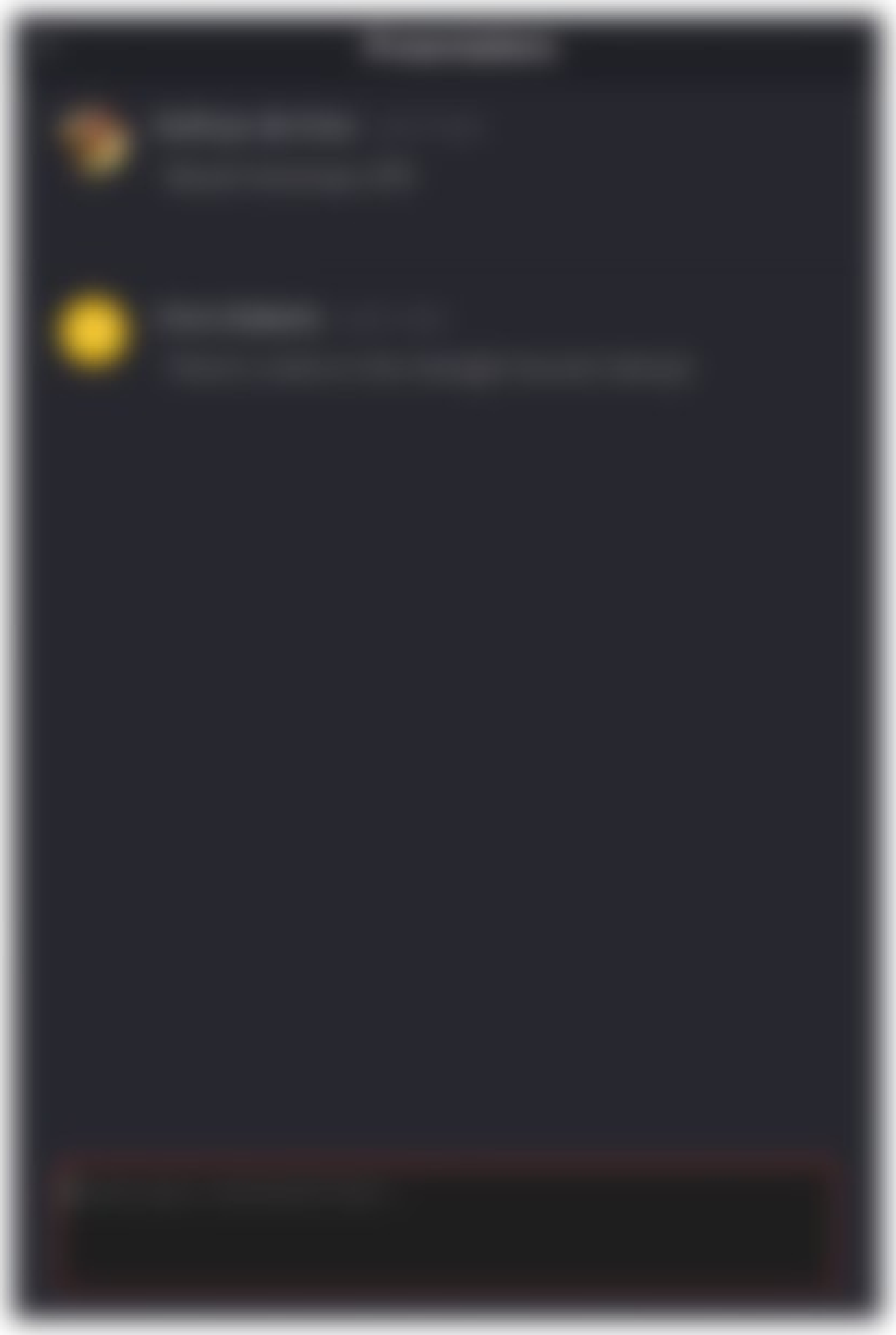
In the timeline, you will see that a series of circular markers have appeared.



Each of these markers has been added to the presentation and has appeared here automatically as part of your project, with different members assigned different colors. This makes Blackmagic Cloud's Presentation feature a wonderful tool for collaboration and feedback.

These markers can be adjusted and, if necessary, responded to directly in the edit page.

- Double-click any timeline marker to open the Presentations comments window, where you can reply to or delete the comment as necessary.



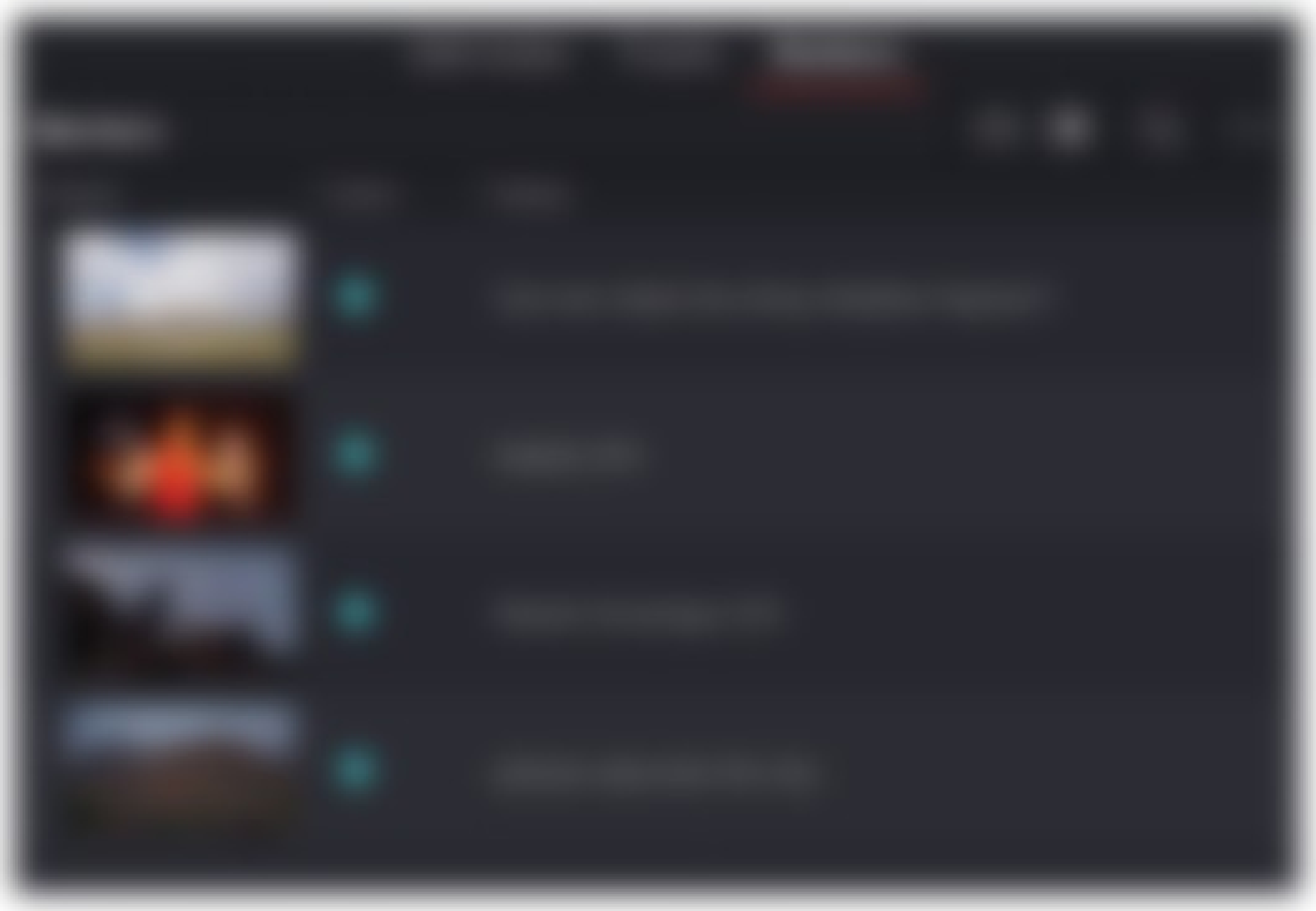
These responses will be synchronized with the list of markers in the presentation hosted on Blackmagic Cloud.

You can also review the markers using the Markers index.

- Click the Index button to open the Edit index and select the Markers panel.

A list of all the timeline markers appears, where you can filter the information being shown.

8 Right-click any of the column headings and deselect all options except Frame, Color and Notes.



9 Select the markers in the Markers panel to jump to that location on your timeline.

10 With the timeline playhead over an existing timeline marker, press M to open the marker's comments and add a reply as necessary.

> **NOTE** Presentation markers are linked to the timeline you uploaded to Blackmagic Cloud Presentations and will retain their relationship with the timeline (including if you duplicate the timeline) unless they are deleted.

Congratulations! Over these first two lessons, you have successfully put together a short yet complex promo using the editing toolset available to you in DaVinci Resolve's edit page. Hopefully, these lessons have given you some insights into how these tools function and how you can start to use them in your own work. You will return to this project in later lessons to finesse the edit even further. In the meantime, over the next few lessons, you will look at other editing techniques you can employ on different sorts of projects.

Lesson Review

1. Which timeline mode(s) allow you to trim the start or end of a clip in the timeline?
   a. Selection mode
   b. Trim Edit mode
   c. Blade Edit mode
2. Which timeline mode(s) allow you to slip a clip in the timeline?
   a. Selection mode
   b. Trim Edit mode
   c. Blade Edit mode
3. True or false? The Replace edit uses the position of the timeline and source viewer playheads but always ignores In and Out points in the timeline.
4. Which features can be used to allow someone to review your edit remotely?
   a. Video Clean Feed
   b. Remote Monitoring
   c. Blackmagic Cloud Presentations
5. Where do you sign in to supported video sharing services to upload your video automatically?
   a. Quick Export window
   b. Sharing tab in the Inspector
   c. Internet Accounts in System Preferences

Answers

1. a) and b). Selection mode and Trim Edit mode can be used to trim the start or end of a clip in the timeline.
2. b). Trim Edit mode allows you to slip a clip in the timeline by adjusting the In and Out points of the clip at the same time.
3. False. The Replace edit will use In and Out points in the timeline to limit the amount replaced but will always ignore any In or Out points in the source viewer.
4. b) and c). Remote Monitoring and Blackmagic Cloud Presentations can be used to allow remote review of an edit. Video Clean Feed outputs the current video to a separate computer monitor attached to your system.
5. a) and c). You sign in to supported video sharing services using the Quick Export window or the Internet Accounts section of the System Preferences.

Lesson 3

Cutting a Dramatic Scene

Editing a dramatic scene is often done by establishing the location and cutting between shots as they would play out in real time. Commonly known as continuity editing, this technique is centered on cutting between two or more shots, alternating back and forth between each character as their dialogue, reactions, and the overall scene warrant. In this lesson, you'll apply these techniques to a simple scripted scene. You'll start with one of the most firmly established conventions in cinema – the shot reverse shot – and see how the editing and trimming tools in DaVinci Resolve can speed up this classic editing style.

Time

This lesson takes approximately 75 minutes to complete.

Goals

Working with Separate Takes [illegible]
Blocking Out the Dialogue [illegible]
Adding the Reverse Shots [illegible]
Using Ripple Overwrite for Alternate Takes [illegible]
Using Match Frame [illegible]
Editing the Pickups [illegible]
Using the Take Selector [illegible]
Refining the Rough Cut [illegible]
Creating Split Edits Using Extend Edit [illegible]
Dynamic Trimming [illegible]
Lesson Review [illegible]

In this lesson, you'll edit part of a scene from the film [illegible], written and directed by [illegible]. This is the scene when the film's main protagonist, Harper Hudson, is brought in front of Vice Principal Garcia to answer for her misdemeanors. The scene features [illegible] as Harper Hudson, [illegible] as Vice Principal Garcia, [illegible] as Principal [illegible], and [illegible] as Officer Wilcox.

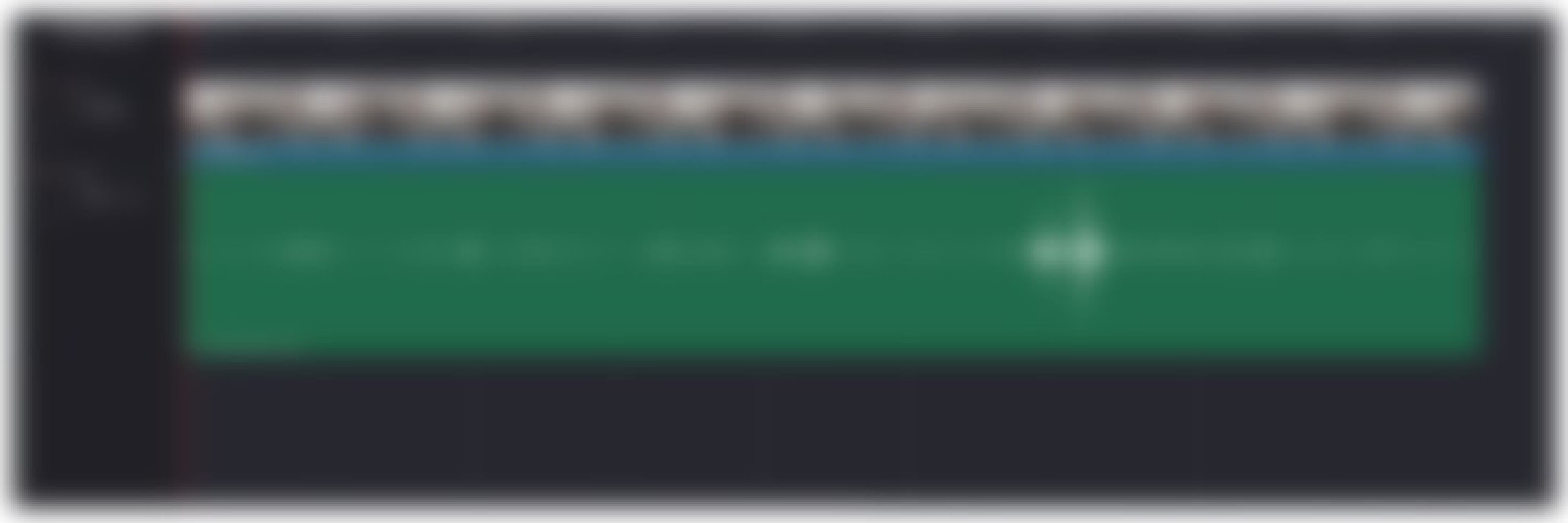
Working with Separate Takes

Although a project like this is often scripted, rehearsed, and shot under controlled conditions, many creative choices will need to be made when editing.

Watching each take and choosing the parts that feature the best performances is often the most time-consuming part of your entire editing process. Still, it is also a critical step in becoming familiar with the available content and identifying which shots and performances might or might not work. Often, you might need to work with different parts of different takes to get the best performances overall.

You'll start by importing the project for this lesson and relinking the necessary media files.

1. Open DaVinci Resolve and, in the Project Manager, click the Import button.
2. Navigate to [illegible] Editors Guide > Lesson 05, select the [illegible] project file, and click Open.
3. Once the project has been imported, double-click to open it and, if necessary, select the edit page.
4. In the media pool, click the Relink Media button and relink the media files.
5. Choose Workspace > Reset UI Layout.
6. In the timeline, click the Full Extent Zoom button and resize the tracks to see the entire timeline comfortably.

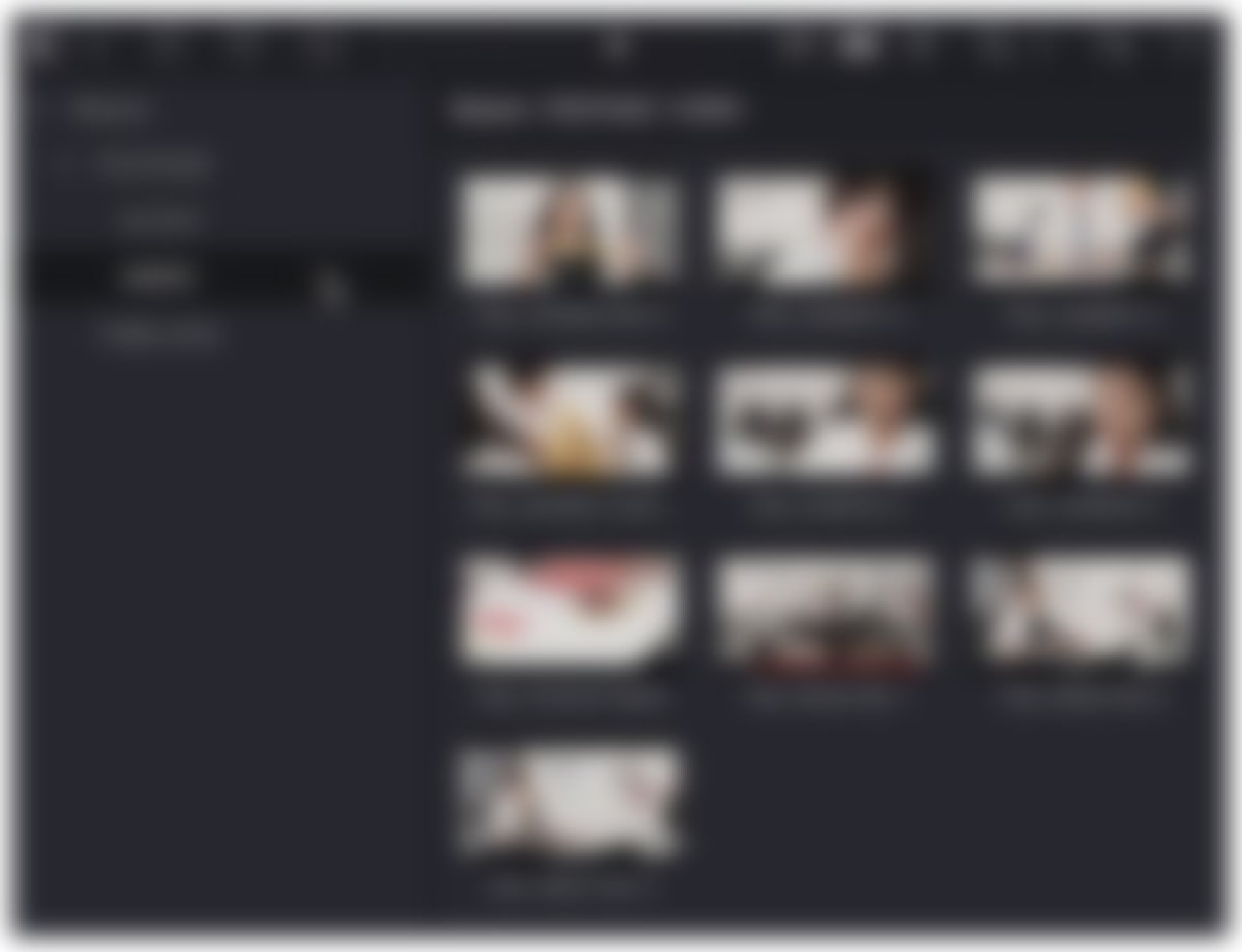


There is currently only one clip in the timeline. This clip is a wide shot of the scene you will edit. Instead of a printed script or storyboards you will use this clip as a reference or master shot to understand how the scene plays out, when each character has spoken lines, and when action might occur that isn't necessarily obvious in some closer shots.

- Return the playhead to the start of the timeline and play through the entire clip to review the scene.

It may seem strange watching the scene play out so far away from the camera, but you should be able to get a sense of the interaction between each character, if not the specific details of each line. You should also notice that Principal Hartman moves around to different sides of the desk throughout the scene.

- In the media pool, open the VIDEO bin to review the footage available to you for the scene.



You'll see that you have a plethora of material to choose from, although this represents only a portion of the material that was shot for this scene.

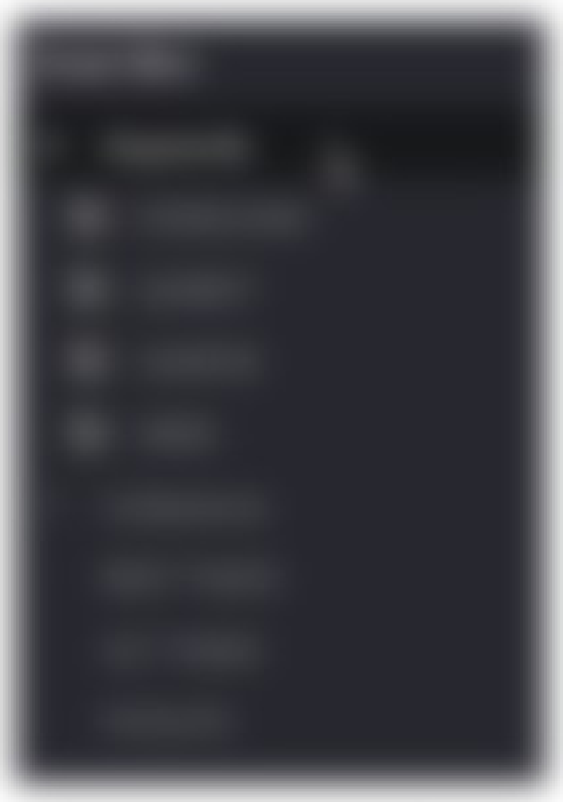
Although this scene may appear to have been shot across multiple cameras, it is not a multicamera shoot. Instead, the scene was shot using a single camera – a typical filming technique that requires the scene to be run multiple times and filmed from different camera angles. The takes from these different camera angles are then edited together seamlessly, provided that continuity between the different takes is maintained, of course. Shooting a single camera is a cost-effective method of production since it requires the minimum amount of crew and equipment, but it requires much more time on set since each scene must be shot multiple times from all the different angles required by the director and with a careful eye on ensuring that there is correct continuity between each shot and take (for example, were Hassan's arms resting on the table or not in all the previous takes?). Similarly, the edit must be pieced together carefully, and because each angle and take is highly unlikely to have exactly the same pacing, multicamera editing techniques would not be appropriate.

NOTE You'll learn more about how to edit multicamera productions in Lesson 6, "Multicamera Editing."

You are more than welcome to review each of the takes made available to you for this scene. You can then decide how each shot can be used to provide the best coverage of the scene. However, to make things a little easier, the Edit Assistant Fairies have been at it again and have already created a few smart bins you may find useful.

NOTE You will learn how to create your own smart bins in Lesson 5, "Project Organization."

9 In the Smart Bins list, open the Keywords to reveal several keyword smart bins for the three main characters, Harper, Vice Principal [illegible], and Principal [illegible], along with another smart bin for different takes of the scene in wide shots.



There are three custom smart bins as well.

10 Select the BEST TAKES smart bin, which contains all the main coverage of the scene that the director would prefer you to use.

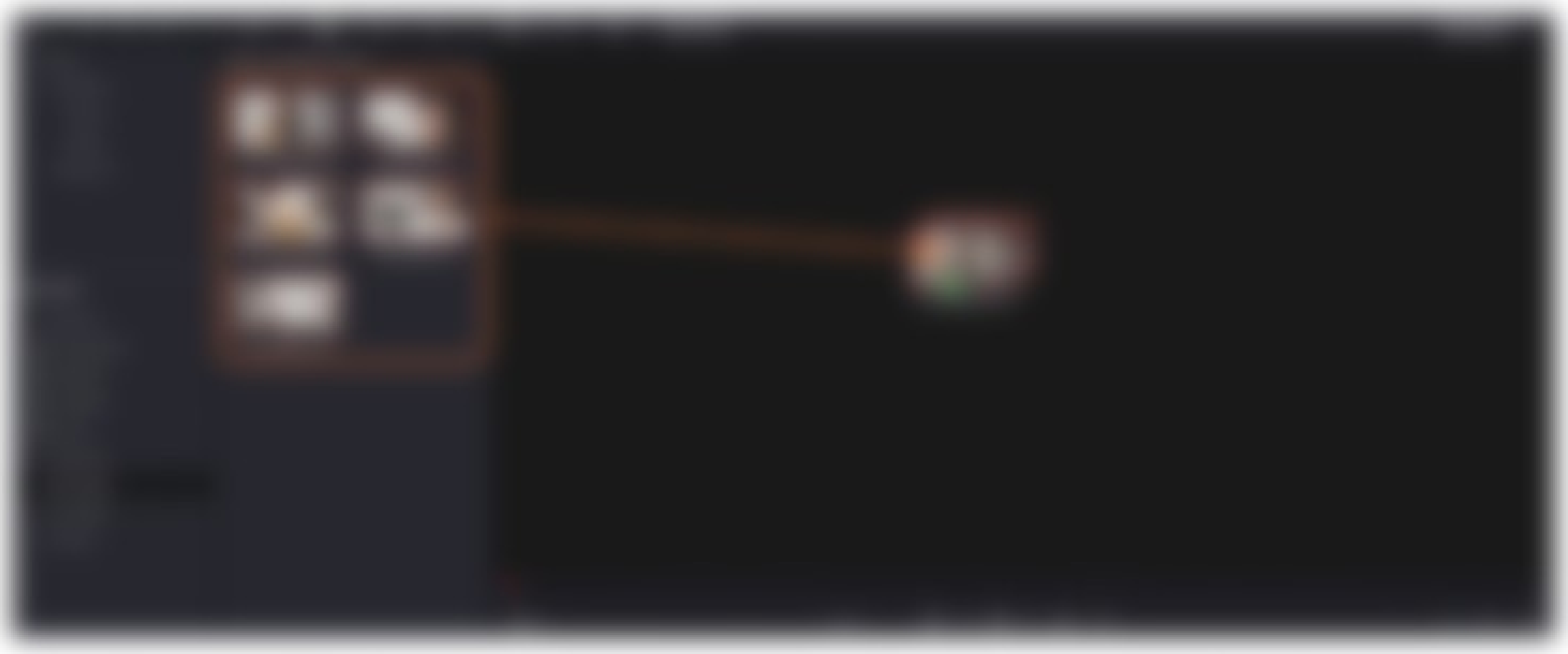
11 Select the ALT TAKES smart bin, which contains alternative takes of the scene that you may need if the preferred take doesn't work as intended.

Now that you're more familiar with the material you have to work with, it's time to start editing the scene together to bring the director's vision alive. Remember, the more familiar you are with the footage, the better you will be able to assess how each take will cut together and the more creative your choices are likely to be.

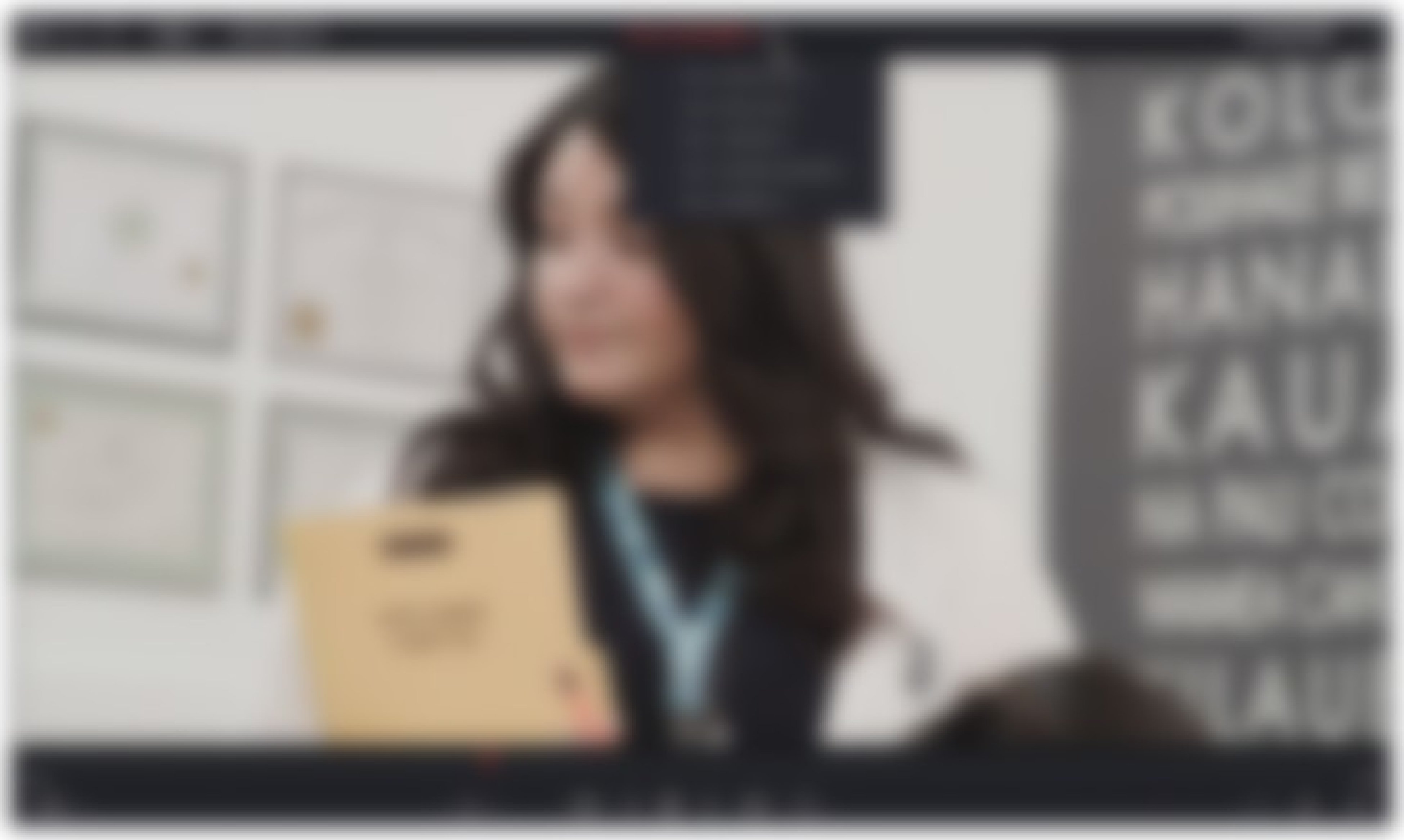
Blocking Out the Dialogue

As with the Organ Mountain Outfitters project you worked on in the previous lessons, the best place to start editing this scene is by concentrating on laying out the dialogue. This way, you can quickly create a rough cut that you can refine later. This process is made easier thanks to an editing function that is unique to DaVinci Resolve.

1. In the media pool, select the BEST TAKES smart bin.
2. Select all five clips and drag them into the source viewer.

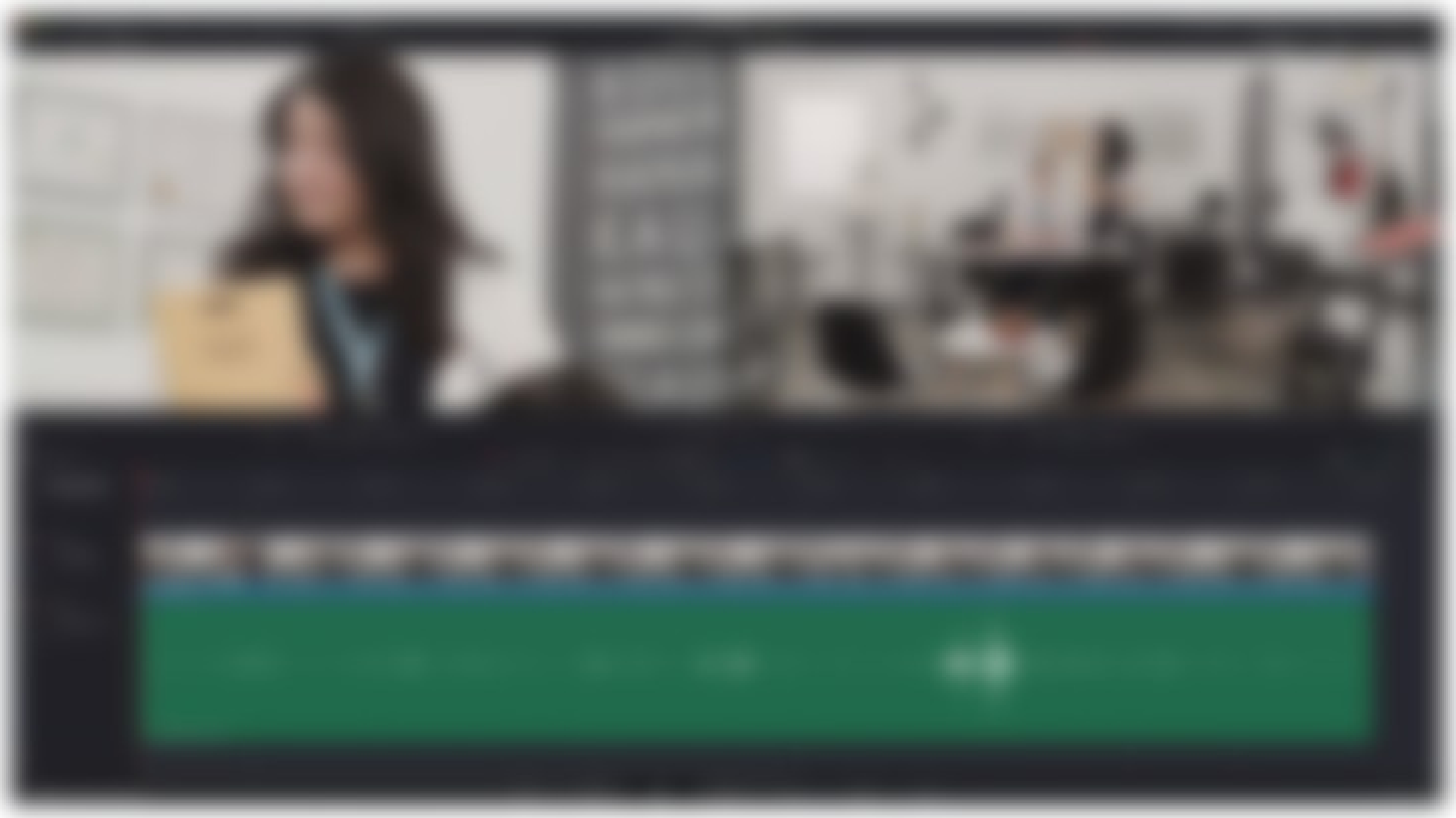


By dragging these clips into the source viewer simultaneously, you have "pre-loaded" the viewer and can now easily access each of the clips using the source viewer's Recent Clips dropdown menu, at the top of the viewer.

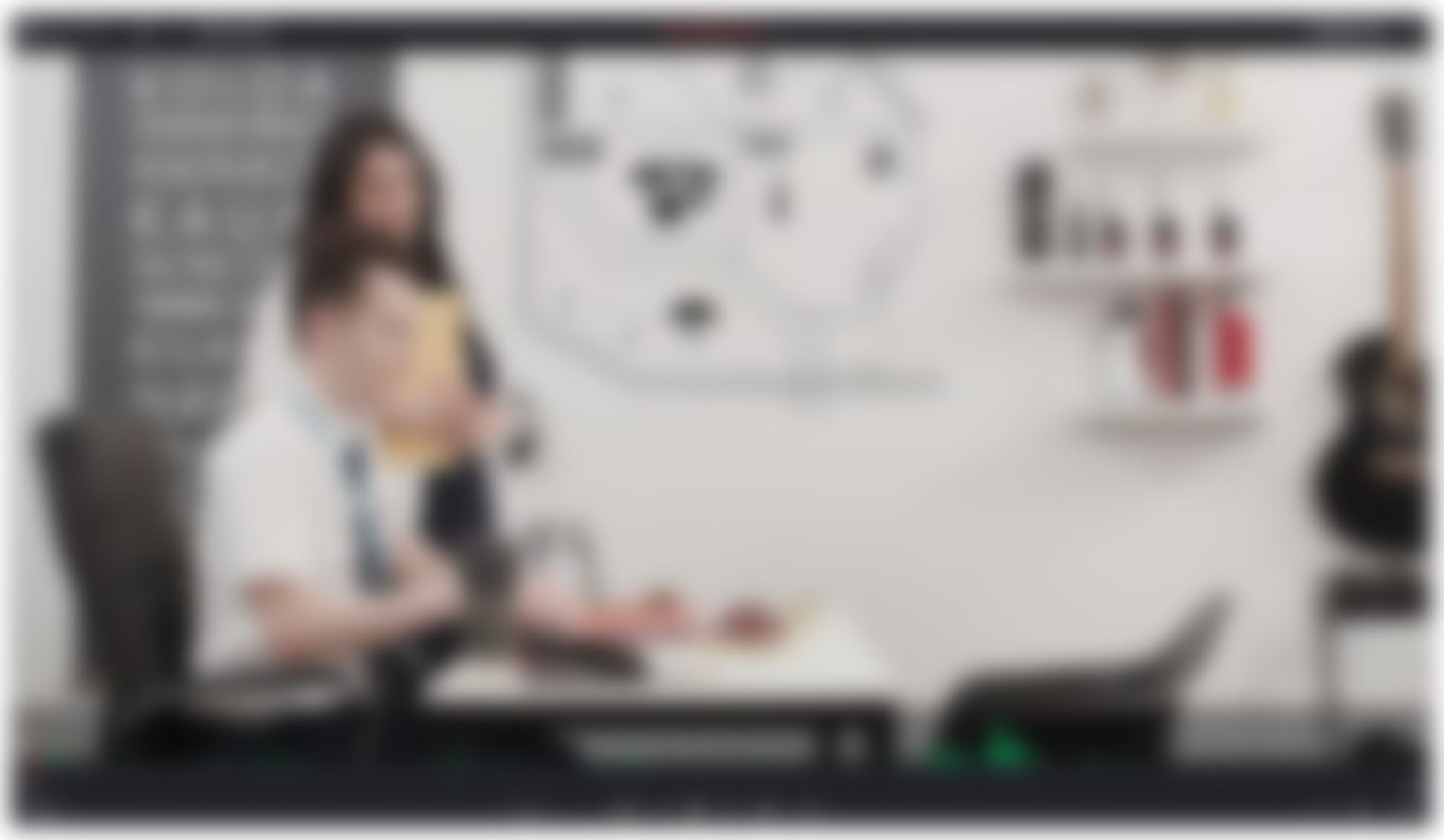


This menu provides an easy way to quickly switch between the last 10 clips you have opened in the source viewer without returning to the media pool.

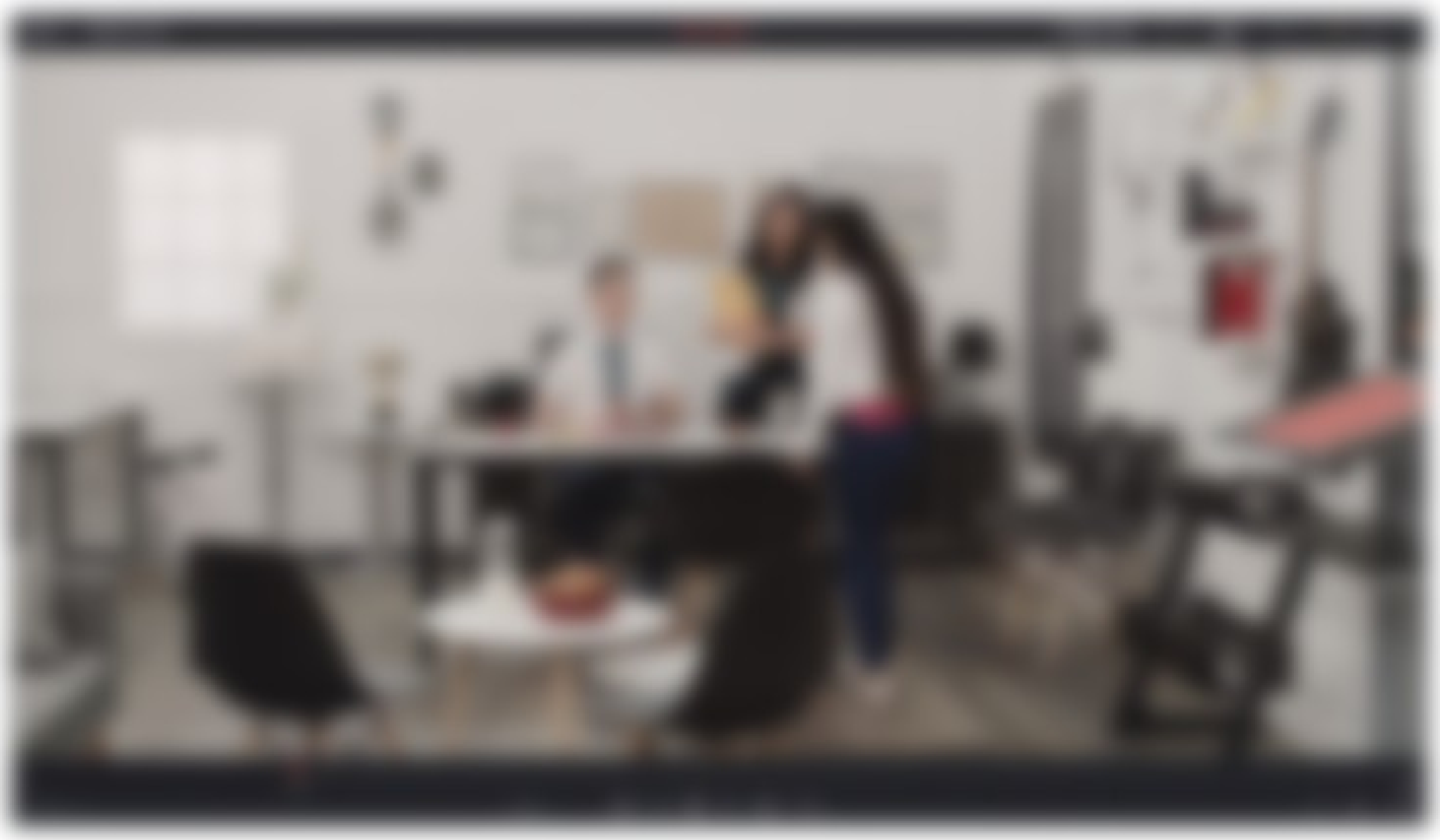
- Click the Media Pool button to close the media pool, allowing you the space to concentrate entirely on the source and timeline viewers.



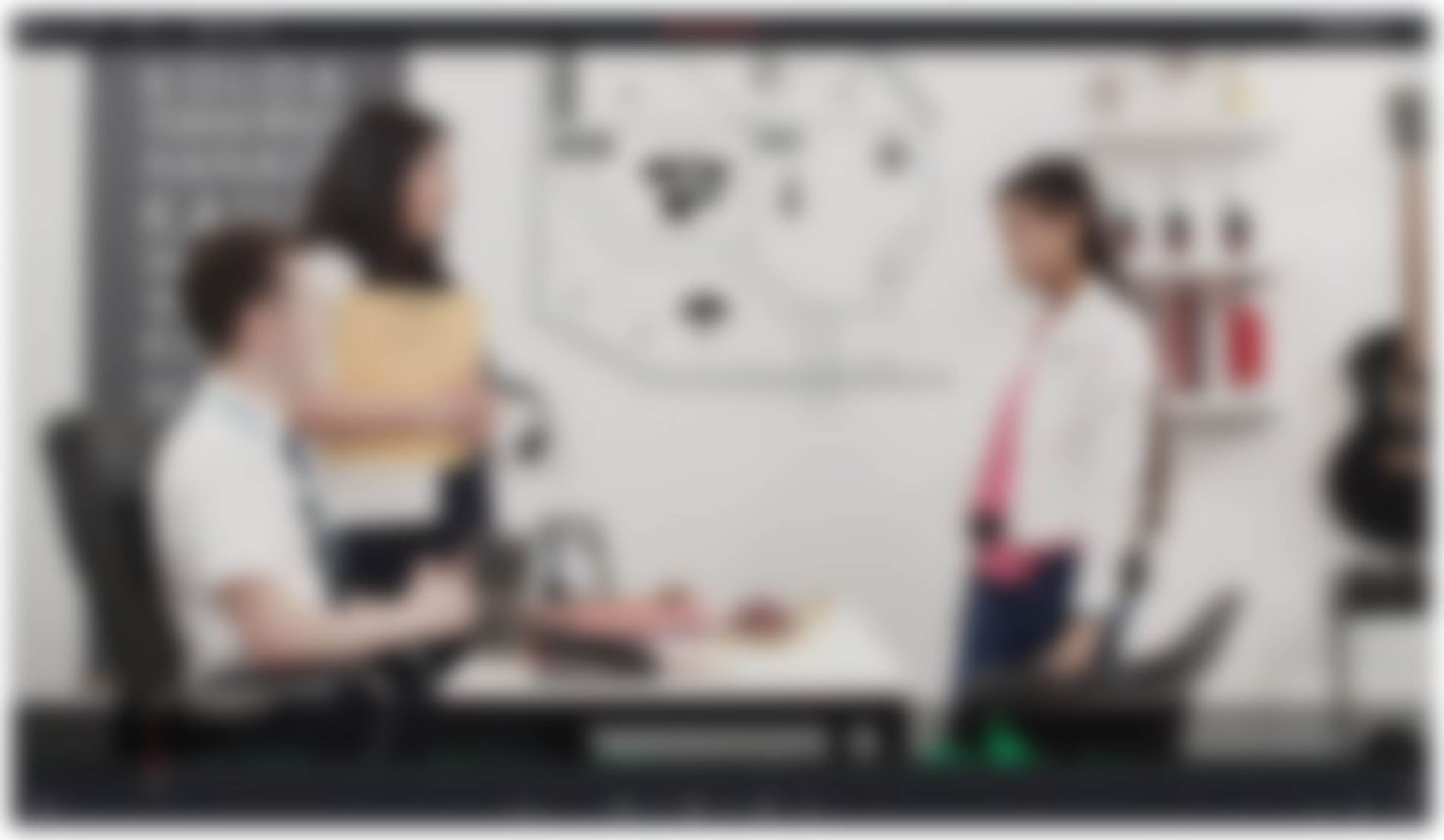
- From the source viewer's Recent Clips menu, select the clip [illegible].
- In the source viewer's Options (...) menu, select Show Audio Waveforms in Source Clip to help you identify where the dialogue starts and stops.



- Press Q to switch to the timeline and, if necessary, press Home (or Fn-Left Arrow if you are working on a laptop) to return the playhead to the start of the timeline.
- Play the timeline and add an In point as Harper is about to sit in the chair.



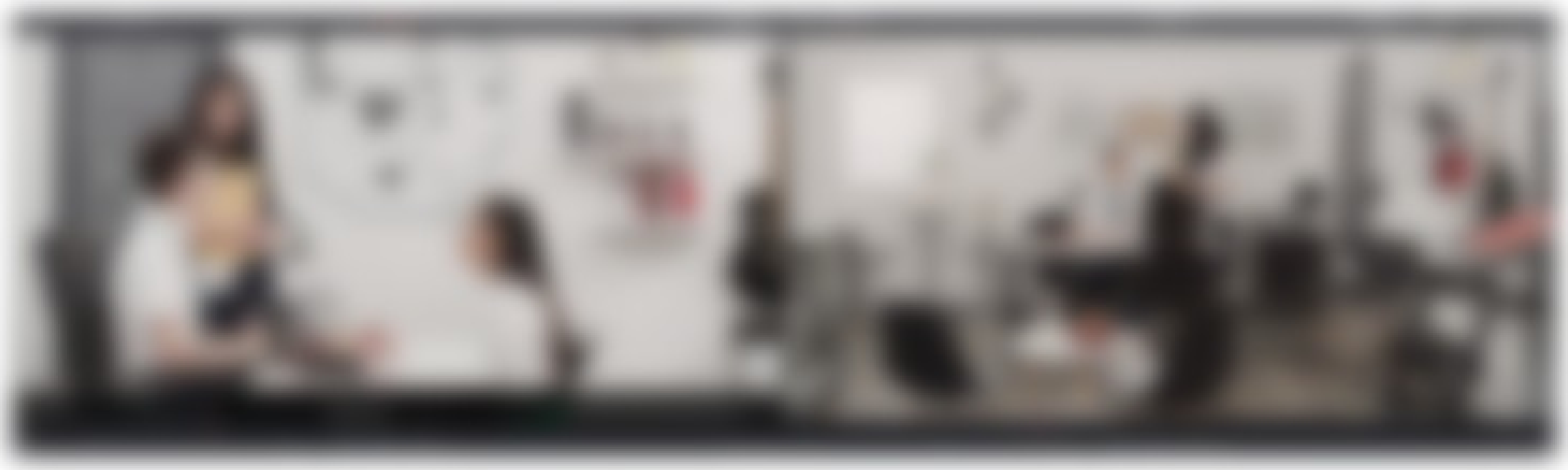
- Press Q to switch to the source viewer, and press Home (or Fn-Left Arrow on a laptop) to return to the start of this clip. Play back the clip until you find a similar point in the action when Harper is about to sit, and add an In point.



- Press Q to switch back to the timeline, continue playing, and add an Out point after Principal [illegible] refers to their Principal [illegible], just before he exits.

- Press Q again to return to the source viewer and continue playing until you reach the same point where [illegible] refers to [illegible], and add an Out point.

Hold on — You have now managed to add a total of four points: In and Out points in the timeline and additional In and Out points in the source viewer. A quick check in the duration fields in both viewers also reveals that, while the In and Out points were set places: there is a subtle but significant difference in their durations: around 12 seconds in the timeline and around 14 seconds in the source.

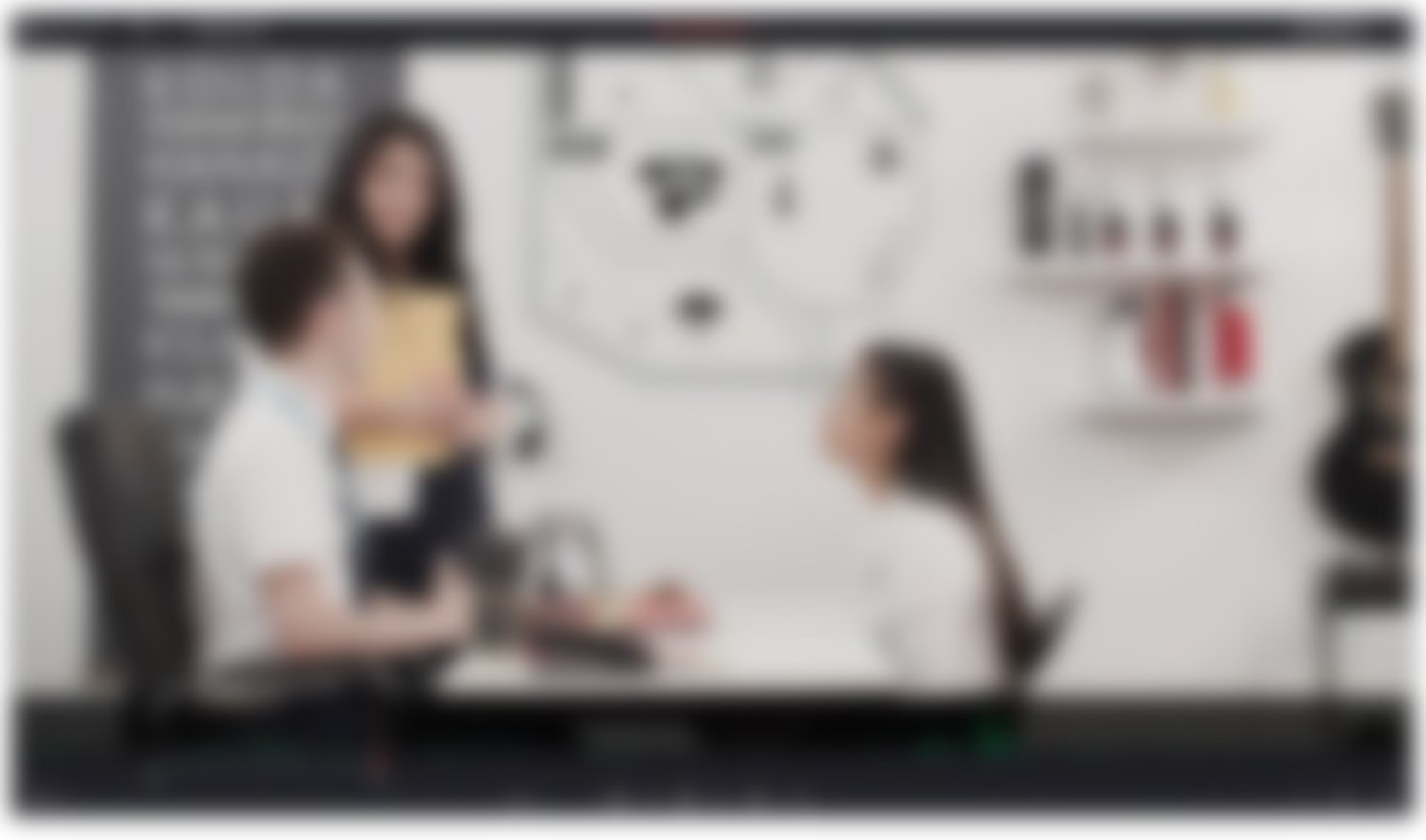


NOTE Obviously, your results will differ from those illustrated here, depending on where you placed your specific In and Out points. However, don't try to replicate these durations precisely. Instead, concentrate on making your choices based on the footage in front of you.

By now, you should be aware of the rules governing three-point editing. But you might be wondering what happens when you have a situation like this.

The answer is simple. If you have a total of four points (two In points and two Out points) and make a standard three-point edit, such as Overwrite or Place on Top, then Resolve will honor the shorter of the two durations. In the preceding case, this is the duration set in the timeline. To verify this, you can use the preview marks you used in Lesson 1.

- Choose View > Show Preview Marks.



The blue preview mark to indicate the last frame of the shorter duration appears on the source viewer (or the timeline viewer if you have set a shorter duration in the source viewer).

- Make an Overwrite edit to add the clip to the timeline and review the edit you've just made.

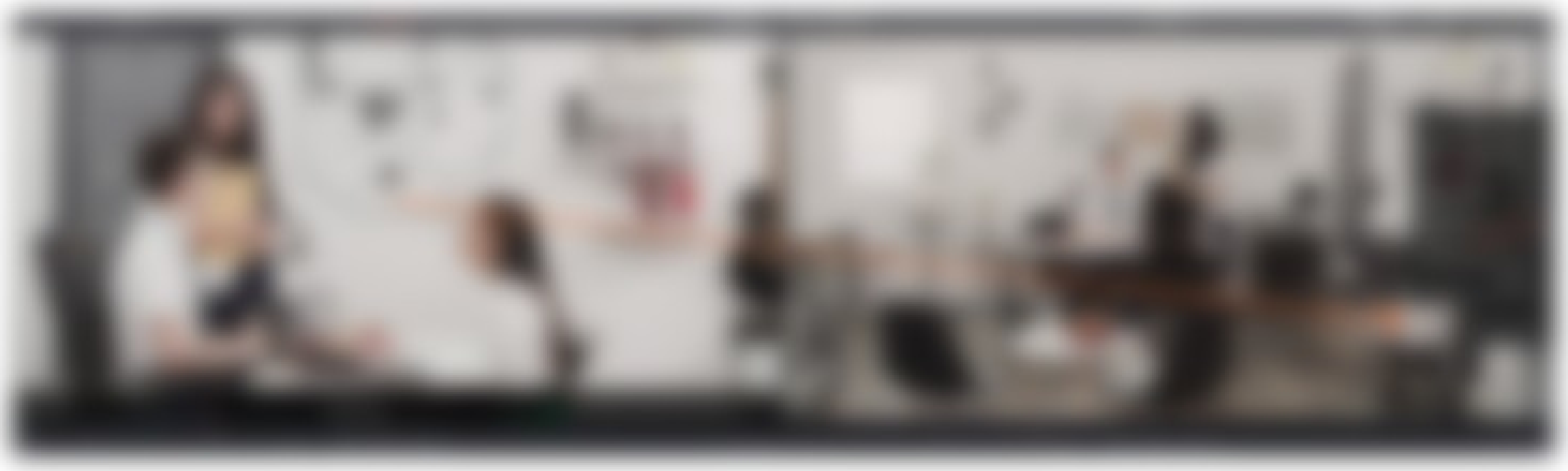
  You can probably see that you've lost the last line from Principal Darnbourn. All is not lost, of course, because you can always switch to Trim Edit mode and trim the end of the newly added clip out to recover the missing footage. However, that means there are several more steps you need to apply before you can move on to the next edit.

  Fortunately, Resolve has a specific editing function that's designed for this exact situation: Ripple Overwrite.

- Choose Edit > Undo or press Command-Z (macOS) or Ctrl-Z (Windows) to undo the last step, removing the clip from the timeline and reinstating the original In and Out points you added.

- Choose View > Show Preview Marks to disable the preview marks.

- Drag the clip from the middle of the source viewer to the Ripple Overwrite option in the edit overlays in the timeline viewer.



- Review the edit you just made in the timeline.

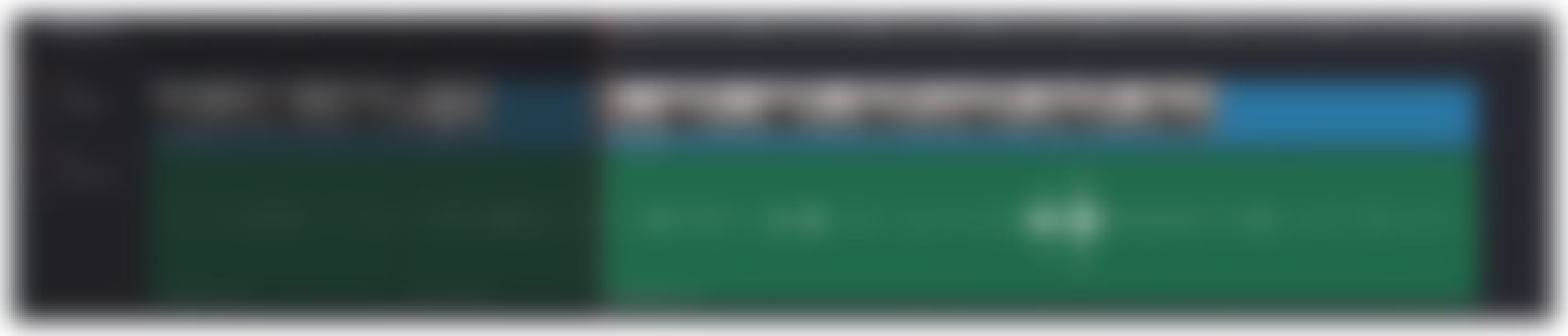
  This time, the source clip is added into the timeline using the full duration set by the In and Out points, with the two seconds that were previously ignored by the standard Overwrite function now being included.

  This is because Ripple Overwrite overwrites the marked portion of the clips in the source viewer to the marked duration in the timeline but ripples the timeline automatically in order to take account of the differences in the two durations. Hence the term "ripple overwrite." And, yes, Ripple Overwrite has used all the In and Out points you marked, which means it is a four-point edit.

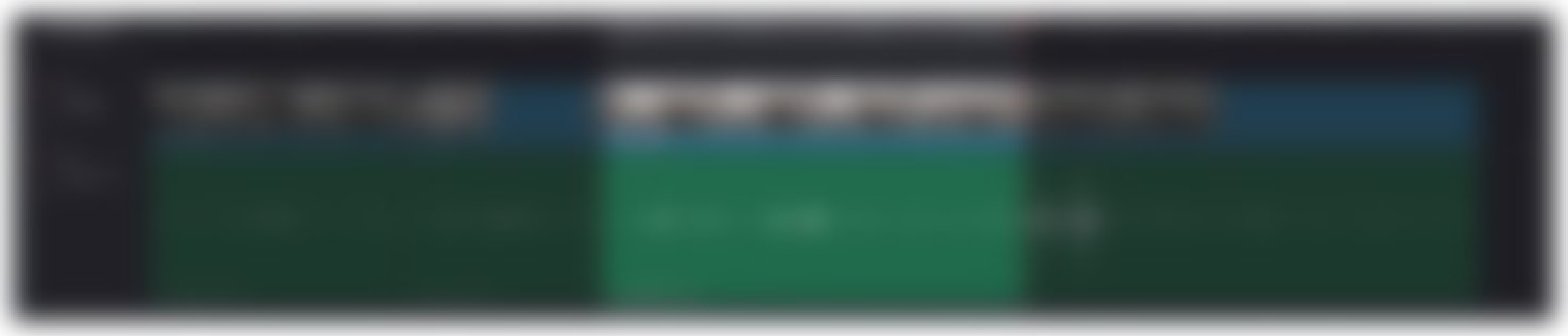
Adding the Reverse Shots

Now that you understand how the Ripple Overwrite works, you will put it to good use by continuing to block out the rough cut of this scene. You will start by adding Vice Principal Garrel's side of the conversation before intercutting Hasan's replies.

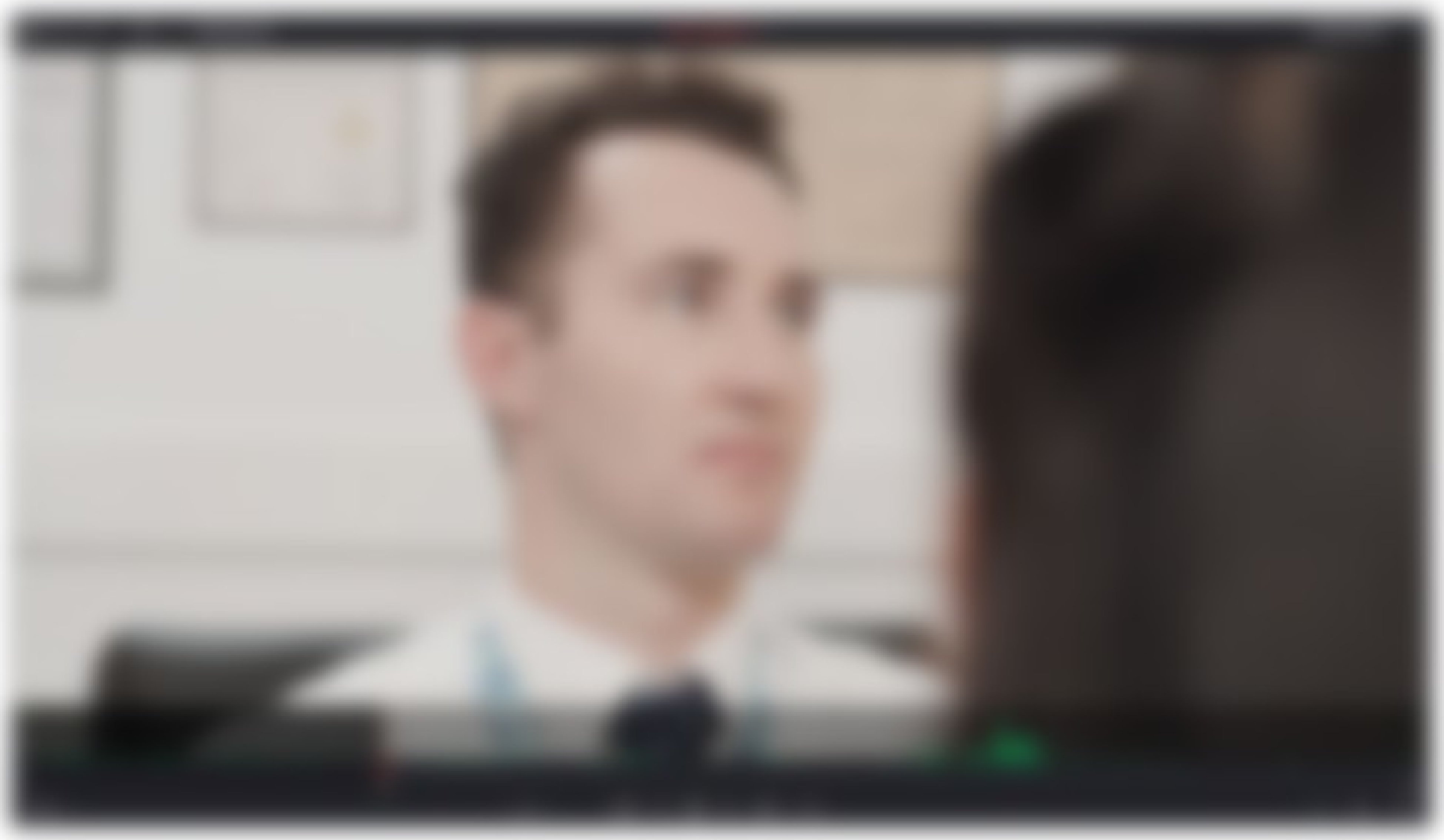
- In the timeline, place the playhead at the start of the third clip, when the cut returns to the wide "master shot," and add an In point.



- Play through the scene, taking the opportunity to refresh yourself on the conversation that occurs between Garrel and Hasan, and add an Out point just as Garrel has turned to Principal Davidson before he says, "[illegible] property."



- In the source viewer, select the recent clips list and choose the clip [illegible].
- Play the clip and set an In point just before Garrel nods after Davidson has said "Vice Principal Garrel."



- Continue to play the clip and set an Out point just as he turns to face the [illegible] (who is off camera), just before he says, "The wide school property."

- Verify the difference in durations between what is marked in the timeline and what is marked in the source; this is the difference in the timing between the two different takes.

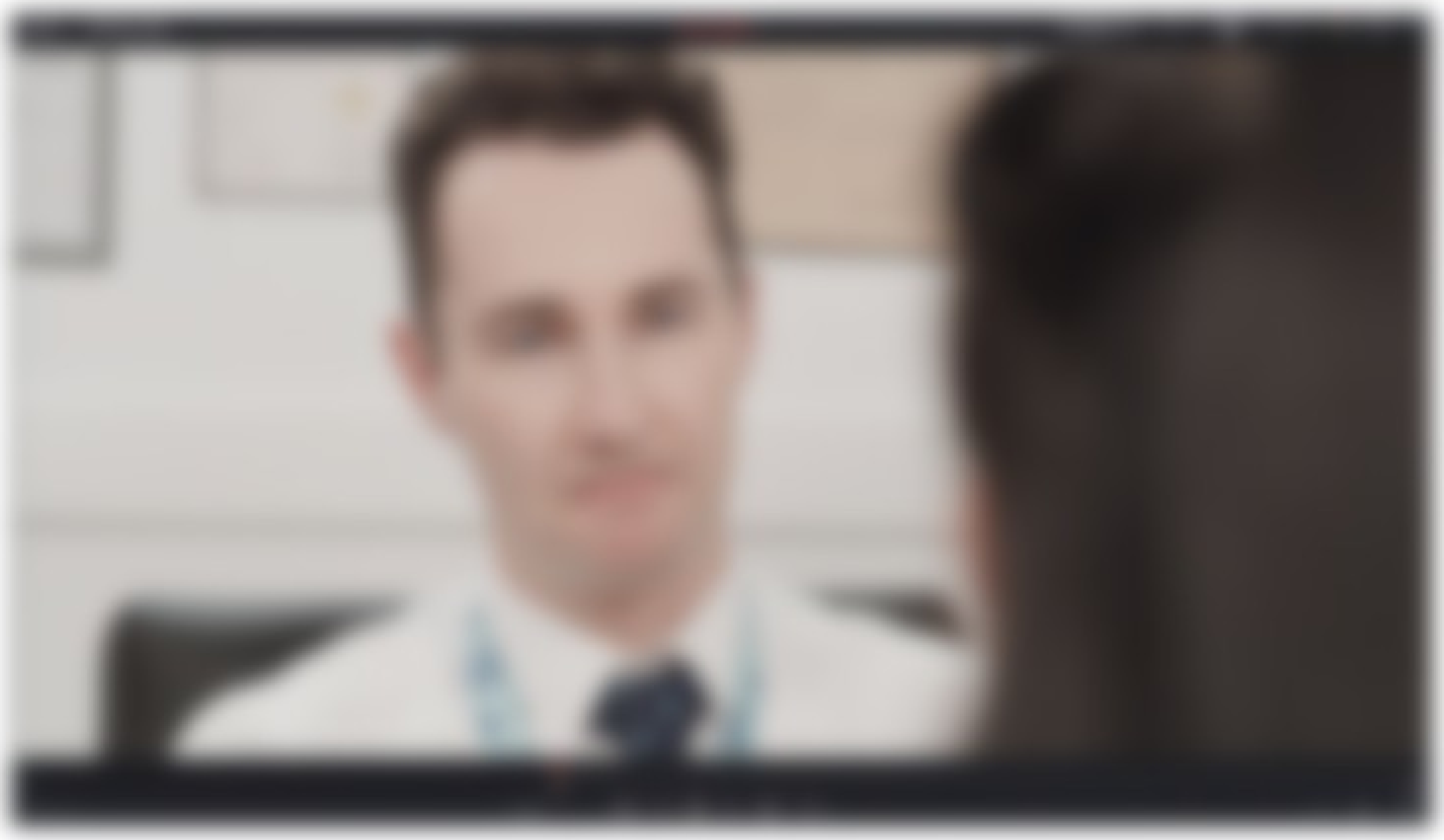
- Choose Edit > Ripple Overwrite or press Shift-F10.

  The new clip is added to the timeline, overwriting the previously existing footage while rippling the rest of the timeline to accommodate the different durations, just as before.

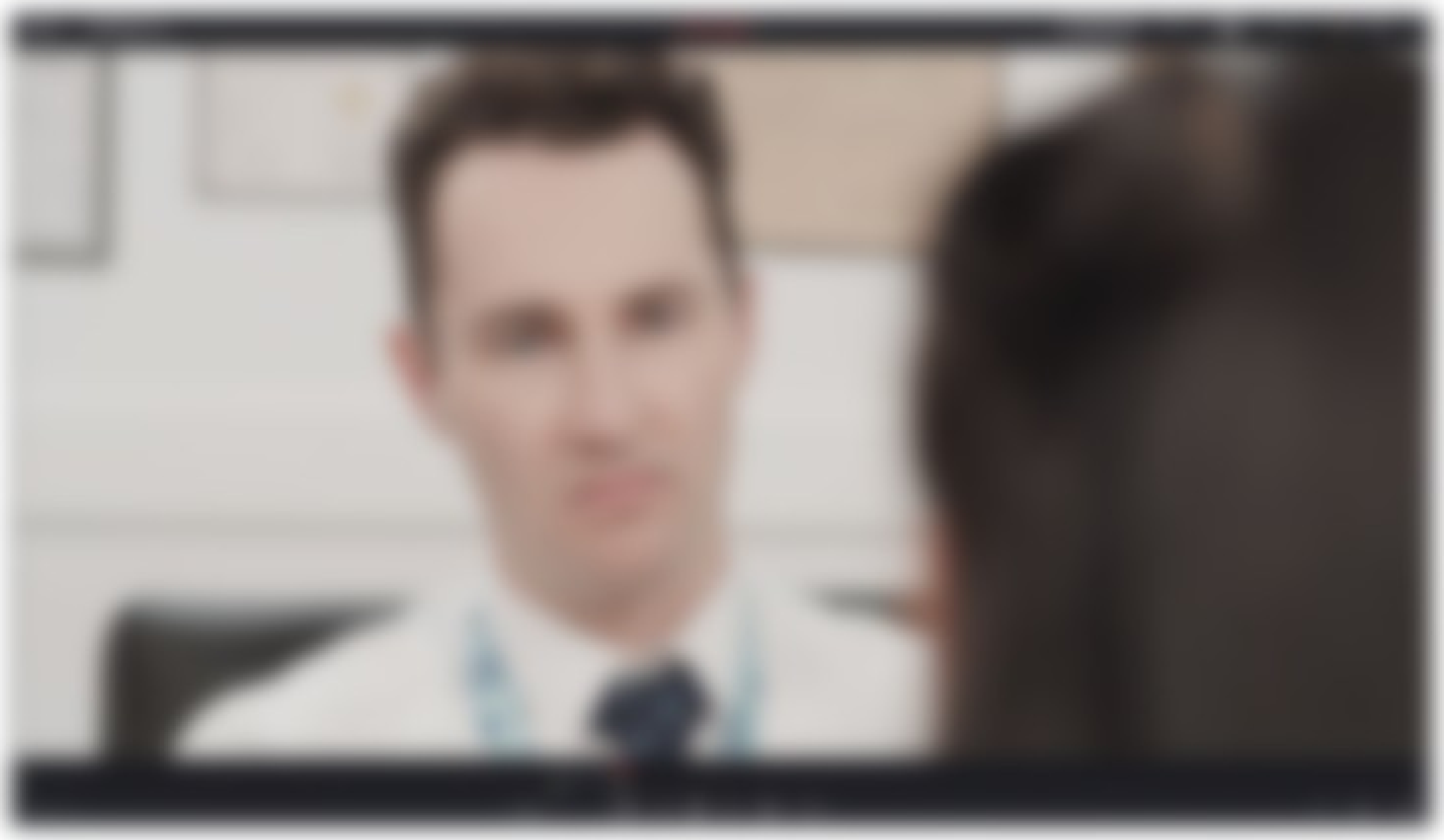
- With the timeline now active, press the Up Arrow key to jump back to the start of the new clip.

- Press / (forward slash) to review the edit. Don't worry at this stage if it's not 100% perfect; remember that this is just a rough cut you're working on!

- Once you have reviewed the edit, play the new clip in the timeline and add an In point after Garret says, "You killed the Centennial Palm Tree," but before he looks away from Harper, and Harper herself starts talking.



- Continue playing and add an Out point after Harper says, "I didn't mean to kill the tree," and before Garret blinks and looks away to the left (this look is supposed to be motivated by Principal Eisenburn as she starts walking around behind Harper).



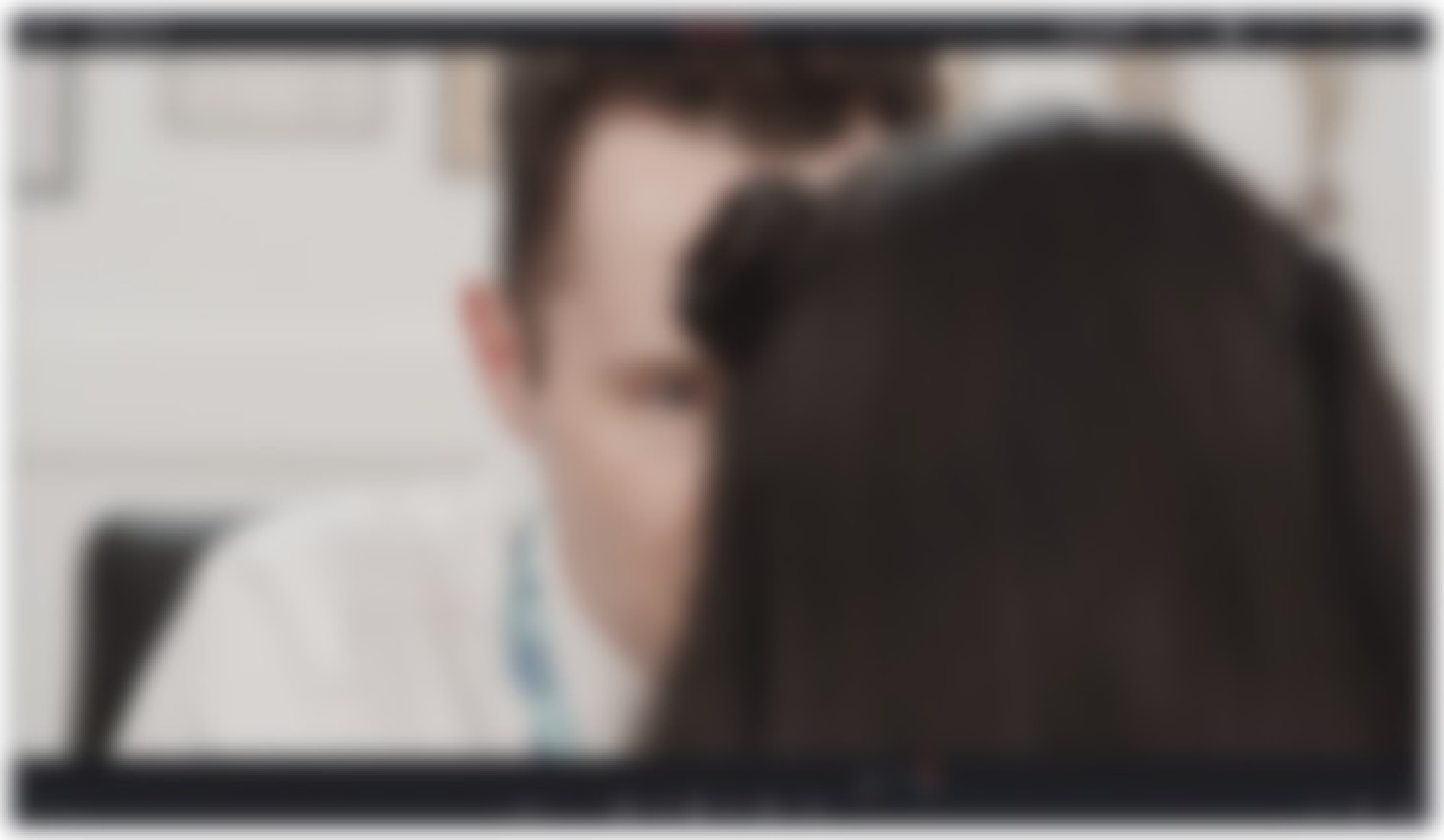
- In the source viewer, use the recent clips menu to open the clip [illegible].

- [illegible]

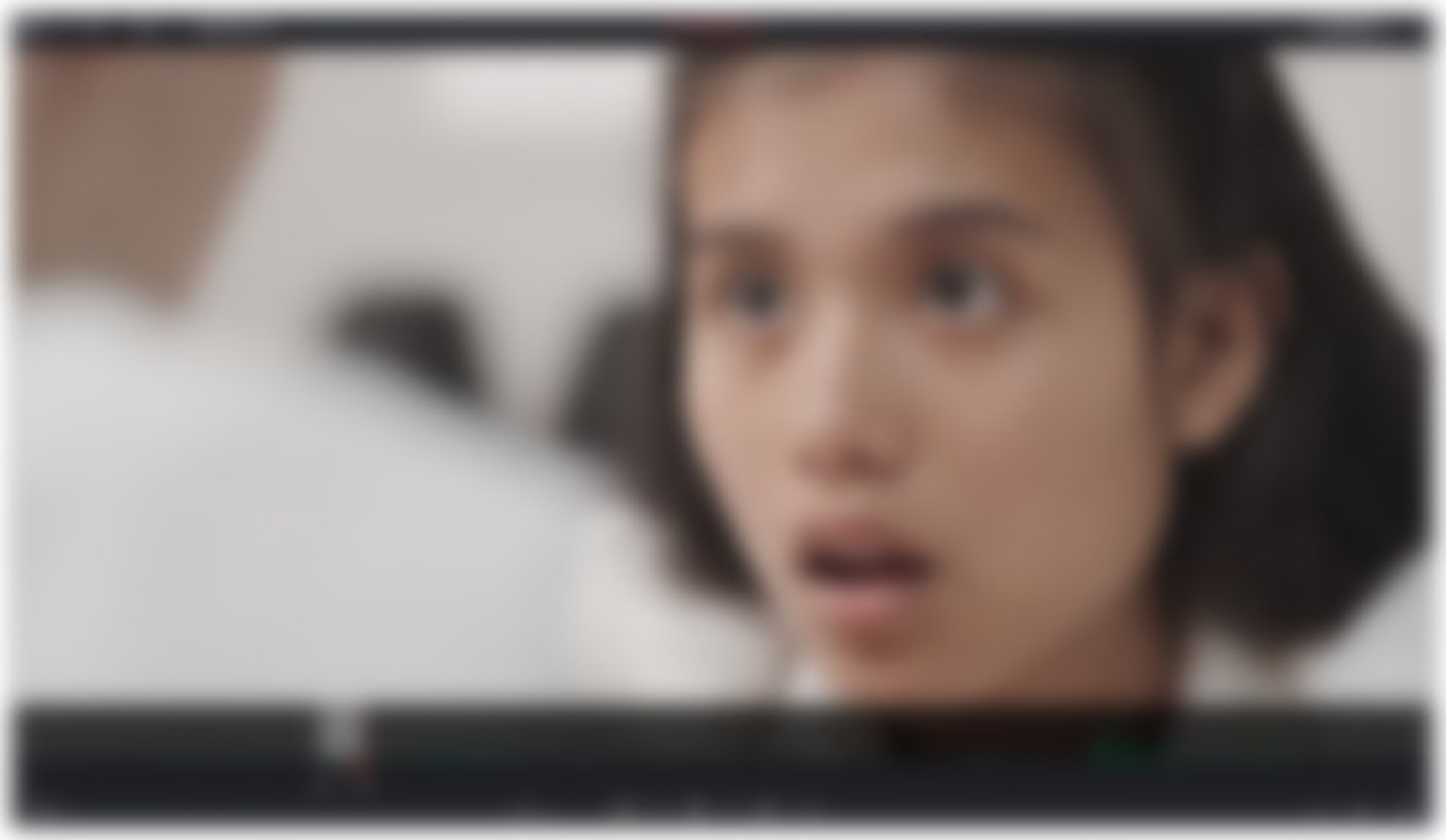
- [illegible]
- [illegible]

- [illegible]

- [illegible]
- [illegible]

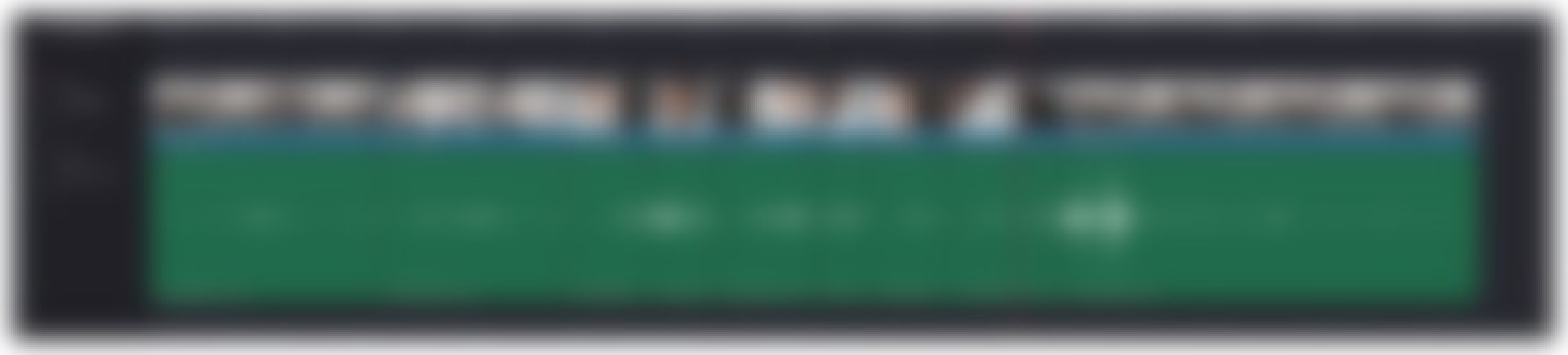


- Press Q to switch to the source viewer and set an In point as Harper starts to lean into Daniel after he says, "It's the Lieutenant Palm Tree," and an Out point after she whispers, "Do they even live that long?"



- Make a Ripple Overwrite edit.

  With the last clip in place, you can review the edit as it currently stands.



- Return the playhead to the start of the timeline and play through to review your editing so far.

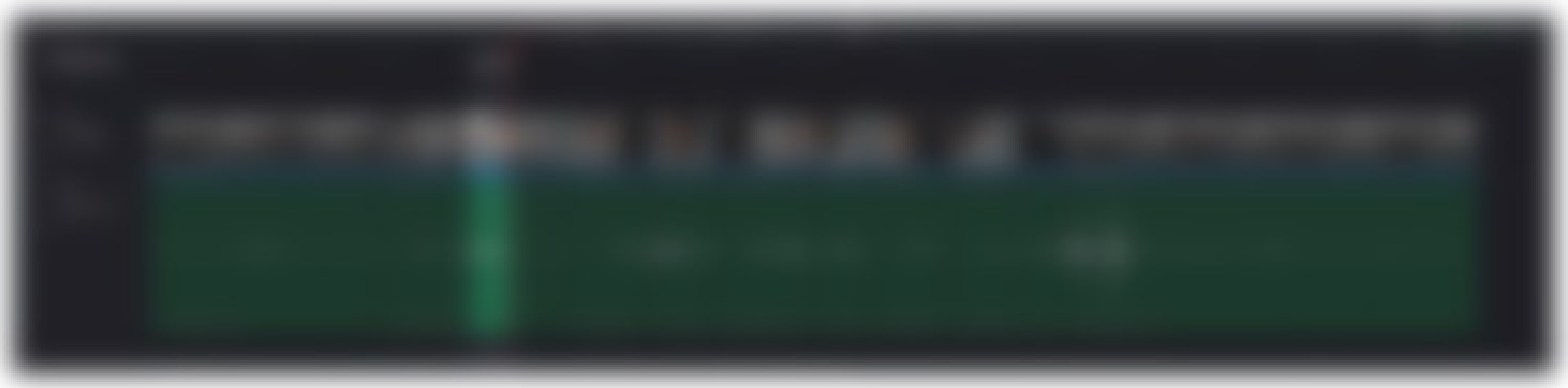
Hopefully, you can see the power of the Ripple Overwrite edit. Without it, you would have had to make adjustments to each edit, which would have taken far longer to complete the rough cut.

> **NOTE** If you need to catch up before moving to the next step, open the media pool, select the Timelines bin, choose File > Import > Timeline, navigate to the Editors Guide > Lesson 03 > Timelines, and select [illegible] and click Open.

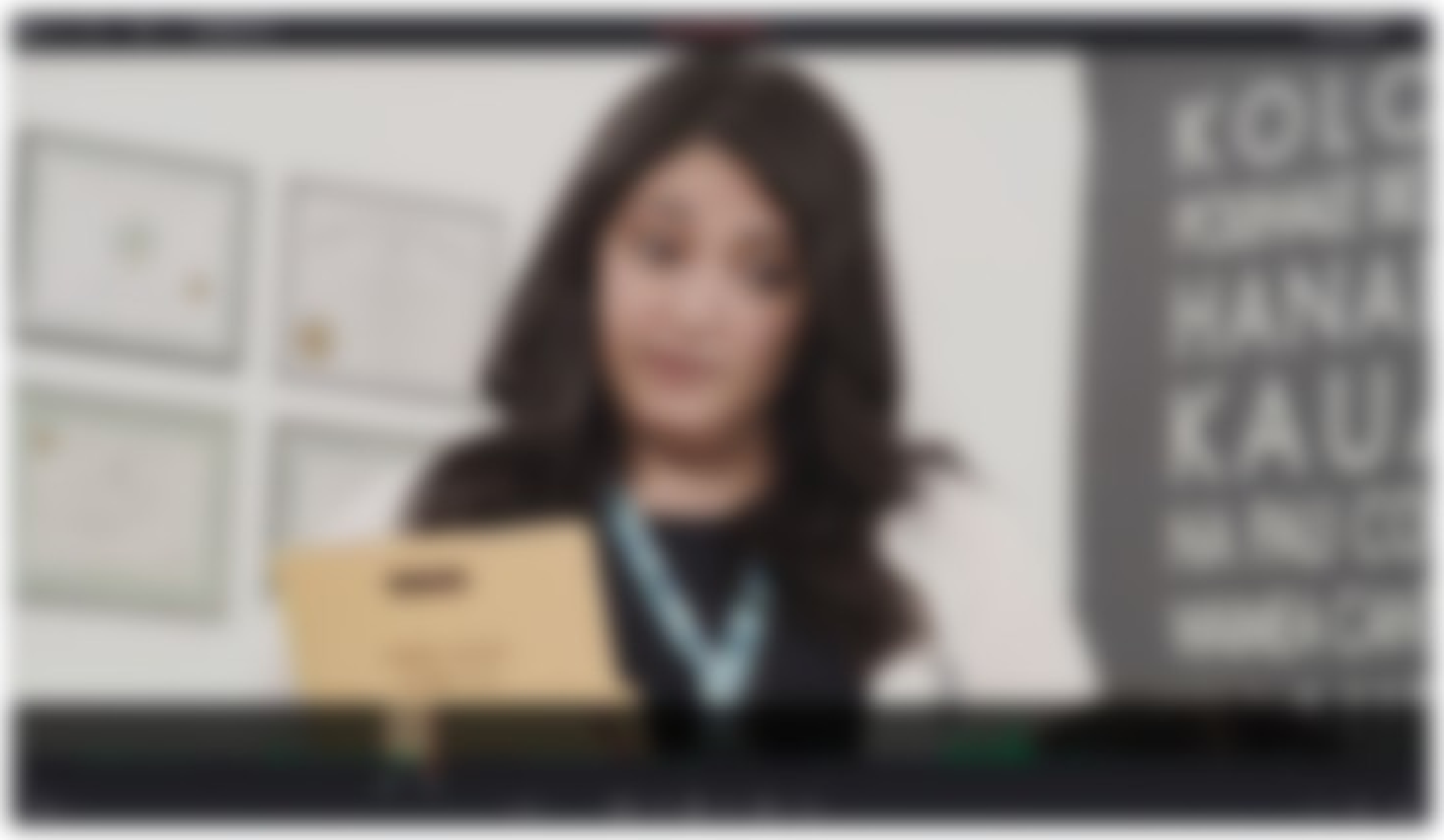
Using Ripple Overwrite for Alternate Takes

The rough cut of this scene is looking fairly accomplished already. However, you know by now that this is generally the easy part of the editing process. Now that you have the main building blocks of the scene in place, it's time to get into the details of the footage that's available to you.

1. Play the second clip in the timeline, **[illegible]**, and add In and Out points around Principal [illegible] line: "You do understand that you're here for a disciplinary meeting?"



2. In the source viewer, select the clip **[illegible]** from the recent clips menu, and mark the same line of dialogue: "You do understand that you're here for a disciplinary meeting?"

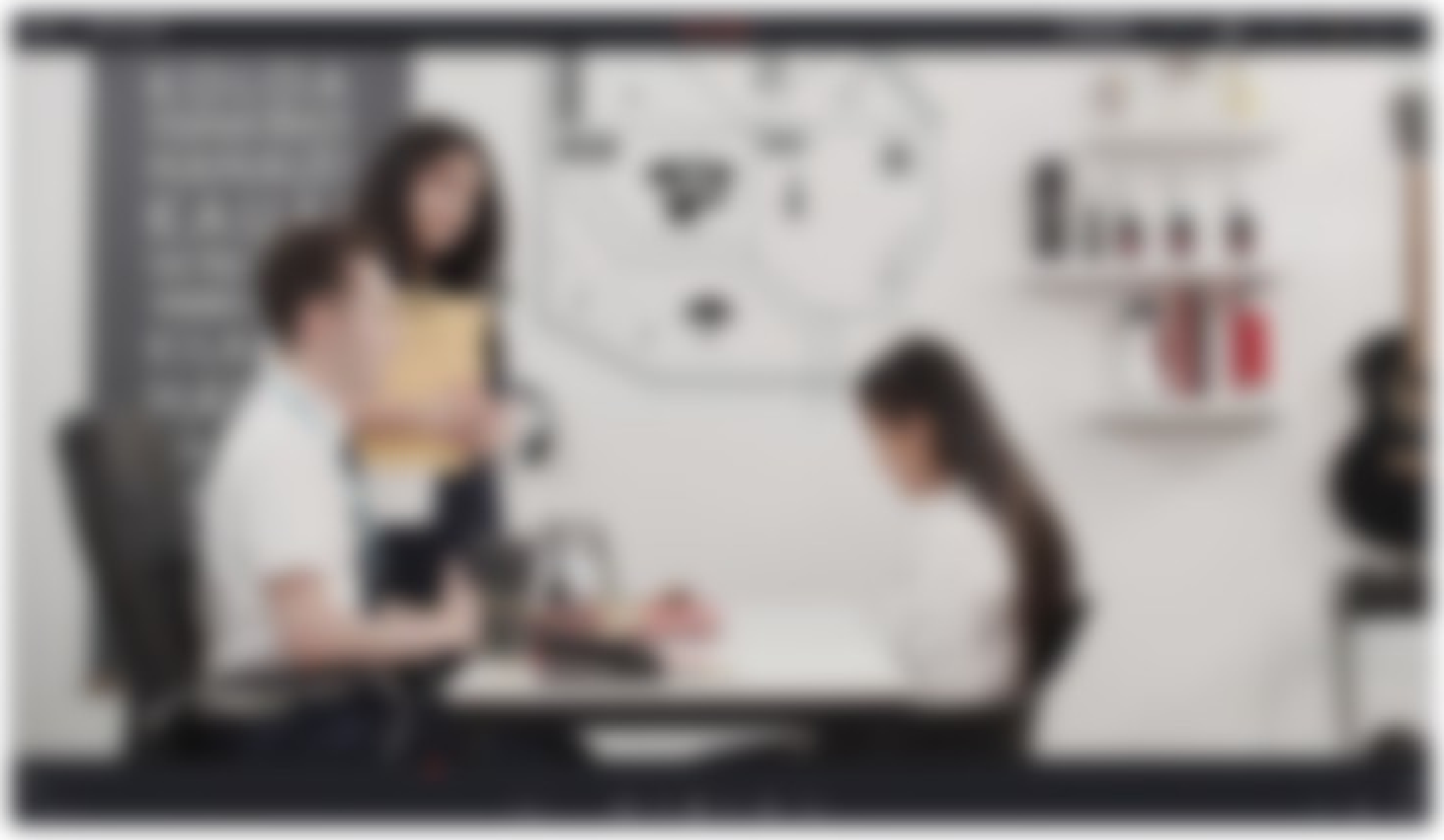


3. Perform a Ripple Overwrite edit.

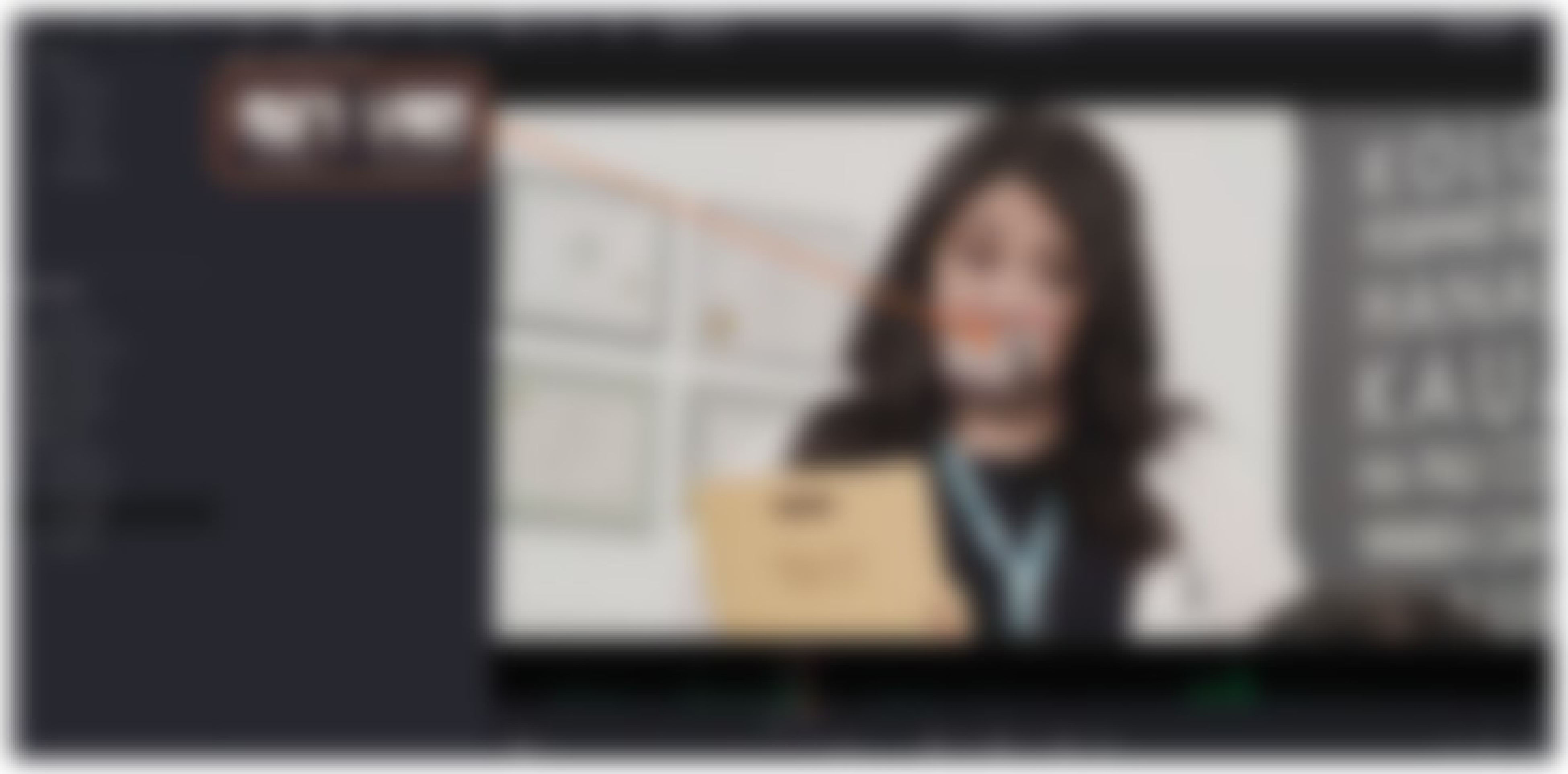
- Review the edit, playing the next clip in the timeline as well, where Harper responds to Principal [illegible].

  Hmmm… It's probably not the best delivery from the young actress playing Harper, and the flow of the [illegible] doesn't help matters either. It's time to look for an alternative take.

- In the timeline, place the playhead anywhere over the fourth clip, where Harper says, "Yes, Principal [illegible]."



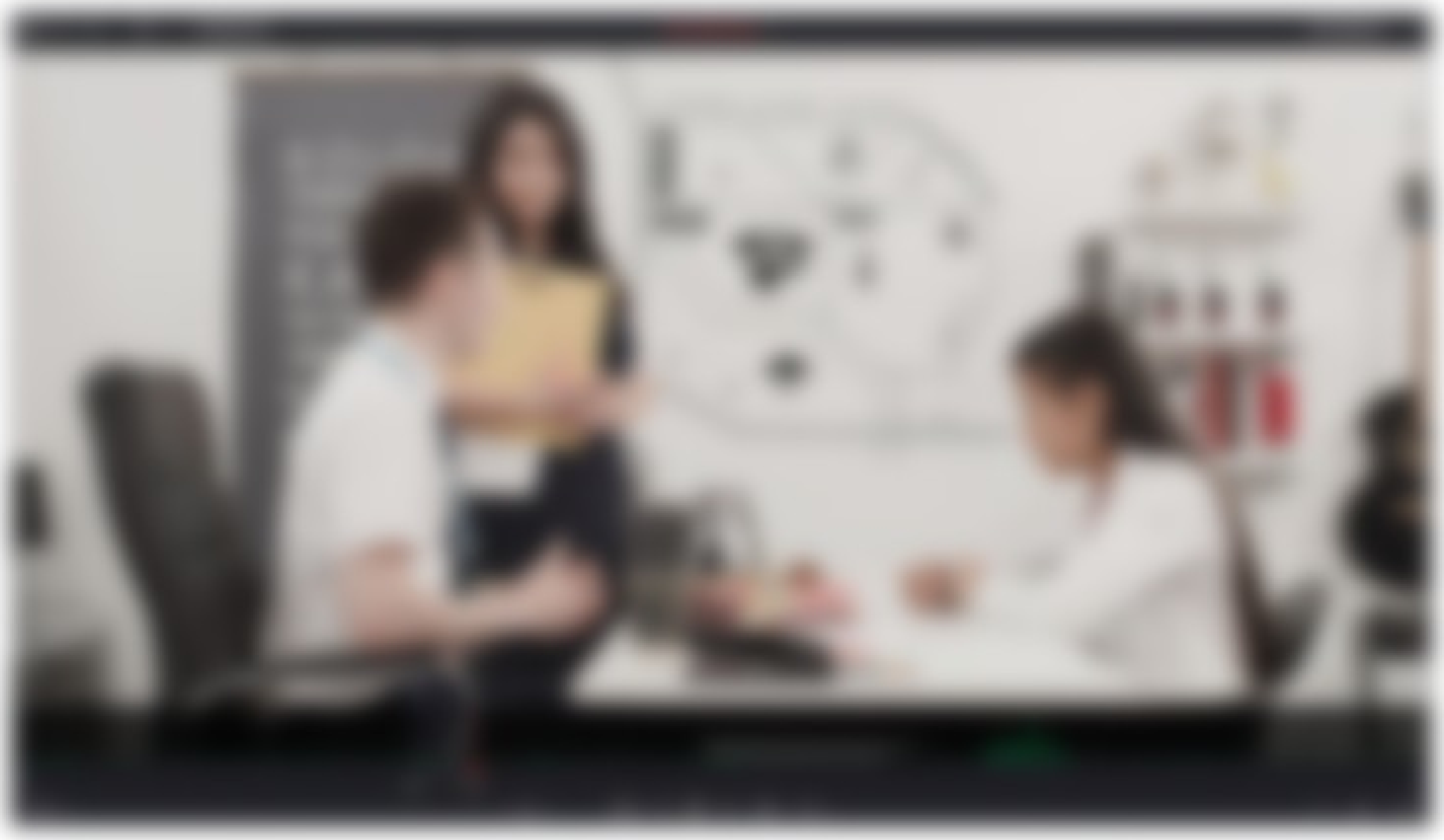
- Open the media pool and click the ALT TAKES smart bin, select both clips, and drag them into the source viewer.



7 Close the media pool to reclaim your editing real estate.

8 Select the clip [illegible] from the source viewer's recent clips menu and play it to review Harper's response to Stenburn's assertion as to the nature of the meeting. Do you think this is a better performance from Harper?

9 Assuming you agree it is, set an In point after Stenburn says, "You do understand that you're here for a disciplinary meeting?" and an Out point after she turns to Garret and says, "Your Principal Garret?" but before Garret nods his head.



You will now use the Ripple Overwrite function to quickly edit this take instead of the original.

10 Perform a Ripple Overwrite edit.

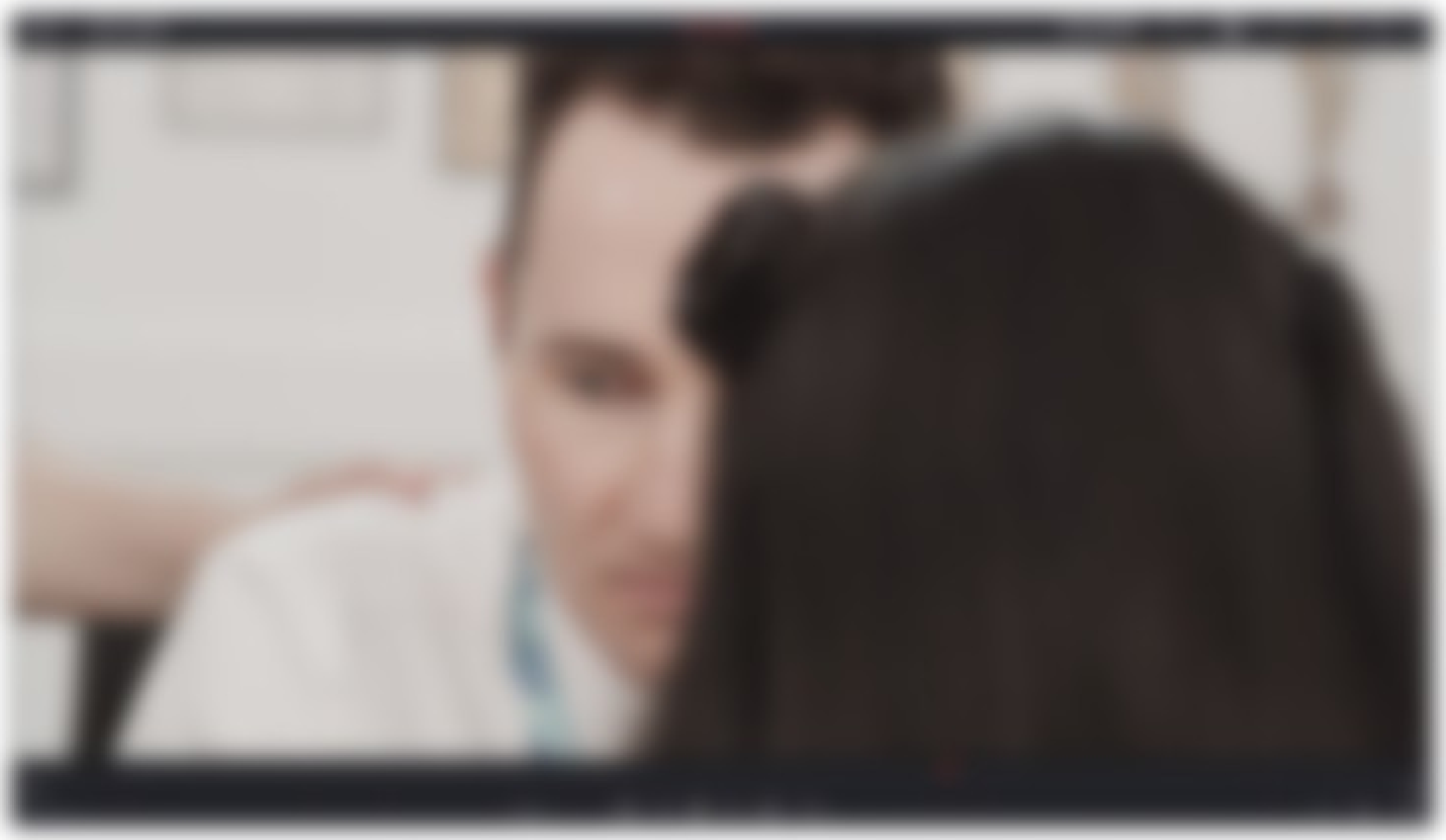
Instantly, the clip on the timeline is overwritten by the new clip, and the timeline ripples to accommodate any difference in the duration between the old and new clip, even if it's just a few frames!

11 Review the new clip in the timeline.

So what happened here? Well, you still performed a Ripple Overwrite, but because you didn't specify any In or Out points in the timeline, Resolve used the In and Out points of the clip underneath the playhead in the timeline. Think about it, and you'll realize this is still a four-point edit and an incredibly efficient way of overwriting one shot or clip with another, especially if they have different durations!

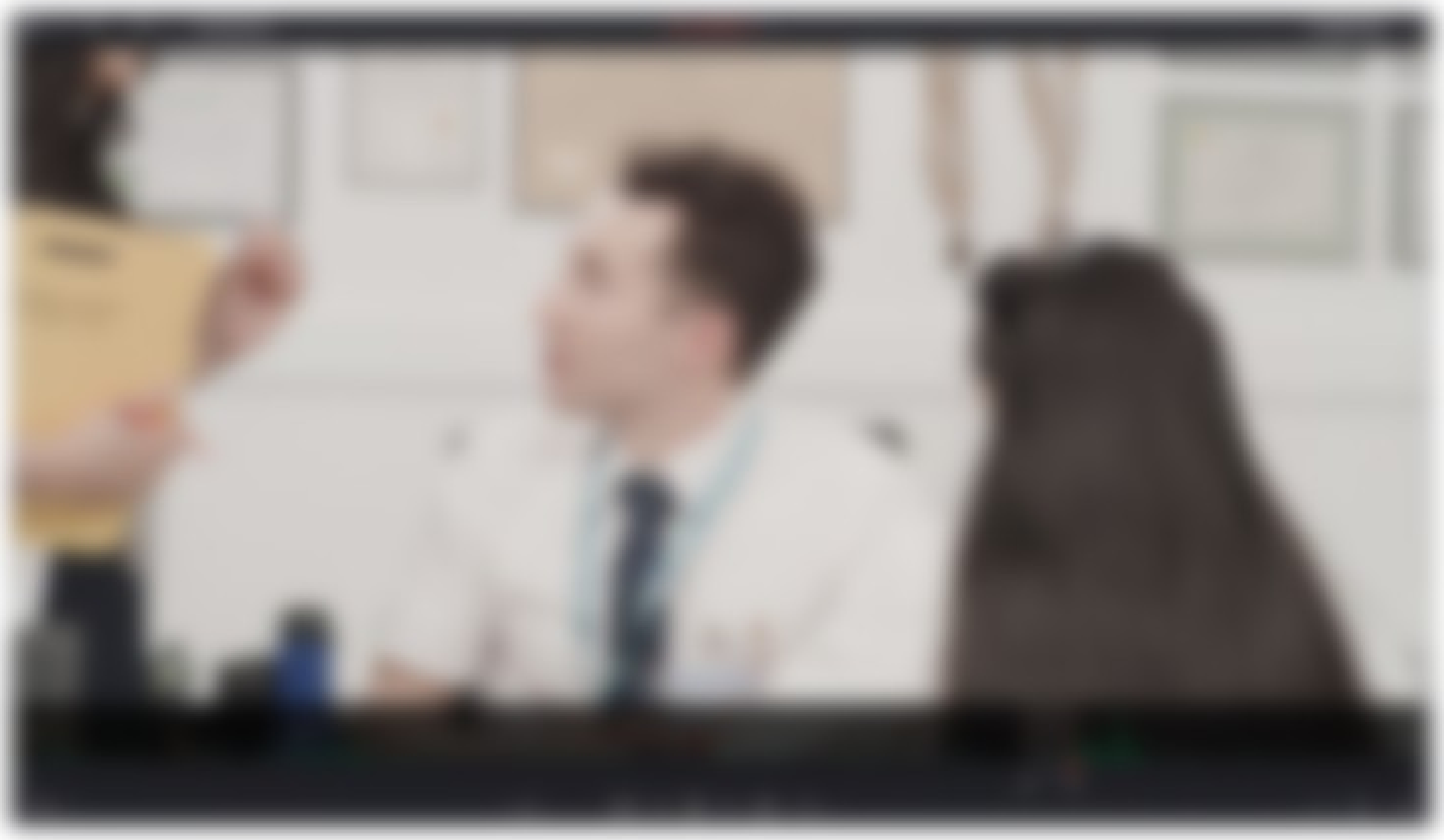
To prove this wasn't a fluke, you'll repeat the process on another shot.

In the timeline, move the playhead over the clip of Garret, where [illegible] places her hand on his shoulder.



In the source viewer, select the clip **[illegible]** from the Recent Clips menu.

Find the place where Harper is delivering her line "Do they even live that long?" and set an In point just before Garret's eye twitches and an Out point just as he starts to say, "One state..."



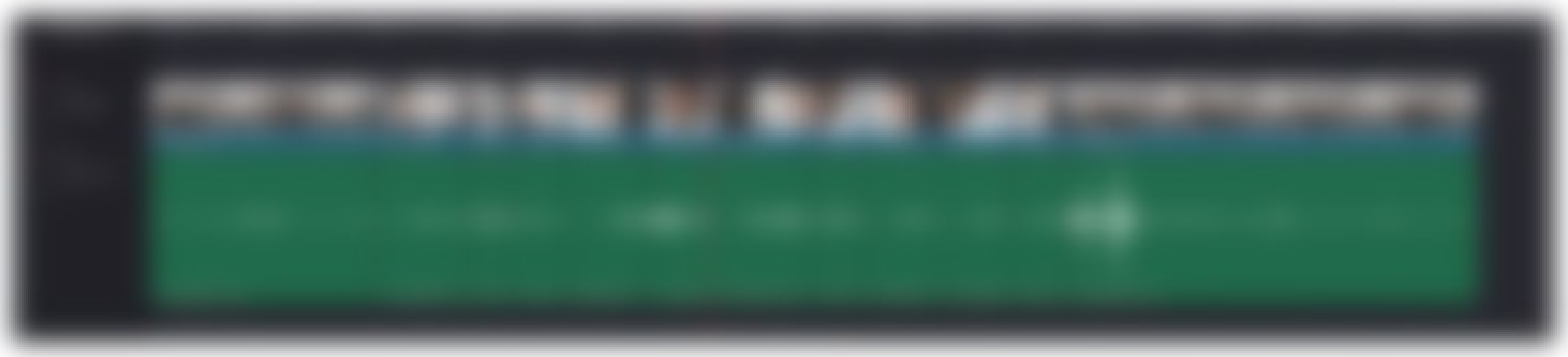
- Perform a Ripple Overwrite edit to add this new shot into the timeline in place of the previous close up.

As you can see, the Ripple Overwrite is a hugely powerful and flexible editing function that can be used in various ways. Best of all, it's still an editing function unique to DaVinci Resolve!

Using Match Frame

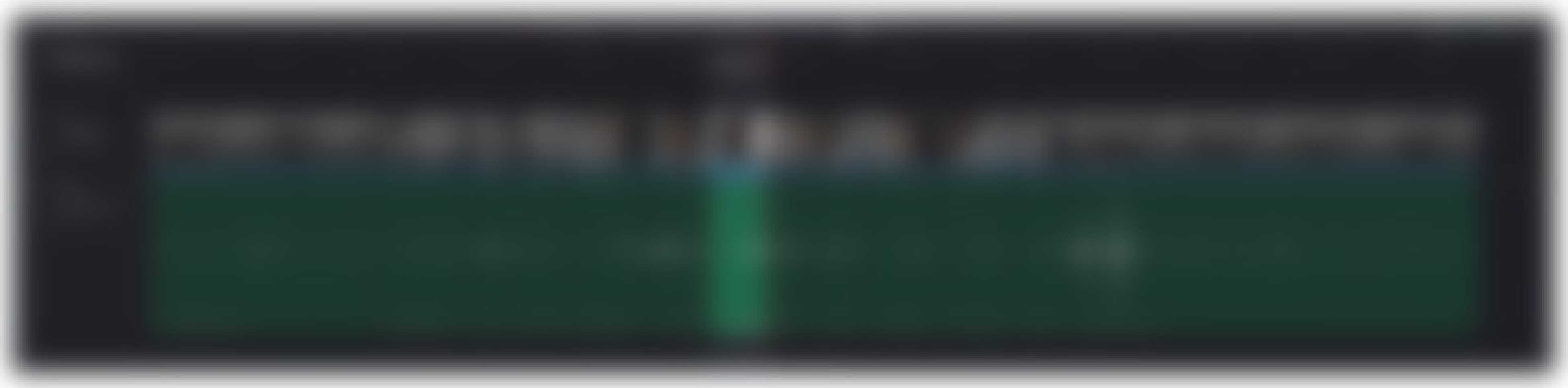
Occasionally, you'll need to edit footage from a clip you already have in your timeline. This might be to quickly reuse a shot, or it might be to use a different part of the same footage. In these cases, instead of hunting back through the recent clips menu or even the media pool trying to locate the clip you need, it's much easier to reopen the original clip from the version you have in the timeline. This procedure is called match framing.

1. In the timeline, locate the clip about halfway through the scene where Garrie says, "Please call it by its name. It's the Centennial Palm Tree."



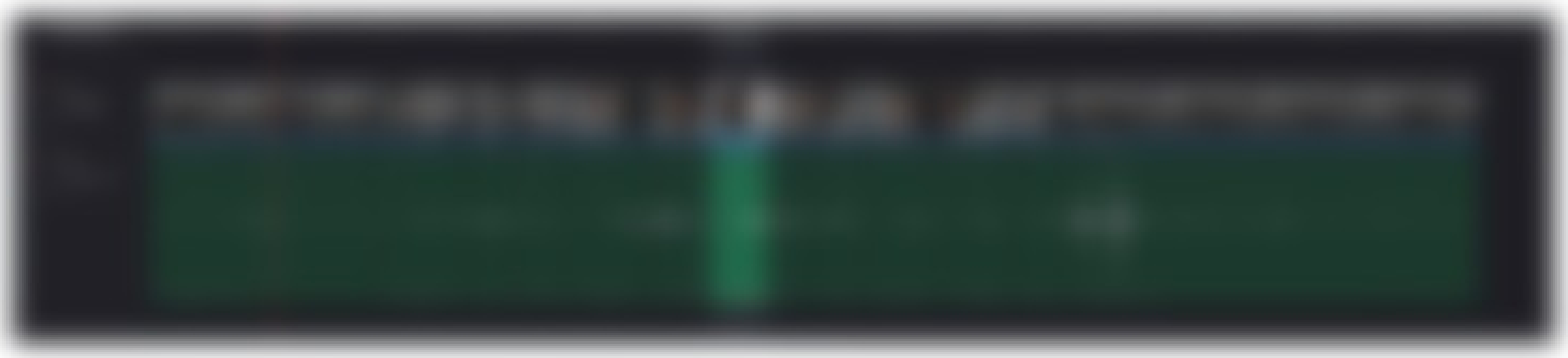
   At this point, Principal Eisenbaum walks around to the other side of the desk. This creates a dilemma for the editor since it's important that the audience knows that this is happening; otherwise, she'll suddenly reappear on the other side of Garrie, which will confuse everyone. This is where it's useful to know what your options are, which you would be aware of if you had reviewed the footage before starting to edit. However, in this case, the only way around this is to cut back to a wider shot to show what she's doing.

2. Add an In point at the start of the clip and an Out point after Garrie says, "Call it by its name" and his mouth is firmly shut.



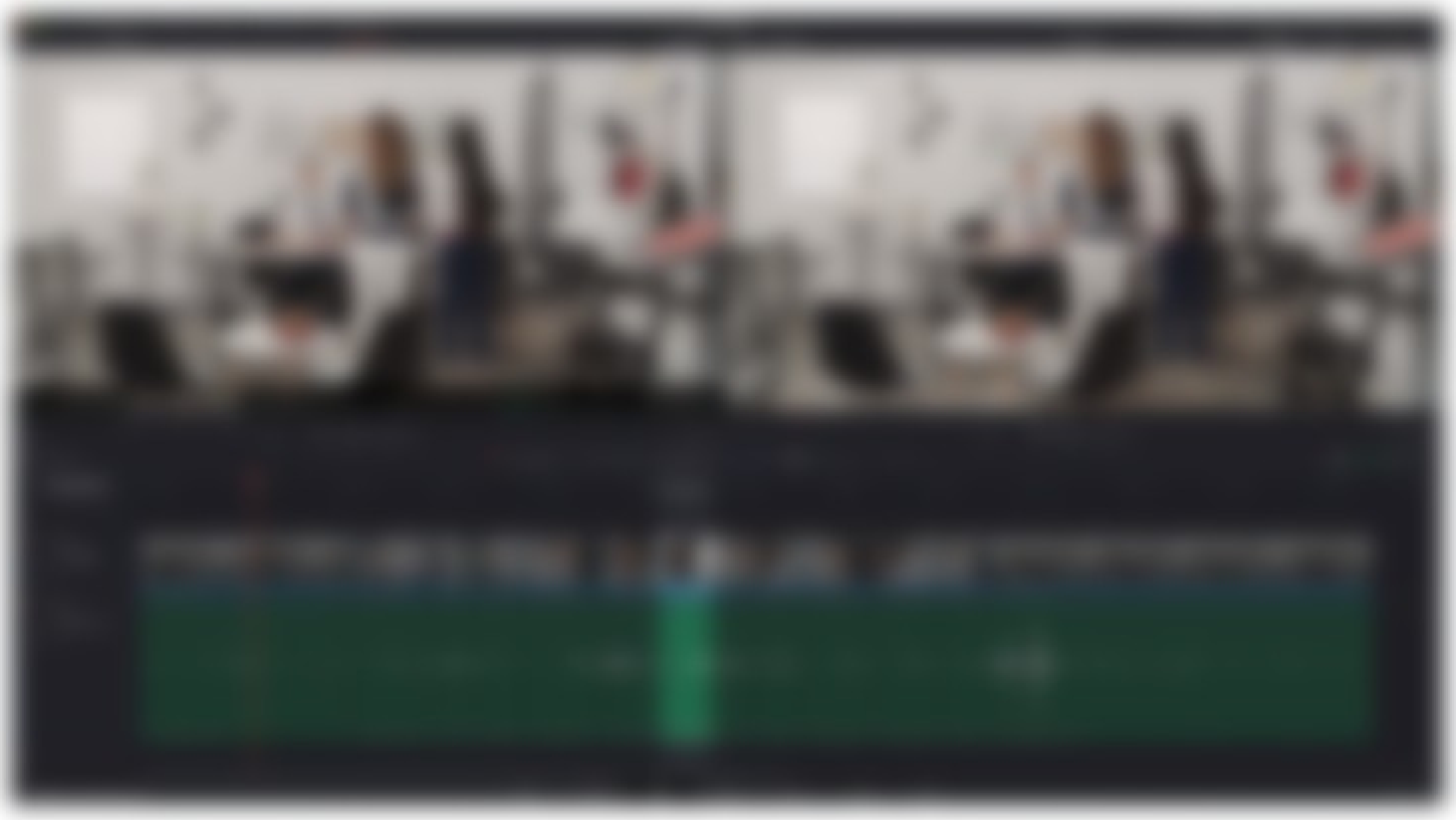
The first step when match framing to a clip is to locate the clip in the timeline. For this example, you need to add another shot you'd previously overwritten from the original main wide shot.

- Place the timeline playhead anywhere over the first clip (the big, wide opening shot).



- Choose Timeline > Match Frame, or press F.

The original clip opens from the media pool in the source viewer, with the playhead positioned on the same frame and In and Out points matching those of the clip in the timeline you're match framing to.



You will also find a Match Frame button next to the In and Out point buttons in both the source and timeline viewers. Clicking the Match Frame button in the source will perform a Reverse Match Frame; that is, it will match the frame in the source viewer with that of the clip in the timeline (if it's present).

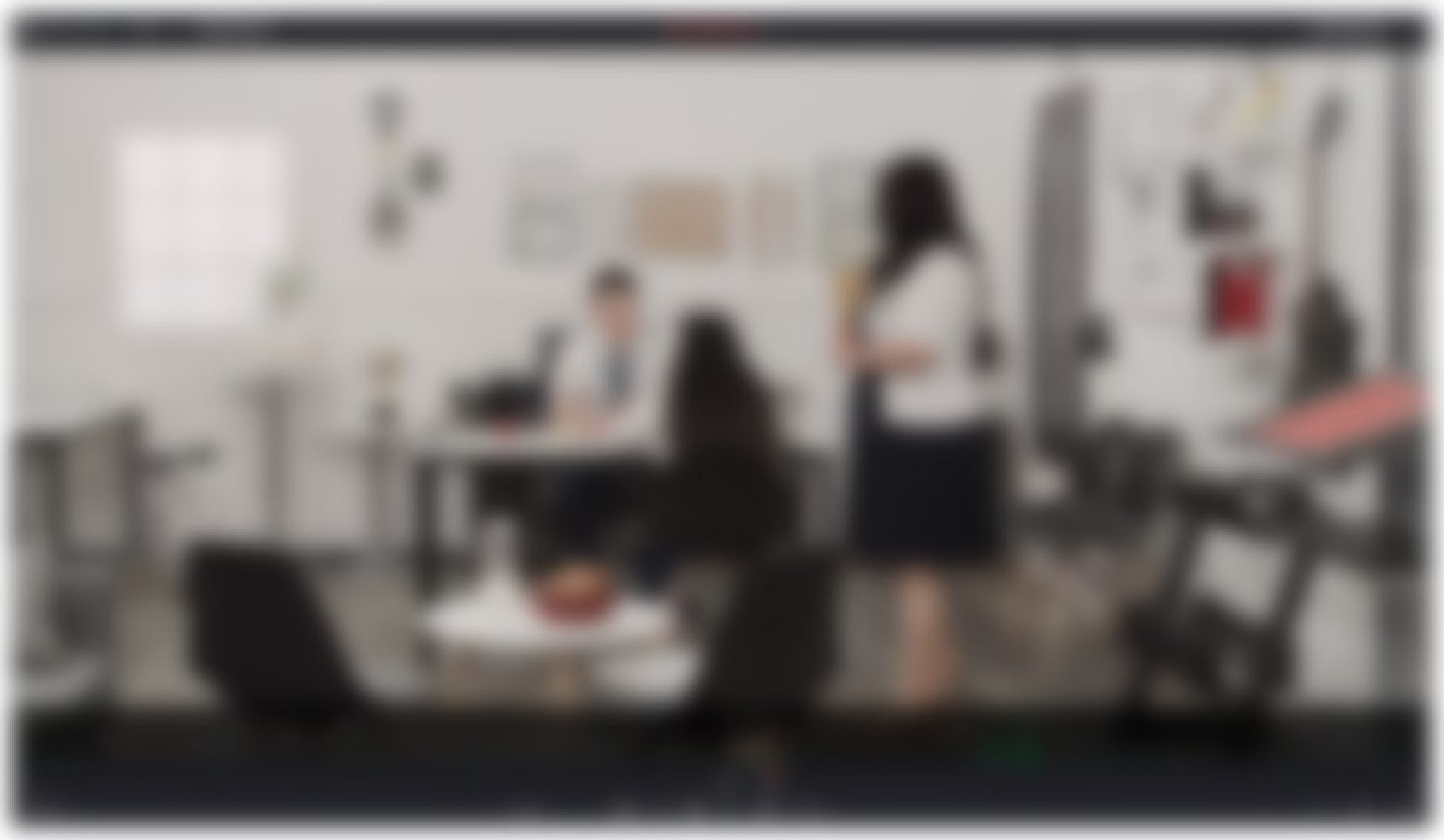
To see how this works, you can match frame to the same clip using the footage at the end of the timeline.

- Place the playhead anywhere over the last clip in the timeline and choose Timeline > Match Frame or press F.

Again, the same clip reappears in the source viewer at the same frame as shown in the timeline viewer, but with the In and Out points adjusted to match the clip you're match framing in the time.

NOTE Using Match Frame is very different from double-clicking the clip in the timeline, which opens the clip directly in the timeline in the source viewer. The difference is that if you adjust the In and Out points of a clip opened from the timeline in the viewer, it will adjust the In and Out points of that clip in the timeline. There are only very rare occasions when you need to do this in DaVinci Resolve. You can tell the difference between a clip open from the media pool and one open from the timeline by the clip name displayed in the source viewer; a clip open from the media pool will display just the clip name; a clip open from the timeline will display the clip name followed by the name of the timeline from which it's open.

- In the source viewer, locate the part where Principal Eversburn starts walking from Garrett's left side and set an In point as soon as Harper stops speaking and an Out point after Garrett says, "Please call it by its name."



This should be enough to establish that Eversburn is moving around behind Harper.

- Perform a Ripple Overwrite edit and review the change you've just made.

NOTE If you need to catch up before moving to the next step, open the media pool, select the TIMELINES bin, choose File > Import > Timeline, navigate to R18 Editors Guide > Lesson 05 > Timelines, and select [illegible] and click Open.

Editing the Pickups

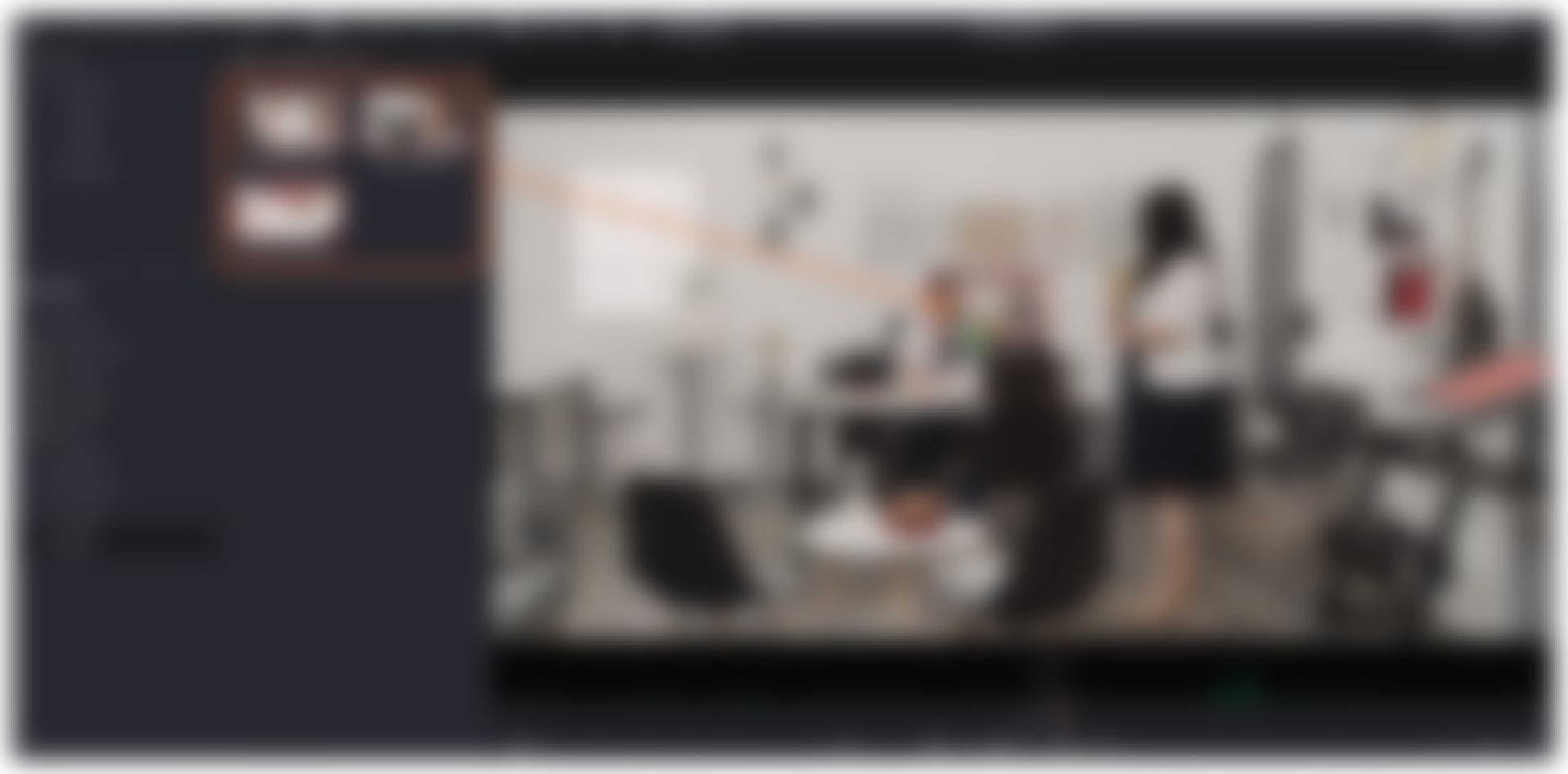
The scene is taking shape nicely. There are just a few additional shots to add now to complete the rough cut. These shots are referred to as pickups.

Pickups are those shots that the director needs to complete the coverage of the scene but are usually just specific shots needed to fill the various holes in the coverage. For this scene, there are only a handful of pickups you need to worry about. The first is a close-up shot of Garrett moving the turtle on his desk. The second is the specific shot of Garrett and Harper standing up to argue in front of Principal Eisenbuck. You will start with the turtle shot.

- Open the media pool and select the PICKUPS smart bin.

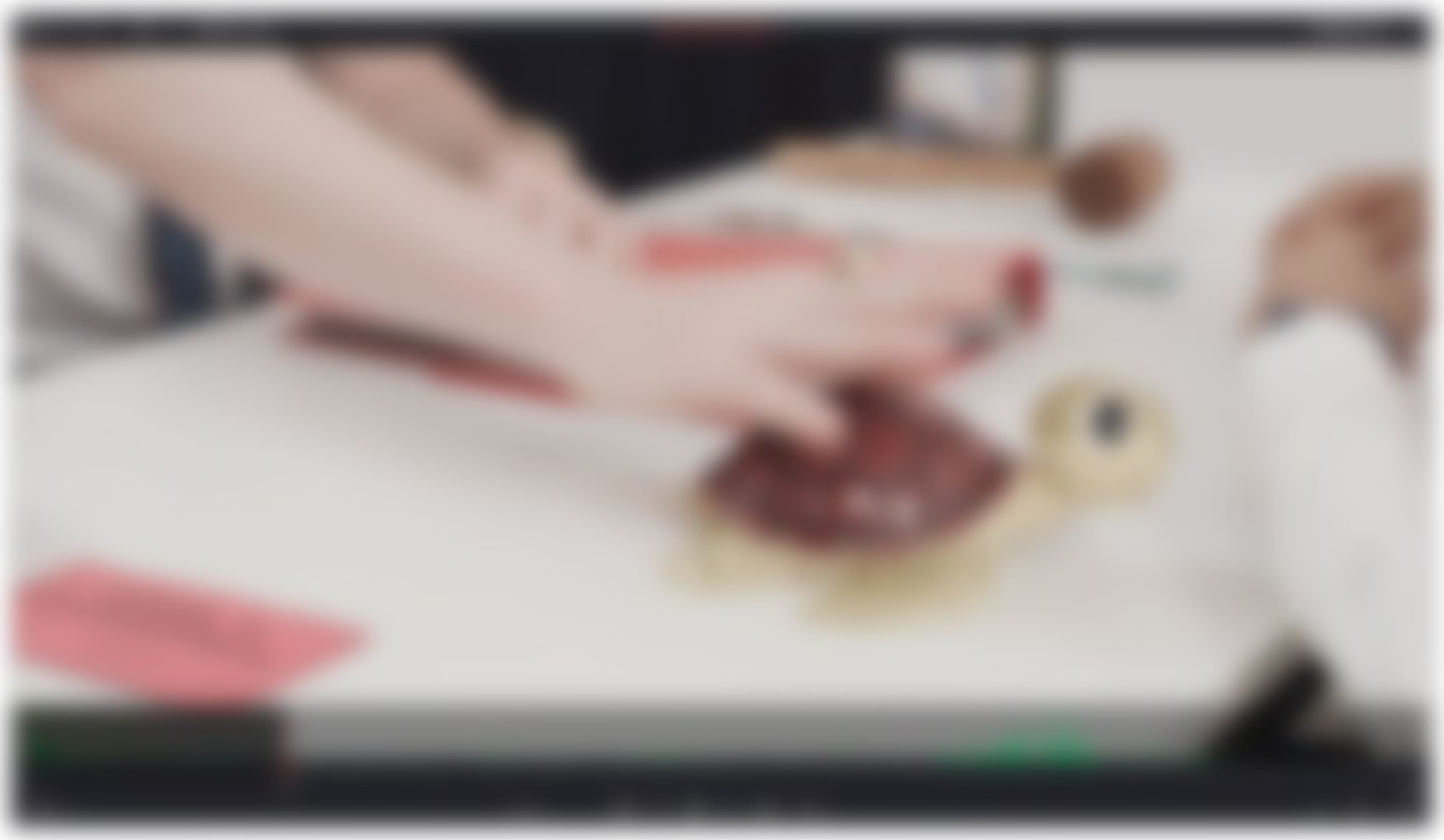
  The bin contains an additional shot of Harper taking a breath, which is needed toward the end of the scene, but there's no harm in having it available in the viewer at the moment.

- Drag the three clips into the source viewer.

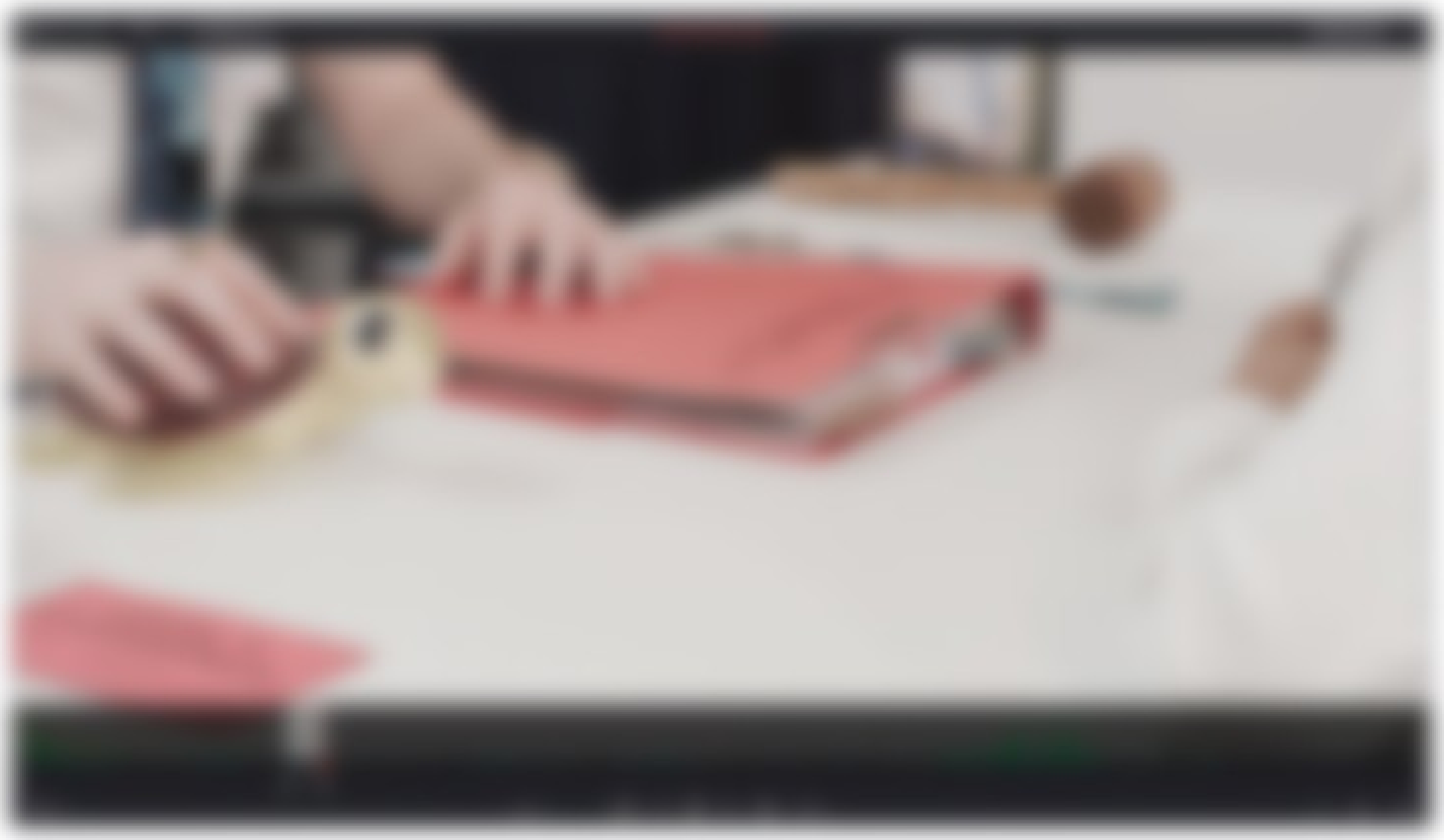


- Close the media pool and, in the source viewer, ensure the clip [illegible] is selected.

- In the source viewer, set an In point when Daniel is reaching out for the turtle just before his hand touches it.

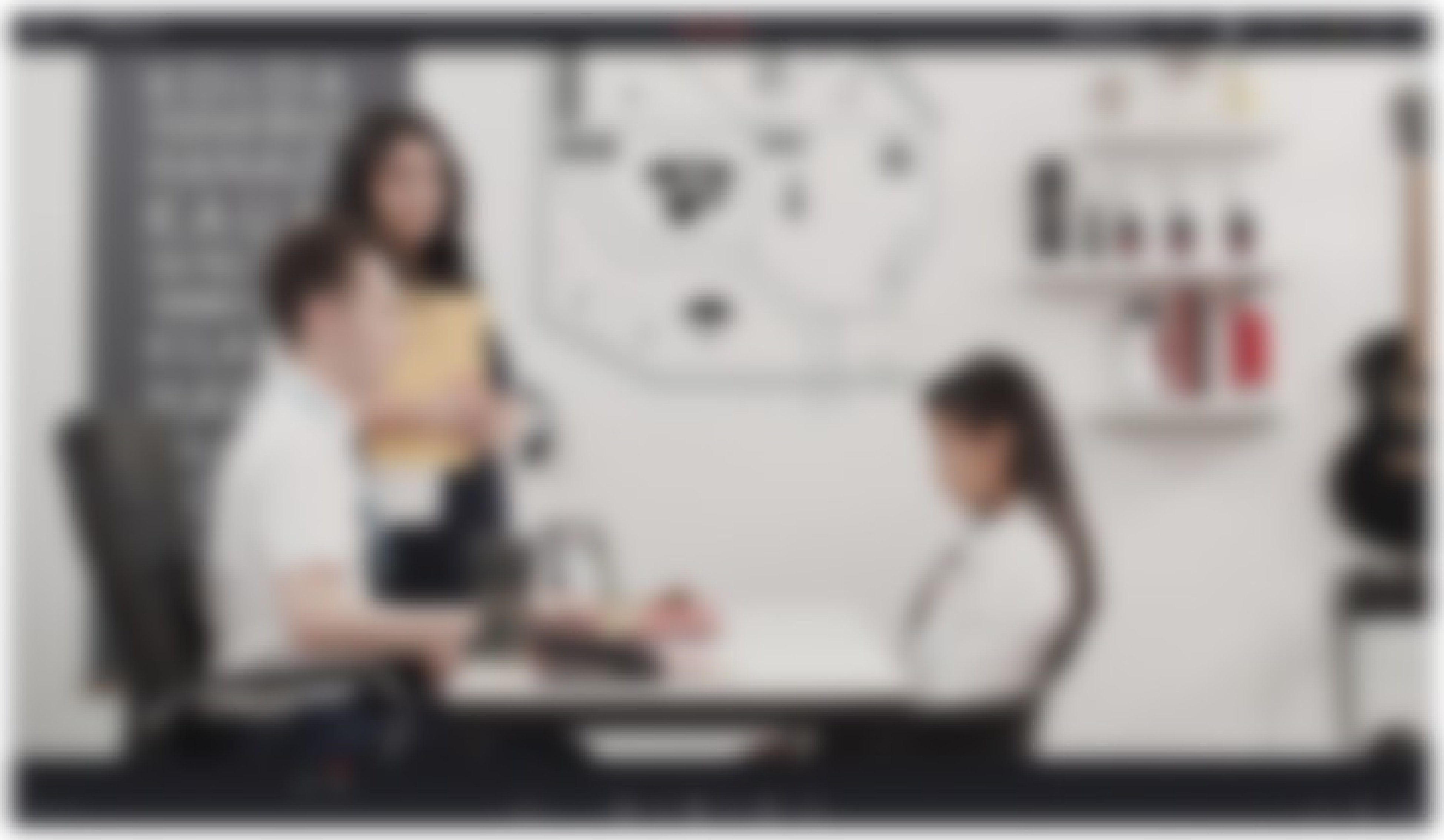


- Play the shot in the source viewer and set an Out point after he has moved the turtle backward across the desk but before his hand releases it.



- Press Q to switch to the timeline and move the playhead to the second clip.

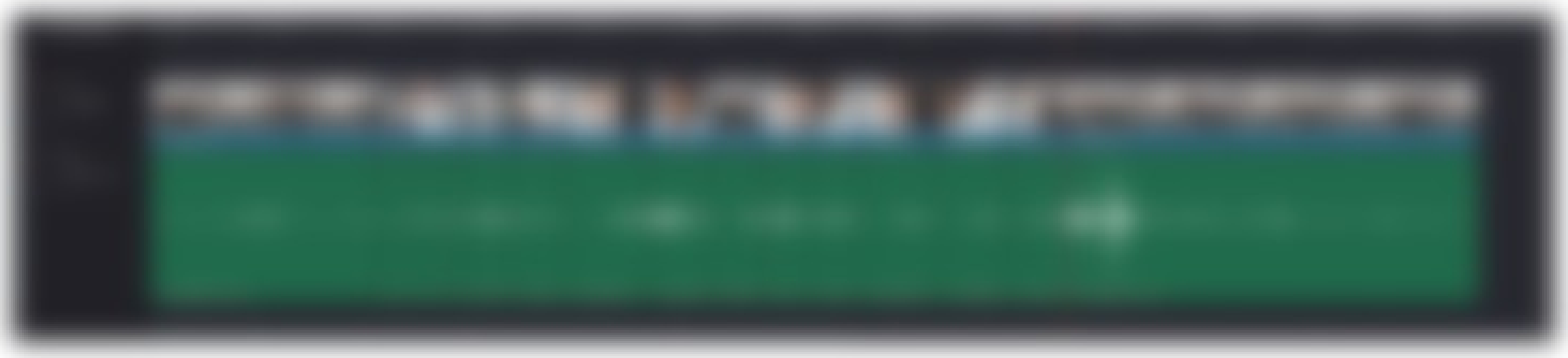
- Review the shot, and then set In and Out points at similar points in the action: the In point just before Garrie grabs the turtle and the Out point just before he releases it.



- Perform a Ripple Overwrite and review the edit you've just made.

  By matching the action of Garrie moving the turtle, and combining this with a Ripple Overwrite edit, you have created an almost perfect continuity edit. However, look closer, and you'll notice that Harper places her elbows on the desk during the pickup but not in the wide shot, creating a bit of a continuity issue: not so much going into the pickup shot, but certainly coming out of it. You'll look to address this issue in a later stage. In the meantime, you will add the pickup for the big argument where Garrie loses his cool.

- In the timeline, move the playhead to the start of the final clip. This is the remainder of the original opening shot you started with at the beginning of this lesson.



- Add an In point at the start of this clip.

- [illegible]

- [illegible]
- [illegible]

- [illegible]

- [illegible]
- [illegible]

Using the Take Selector

[illegible]

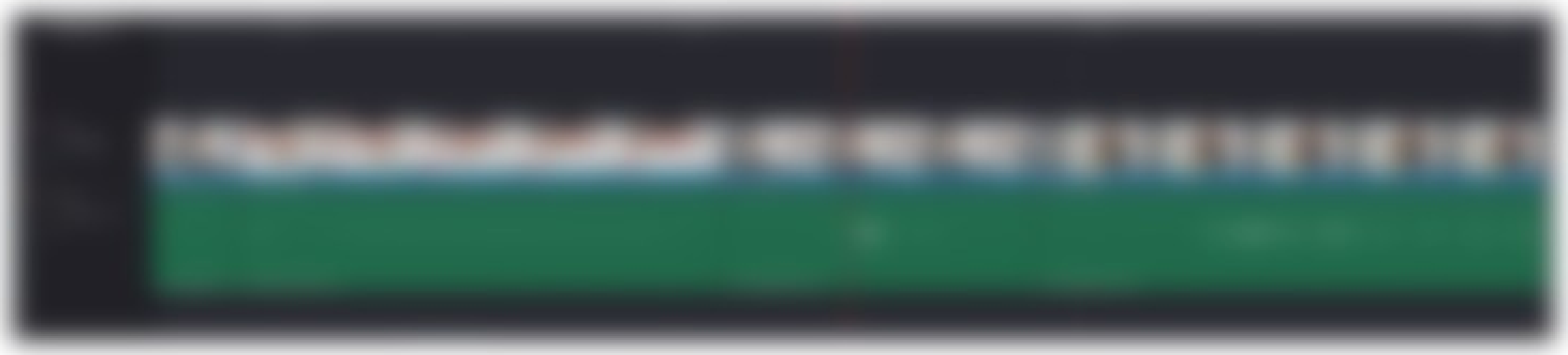
[illegible]

[illegible]

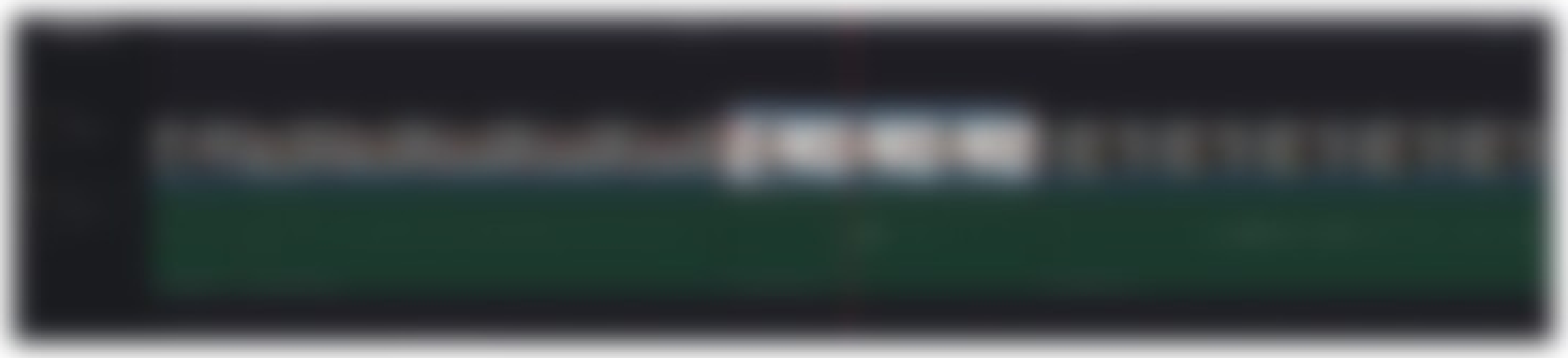
[illegible]

1. [illegible]

2. [illegible]



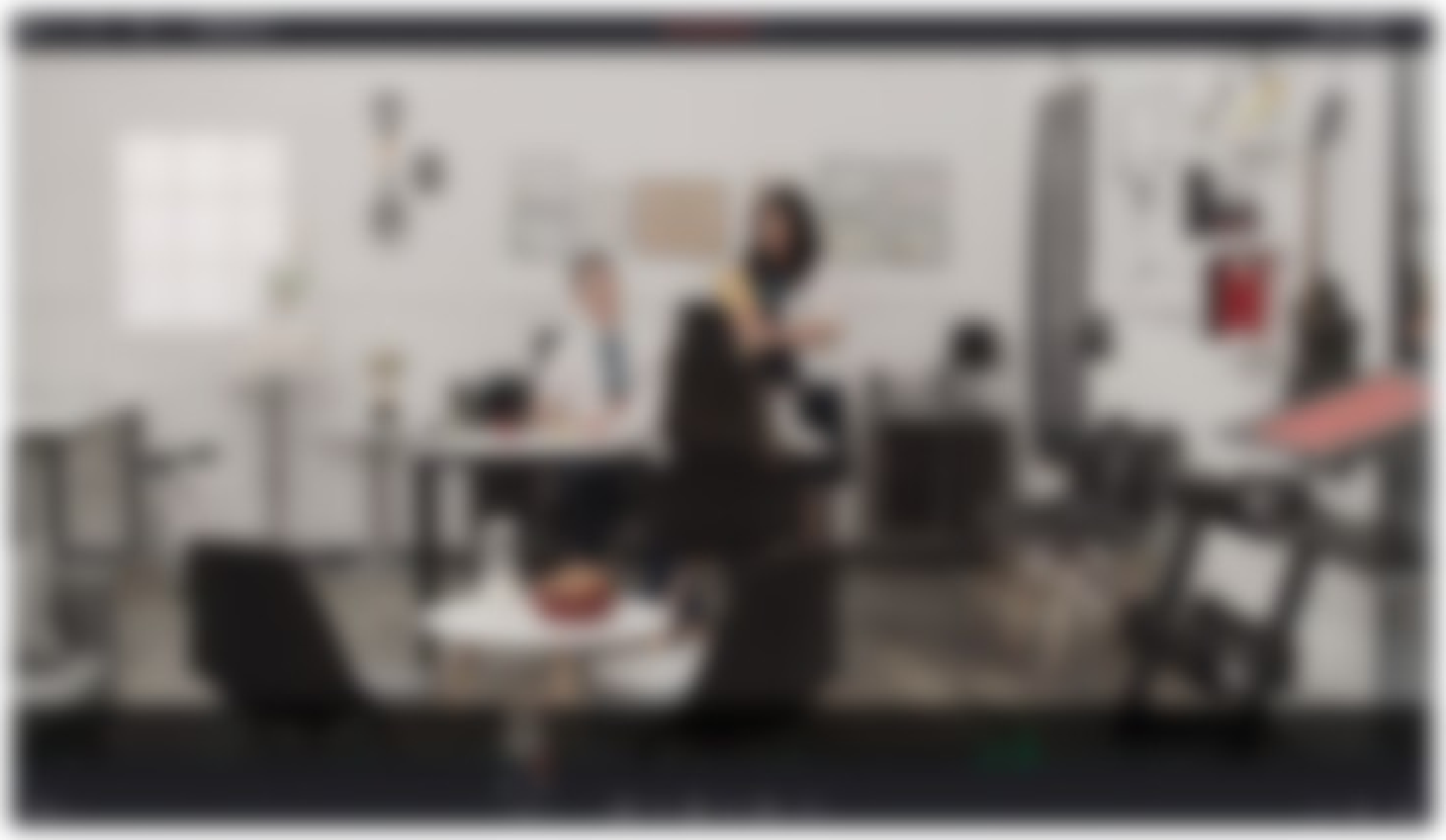
3. [illegible]



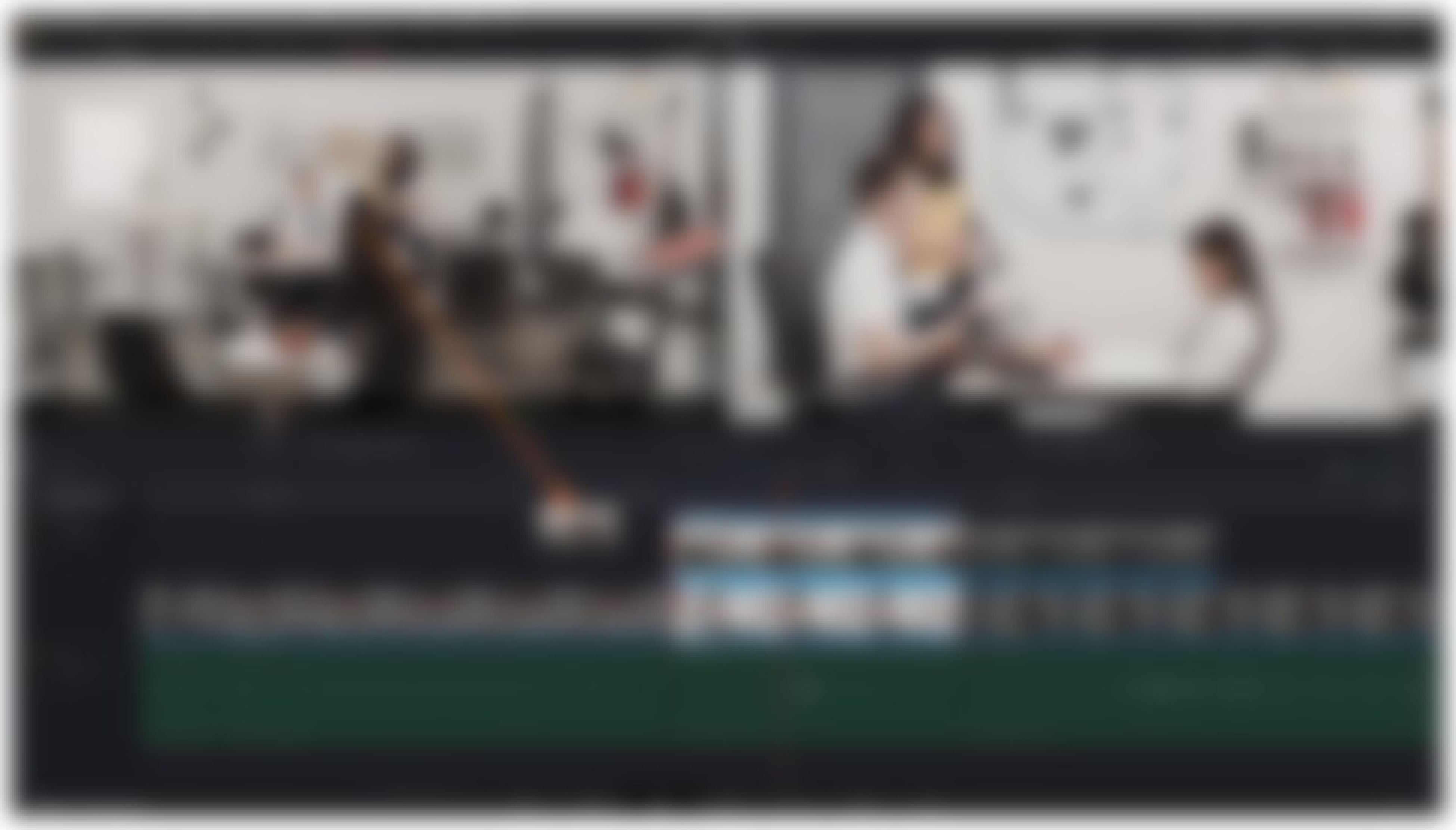
[illegible]

4. [illegible]

Principal Eisenbaum says, "Harper" but before she says her next line. You might not be able to hear the line very clearly, but that's not really important at the moment.)

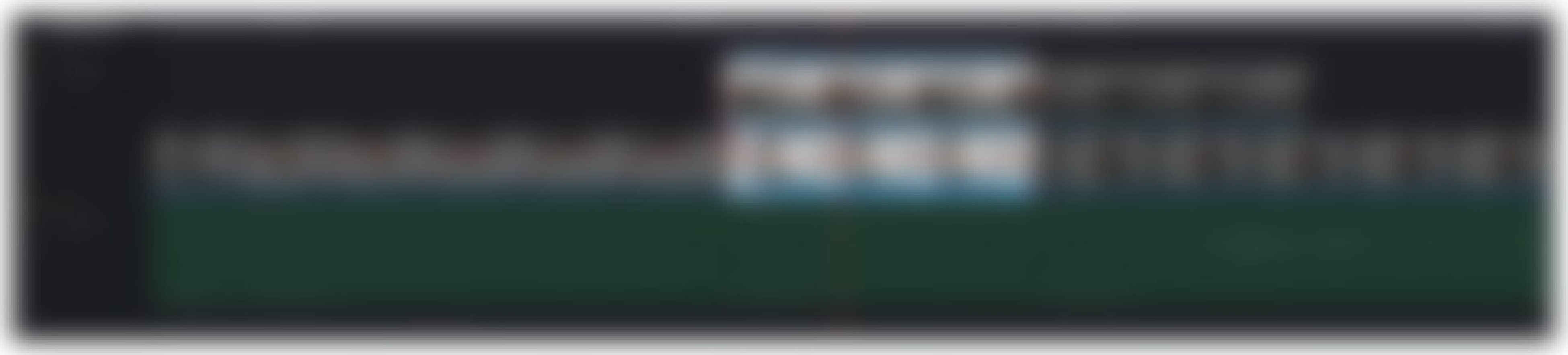


- Drag the clip from the source viewer into the timeline to add it to the currently active Take Selector.

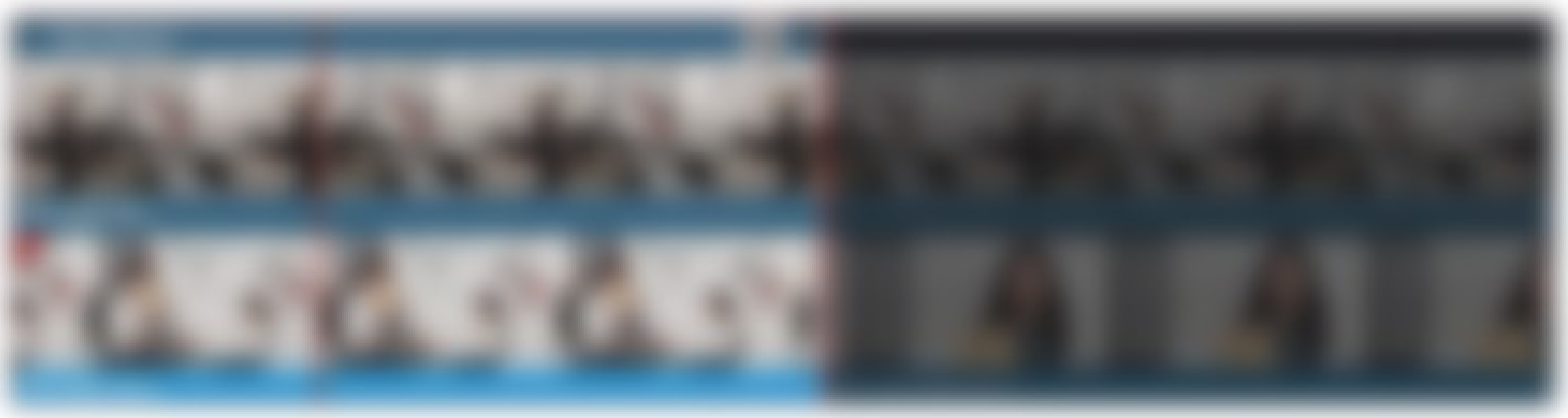


TIP You can add as many takes as you need to a Take Selector.

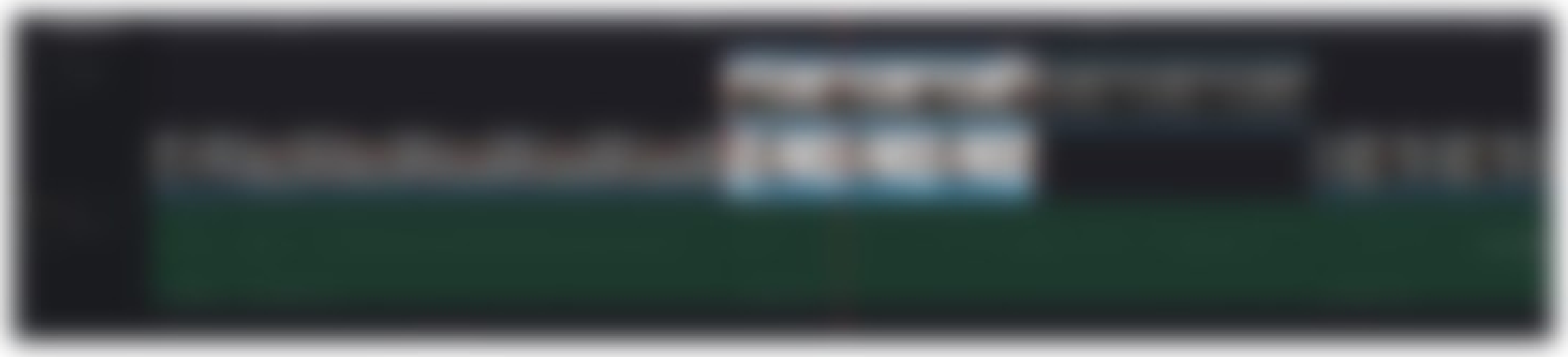
The current Take Selector now shows two clips stacked on top of each other, with the most recently added take being the active take. However, you'll notice there is a noticeable difference in duration between the two takes.



- In the upper right of the Take Selector, click the Ripple button.



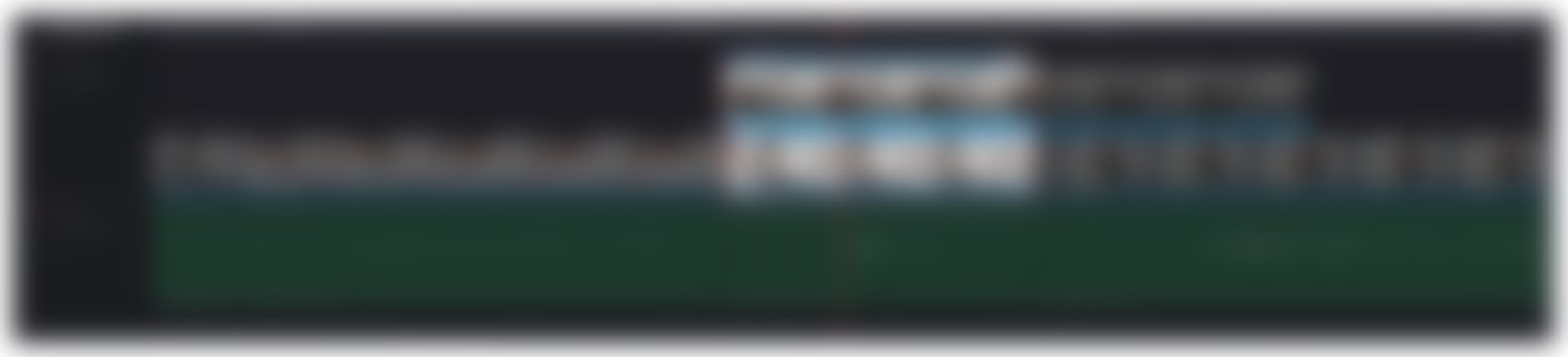
The timeline ripples to account for the take's longer duration.



- Play the timeline to review the alternative take.

  What do you think? Better or worse than the original take?

- To restore the original take, click the lower clip in the active Take Selector.



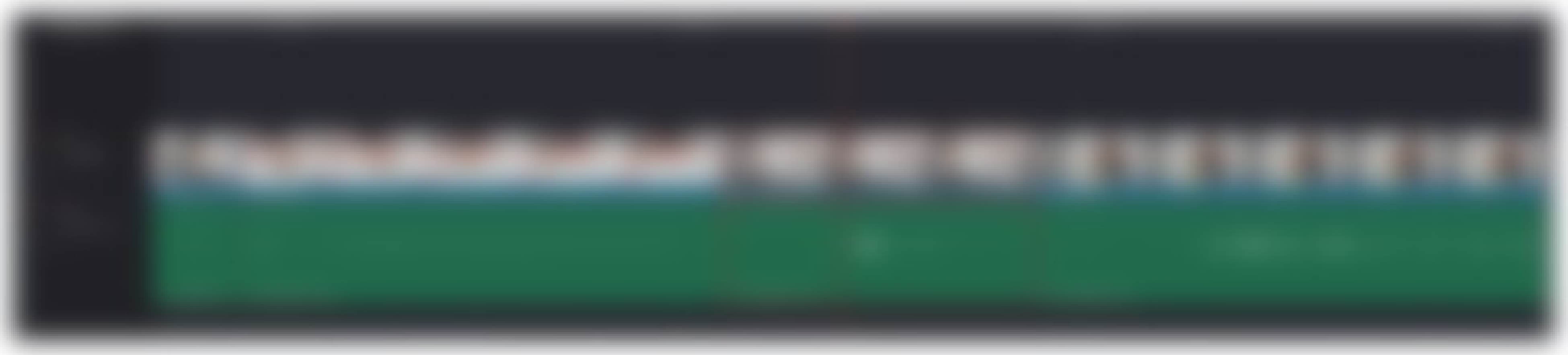
NOTE The original take you began with before opening or reopening the Take Selector is indicated by a red star icon in the upper left corner of the take.

Of course, you should realize by now that there is no right or wrong answer; simply your preferred choice of the lesser of two imperfect choices: the original take has the slight continuity issues you're attempting to work around, whereas the wider take helps avoid the issue but removes the viewer from the intimacy of the scene and the performances of the actors.

TIP Don't try to overanalyze either of these takes. You can spend too long looking at the specific pros and cons of each take, details that the viewer will ultimately never see because, by the time they may have noticed them as an issue, the action has moved on and, if they are following the story (which is the main aim of the scene), these issues are minor considerations.

Ultimately, though, someone must decide, and in this case, the director prefers the original, continuity-imperfect take.

- In the Take Selector, make sure the shorter take is selected and click the Close button (X) to collapse the Take Selector.



NOTE You can always reopen an active Take Selector and continue reviewing the different takes by double-clicking the Take Selector icon in the lower-left corner of the timeline clip.

Now that a decision has been reached, you can remove all the unused takes, leaving the director's final choice as a stand-alone clip.

- Choose Clip > Finalize Take or right-click the clip with the active Take Selector and choose Finalize Take.
- Click the Full Extent Zoom button to return to viewing the whole timeline.

Extra Credit

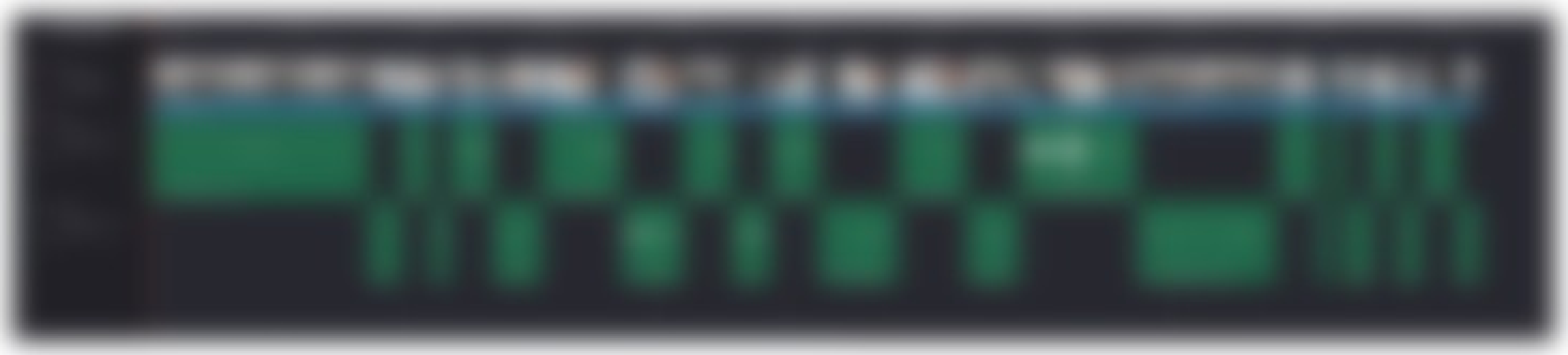
Fantastic work! Well done. You have successfully put together a rough cut of this scene, but the scene is not yet complete. There are still some shots that need to be added after Principal Eisenburn walks behind true Principal Garcia and back to the other side of the desk and encourages both Garrett and Harper to take deep breaths. Can you add the final shots to this rough cut using the techniques and considerations you've practiced throughout this lesson? There is no right or wrong way of cutting this scene, but the director would like to see Garrett's and Harper's reactions to each other as much as possible. Once you've given this a try, you can move on to the next steps.

Refining the Rough Cut

So far, you have effectively used the Ripple Overwrite edit to put together a rough cut of this scene. You'll now take this rough cut and begin refining it further.

If you have successfully completed the previous steps in this lesson, you are more than welcome to continue using your current timeline. Otherwise, you can import a completed rough cut of this scene to continue.

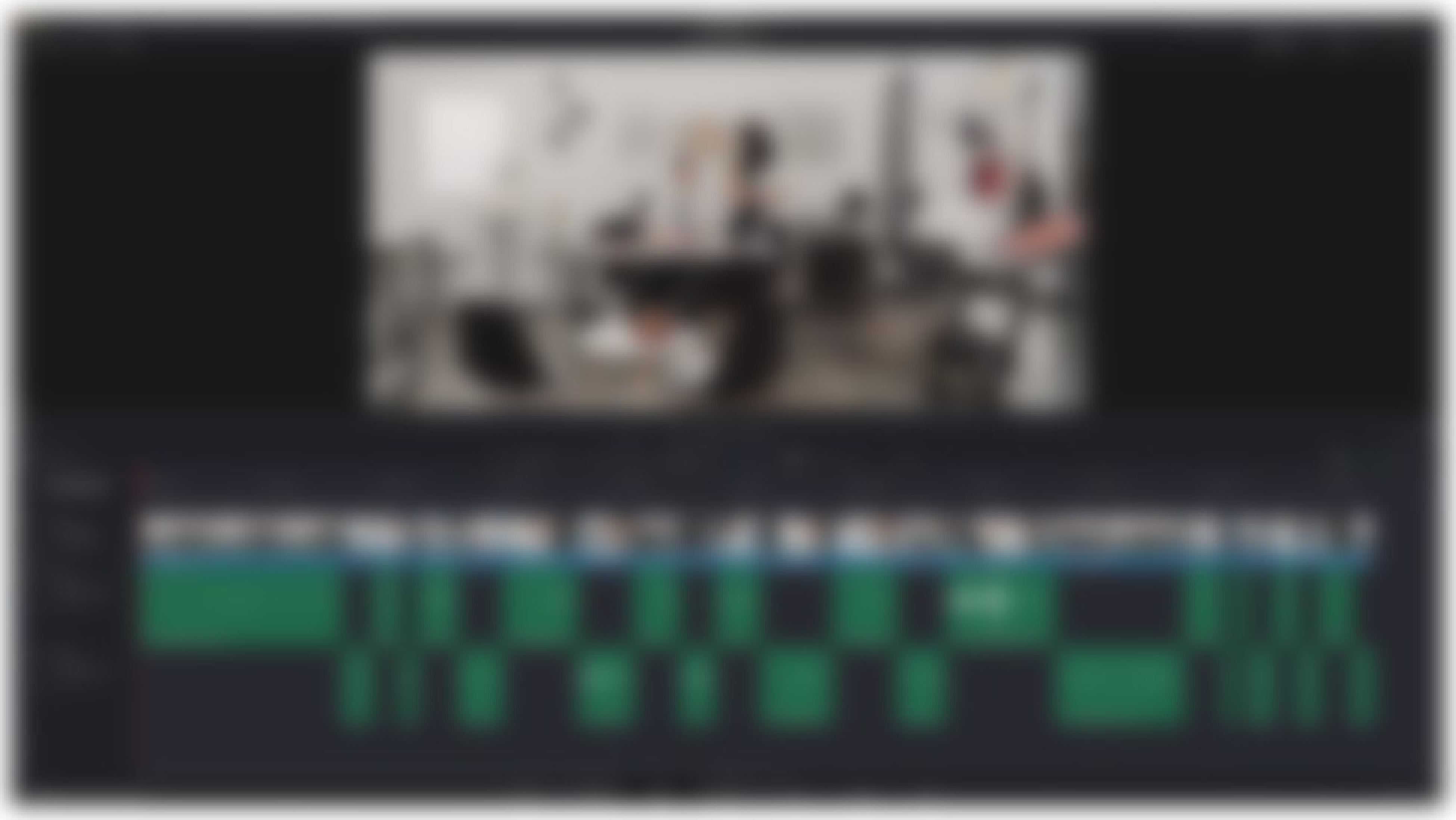
1. Open the media pool, select the TIMELINES bin in the bin list, and choose File > Import > Timeline, or press Shift-Command-I (macOS) or Shift-Ctrl-I (Windows).
2. Navigate to R20 Editor's Guide > Lesson 05, select the file TAB ROUGH CUT.drt, and click Import.
3. In the Search New Folder? window, click Cancel, and remove the offline audio files from the Timelines bin.
4. Close the media pool, ensure that the timeline is set to Full Extent Zoom, and, if necessary, resize the timeline tracks so you can comfortably see the entire timeline in the timeline panel.



This timeline is a rough cut of the whole scene, including the ending, where Principal Evanston gets Garrett and Harper to breathe deeply. The notable difference with this timeline is that the audio has been checkerboarded, which is a technique in which alternate audio clips are placed onto different tracks. This will aid the next stage, where you'll finesse the editing between the shots.

To focus fully on the trimming task at hand, you will close the source viewer.

- Choose Workspace > Single Viewer Mode to close the source viewer, leaving just the timeline viewer open.



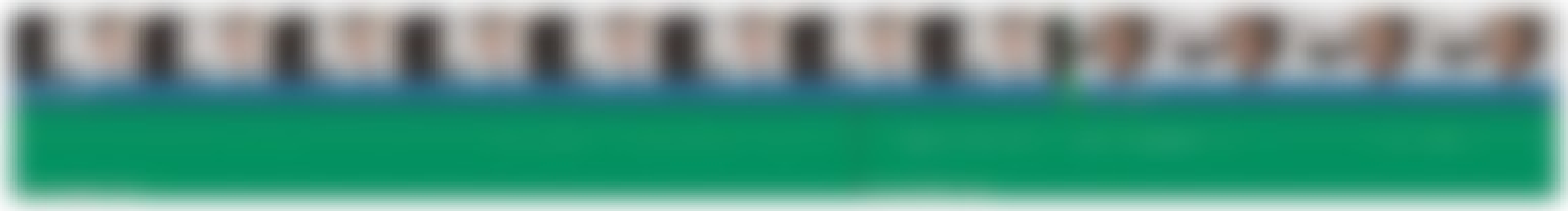
NOTE You can still use both the source and timeline viewers in Single Viewer mode. It's just that each will open in place of the other accordingly. For instance, pressing Q will switch between the source and timeline viewers, opening a clip from the media pool will open the source viewer, and clicking in the timeline will reopen the timeline viewer.

You are now ready to begin refining the scene, starting with the tried and tested techniques of creating split edits.

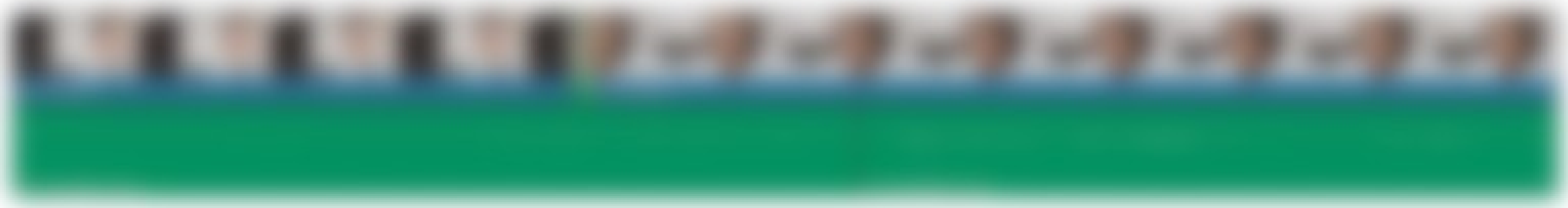
Creating Split Edits Using Extend Edit

A straight cut, whereby audio and video start and end simultaneously, can be quite abrupt and even slightly jarring. As you have already seen in an earlier lesson, split edits offset the audio and video edits of a clip. Staggering the cuts in this way can create a more natural rhythm between shots and allow the sequence of shots to knit together better.

Split edits are often called an L-cut or J-cut because of the implied shape they create in the edit. The most common split edit is the J-cut, with which you first introduce the sound of the next shot and then cut to the picture slightly later. This is the way we generally perceive the world around us. For example, when you hear a car horn in the street, you look for the source of that sound a fraction of a second later; the sound has motivated you to change your point of view.



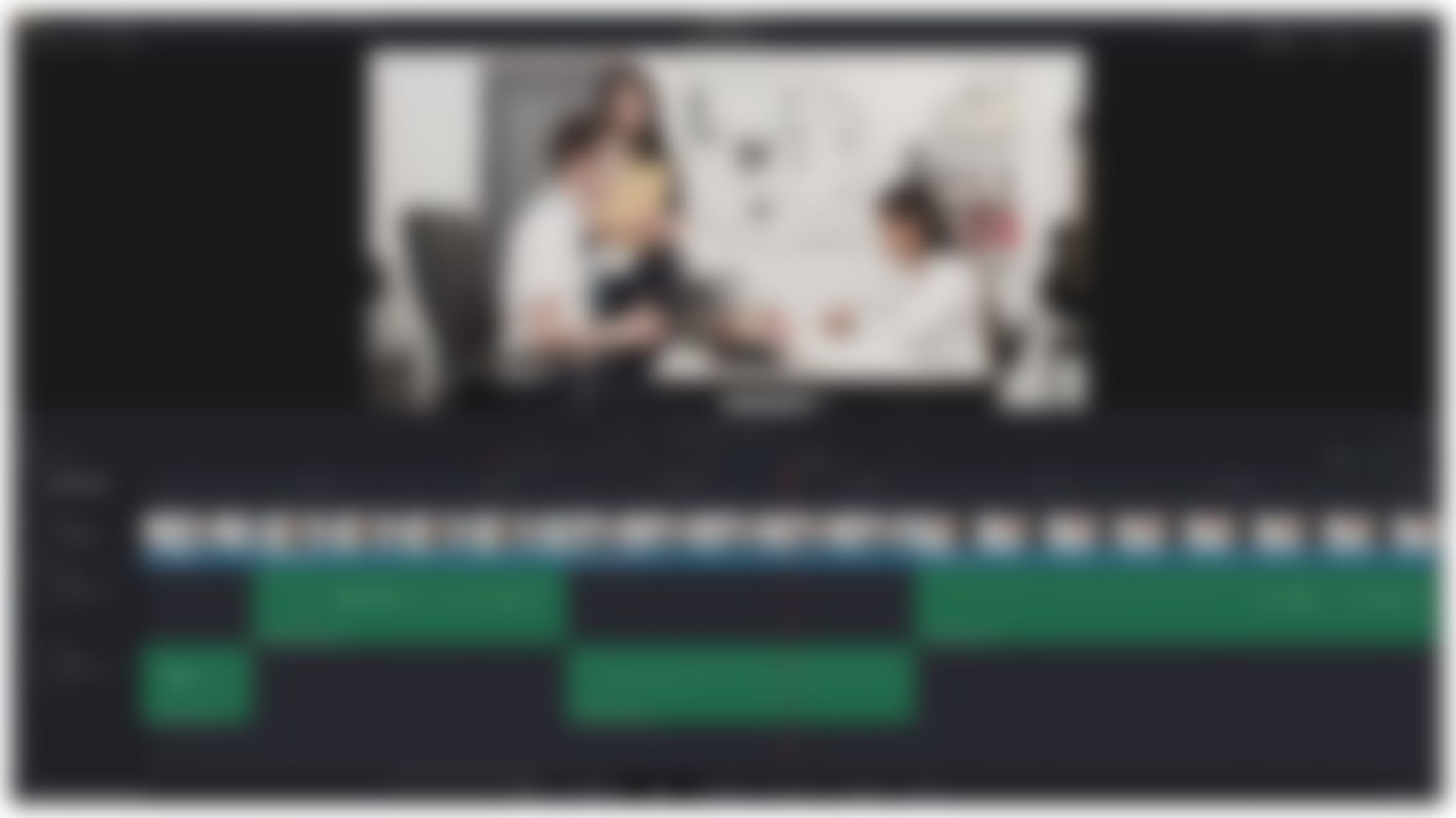
An L-cut leads with the picture edit before the audio edit and is often used when you want to show a character's reaction to something happening or being said before their response.



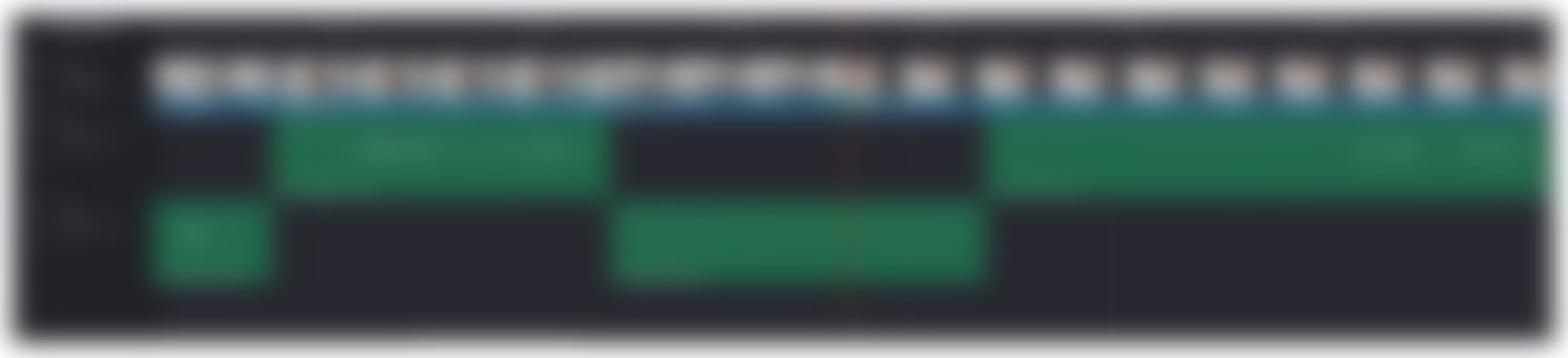
There are multiple ways to create L-cuts and J-cuts, but you'll start by creating an L-cut to better see Daniel's reaction to a line from Principal Davidson.

- Enable the "Snapping" and "Linked Selection" controls in the timeline toolbar. This will allow you to better control the changes you're making and ensure that you can easily select just the video or audio parts of the clips separately.

- Play the opening part of the scene and stop at the point where Principal Stembeck turns to face Principal Garrett, but just before she says his name, and click the Detail Zoom button.



- Select the edit point after the playhead position and choose Trim > Extend Edit or press E.



The selected edit point is instantly rolled to the location of the playhead.

- Choose Playback > Play Around/To > Play Around Current Selection or press / (forward slash) to preview the selected edit.

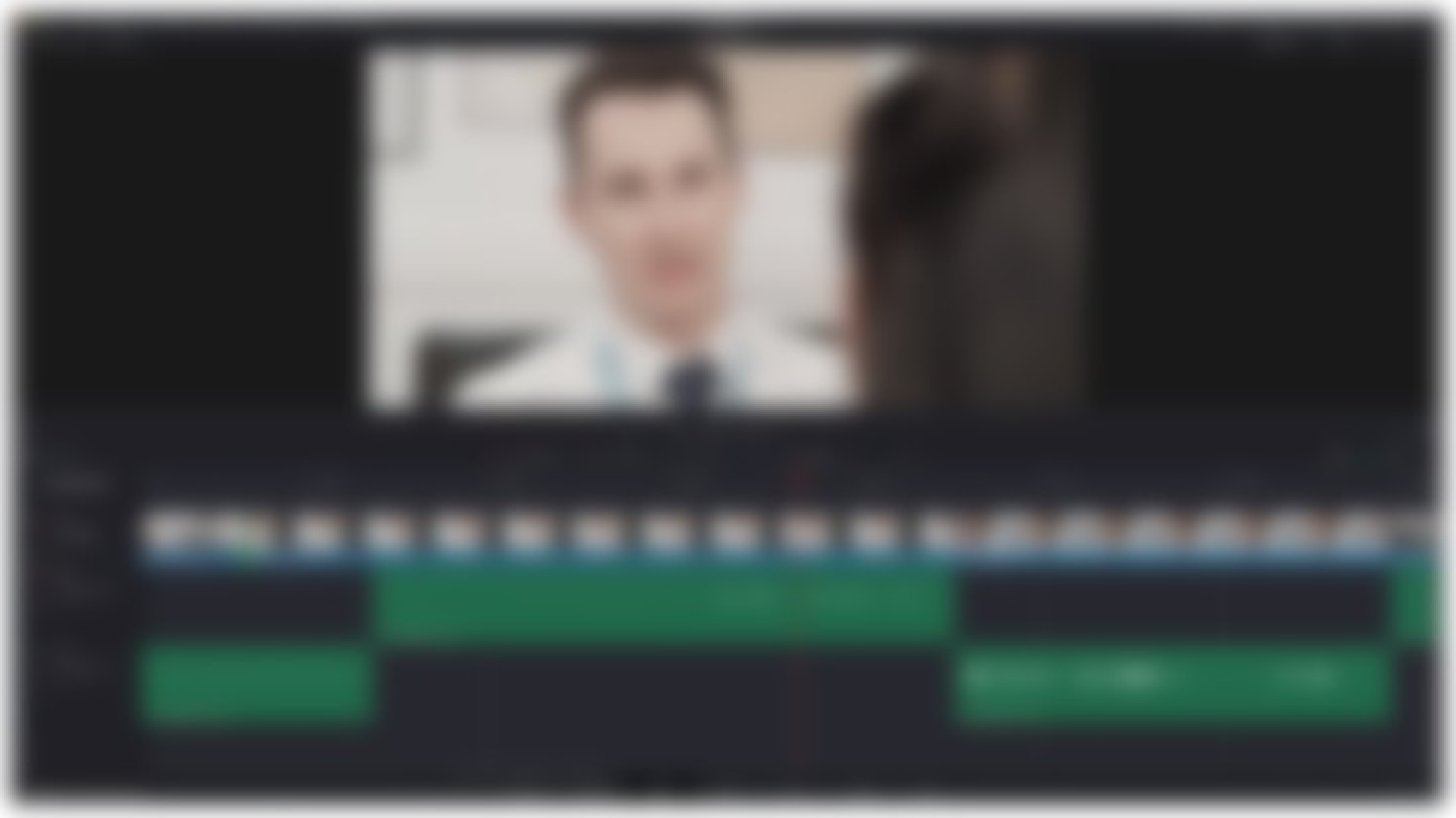
Now, you should see how Garrett reacts to Principal Stembeck. The edit should feel a little more natural, too, with Stembeck's headturn now motivating the cut to Garrett's nod, acknowledging her.

You can make a similar change to the next edit point too.

- Continue playing through Garrett's shot.

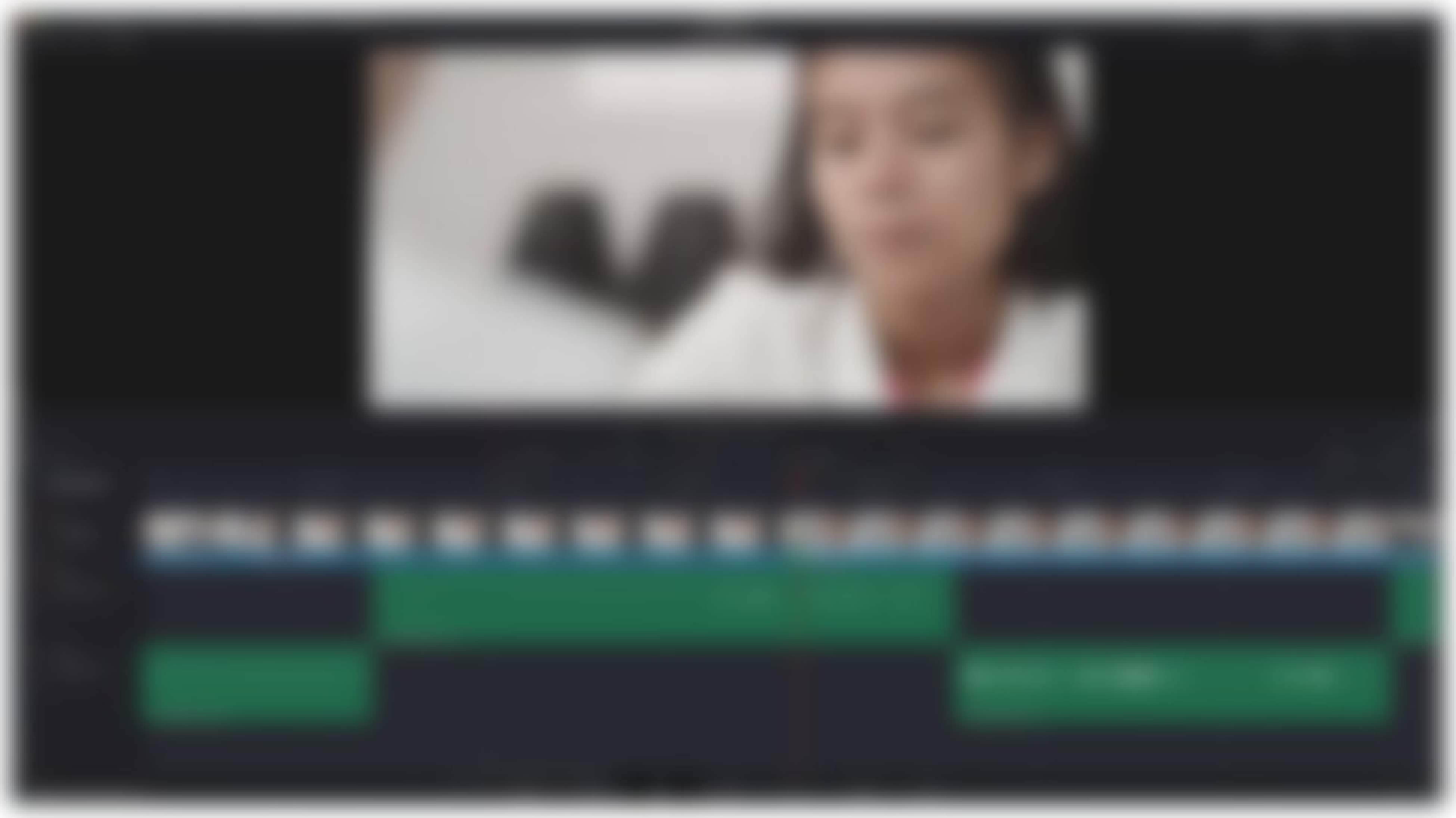
He is obviously upset by Harper's actions and the resultant effect on the reverse path tree on the school grounds. It would be nice to know what Harper's reaction to his accusation is.

- Place the playhead over Garrett's shot just after he says, "[illegible]," when he's looking at Harper.



Now that Garrett's emotional state has been established, it would be great to see Harper's reaction to this emotive word.

- Select the next edit point and press E to perform an Extend Edit.

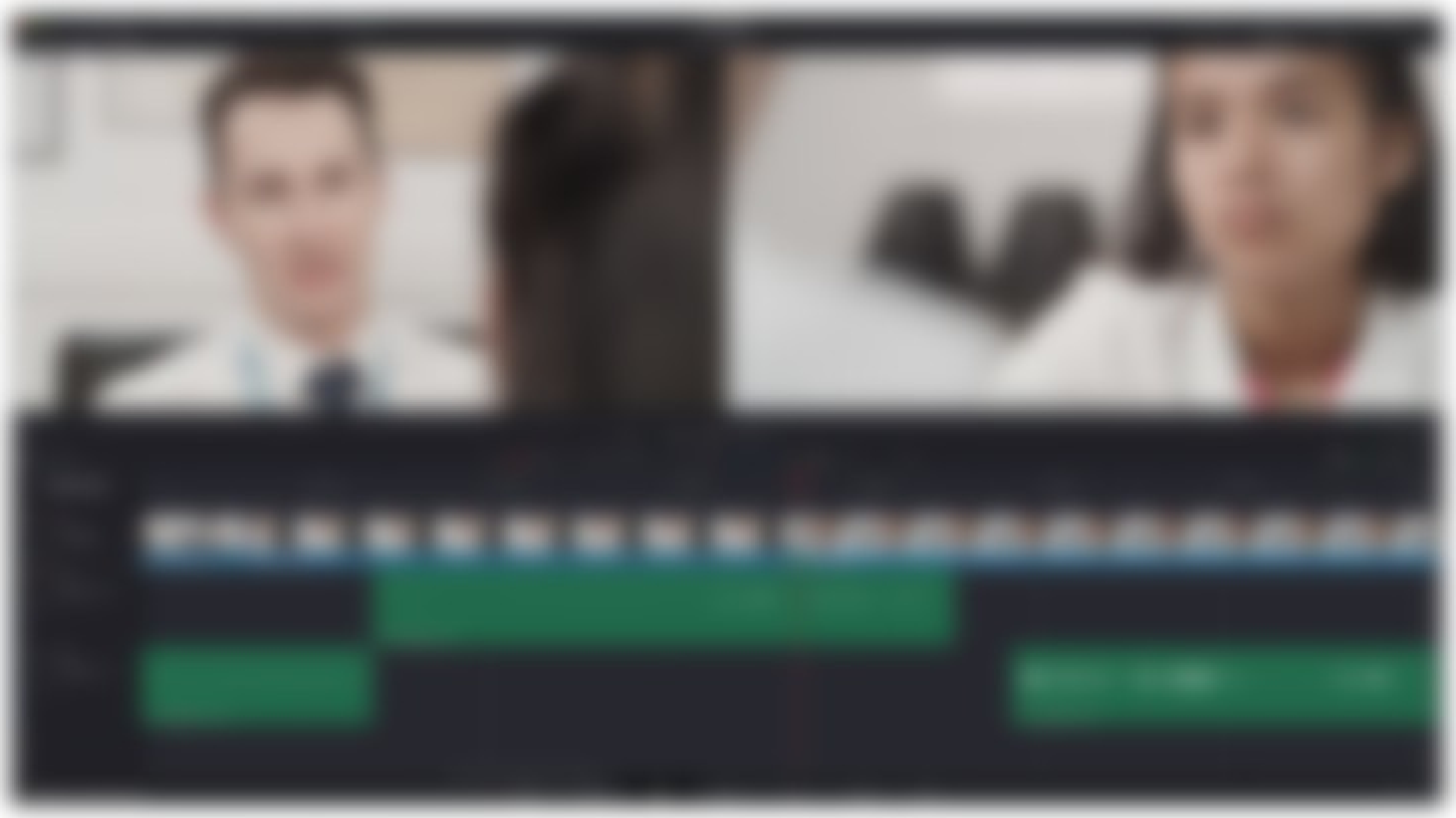


- Press / (forward slash) to review the change.

Harper reacts with a roll of the eyes. It would be nice to make more of this performance.

- Press T to enable Trim Edit mode. This will enable you to ripple the timeline.

- Press U to switch the selected edit from a roll to an incoming ripple trim.
- Press , (comma) to trim the incoming shot backward, adding frames to the start of the shot until the incoming frame shows [illegible] looking directly at [illegible].

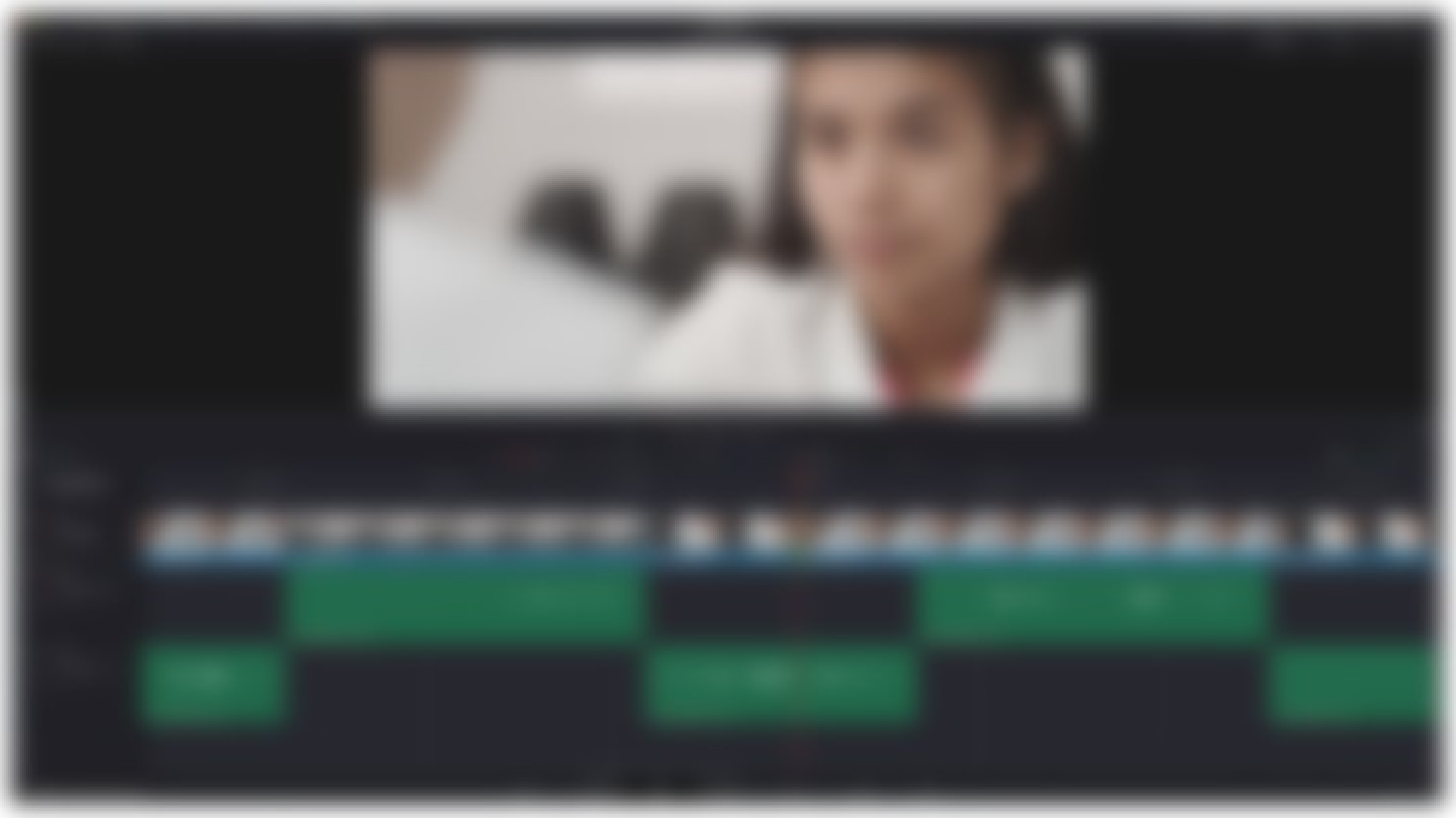


- Press / (forward slash) to review the change.

  Perfect! Now [illegible] showing a certain amount of conviction in front of [illegible]. More to the point, you have just fractionally extended the time it's taken for [illegible] to respond.

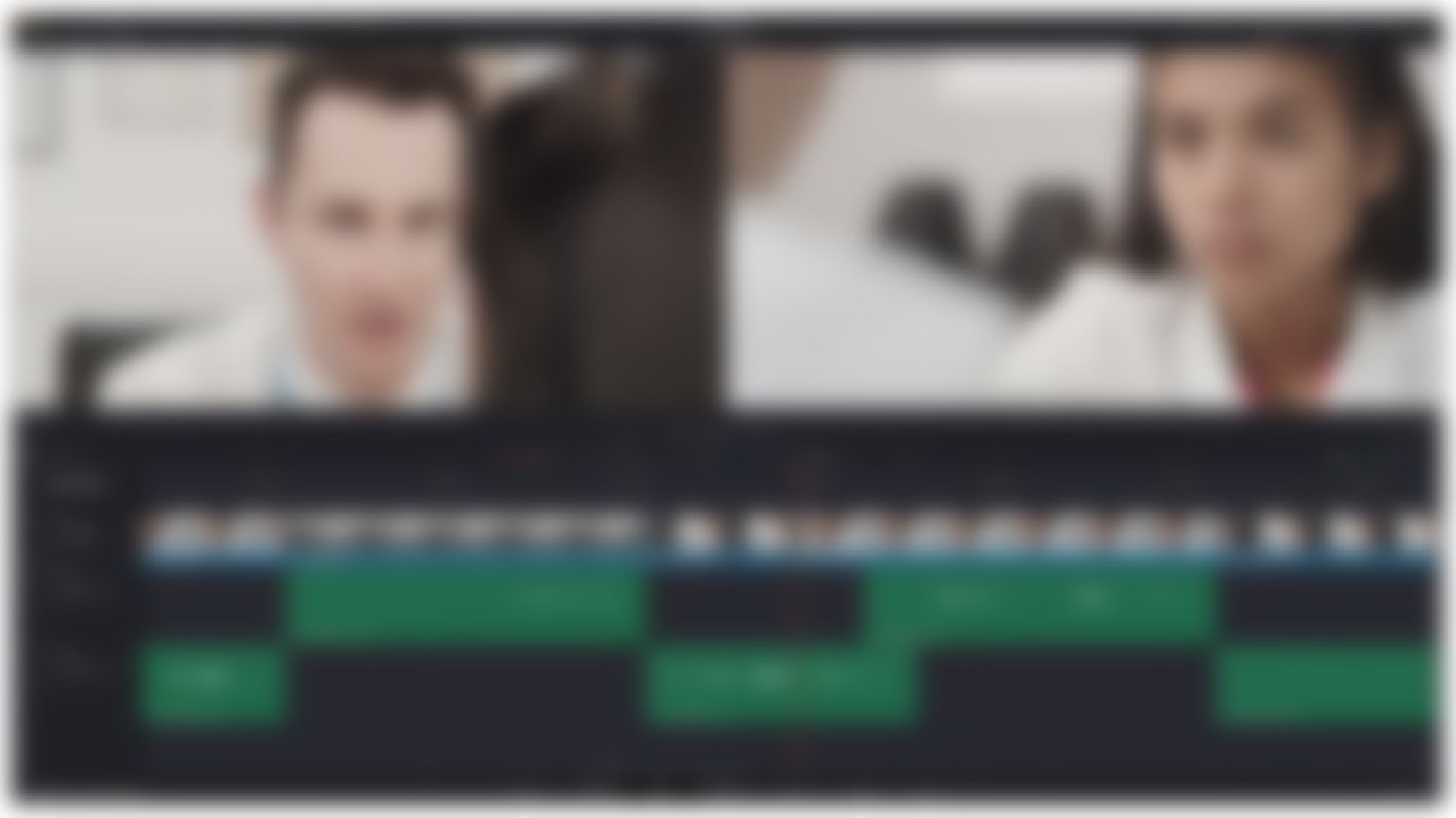
- Continue playing the scene until you reach [illegible] line, "[illegible]," and stop just before he starts to say, "[illegible]."

- [illegible]

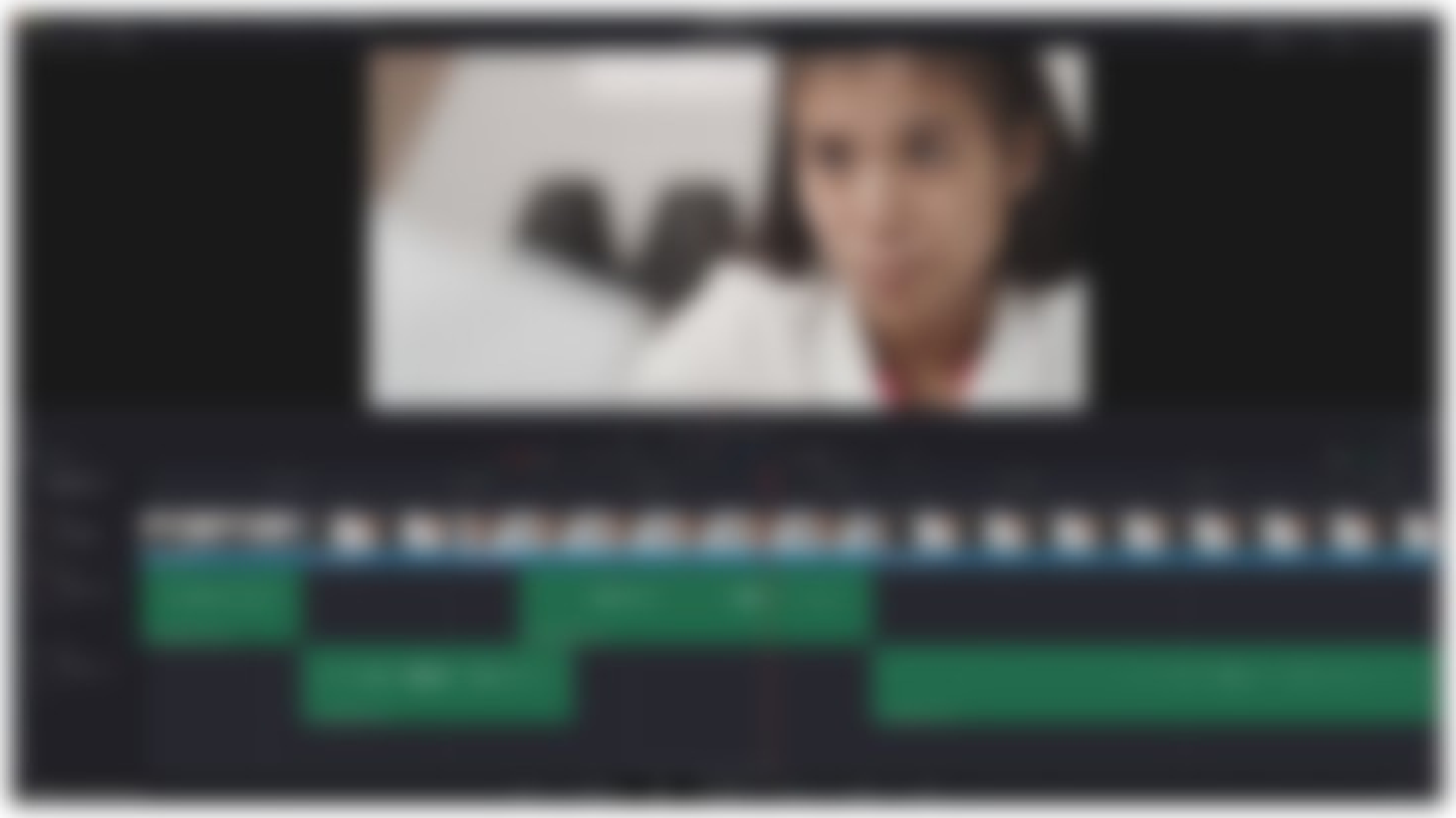


[illegible]

- [illegible]

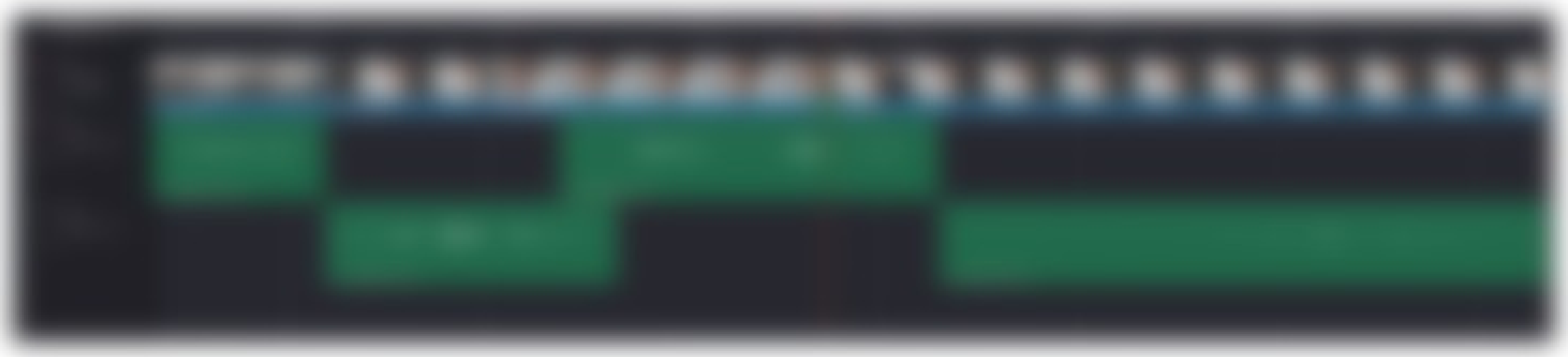


- Continue playing Hassan's shot, stopping just as she says the word "path" and looks directly at Garrett again.



Again, this would be a great point to see Garrett's reaction.

- Select the next video edit point, press E to perform an Extend Edit, and press / (forward slash) to review the edit.



By seeing more of Garrett's reaction, the audience should get a better sense of how Hassan is purposefully enraging him.

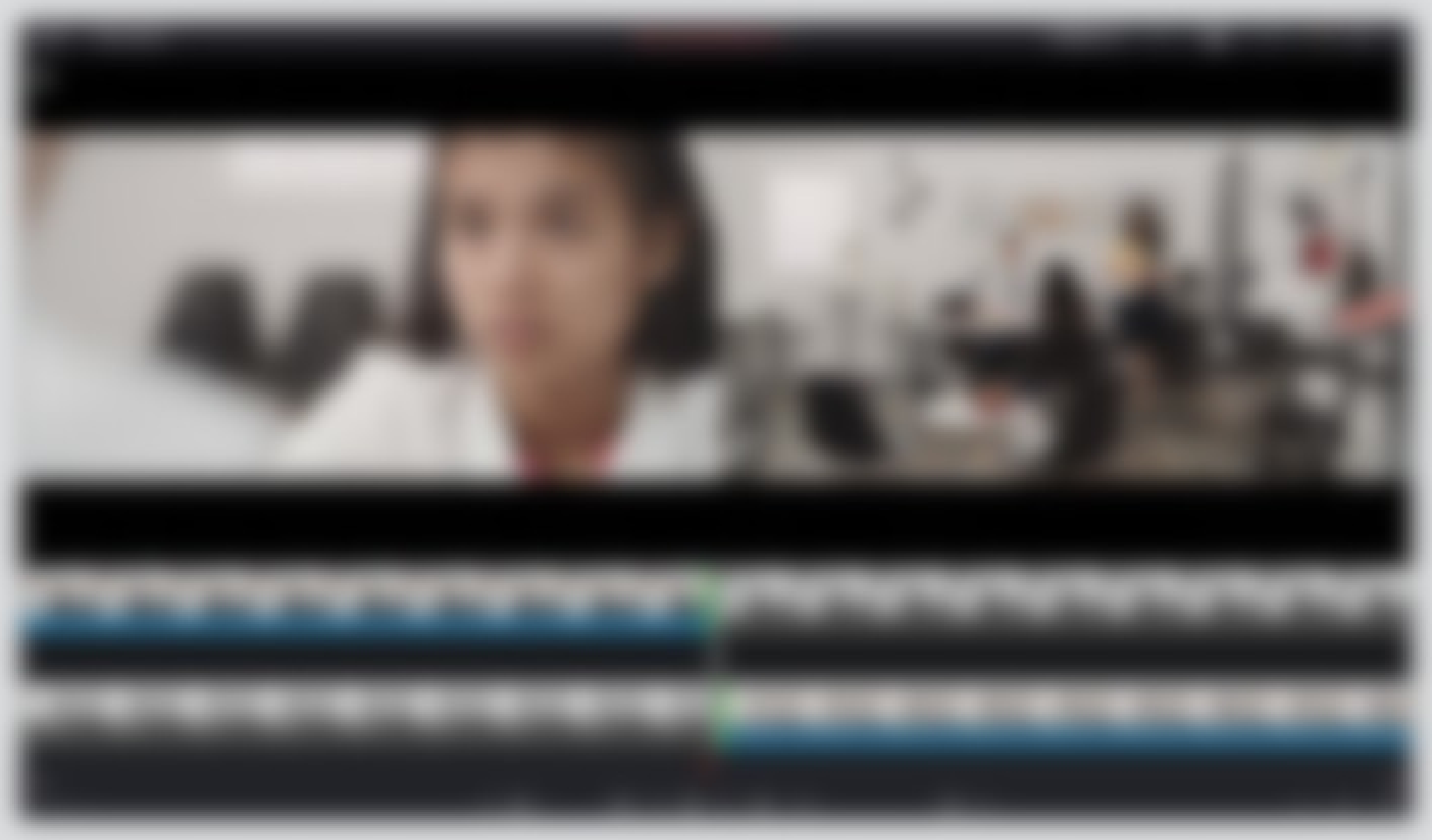
Do you think this edit could be better still? Maybe you'll want to hold onto Garrett's shot for a little longer, allowing more time for the audience to appreciate his mounting anger? Or if you think the scene is starting to slow down too much, maybe you want him to respond quicker? These are all questions an editor poses to themselves (and to a director) as they manipulate the footage to achieve the best possible results all around.

Of course, there is never a single answer to any of these questions. The best approach is to experiment with different editing techniques and determine which one you (and the director) prefer. So feel free to continue making changes to the edit and review the changes you're making objectively.

Of course, these creative decisions are also limited by the footage you've chosen or been given to work with. Maybe you want Gabriel's reaction to be quicker, but what if the actor's performance isn't suitable for this outcome? Maybe you need to try a different take? Or maybe accept that the footage is leading you in a particular direction. The possibilities are almost endless, with many acceptable outcomes. Such is the ecstasy and agony of editing.

The Precision Trim Editor

Alternatively, you can use the Trim Editor to trim your clips. Simply select an edit point and choose Trim > Trim Editor, or just double click the selected edit to open the Trim Editor's graphical edit display in the timeline viewer.



When in Trim Edit mode, you can use the Trim Editor to precisely ripple the selected edit using your mouse by simply dragging the upper filmstrip to trim the outgoing clip or the lower filmstrip to trim the incoming clip. Alternatively, you can roll the selected edit by dragging the control between the upper and lower filmstrips. The numbers displayed on the adjacent dark frame show you exactly how many frames you've trimmed, while buttons on either side of the transport controls allow you to trim the selected edit one frame in either direction. To change the direction of the edit, press U or double click the outgoing, incoming, or roll picture.

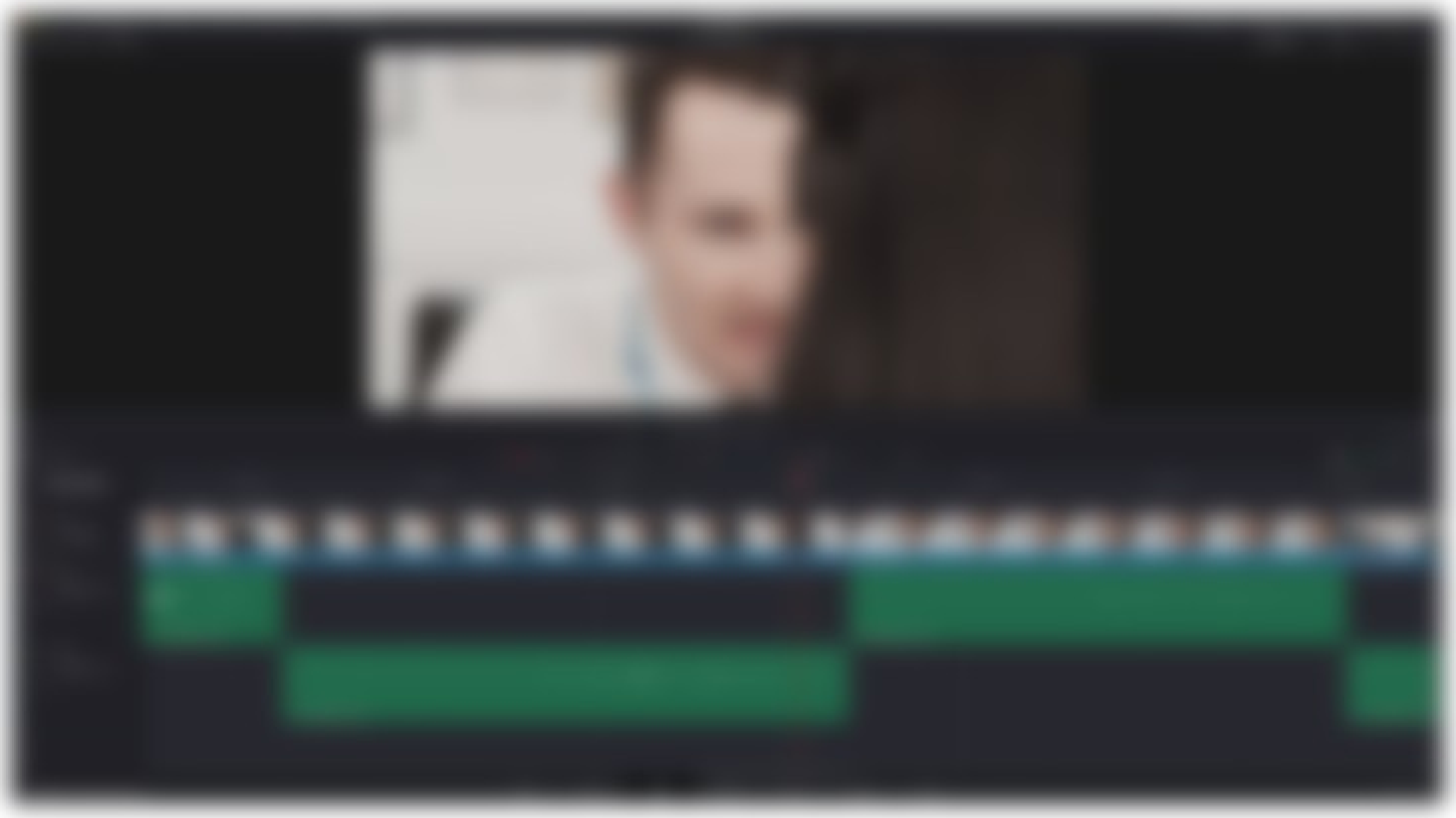
Dynamic Trimming

Another trimming mode you can enable in conjunction with either the Selection or Trim Edit modes is Dynamic Trim mode. Dynamic trimming is a technique that many editors like because it allows you to trim in real time as you are playing back. It takes a bit of practice to use effectively, but it can be a fast way of making even precise adjustments in the timeline.

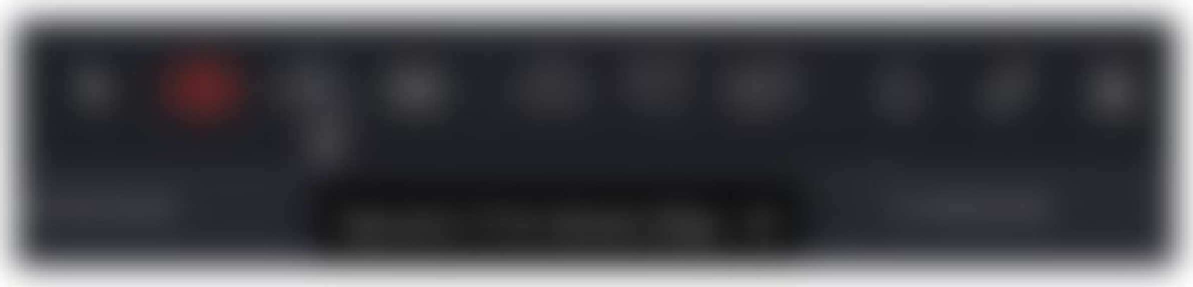
1 Make sure no edit points are selected in the timeline.

> **TIP** You can press Shift-Command-A (macOS) or Shift-Ctrl-A (Windows) to deselect all.

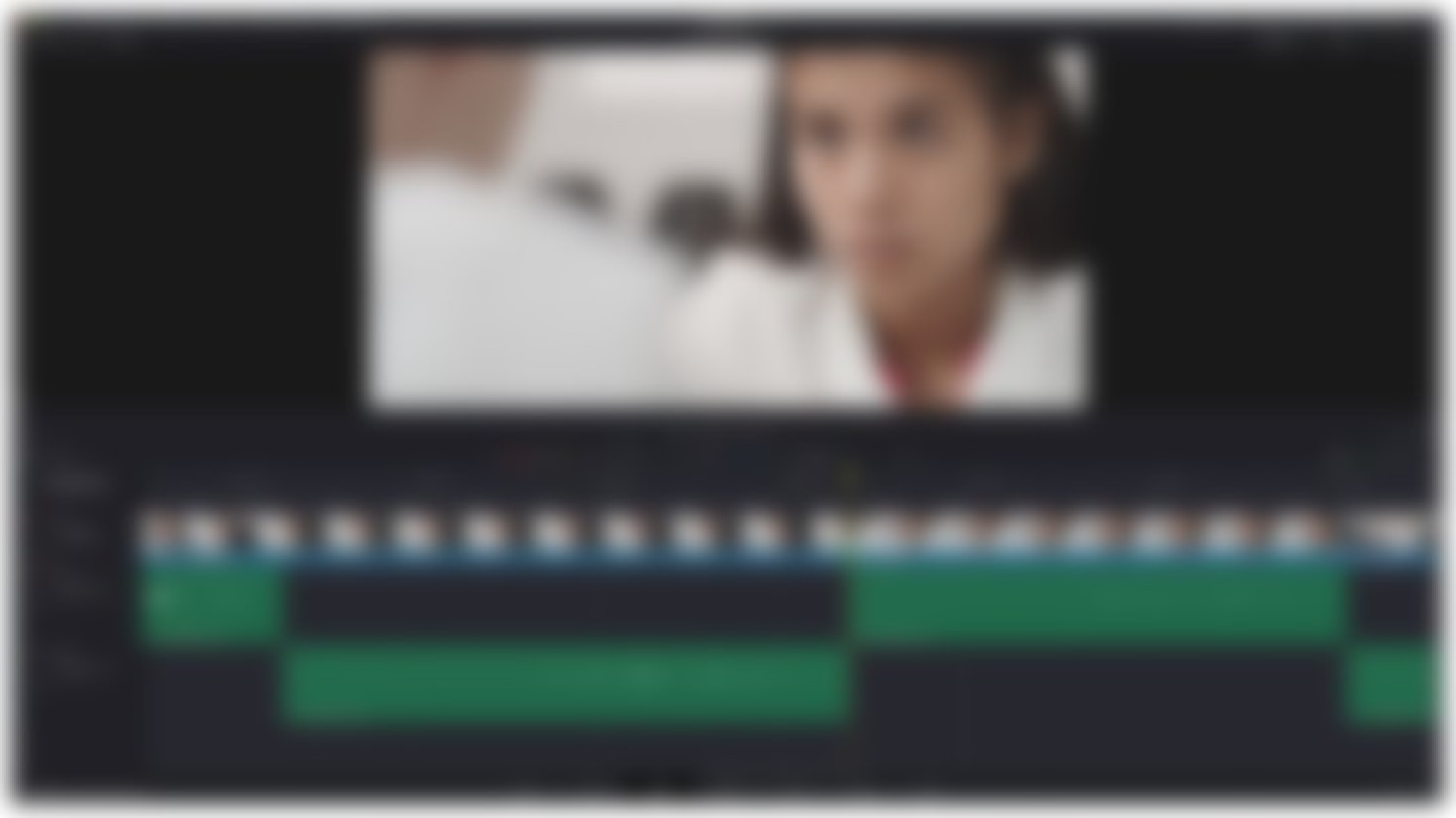
2 In the timeline, play the next shot of Garrick, where he says, "It's the Centennial Palm Tree" through gritted teeth.



3 In the timeline toolbar, click the Dynamic Trim Mode button or press W.



As soon as you enable Dynamic Trim mode, several things happen. First, the edit point nearest the playhead is selected, and the playhead moves to that point. Second, both the timeline playhead and the Dynamic Trim button turn yellow as an obvious visual indication that you are now in Trim Edit mode.



Why would you need to have such an obvious visual indication? Well, because there are also other changes made to how your timeline now operates that aren't immediately obvious, including some of your familiar keyboard shortcuts.

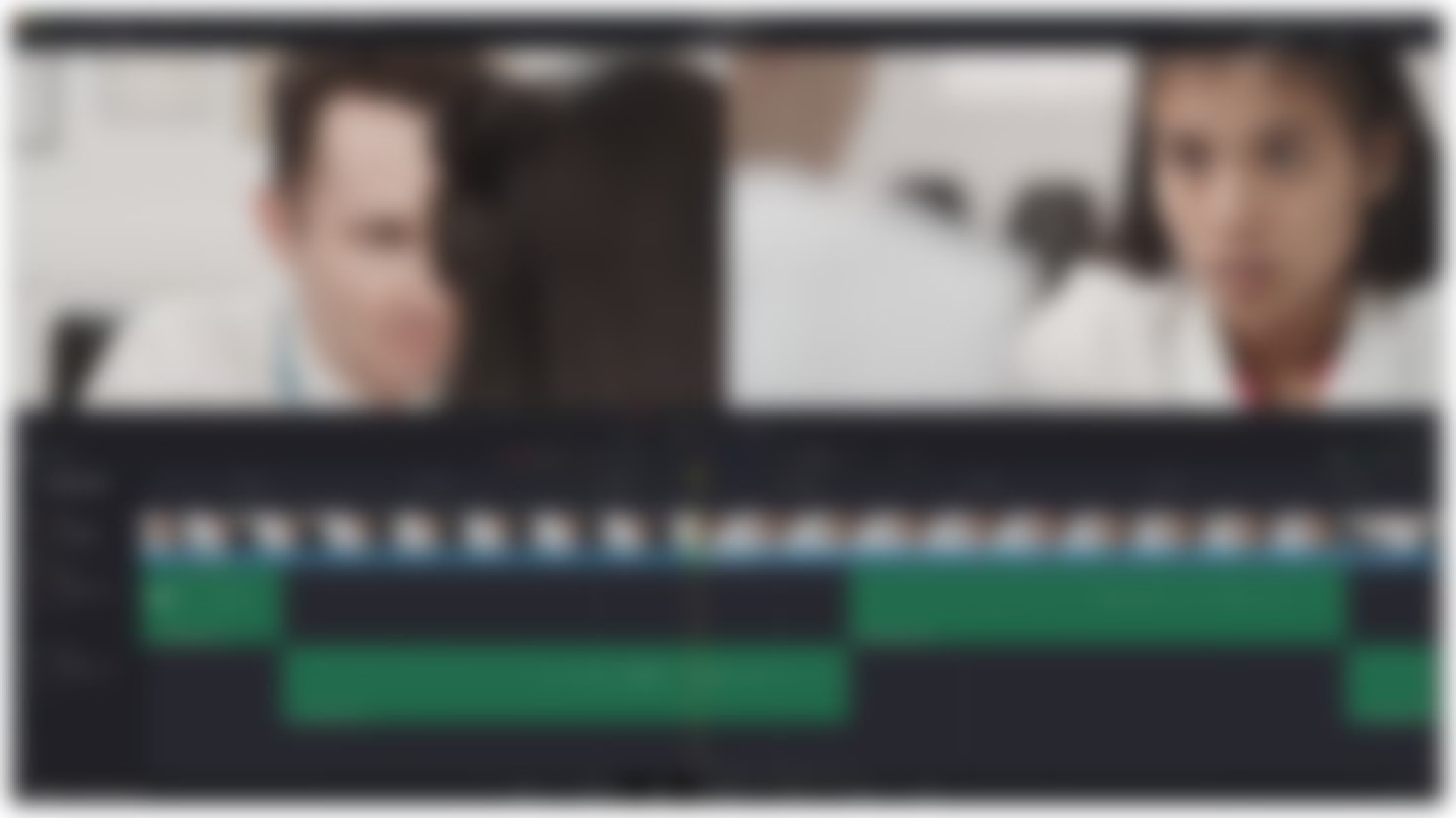
- Press the Spacebar.

  Note, instead of simply playing the timeline from the playhead, the shortcut now plays around the playhead position, similar to how you've been using the / (forward slash) shortcut in previous steps.

  More importantly, the J, K, and L shortcuts now trim the selected edit in real time.

- Ensure that the selected edit is selected as a roll. If necessary, press U to cycle through the different edit point selections until both sides are selected.

- [illegible]



[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Continue to finesse this edit using any of the techniques you prefer to adjust the pacing and cue between each shot. Remember, there are really no right or wrong ways to cut a scene like this, but editors around the world have used these techniques for decades, so they are a good place to start.

NOTE If you wish to see a completed version of this scene, select the TIMELINES bin and choose File > Import > Timeline, navigate to R20 Editors Guide > Lesson 05 > Timelines, select [illegible] and click Open.

Lesson Review

- True or false? Ripple Overwrite is a three-point edit.
- True or false? You must always set In and Out points in the timeline when performing a Ripple Overwrite.
- What function is used for opening a timeline clip's master clip in the source viewer?
    - Source Overwrite
    - Source Frame
    - Match Frame
- Which of the following are types of split edits?
    - J-cuts
    - R-cuts
    - L-cuts
- True or false? Dynamic Trimming can only be used when the timeline is in Trim Edit mode.

Answers

1. False. Ripple Overwrite is a four-point edit that you use when the duration of the marked source clip differs from the duration marked in the timeline, and when you want the timeline to ripple to accommodate the difference in duration.
2. False. If timeline In and Out points aren't set, then the Ripple Overwrite function will use the start and end of the clip in the timeline.
3. c) Match Frame will open a timeline clip's master clip in the source viewer, displaying the same frame and In and Out points as the timeline clip.
4. a) and c) J-cuts are when audio edits precede video edits, and L-cuts are when video edits precede audio edits.
5. False. Dynamic Trimming can be used when the timeline is in either Selection or Trim Edit mode.

Lesson 4

Multicamera Editing

Multiple cameras running simultaneously are used for many types of productions, including music videos and reality TV programs. Even simple interviews benefit from being shot on more than one camera.

The multicamera editing workflow in the edit page requires you to synchronize multiple clips initially. Then, you can easily cut between different camera angles without any further concern about sync issues. Using metadata provides even more flexibility for naming and ordering camera angles.

In this lesson, you'll explore the power of multicamera functionality in the edit page across two projects, learning how to solve some common challenges along the way.

Time

This lesson takes approximately 60 minutes to complete.

Goals

Editing a Multicamera Interview [illegible]
Switching Multicam Angles [illegible]
Rendering the Multicam Clips [illegible]
Editing a Multicamera Music Video [illegible]
Creating the Multicam Clip [illegible]
Real-Time Multicamera Editing [illegible]
Adjusting the Multicamera Edit [illegible]
Adjusting a Multicam Clip [illegible]
Lesson Review [illegible]

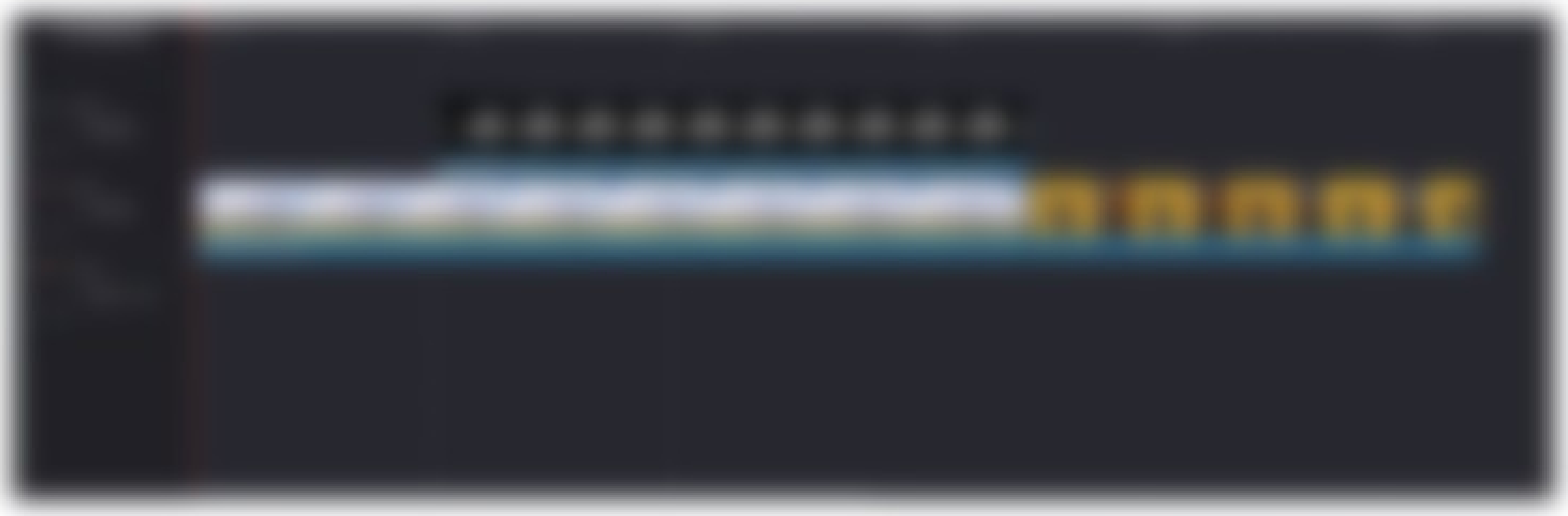
Editing a Multicamera Interview

Accurately establishing the synchronization relationship between multiple camera angles is critical for a successful multicamera edit in the edit page.

1. Open Resolve, and in the Project Manager, right-click and choose Import Project.
2. Navigate to R17 Editors Guide > Lesson 07. Select the OMO INTERVIEW.drp project file, choose Open, and then double-click the project in the Project Manager to open it.
3. If necessary, switch to the edit page and choose Workspace > Reset UI Layout.
4. Relink the media files using the Relink Media button.

   This project contains footage from the interview with Chris Long from Organ Mountain Outfitters.

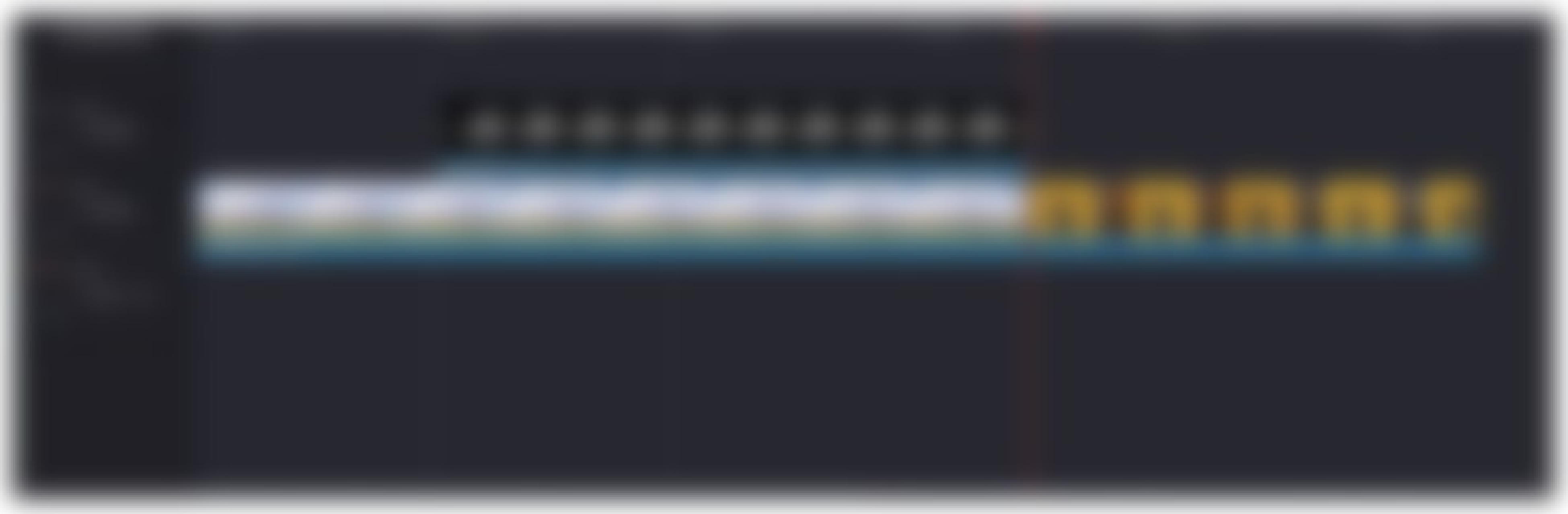
5. In the timeline, review the current edit, OMO Multicam EDIT.



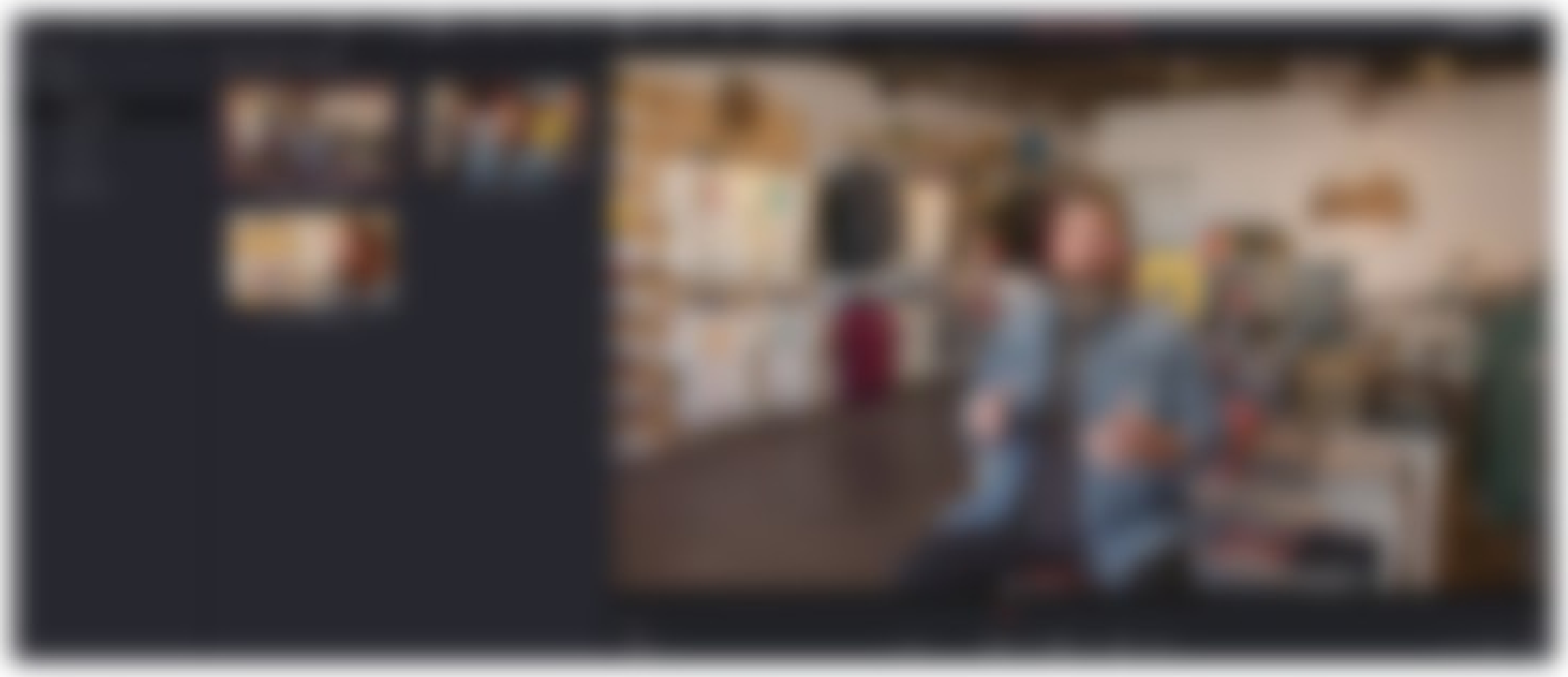
   This simple timeline has the opening timelapse shot and logo from the Organ Mountain Outfitters promo video you worked with in earlier lessons, followed by a B-roll clip featuring the "Buy a Shirt, Give a Lunch Forever" promise.

   The director wants to insert the interview between the logo and the "Buy a Shirt…" logo.

6. Position your timeline playhead on the first frame of the SHIRT SIGN clip.



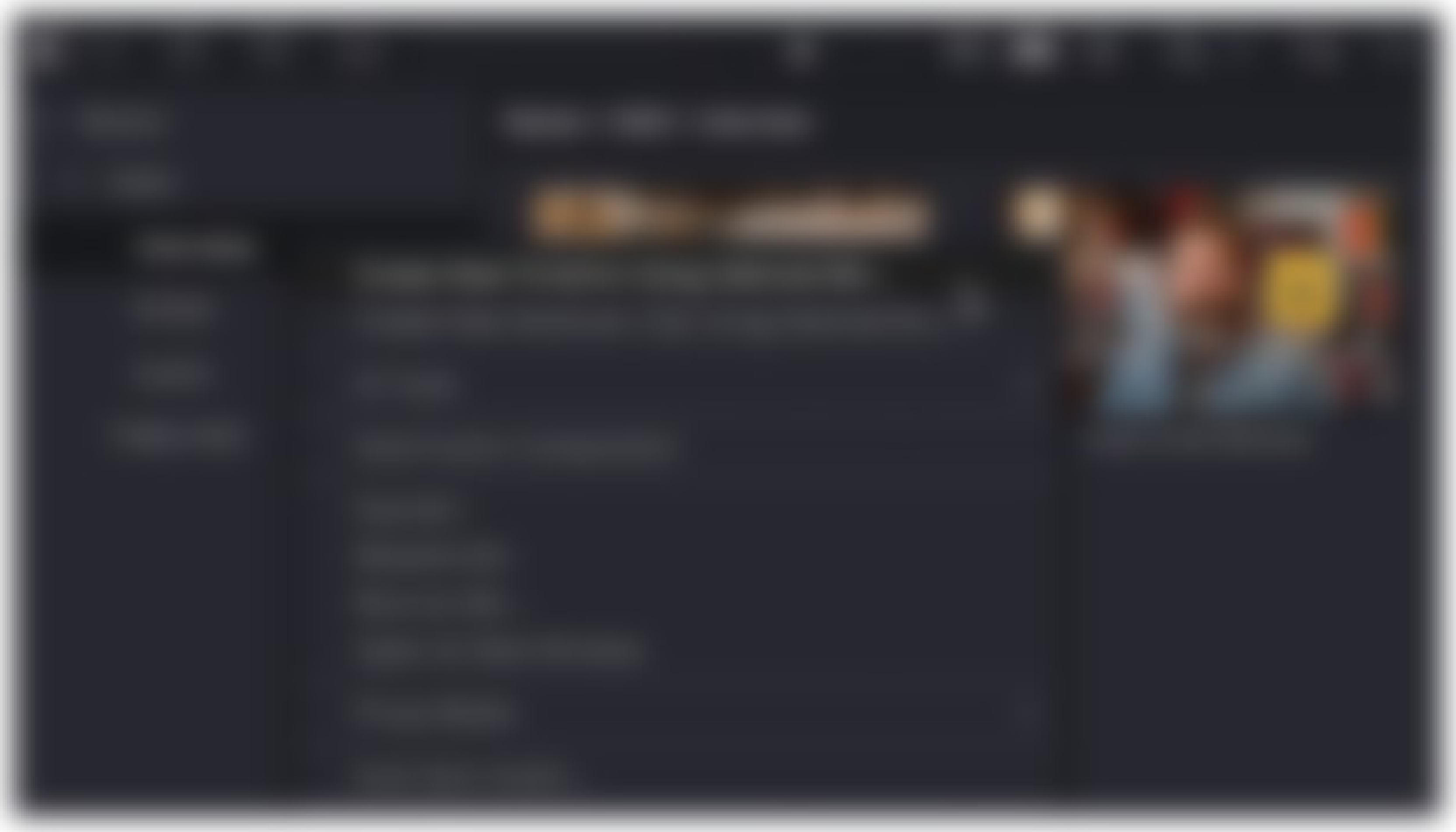
- In the media pool, select the Interviews bin and review the footage.



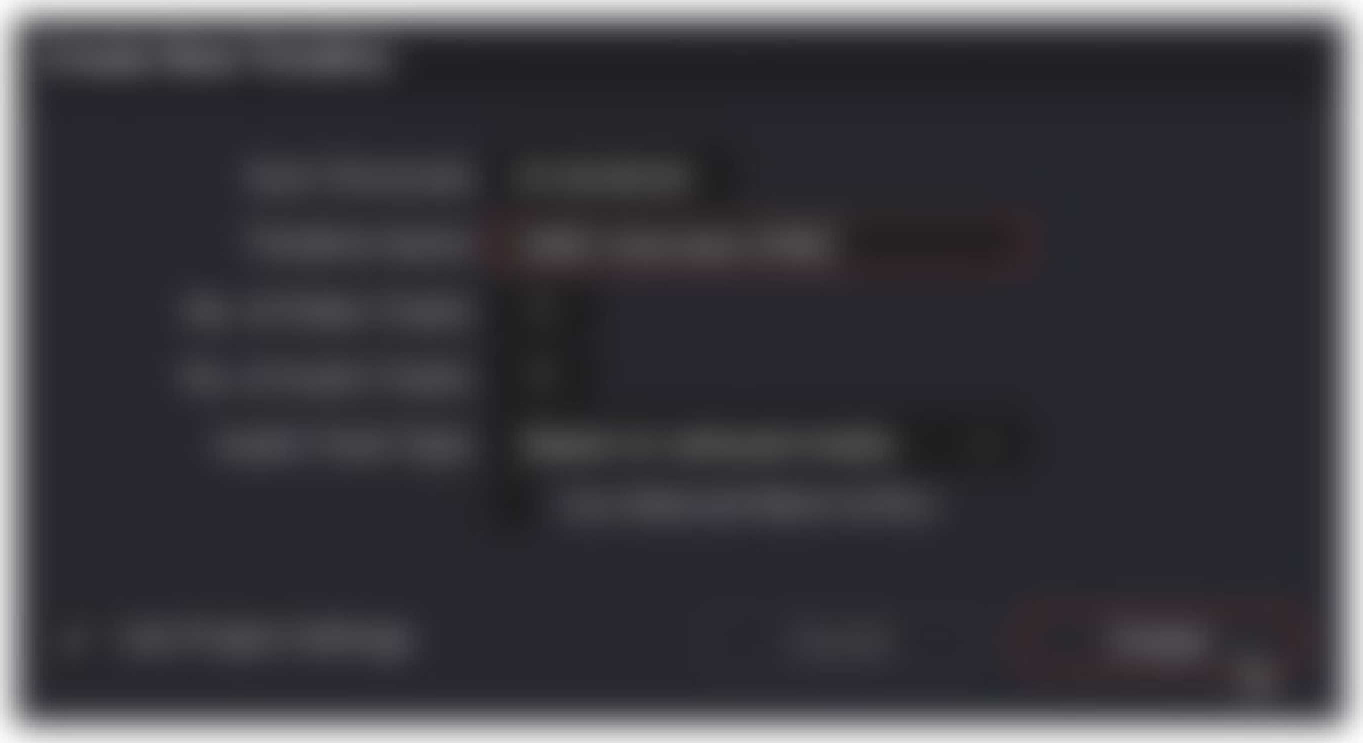
This bin contains three interview clips with Chris, in which he introduces himself and explains Organ Mountain Outfitters' "Buy a Shirt, Give a Lunch" concept. You should notice that only one of these clips has the sync'd audio shot alongside the footage; the other two clips use their original scratch audio recorded using the camera mic.

There are several ways you can sync multicamera footage on the edit page. In this first exercise, you'll manually organize the footage in a normal timeline so you can appreciate how multicam clips are structured, although you will let Resolve sync the media for you.

- In the media pool, right-click the Interviews bin and choose Create New Timeline Using Selected Bin.

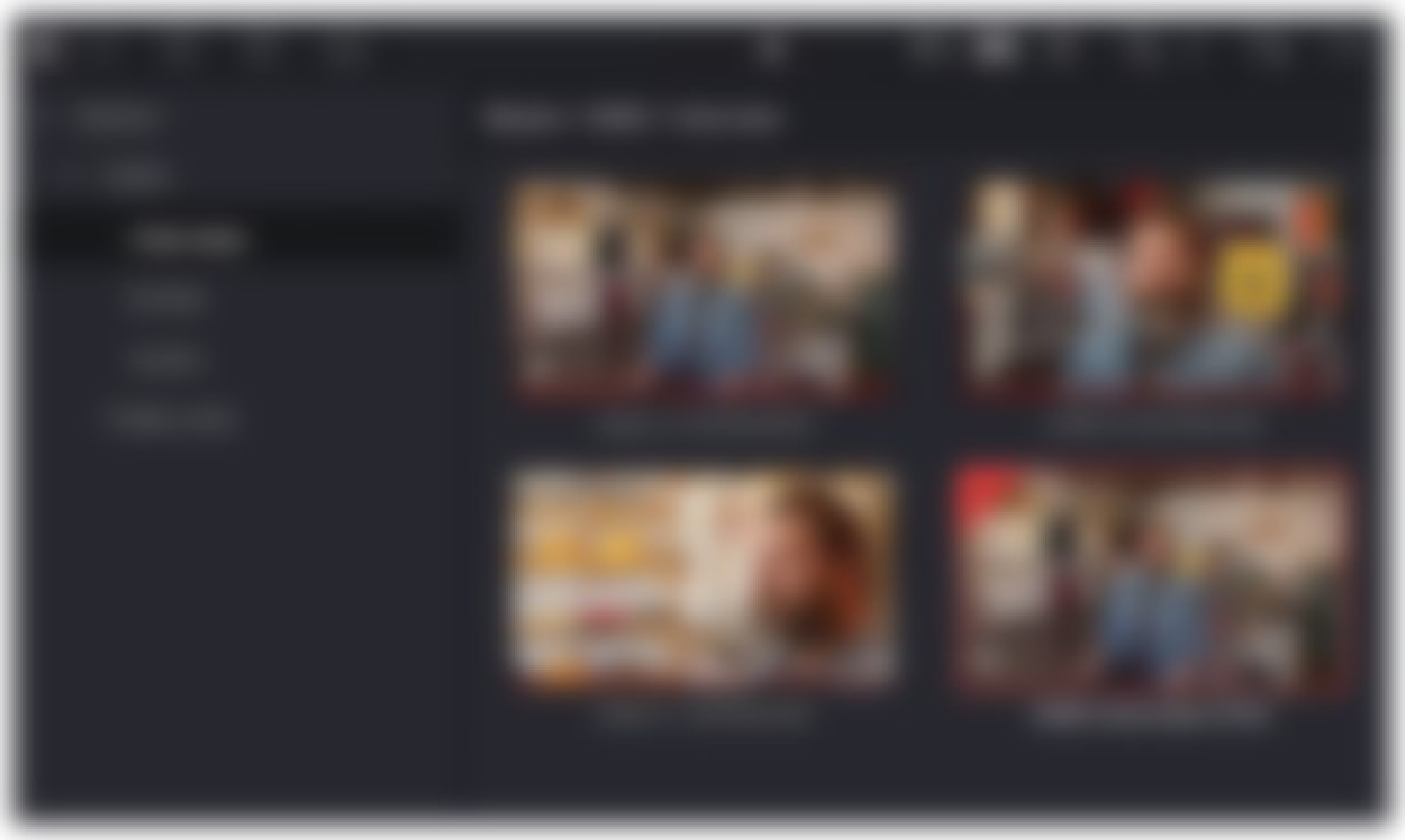


In the New Timeline window, name the timeline **[illegible]** and deselect Use Selected Mark In/Out.

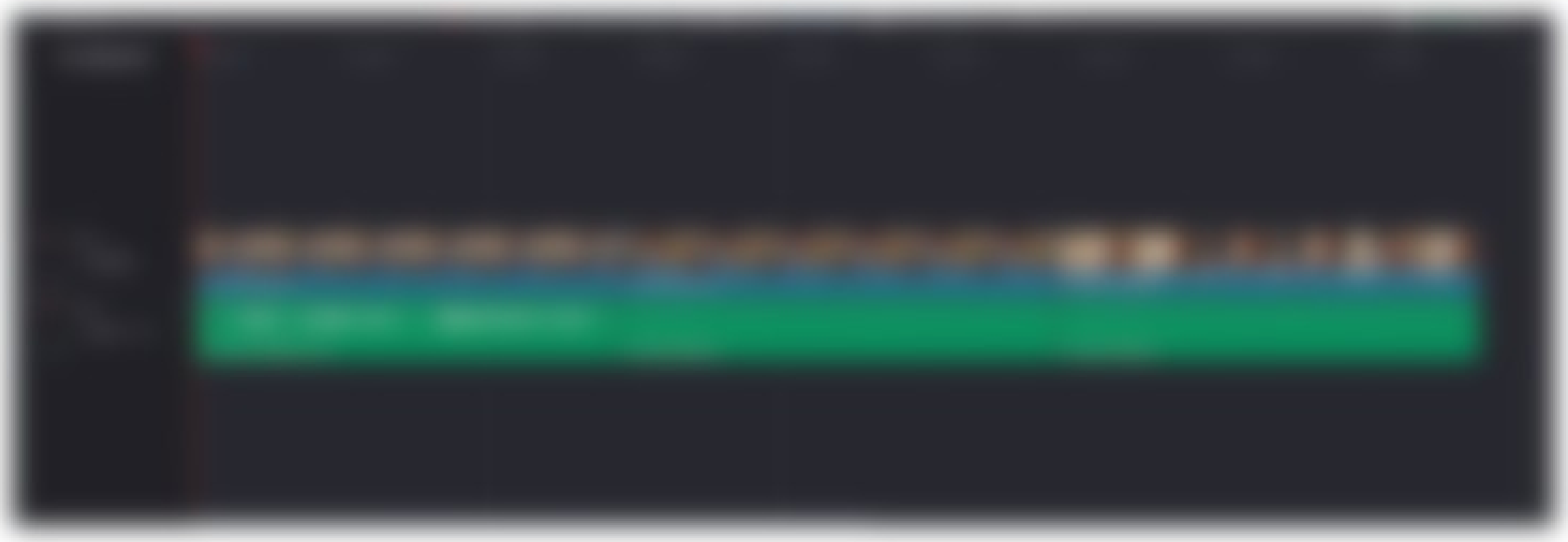


Click Create.

A new timeline is added to the current bin.



In the timeline, the three clips are arranged sequentially based on their clip name (the sorting order of the media pool).



[illegible]

[illegible]

[illegible]

[illegible]

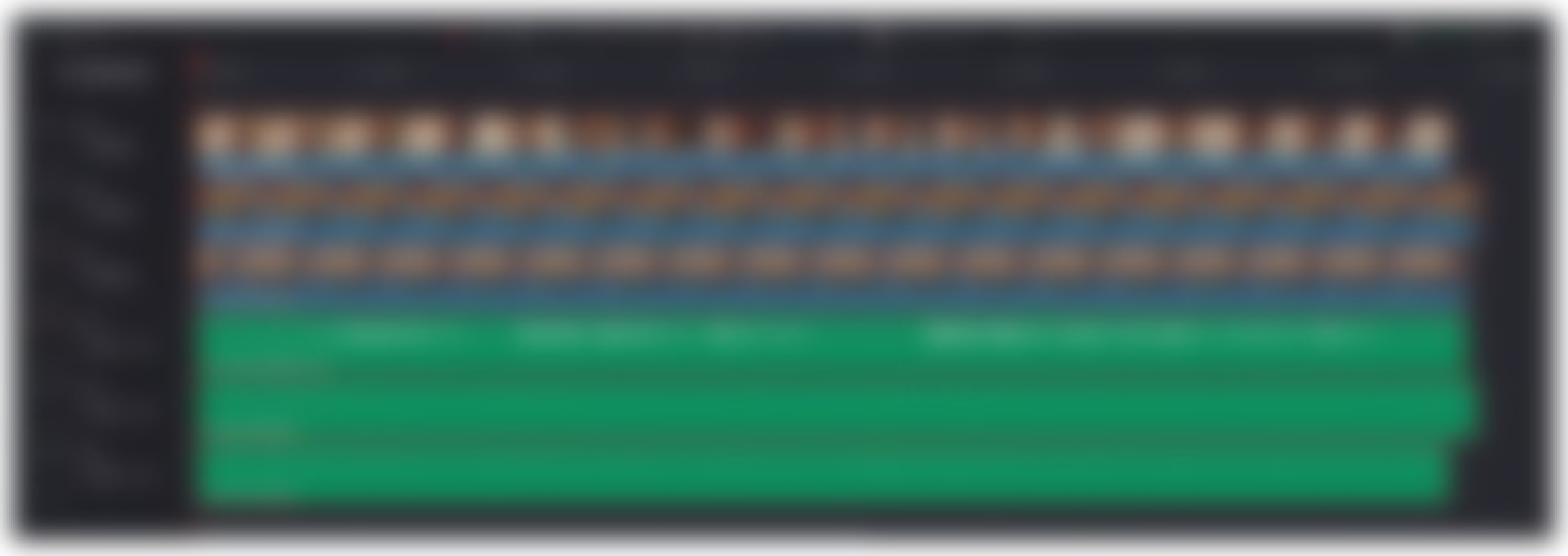
[illegible]

[illegible]

[illegible]

- Ensure that the "Synchronize using" option is set to Timecode and click Sync.

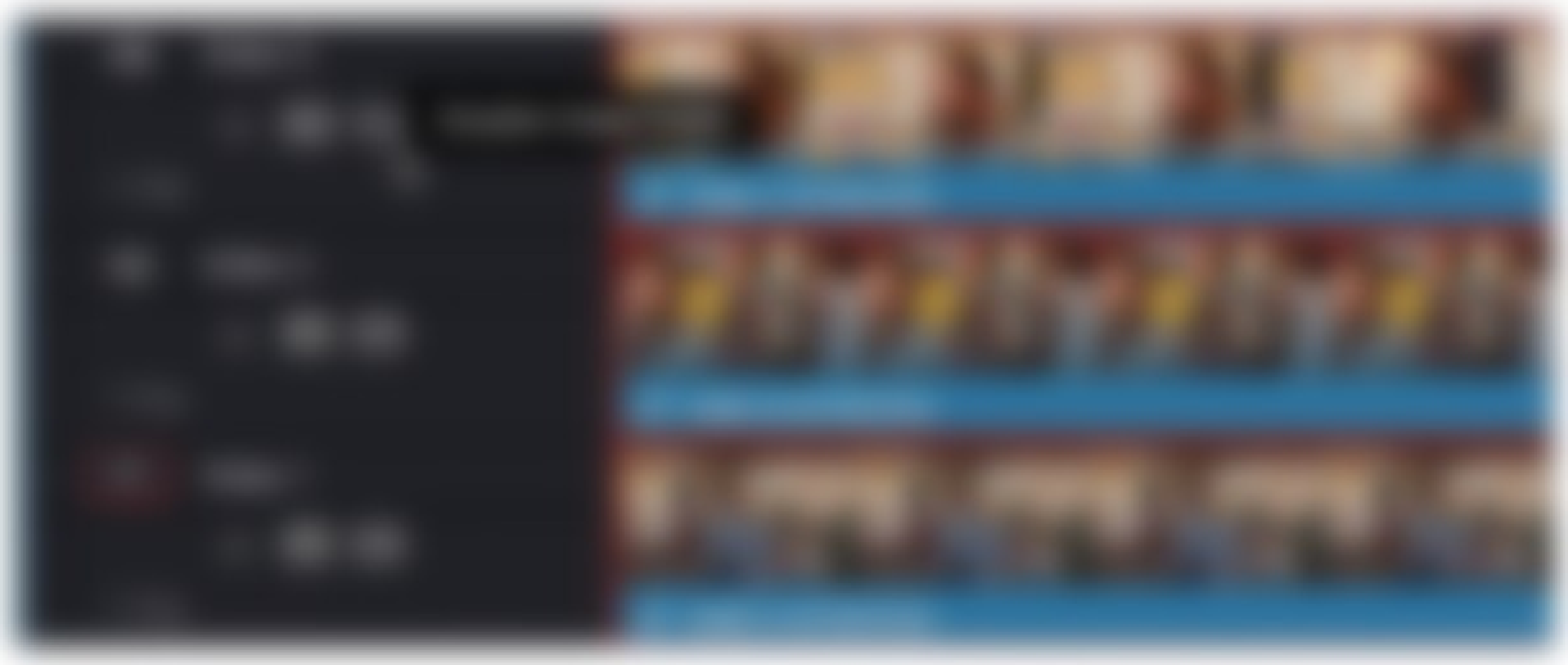
  Resolve instantly synchronizes the clips in the timeline.



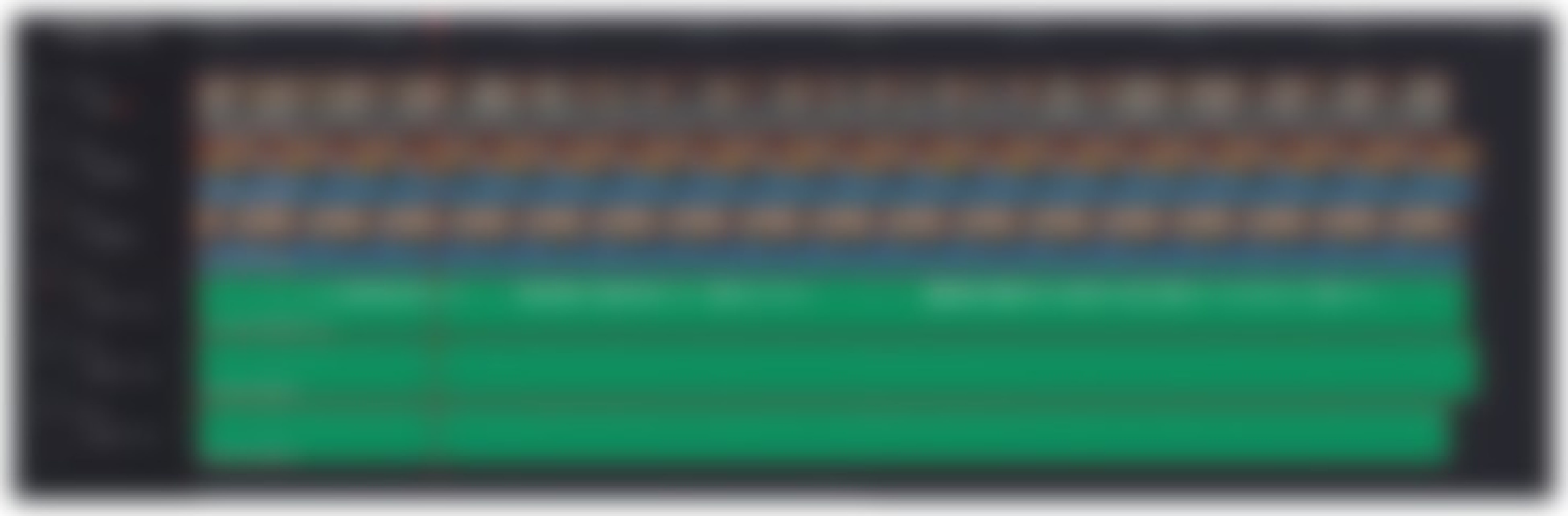
- Play the timeline as it currently stands.

  You will primarily hear the audio from the clip on the Audio 1 track but will see the clip on the Video 3 track. Both should be playing in sync.

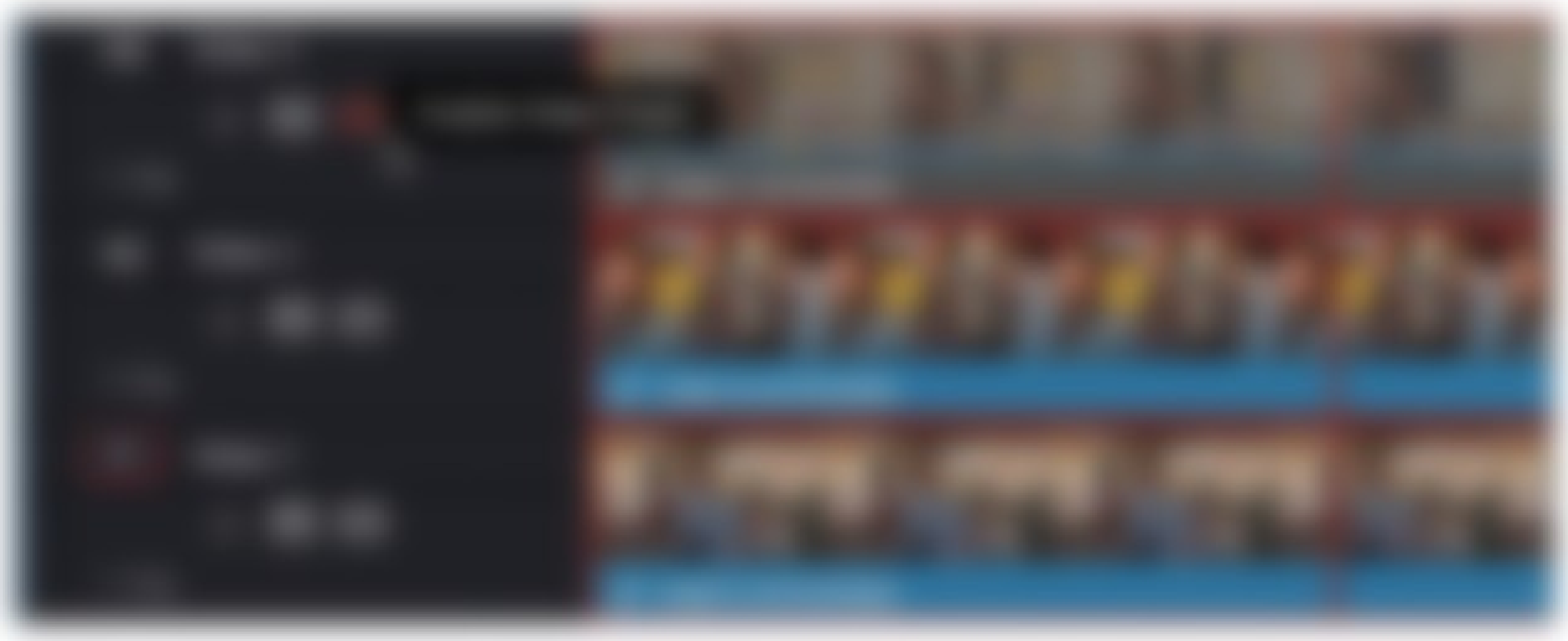
- Stop playback and click the Disable Video Track control for Video 3 to turn off that track.



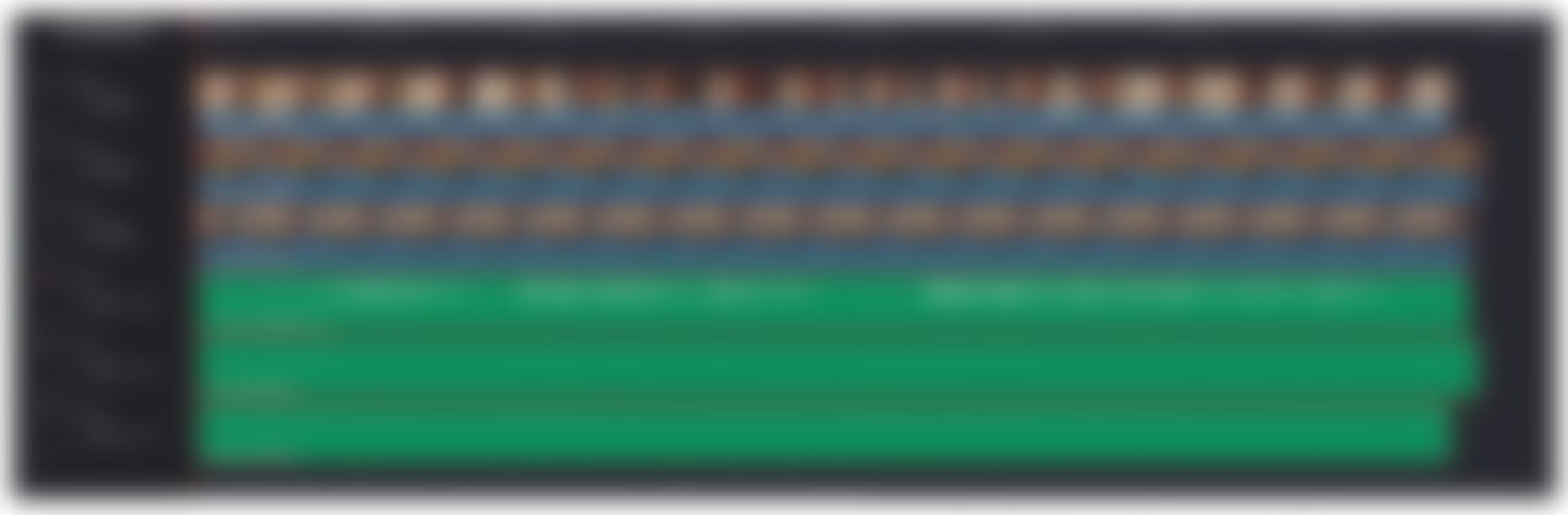
- Continue playing the timeline. Now you see the clip on Video 2, enabling you to verify that it, too, is playing in sync with the audio from Audio 1.



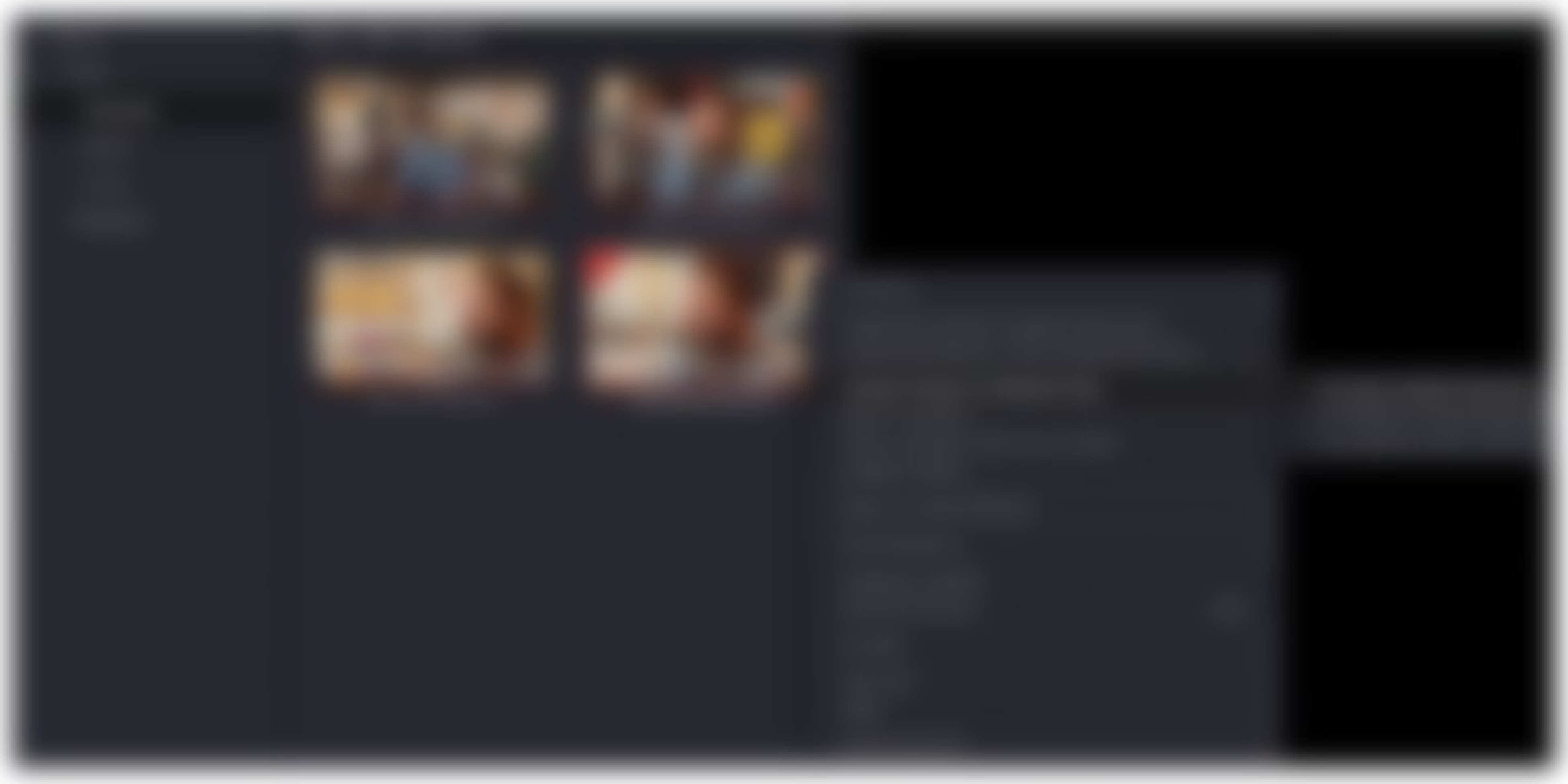
- Click the Enable Video Track control for Video 3 to re-enable the track.



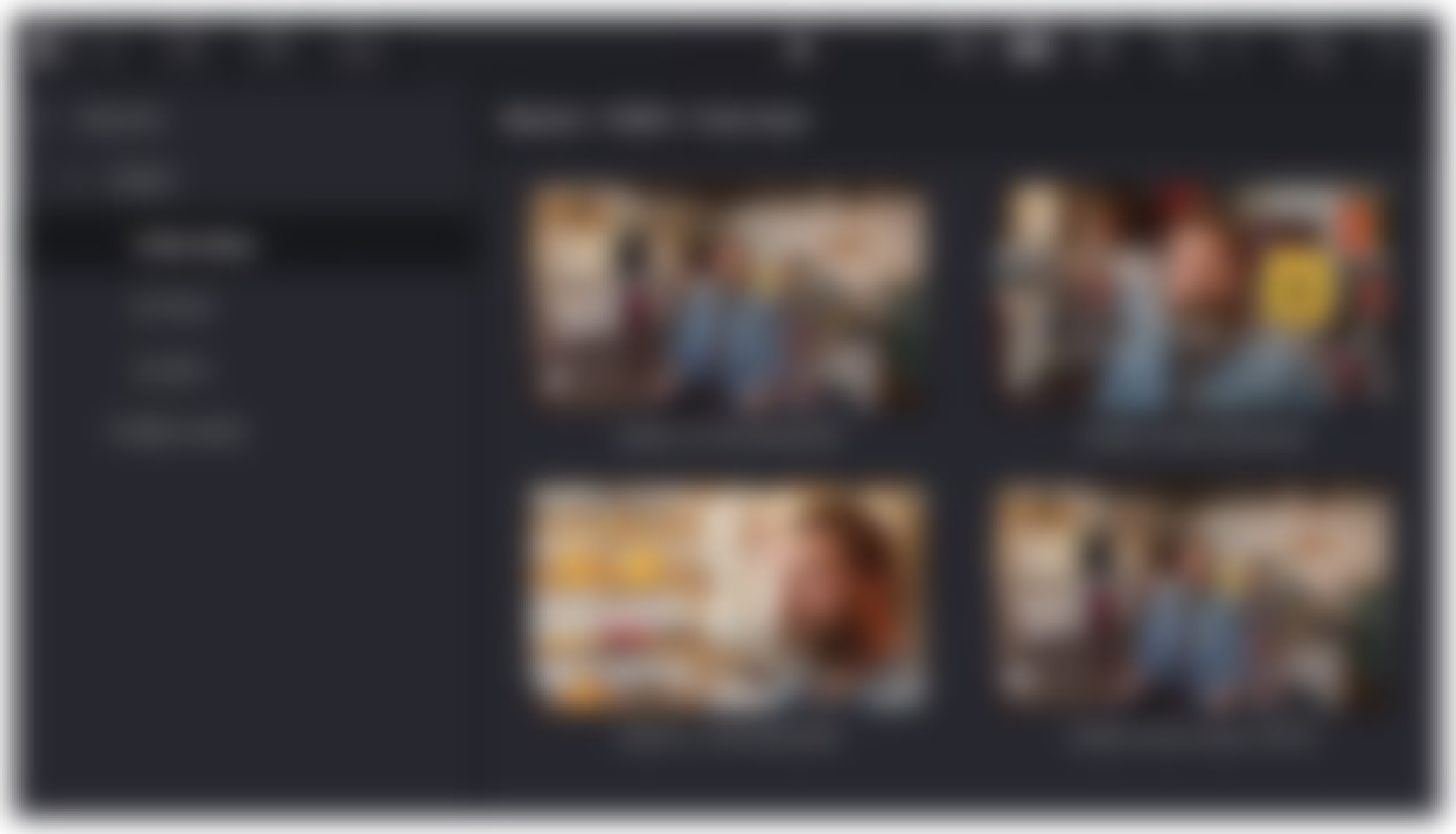
Now that you have verified that the angles have been synchronized correctly, you need to convert this timeline into a multicam clip that you can use for editing.



- In the [illegible] bin, right-click the **[illegible]** timeline and choose Convert Timeline to Multicam Clip > Use Source Audio Channels.



The timeline closes (because it is no longer a timeline), revealing the previously open timeline, **[illegible]**. You will also see that the clip's icon in the media pool has changed from a timeline to a multicam clip.



TIP You can identify a multicam clip in the timeline by the multicam icon next to the name of the clip.

Now you're ready to insert the interview into the main timeline and start editing between the different angles.

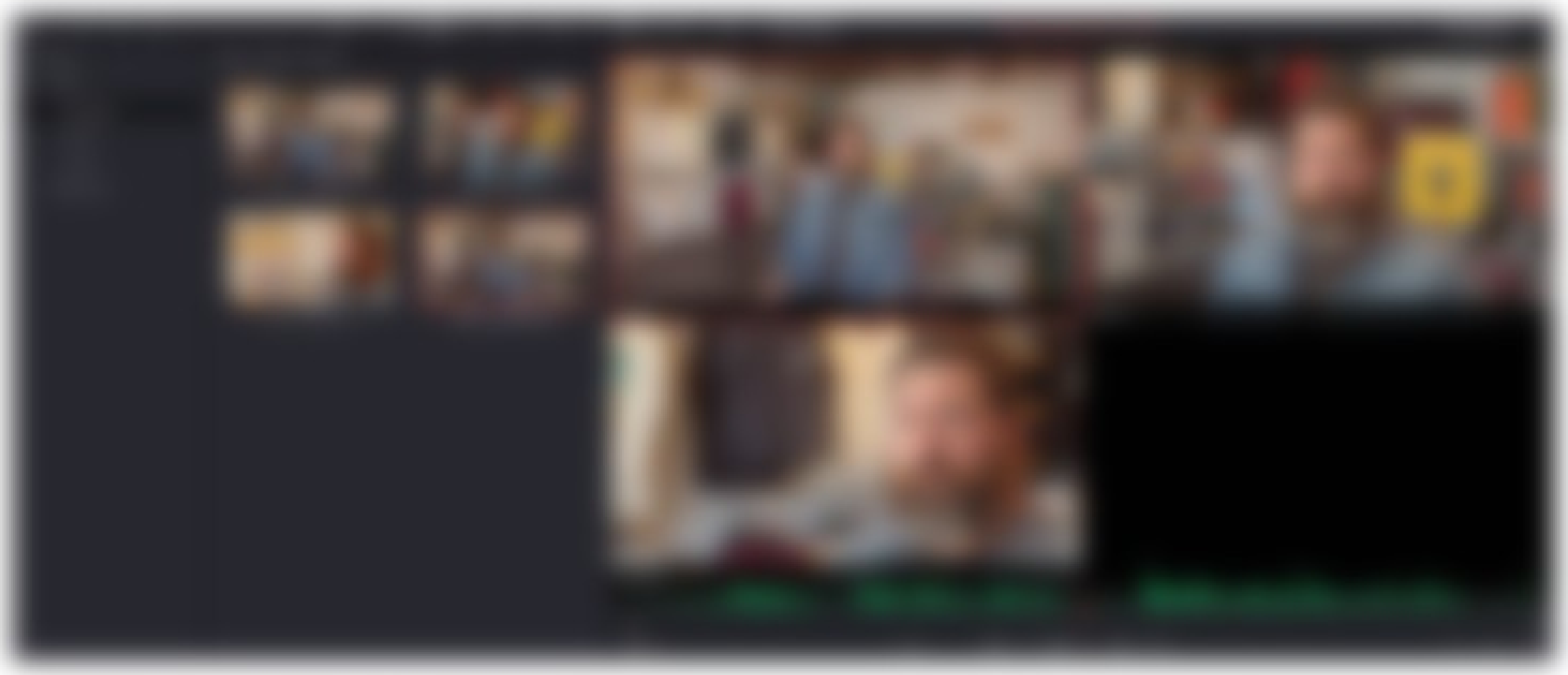
Viewing and Trimming the Multicam Clip

You can work with a multicam clip just like any other source clip. However, because it contains multiple angles in a single clip, you can switch between them anytime.

1 In the source viewer, click the Options menu (...) and choose Show Audio Waveforms in Source Clip.

NOTE If you have a multicam clip already open the source viewer, you cannot access the waveform displays. If this is the case, simply open one of the regular interview clips in the source viewer to enable the waveforms, and then reopen the multicam clip. Alternatively, you can clear the source viewer of any clips by clicking the Options menu (...) and choosing Clear Recently Viewed Clips. This will allow you to enable the audio waveforms in the source clip.

- Double-click the **[illegible]** multicam clip to open it in the source viewer.

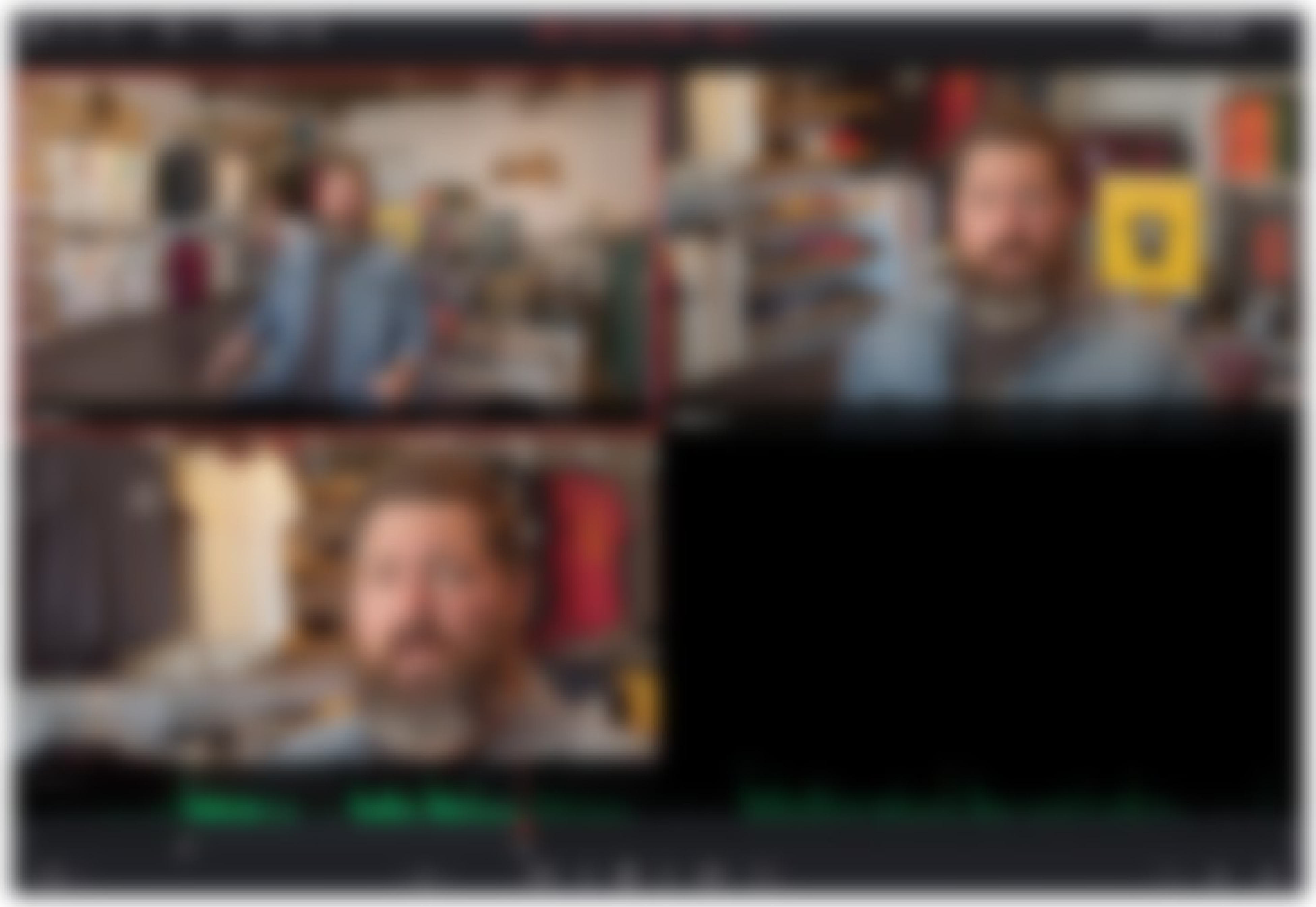


Because this is a multicam clip, Resolve automatically displays the angles simultaneously. The angle with the red outline represents the currently active angle – the angle that you will see and hear. The names of these angles are "Video 1," "Video 2," and "Video 3" because these were the names of the video tracks in the original timeline from which the multicam clip was created. You'll learn how to rename angles later in this lesson.

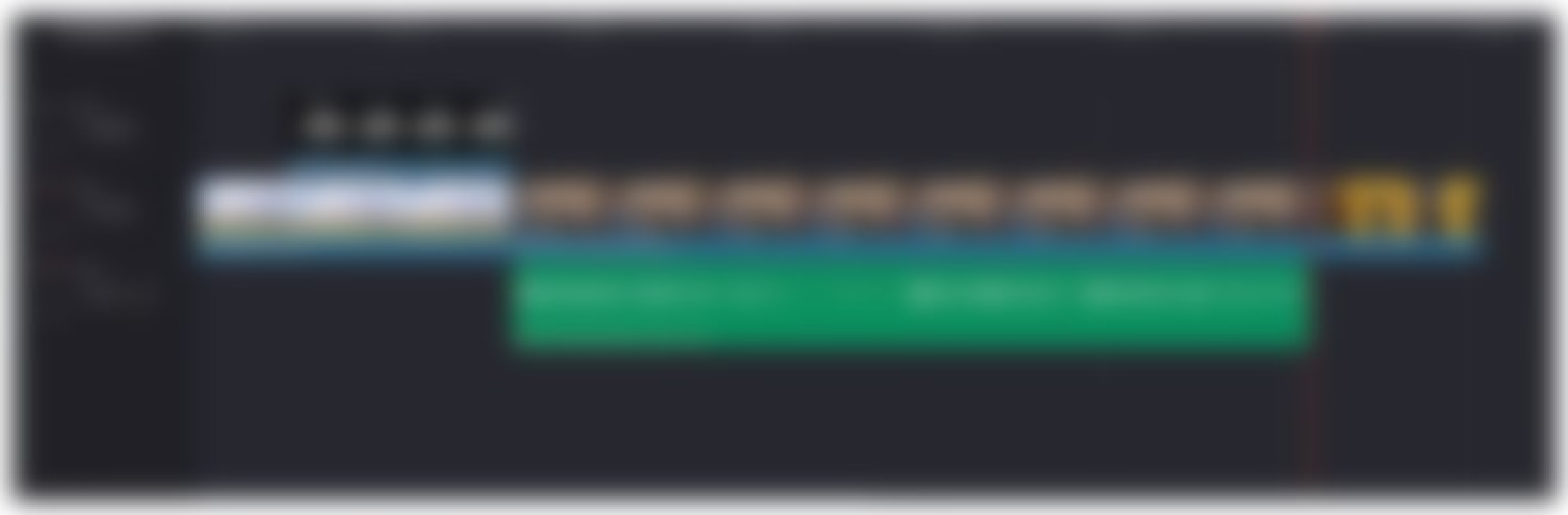
NOTE You can change the currently active angle by clicking the angle in the source viewer.

- Play the multicam clip in the source viewer. All angles should still be in sync. This is another useful technique for verifying that the different clips are playing together in sync.

- [illegible]

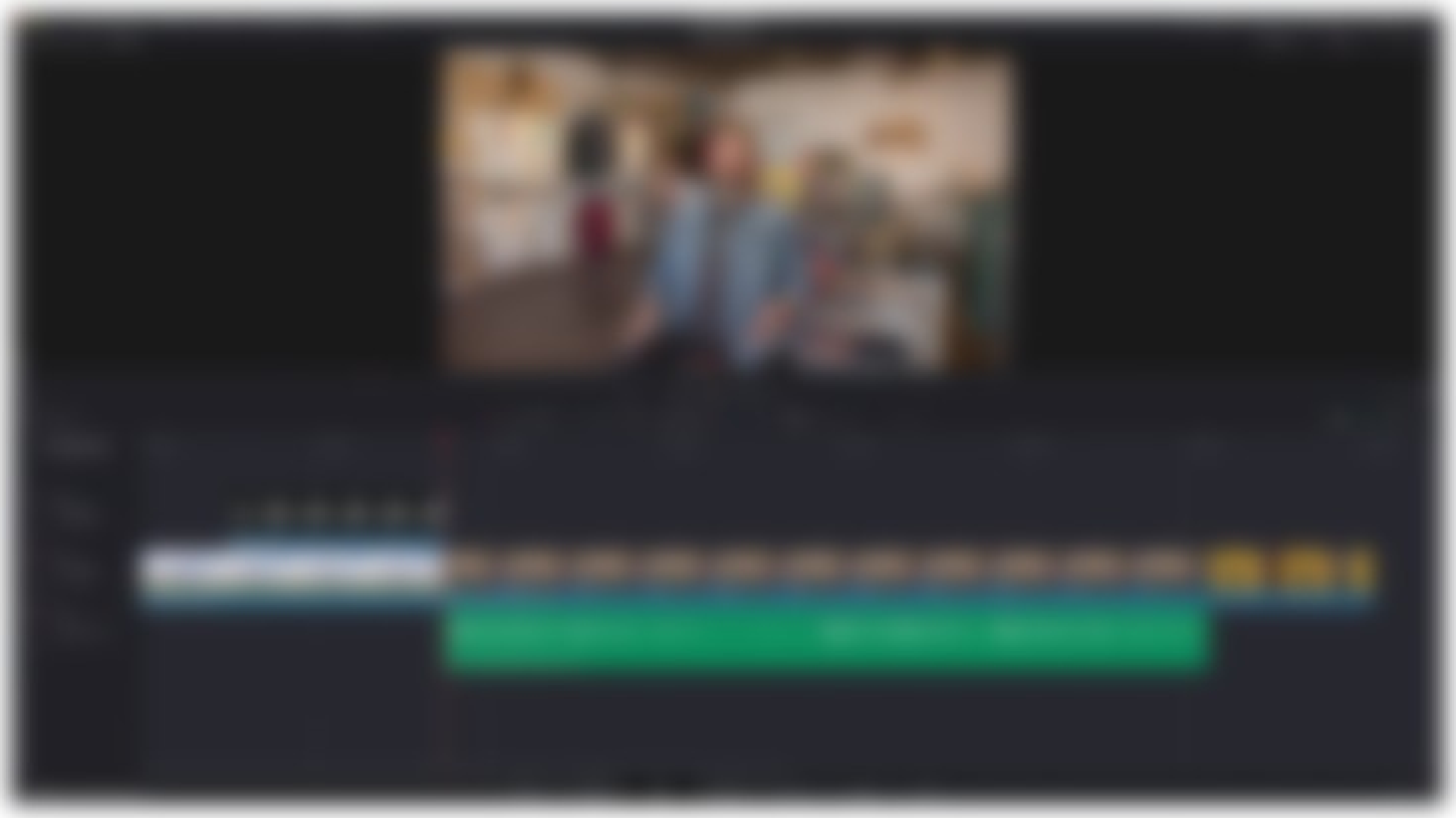


- [illegible]

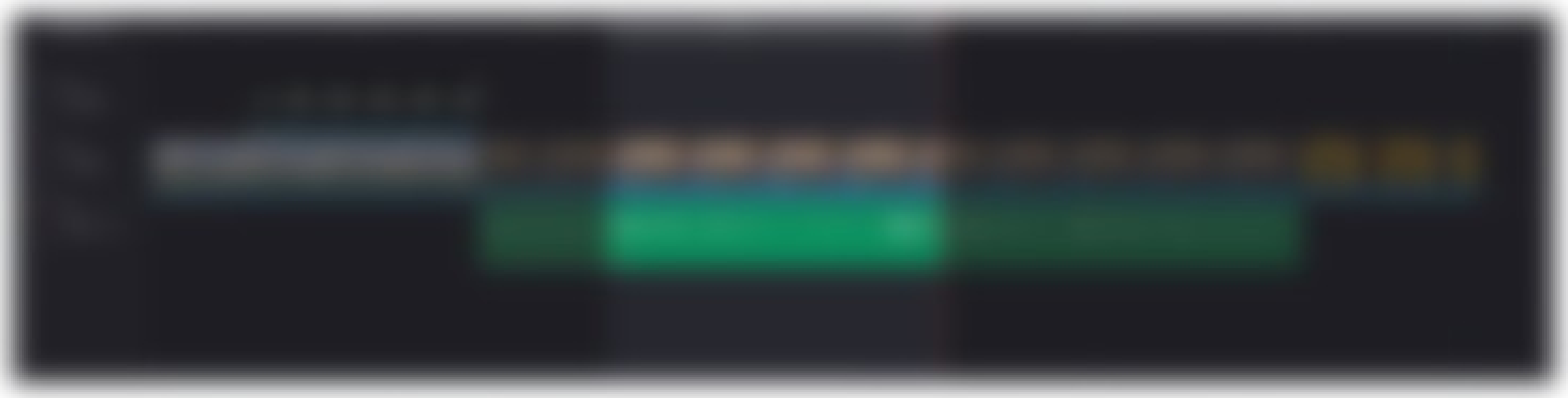


[illegible]

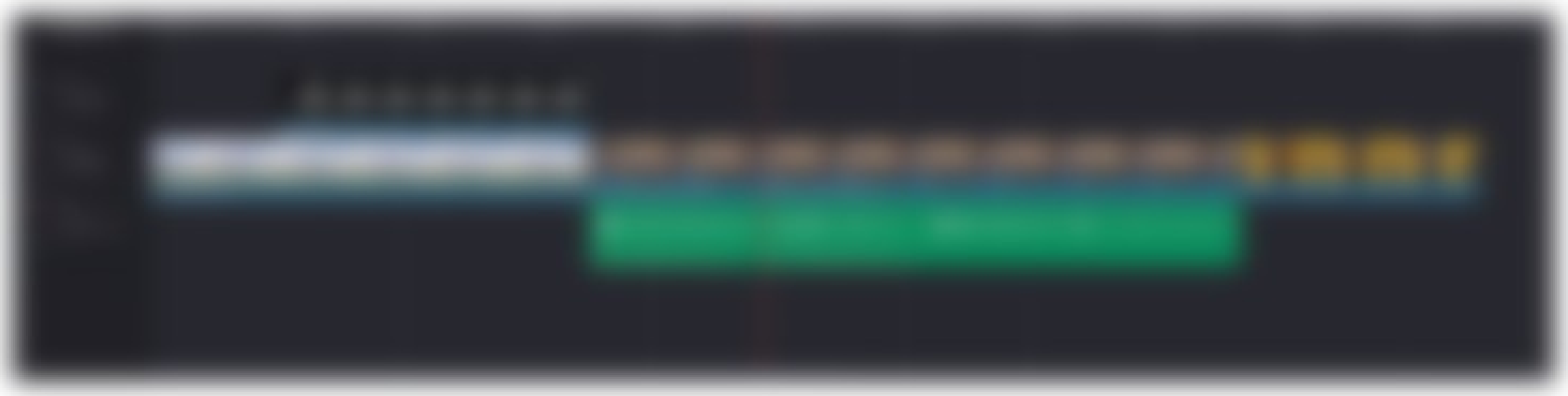
- Close the media pool and choose Workspace > Single Viewer Mode. If required, resize the audio track so you can easily see the waveform of the interview audio.



- In the timeline, play through the interview until just after Chris says, "...Organ Mountain Outfitters." Press I to add an In point.
- Continue to play through the interview until after the next question and just before Chris says, "...a lifestyle and outdoor brand." Then press O to add an Out point.



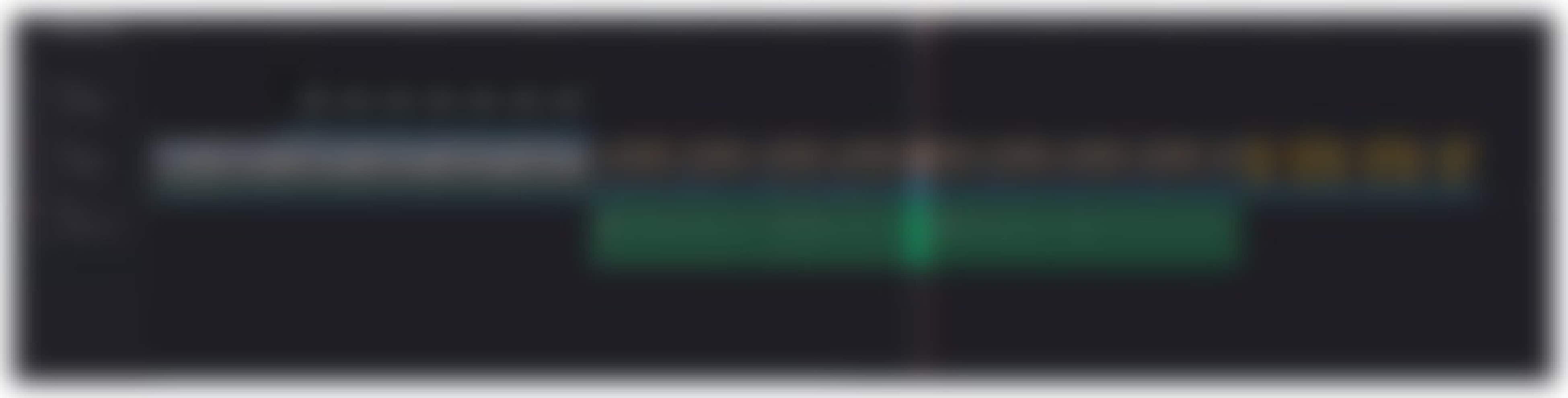
- Press Shift-Delete (or Shift-Backspace) to ripple delete the marked section.



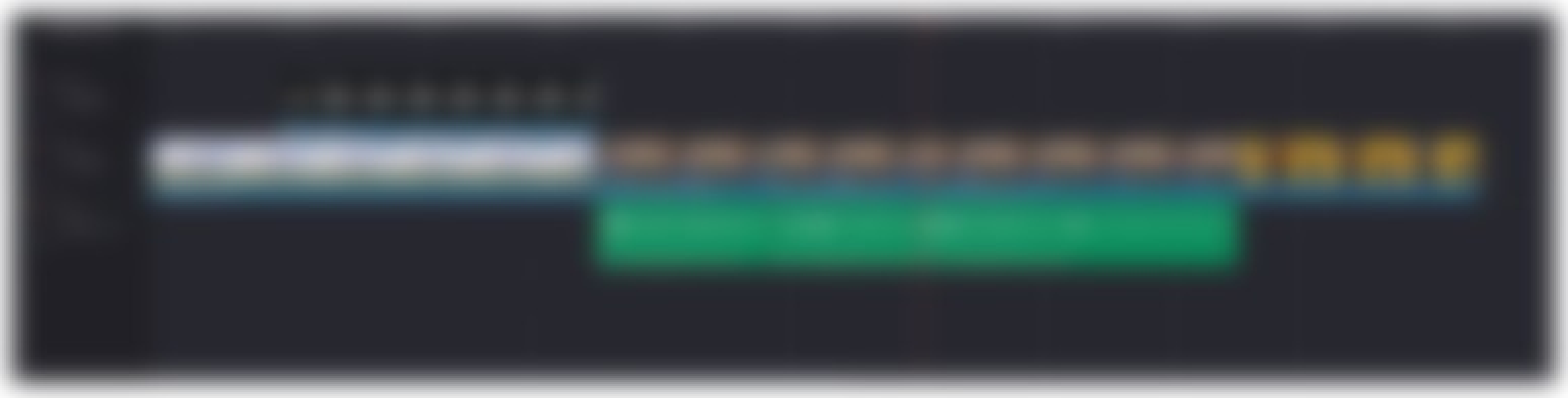
- Press / (forward slash) to preview the edit.

[illegible] If necessary, enter Trim Edit mode and refine the edit so Chris says: "My name is Chris Lang, and I'm the founder of Organ Mountain Outfitters, a lifestyle and outdoor brand…"

[illegible] Continue to play the interview and mark In and Out points around the pauses after Chris says, "…outdoor brand" and before he says, "That not only promotes…"



[illegible] Press Shift-Delete (or Shift-Backspace) again to ripple delete the marked portion of the interview, press / (forward slash) to review the edit, and then refine it using Trim Edit mode as required.



By now, this process should be second nature to you. You can treat this multicam clip exactly like any other clip you've worked with previously, and once you have cut the audio of the interview to your satisfaction, you're ready to put the additional angles of your multicam clip to work.

Switching Multicam Angles

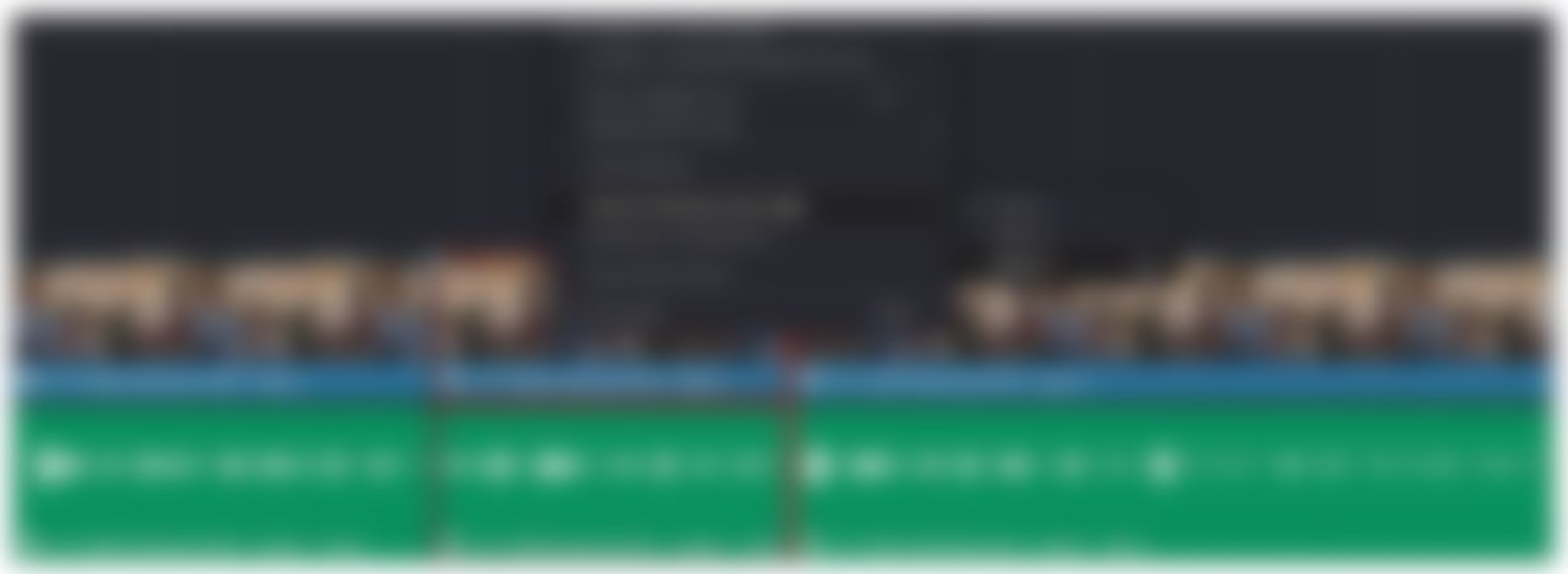
Not all multicamera clips must be edited on the fly, cutting between angles in real time as the footage rushes past. You can edit a multicam clip just like any other clip and then switch between the different angles contained within it at any time.

1 In the **OMO Multicam EDIT** timeline, position the playhead on the first edit in the interview.

2 Press / (forward slash) to review the cut.

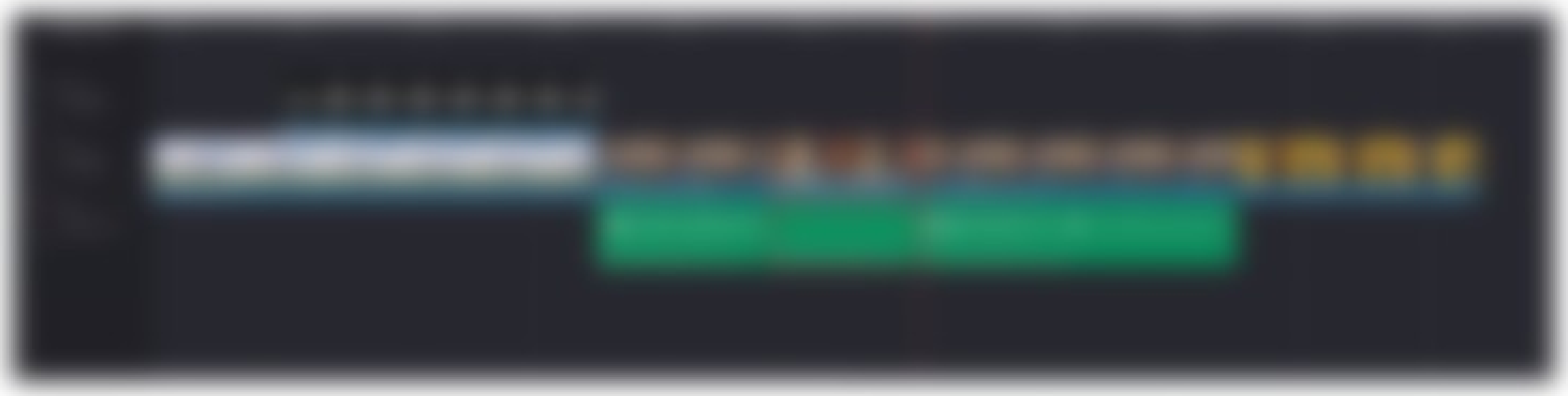
Ouch! Although the audio edit might sound good, you'll no doubt agree that, picture-wise, this is a very nasty jump cut!

- Right-click the second multicam clip in the timeline and choose Switch Multicam Clip Angle > Video 3.

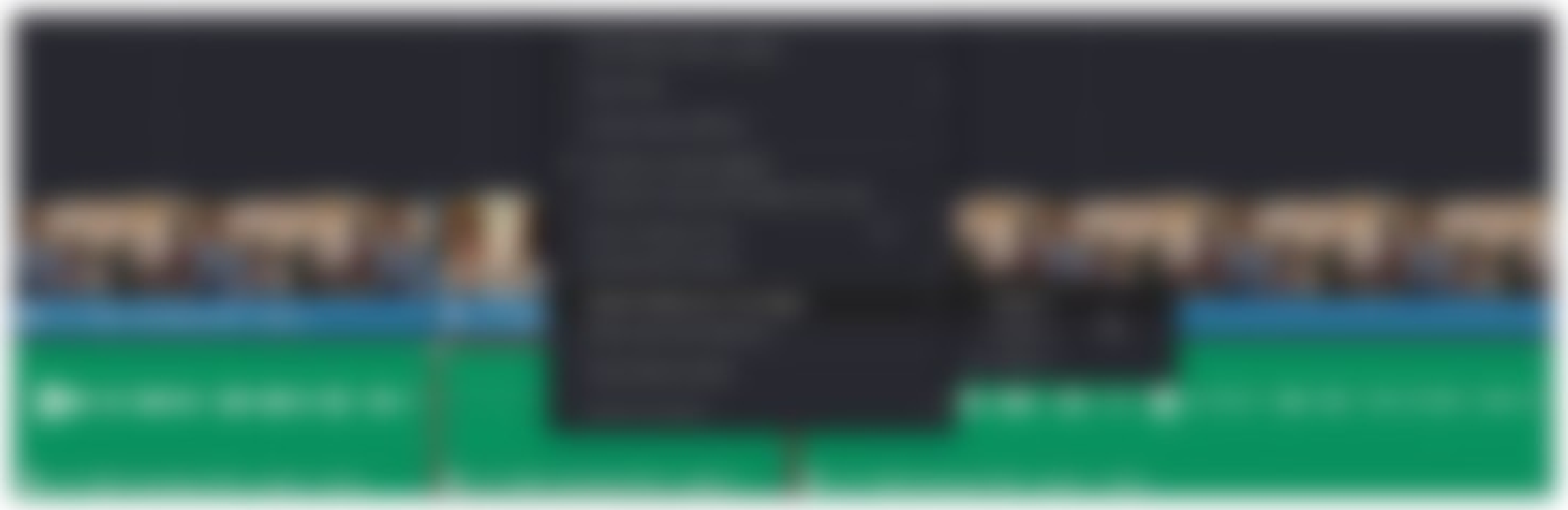


- Press / (forward slash) to review the new edit.

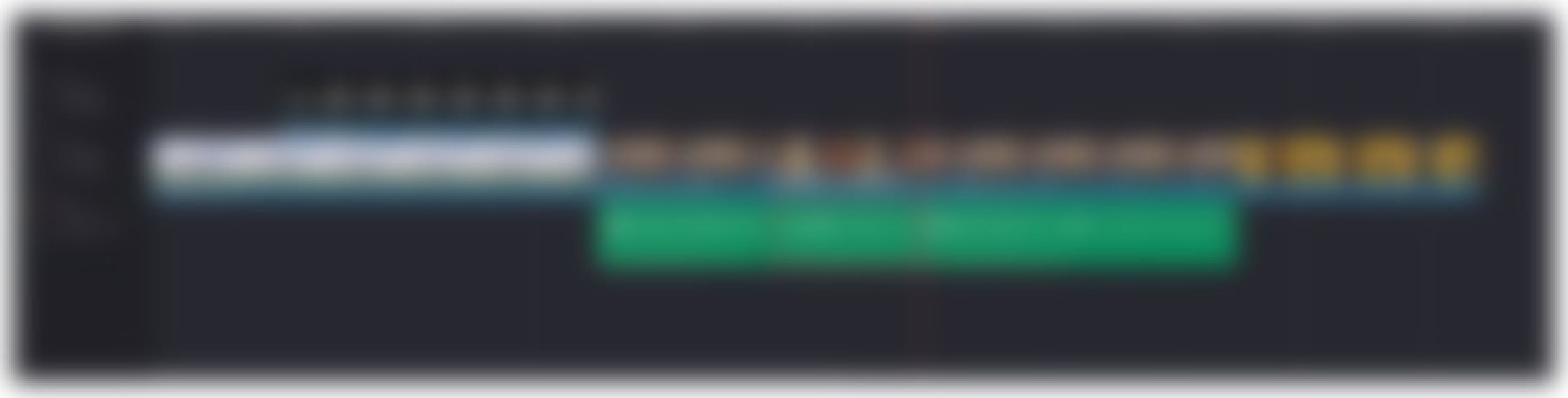
  By switching the multicam clip to the third video angle, you have successfully covered the jump cut between the two parts of the interview. Unfortunately, the audio has also switched to the same angle.



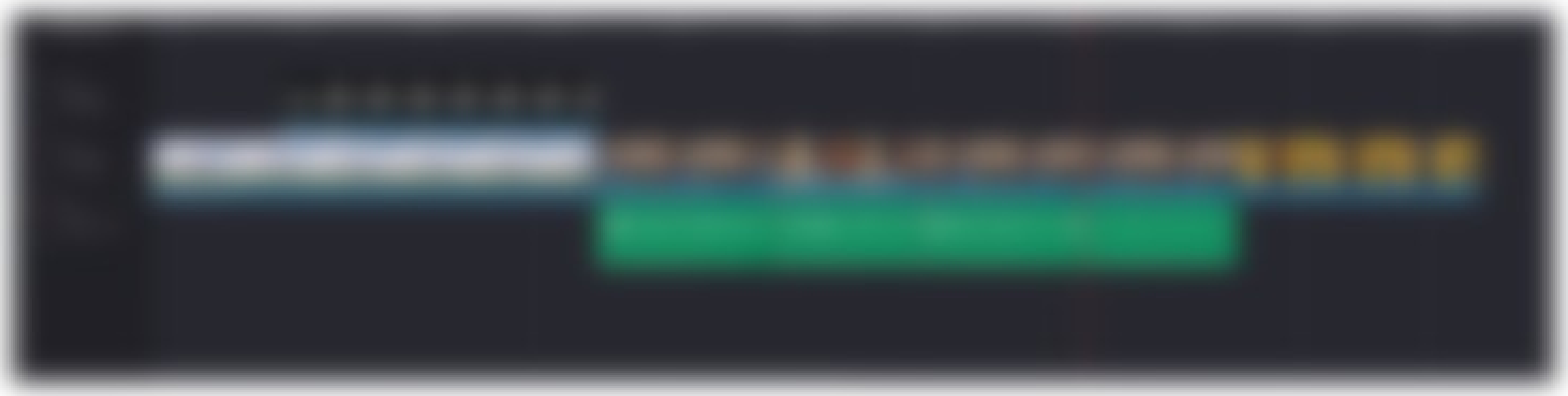
- Deselect the clips in the timeline and disable Linked Selection in the timeline toolbar.
- Right-click the audio clip for the second multicam clip and choose Switch Multicam Clip Angle > Audio 1.



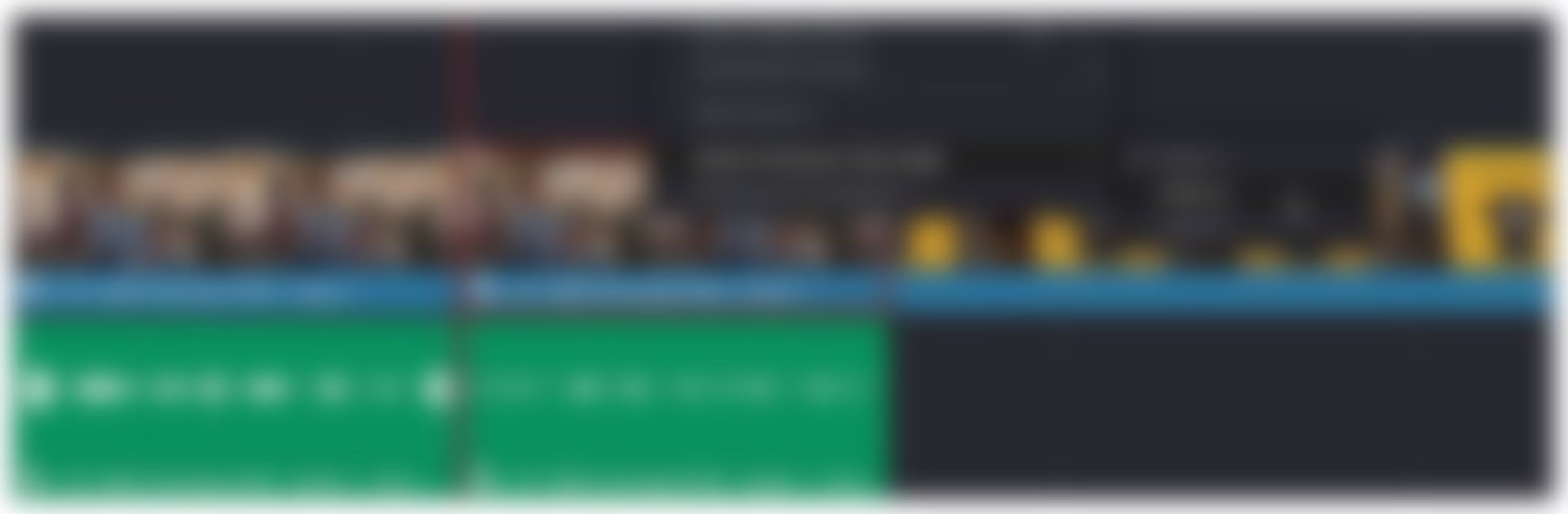
The audio angle is switched back to the sync'd audio of the first angle, Video 1.



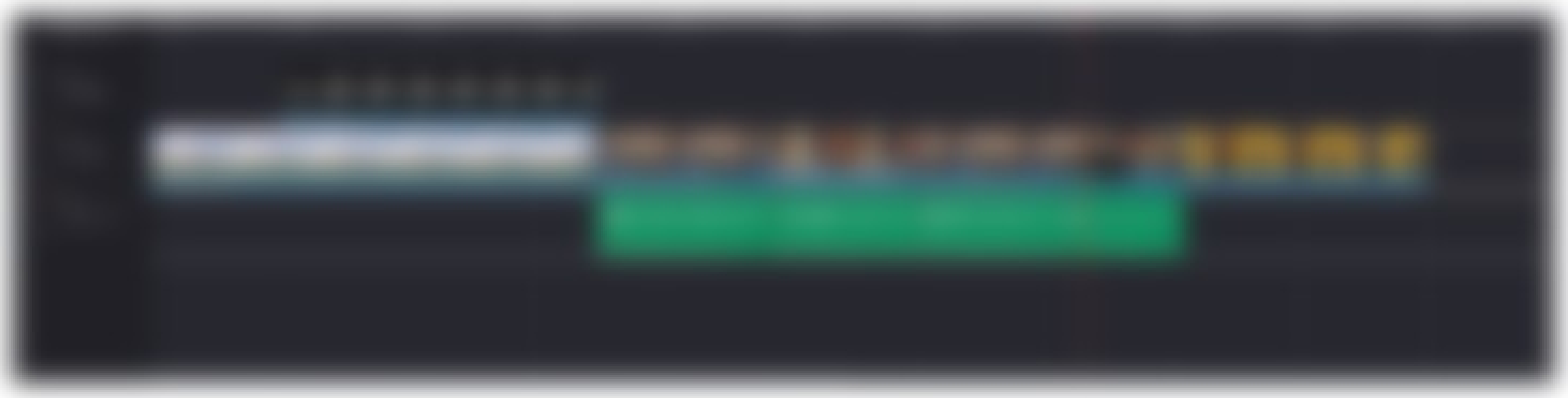
- Deselect the audio clip and continue playing the multicam clip in the timeline. Stop after Chris says "… [illegible] …"
- Press Command-B (macOS) or Ctrl-B (Windows) to add an edit at this point in the multicam clip.



- Ensure that Linked Selection is still disabled, and then right-click the incoming video clip to the right of this new edit and choose Switch Multicam Clip Angle > Video 2.



- Enable Linked Selection and, using Trim Edit mode, trim the incoming multicam clip by about 20 frames, to where Chris says, "…in our communities…" to further tighten the interview.



- Return to the start of the multicam clips in the timeline and review your changes.

  Great work. By utilizing the additional camera angles, you have seamlessly edited this part of the interview with Chris Lang without resorting to using B-roll for cutaways. And now that you have the interview sitting amid the rest of the footage and utilizing the different angles, it's time to begin finessing how you cut to and from the interview.

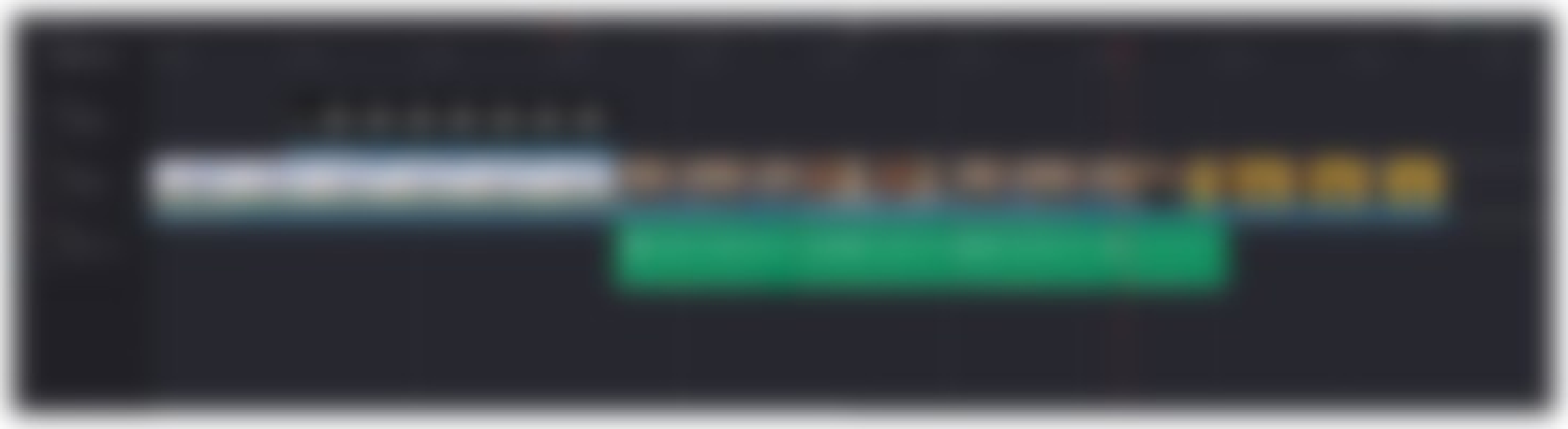
- Press Shift-Command-L (macOS) or Shift-Ctrl-L (Windows) or click the Linked Selection toolbar button to disable Linked Selection in the timeline once again.

- Make sure you are still in Trim Edit mode.

  To begin with, you'll adjust the cut between the interview and the last clip in the timeline.

- Select the outgoing video edit between the fourth multicam clip and the [illegible] clip.

- Trim the video edit back to create a slight L-cut over Chris's final words "…live in."

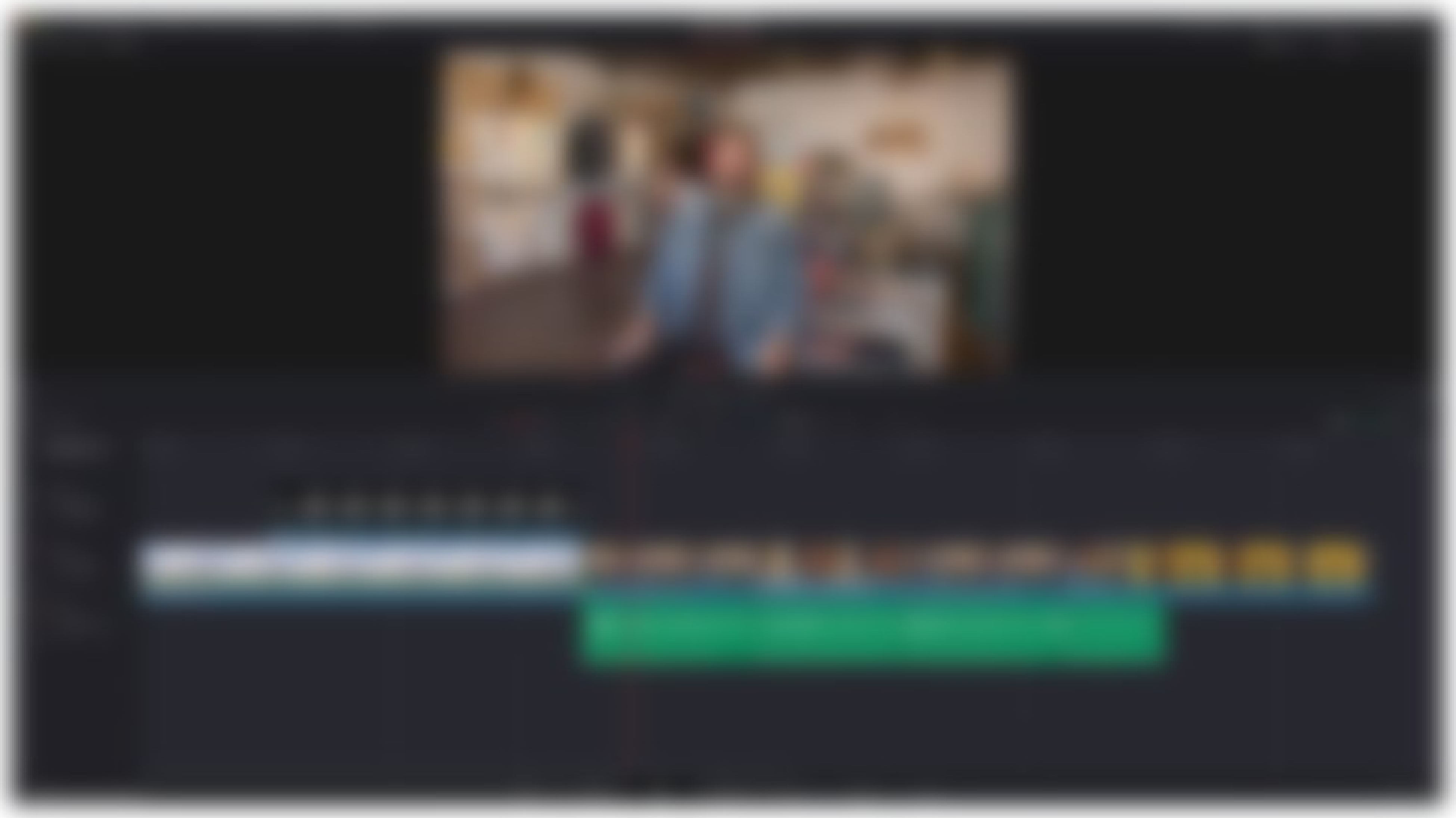


- Press / (forward slash) to preview the selected edit, refining it further as you see fit.

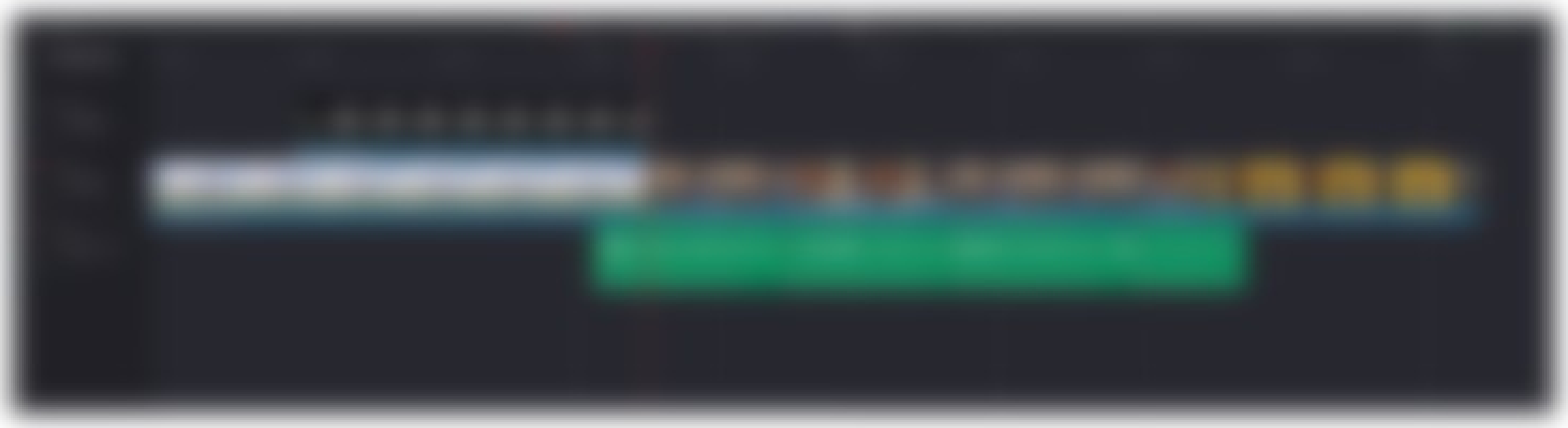
  That simple change has created a nice split edit that helps soften the end of the interview going back into the B-roll footage.

  Now, you'll turn your attention to the incoming part of the interview.

- With Trim Edit mode still active, select the incoming side of the video of the first interview clip.
- Position the timeline playhead over the first interview clip, at the point where Chris says his name, "Chris Lang," and lowers his left hand to his knee.



- Press E to make an Extend Edit and quickly create a split edit.



- Press / (forward slash) to preview the edit.
- Continue refining the edits you've just made as you see fit. Offsetting the edits by even a small number of frames can make a big improvement in the way the edits are perceived.

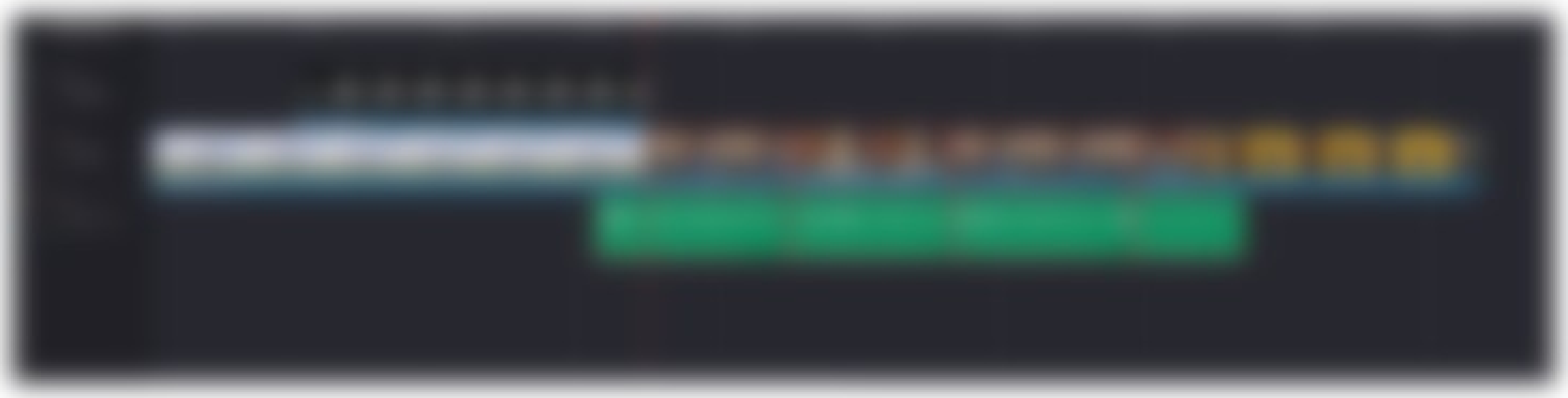
NOTE If you wish to view the finished version of this edit, created using the steps detailed in this section, select the TIMELINES bin, choose File > Import > Timeline, navigate to R20 Editor's Guide > Lesson 04 > Timelines, and open [illegible]. When you import this timeline, Resolve will try to create the multicam clip needed, adding it to the selected bin alongside the imported timeline.

Flattening the Multicam Clips

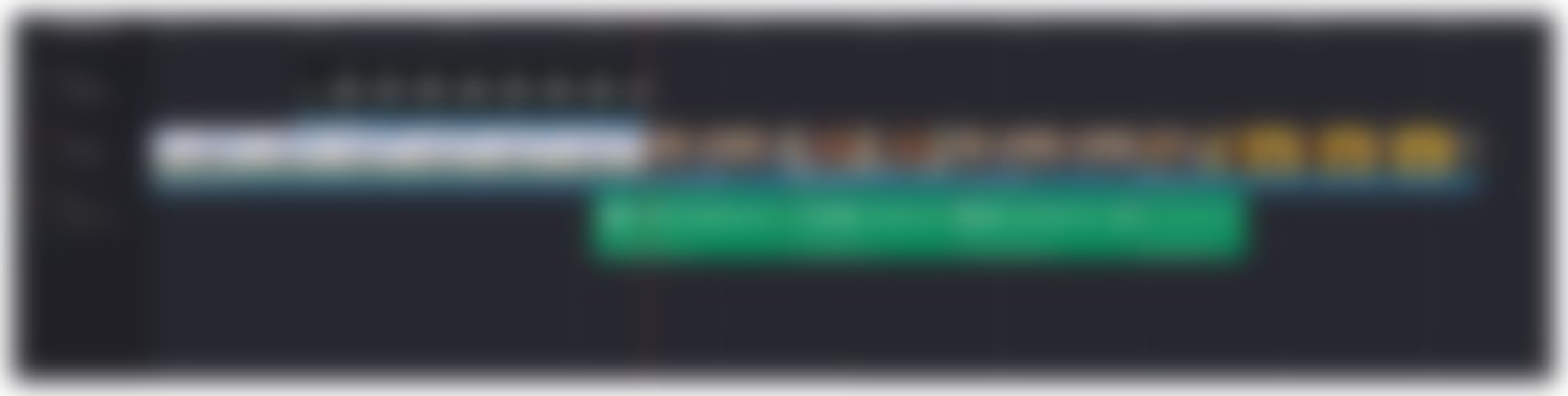
When editing multicamera footage like this, you can often leave the footage as part of the multicam clip in the timeline. This will allow you to continue switching between different angles later in the edit if you decide to make further changes. However, be aware that the individual clips are inside the multicam clips in the timeline. This can impact various other workflows, such as grading the footage in the color page. Therefore, you might prefer, or even need, to flatten the multicam clips used in the timeline to remove all the additional angles and leave just the active angles as normal timeline clips, similar to how you worked with the Take Selector in the previous lesson.

NOTE Once you've flattened a multicam clip, you can no longer switch to alternate angles. Therefore, a good technique is to duplicate the timeline prior to flattening the multicam clips so that you have an unflattened version you can change later if necessary.

- Press A to switch to Selection mode, and then select all the multicam clips in your timeline (audio and video).



- Choose Clip > Flatten Multicam Clip.



Flattening the multicam clips means that clips can now be graded individually in the color page. If left unflattened, the multicam clip itself is graded rather than the individual angle.

NOTE You can always flatten a multicam clip after it has been graded. By default, flattening the multicam clip will copy the grade(s) applied to the multicam clip itself to the current active angles. However, not all grading features in the color page (such as applied flags and groups) are supported when doing this. Therefore, for complex grading workflows, it is recommended that you flatten before starting the grade.

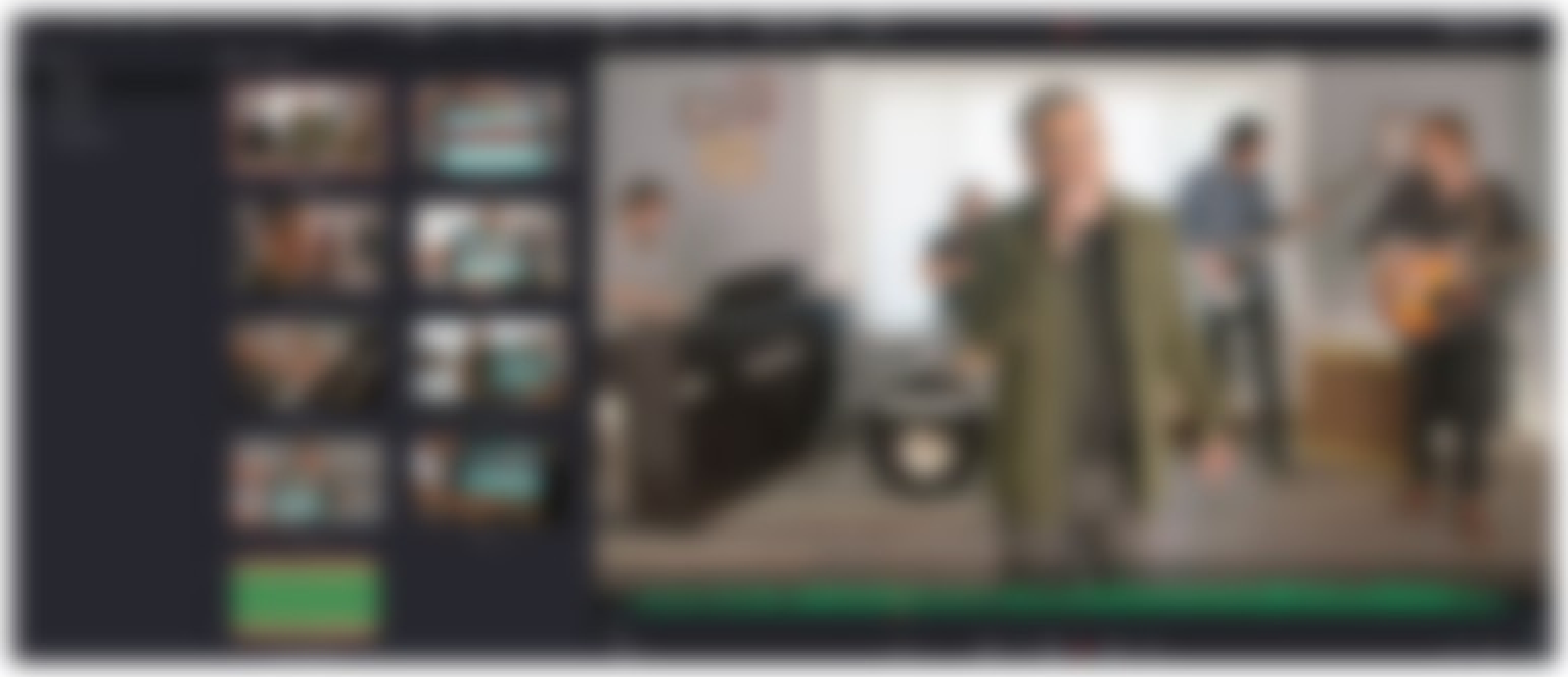
By shooting the interview with more than one camera, you can effectively cut it without having to cover it with B-roll footage.

Editing a Multicamera Music Video

For the next multicamera exercise, you'll concentrate on editing a band performance, enabling you to explore some of the more in-depth features of multicamera editing in the edit page. You will begin this exercise by importing a different project into the Project Manager.

- Choose File > Project Manager or press Shift-1 to open the Project Manager window.
- Click the Import button or right-click in an empty area of the Project Manager window and choose Import Project.
- Navigate to R20 Editor's Guide > Lesson 09, select the [illegible] file, and click Open.
- Once the project has been imported, double-click it in the Project Manager to open it.
- If necessary, choose Workspace > Reset UI Layout.
- Click the Relink Media button and relink the offline media files.

- Select the ANGLES bin and review the footage.



This project contains footage of the band Sons of New York performing their song "I Don't Know Nothing" from their 2019 album "American Dream."

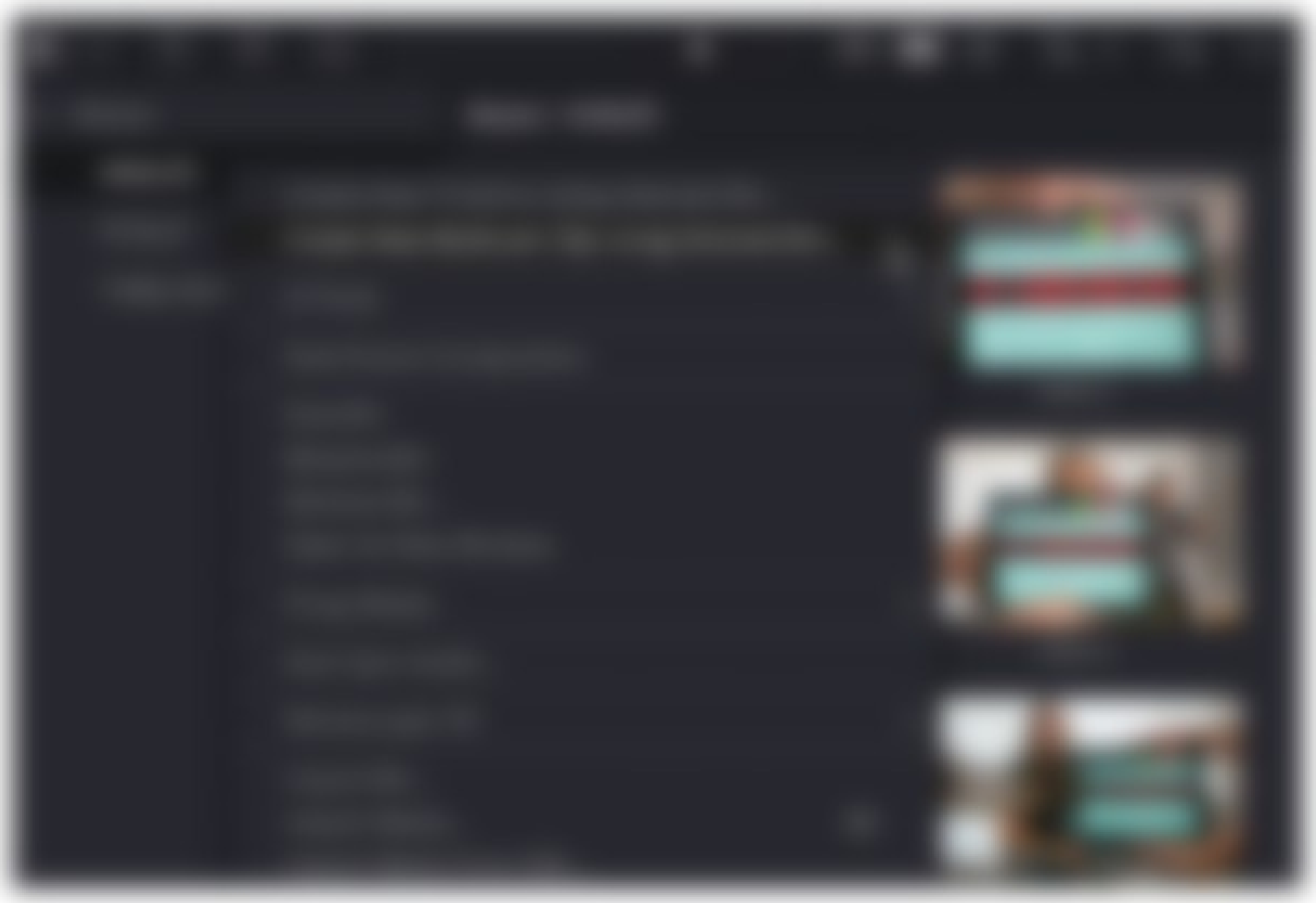
Now, strictly speaking, this isn't a multicamera shoot. If you look at the footage, you'll notice close-up shots of the guitars that couldn't possibly have been shot without getting the cameras in the wider shots.

In fact, this is a single camera shoot, where the camera was repositioned for each separate shot, like the Too Much Lib scene you edited in the previous lesson. The difference here, though, is that for each take, the members of the band perform to the pre-recorded track (which just happens to be the SONG MUSIC audio clip), so while each take isn't synchronized with each other, they all perform at exactly the same pace. As a result, you can use multicamera editing techniques, although you'll still need to be aware that each angle is a separate performance, so continuity issues like those you experienced in the previous lesson might easily occur. However, since this is a music video, that shouldn't be as big an issue as in the Too Much Lib scene, and the abundance of alternative angles should mean it's easier to cut around such issues if they are problematic.

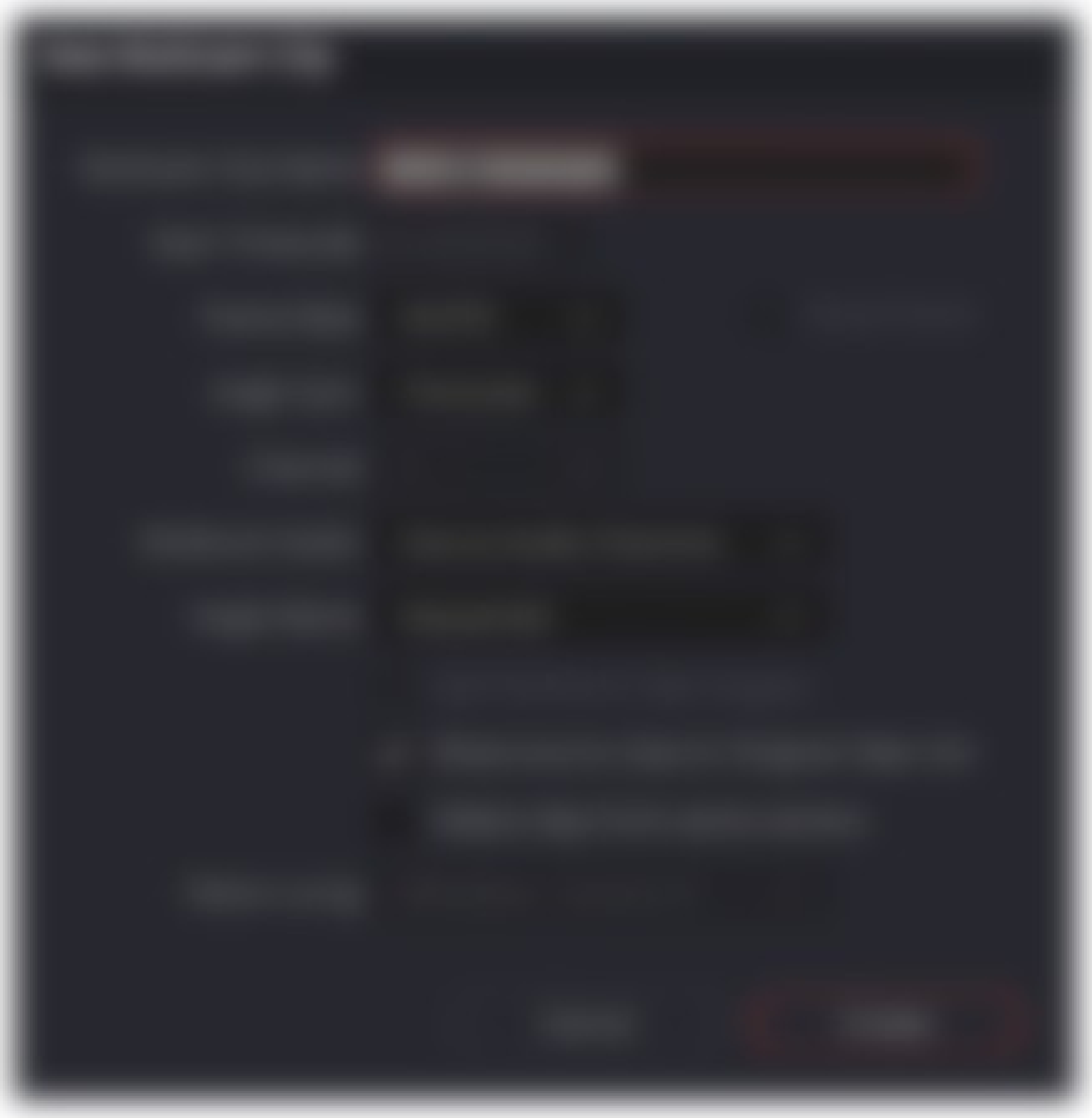
Creating the Multicam Clip

As in the previous exercise, the first step in editing multicamera footage on the edit page is synchronizing the clips to play together. You achieved this in the previous exercise manually by arranging the clips on different tracks in a timeline and getting Resolve to synchronize them using timecode. However, in this example, you'll tell Resolve how you'd like the multicam clip created and organized.

- Click the Options menu (...) in the source viewer and deselect the Show Audio Waveforms in Source Clip option.
- In the bin list, right-click the ANGLES bin and choose Create New Multicam Clip Using Selected Bin.



The New Multicam Clip window opens, which you will use to tell Resolve how you want the clips organized and synced within the multicam clip.



- In the Multicam Clip Name field, change the name of the multicam clip to **[illegible]**.

- Leave the Frame Rate set to 23.976, which has defaulted to the frame rate of the source footage.
- From the Angle Sync dropdown menu, choose Sound, which tells Resolve you want to synchronize the footage based on the audio content of each clip.

> **NOTE** If you don't have matching audio across the different clips, other options for synchronizing multicam clips include using existing In or Out points or matching timecode or markers.

- Change the Channel dropdown menu to Automatic.

  When choosing Sound as a method of synchronizing clips, you can also specify the specific audio channel you wish to use for the syncing process, which is useful if you have different quality audio on different channels. Setting this to Automatic means DaVinci Resolve will automatically choose the best audio channel.

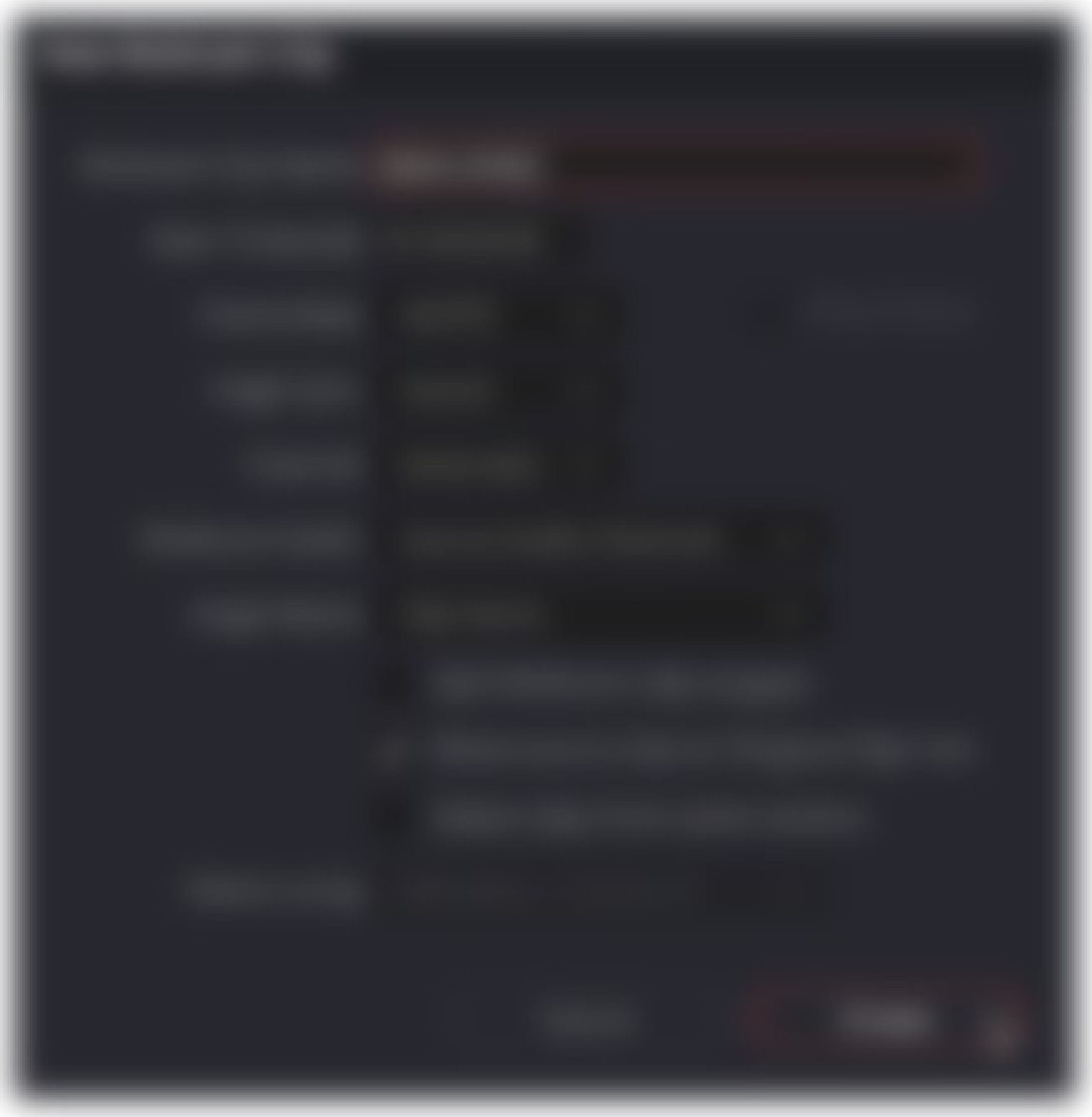
- Leave Multicam Audio set to Source Audio Channels to retain the audio for each angle, even though you will not use it in this exercise.

> **NOTE** An alternative option for this type of multicam setup would be to set Multicam Audio to Reference Audio/Angle 1. This will use the audio only from the first angle's audio for all the angles and can simplify the multicam editing process when working with material such as this.

- From the Angle Name dropdown menu, choose Clip Name. This will ensure that the clips are ordered based on their clip name metadata, which you can see in the media pool.

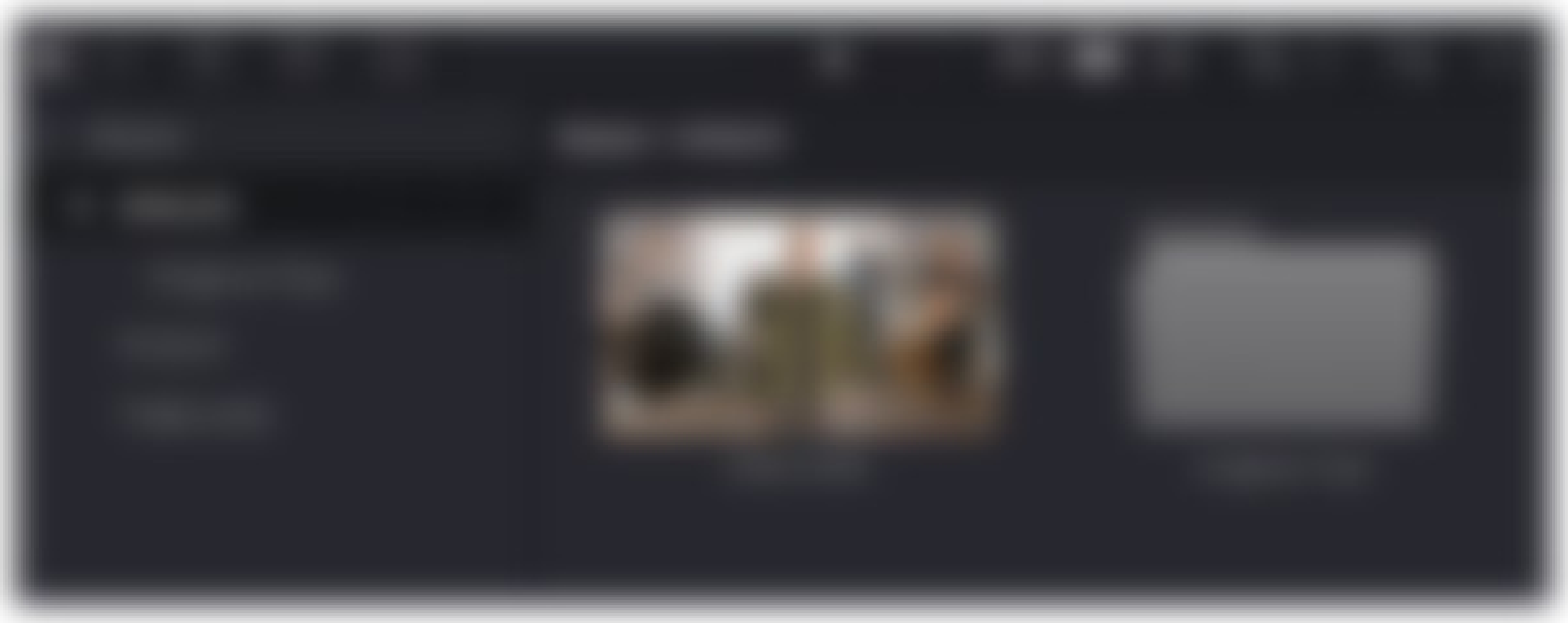
> **NOTE** The Angle Name option dictates the order in which the angles are sorted. When you choose Sequential, Resolve labels the angles and sorts them as "Angle 1," "Angle 2," and so on, based on their starting timecode values, with the earliest timecode becoming the first angle. Choosing Clip Name sorts the clip names in ascending alphanumeric order and labels the angles appropriately. Similarly, choosing "Metadata – Angle" or "Metadata – Camera" sorts the clips based on information in their respective metadata fields, if relevant.

Ensure that the option "Move source clips to 'Original Clips' bin" is selected.

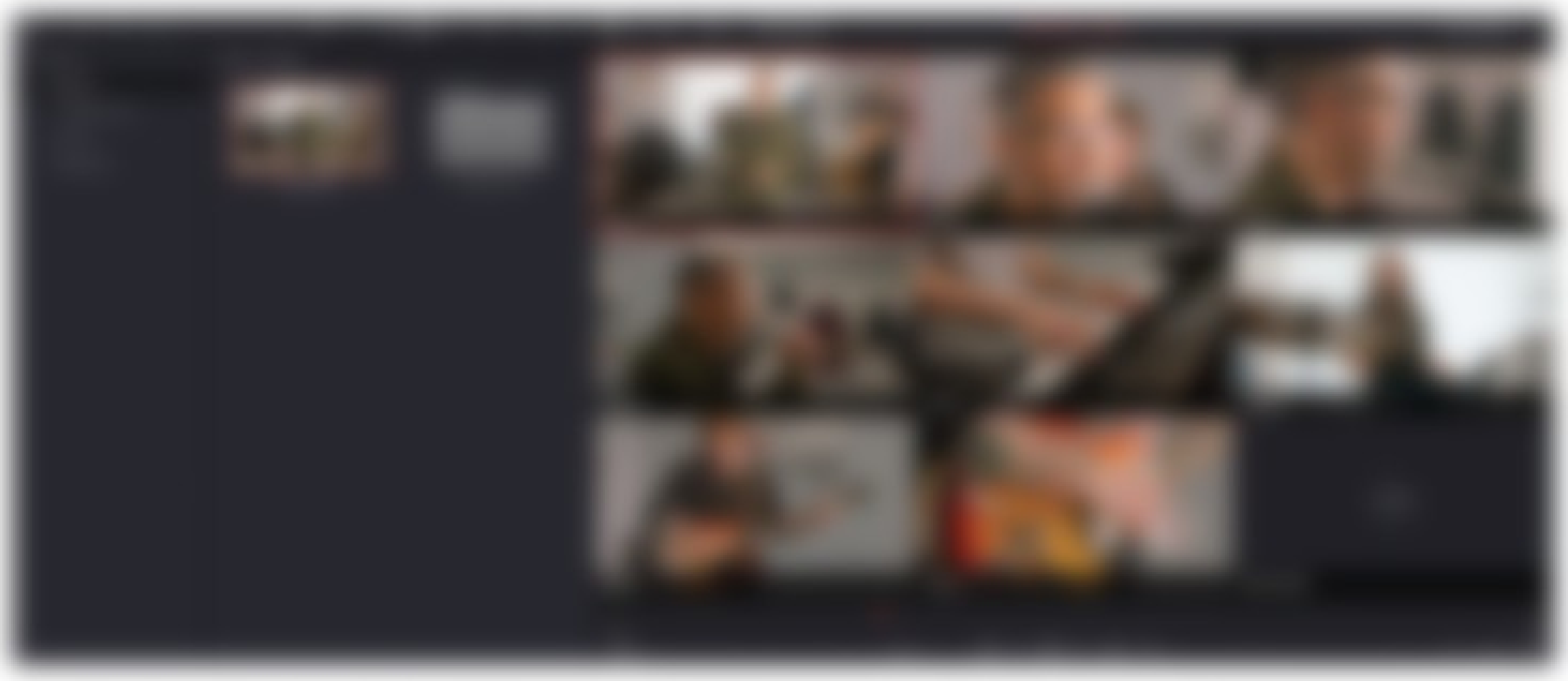


Click Create to create the multicam clip.

Resolve analyzes the clips' audio channels and creates a new multicam clip in the selected bin in the media pool. A new bin called "Original Clips" has also appeared, which, unsurprisingly, contains the individual clips you used to create the multicam clip.



- Double-click the [illegible] clip to open it in the source viewer.



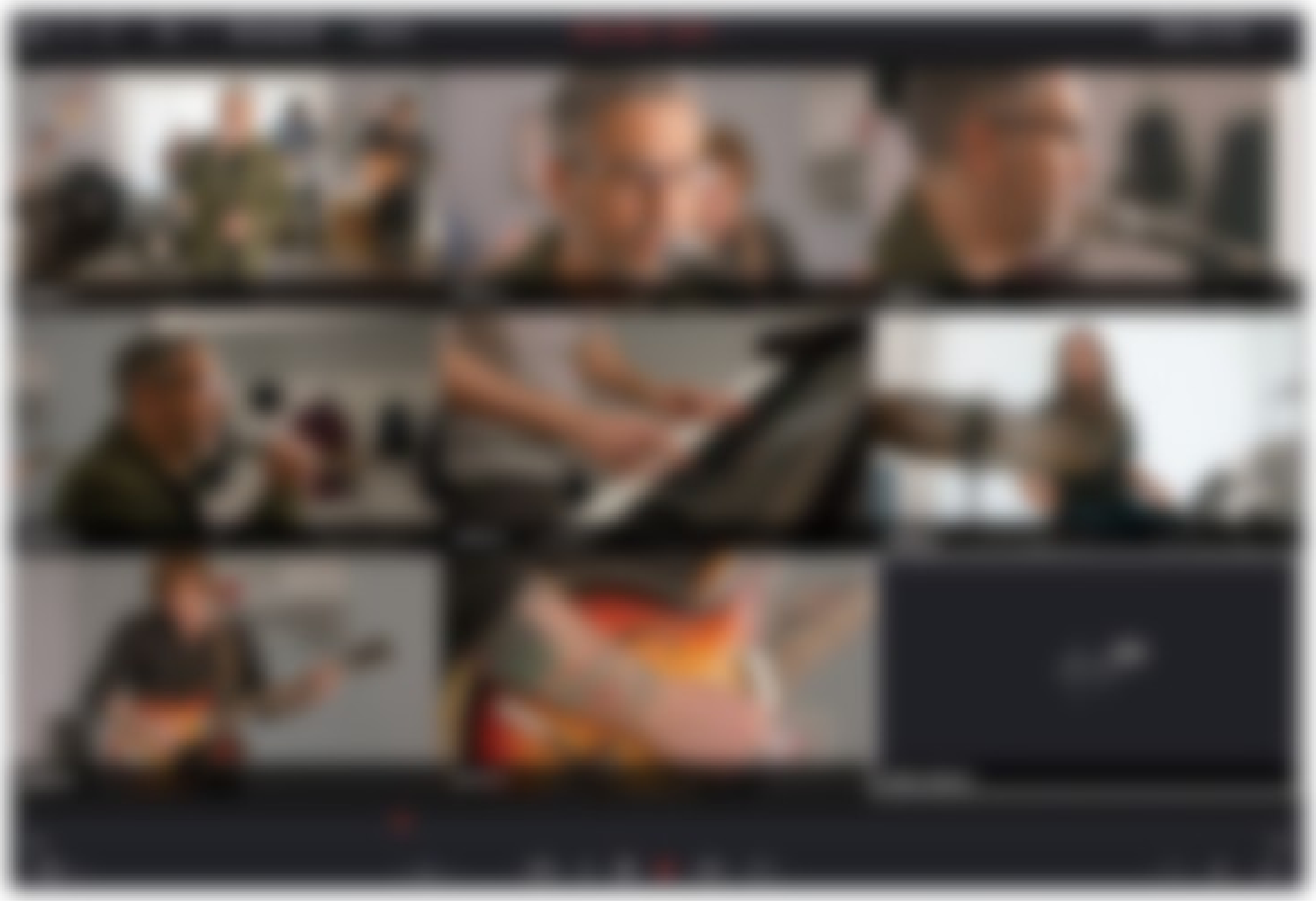
The multicam clip displays each of the different clips – now referred to as angles – in a separate box, with each box displaying the angle name as you specified when creating the multicam clip. This view organizes the angles from left to right and top to bottom. So the first angle [illegible] appears in the upper left box, and the ninth angle [illegible] appears in the lower right box. Notice how the angle names are all using the multicam clips' individual clip names.

> **NOTE** If the playhead is at the start of the multicam clip, you will see blank frames for most of the angles because not all the cameras began rolling at the same time. Simply move the playhead to later in the multicam clip to see the footage for all the angles.

- Play the multicam clip in the source viewer to verify that the angles are correctly in sync with each other.

When you play the multicam clip, although all the clips are playing together, you'll only hear the audio for the currently selected angle. By default, this will be the first angle in the multicam clip, which is currently outlined with a red box.

- While the multicam clip continues to play, click the EMS MUSIC angle in the bottom right corner.



This changes the active angle of the multicam clip to the music insert in real time.

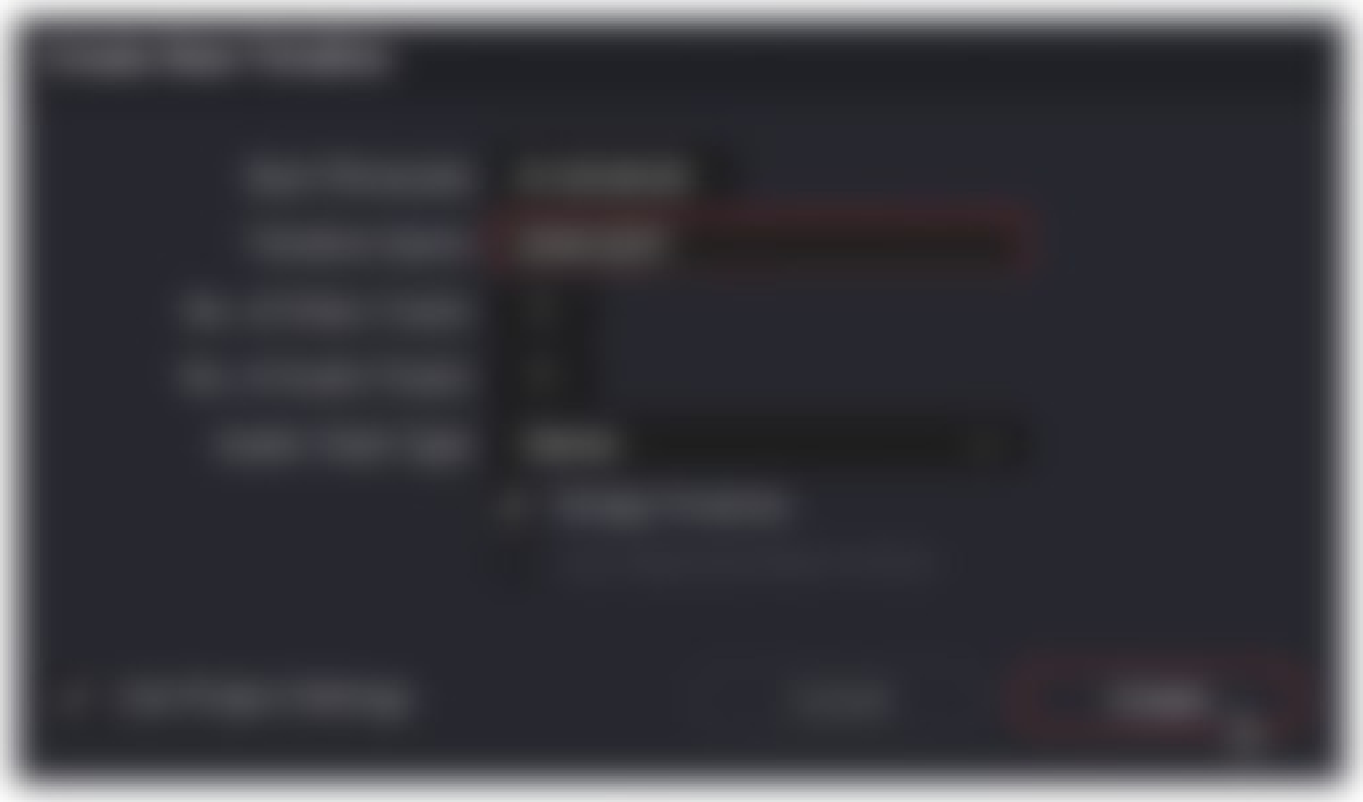
- Stop playback.

Real-Time Multicamera Editing

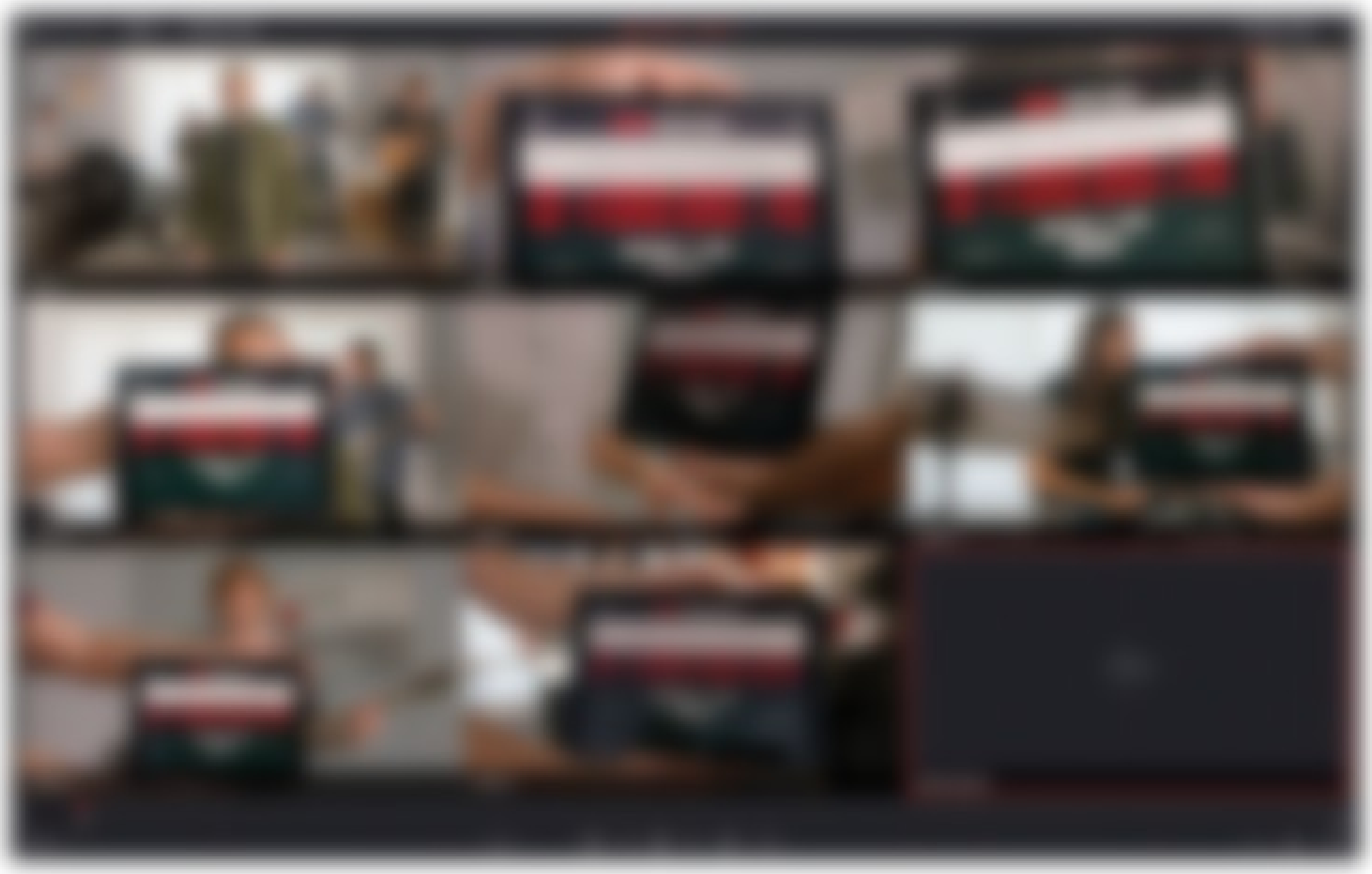
Now that you have successfully synced the different clips in a single multicam clip, you can begin editing the performance. The fun aspect of working with a multicamera edit in the edit page is that you can cut between the different angles in real time as if you were sitting in front of a live video switcher. Often, this will save you hours because you can cut the material in the time it takes to play the timeline.

- Select the TIMELINES bin and choose File > New Timeline.

- In the New Timeline window, change the Timeline Name field to **[illegible]** and click Create.

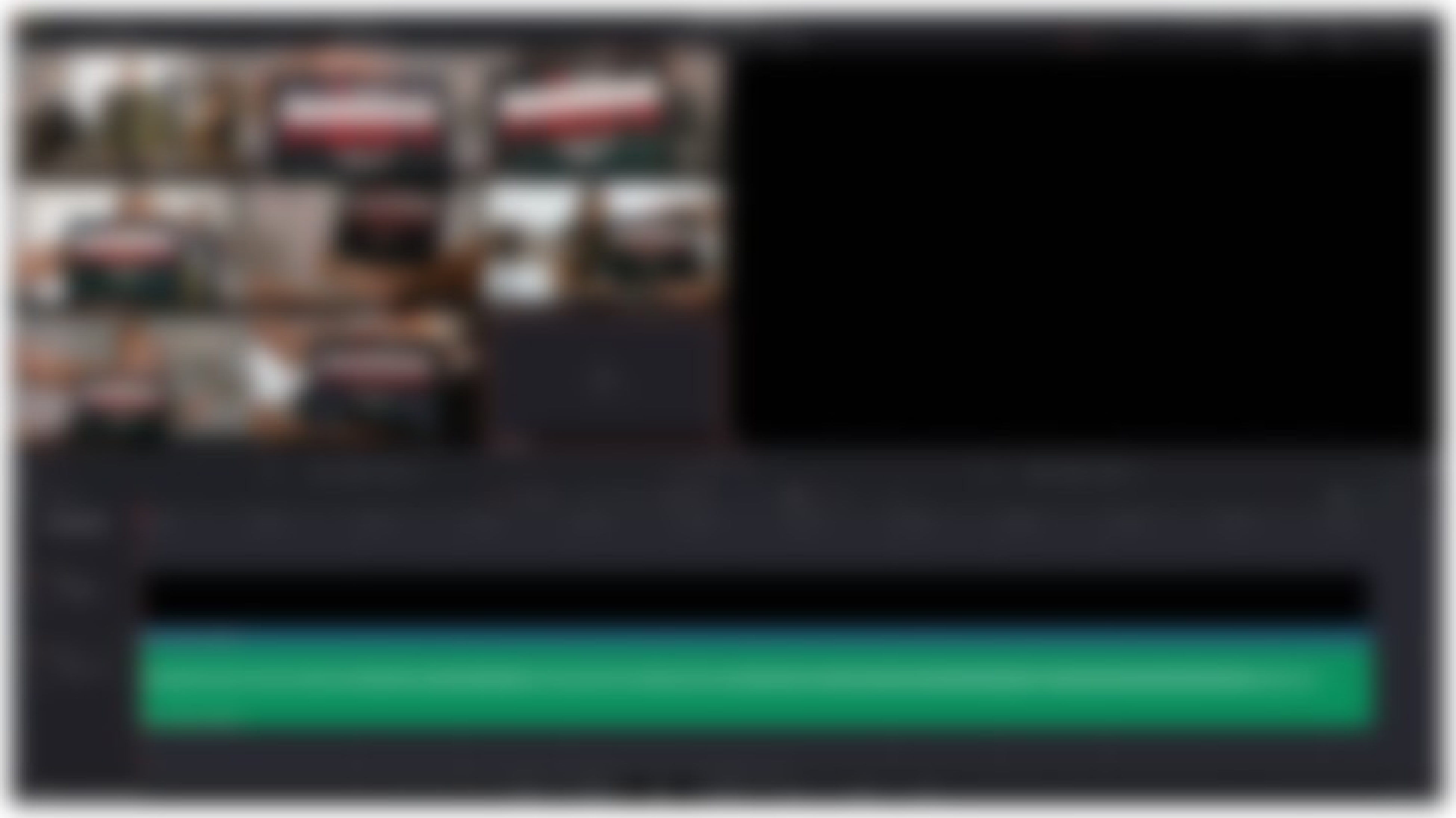


- Click the Media Pool button to hide the media pool, leaving plenty of room on your display for the source and timeline viewers and the timeline panel itself, allowing you to concentrate on the multicam clip in all its glory.
- In the source viewer, using the [illegible] 1 angle as a guide, set an In point as soon as the camera assistant has moved the smart slate out of the shot and mark an In point.



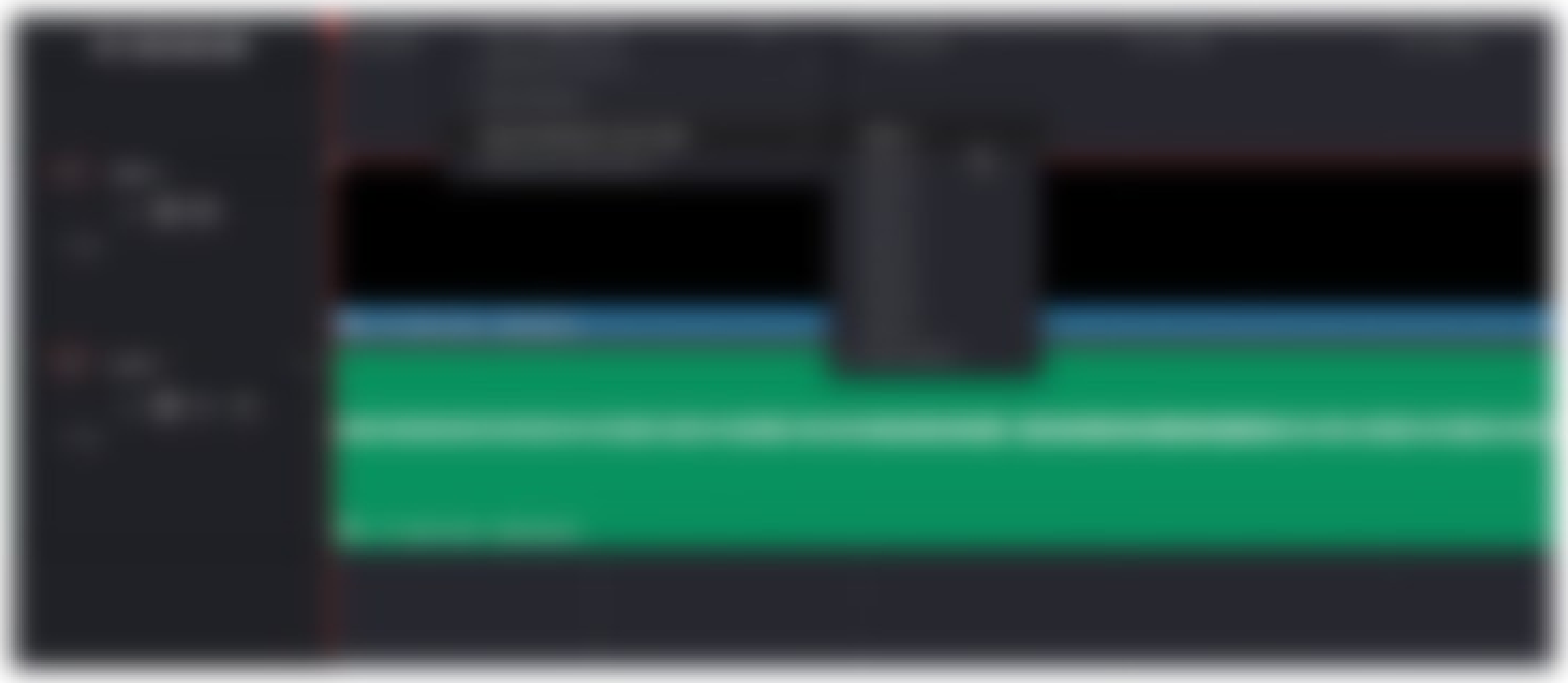
- Perform an Overwrite edit to edit the multicam clip into the empty timeline.

- Click the Full Extent Zoom button and move the timeline playhead back to the start of the timeline.

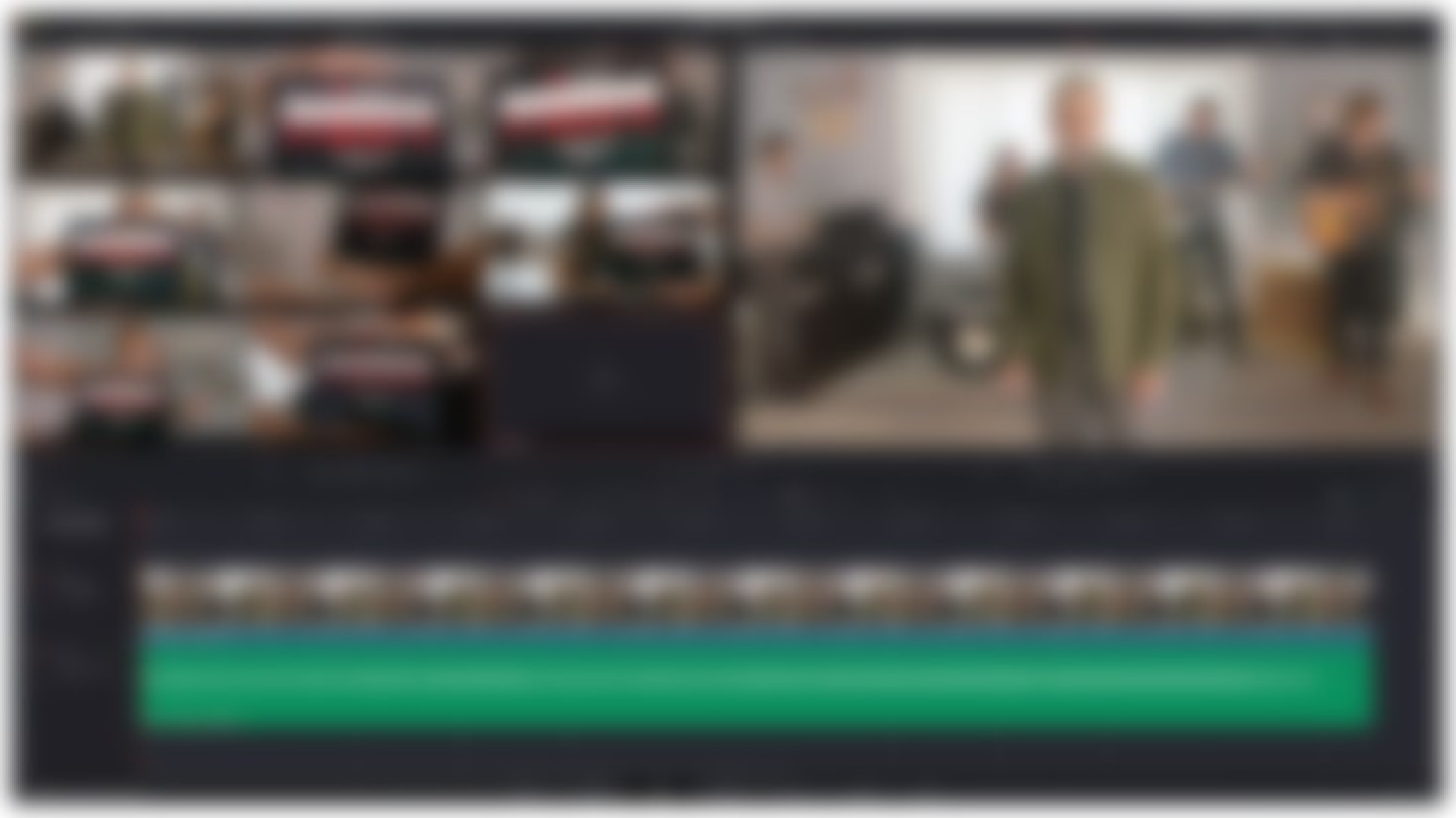


The timeline viewer displays only the current angle, EDEN MUSIC. It's highly unlikely you'll want to use this as part of your edit since the audio clip has no picture associated with it, and the timeline viewer is currently black. Instead, you must show a different video angle while retaining the EDEN MUSIC for the audio.

- In the timeline toolbar, click the Linked Selection button or press Shift-Command-L (macOS) or Shift-Control-L (Windows) to disable the linked selection in the timeline.
- With Linked Selection disabled, right-click the video portion of the EDEN Multicam clip in the timeline and choose Switch Multicam Clip Angle > EDEN 1.



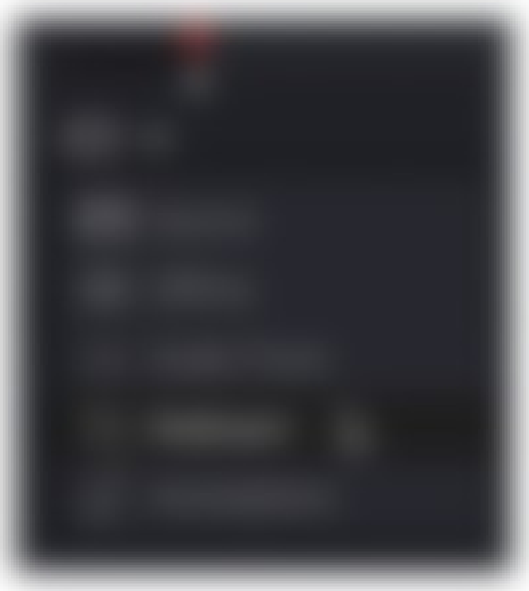
This switches the video angle for the multicam clip in the timeline to the first angle while retaining the audio from the BAND MUSIC angle.



NOTE You can verify which angles are in use in any multicam clip in the timeline by referring to the clip name. This will display the multicam clip name followed by the specific angle name.

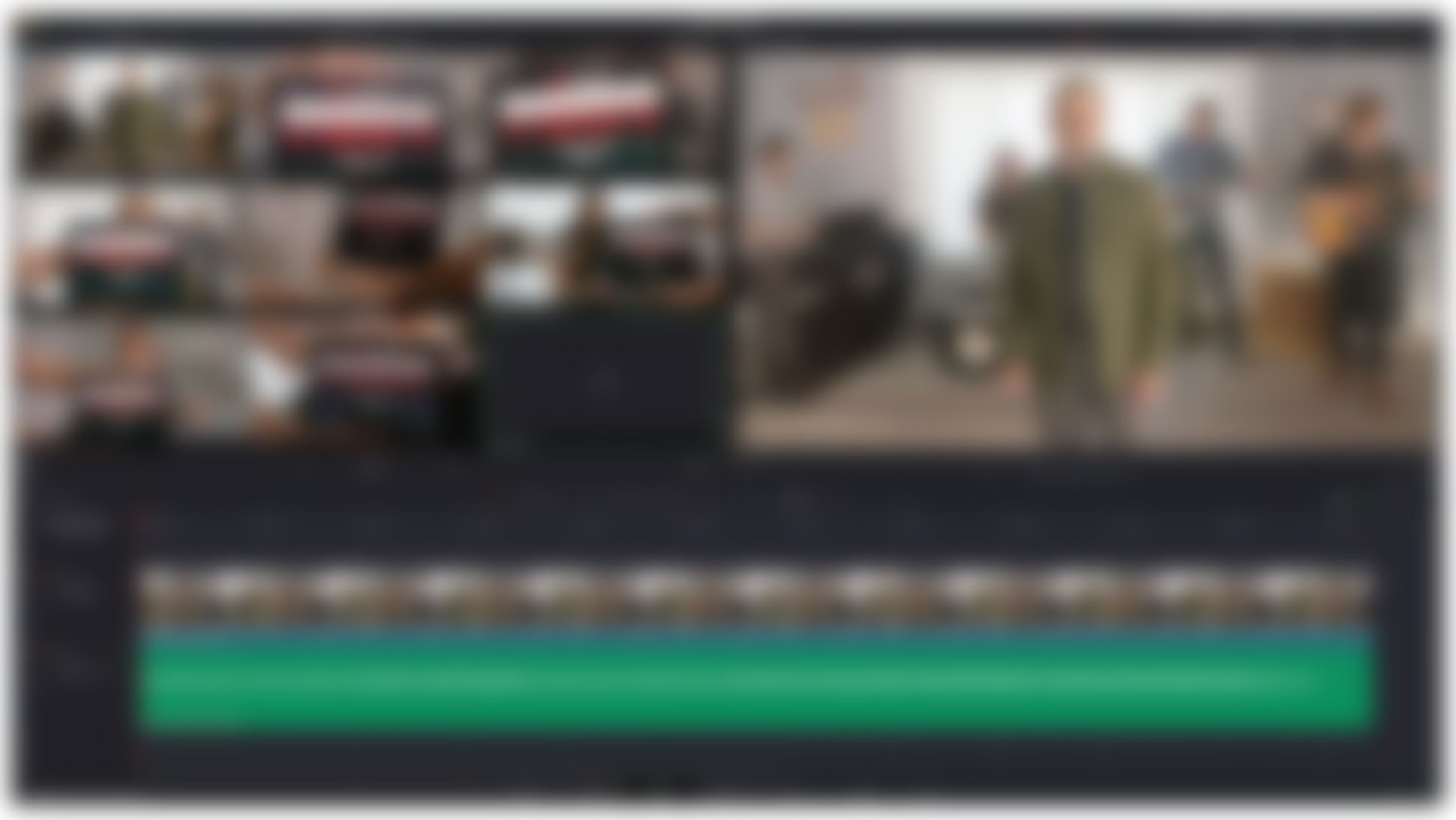
While you could conceivably continue to edit this multicam clip manually by adding edit points and switching the angles one at a time, like you edited Chris Lang's interview earlier in this lesson, it's much more effective (and a whole lot more fun) to edit it in real time. To achieve that, you'll need to bring the source viewer into play by enabling multicamera mode.

- In the source viewer mode dropdown menu, choose Multicam to display the multicam viewer.

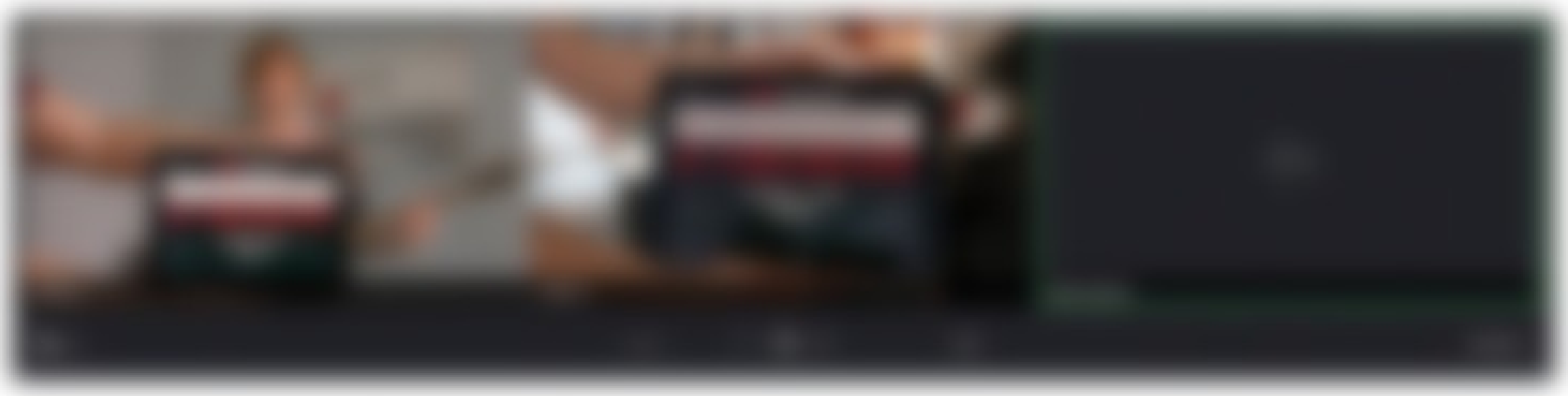


NOTE Multicam mode can only be used in conjunction with any multicam clips in your timeline. If your timeline consists of both multicam clips and other types of clips, multicam mode will only display the multicam clips in the source viewer; other clips will display as blank.

With Multicam mode active, all the angles of the multicam clip in the timeline are displayed. Note how the red outline indicating the current active angle has been replaced by a blue outline for the currently active video angle and a green outline for the currently active audio angle.



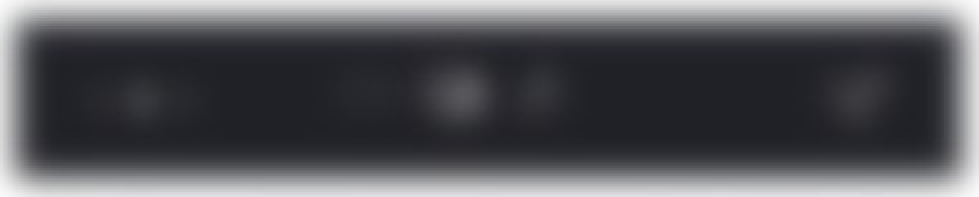
Multicam mode also dispenses with many of the transport controls at the bottom of the source viewer, replacing them with specific multicam-related controls. Separate transport controls are not necessary in the multicam viewer because it is now synced to the playhead's position in the timeline.



Play the timeline and see how the different angles in the multicam viewer play in sync with the timeline viewer.

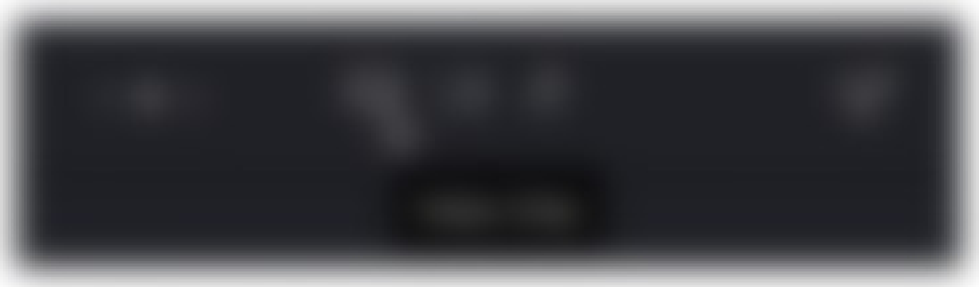
You are almost ready to begin cutting this multicam clip. However, there is one final control you'll need to adjust.

In the lower part of the multicam viewer, where the transport controls would usually be, notice that there are three buttons. Each button controls which part of the multicam clip will be edited when you switch angles: Video Only, Video and Audio, or Audio Only.



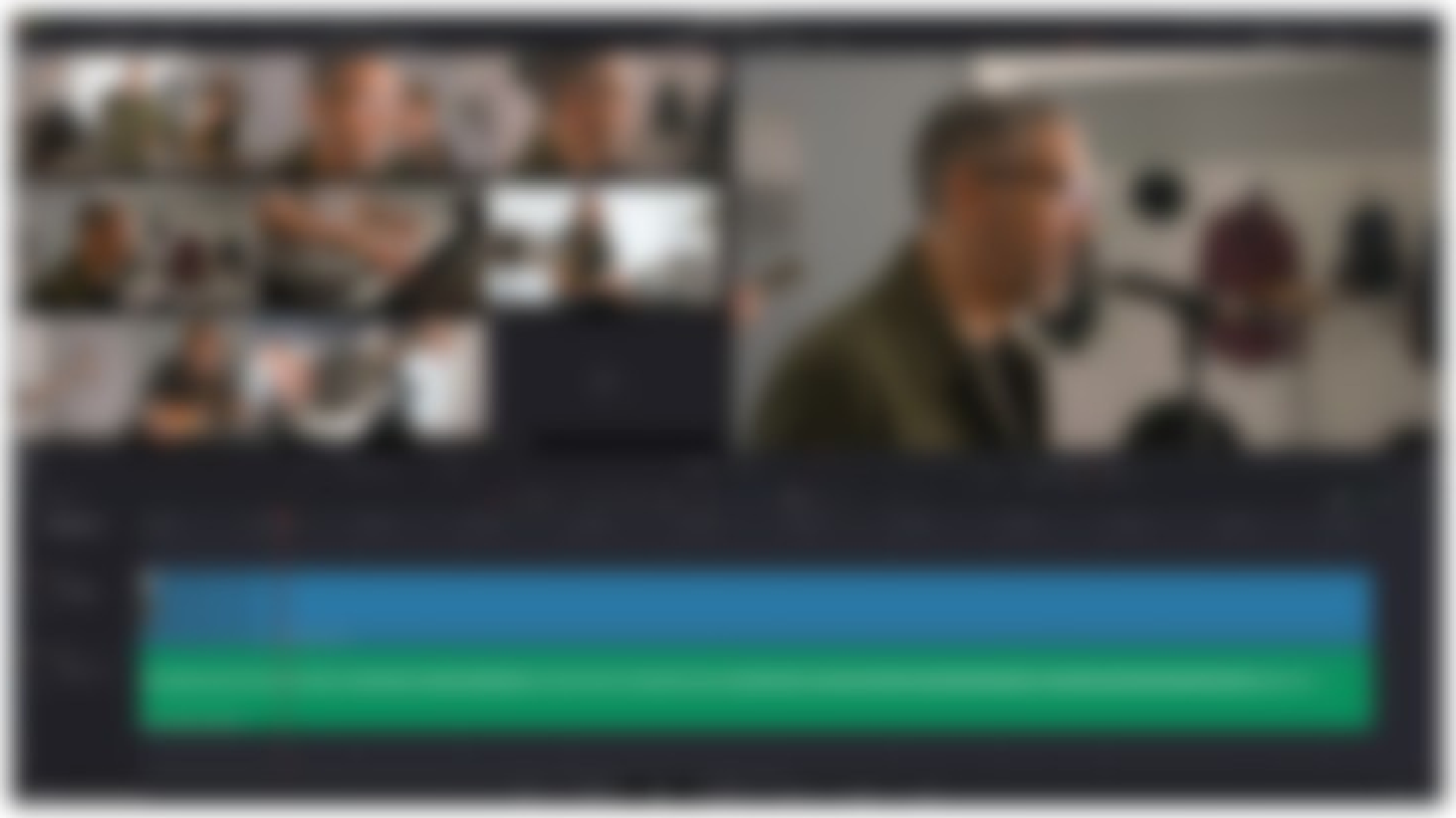
Since you've already set the multicam clip in the timeline to play the correct audio angle, you'll only need to cut between the video of the other angles.

- Click the Video Only control.



Now for the fun part…

- With the playhead at the start of the timeline, begin playing and click each of the different video angles in the multicam viewer to edit between each one as the multicam clip is playing. As you do so, your mouse pointer automatically changes to a blade icon, indicating that you are cutting to the selected angle, with edit points appearing in the timeline each time you click an angle. Keep going until you reach the end of the timeline and the song.



NOTE [illegible]

TIP [illegible]

[illegible]

[illegible]

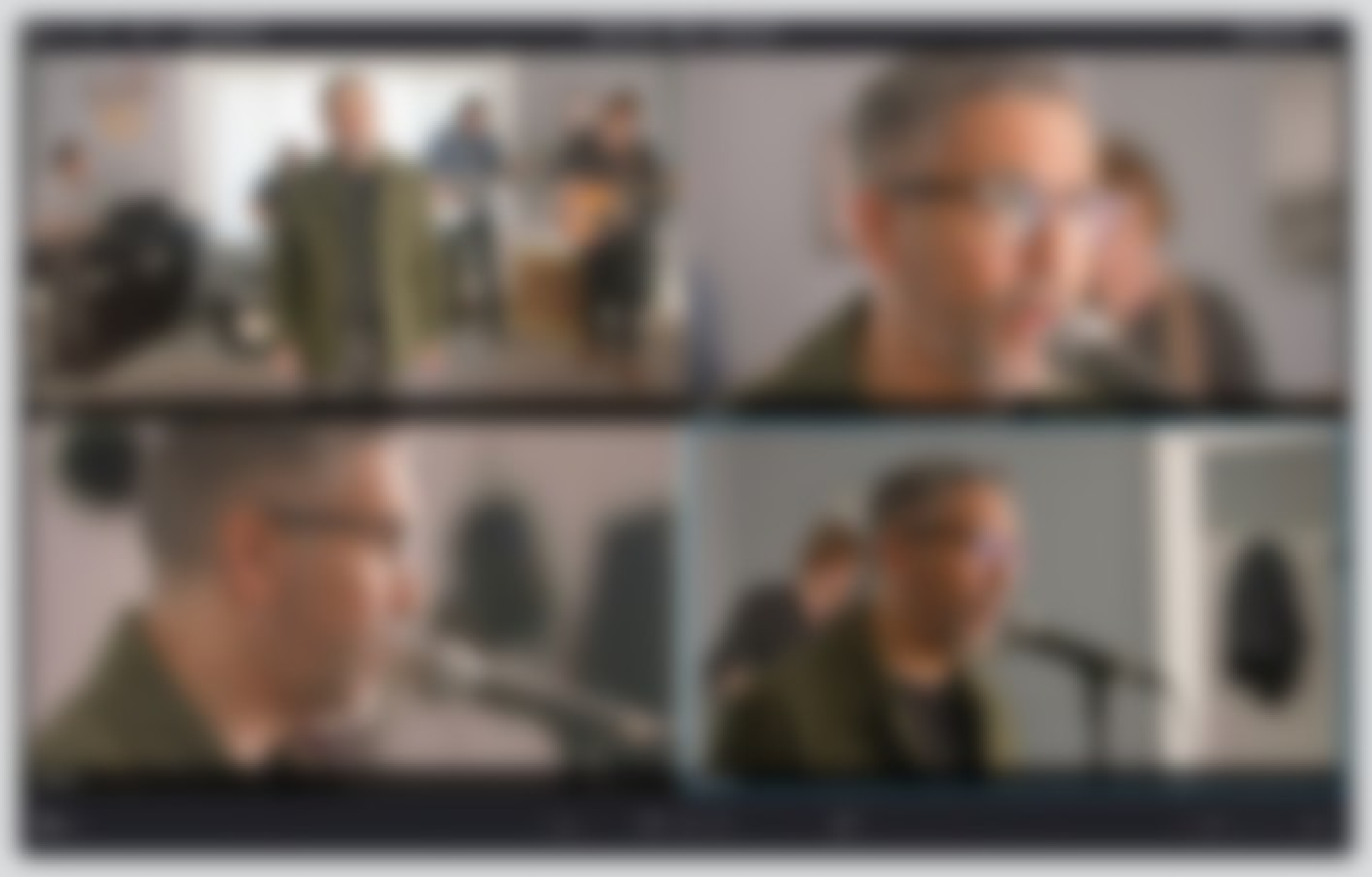
[illegible]

NOTE [illegible]

Multicamera Editing Tips

When editing multicamera material like this, don't try to make every cut perfect on the first pass. Instead, try to get a feel for the music's pacing and the different angles you have to work with. It can be useful to watch the multicam clip back a few times before making a single cut. When you start editing, try to make cuts according to when you feel they work best with the music, and don't be afraid to make mistakes. You'll learn how to refine the edit further in the next steps.

If you find it difficult to concentrate on so many angles at once, it's often useful to reduce the number of angles you're viewing at any one time. In this case, click the Multicam Display dropdown menu in the bottom right of the multicam source viewer and choose an option such as "2x2." This option displays only the first four angles of the multicam clip, with the other angles then available on different "pages" (presented as a row of dots bracketed by arrows), which can be accessed using the Multicam page buttons that now appear.



By reducing the total number of angles you're working with, you might find it easier to begin your multicamera edit. You can then introduce the other angles once you have the initial rough cut created. It can also help maintain real-time playback for slower systems.

You can use clip names (as you've done here) or other metadata to identify the most important clips as angles 1 through 4 (or see the section "Adjusting a Multicam Clip" later in this lesson) to order your clips appropriately when you create your own multicam clips.

Adjusting the Multicamera Edit

Now that you've completed your rough cut, when you review it, you might notice two common issues: you've made a cut at the wrong time, or you've cut to the wrong angle. Even worse, it could be both issues at the same time!

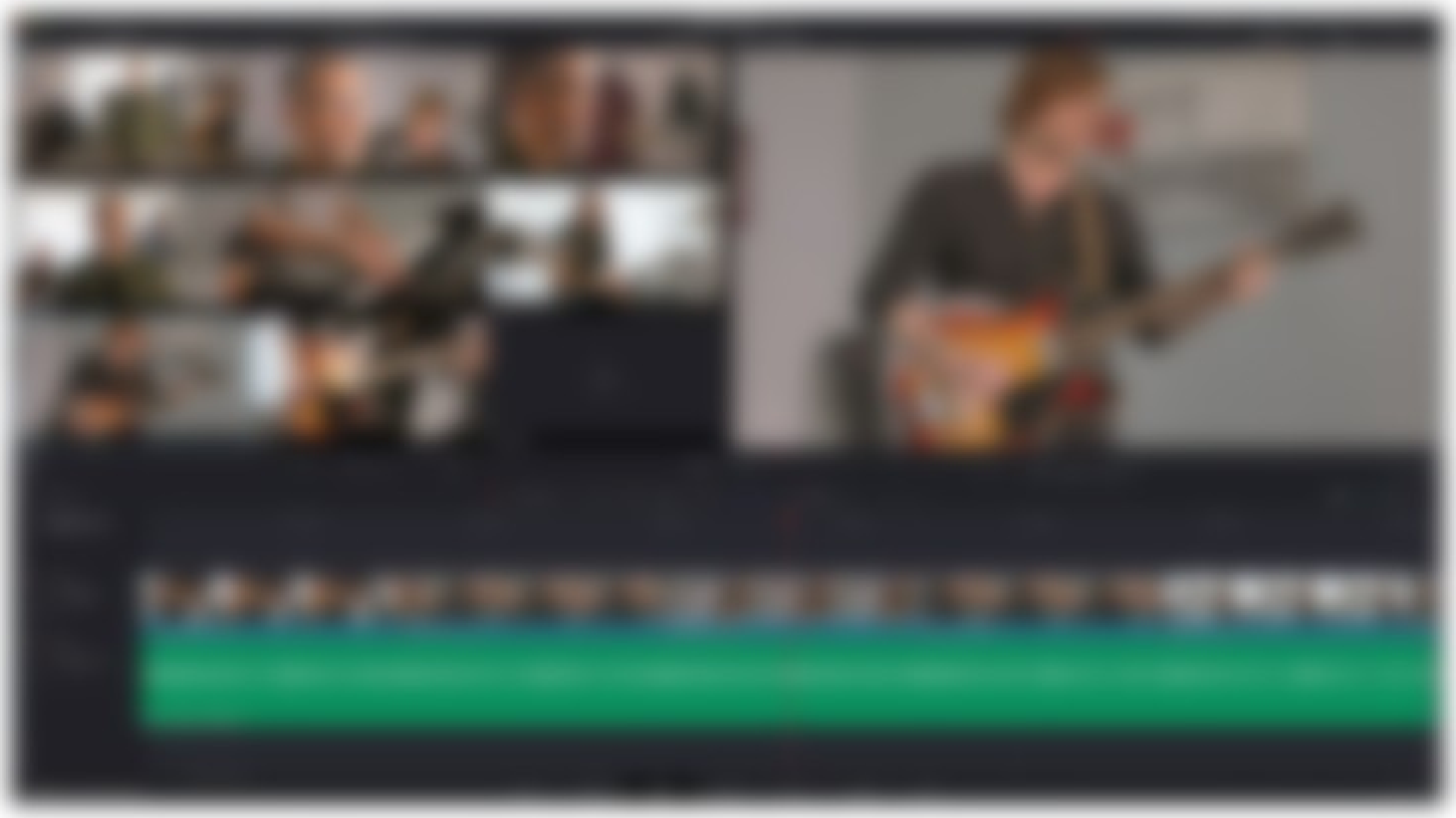
Fear not. You're not directing live television here! This is post-production, so you can change your mind before anyone has seen your previous "creative choices." Solving the first issue, where you cut at the wrong time, is easy; you already know how to change an existing cut point by simply performing a rolling trim using any number of techniques, including using Extend Edit.

The second issue, where you use the wrong angle, is just as easy to fix by switching the angles of the multicam clips in the same way you changed the angles in Chris Lang's interview earlier in this lesson.

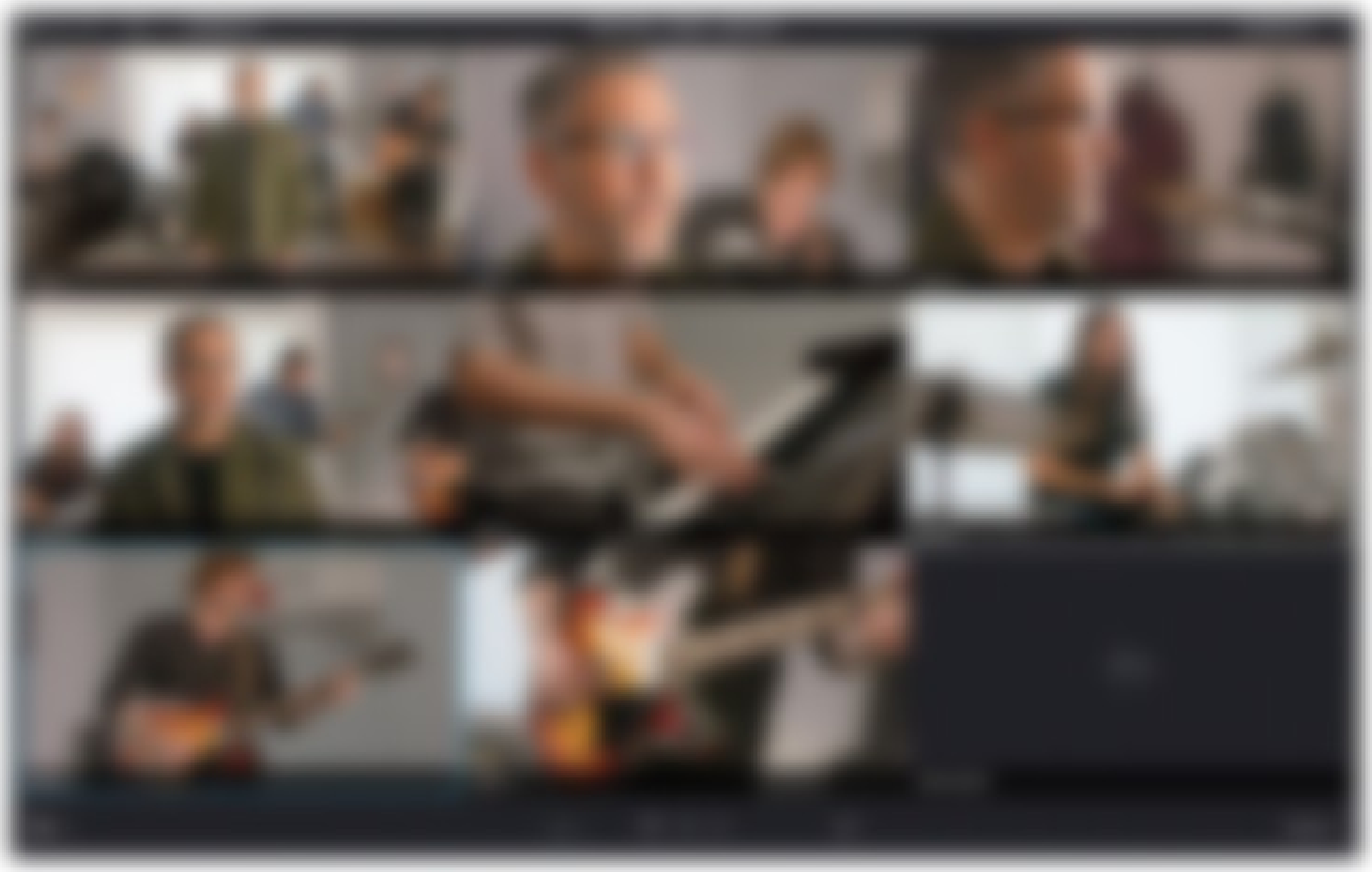
TIP When working with a multicamera edit, you must be mindful of the sync between the angles. For this reason, it's probably not advisable to begin rippling, slipping, or sliding shots until you are confident that you have mastered those techniques, are very familiar with the source footage, and have a definite goal in mind.

1 In the timeline, ensure that the source viewer is in Multicam mode and play your edit until you see a shot you want to change, and then stop playback.

Since the multicam viewer is displaying the same multicam clip under the timeline playhead, you'll see all the angles available at that point.

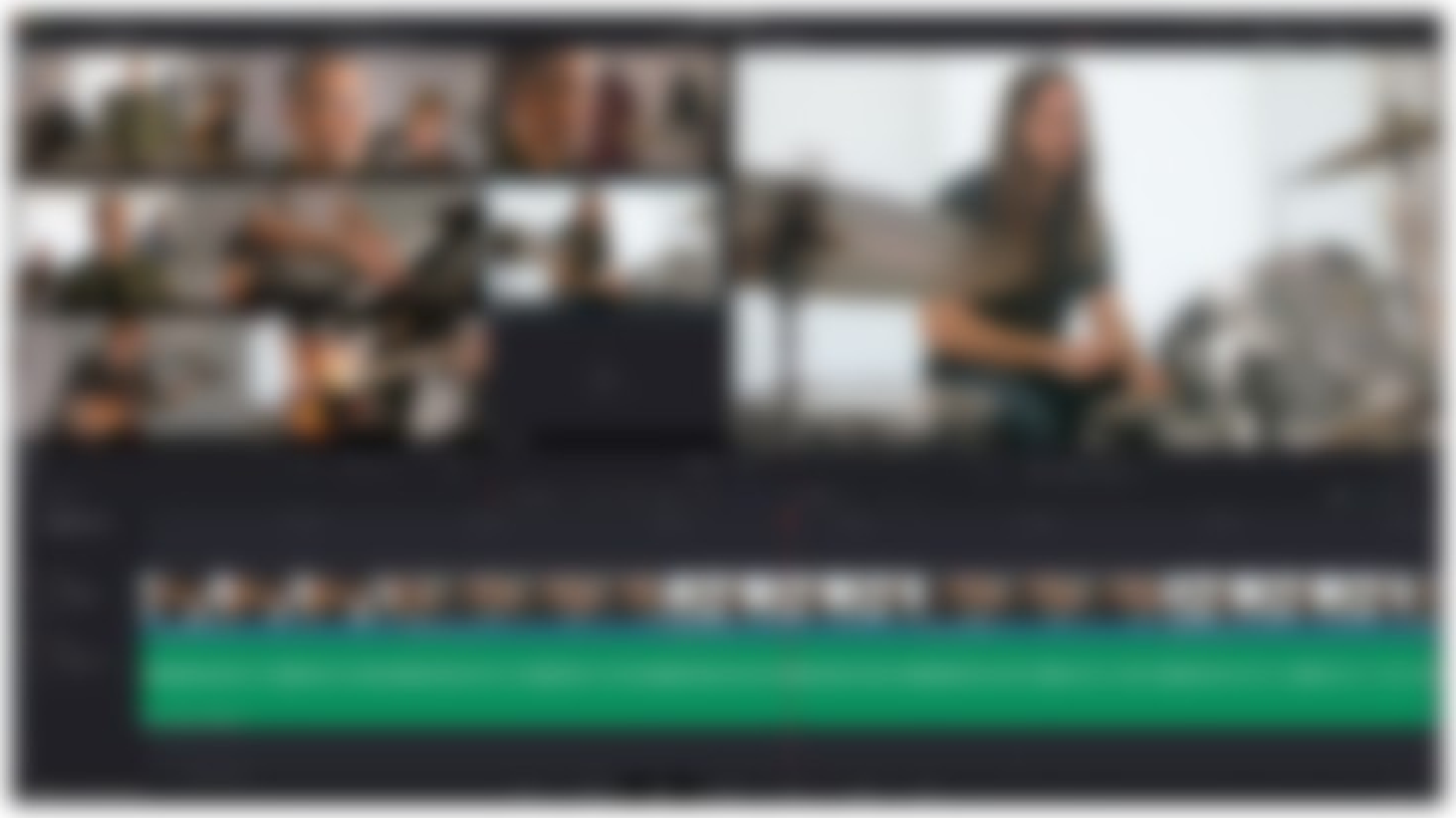


- Hold Option (macOS) or Alt (Windows), and move your mouse cursor over your preferred angle.



Holding Option (macOS) or Alt (Windows) switches the mouse function from the default cut (blade) icon to switch (replace) icon.

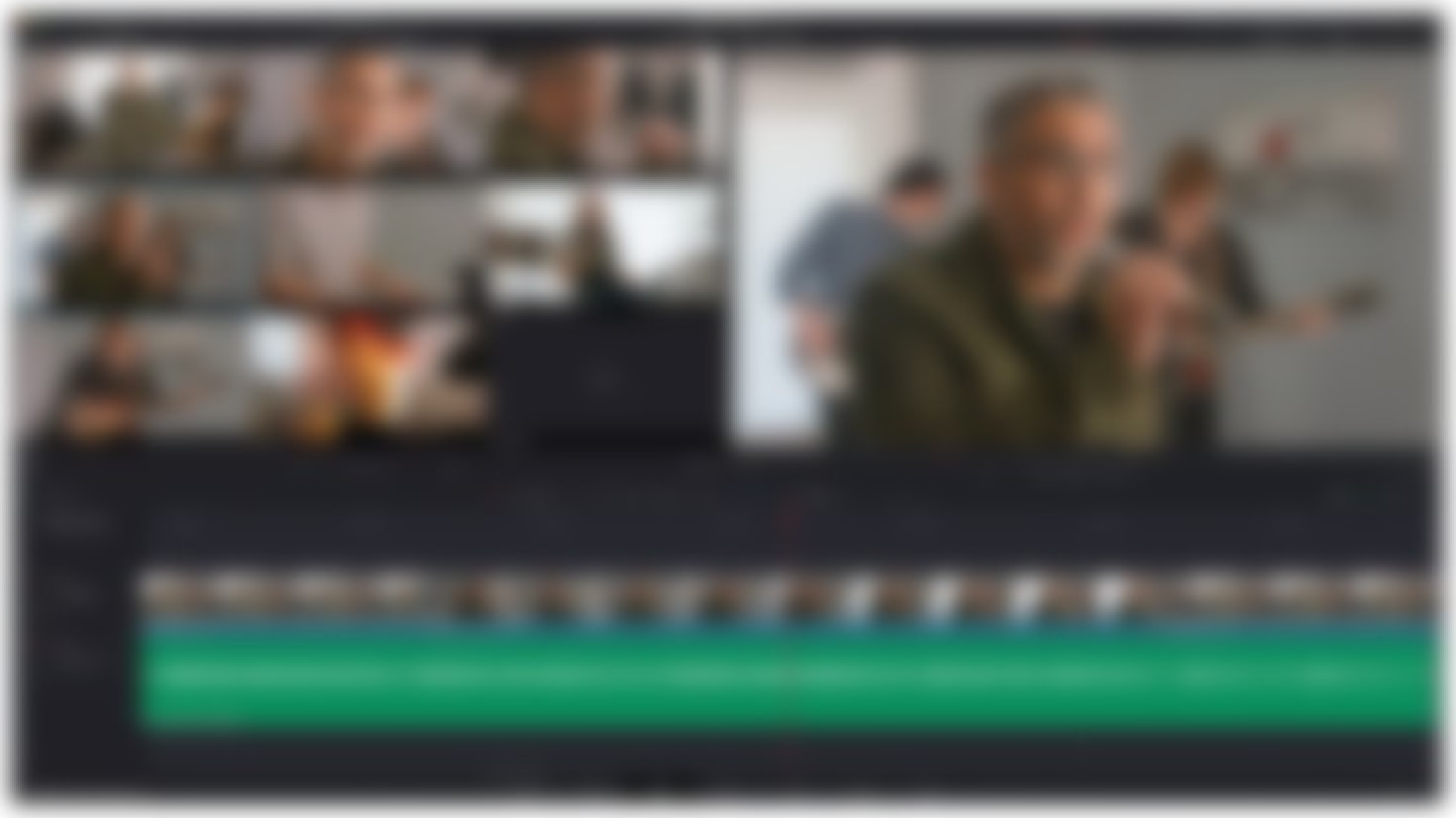
- Option-click (macOS) or Alt-click (Windows) to switch the current active angle to the new angle without adding any additional edit points.



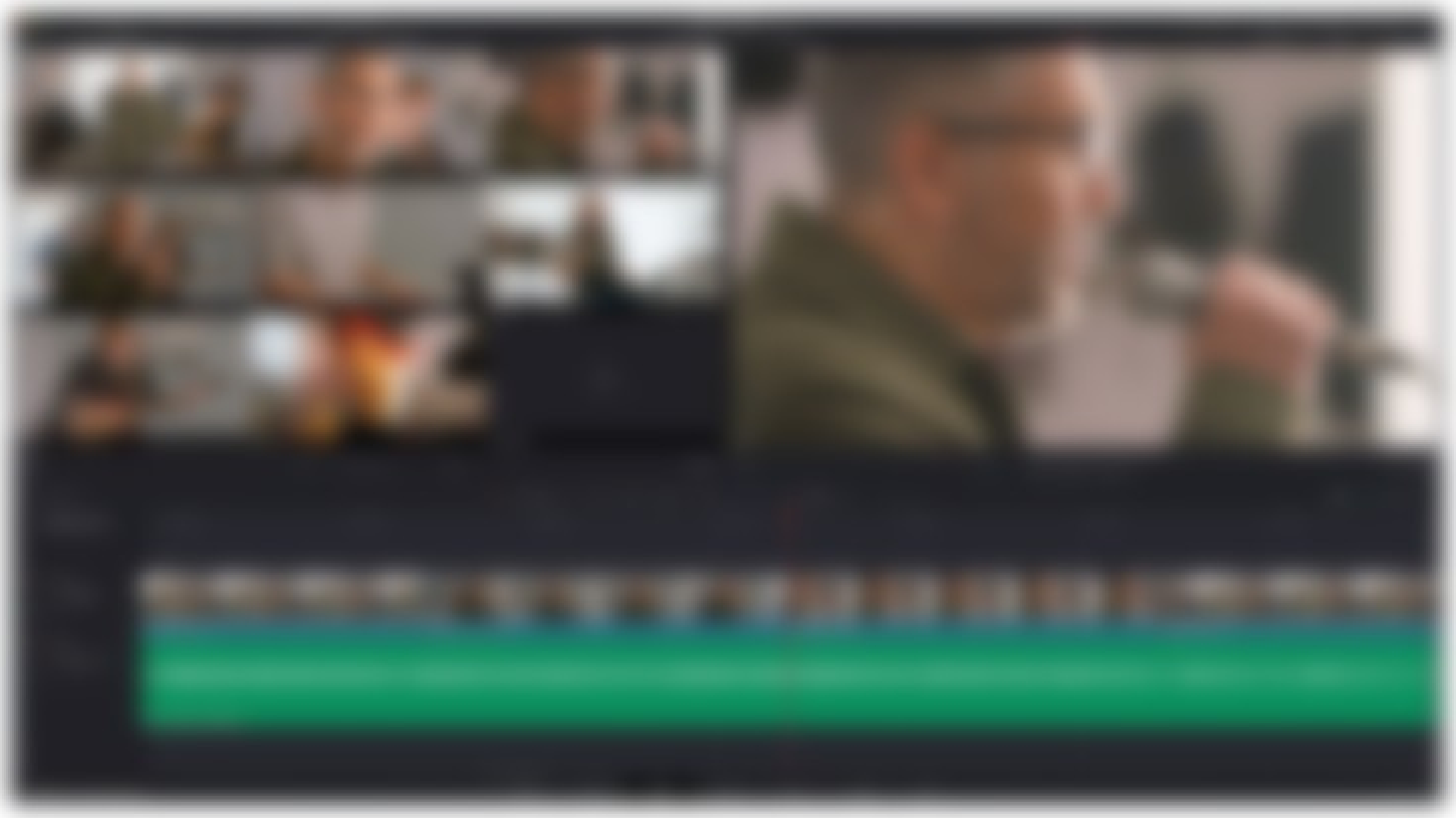
It's just as easy to add further cuts to your multicam edit too.

NOTE: To remove an unwanted edit, right-click it and choose Remove Through Edit, or simply press Delete (Backspace).

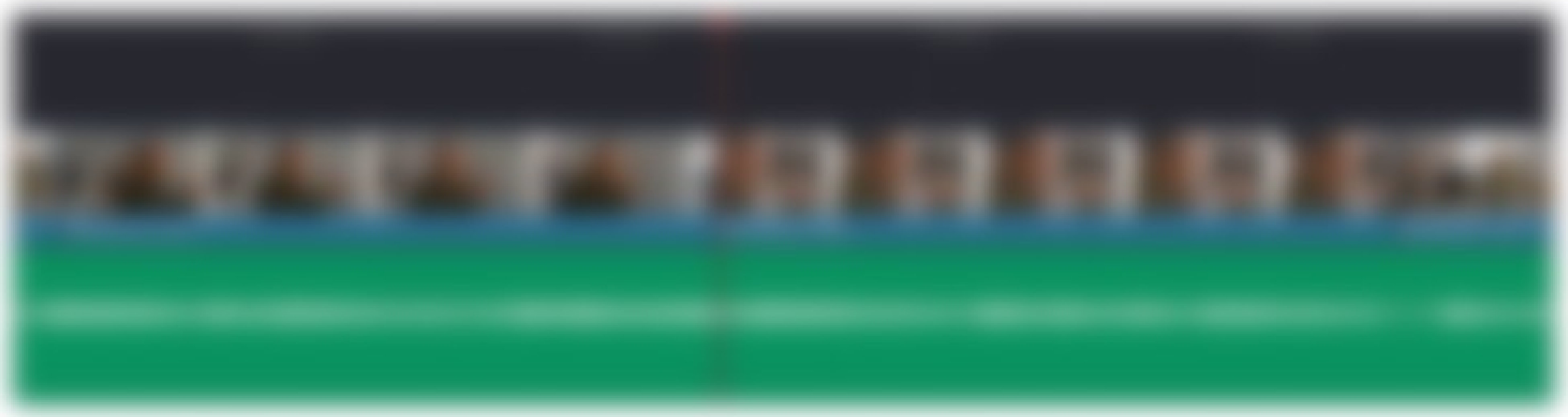
- In the timeline, move the playhead to the middle of one of the multicam clips.



- [illegible]



[illegible]



[illegible]

[illegible]

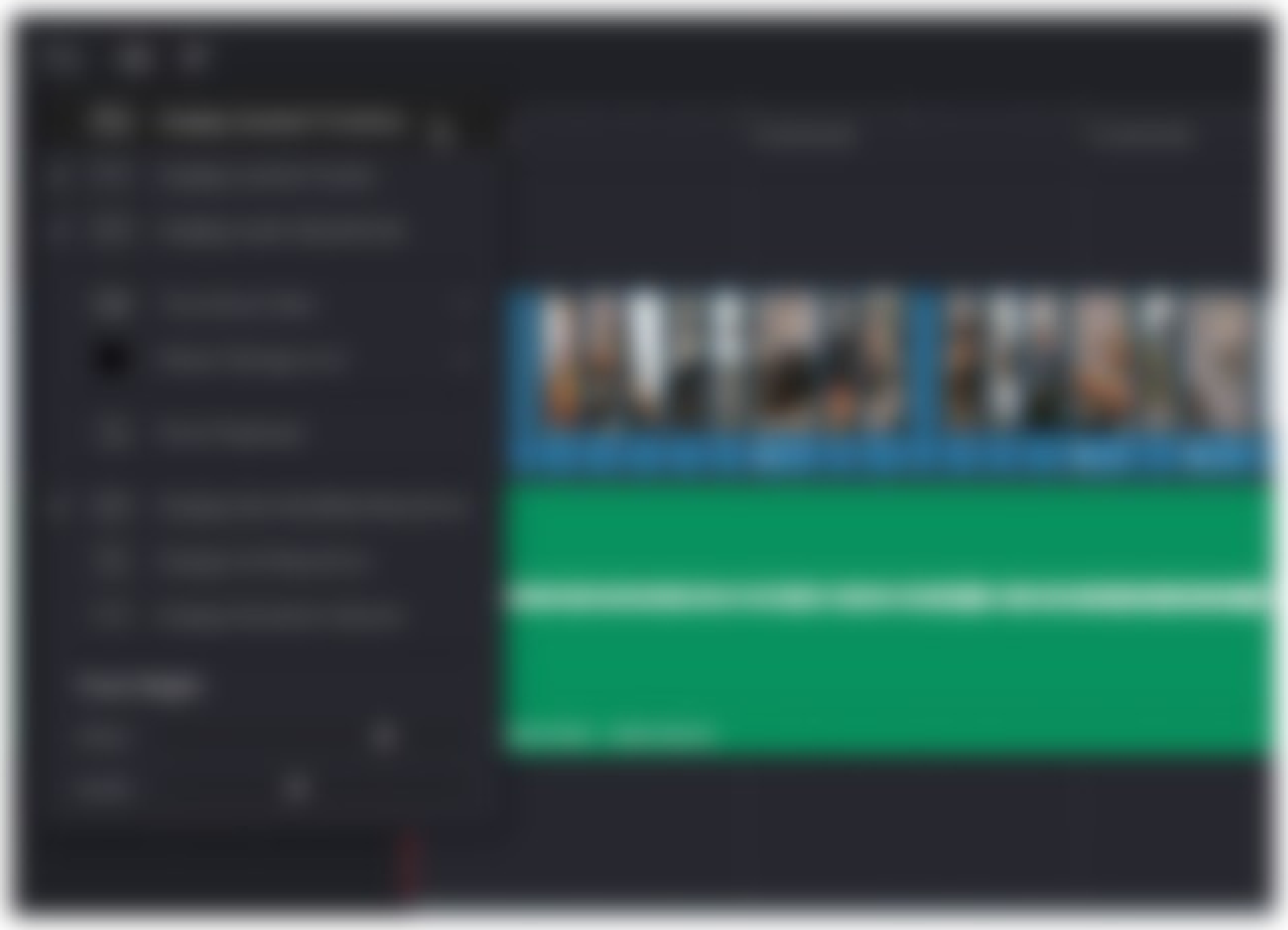
Multicam Editing with the Speed Editor

DaVinci Resolve features Speed Editor functionality for multicamera editing in the edit page

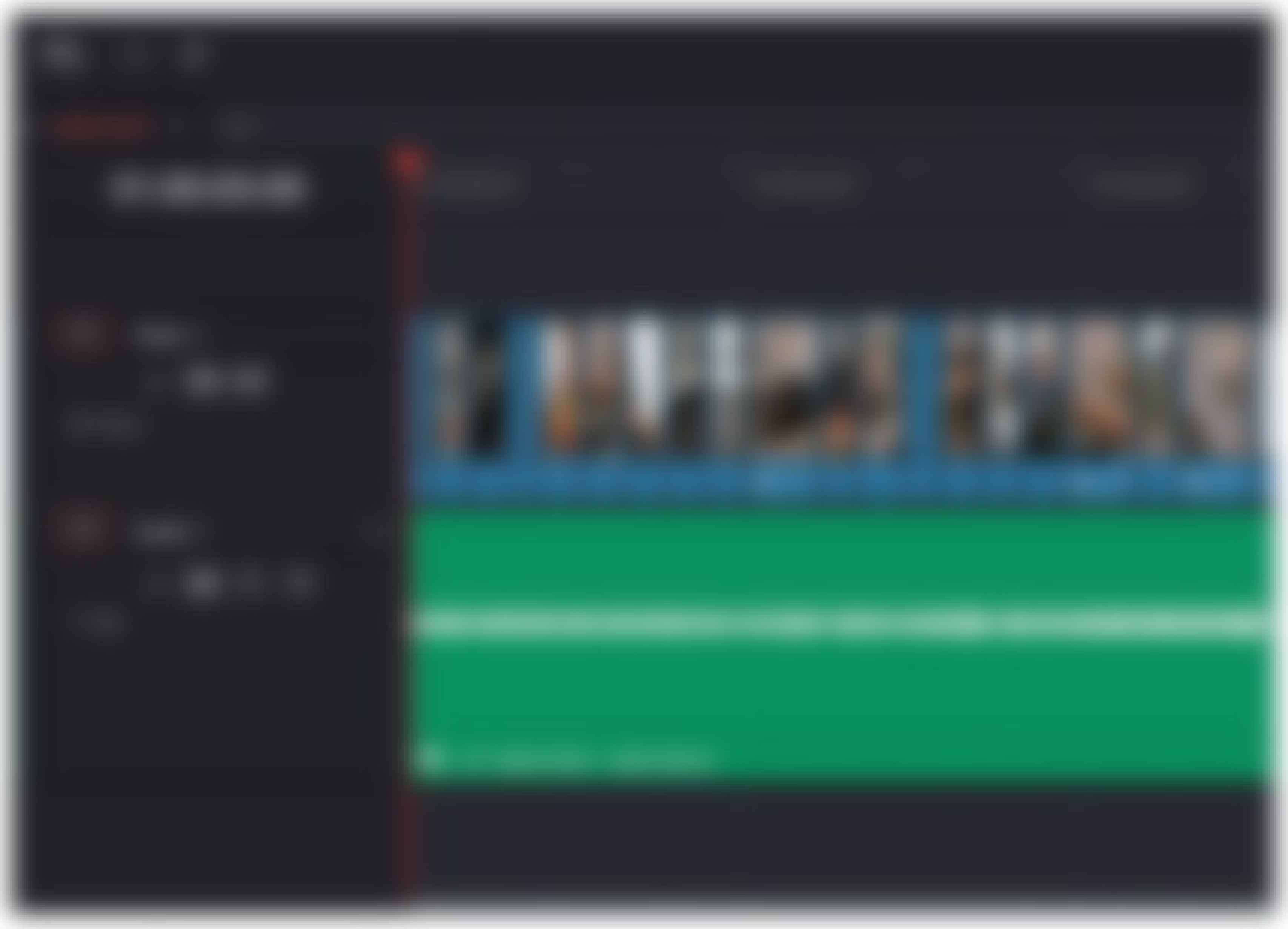
Adjusting a Multicam Clip

In DaVinci Resolve, a multicam clip is a type of "container" clip that can be opened in its own timeline when you need to make changes, such as changing the order of the angles or an angle's name.

- In the Timeline View Options menu, select Display Stacked Timelines.

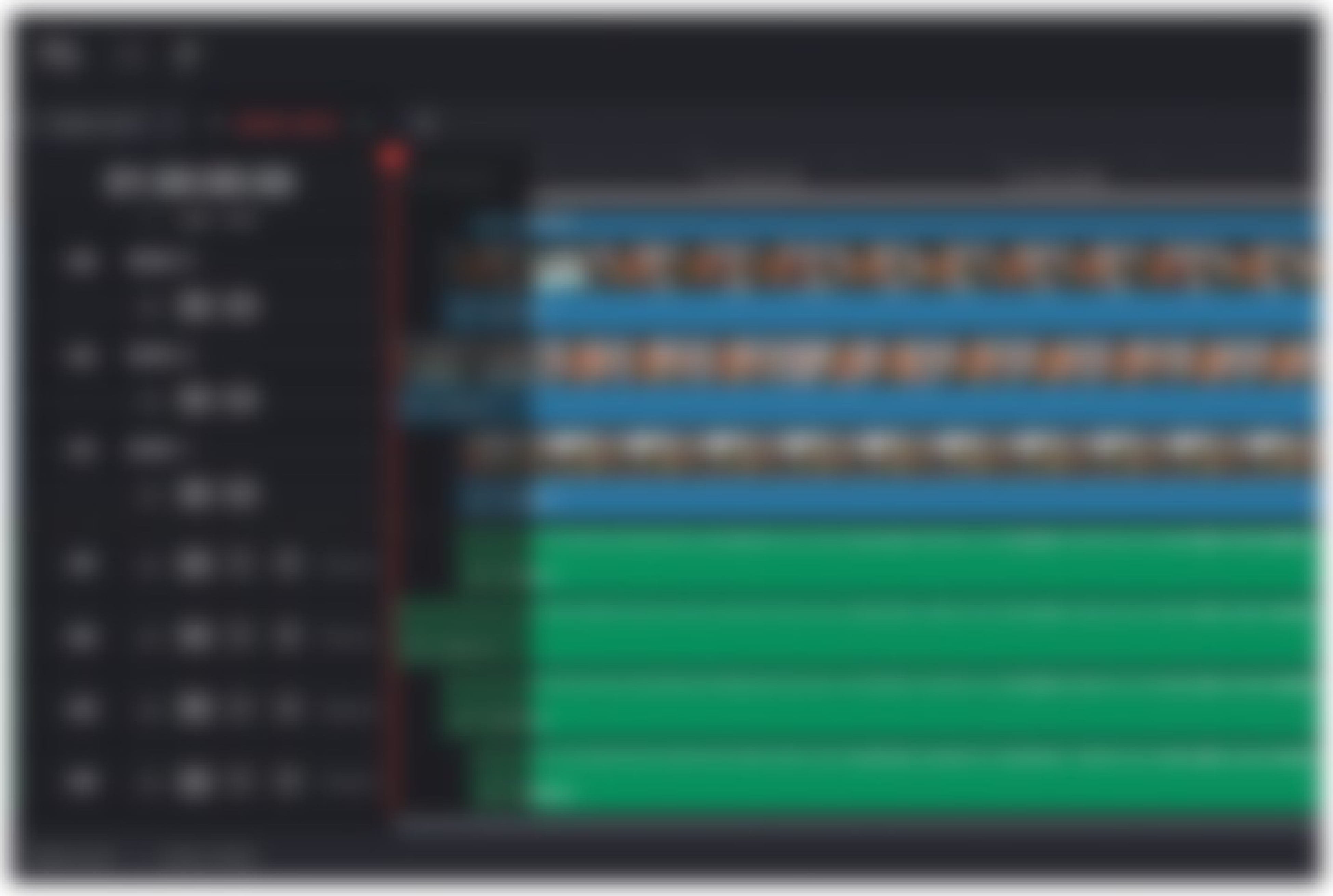


The current timeline appears as an individual tab along the top of the timeline window.



- Select any of the individual multicam clips and choose Clip > Open in Timeline, or right-click any of the multicam clips and choose Open in Timeline.

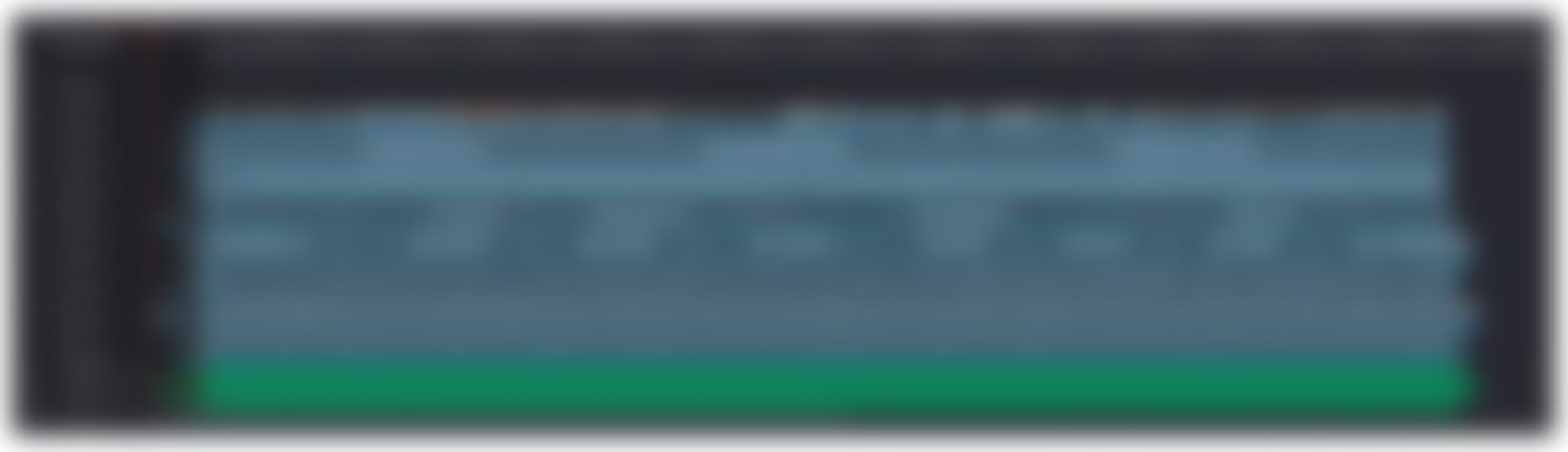
  The "parent" clip, [illegible], opens in its own tabbed timeline, laying bare the "anatomy" of the multicam clip.



- Reduce the video and audio track heights to their minimum and increase the size of the timeline panel by dragging the horizontal divider between the viewers and toolbar area upward so you can comfortably see all the angles of the multicam clip in the timeline panel.

The structure of the multicam clip is very similar to the way you arranged the clips of [illegible] in the timeline before, [illegible] the first multicam clip in the [illegible] content on the "Video 1" and "Audio 1" tracks is displayed as angle 1 in the multicam viewer, with clips on "Video 2" and "Audio 2" being displayed as angle 2, etc.

However, notice that instead of "Video 1" and "Audio 1," the track names are "EDM 1," "EDM 2," etc. To see the track names, you increase the height of the video tracks slightly.

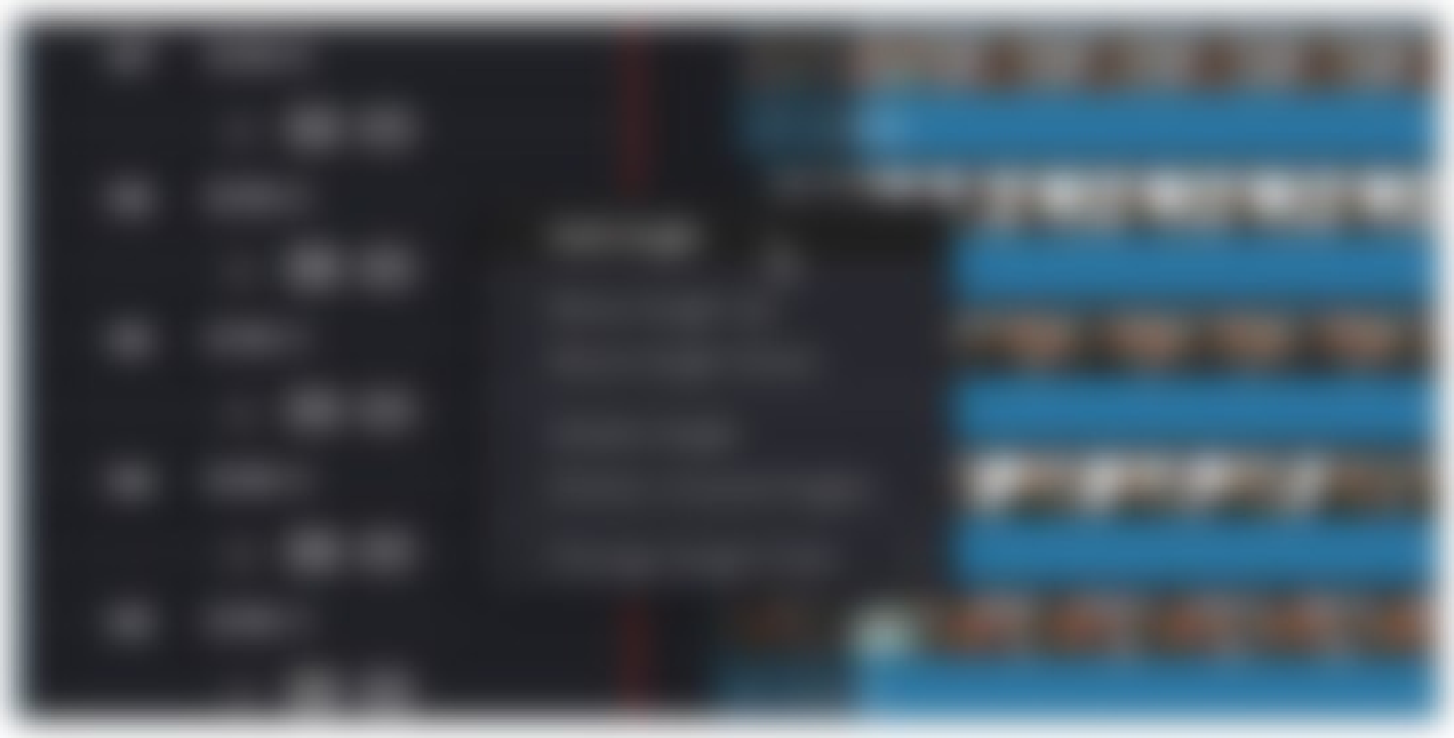


NOTE Do you notice that the V4 video track is empty? This is because Angle 4 does not contain any video elements. Instead, the **EDM MUSIC** clip occupies the A4 angle. However, unlike a regular timeline, multicam clips must contain an equal number of audio and video angles in order to function.

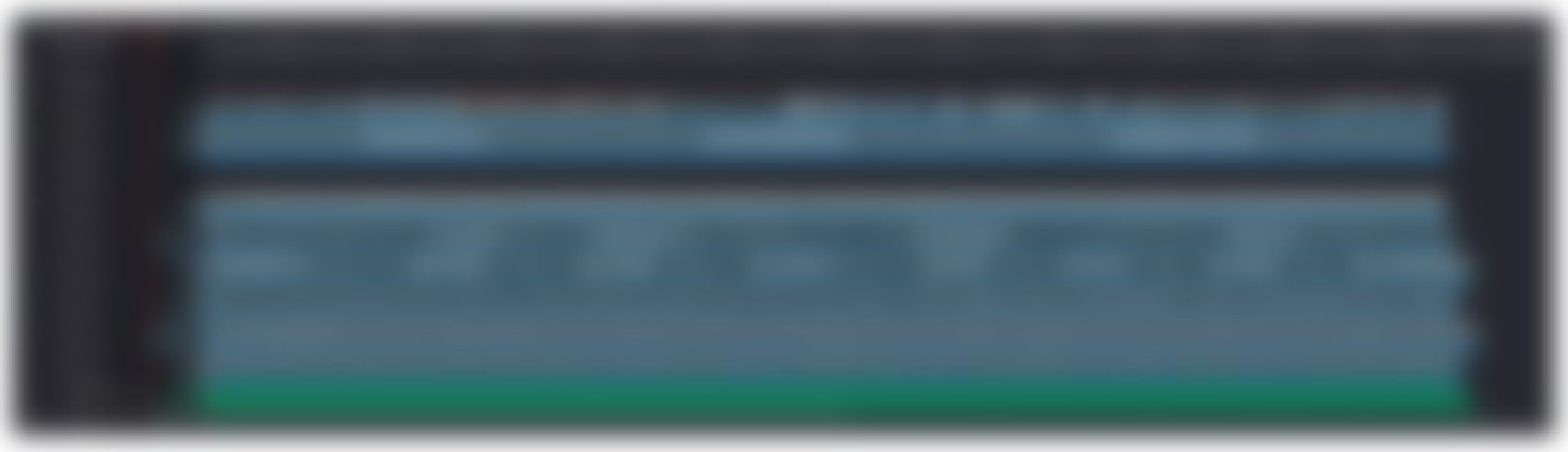
With the multicam clip now open in its own timeline, you can make changes to its organization and structure.

Although you have cut up the original multicam clip into many individual clips in the timeline, each of these clips still refers to the original EDM Multicam clip you started with. As a result, any change to the "parent" multicam clip will be reflected in each of the edited "child" clips, although Resolve will keep the original edit as is, adjusting for any changes to the angle order or names.

- Right-click the track header for V4 (EDM 4) and choose Add Angle.

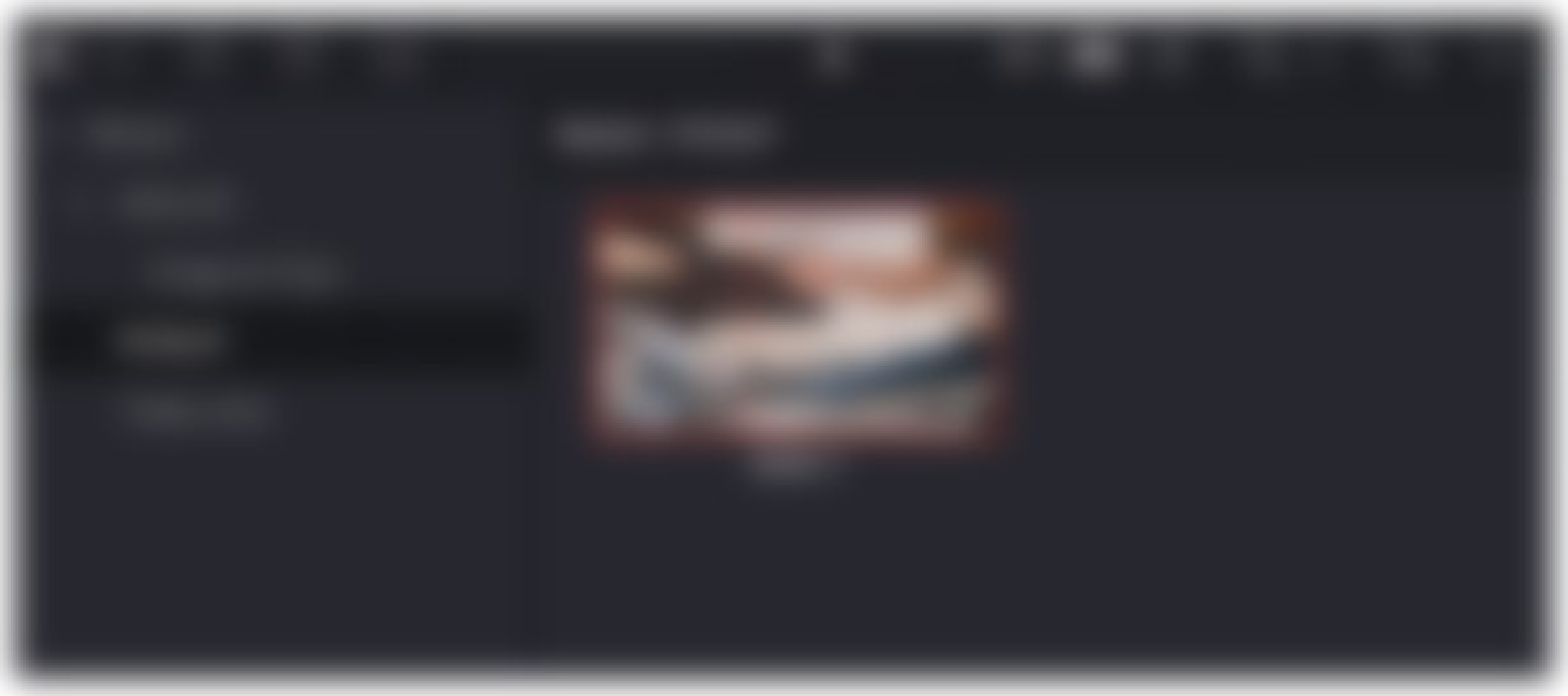


This adds a new V1 angle, moving each subsequent angle up so the original V1 becomes [illegible], the original [illegible] becomes [illegible], and the original [illegible] becomes [illegible], even though the angle names haven't changed.



NOTE Similar changes have also been made to the audio tracks, with the addition of a corresponding [illegible] audio angle.

[illegible] Open the media pool and select the [illegible] bin.



The bin contains a [illegible], currently unused angle called [illegible]. This clip was filmed in addition to the other main angles and shows a closeup of the drumming for the latter part of the song.

- Drag the [illegible] clip anywhere into the new [illegible] angle you just added.

NOTE The audio for this clip is also added to the appropriate track at the same time.

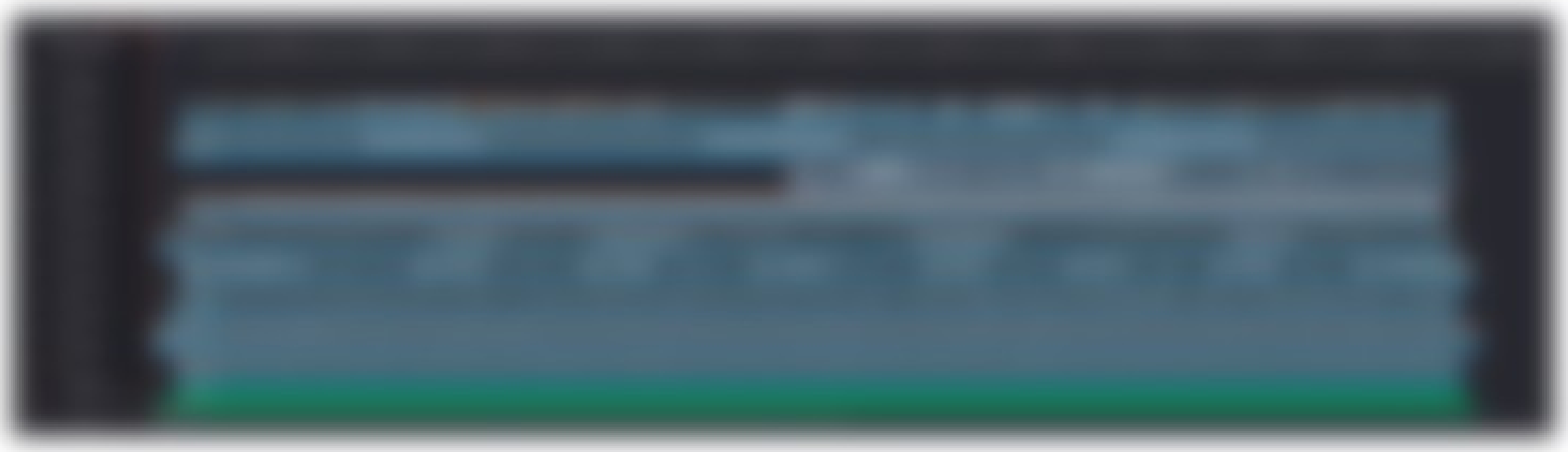
- With the new angle sitting in the new track, close the media pool.

  You must now sync this new angle to the other angles in this multicam clip.

- If necessary, click the Linked Selection button or press Shift-Command-L (macOS) or Shift-Ctrl-L (Windows) to enable Linked Selection.
- In the timeline, select the [illegible] clip and Shift-click the clip in the track below it to select both clips.

- Choose Clip > Auto Align Clips, or right-click either of these selected clips and choose Auto Align Clips.
- In the Automatically Align Clips window, choose Waveform and click Sync.

Resolve automatically syncs the newly added angle to the clip below it.



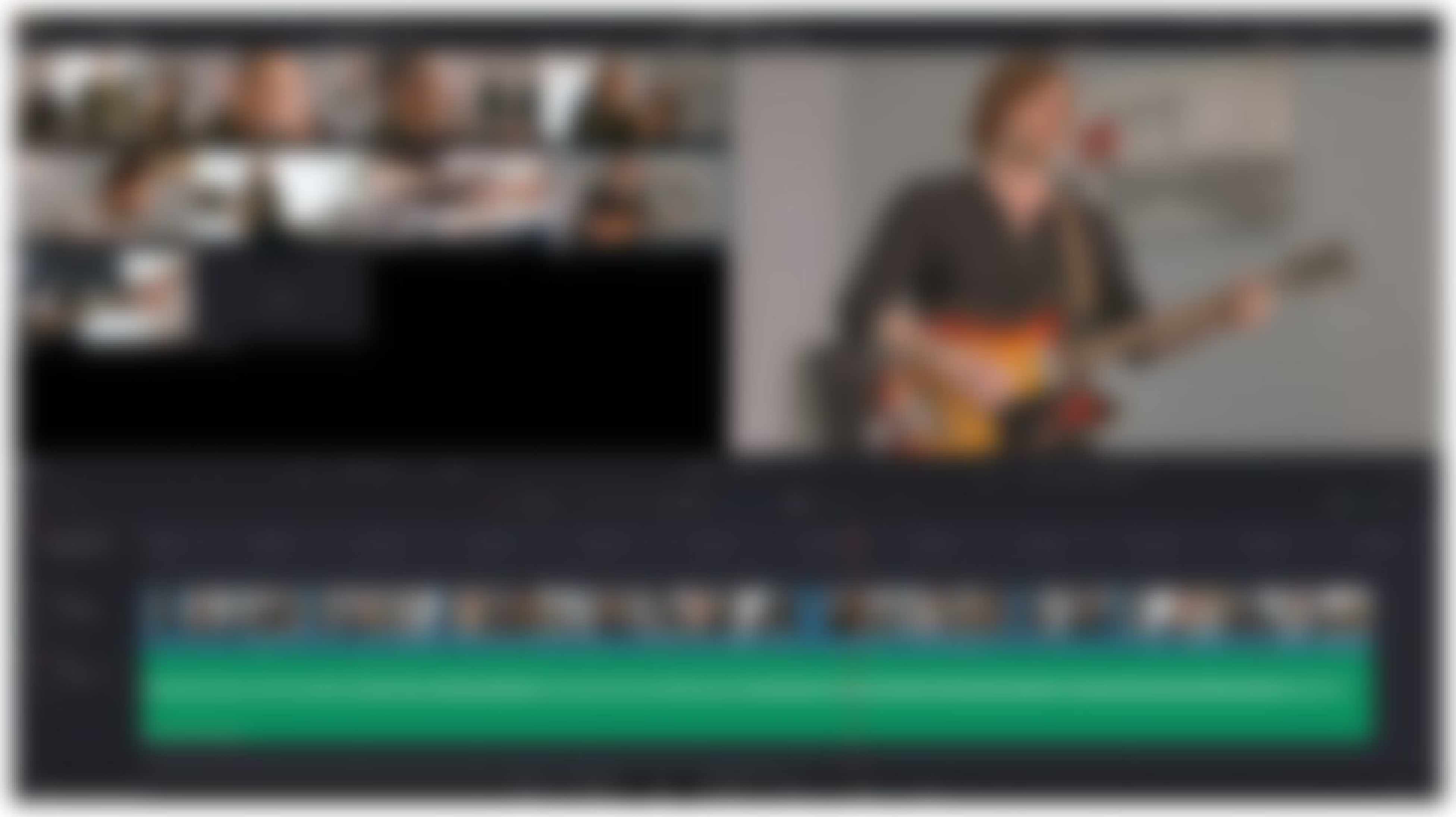
NOTE When auto aligning clips in the timeline like this, it's important to remember that Resolve always syncs the selected clip(s) on the higher numbered track(s) to the clip on the lowest numbered track.

- Click the angle name for V1 (currently named Angle 10) and change it to [redacted] in keeping with the other angle names you originally set for this multicam clip.

NOTE Changing the angle name also changes the name of the corresponding audio angle.

With the new angle in place, you can now begin using it in your main multicamera edit.

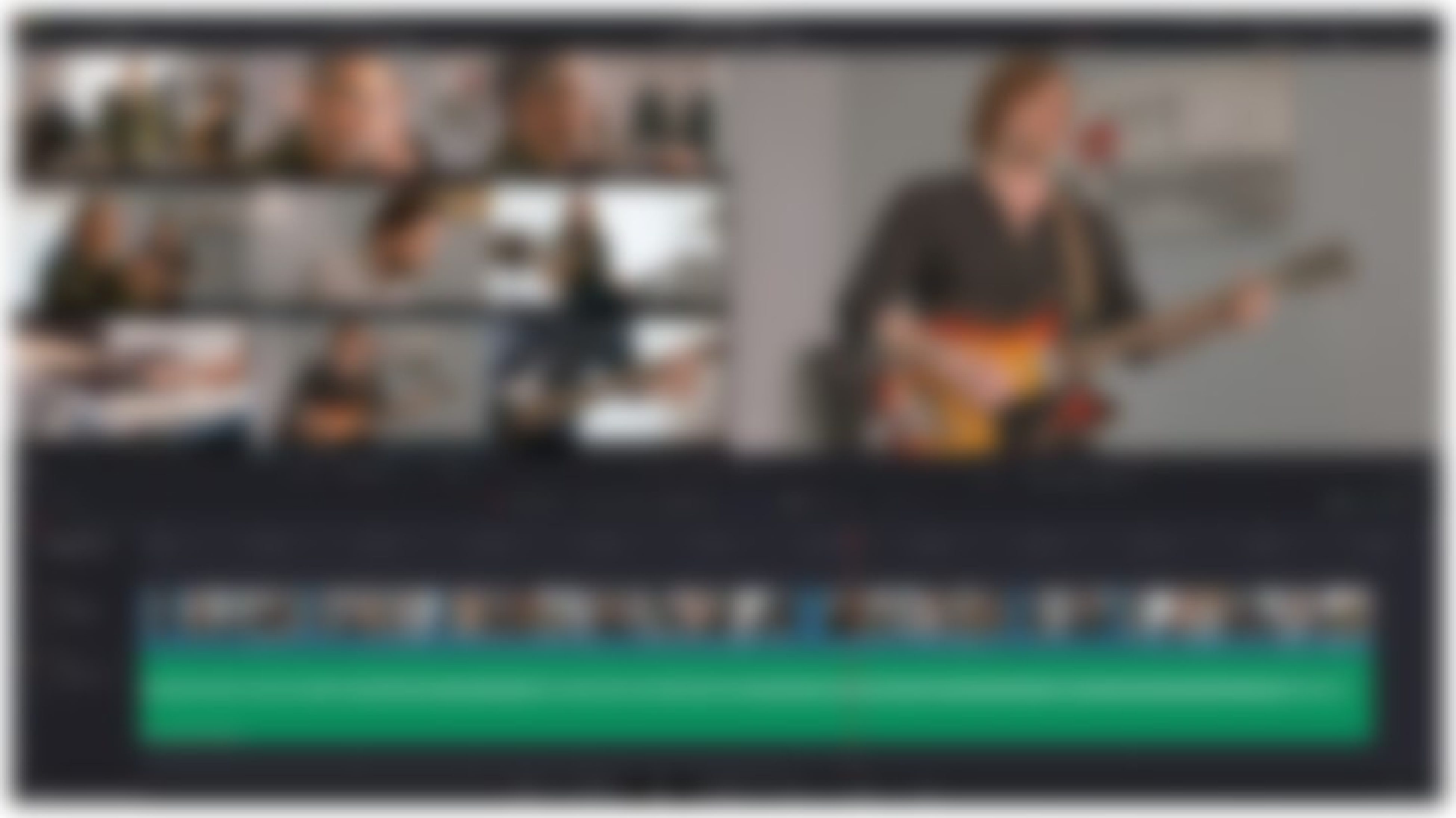
- Choose File > Close Current Timeline to close the multicam clip's timeline and return to the main timeline for this lesson.
- Resize the height of the timeline panel to make it shorter and the source and timeline viewers larger.
- In the source viewer mode dropdown menu, choose Multicam to switch the source viewer back to Multicam mode.



The multicam viewer now displays the additional DSNV 7 angle and automatically adjusts the display to a 4x4 view to account for the additional angle.

NOTE If the DSNV 7 angle is currently blank, move the timeline playhead to the latter half of the song.

- Change the Multicam view menu from "Default" to "3x3" to view all nine video angles together. This removes Angle 10 (GOPRO MUSIC) to a separate "page," which can be accessed using the multicam page controls that appear to the left of the multicam view dropdown menu once the total number of angles is more than the current view allows.



NOTE Multicam clips can contain an unlimited number of angles (tracks). However, the maximum number of angles you can view at any one time (and therefore edit in real time) is 25, using the 5x5 view. Also, note that multicam real-time performance can be affected by the resolution and frame rate of your source media and the speed of your storage device. If your multicam clips aren't playing in real time, try reducing the number of angles you are attempting to play by using the Multicam view dropdown menu. Alternatively, consider generating proxy media (see Lesson 6, "A Workflow").

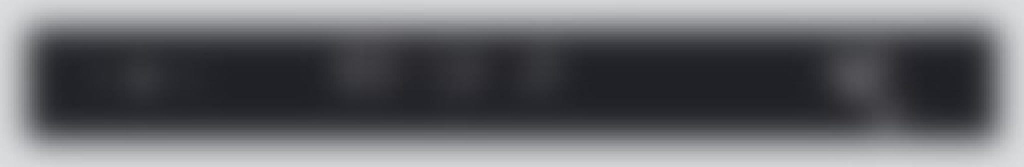
- Finally, watch your multicamera edit through again, making any further adjustments you consider necessary now that you have an additional camera angle to consider.

AI Multicam SmartSwitch (DaVinci Resolve Studio Only)

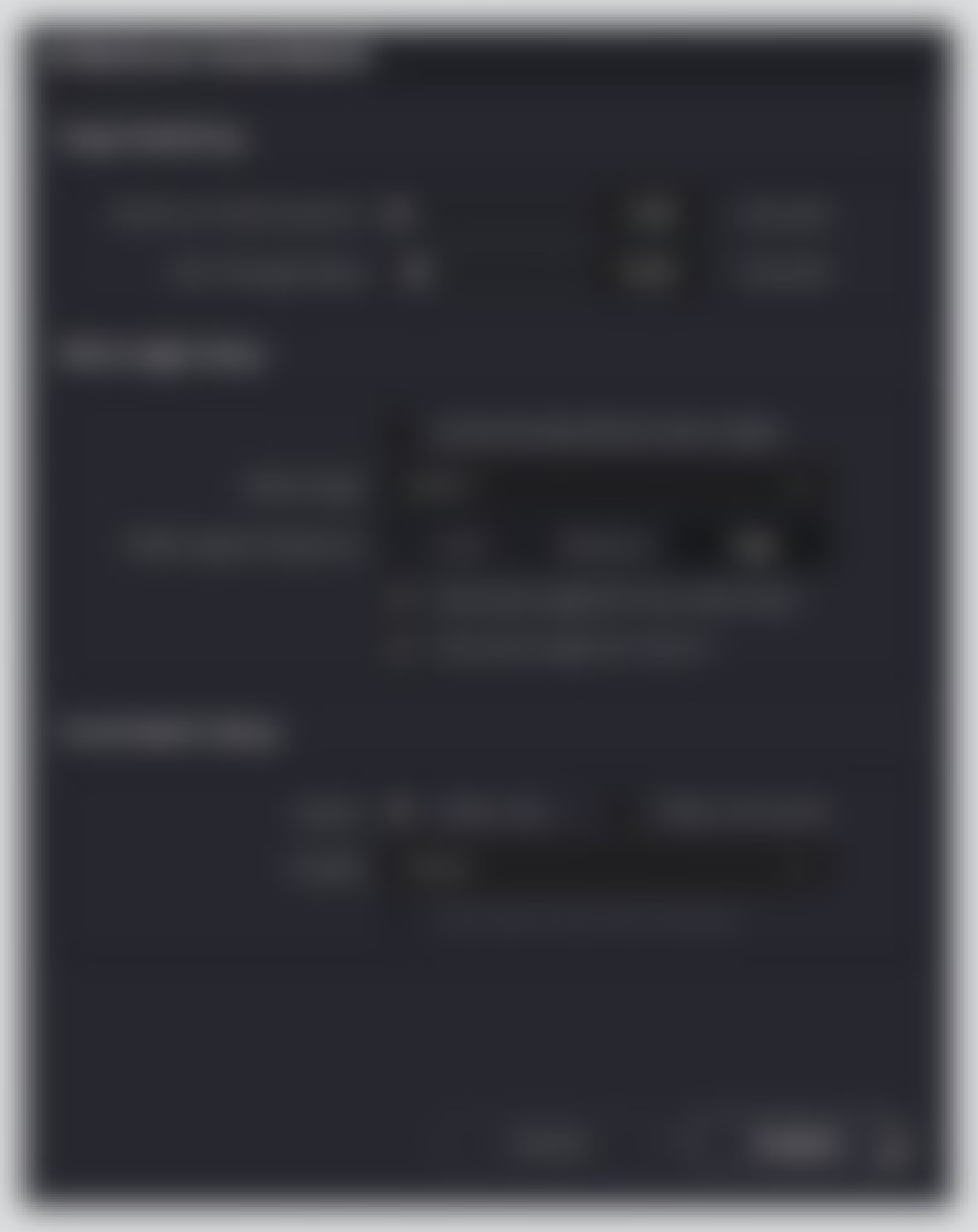
DaVinci Resolve Studio 20 features an AI-powered multicam tool called AI Multicam SmartSwitch, which will analyze all multicam camera angles and automatically cut to the most appropriate angle, based on who the active speaker is. AI Multicam SmartSwitch doesn't just use the audio track but also analyzes lip movement to identify speakers and determines whether the shot is a wide or close-up to determine the best angle. AI Multicam SmartSwitch has been trained on thousands of hours of multicam footage and is great for making an initial rough cut.

AI Multicam SmartSwitch is best used for "talking head" edits, where you have a camera for each person speaking. It is best used to create a rough cut of the footage, allowing you to refine it afterward.

To enable AI Multicam SmartSwitch, click the icon in the multicam viewer once you have created a multicam clip and edited it in the timeline.

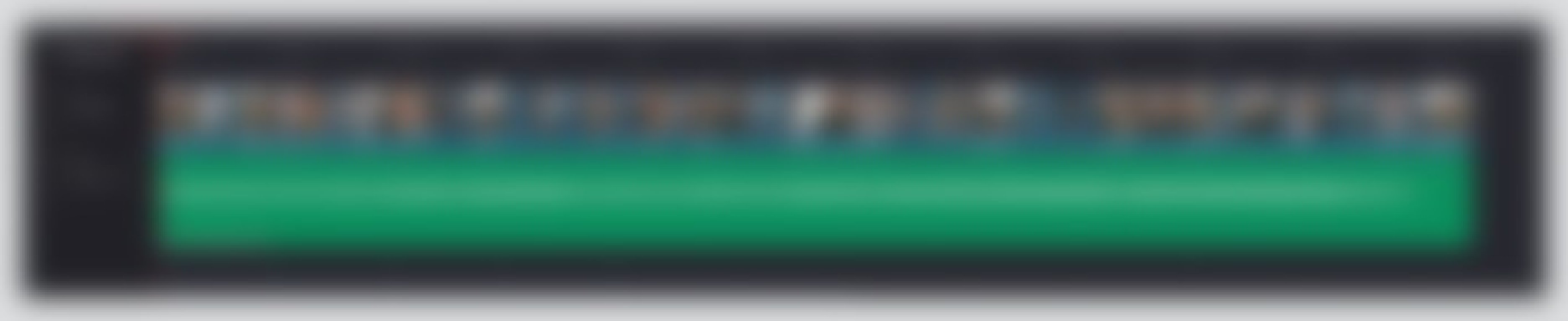


The AI Multicam SmartSwitch window will open with several options that you can adjust as appropriate, depending on your footage. These include options to control the frequency of cuts, use of wide angles, and whether to cut the video only (if using the Reference Audio option when creating the multicam clip) or both audio and video.



continued

Once the analysis is complete (which can take some time), you will have a cut version of your multicam footage, which you can refine using the techniques discussed previously in this lesson.



Congratulations! You should now have the skills necessary to tackle even the most complex multicamera editing tasks in DaVinci Resolve's edit page.

Remember, when editing multicamera projects and playing back in real time, you are really trying to assess the rhythms and themes of the footage and capture those characteristics as you are cutting. Sometimes, you might cut a multicam clip in three or four ways to experiment with various pacing strategies and later decide which shows the most flow. However you approach your multicamera projects, as with all editing, each cut requires constant revisiting and reworking to ensure that your audience sees the best possible results.

Lesson Review

1. What are your options for synchronizing angles in a multicam clip from video clips without sound?
   - a) In or Out points
   - b) Markers
   - c) Timecode
2. What is the maximum number of angles you can view simultaneously in a multicam clip?
   - a) 9
   - b) 16
   - c) 25
3. Which modifier key is used to switch the entire multicam clip to another angle instead of adding a new edit point?
   - a) Command (macOS) or Ctrl (Windows)
   - b) Option (macOS) or Alt (Windows)
   - c) Shift
4. True or false? You cannot change the angle names, add additional angles, or change the current order of the angles of an existing multicam clip.
5. True or false? When you flatten a multicam clip, you lose all the other synchronized angles from the multicam clip(s) in the timeline.

Answers

1. a), b), and c) You can choose to synchronize angles using In points, Out points, timecode, or markers instead of sound.
2. c) 25. You can have multiple pages of more angles, but the maximum number of angles you can view in any one page is 25 (5x5).
3. b) Option (macOS) or Alt (Windows) is used to switch the existing angle.
4. False. Right-click a multicam clip and choose Open in Timeline to adjust an existing multicam clip.
5. True. Flattening a multicam clip removes all the unused angles and leaves only the clip that was used as the active angle in the timeline.

Lesson 5

Project Organization

While DaVinci Resolve is a superior editing, audio mixing, visual effects, and color grading system, several steps are important to consider before making a single edit, primarily to ensure that the project has the correct settings and the media is efficiently organized. In the preceding lessons, the projects had already been set up and organized for you to help you explore the editing toolset in DaVinci Resolve but also to demonstrate how important and useful it is to organize your projects so that, once you do start editing in earnest, you can focus on the creative storytelling process rather than having to spend valuable editing time locating specific clips. In this lesson, you'll focus on leveraging these powerful functions to help you organize and prepare your own projects.

Time

This lesson takes approximately 60 minutes to complete.

Goals

Creating a New Project and Project Settings [illegible]
Exploring the Source Media [illegible]
Importing Media [illegible]
Syncing Audio to Video and Channel Configuration [illegible]
Working with Metadata [illegible]
Creating Keyword Smart Bins [illegible]
Analyzing Clips for People (Studio Only) [illegible]
Configuring Metadata Presets [illegible]
Exporting Metadata [illegible]
Renaming Clips with Metadata [illegible]
Creating Custom Smart Bins [illegible]
Creating Subclips [illegible]
Power Bins [illegible]
Lesson Review [illegible]

While much of this can be accomplished in the edit page, DaVinci Resolve has a specific page dedicated to helping you focus on preparing and organizing your media: the media page. Here, you have the most space to explore the clips you have to work with without the distraction of unnecessary interface elements like timeline windows, color grading controls, or audio mixers, which aren't required for this task.

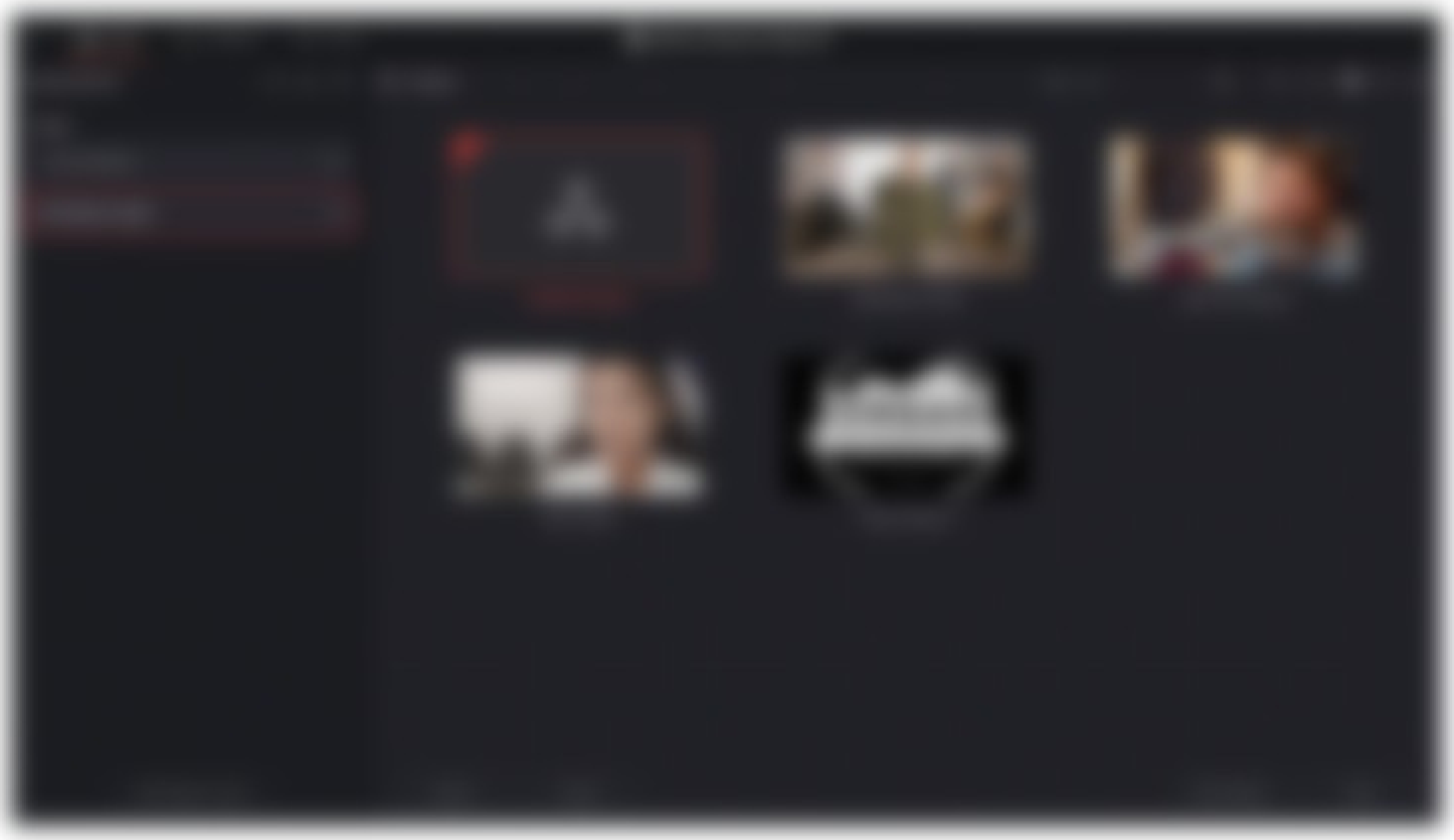
Still, project organization isn't something that happens just once before you start editing. Rather, it's a process that is constantly refined as you work on a project, often right up until the point you're ready to deliver it. As such, although this lesson is designed to highlight this functionality in the media page, many of the steps discussed in this lesson can be applied directly in the edit page so that you can implement them alongside your editing as required.

To explore these steps so that you can begin applying them to your own projects, you'll set up a new project, import the Organ Mountain Outfitters media, and re-create the project you worked with in Lessons 1 and 2.

Creating a New Project and Project Settings

The first step for any project is to actually create a new project in the Project Manager.

- Open DaVinci Resolve and, in the Project Manager window, click the New Project button.



- [illegible]

[illegible]

[illegible]

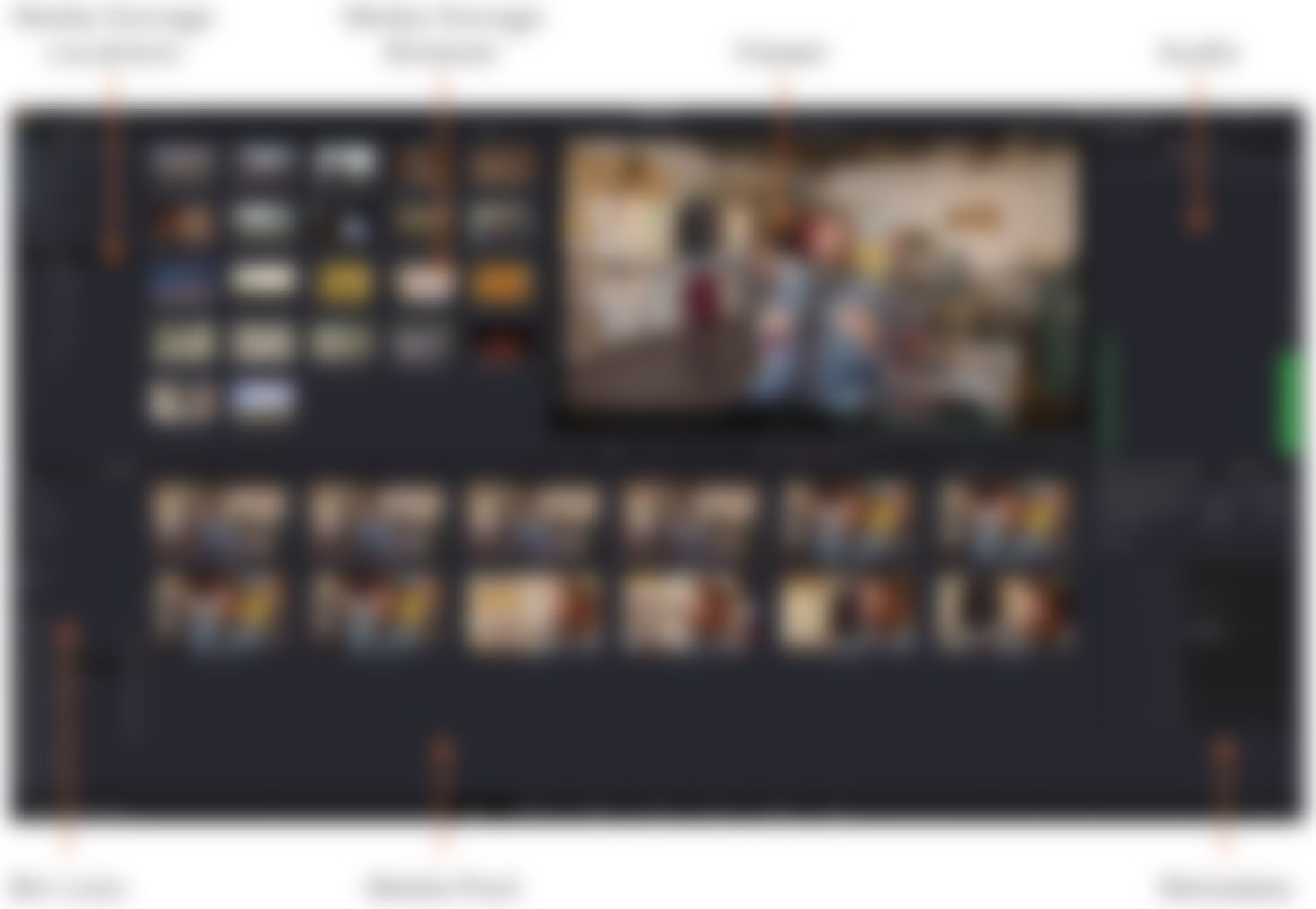
- [illegible]

[illegible]

- [illegible]

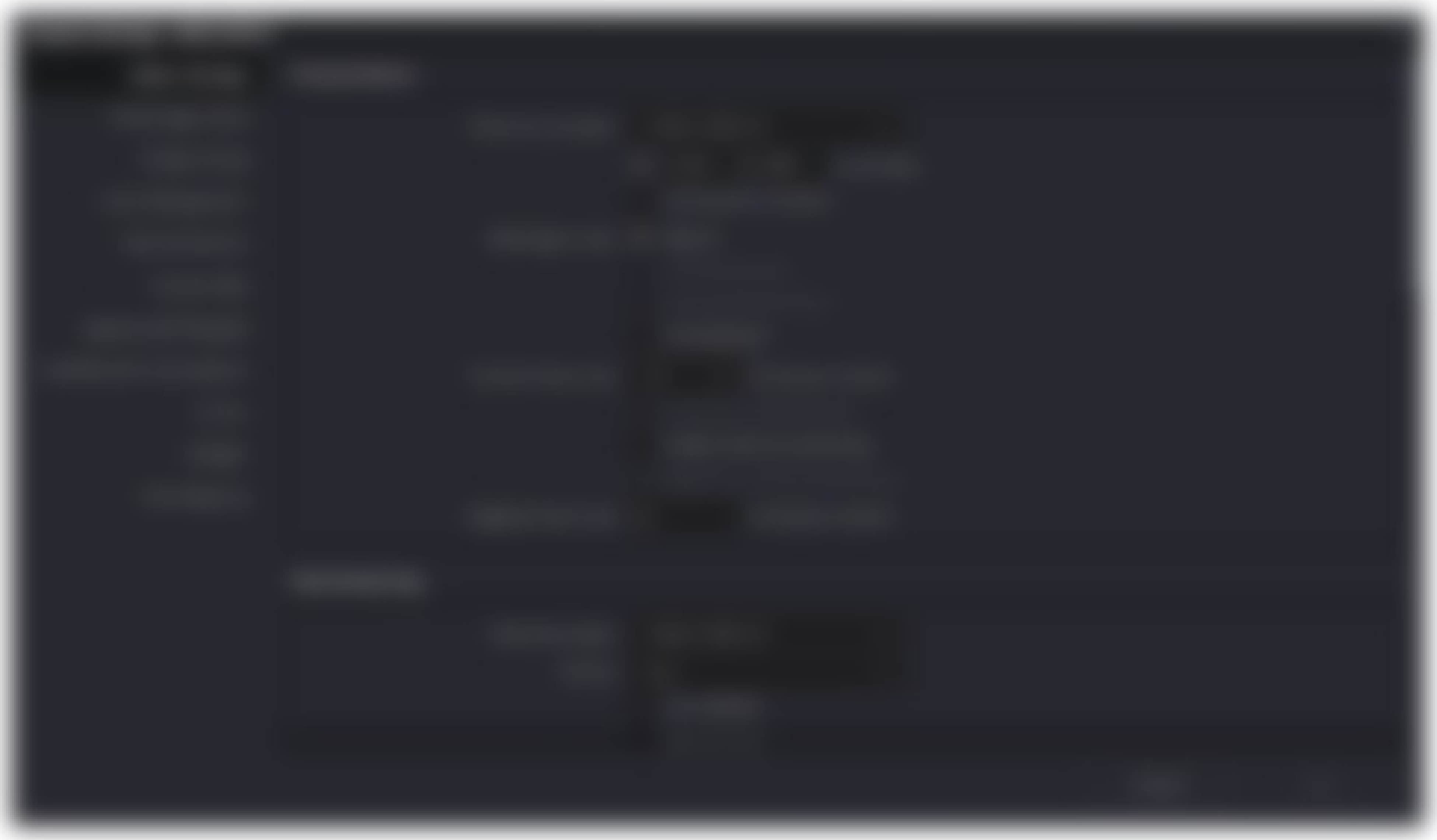
> [illegible]

As mentioned in the introduction to this chapter, the media page is dedicated to the reviewing and organizing of your source media—principally video, audio, and graphics files.



When you create a new project in DaVinci Resolve, the project itself uses some default settings. The next step when creating a new project should be to check these basic settings.

- Choose File > Project Settings or press Shift-9 to open the Project Settings window.



For an editor, the main settings to be concerned with are in the Master Settings. This group of settings primarily deals with the Timeline Format and Video Monitoring for the project.

Generally, all projects have a timeline resolution of 1920 x 1080 HD and a timeline frame rate of 24 frames per second (fps). This is the resolution and frame rate used whenever you create a new timeline using the Project Settings option. These settings can be changed when you create a new timeline, so each timeline in any project can have completely different settings, but as most projects tend to use the same timeline settings, it's useful to set a general setting in the Project Settings window.

So what timeline settings should you use? That depends primarily on where you will deliver your final edited timeline. For example, if you're working on a feature film, you'll probably want to deliver a 3840 x 2160 Ultra HD timeline at 24 frames per second; if it's a broadcast TV show, then the timeline might be 1920 x 1080 HD at 29.97 frames per second or 25 frames per second for the UK and Europe; whereas if you will deliver a file to a streaming site such as YouTube or Vimeo, your choices aren't quite so limited and you may need to make a judgment call based on the source footage itself. If in doubt, always talk to the director to determine the best settings for your project.

NOTE If you're working for broadcast TV, you may be required to work with an interlaced timeline, which DaVinci Resolve fully supports. To enable interlaced processing for a timeline, select the "Enable interlace processing" option in the Timeline Format section of Project Settings or in the Format tab of the New Timeline window. The frame rates for interlaced timelines are measured in fields per second and can only be set to 50, 59.94, or 60, equating to 25, 29.97, and 30 frames per second, respectively. Everything in an interlaced timeline, including graphics, Fusion compositions, and video clips, are processed at the field level for high quality compositing and titling for interlace delivery.

Although the Organ Mountain Outfitters project is destined for online delivery, it was shot with the intention of being delivered at HD quality and 23.976 fps. Therefore, this is the resolution and frame rate you will work with for this project.

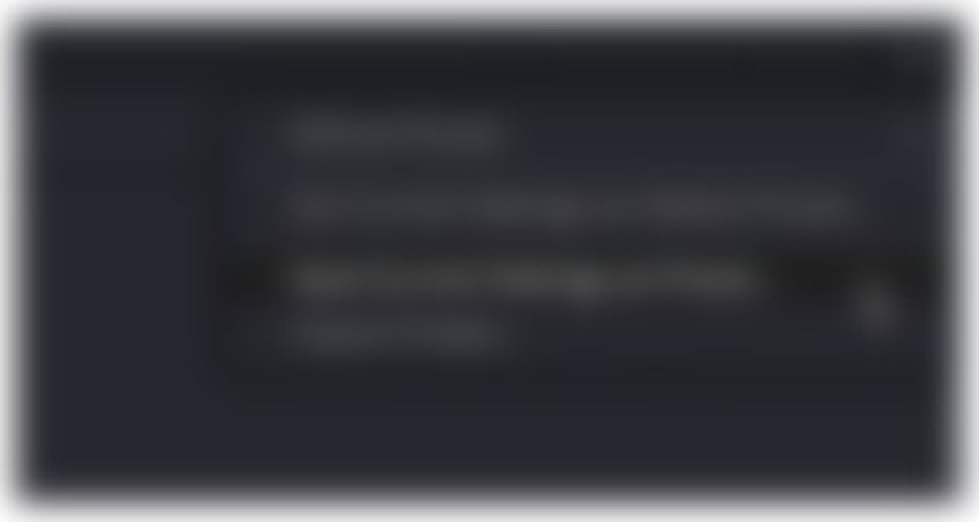
- If required, select 1920 x 1080 HD from the Timeline Resolution dropdown menu and 23.976 frames per second from the Timeline Frame Rate dropdown menu.

NOTE When you change the frames per second option, the Playback frame rate and Video Format in the Video Monitoring section change to match. Normally, this is what you want; however, in very rare instances, you can adjust these separately, especially if you're working with a timeline resolution or frame rate that is unsupported by the video monitoring hardware.

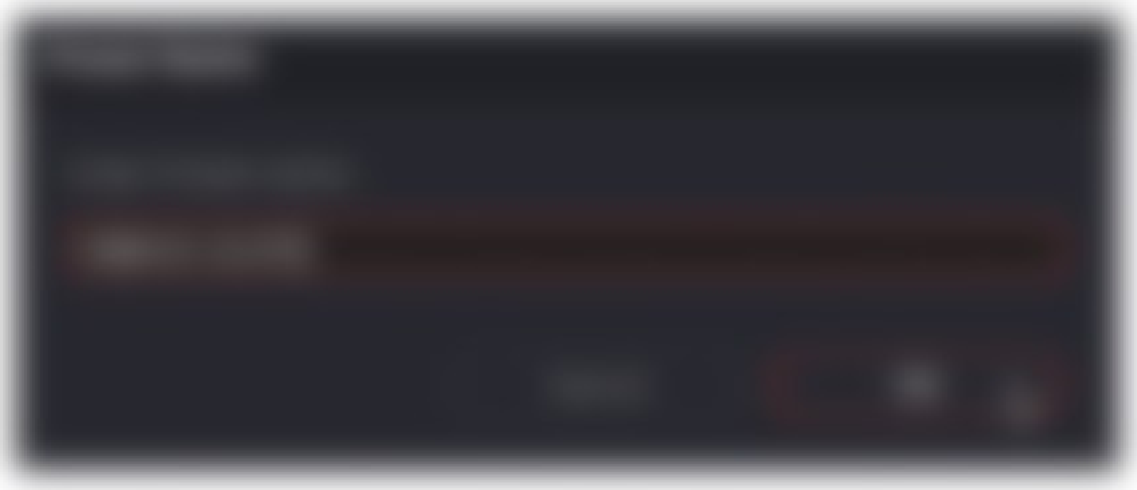
Saving Project Presets and Setting the Default Preset

If you frequently work with projects that require different Timeline Format settings or you need a specific setting for your timelines for all projects beyond the standard 1920 x 1080 HD and 24 fps, it can be useful to save different project presets that can be easily recalled or even set the current project preset as a default for all newly created projects in the current project library.

- In the Project Settings window, click the Options menu (...) and choose Save Current Settings as Preset.

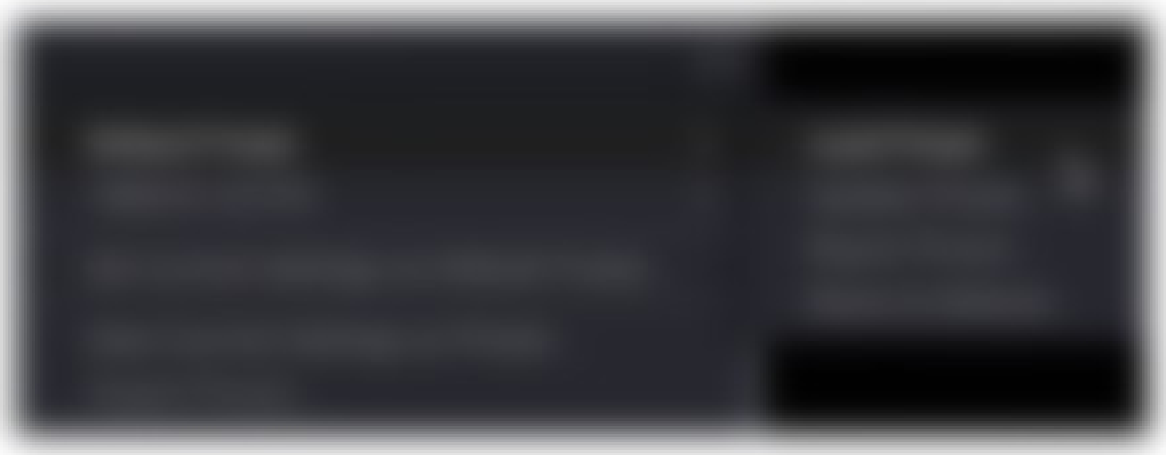


- In the Preset Name window, type **1080HD 23.976** and click OK.



All the settings for the current project are now saved as a preset that you can quickly load.

- Click the Options menu again and choose Default Preset > Load Preset to reload the default project settings, returning the Timeline Format settings to their starting values.

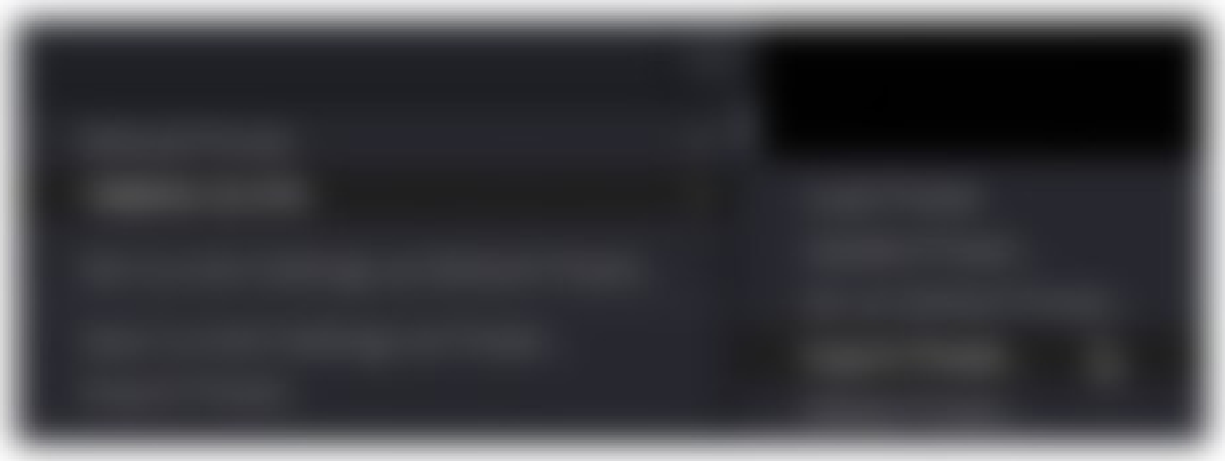


- Click the Options menu and choose 1080HD 23.976 > Load Preset to reload the saved preset you'll use for this project.

> **NOTE** Saving a project preset saves all the settings in the Project Settings window, not just those in the Master Settings.

You can also export a project preset that you can use to quickly load the same project settings onto another DaVinci Resolve system.

- Click the Options menu and choose 1080HD 23.976 > Export Preset.

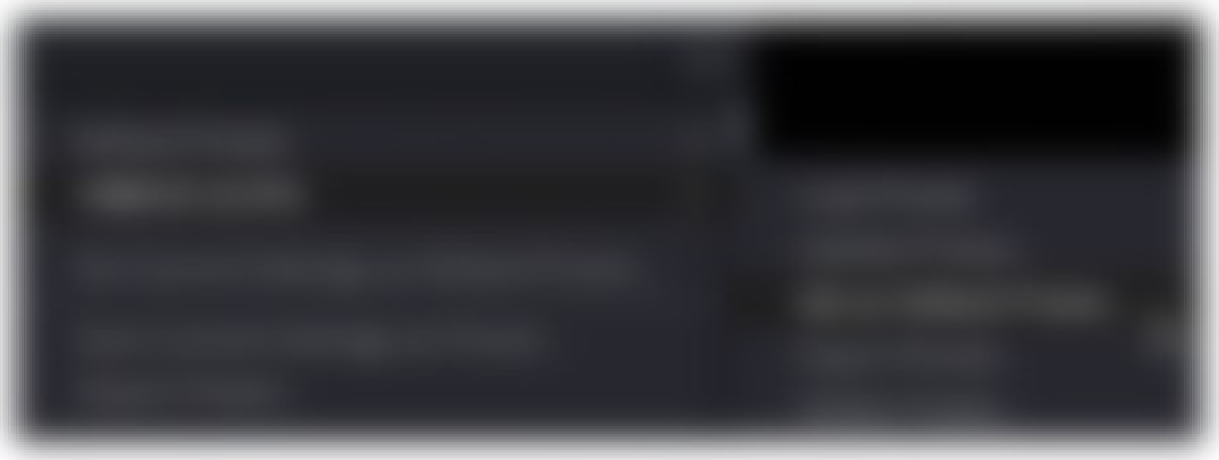


- In the Save As field, type **1080HD 23.976**, choose a location, and click Save to save the exported .preset file.

> **NOTE** To import the project .preset file onto another DaVinci Resolve system, select the Project Settings Options menu (...) and choose Import Preset.

You can also set any saved preset as a default for all new DaVinci Resolve projects for the current project library.

- Click the Project Settings Options menu and choose 1080HD 23.976 > Set as Default Preset.



A window confirms that you want to set the [illegible] preset as the default for all Fusion projects.

- Click Yes.

  Now all Fusion projects created in the current project library will use this preset by default.

- Click Save in the Project Settings to save your changes and close the Project Settings window.

Exploring the Source Media

Before proceeding with the project, it's useful to consider the source media files you will work with. The media page is the perfect place to do this, even before you've imported a single clip, thanks to the media storage browser.

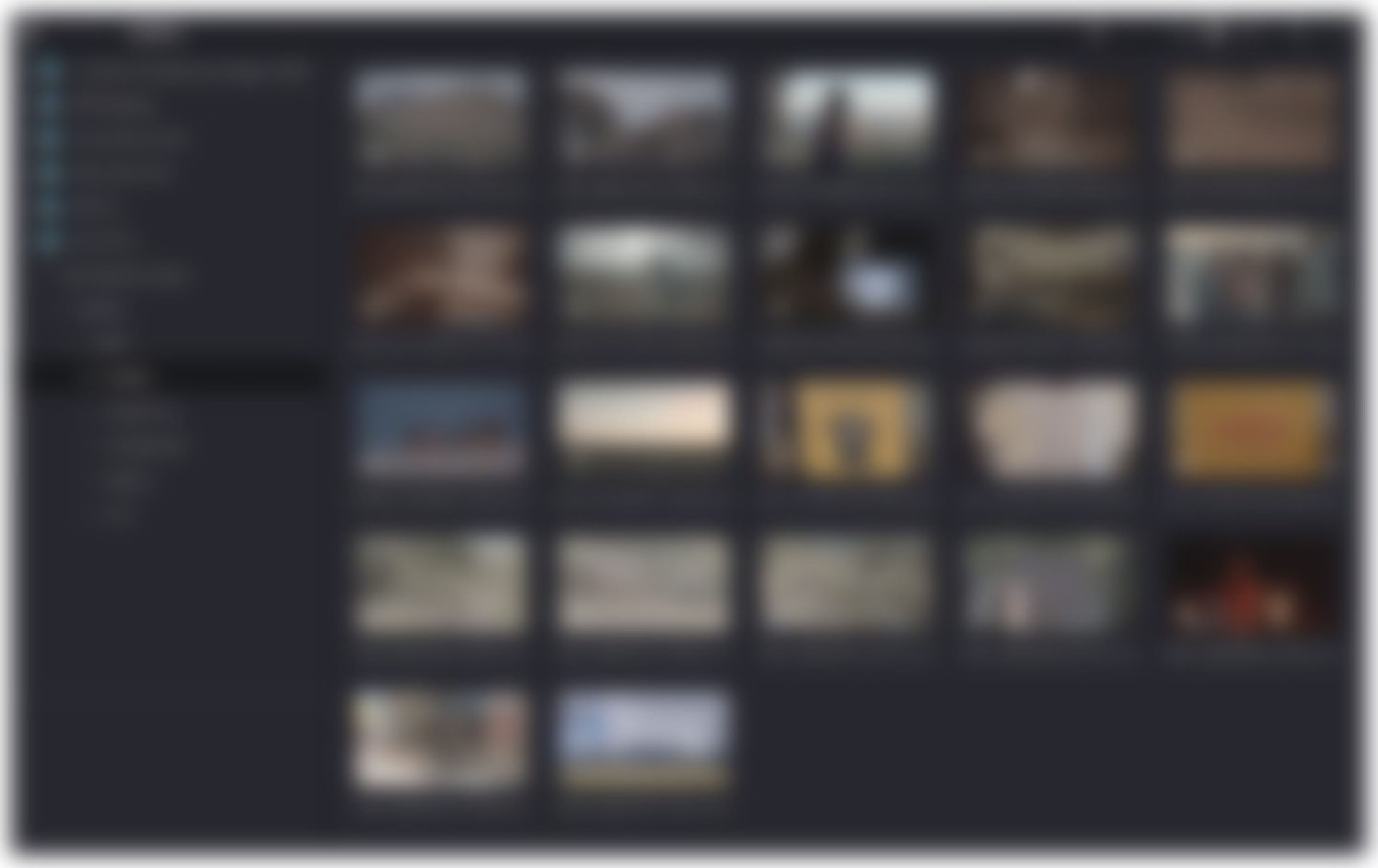
- In the media storage browser, navigate to the [illegible] folder.

  TIP If you find it unintuitive to navigate through your computer's file system using the media storage browser's rudimentary directory tree, you can simply open a location in the Finder (macOS) or File Explorer (Windows) and drag the folder into the media storage browser to open that location directly.

The media storage browser displays five folders containing the clips used in the Organ Mountain Outfitters promo.

TIP To set a location as a favorite so you can quickly access a location quickly, right-click the folder in the media storage and choose Add Folder to Favorites. Favorite folders will appear in the Favorites section of the media storage panel and can be removed from this list by right-clicking the favorite and choosing Remove Folder from Favorites.

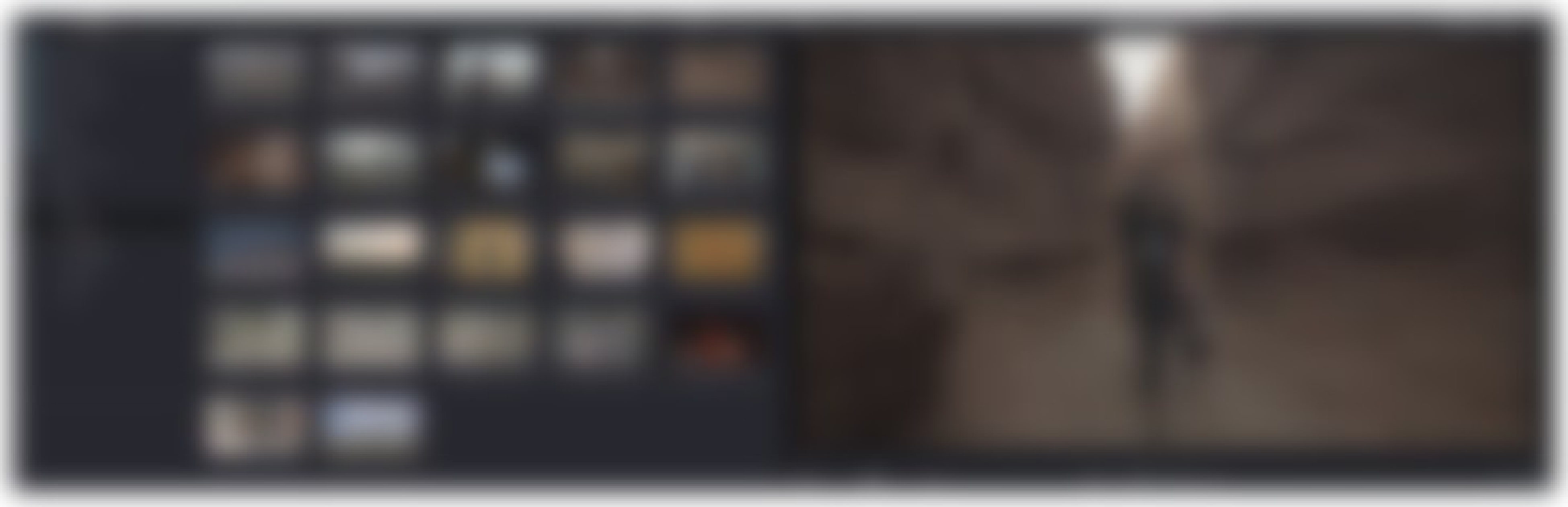
[illegible] In the media storage browser, double-click to open the B-ROLL folder to view its contents.



The folder contains the B-Roll clips for the Organ Mountain Outfitters project, which you'll no doubt be familiar with from earlier lessons. The view defaults to Thumbnail view.

The media storage browser functions the same way as you've grown accustomed to in the media pool.

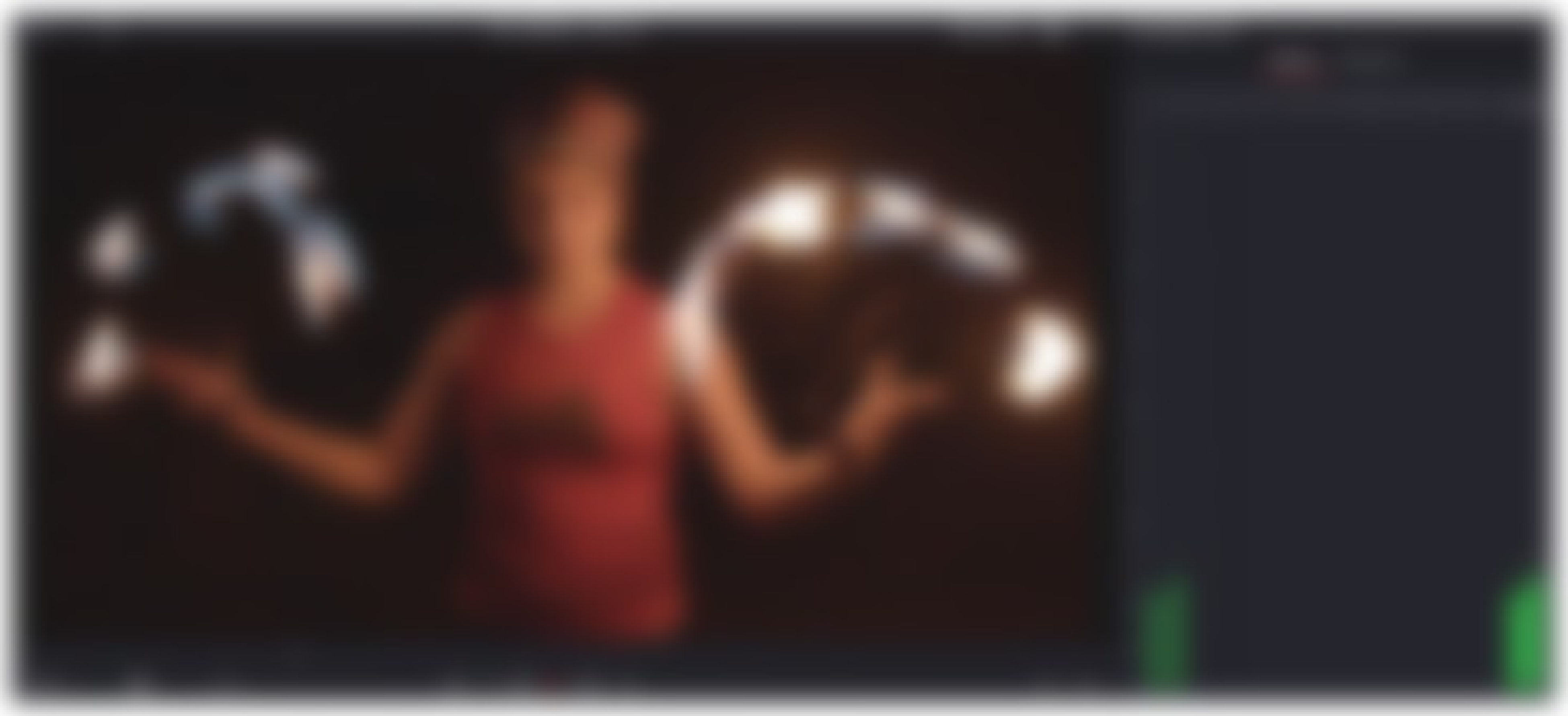
- Move your mouse pointer across any of the clips in this folder to live preview them in the media page's viewer.



TIP As in the edit page, you can disable or enable Live Media Preview in the viewer's Options menu (...), and toggle audio scrubbing by pressing Shift-S or by choosing Timeline > Audio Scrubbing.

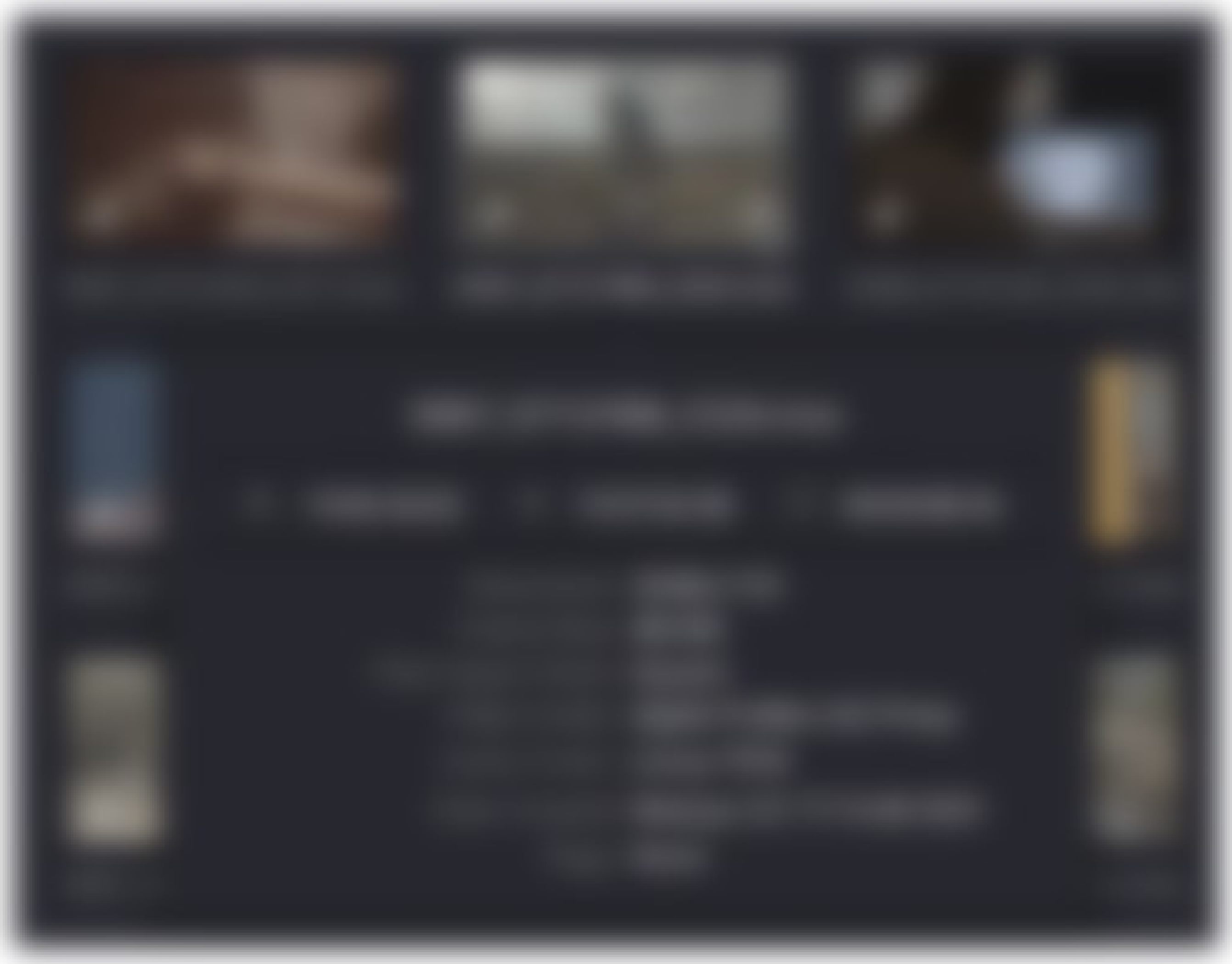
- Click any of the clips and press the Spacebar to play the clip forward.

As the clip is playing, any audio on the clip (up to 16 audio channels) will be represented in the Meters tab of the Audio panel.



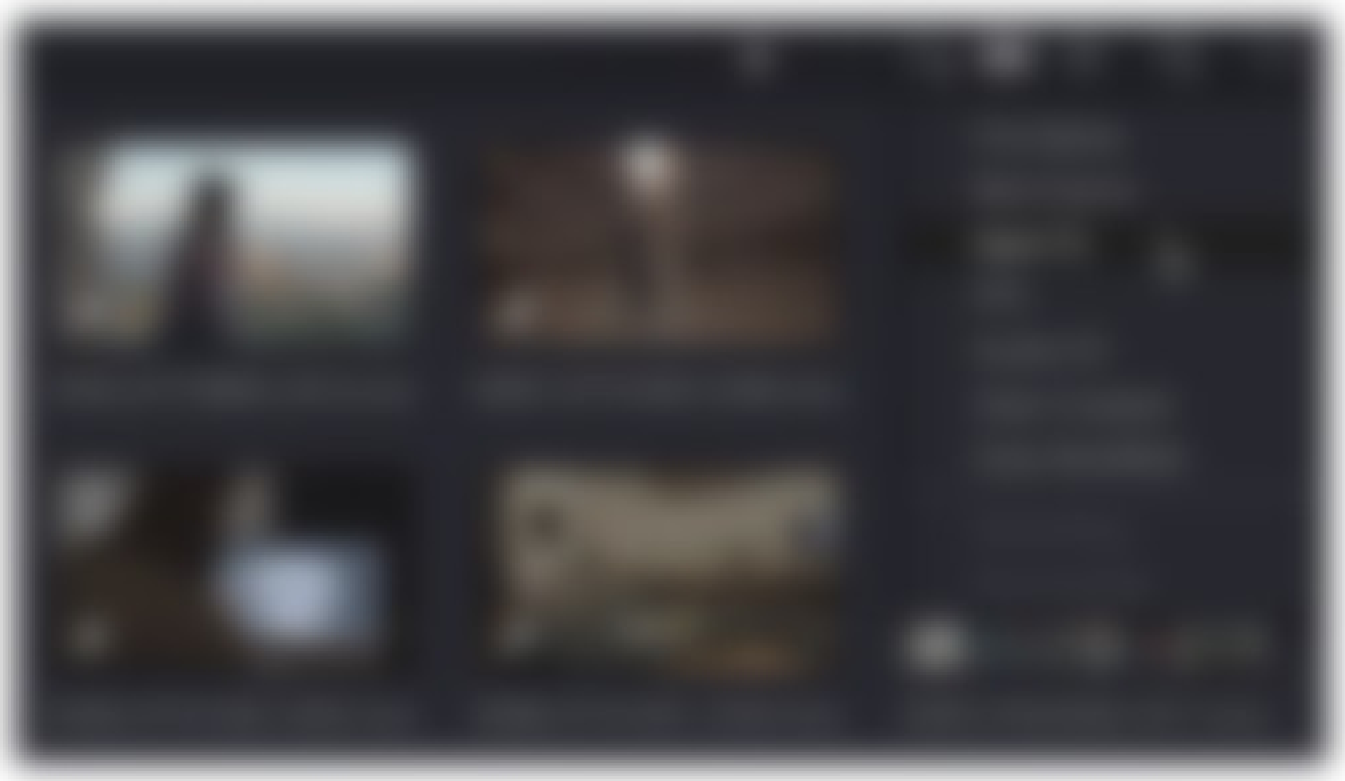
TIP You can also use the familiar JKL shortcuts to control playback of clips in the media page.

- Click the i button in the bottom right corner of any clip under your mouse pointer to reveal more information about that specific file, such as its start and ending timecode values, total duration, resolution, frame rate, video codec, and date created.

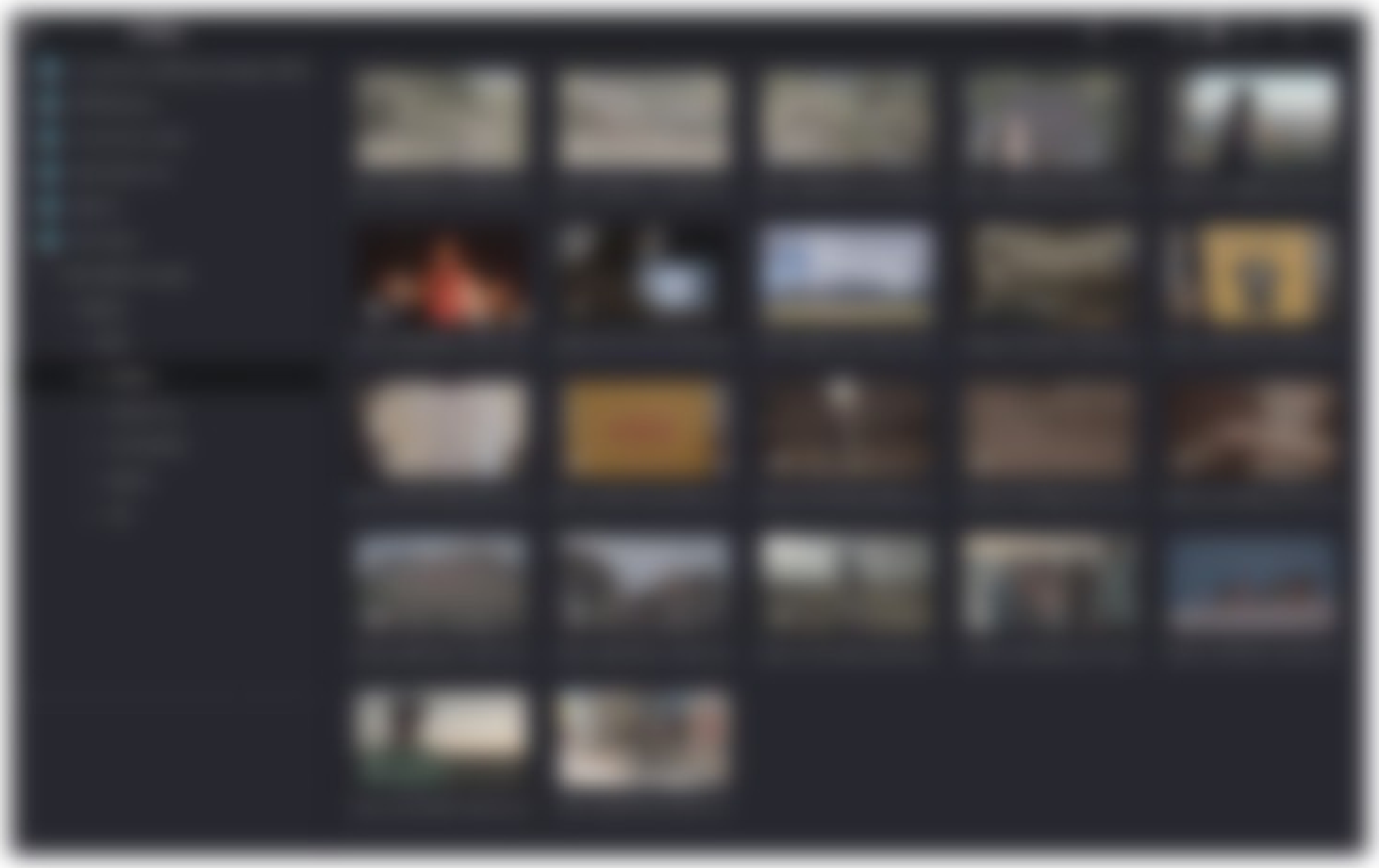


NOTE You can view more information about a selected clip in the Metadata panel.

- Click the Sort menu and choose to sort the clips by ascending Start TC.



This changes the order of the clips displayed in the media storage browser.



Of course, you can also use List view to view the information about all the clips together.

- Click the List View button at the top of the media storage browser.

- Right-click any of the column headers and deselect Start, End, and Frames to hide those columns.

You should now be able to compare the relevant information about these files, specifically the Resolution and FPS (frames per second).

All the media in this folder have a resolution of 2048 x 1152 (2K) and various frame rates.

Click the FPS column header to sort the files by ascending frame rate.

Click the File Name column header to sort the files by ascending name order.

In the media storage location's directory tree, select the CAM A subfolder of the INTERVIEW folder.

These four files are the interview clips from the main A camera you worked with in previous lessons. This time, these files have a consistent resolution and frame rate: 1920 x 1080 (HD) and 23.976 fps, respectively.

So, to summarize, the project needs to be delivered at a resolution of 1920 x 1080 and 23.976 fps, and the media you've been supplied with is a mixture of HD and 4K resolutions and frame rates ranging from 23.976 to 60 fps.

- Click the Thumbnail View button to return the media storage browser to the familiar clip thumbnails.

Working with Different Resolutions and Frame Rates in DaVinci Resolve

DaVinci Resolve is "resolution independent," which means you can edit clips with different resolutions in the same timeline, and they will automatically fit that timeline's resolution. You can also output that timeline to as many different resolutions as you like or even change the timeline resolution, and all effects and transforms will automatically adjust themselves to match the size of each new timeline resolution.

One reason why footage may be shot at resolutions higher than that required by the delivery requirements, and therefore your project settings, is that it's easier to scale and reframe clips. Scaling HD clips in an HD timeline means the footage can only be resized a limited amount. 4K clips (or higher) in an HD timeline can be scaled further without a noticeable a loss in visual quality.

DaVinci Resolve will also handle clips with different frame rates in a similar manner, although it's a little more limited. Clips at the same frame rate as the timeline will play fine, but clips at a different frame rate will play back at the frame rate of the timeline when they are added into that timeline. Clips that have a higher frame rate than the timeline will skip frames in order to achieve the frame rate of the timeline, and clips with a frame rate lower than the timeline will repeat frames.

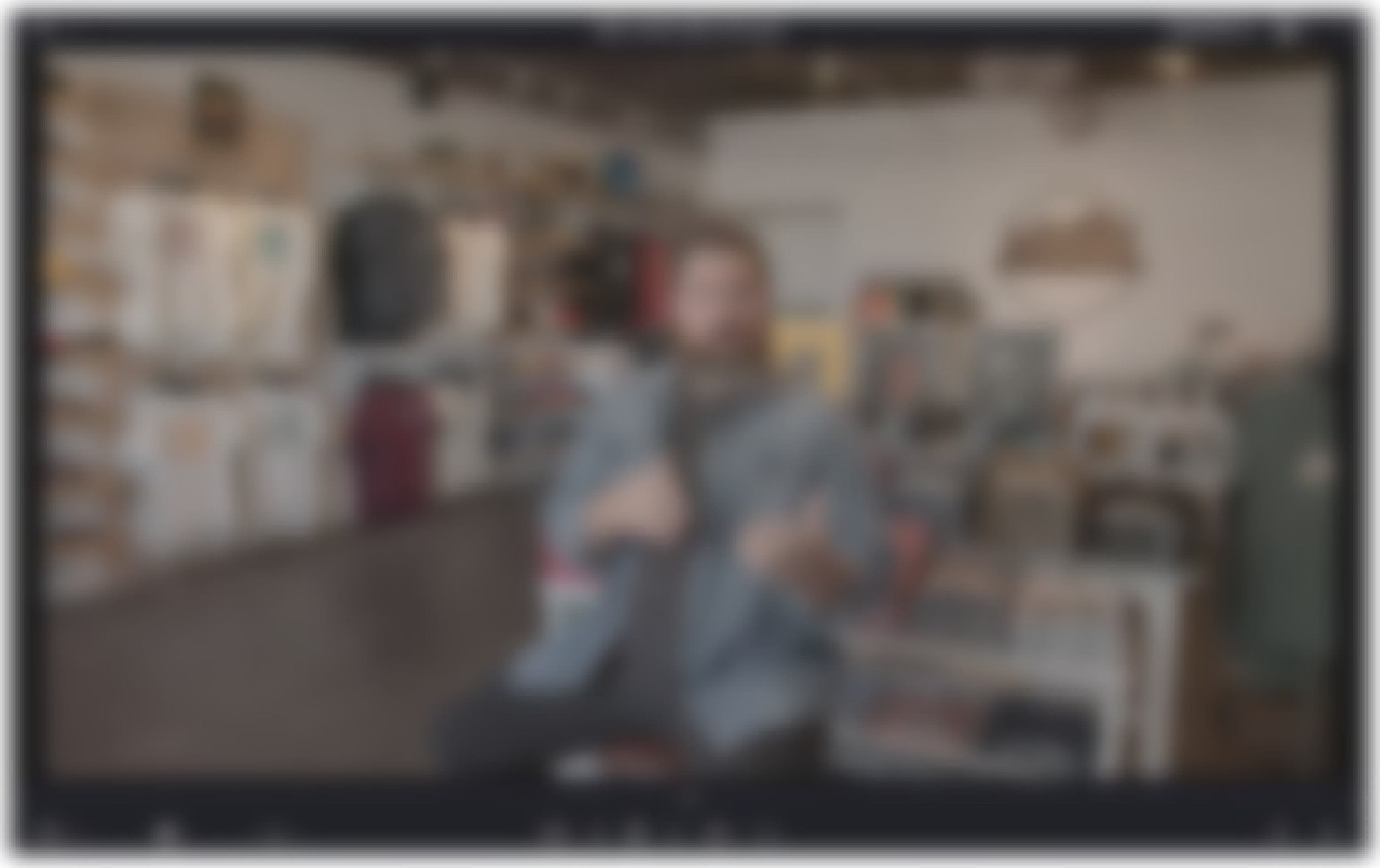
The main reason why footage may be shot at frame rates higher than those required is that they can then be slowed appropriately to create smooth slow motion results. You will learn more about the advantages and disadvantages of different frame rates in Lesson 11, "Edit Page Effects."

The choice of shooting different resolutions and frame rates should be taken in pre-production for very good reasons, not least because higher resolutions and frame rates will usually result in larger file sizes.

You worked with these exact same media files throughout Lessons 1 and 2. Hopefully, you weren't necessarily aware of their different properties at that stage and you were able to edit them without any issues.

Adjusting Project Settings

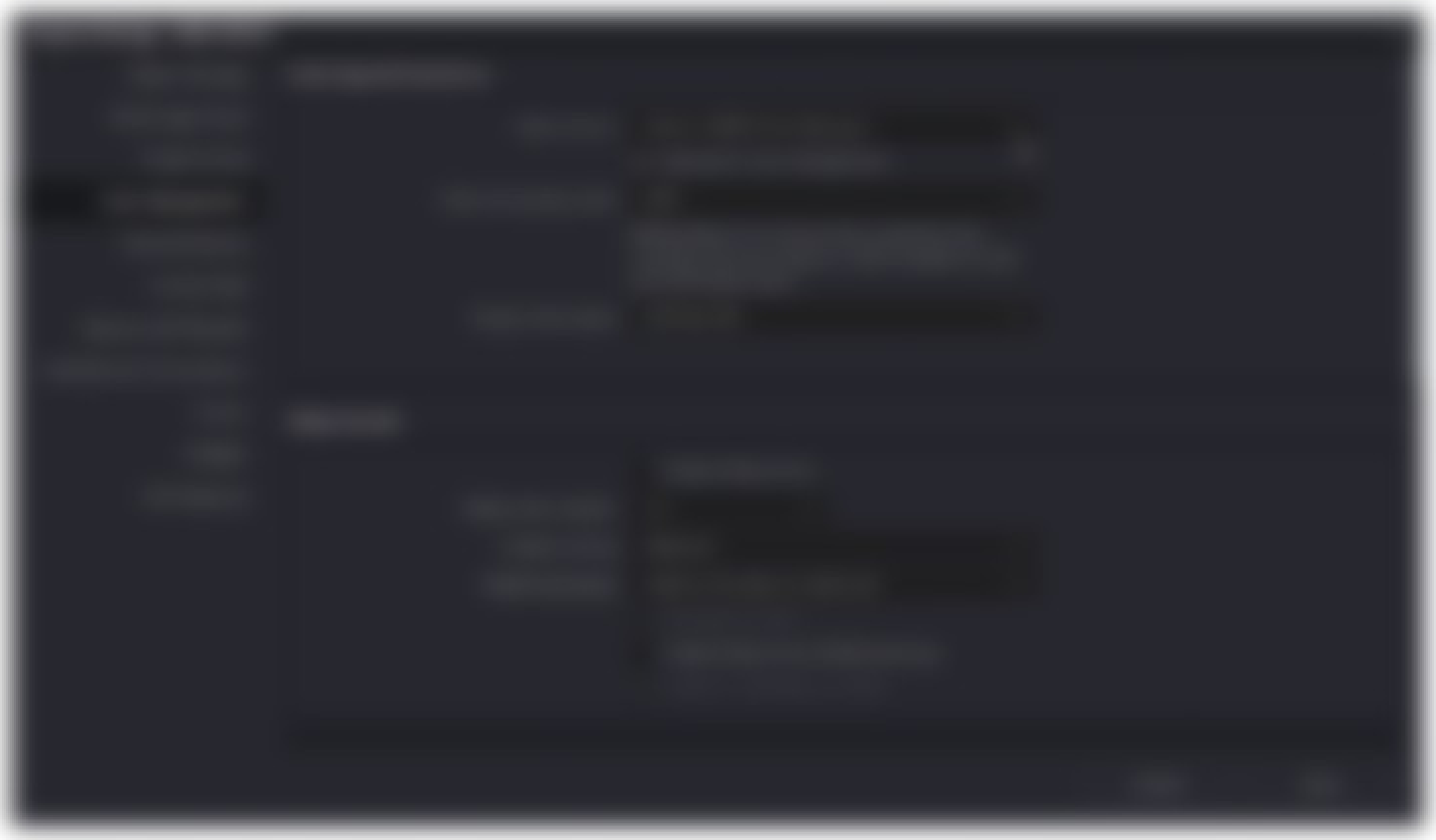
You may also notice that these files look a little more washed out than the footage you used in earlier lessons. This wasn't because that footage had been graded for you; rather it was because it was color managed by DaVinci Resolve.



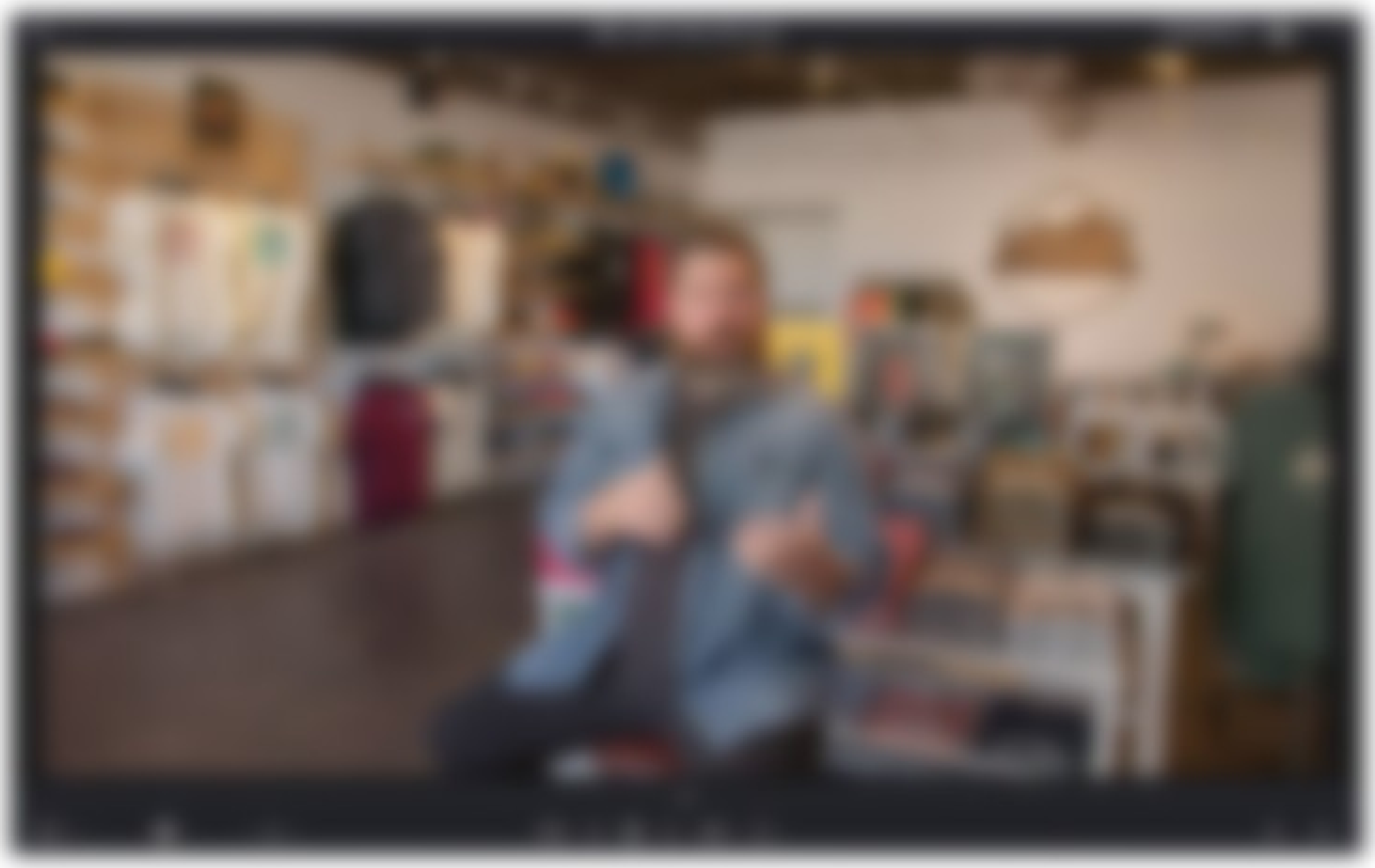
NOTE The original files for the Organ Mountain Outfitters promo were shot on Blackmagic Pocket Cinema 6K cameras using Blackmagic RAW. For the purposes of this guide, the media files have been supplied to you as ProRes 422 Proxy media files. However, these files still retain the color space metadata from the originals.

- Press Shift-9 to reopen the Project Settings window and select the Color Management section.

- In the Color Space and Transforms settings, change the Color Science dropdown menu to DaVinci YRGB Color Managed.



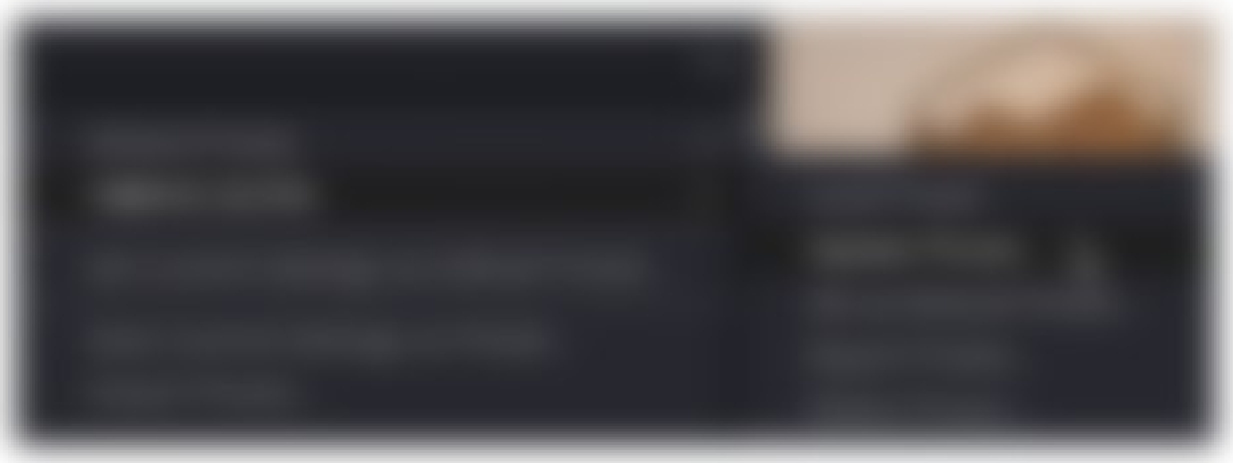
- Click Save.
- Now the footage looks like it was intended to, with greater contrast and saturation.



NOTE Color management is a vast subject far beyond the scope of this editing guide, but it is often an important consideration when editing to have the clips "normalized" so they appear as the director/client expects. Thankfully, just by enabling DaVinci Resolve's Color Management feature in the steps above, most native footage should be displayed correctly without the need to apply lookup tables (LUTs). For a general introduction to color management in DaVinci Resolve, see The Beginner's Guide to DaVinci Resolve 20, and for more in-depth information, including ACES workflows, see The Colorist Guide to DaVinci Resolve 20 and the DaVinci Resolve Manual.

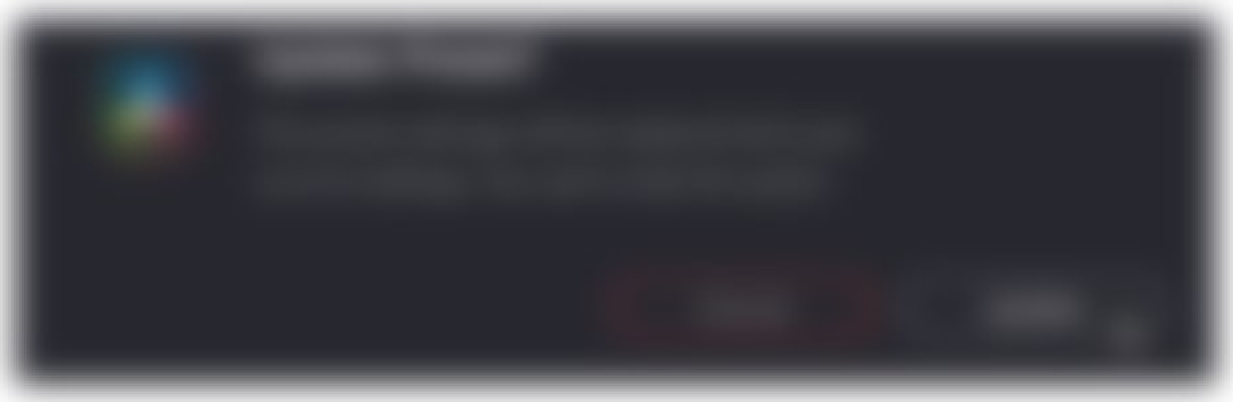
However, by changing the current project's settings, you may need to update your current project preset so color management will be enabled by default in future projects using that preset.

- Press Shift-9 to open the Project Settings again.
- Click the Options menu (…) and choose 1080HD 23.976 > Update Preset.



TIP If you prefer, you can create a new, separate preset for your color managed projects.

DaVinci Resolve will ask if you're sure you want to update your preset.



- Click Update.

If you previously exported a .preset file for this preset, you'll no doubt want to update that, too, or export a separate preset when working with footage that needs to be color managed.

- Click the Options menu (…) and choose [illegible] > Export Preset.
- In the Export Preset window, save the preset as **[illegible] COLOR MANAGED.preset** and save it in the same location as your previous preset file.
- Click Cancel to close the Project Settings window (or Save if you've made any additional changes).

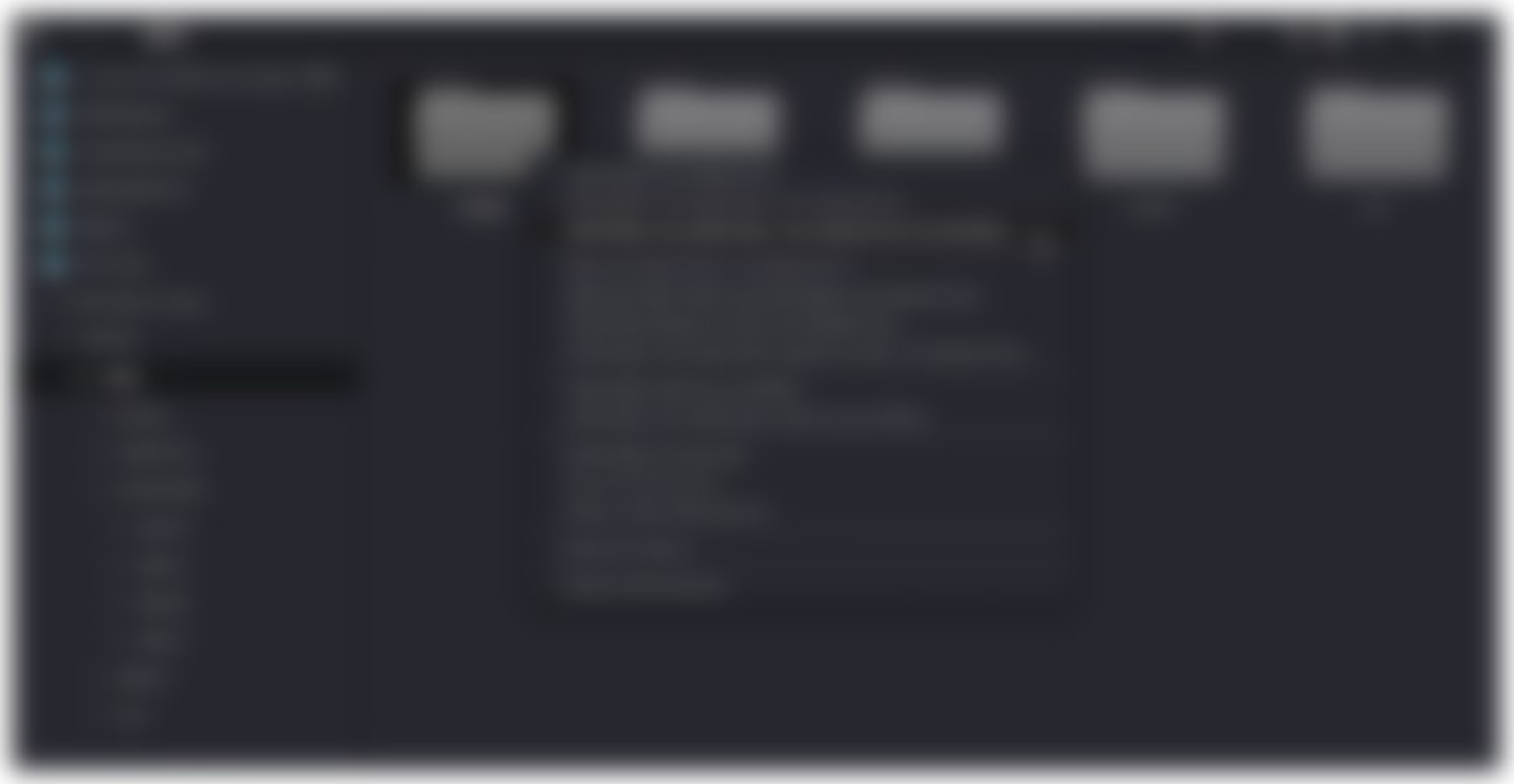
Now that you understand how to ensure that your projects are set up for the source media you're working with, it's time to import the files into your project.

Importing Media

There are numerous ways to import files into a DaVinci Resolve project. For instance, you could choose File > Import > Media on any page with access to the media pool (that is, every page except the deliver page). You can also simply drag and drop files from the Finder (macOS) or File Explorer (Windows) directly into the media pool. However, both these techniques offer limited options, whereas the media page has much more flexibility when it comes to importing clips.

NOTE Whenever you import media, DaVinci Resolve creates a link to the original clips on your hard drive. At no point does the import process copy, move, convert, or in any way alter the source media.

- In the media storage browser, select the [illegible] folder and right-click the [illegible] folder to reveal the import options.

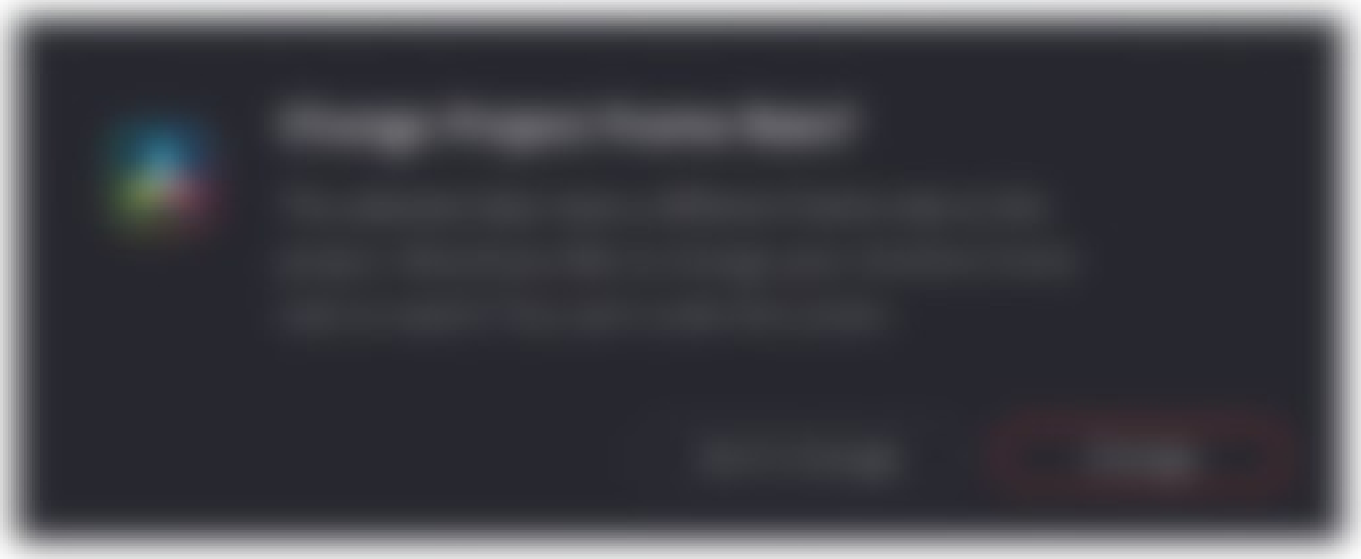


There are three main options for importing clips from the media storage browser:

- **Add Folder into Media Pool** will import the contents from one level inside the current folder.
- **Add Folder and SubFolders into Media Pool** will import the contents of the current folder and any folders contained within it. This is the same as when you drag a folder into the media pool either from the media storage browser or from the Finder (macOS) or File Explorer (Windows). This is a useful option when importing numerous files from different folders from a camera card that uses a complex directory structure.
- **Add Folder and SubFolders into Media Pool (Create Bins)** will import the contents of the current folder and any folders contained within it, preserving the folder structure as a series of bins in the media pool. This option is most useful when you want to import several clips that are already organized into folders on your hard drive.

- Choose Add Folder and SubFolders into Media Pool (Create Bins).

  A warning appears asking if you want to change the project frame rate.



Change Project Frame Rate?

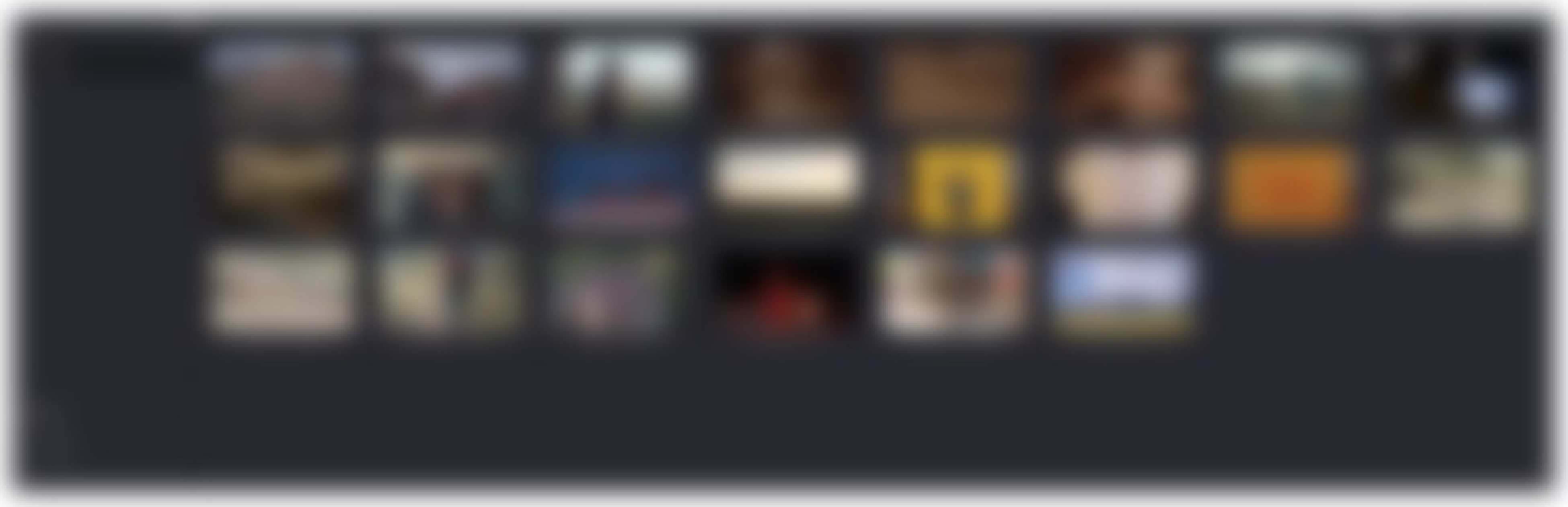
[illegible]

  This is because the first clip in this folder (based on the current Sort options) has a different frame rate than you have set for your project. This warning occurs only if the first clip imported into a project has a different frame rate than the Timeline Format in the Project Settings. Subsequent files will not trigger this warning.

- Click Don't Change to keep the project frame rate as 23.976.

> **NOTE** If you inadvertently change the project frame rate, you can always change it back in the Project Settings before creating any timelines. Once you've created a timeline in a project, the Timeline Frame Rate in Project Settings cannot be changed, although timelines you create subsequently can have their own individual settings, which you must set each time you create the new timeline.

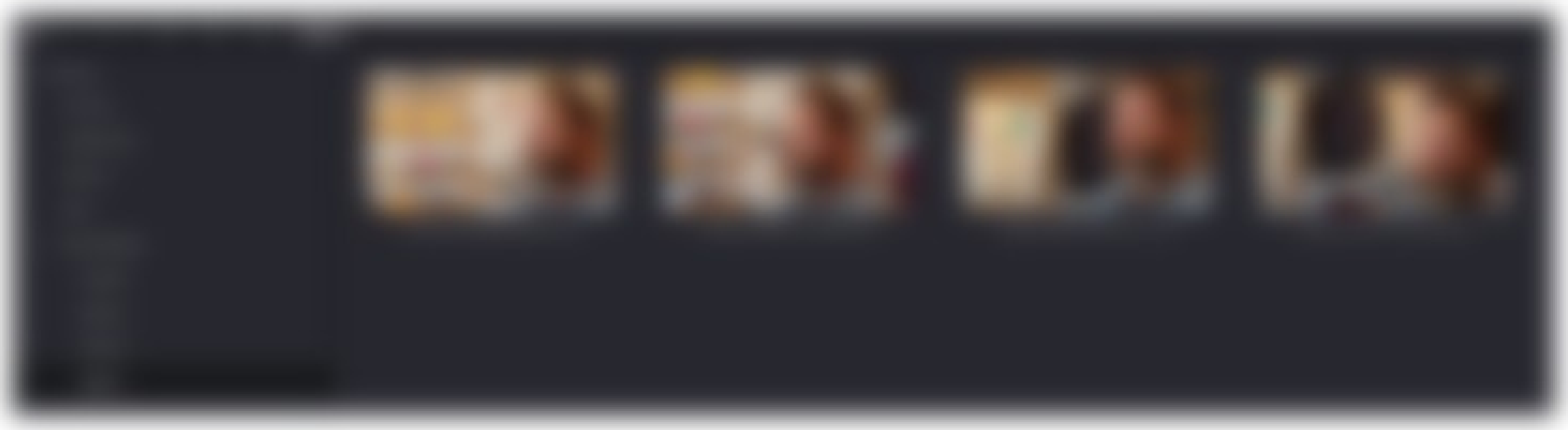
The clips are added to the media pool in a B-ROLL bin.



You can also create bins from folders by dragging and dropping the folders directly in the bin list.

- In the media storage browser, select the GRAPHICS, INTERVIEW, MUSIC, and SFX folders and drag them to the bin list in the media pool.

The rest of the media is added to the media pool in a series of bins that reflect the folder structure of the Organ Mountain Outfitters source folder.



The media pool automatically sorts bins in the order they were created, with newly created bins appearing at the bottom of the bin list. However, you can change the sort order from Date Created to Name, Date Modified, or User in ascending or descending order.

- Right-click any bin in the bin list and choose Sort > Name.

TIP The User sort order allows you to manually drag the order of items in the bin list.

Resyncing Media Files

If you choose **Add Folder and SubFolders into Media Pool (Create Bins)** when importing clips, you can use the Resync Media Files option to automatically import any newly added media files in those folders on your hard drive.

Simply right-click a bin and choose Resync Media Files. Any files that have been added to the source folder since import or the last resync operation will be automatically added to the bin.

Alternatively, you can choose to enable Automatically Resync Media Files. This automates the resyncing process, importing any new media files to the bin in your project that are added to the source folder without you having to do anything else.

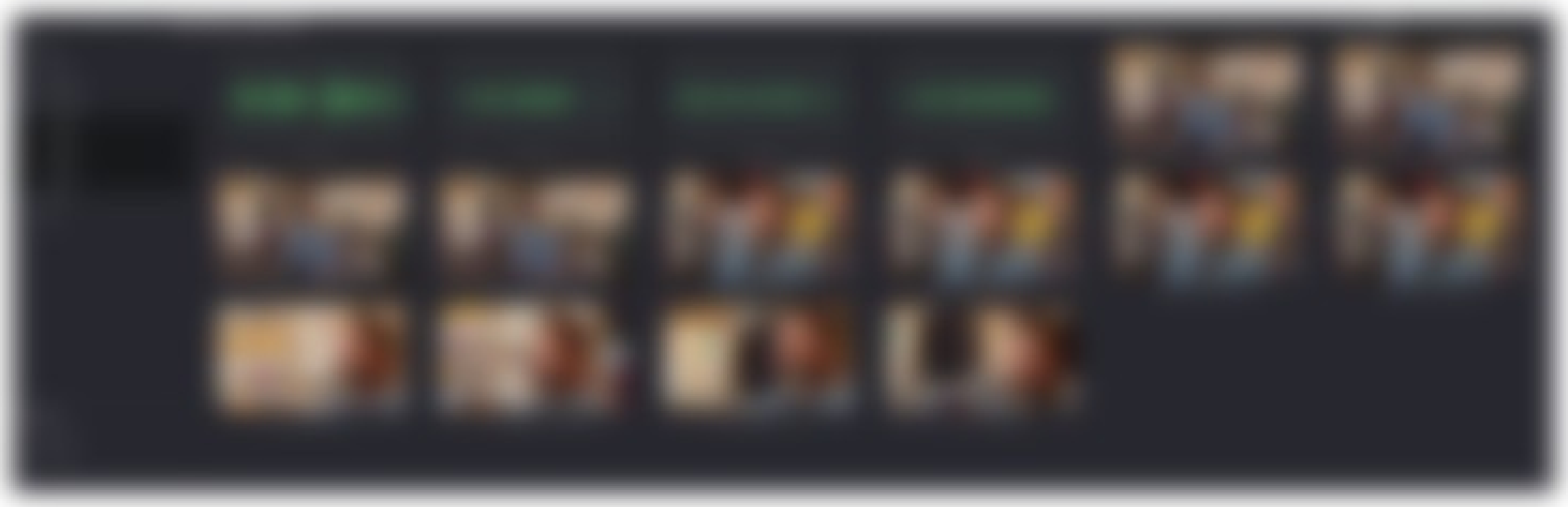
For certain editing workflows, this feature alone can be a huge timesaver!

Syncing Audio to Video and Channel Configuration

Now that you've imported the rushes into your project, you can start organizing the footage by syncing any audio and video clips recorded on separate devices.

Many productions record audio on dedicated digital audio devices to capture the highest quality audio or when it's not practical or desirable to record audio directly to a camera. Thus, when the files come in from the day's shoot, you'll need to sync the appropriate audio and video clips—a process often referred to as "syncing the dailies." Thankfully, Resolve has a fantastic way of making this process as painless as possible. And, similar to the multicamera syncing you did in the previous lesson, you can use either the timecode or the audio of the clips to help achieve the perfect sync.

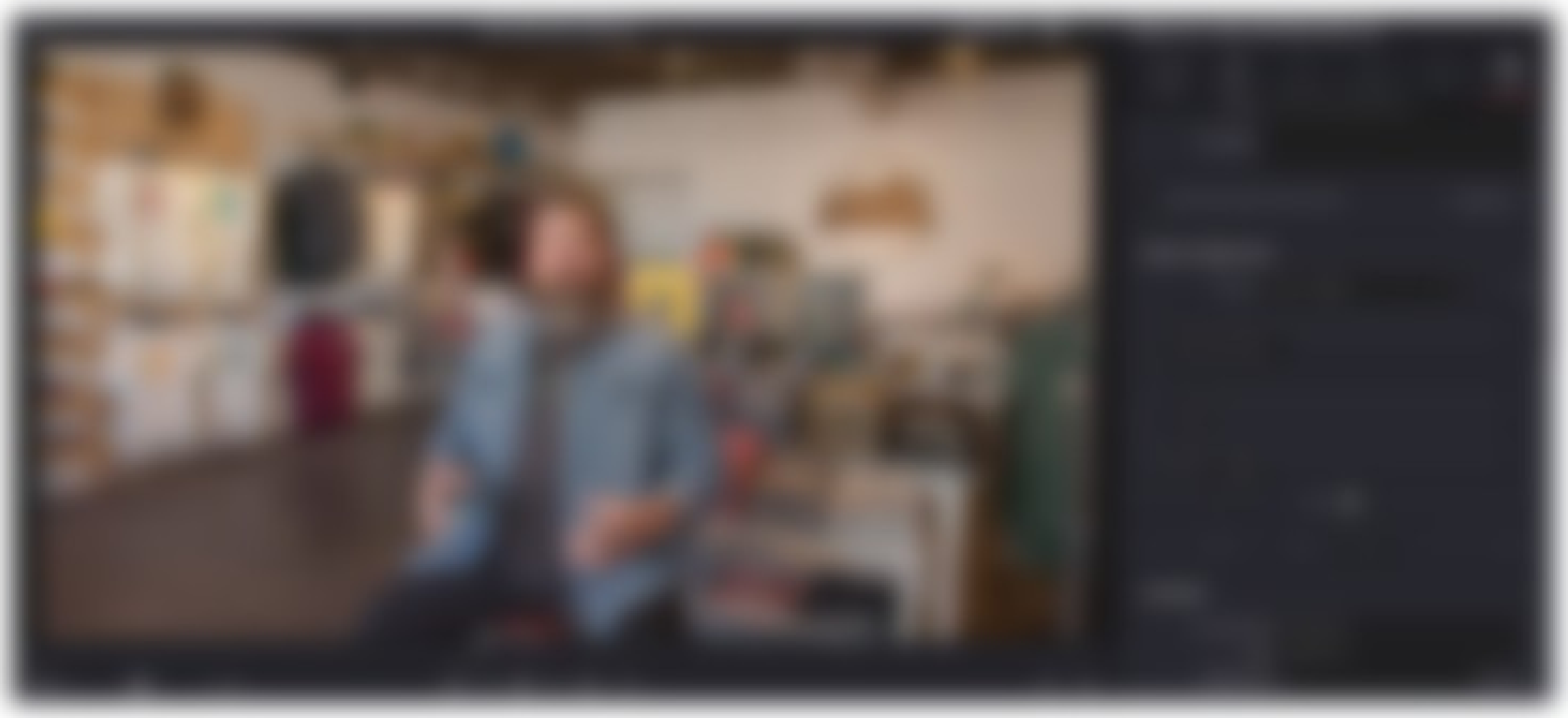
- [illegible]



- [illegible]

[illegible]

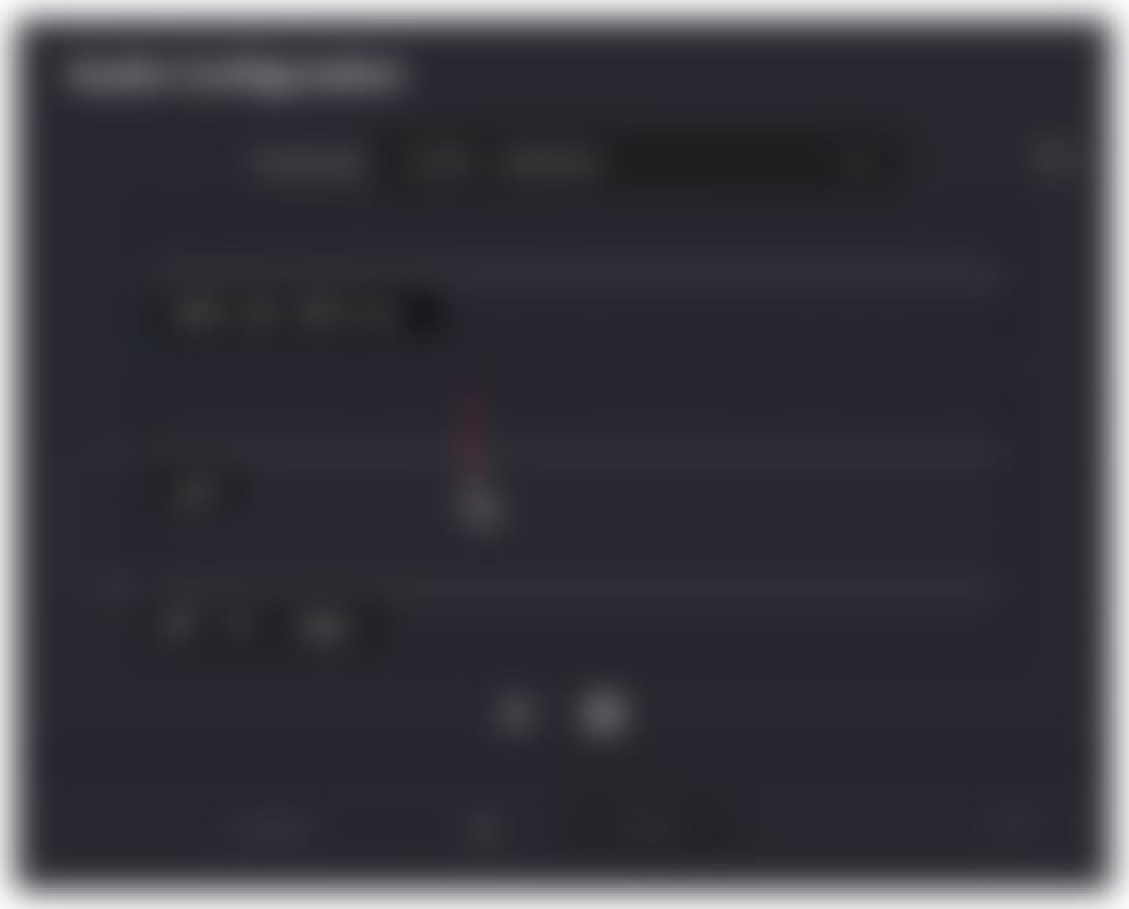
- With the clip still selected, open the Inspector, select the File tab, and scroll down to the Audio Configuration panel.



This clip has two embedded audio channels, configured as Left and Right channels in a single stereo audio track, displayed as "1: 2 – stereo" in the Format dropdown menu. A "composite" waveform at the top of this panel displays a single amalgamated waveform of all active audio tracks, with each individual audio track displayed underneath.

NOTE The Audio Configuration panel allows you to preview up to [illegible] audio channels in a single clip.

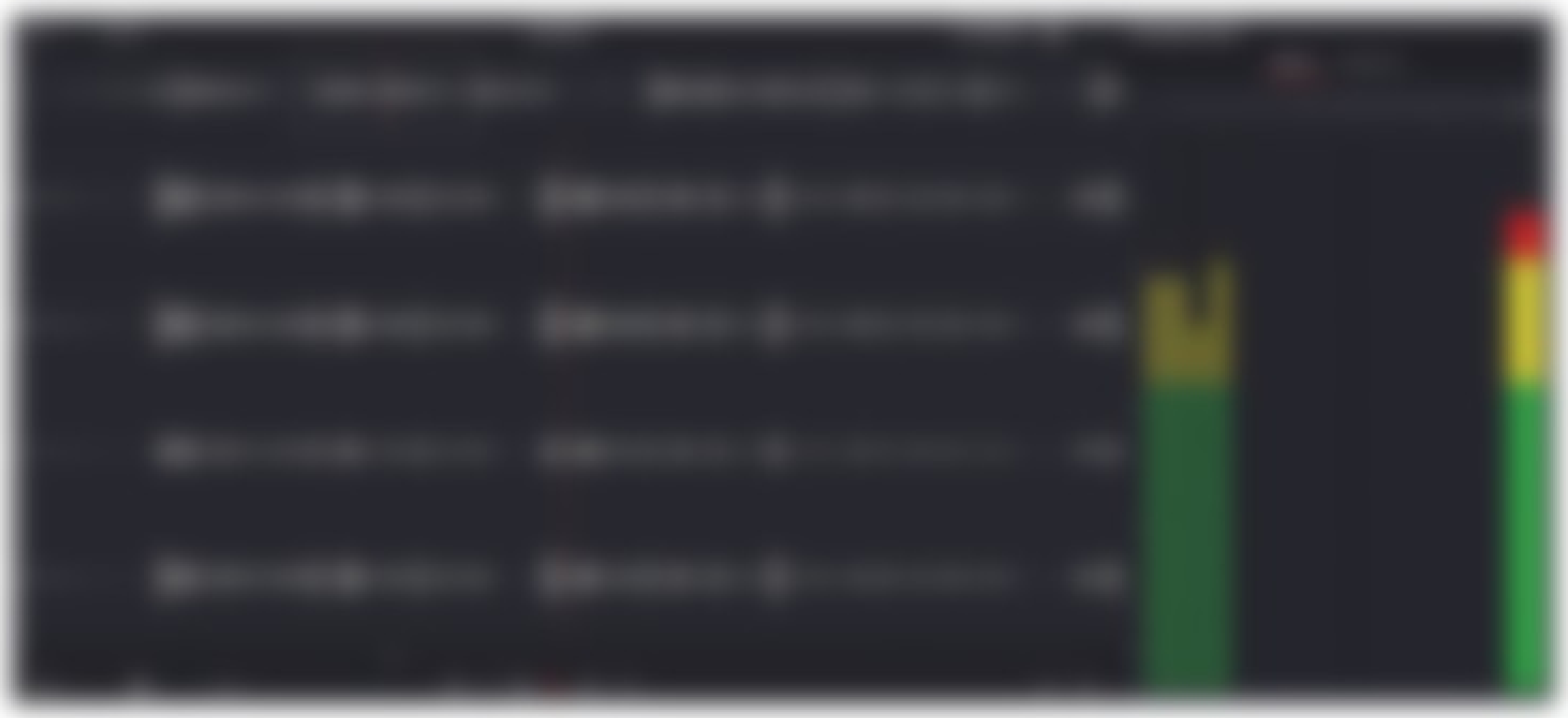
- Scrub and play each of these waveforms separately using your mouse pointer to preview each channel in isolation.



TIP Press Shift-S to toggle audio scrubbing.

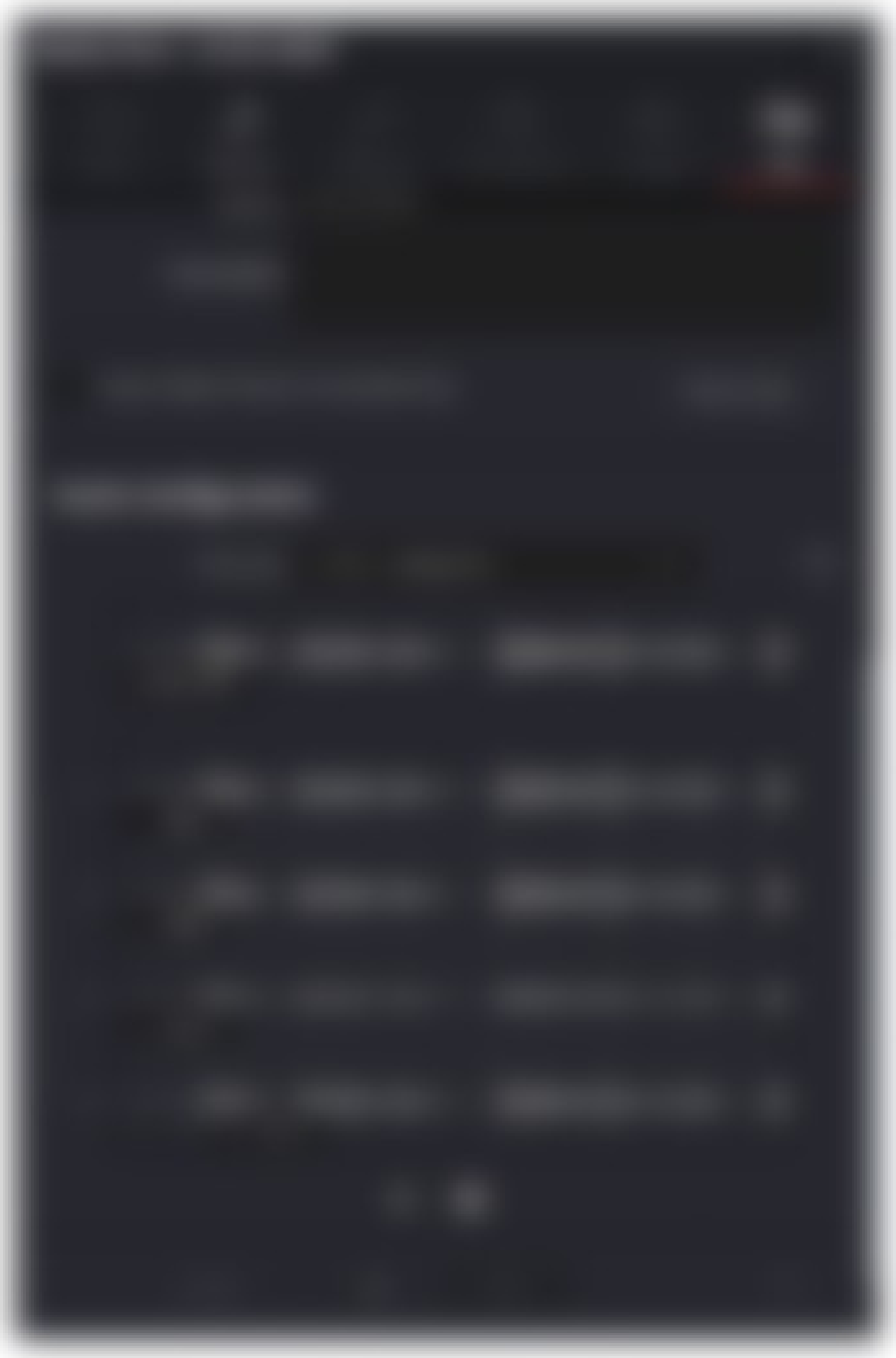
As you scrub or play the audio channels for this clip, you should hear the Left and Right channels play from your system's left and right speakers, respectively.

- Click the Audio button at the top right of the interface to reopen the audio meters and move the Organizer back to the media pool.
- In the media pool itself, select the first audio clip, **[illegible]**, and play it.



You'll see that this clip has four audio channels, displayed as separate waveforms in the audio viewer, all with healthy audio levels showing in the meters.

In the Info tab of the Inspector, you see the individual channels labeled "Mic L," "Mic R," "Boom," and "Chris." This indicates that a boom mic was recorded on channel 3, Chris's personal mic was recorded on channel 4, and channels 1 and 2 are a mix of both.

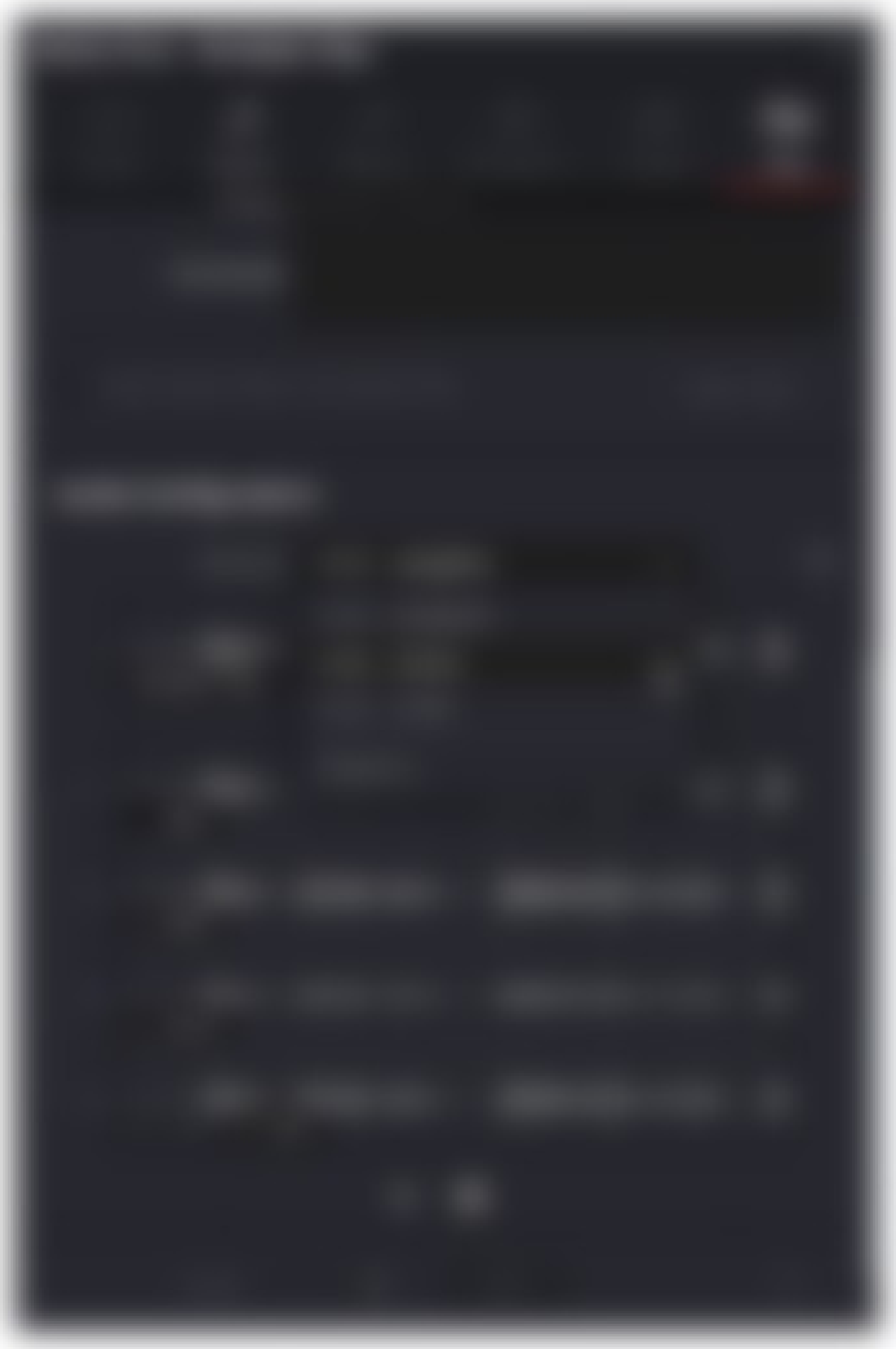


NOTE The track names have been imported as part of the audio files' metadata. You can view specific track names (or add your own) by choosing Audio Tracks from the Metadata panel's Sort menu.

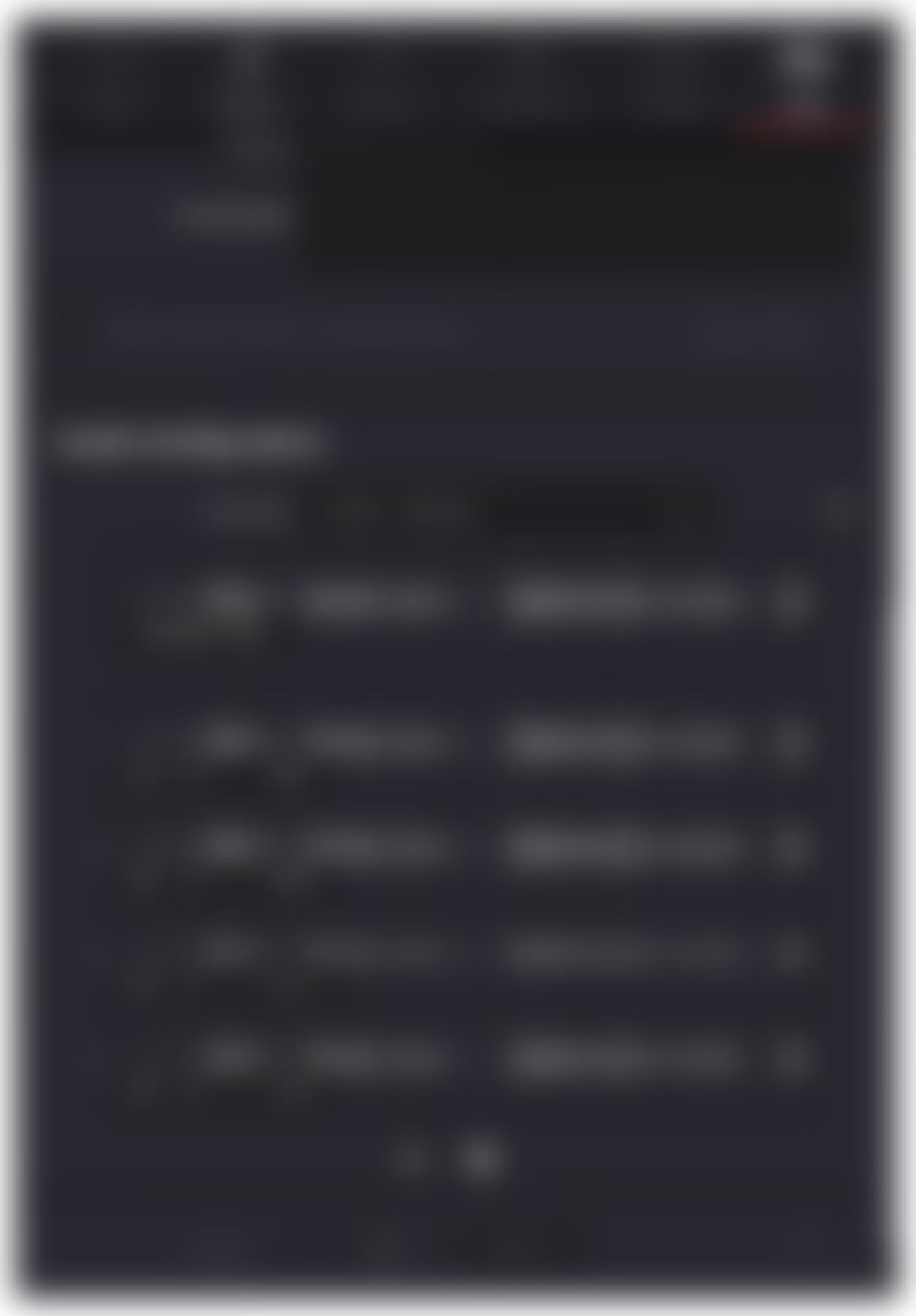
You will notice, however, that this clip is configured as "4.0 - adaptive" in the Format dropdown menu. This means that although the clip has four separate channels with different mics or mixes being recorded to each channel, the audio would be presented as a single clip if you were to edit this into a timeline. To get the most out of the separate channels, you'll need to change the audio configuration.

- In the media pool, with [illegible] still selected, Shift-click [illegible] to select all four audio clips.

- In the Format dropdown menu in the Inspector, choose the option "8 ch – mono."

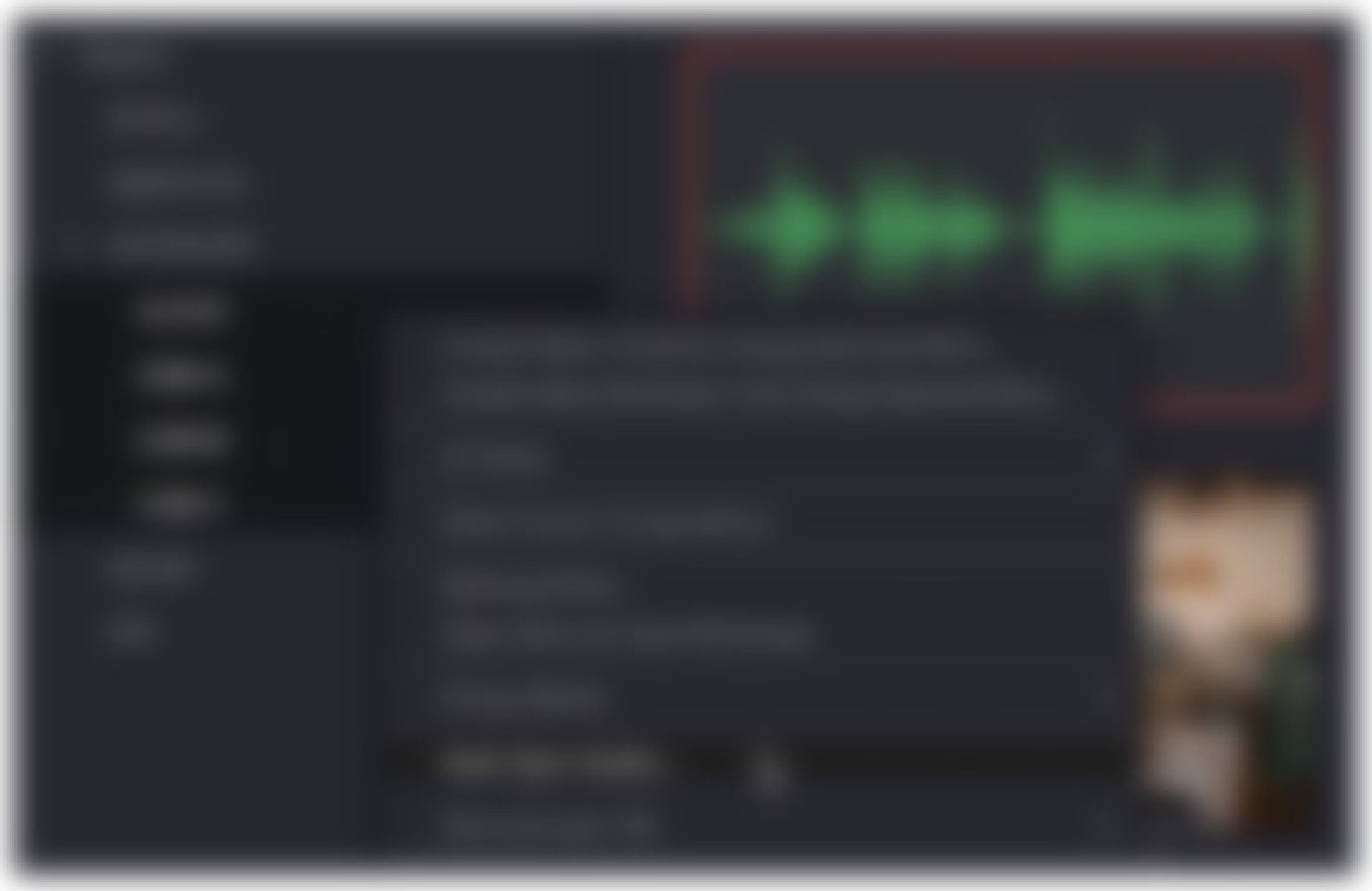


This changes the audio configuration of the selected clips to mono so that each channel can now be used individually in the timeline.

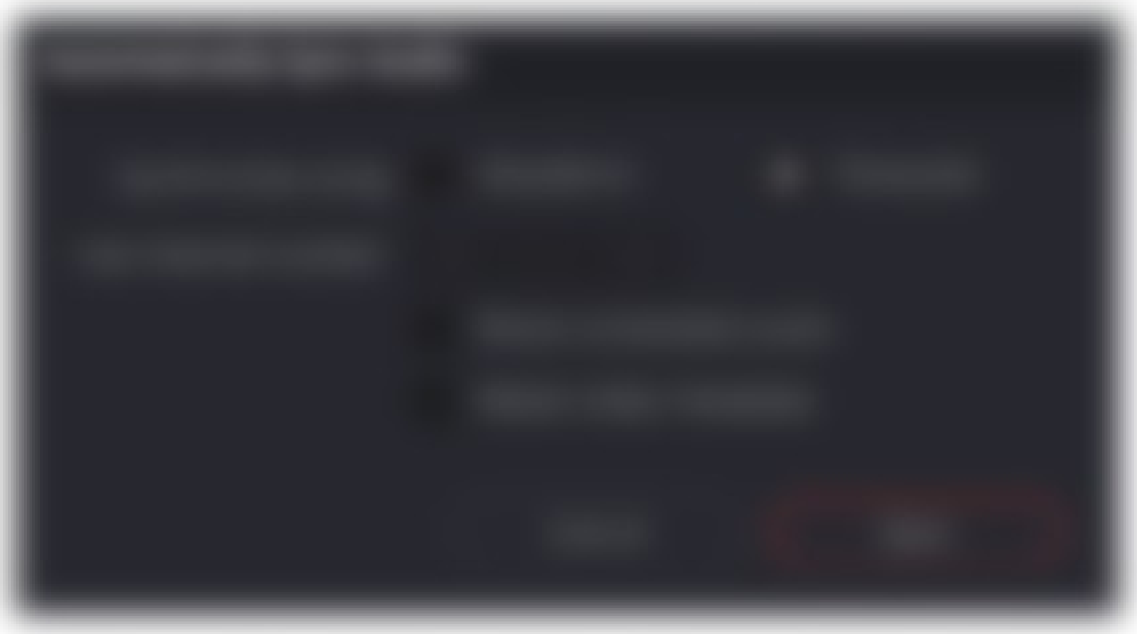


Now that you have correctly configured the audio, you can sync the video and audio clips together and choose the most appropriate channels to work with.

- In the media pool, right-click the selected items (AUDIO, CAM A, CAM B, and CAM C) and choose Auto Sync Audio.

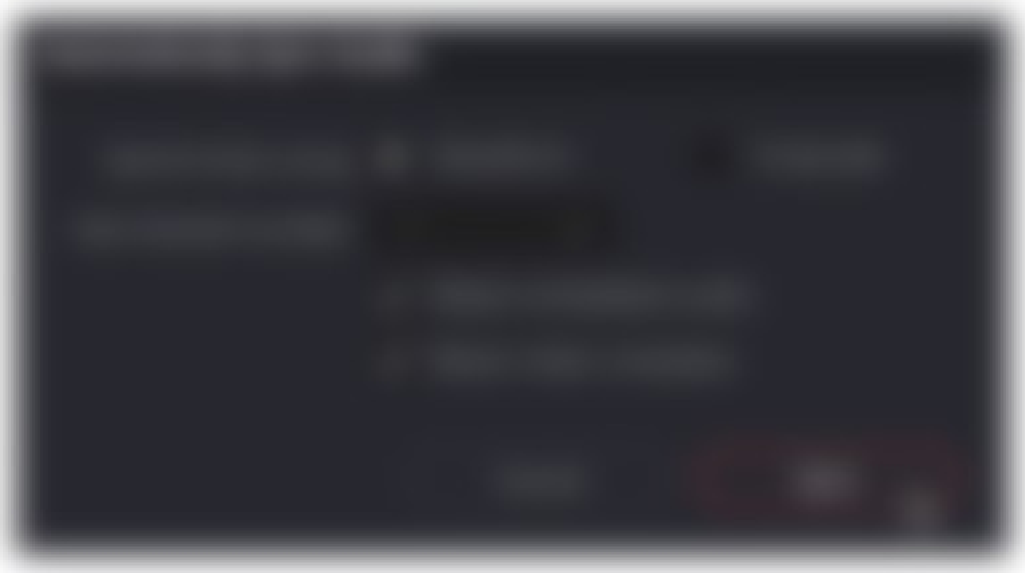


The Automatically Sync Audio window opens, displaying several options for how the audio will sync with your video clips.



While synchronizing audio using matching timecode is always preferable because it's quicker and much more reliable, if your clips don't have exactly matching timecode, using the waveforms is the next best option. This is why most clips that need synchronizing will also contain some kind of "scratch" or reference audio to make the process easier.

- Select Waveform for the 'Synchronize using' option and select the 'Retain embedded audio' and 'Retain video metadata' options.



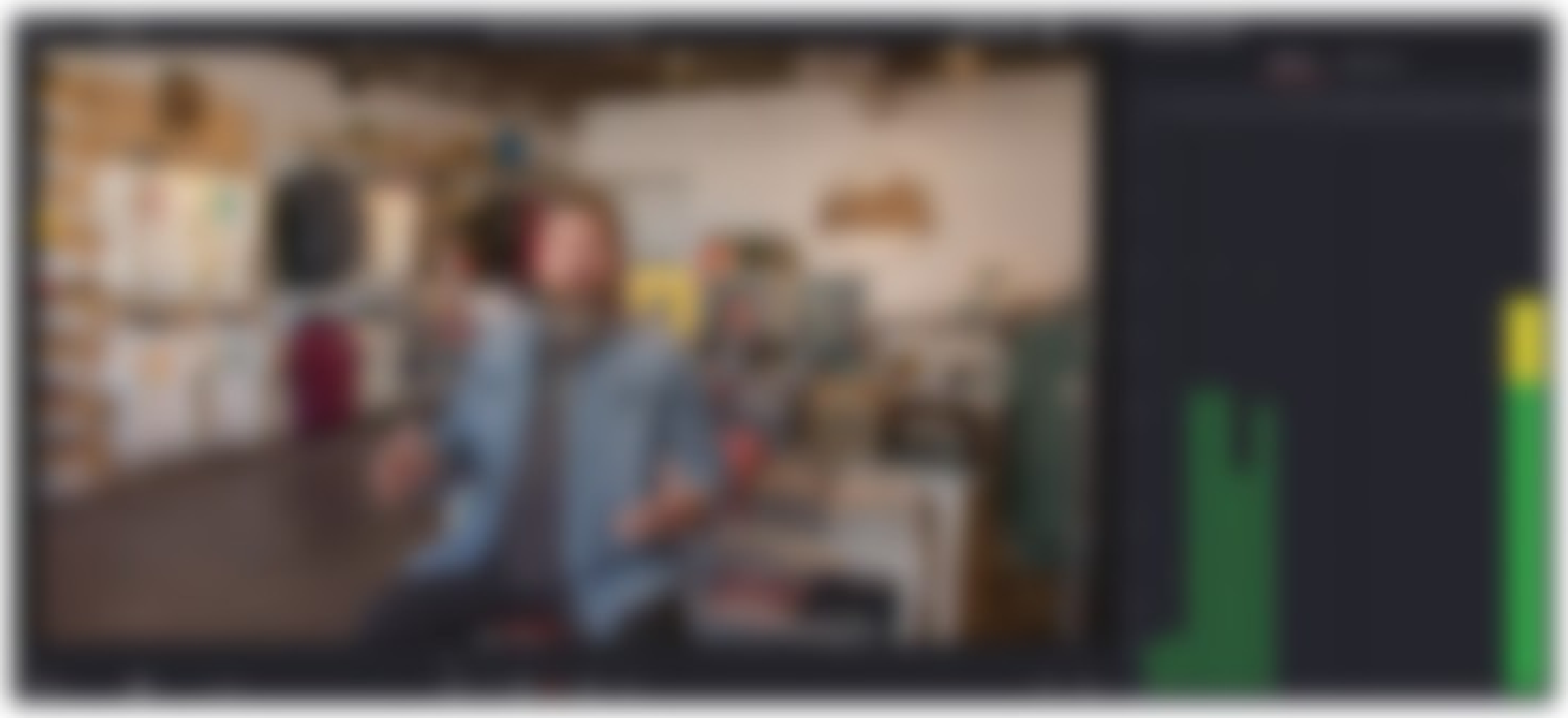
NOTE When choosing to sync using waveforms, the 'Use channel number' option can be used to specify which audio channel you want to use for syncing. This is useful if one audio channel has better audio than another.

Retaining the embedded audio means that Resolve will keep all the audio channels joined on the clip. This can be useful for verifying that the audio is in sync with the original. However, if you don't choose this option, the original embedded audio is not deleted and is accessible through Clip Attributes (see below). You will use the metadata of the video clip in later steps, so retaining the video metadata means that the metadata of the audio files won't override that of the video clips.

- Click Sync, and Resolve analyzes the audio.

  Although nothing appears to happen beyond this, Resolve has successfully synchronized the audio with the video clips. If the Auto Sync hadn't been successful, a warning dialog would have appeared indicating which clips couldn't be synced.

- Select the first video clip, [illegible] again and play it.

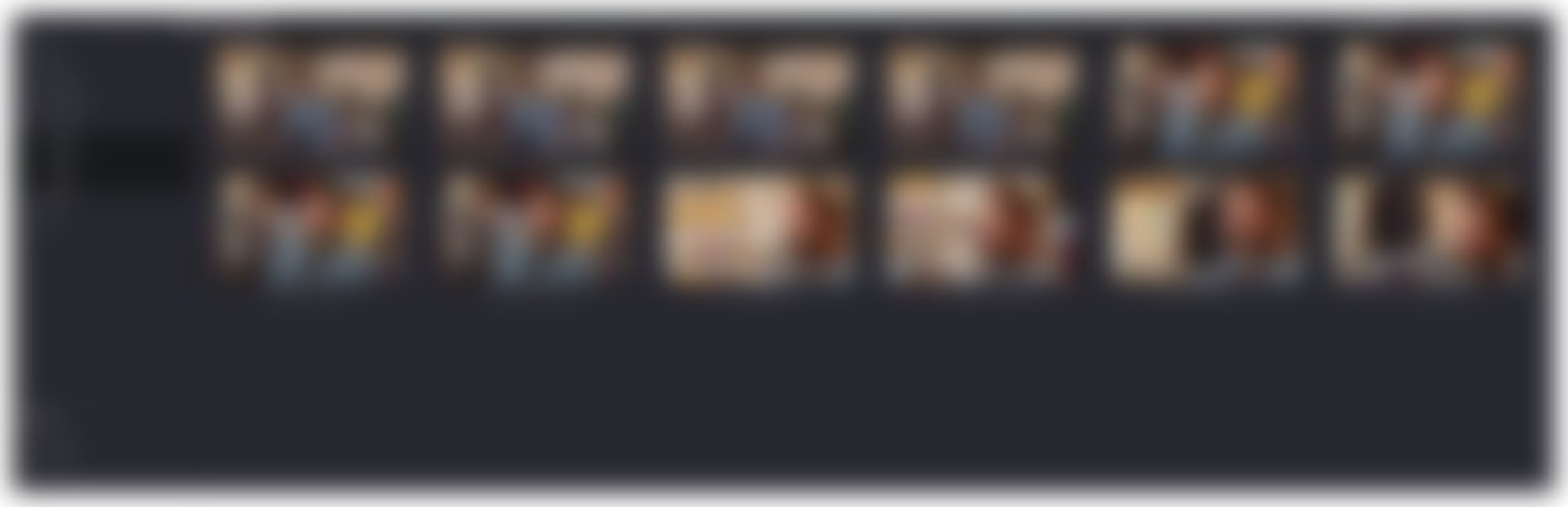


Now this clip has six audio channels, the last four of which are much higher in the meters than the first two. These are the four channels of the audio clip that you have just synced.

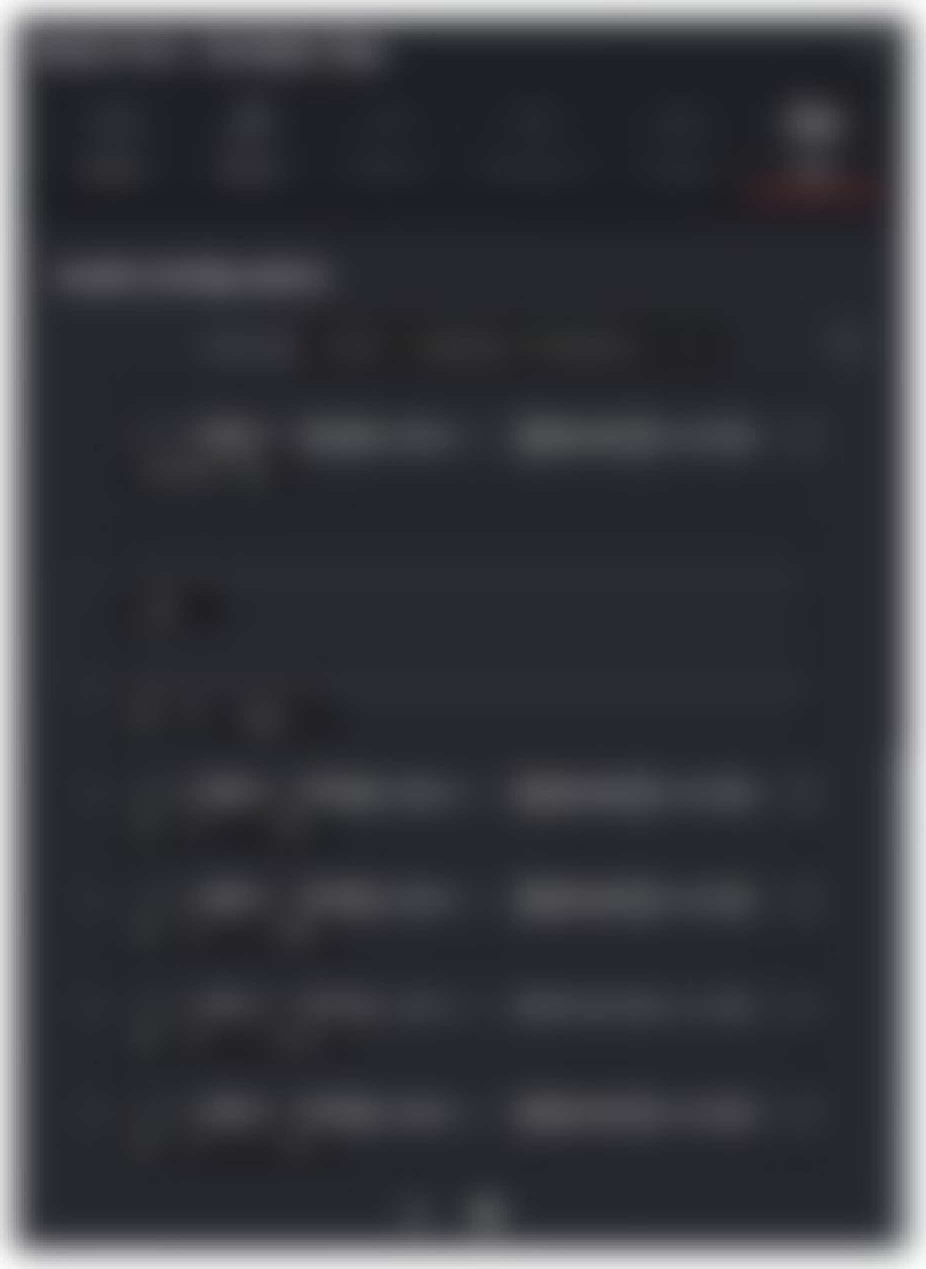
TIP You can verify that there is synced audio with each of the clips in List view in the Synced Audio column.

You could continue using the audio of these clips as is. Having multiple audio tracks on a clip allows you to choose which microphone to use at any given time. However, it can be just as simple to configure the audio of a clip so that it uses just the track(s) you need.

- Command-click (macOS) or Ctrl-click (Windows) the AUDIO bin to deselect it and leave just the contents of the CAM A, CAM B, and CAM C bins displayed in the media pool.

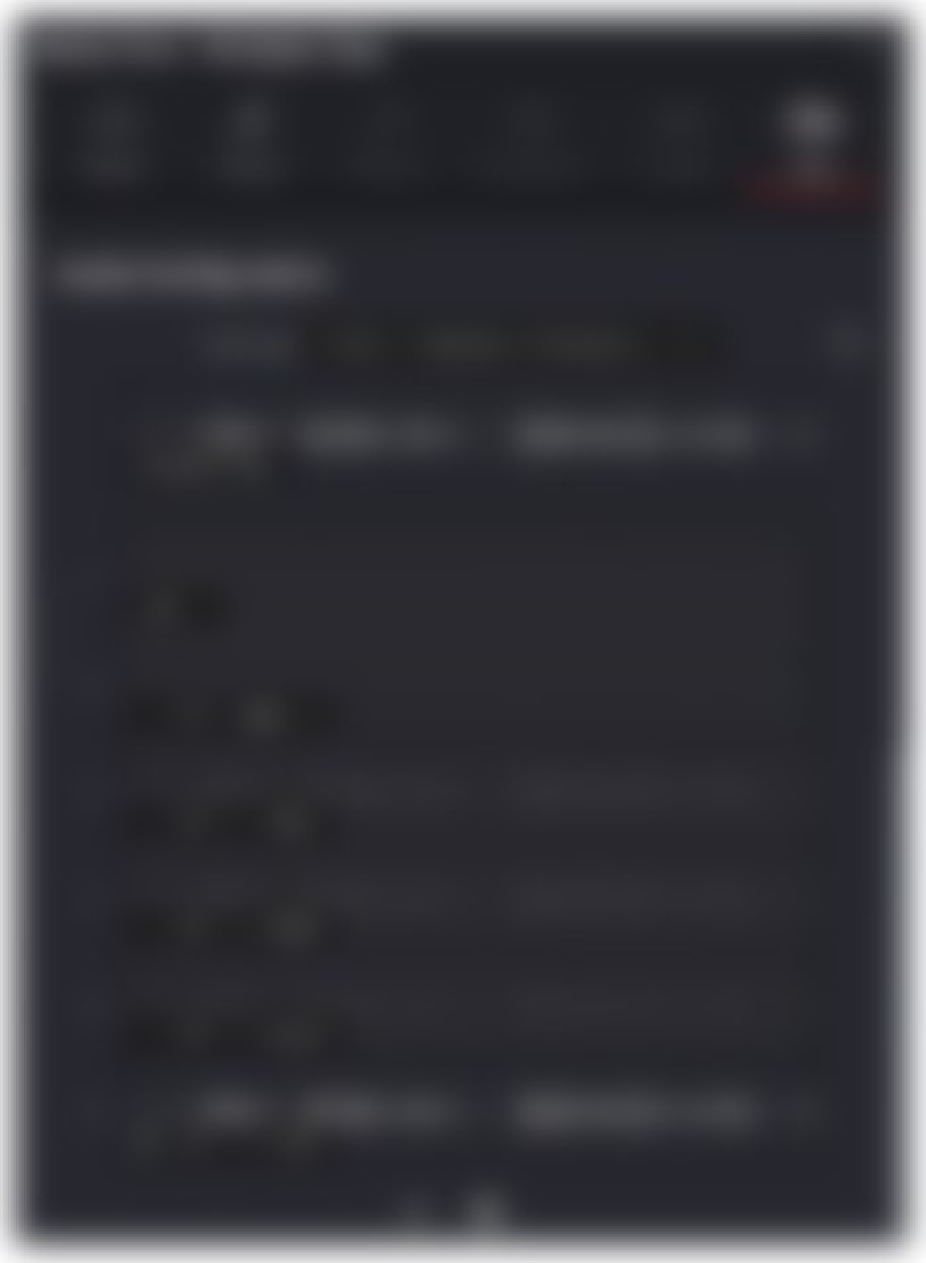


- Select all the interview clips and, in the File tab in the Inspector, scroll down to the Audio Configuration panel.



Now you can see that these clips all have a total of six audio channels: the first two being the embedded audio channels (still configured as stereo), and the last four being the linked audio clips (configured as mono). Since you only need the audio recorded from Chris's personal mic, you can turn off the audio channels you don't need.

- Deselect the first two audio channels. Since these are the original audio embedded in the interview clips, there is one checkbox to disable both channels since they are currently configured as a stereo track.
- Continue to deselect tracks 3, 4, and 5, leaving just Chris's final audio track active.

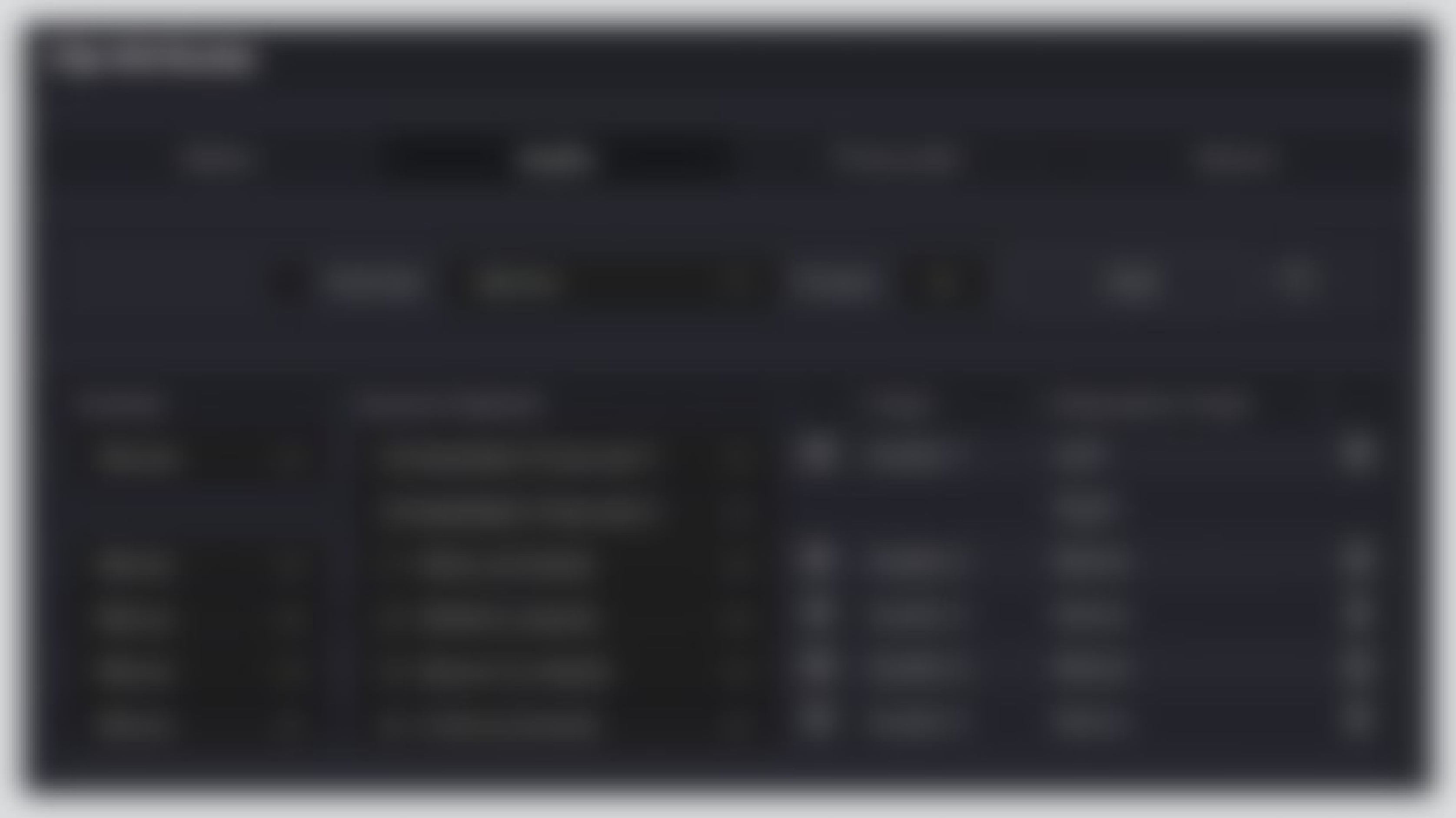


- Once again, play [illegible] in the viewer, this time noting how only one track is playing.

NOTE: Muting and disabling tracks in the Audio Configuration panel results in two different things when the clips are added into a timeline. Disabling the audio track means the track is effectively "hidden," so those tracks will not be added into a timeline. Muting an audio track in the Audio Configuration panel means that that track will still be added into the timeline but will be automatically disabled. Disabled tracks like this can be re-enabled in the timeline by right clicking them and choosing Enable Clip or by pressing D.

Modifying Audio Channels in Clip Attributes

Configuring the audio channels for selected clips in the Inspector is an intuitive and efficient way of ensuring that you're working with the best audio channels available to you. However, you can still configure your audio as in previous versions of DaVinci Resolve using the Clip Attributes window. Indeed, the Clip Attributes menu offers more flexibility in choosing how you configure specific audio channels for the selected clip(s) over and above the Audio Configuration in the Inspector.



To access Clip Attributes, select Custom from the Format menu in the Audio Configuration controls or right click the selected clip(s) in the media pool and choose Clip Attributes.

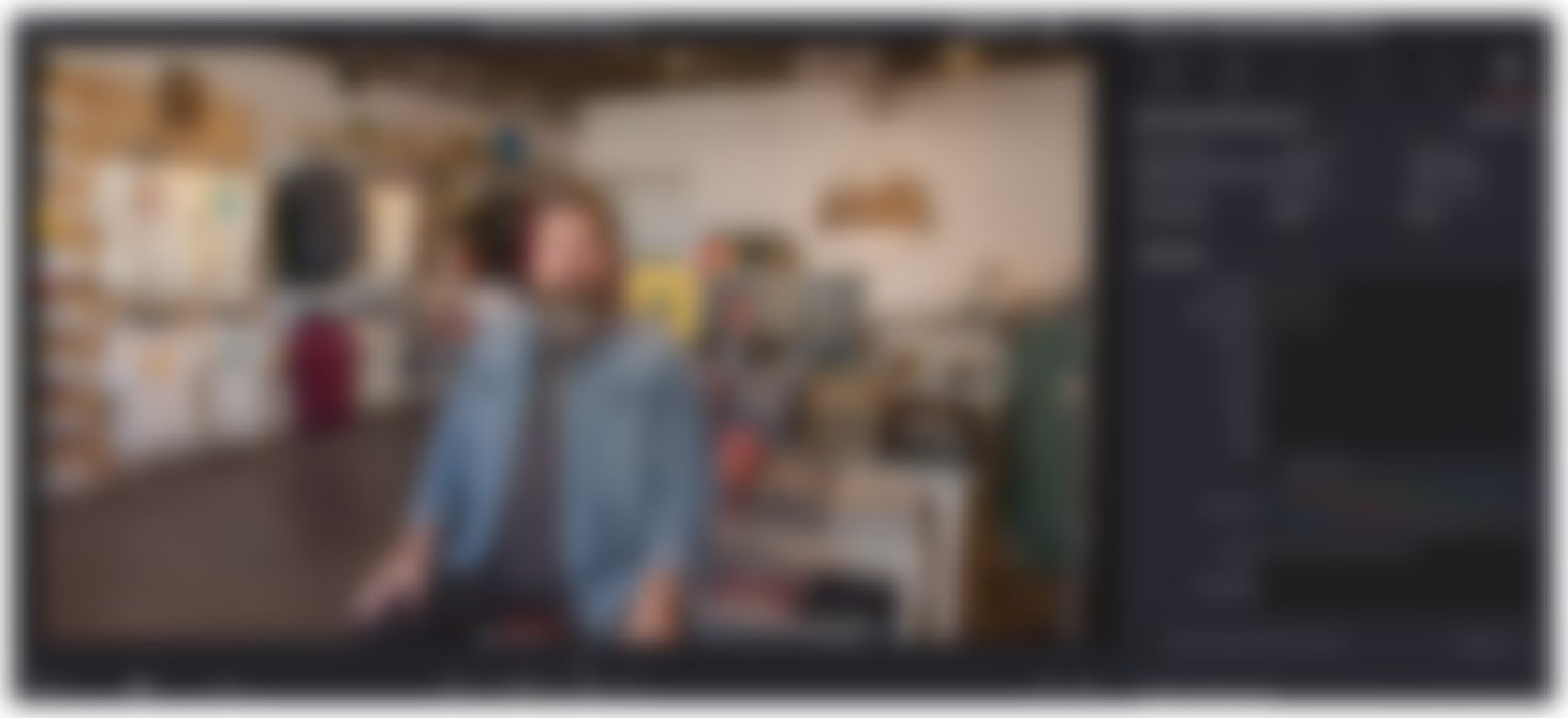
Working with Metadata

Metadata has quickly become an important part of working with digital media files, not least in the sorting and finding of specific clips in the morass of media in any given project, and metadata is an integral part of working with DaVinci Resolve throughout the post production process.

You have many ways to populate your clips with useful metadata. It may be entered on the camera during production, or you can enter it manually in DaVinci Resolve. Alternatively, someone on set can be assigned to enter metadata in their favorite spreadsheet program or in any of the smart slate apps that can be used to log metadata such as shot, scene, take, and more. You can then import this data into Resolve using the simple CSV (comma-separated value) format. The benefit of understanding and utilizing metadata is that you have a more intimate understanding of your media and will no doubt save hours of work and frustration!

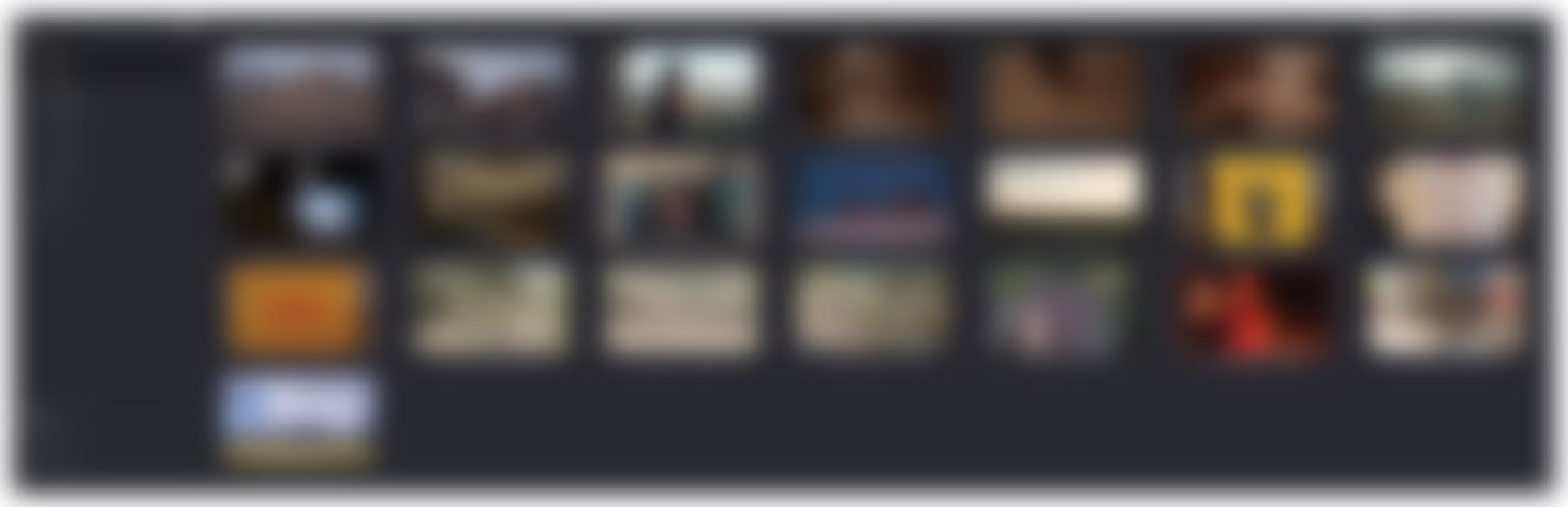
Over the next few steps, you will explore each of these different pieces of metadata before learning how it can be put to practical use.

1. In the top right of the interface, click the Audio button and then the Metadata button to close the Audio panel and open the Metadata panel, respectively.
2. In the media pool, select the first interview clip, [illegible]
3. Scroll to the top of the File tab in the Inspector to display the Metadata panel.



The Inspector contains several common metadata fields. In this example, you can see pieces of information that detail the camera number, reel, scene, and take. This is an example of metadata that has been assigned in camera when the clip was originally recorded. You can edit many of these fields or add your own metadata as needed.

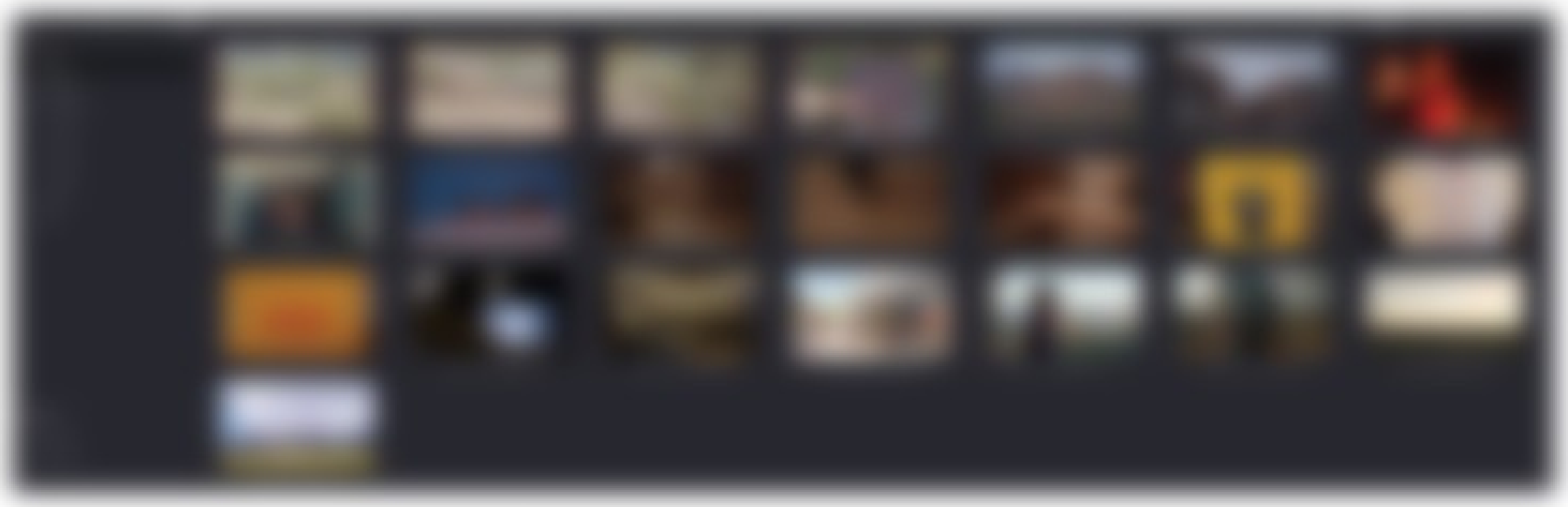
- In the media pool, select the B-ROLL bin.
- Use Live Preview to quickly review the clips in the bin, and then Command-click (macOS) or Ctrl-click (Windows) your three favorite clips.



- In the Inspector, click the Good Take checkbox.

- Click the media pool Sort menu, and choose Scene to list the clips in order of their scene number.

8 With the clips reordered, select the first four clips (from Scene 2).



9 In the Inspector, type **[illegible]** in the Comments field.

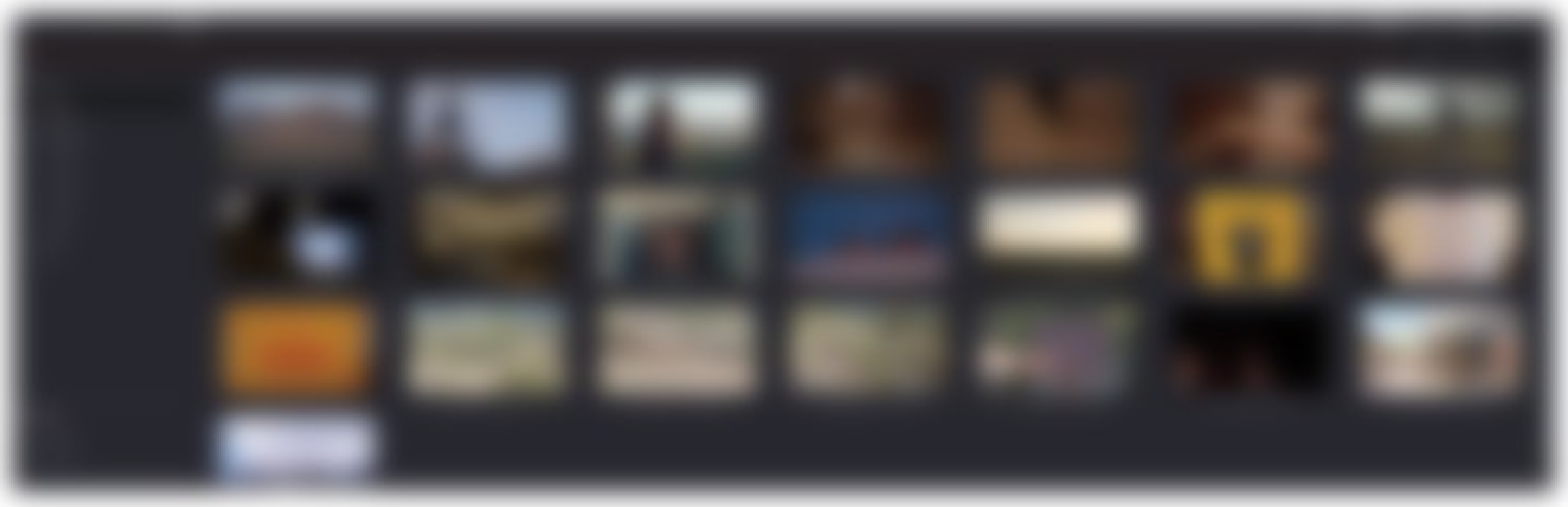
10 Click the media pool Sort menu again and choose Clip Name to reorder the clips in the media pool by their names, and then deselect the selected clips.

Simple Searches Using Metadata

Now that you've added your own simple metadata to these clips, you can use it to find them instantly.

1 At the top of the media pool, click the Search menu and choose All Bins.

The Search field opens at the top of the media pool.

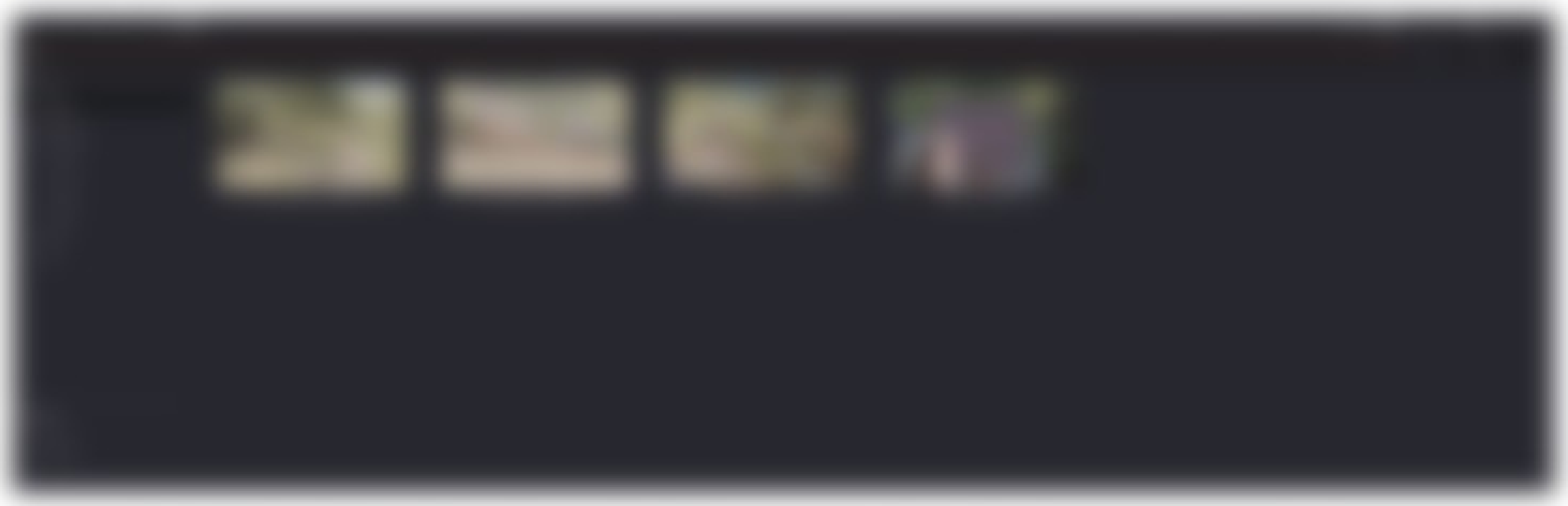


- In the Search field, type **[illegible]**.

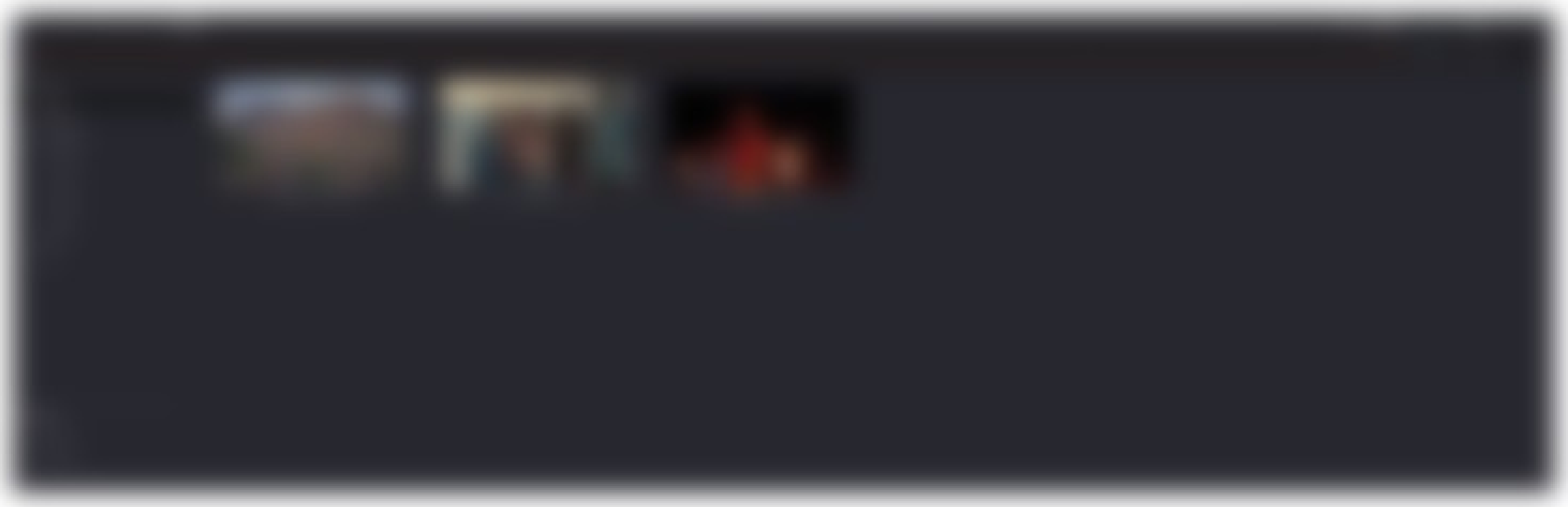
The music clip is instantly displayed because it has the phrase "[illegible]" in its filename, which by default is what your search is looking for.

- In the Filter By menu, select Comments.

- In the Search field, highlight "Sunset" and type **pine** to reveal the clips that have the "PINE TREES" comment you added previously.



- Click the "X" on the right side of the Search field to clear the current search.
- In the Filter By menu, choose Good Take and, in the Search field, type **1** to indicate the value should be "true" (set/on), and the clips you marked as good a few steps earlier are instantly recalled.



> **NOTE** To view all the clips you have not marked as Good Takes, type **0** in the Search field.

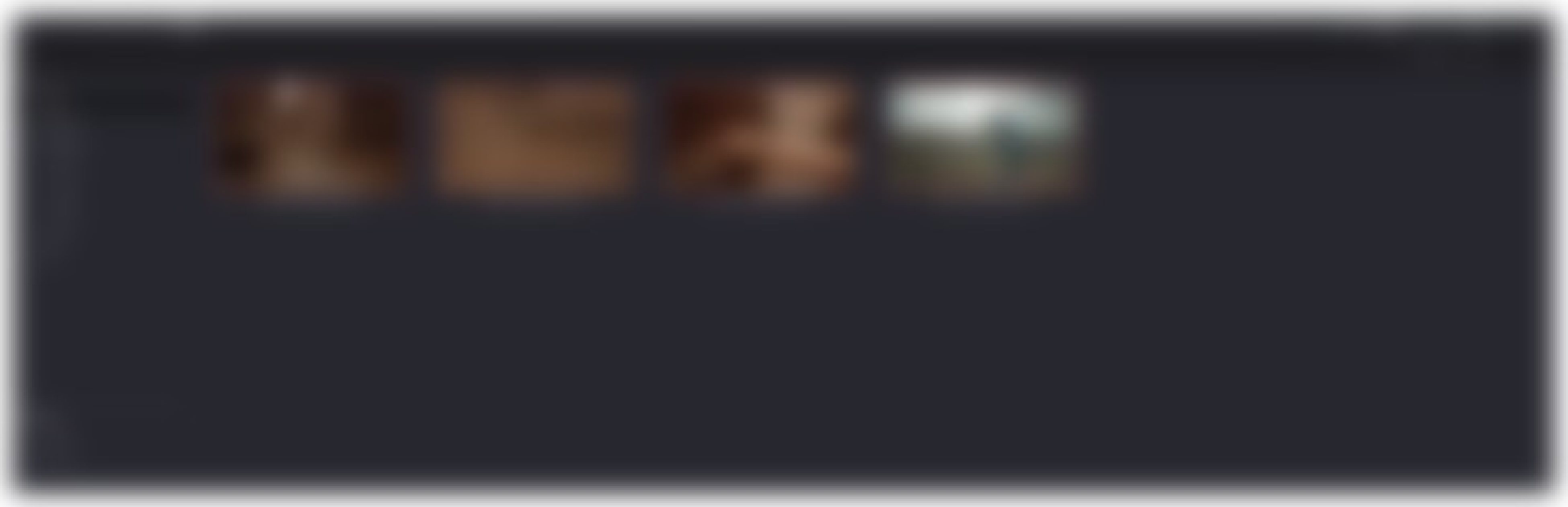
Resolve's powerful and responsive search feature lets you leverage the flexibility of metadata to find media pool clips in even the largest projects.

Creating Keyword Smart Bins

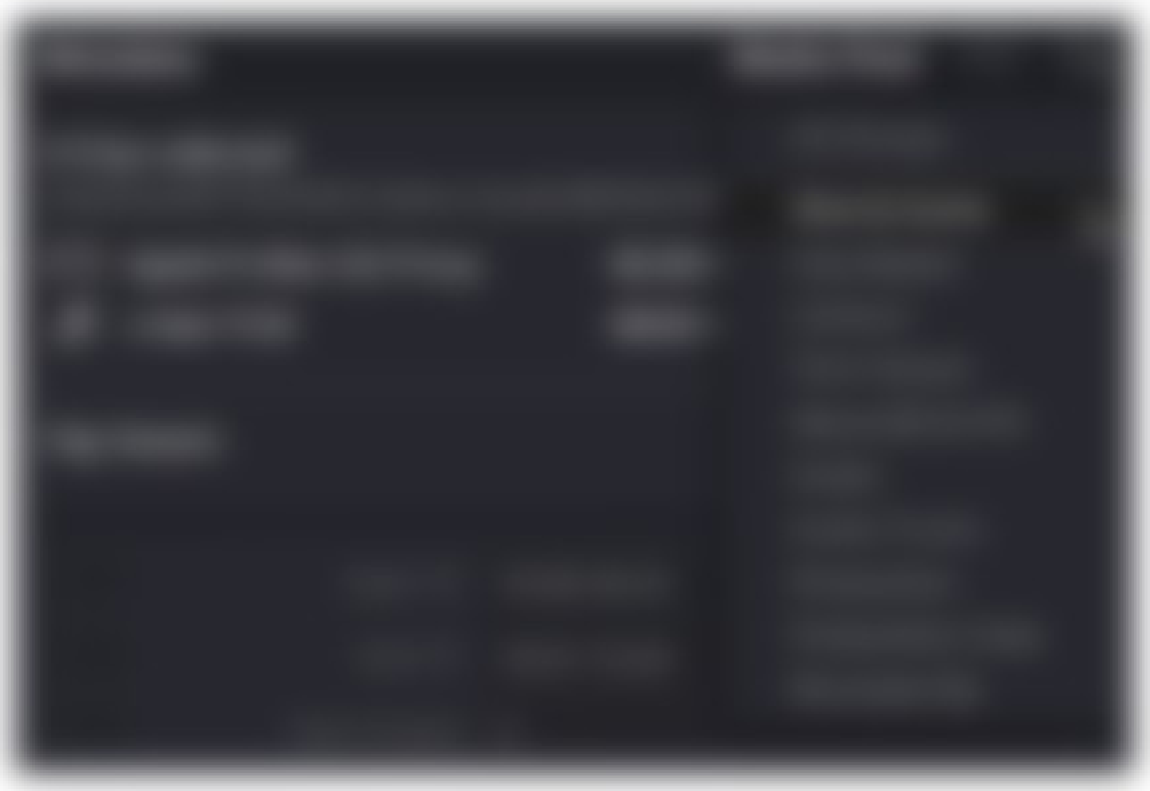
Not all possible metadata fields are available in the Inspector, which is why the dedicated Metadata panel comes in handy. This is especially true when it comes to adding keywords to your clips to create keyword smart bins, which you used in Lesson 1 when you added B-roll clips to your rough cut as an easy way of seeing just the relevant footage.

Creating a keyword smart bin is as simple as adding a keyword to a clip.

1 In the Filter By menu in the search bar, choose Scene, search for clips from Scene 5, and select the four clips of the girl walking through Slot Canyon.

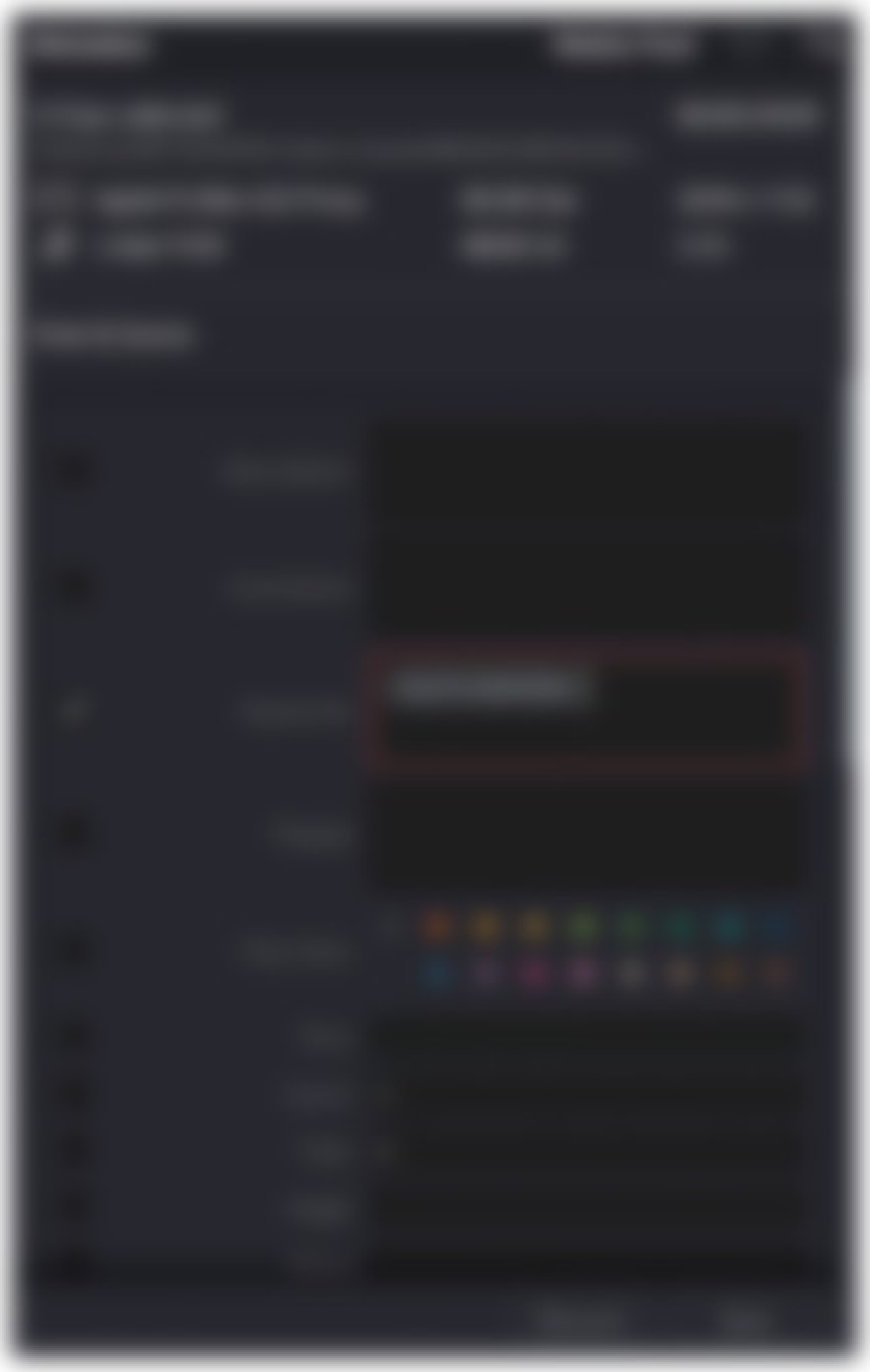


2 At the top of the Metadata panel, click the Sort menu (three lines with an arrow) and choose "Shot & Scene" to display the metadata fields most closely associated with shot and scene information.



Some of these fields are the same as those listed in the Inspector. In fact, they are the same fields and are available in either of the two panels, and you will no doubt see the same information listed here.

- With the four clips still selected, type **SLOT CANYON** into the Keyword field of the Metadata panel and press Enter (Return).

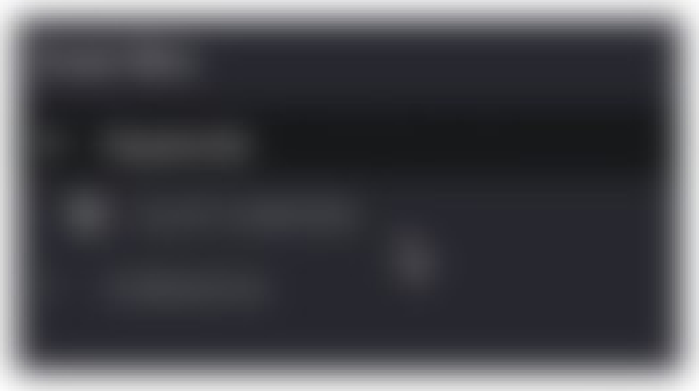


Your text is converted into a keyword that will be assigned to the selected clips.

- At the bottom of the Metadata panel, click Save.

> **NOTE** You only need to save the metadata if you're adding it to multiple clips at the same time. If you forget to click Save, Resolve will ask you to confirm whether you want to apply or discard your metadata changes.

- In the Smart Bins area of the media pool's bin list, click the Keywords smart bin folder and then click the disclosure triangle to open the Keywords smart bin.



As soon as you added the "SLOT CANYON" keyword to the clips in the VIDEO bin, the SLOT CANYON keyword smart bin was created automatically, which then displays just the clips with that keyword applied. You will learn how to display other automatic smart bins like this later in this lesson.

- Click the Search button to clear and close the Search bar.

TIP You can drag and drop clips onto an existing automatic smart bin to quickly add the clips to that bin by automatically assigning the metadata properties of the smart bin to the clips. For example, dragging a clip onto a keyword smart bin will automatically add that smart bin's keyword to the clip.

Favorite Keyword Shortcuts

Rather than typing keywords each time you want to add them to a clip, you can set up to nine favorite keywords in the Keyword Manager so you can quickly apply certain keywords using keyboard shortcuts.

Choose Workspace > Keyword Manager to open the Keyword Manager and enter the keywords you commonly use in the slots provided.

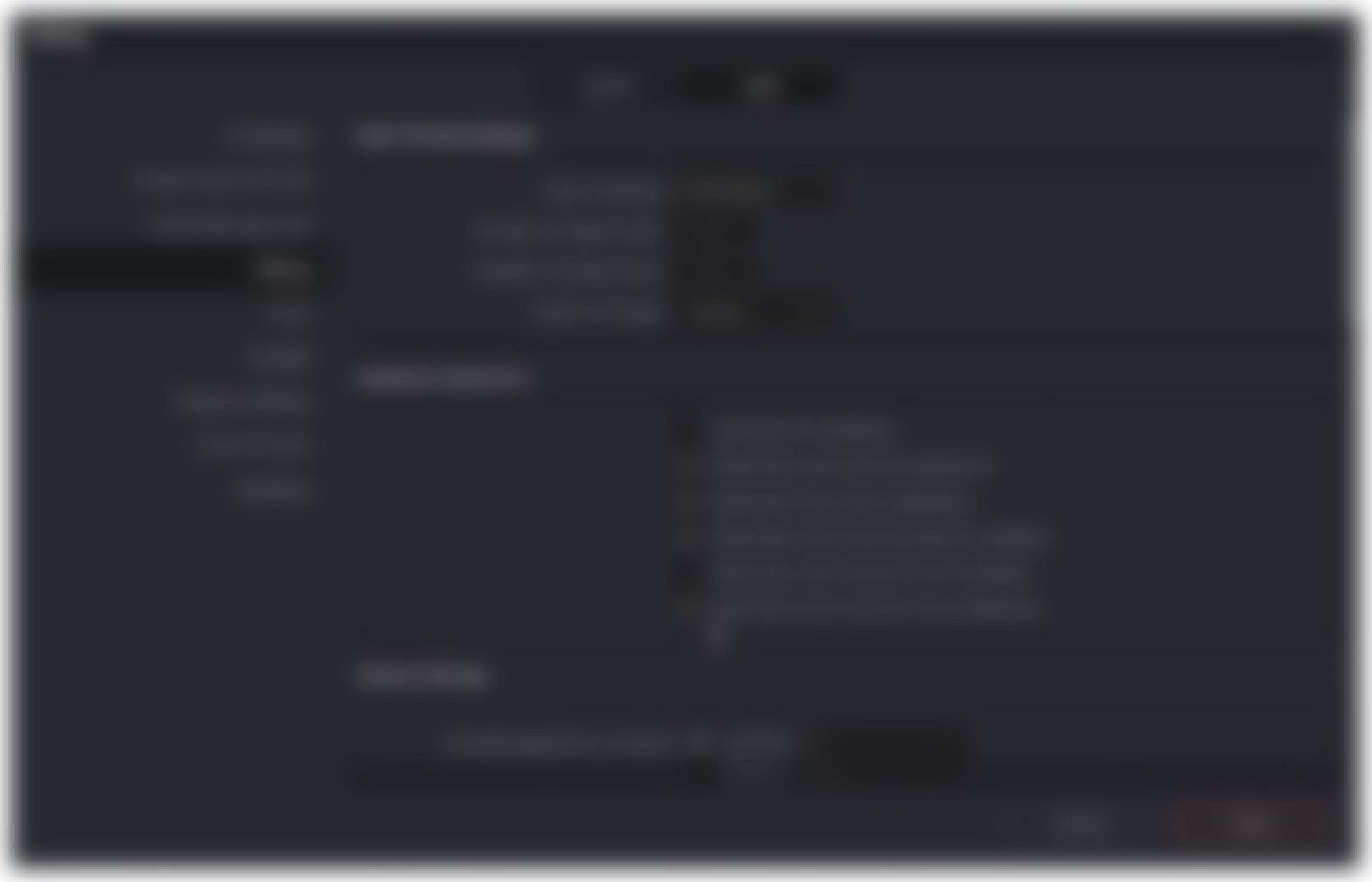
Once assigned, you can quickly add the keywords to any selected clips by choosing Mark > Favorite Keywords and selecting the keyword you want. Alternatively, you can use the shortcuts Option-Shift-1 through 9 (macOS) or Alt-Shift-1 through 9 (Windows) to apply the appropriate keywords to the selected clips. Use Option-Shift-0 (macOS) or Alt-Shift-0 (Windows) to remove all keywords applied to the selected clips.

Automatic Scene Smart Bins

Another advantage of adding metadata to your clips is that keywords, scene, and shot metadata will be used to create a series of automatic smart bins. To show additional automatic smart bins for metadata other than keywords, you must open the User Preferences.

1 Choose DaVinci Resolve > Preferences or press Command-, (macOS) or Ctrl-, (Windows), click the User tab, and then click the Editing category on the left side of the window.

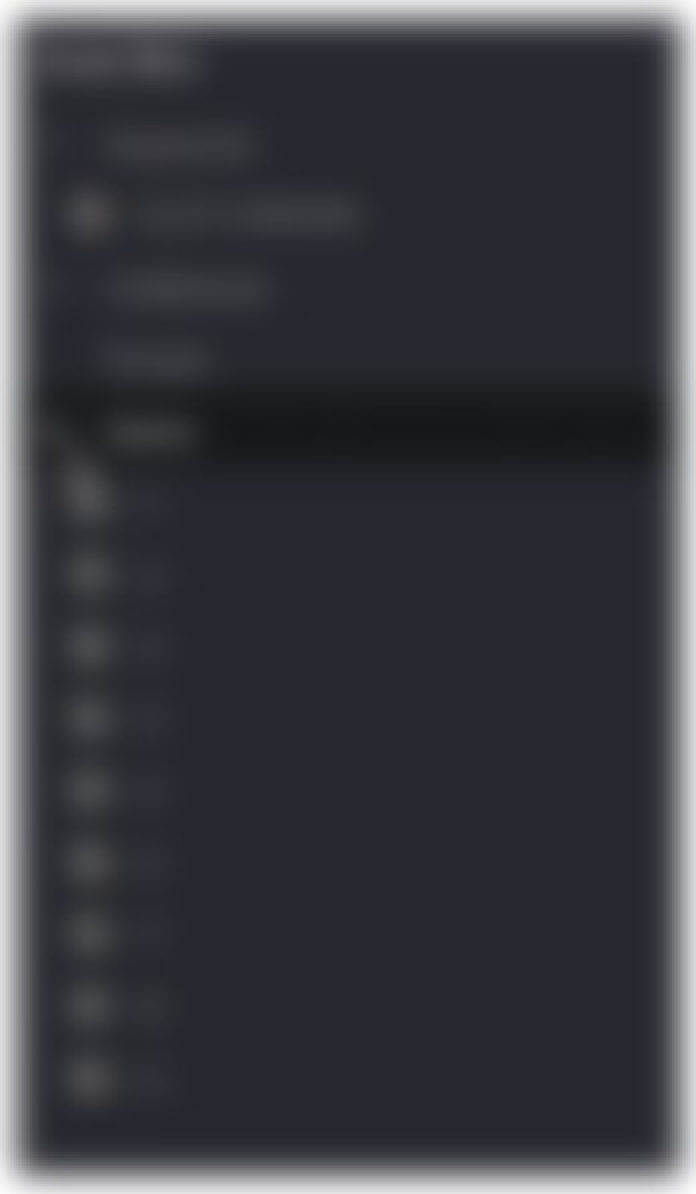
The editing preferences allow you to display other automatic smart bins beyond keywords, such as scene, shot, and people metadata.



2 Select the Automatic Smart Bin for Scene metadata and People metadata checkboxes, click Save to save the change, and then close the Preferences window.

Scene and People folders appear in the Smart Bins list.

- Click the disclosure arrow for the Scenes smart bins to reveal the appropriate scene metadata from the clips in the project.



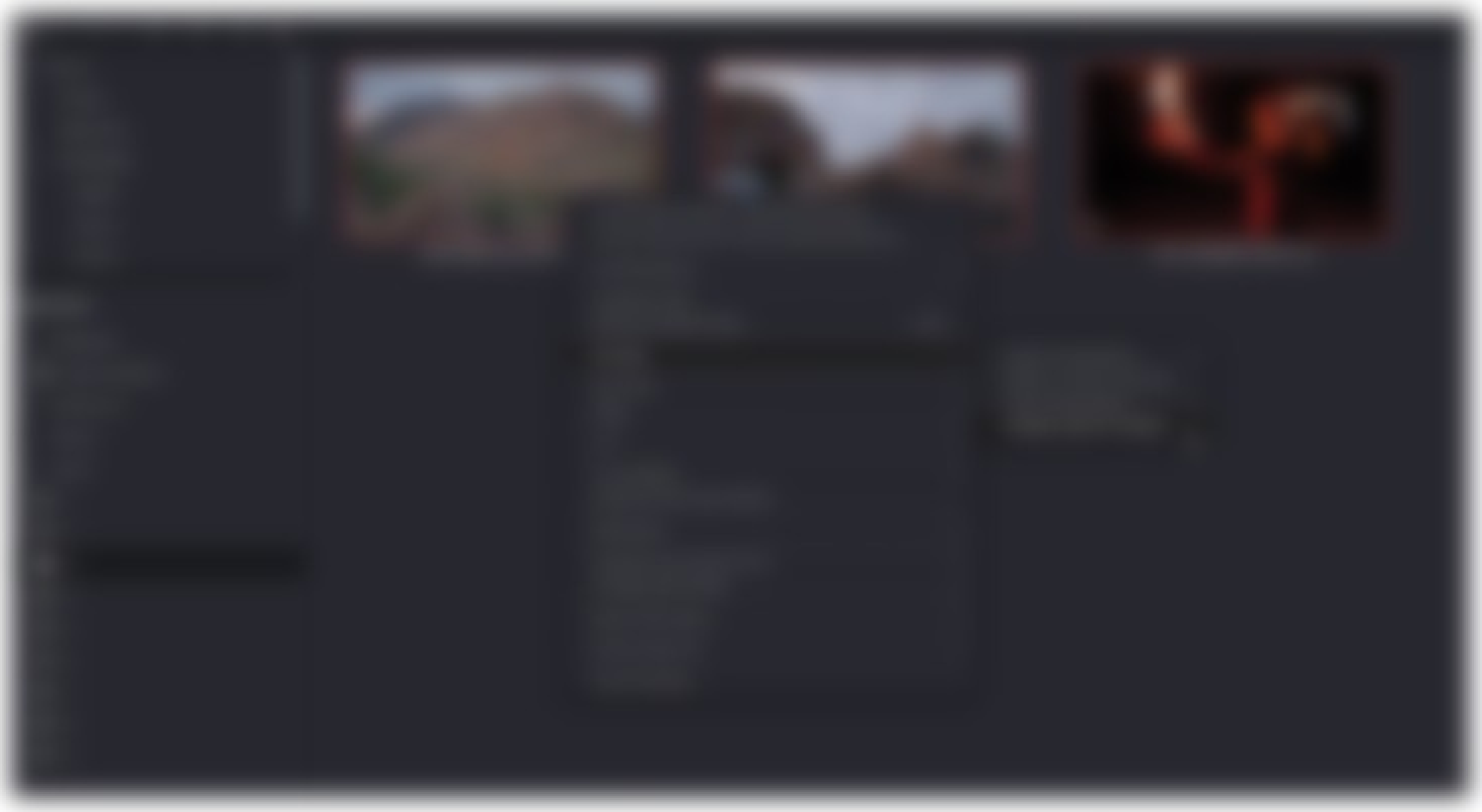
Analyzing Clips for People

(Studio Only)

Another subset of metadata that you may find useful when organizing clips in your project is to have DaVinci Resolve analyze clips for people's faces. This can then be used to generate People keywords, which in turn will appear as a series of automatic smart bins and can be useful in locating clips containing certain people, whether they are actors, interviewees, or presenters.

NOTE Generating People metadata is available only in DaVinci Resolve Studio. If you're using the free version of DaVinci Resolve, you can read over this exercise, but you won't be able to perform the steps.

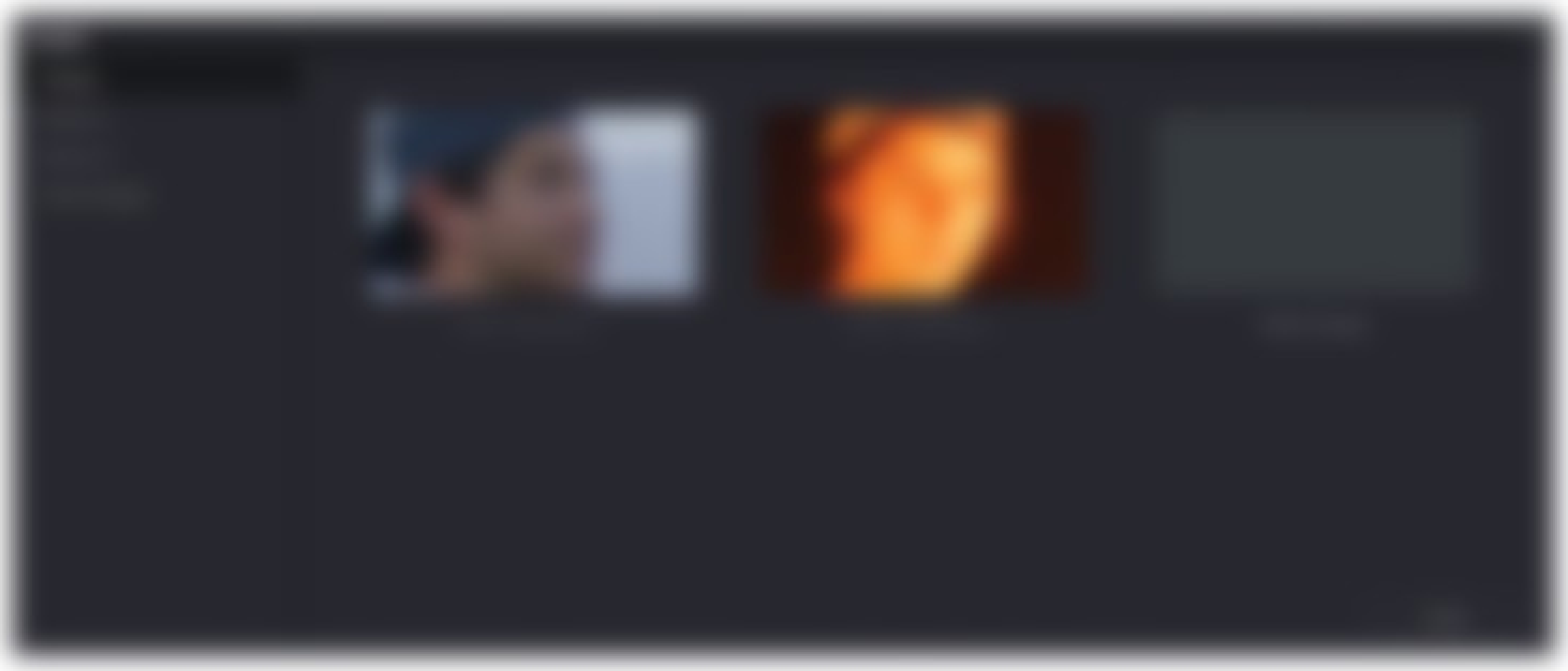
[illegible] Select all the clips in the Scene 3 smart bin, right-click, and choose AI Tools > Analyze Clips for People.



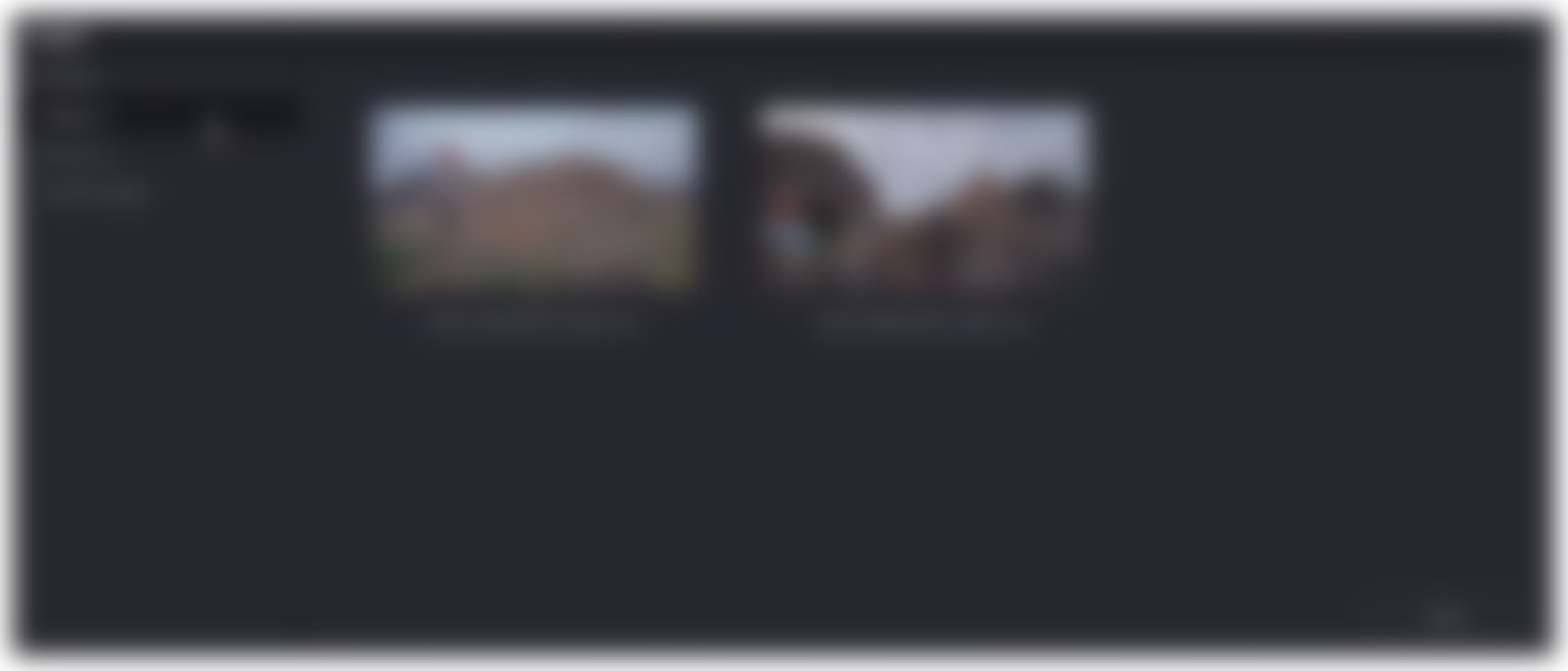
The clips are analyzed and the results are stored in the project's face database.

NOTE This analysis takes place entirely on your own computer and is only stored in the face database for the current project.

Once the analysis is complete, the dominant faces that have been identified are displayed in the People window, allowing you to manage the People metadata.

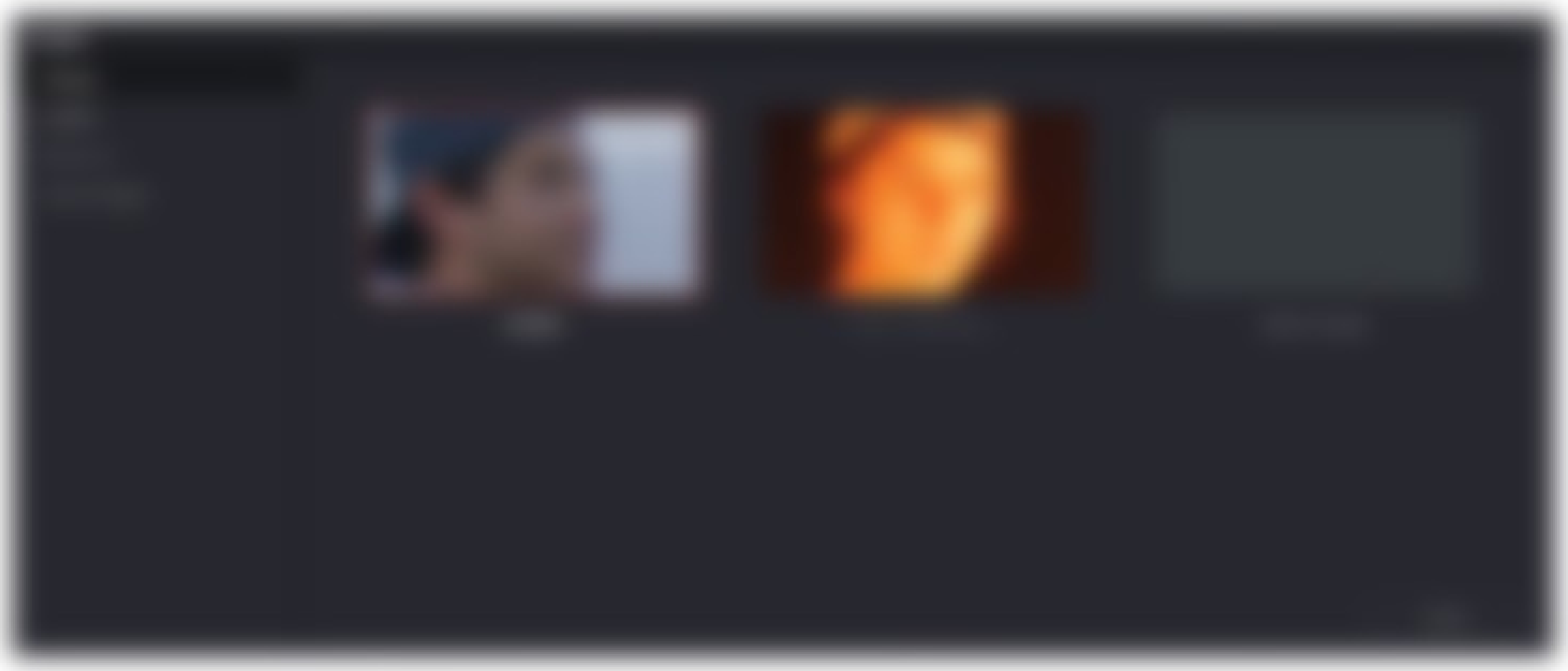


- In the People window, select the clips identified as "Person 1."



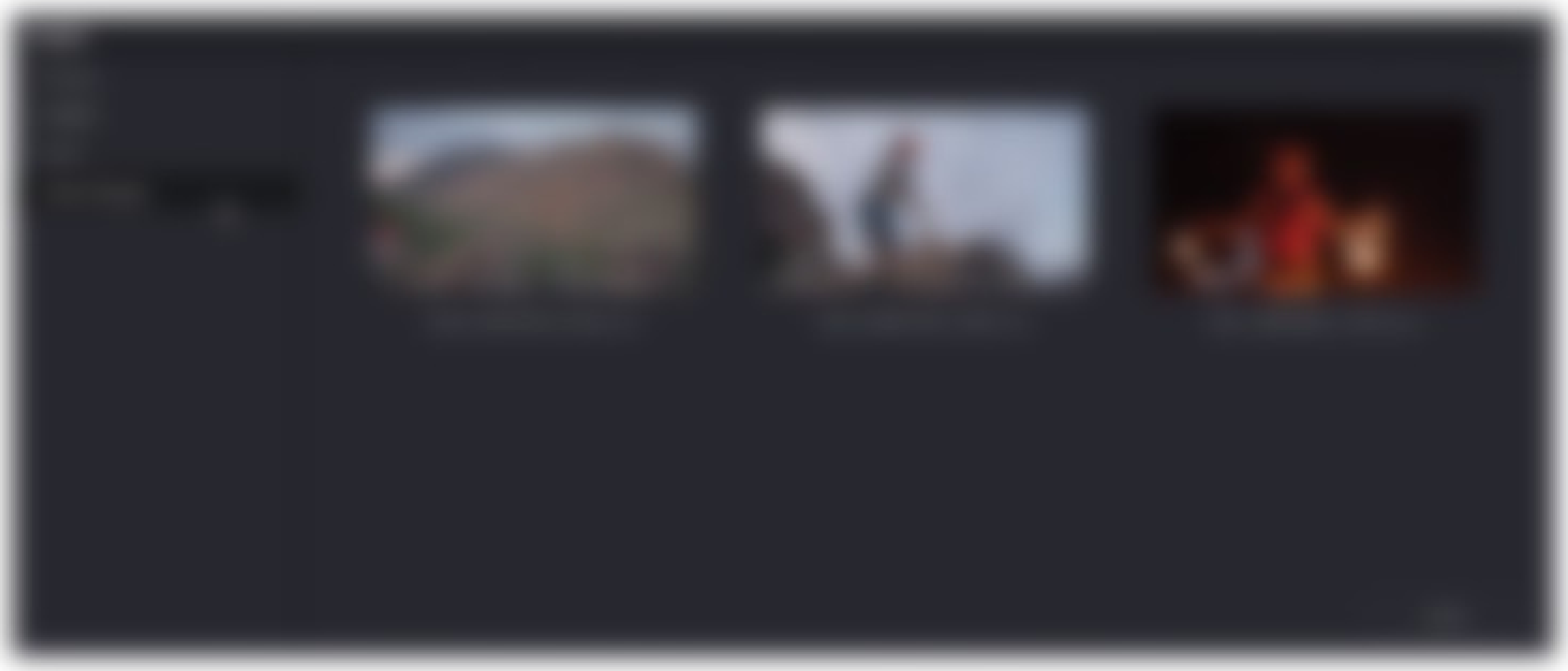
This collection contains two clips featuring the same person, with a red box identifying the specific face that the analysis has identified. You can add a name for this person to make it easier to identify them.

- Return to the People collection and select the first icon displaying the face of "Person 1."
- Click the area below the selected face where it says "Enter name here" and type **[illegible]** as the guy's name.



- Rename Person 2 as **[illegible]**.

- Select the Other People group.



This group contains faces that the analysis could not identify, including those you have subsequently removed.

- Select the first two clips, which are clearly shots of Bobby on the rocks, and then right-click and choose Tag As > Bobby.

NOTE You won't see any additional clips appear in Bobby's group since these clips have already been tagged as Bobby. However, Resolve identified a face in a different part of the clip that it could not identify. Confirming this as Bobby rather than a different person helps prevent misidentification.

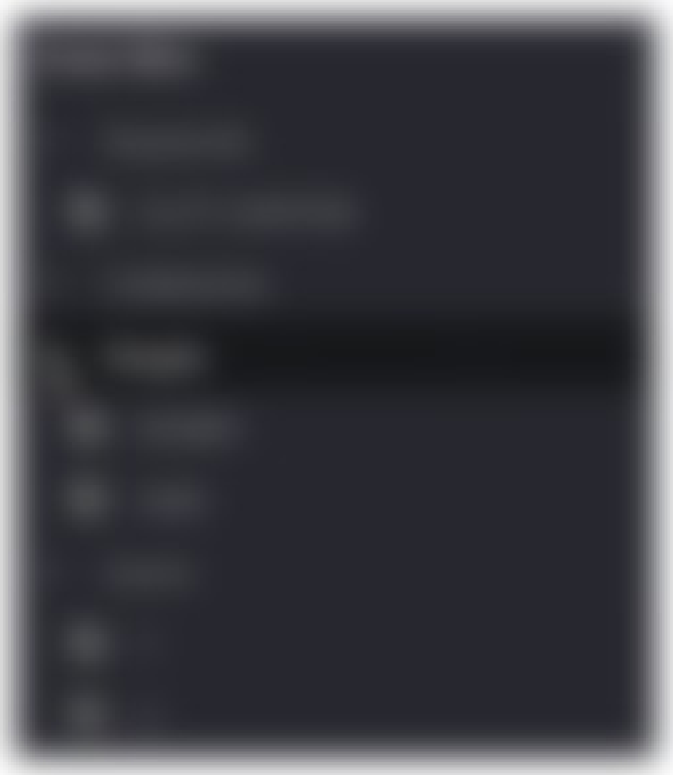
- Right-click the other instance of the fire dancer clip and choose Tag As > [illegible].

> **NOTE** You can also remove a face that you're not interested in—for example, if they are a background extra or passerby; right-click the person's thumbnail and choose Not Person > Remove.

- Click Close to close the People window.

> **NOTE** To further refine the People metadata, choose Workspace > People. To reset the Face database for the current project, open the People window and choose Reset Face Database from the Options menu (…).

- In the Smart Bins list, click the disclosure arrow for the People group to reveal the People smart bins.

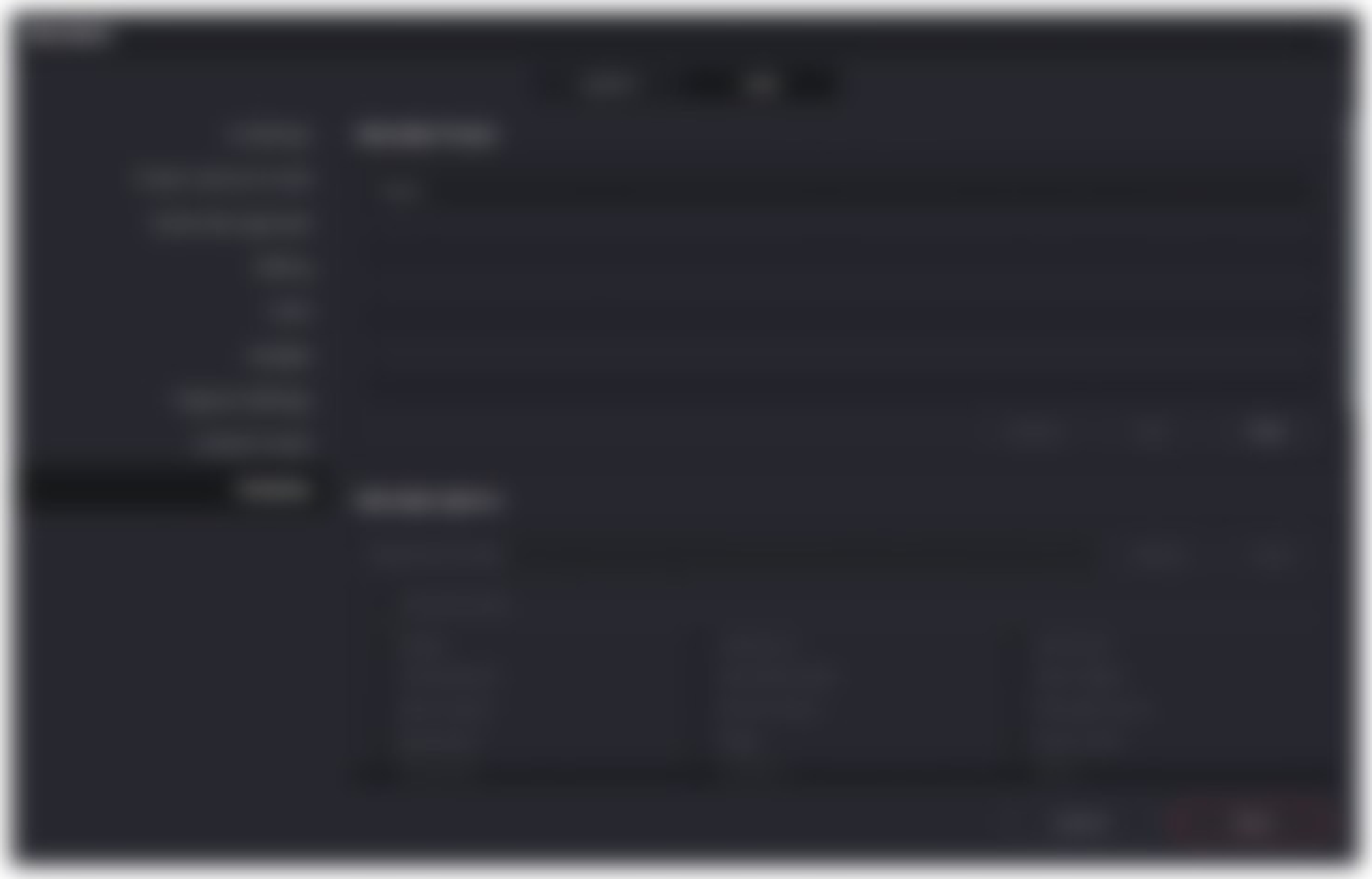


You can also view the People tags associated with each clip in the Metadata panel, although this field is not directly editable.

Configuring Metadata Presets

As useful as metadata is, there is a lot of it, and it can often seem overwhelming, especially at first. However, you can customize metadata presets to display only the information you most need or want to see.

- Choose DaVinci Resolve > Preferences, or press Command-, (comma) in macOS or Ctrl-, (comma) in Windows.
- In the Preferences window, click the User tab and select the Metadata category on the left.



Using the Metadata Presets, you can create, modify, and delete custom metadata presets.

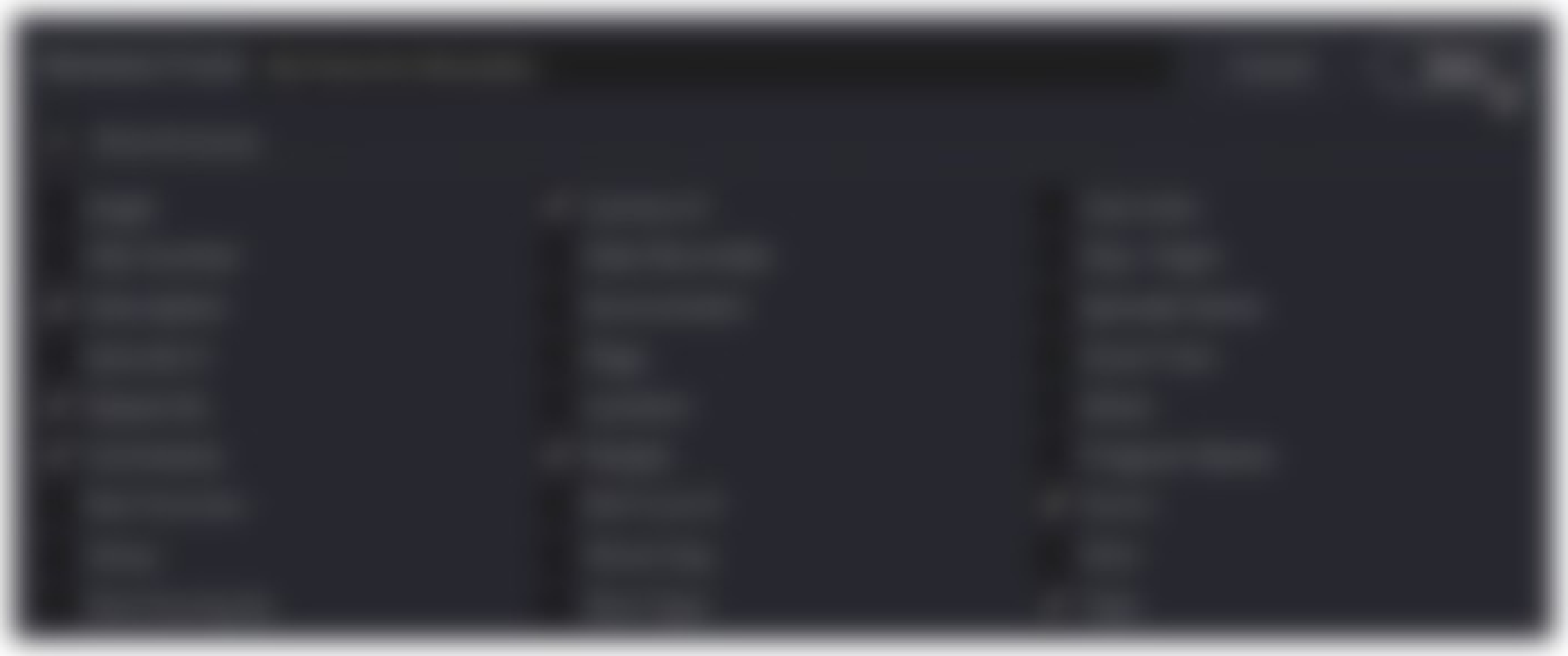
- Click the New button to create a new metadata preset, name it **My Favorite Metadata**, and click OK.

The newly created My Favorite Metadata preset appears in the Metadata Presets list.

In the lower half of the Metadata panel, under Metadata Options, you'll see all the metadata that you can add to the preset.

- Select the checkboxes for Description, Keywords, Comments, Camera #, People, Scene and Take. These are the metadata fields you will need throughout the rest of this lesson.

- In the upper right of the Metadata Options, click Save to save your changes to the preset.



- Click Save at the bottom of the Preferences window to save and close the Preferences panel.

- In the media pool, select any clip from the Scene 3 smart bin and, in the Metadata panel, click the Sort menu and choose All Groups. Then click the Options menu (...) and choose the My Favorite Metadata preset.

TIP Your preset will appear blank in the Metadata panel unless it is set to show all groups or a subset that contains the fields of your preset.

[illegible] view. Only the selected metadata fields for the My Favorite Metadata preset appear in the Metadata panel, making this a much more usable space.

You could continue entering the metadata manually or, if the information exists outside of DaVinci Resolve, you could simply import it.

Importing Metadata

You have many ways to populate your clips with useful metadata. It may be entered on the camera during production, you can enter it yourself manually as you have been doing in the previous steps, or someone on set can be assigned to be responsible for entering metadata in their favorite spreadsheet program or in any of the smart slate apps that can be used to log metadata such as shot, scene, take, and more. You can then import this data into Resolve using the simple CSV (comma-separated value) format and save yourself hours of work in the edit suite.

1. Choose File > Import Metadata To > Media Pool.

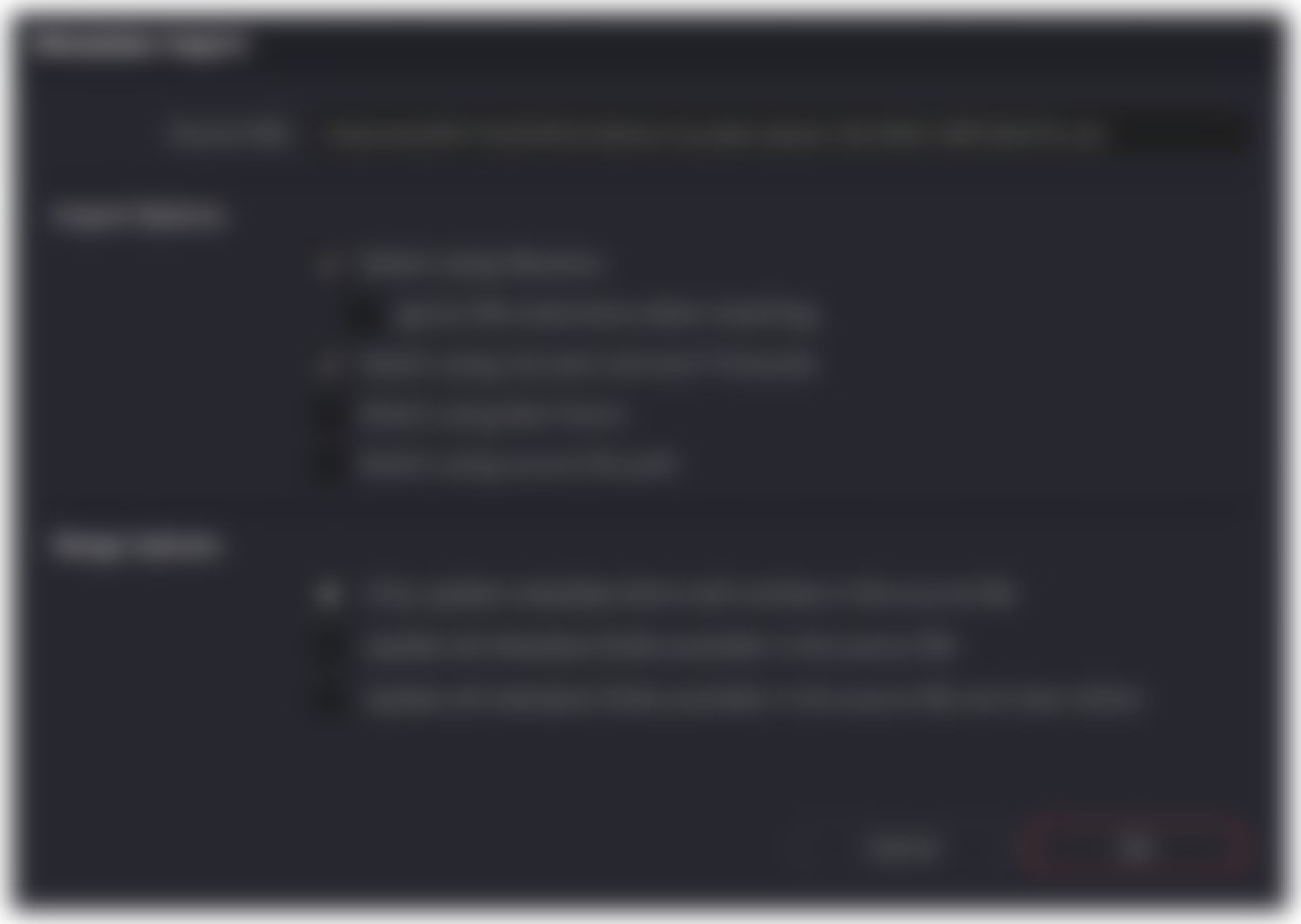
2. In the File dialog, navigate to R20 Editor's Guide / Lesson 05 and select the file **SMB metadata.csv**.

   This .csv file was exported from a simple spreadsheet program.

3. Click Open.

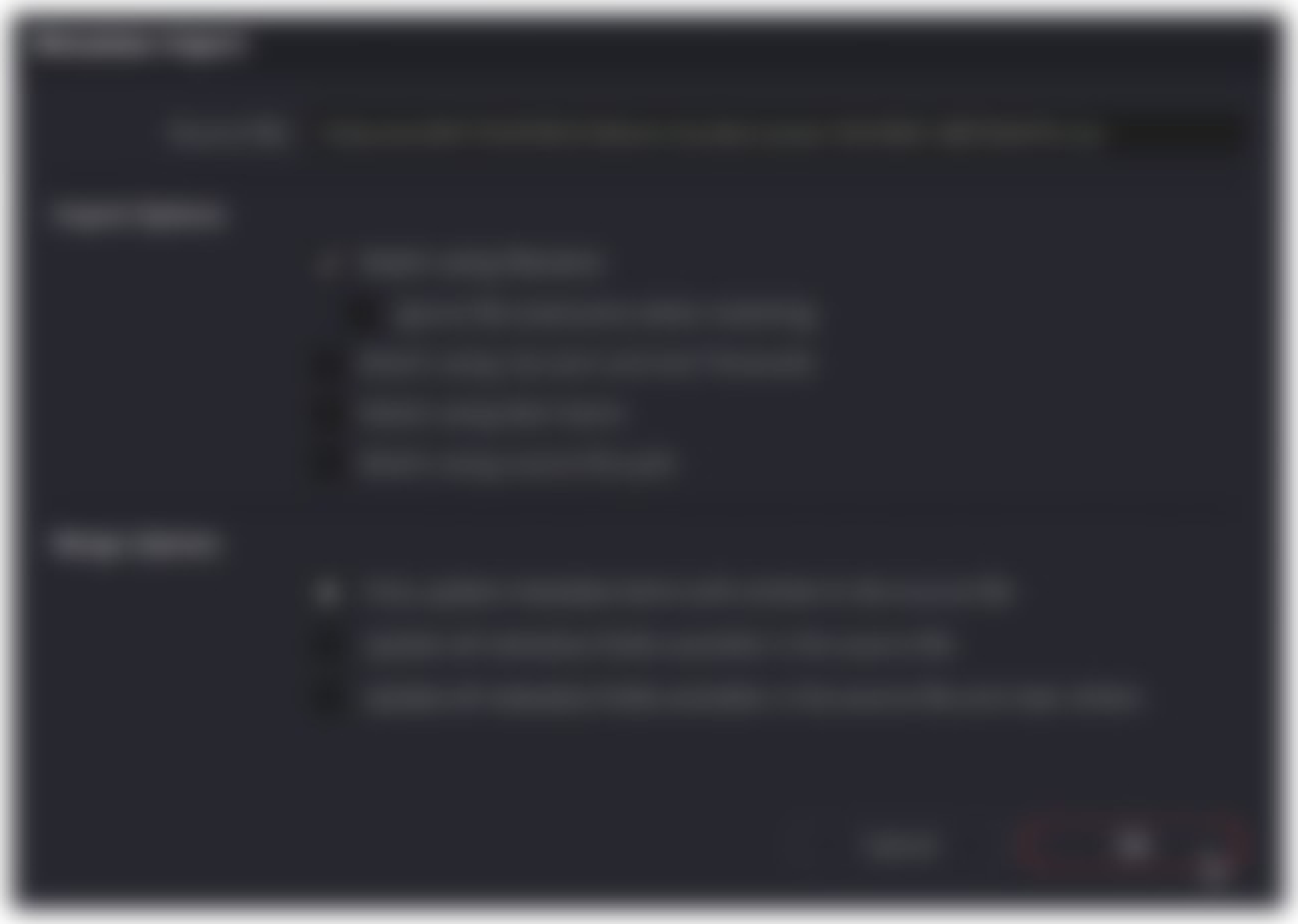
   The Metadata Import dialog opens.

   This window allows you to choose how you want Resolve to match the metadata in the .csv file with the clips in the media pool and how you want to merge the metadata in the .csv file with existing clip metadata. The default is to match clips based on their filenames and starting and ending timecodes, and only update metadata with entries in the .csv file. However, you can adjust these or use additional matching and merge options.



   In this case, you can match clips based on their filenames but not their timecodes because that information is not included in the .csv file you're importing.

- Disable the "Match using clip start and end Timecode" checkbox since the .csv file does not contain this information.



- Click OK.

A confirmation window appears stating that the information within the .csv file has been imported and added to [illegible] clips in the media pool.

- Verify that the information from the .csv file has been added to the media pool clips by selecting a few clips and viewing their newly added metadata in the Metadata panel along with the expanded list of Keyword smart bins.

This metadata will help as you organize and rename the clips to something more useful than the cryptic filenames given to them by the camera.

Exporting Metadata and Bins

In addition to importing metadata to clips in your media pool, as detailed in the preceding steps, you can also choose to export the metadata from your media pool or from selected clips from the media pool. To do so, simply select File > Export Metadata From > Media Pool or select File > Export Metadata From > Selected Media Pool Clips (as appropriate). Your chosen clip metadata will then be exported as a .csv file and will provide a way of easily transferring metadata from one project to another that uses the same media, even if that project is on another Resolve system.

You can also export an entire bin by choosing File > Export > Export Bin. This command will export the clip metadata (not the media) from the currently selected bin to a .drb file. As with exported metadata, you can use this option to transfer bins between different Resolve projects or systems by choosing File > Import > Import Bin.

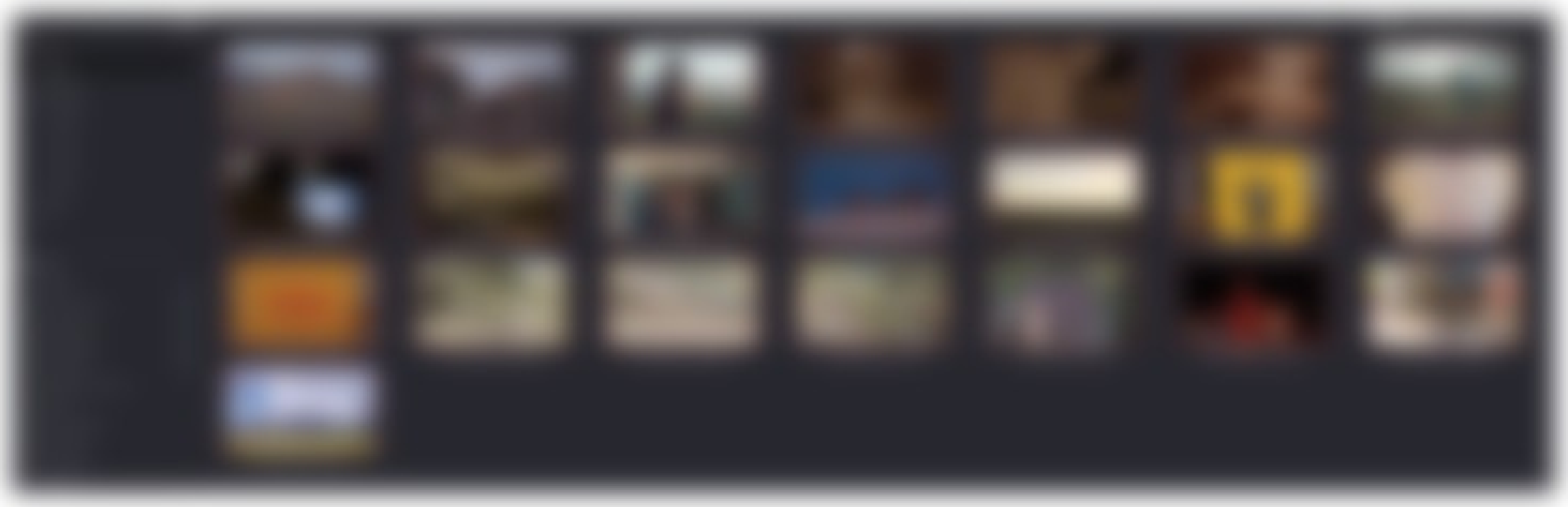
Any clips listed in the .drb file will be automatically imported into the current project, together with their associated metadata. If the source media is in the same location as the system the bin was exported from, it will be automatically linked to the newly imported clip. If the media is in a different location, you must manually relink it.

Renaming Clips with Metadata

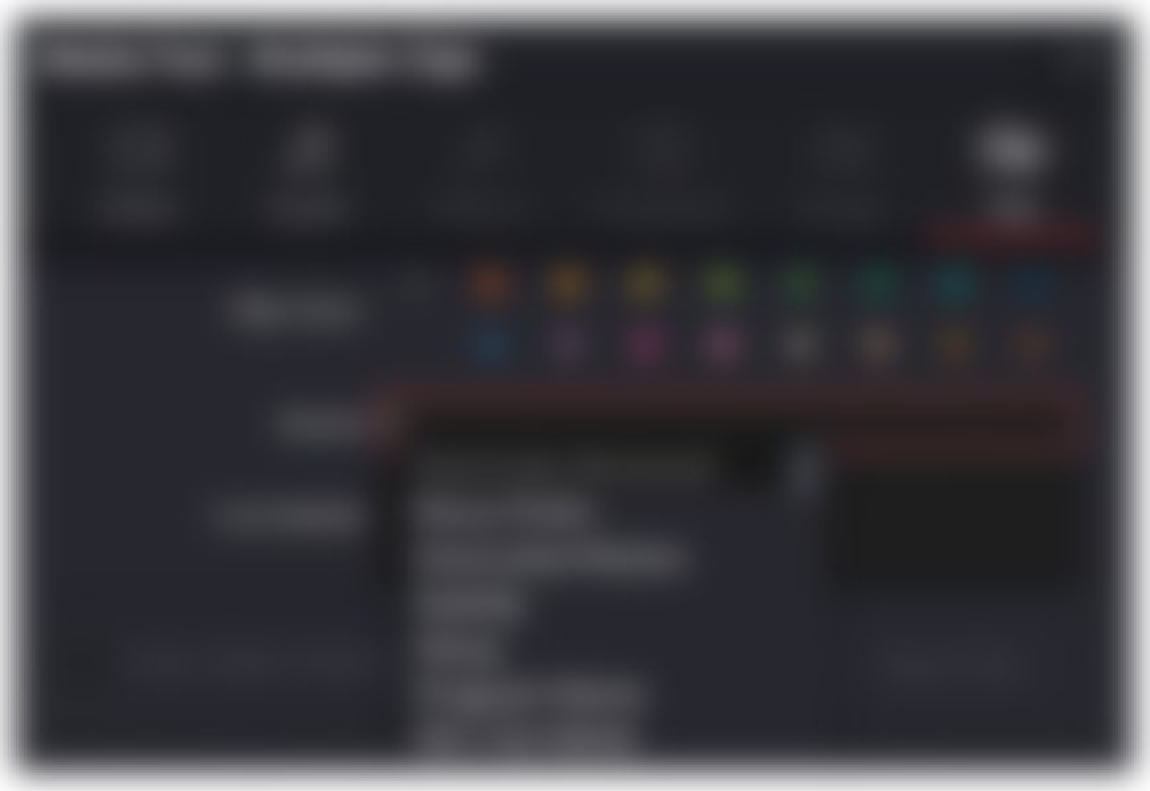
Filenames from a camera, or almost any capture device, are often an alphanumeric string that typically includes the date and time the clip was created. When you import a clip into DaVinci Resolve, the filename automatically becomes the clip name. Of course, these are not the most descriptive names and often need to be changed for editing purposes. Entering clip names manually is one way to address this, but it is not the only way (or even the most efficient way) to rename them.

Variables are references to other metadata that exist on the clip, such as scene, take, and shot number – so called because variables are not necessarily the same for each clip. You can enter a variable into the clip name, and Resolve will reference the correct information for each clip provided the information is present. You will use the metadata you've imported to change the current clip names in the media pool to more descriptive names.

- Select the B-Rolls bin and press Command-A (macOS) or Ctrl-A (Windows) to select all the clips in the media pool.



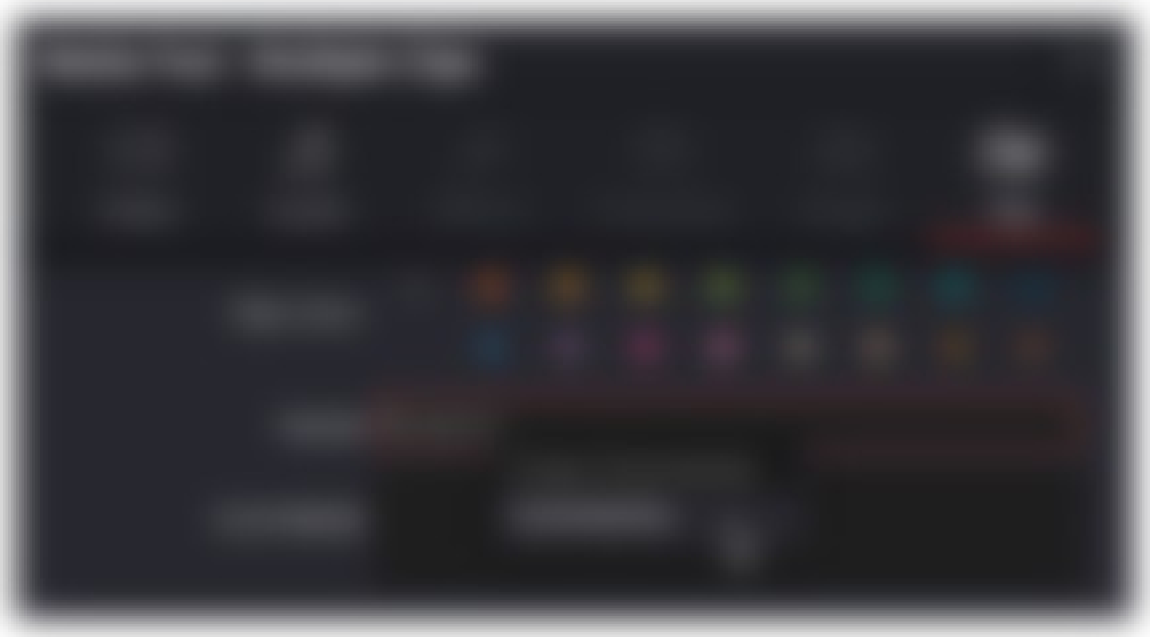
- In the Clip Name field in the File tab in the Inspector, type % (percentage sign).



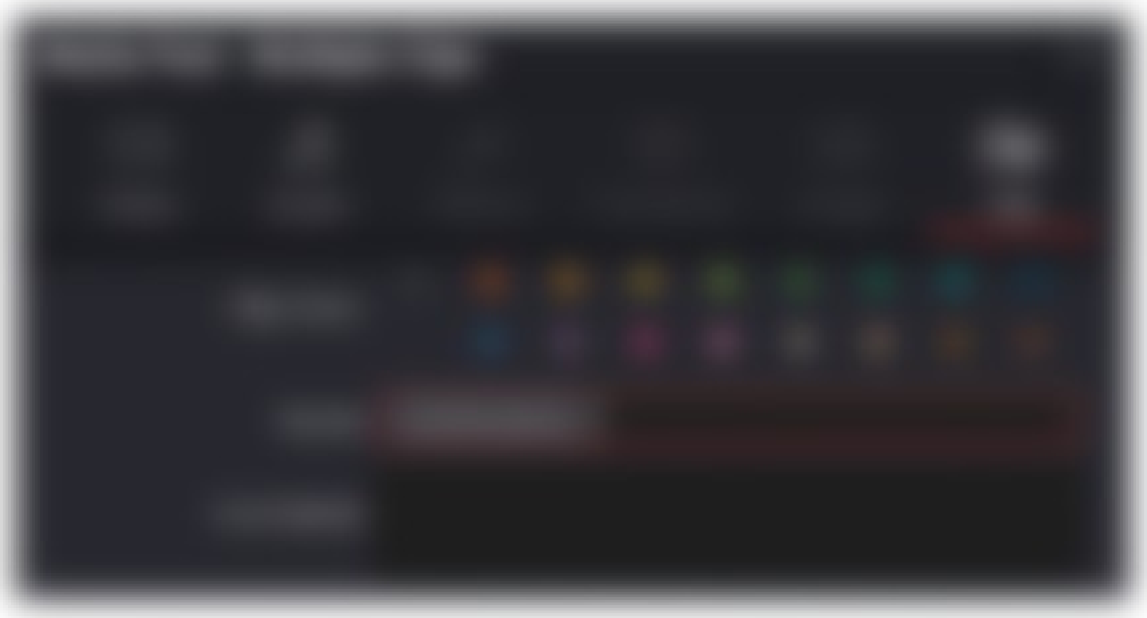
Entering % indicates that you are about to enter a variable. When you enter that %, a list of variables appears.

- Type **comments**.

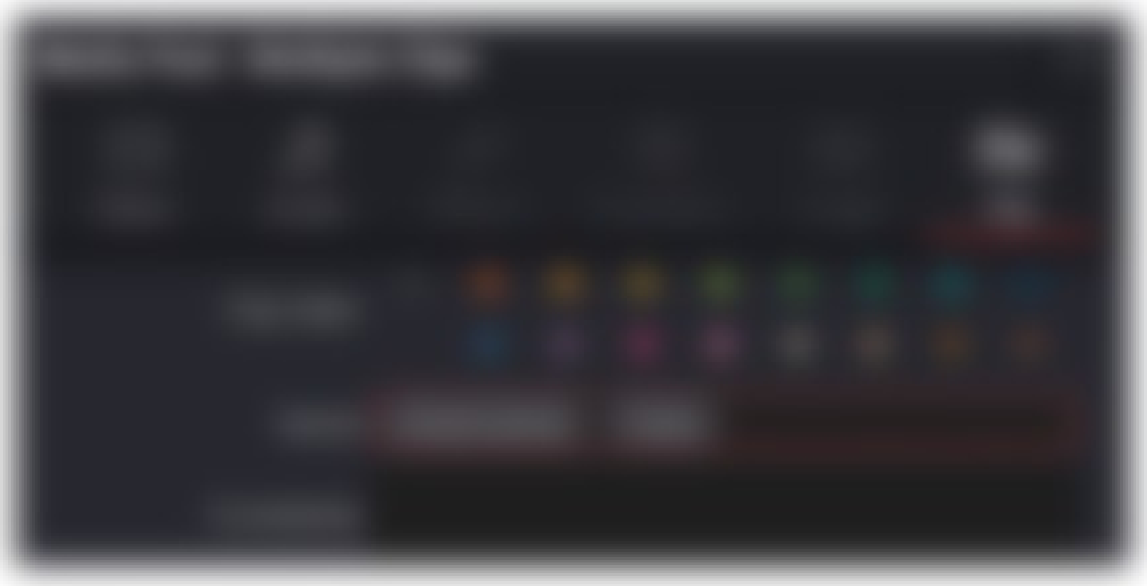
A list of potential variables appears that contain "comments."



- In the list of variables, click Comments to add it to the Clip Name field.

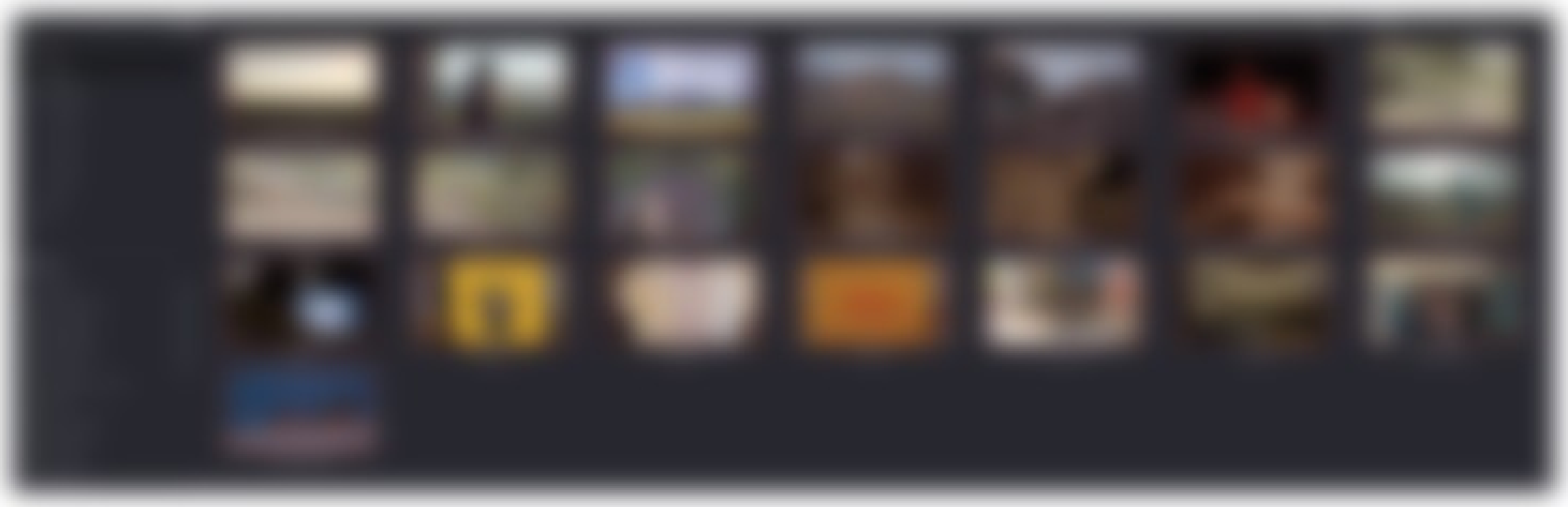


- Press the Spacebar to add a space after this variable, and then type **Take** and choose Take from the list of variables.



- Click away from the Clip Name field.

The clip names now show a combination of comments and take numbers pulled from the clips' various metadata fields. You will also see the clips rearrange, as the media pool is set to sort by clip name, which has now been changed.

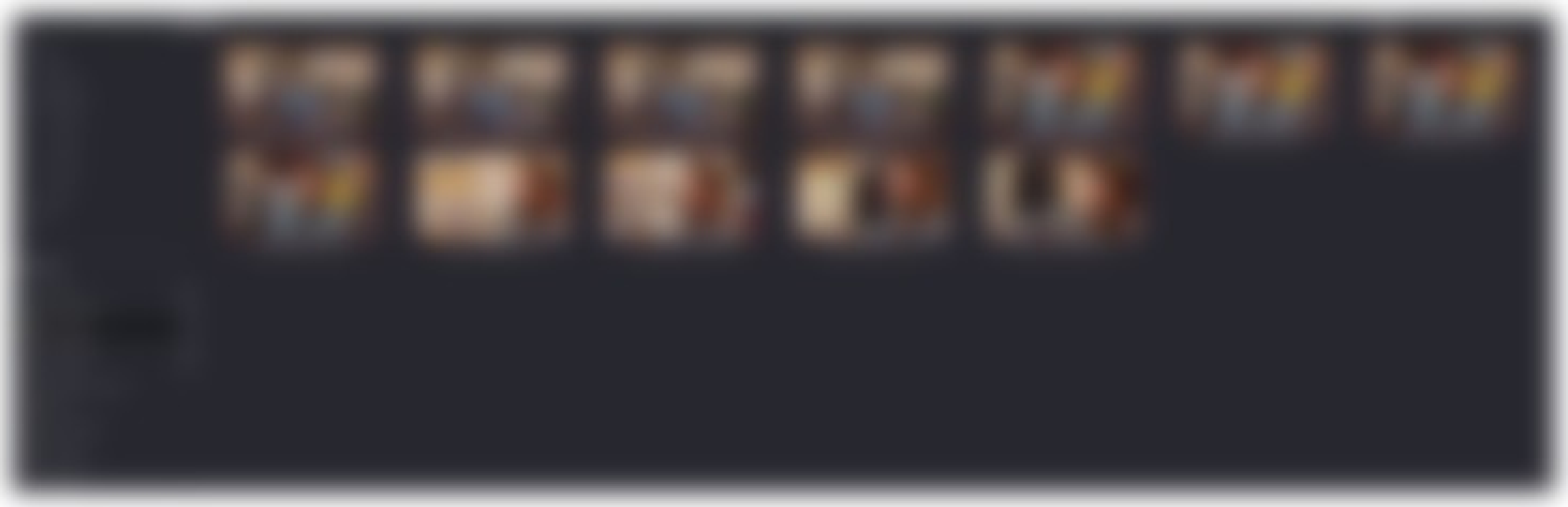


Changing the clip names in this way does not change the names of the original media files. Editors often use clip names within a project to provide a more user-friendly way of identifying a clip or series of clips. Clip names are just one more piece of metadata in your project. EDLs, XMLs, or AAFs generated from within Resolve will always reference the original filename.

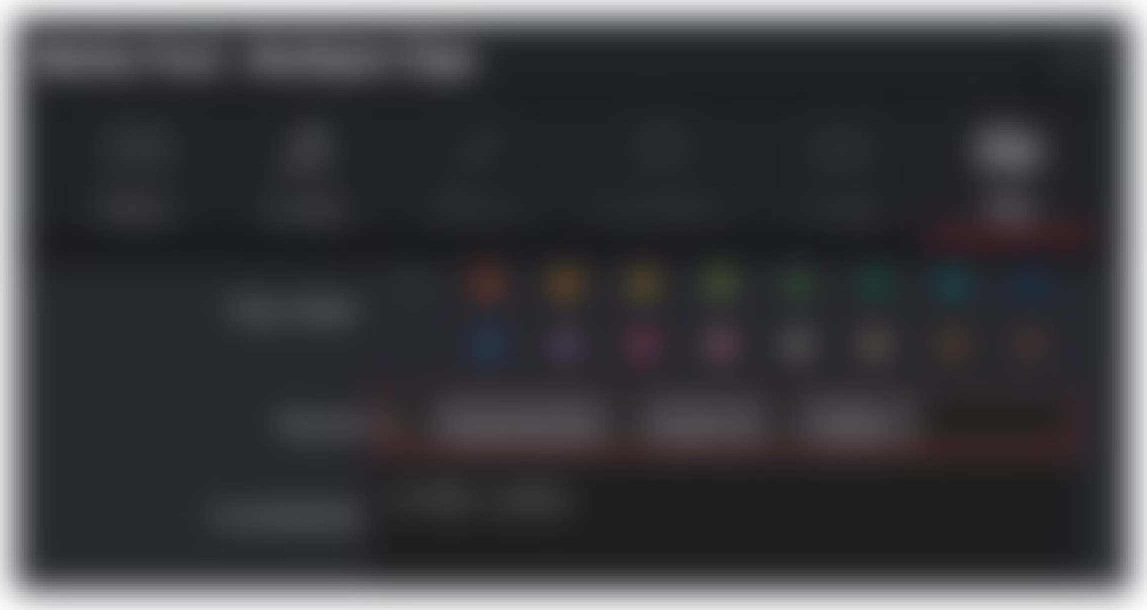
TIP To switch between viewing the clip names and original filenames across the project, choose View > Show File Names.

You can also combine regular text that you enter along with the variables to create a more descriptive clip name.

- Select the INTERVIEW smart bin and select all the interview clips.

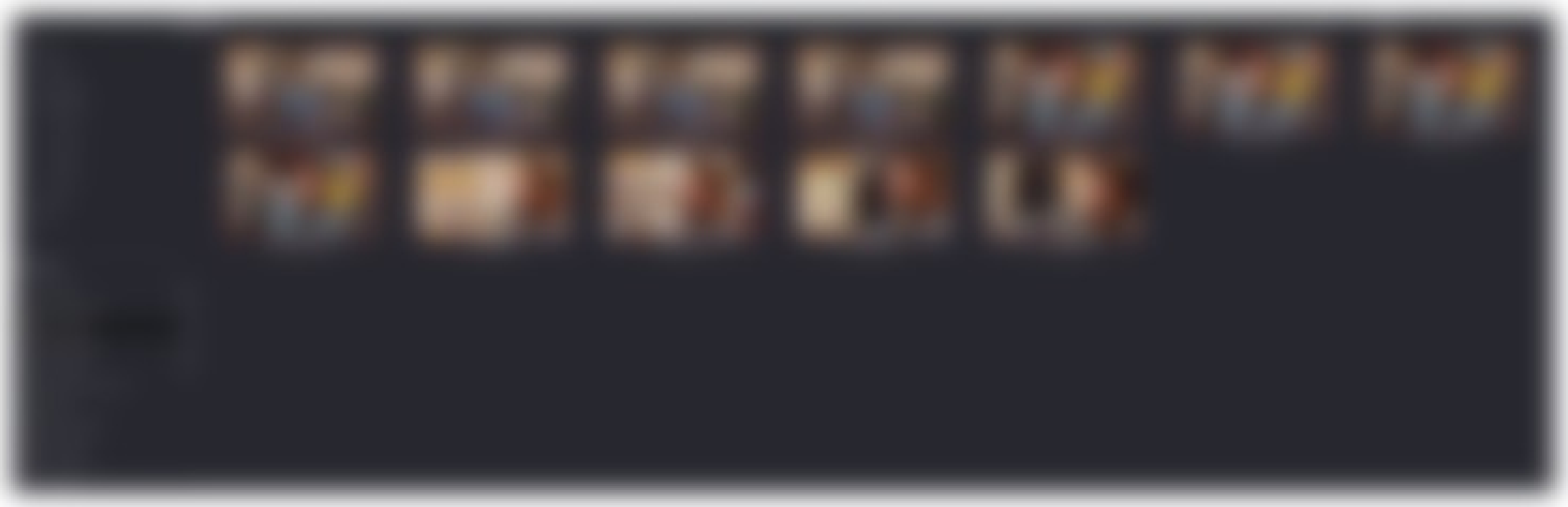


- In the Clip Name field in the Inspector, type **[illegible] %Keywords %Cam # %Take**, selecting the options for Keywords, Cam # and Take as they appear.



- Click away from the Clip Name field.

Now, all of [illegible] interview clips have been renamed with his initials, the clip's keywords, camera #, and take number.



TIP To reset any custom names you've applied to any clips, simply delete the contents of the Clip Name field in the Inspector. Since a clip must have a clip name, the original filename is used.

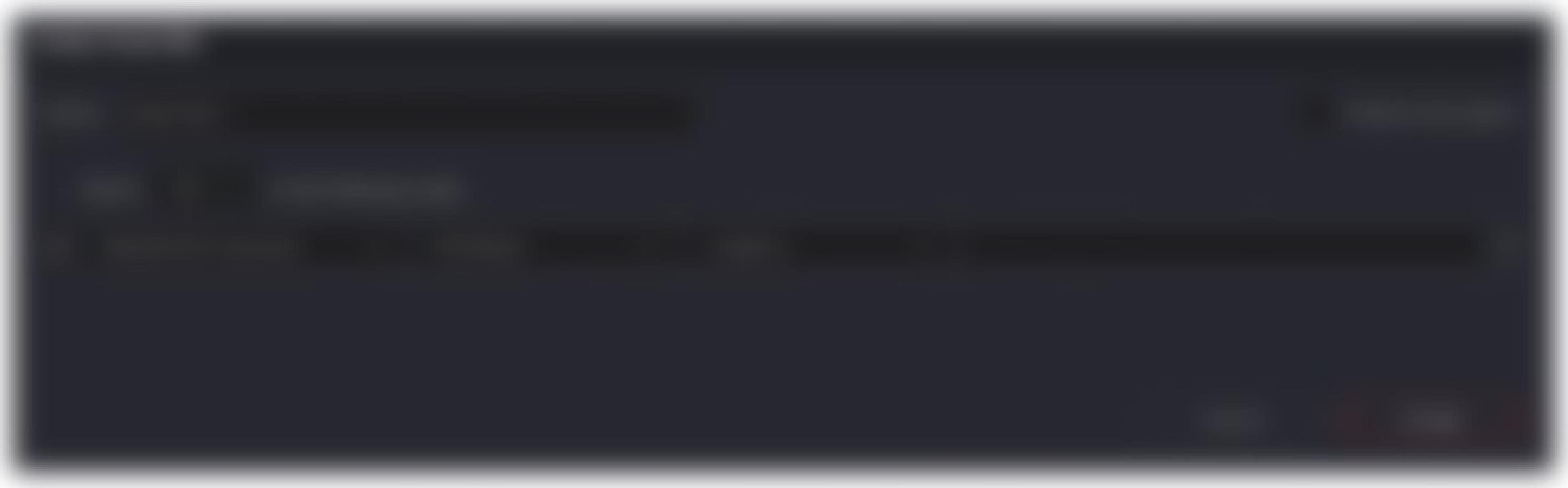
Importing metadata and using it to rename clips with variables can save hours of manual typing and provide clear, descriptive information.

Creating Custom Smart Bins

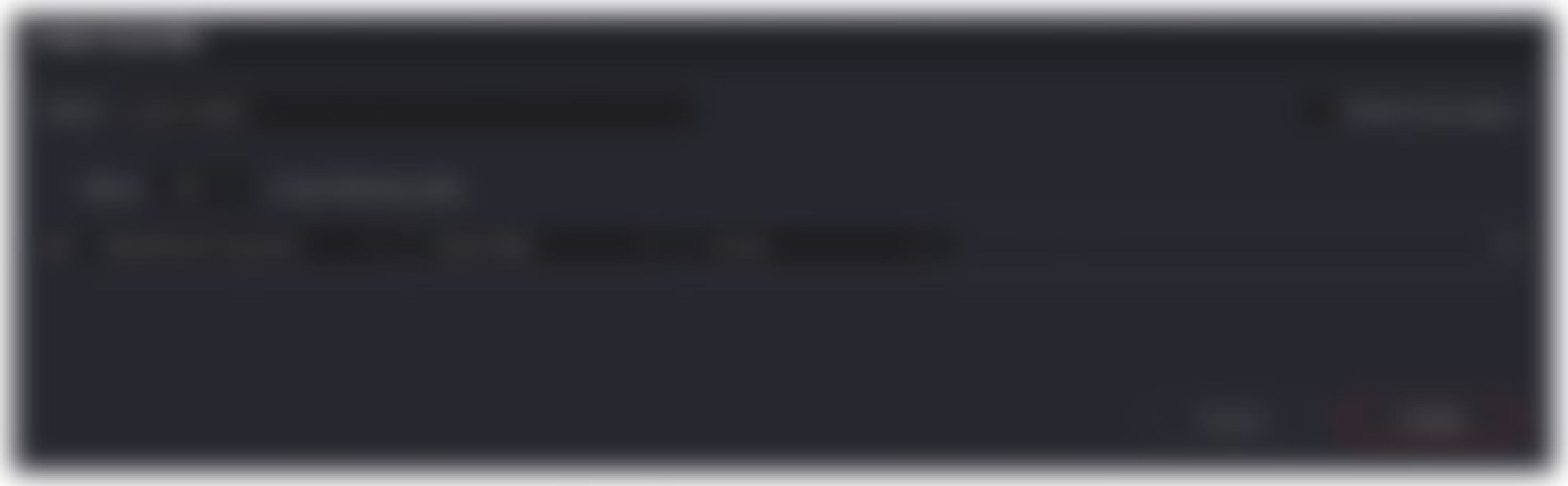
Using the various automatic smart bin options is a great way to help add order to your projects, but the true power of smart bins comes to the fore when you can set your own rules for what a smart bin will contain. In this exercise, you'll create your own smart bins so you can find and work with specific media from this project.

1. Click to select the media pool and choose File > New Smart Bin.

   The Create Smart Bin window appears. You'll use this smart bin to easily locate the clips you marked as Good Takes earlier.

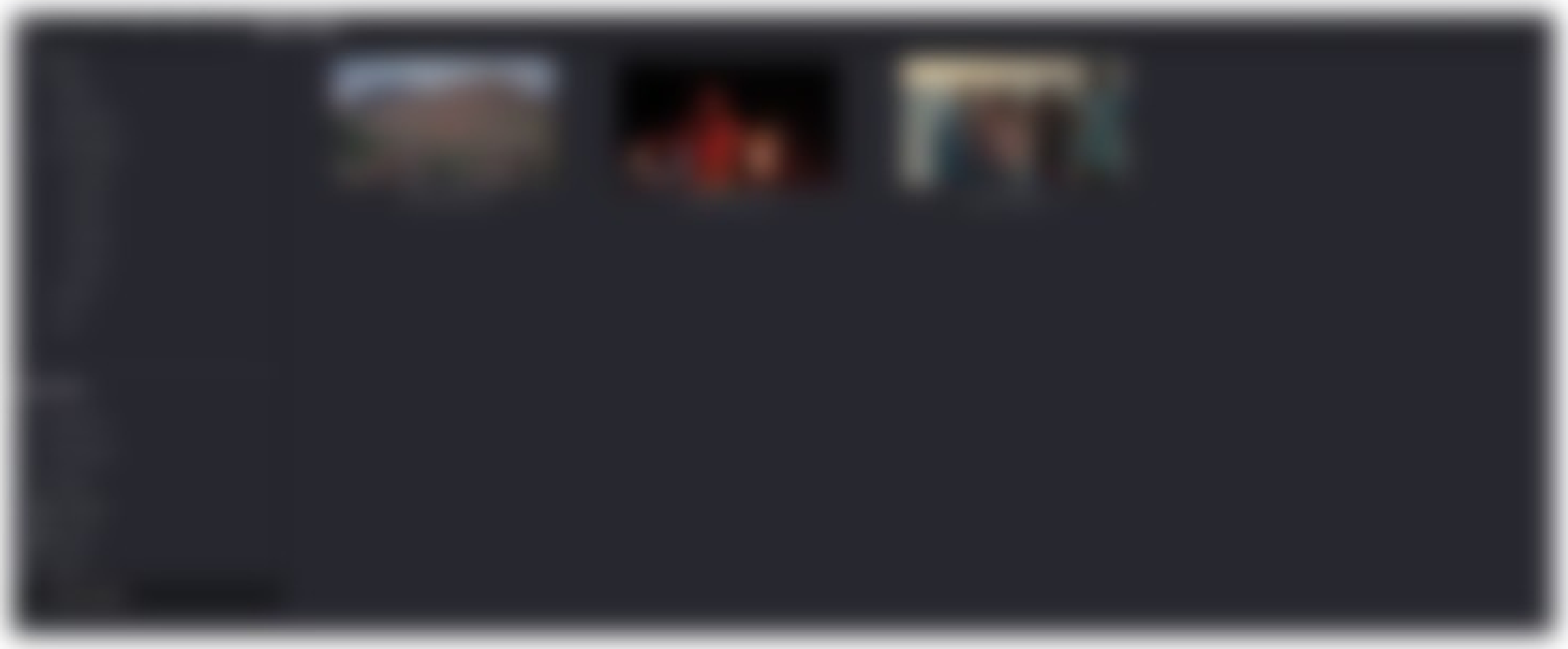


2. Name this Smart Bin **GOOD TAKES**.
3. Click the second dropdown menu (currently File Name) and choose Good Take.



NOTE The media pool will display the results of the smart bin criteria as you choose them.

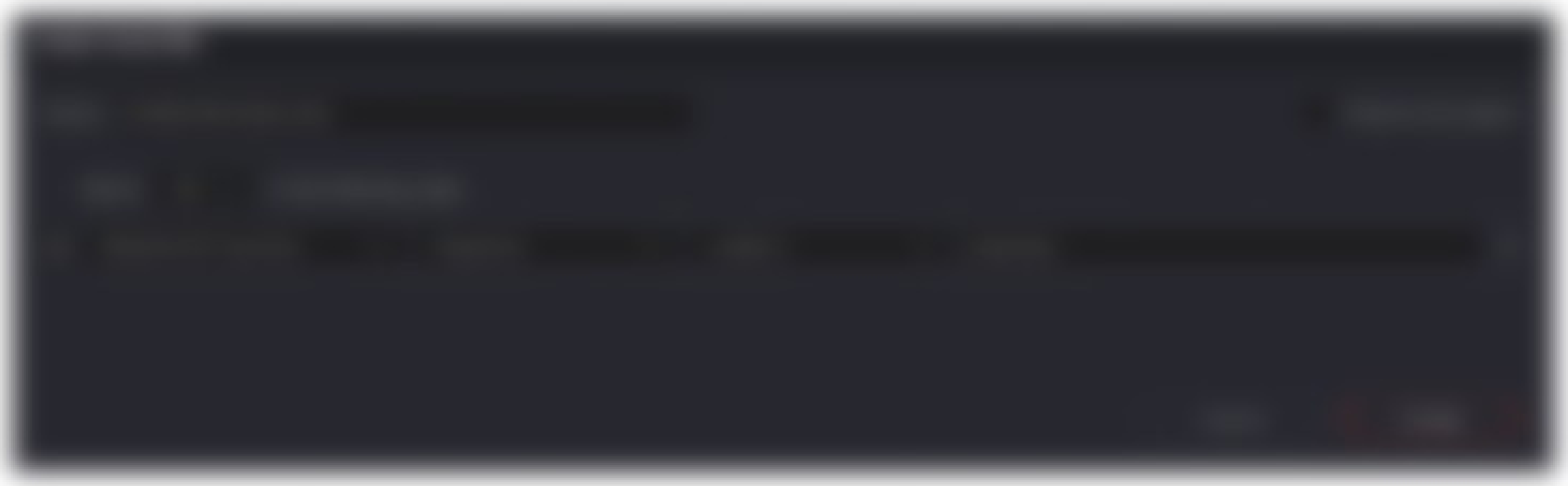
- Click Create to add the smart bin to the Smart Bins list.



To add other good takes to this smart bin, simply select the Good Take checkbox in the clip's metadata. Similarly, to remove a clip from this smart bin, simply uncheck the same option.

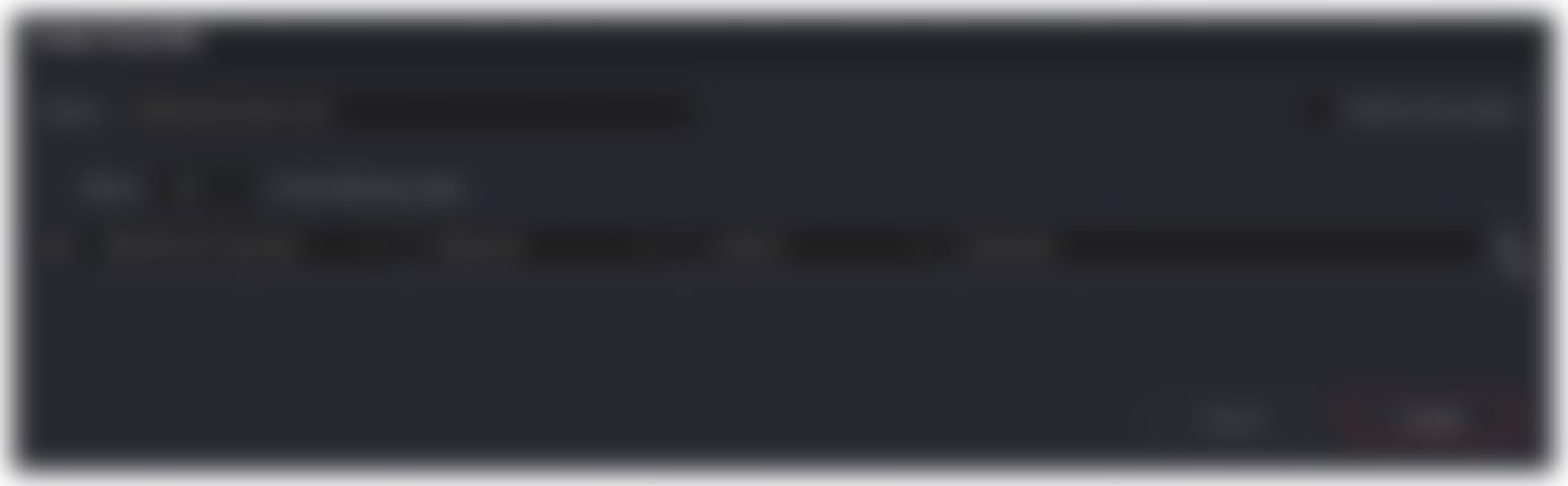
You can combine a series of rules to ensure that you're creating a smart bin that collects exactly the clips you'll need.

- Choose File > New Smart Bin and change the name in the New Smart Bin window to **[illegible]**.
- Ensure that the second dropdown menu is set to "Keywords" and the third dropdown menu is set to "contains," and type **Interview** in the final field.

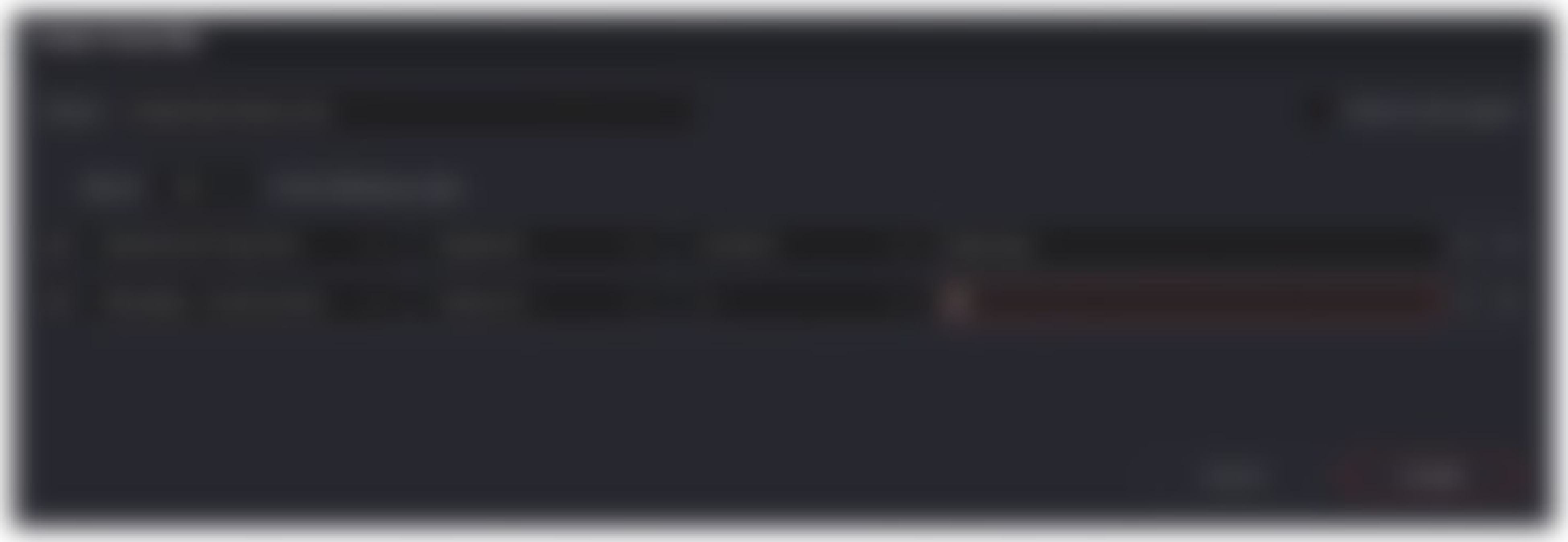


This means that any clip that has the "Interview" keyword applied will be included in this smart bin.

- Click the Add Criteria (+) button to add another set of criteria.



- Change the first dropdown menu from "Media Pool Properties" to "Metadata – Shot & Scene."
- Change the second dropdown menu to "Camera #," the third to "is," and then type **B** in the final field.

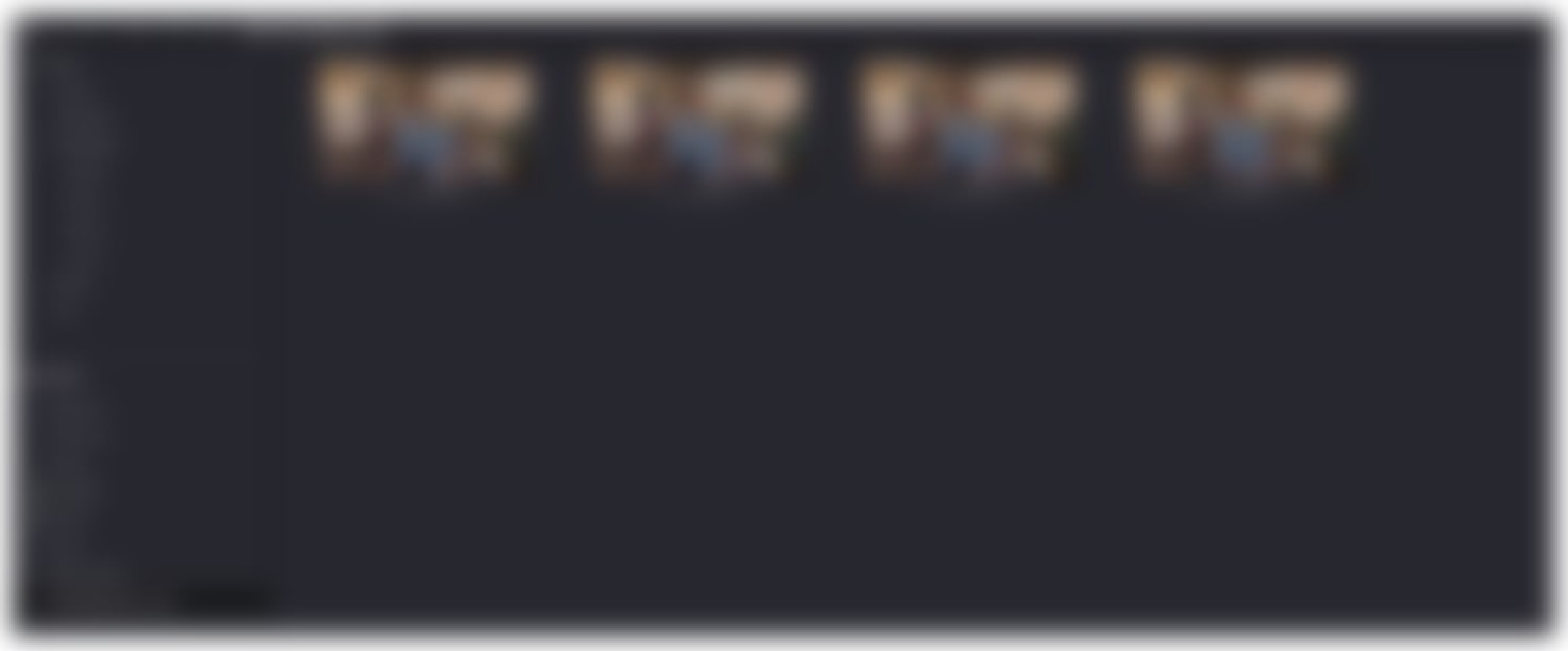


TIP To navigate quickly through the list of options, type the first letter of the metadata field you want. This will move to the next option in the list, starting with that letter. You can then select it from the list with your mouse. Keep pressing the same letter to jump to the next option starting with that letter.

This sorts the contents of this smart bin to include only interview clips from the "B" camera.

- Click Create.

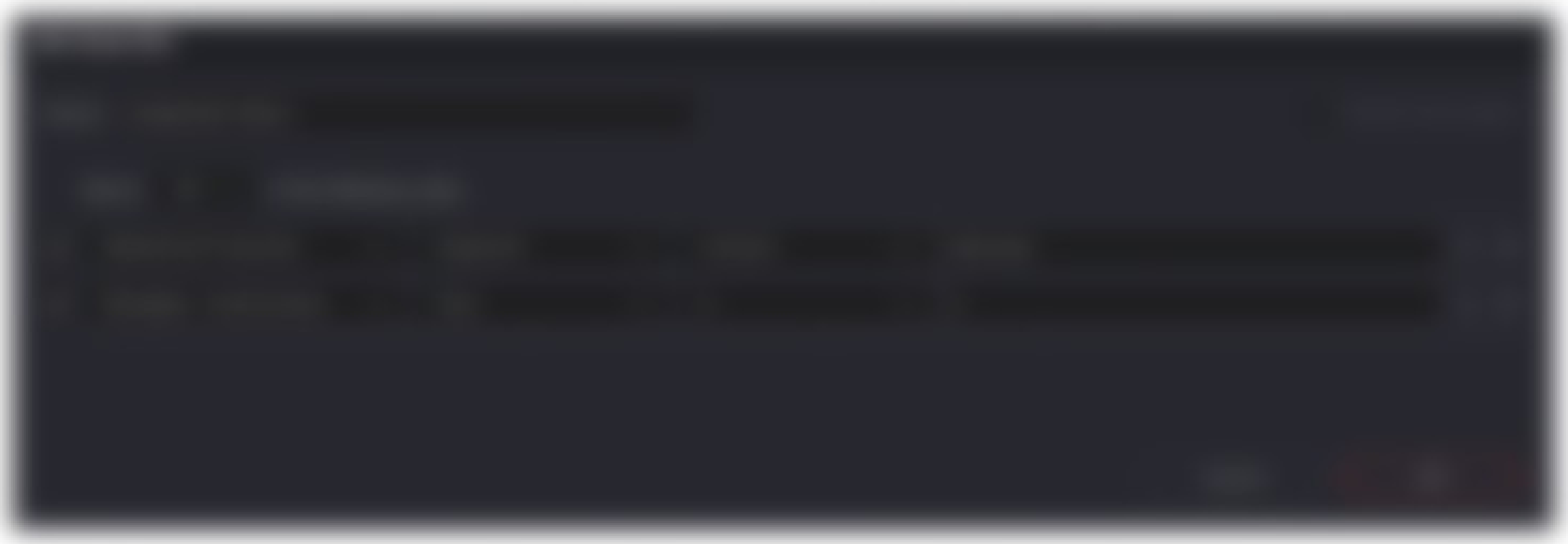
  The new smart bin is added to the Smart Bins list, collecting just the interview clips from the A camera.



  An alternative is to create a smart bin for a particular set of clips that you might want to use for a multicam edit.

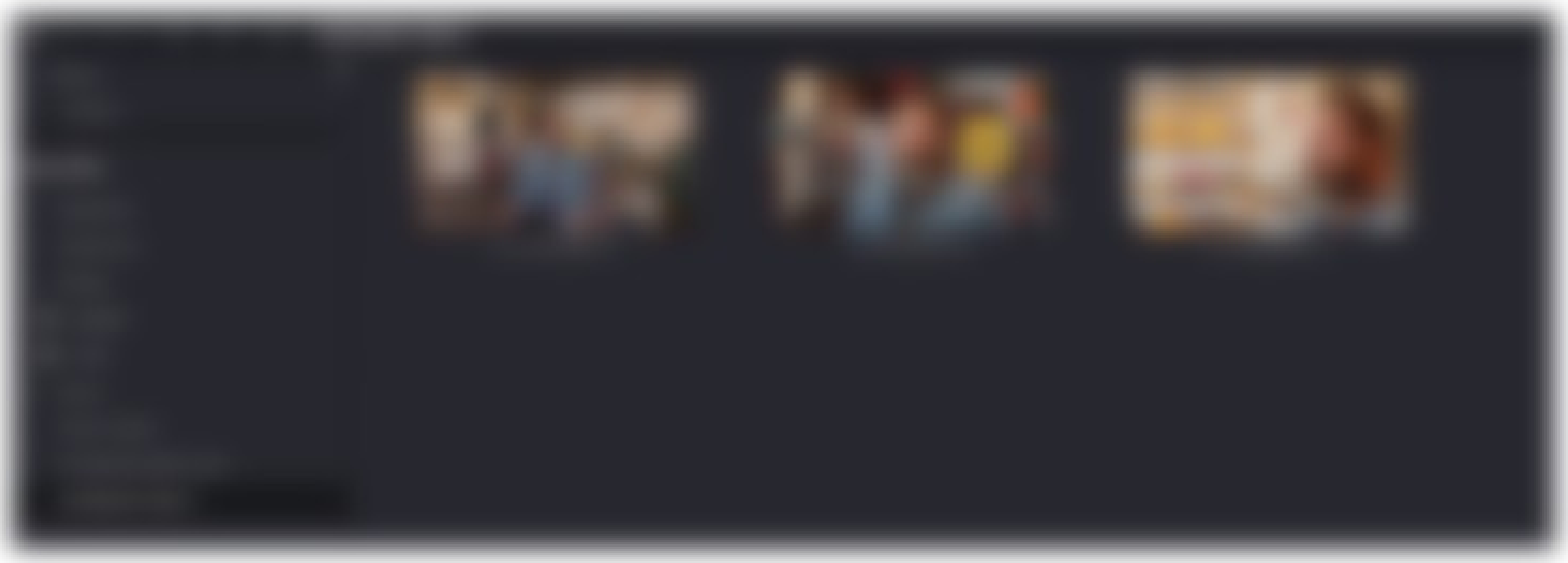
- Right-click the INTERVIEW MAIN CAM smart bin and choose Duplicate.
- Change the name of the duplicated smart bin to **INTERVIEW TAKE 2**.

- Right-click the INTERVIEW TAKE 2 smart bin and choose Edit.
- In the Edit Smart Bin window, change the "Camera #" option to "Take," ensure that the third dropdown menu is set to "is," and in the final field, type **2**.



- Click OK.

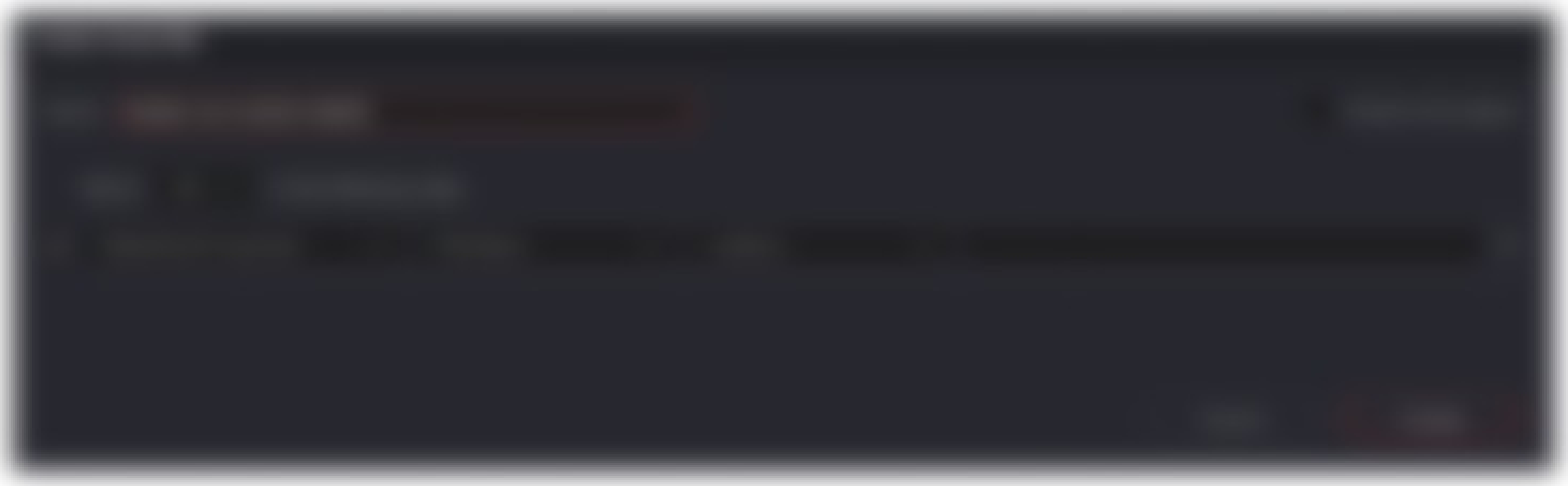
The smart bin now contains the three clips for the 3A take from the interview.



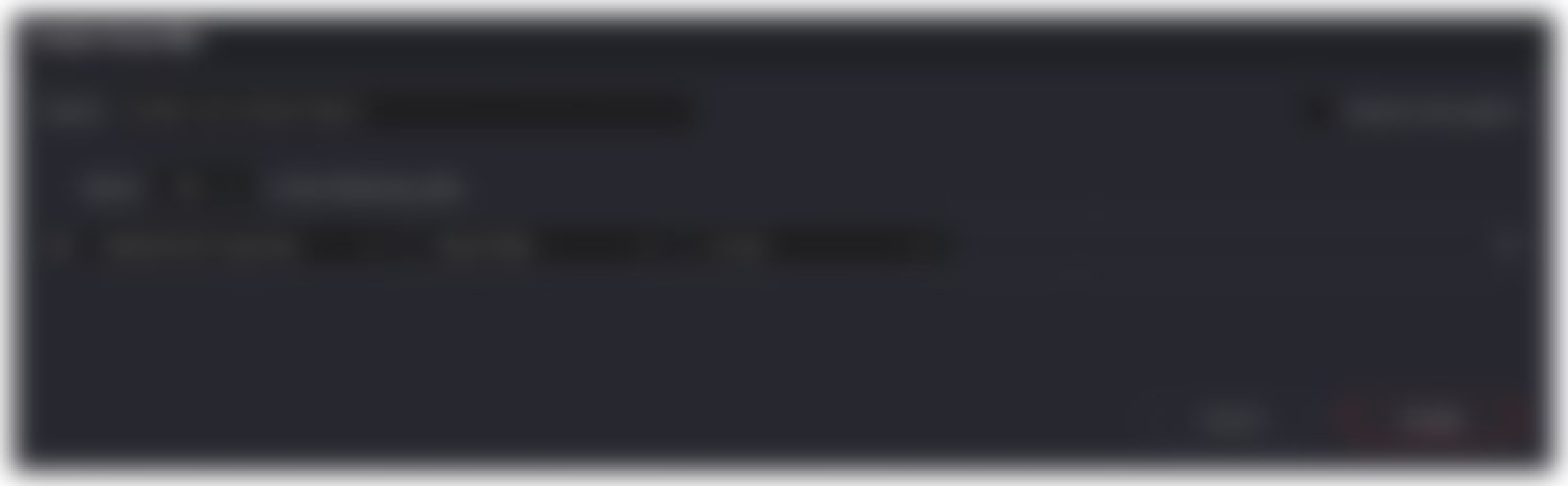
Using Additional Match Options

Custom smart bins can be created using the options to Match All or Any of the listed rules you choose. However, for added flexibility, you can choose to add additional rule subsets that have their own matching options.

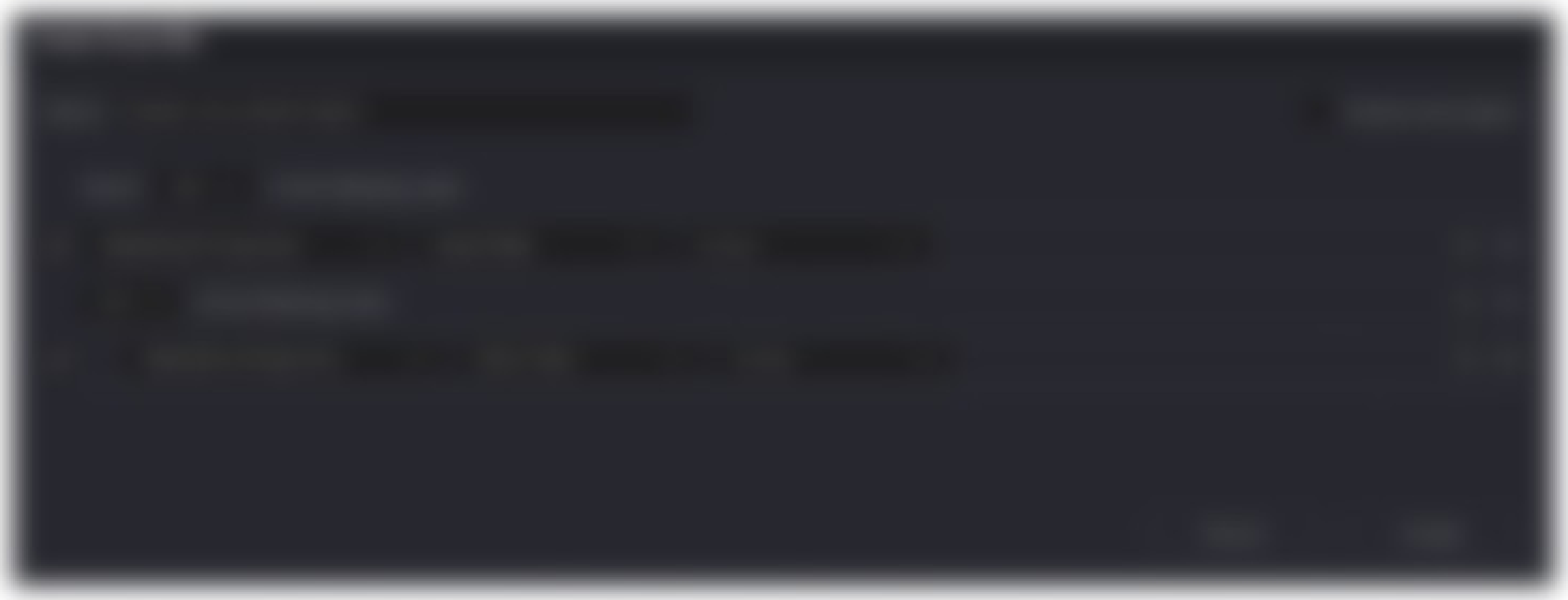
1. Choose File > New Smart Bin.
2. In the New Smart Bin window, name the smart bin **SCENE 2 & 3 GOOD TAKES**.



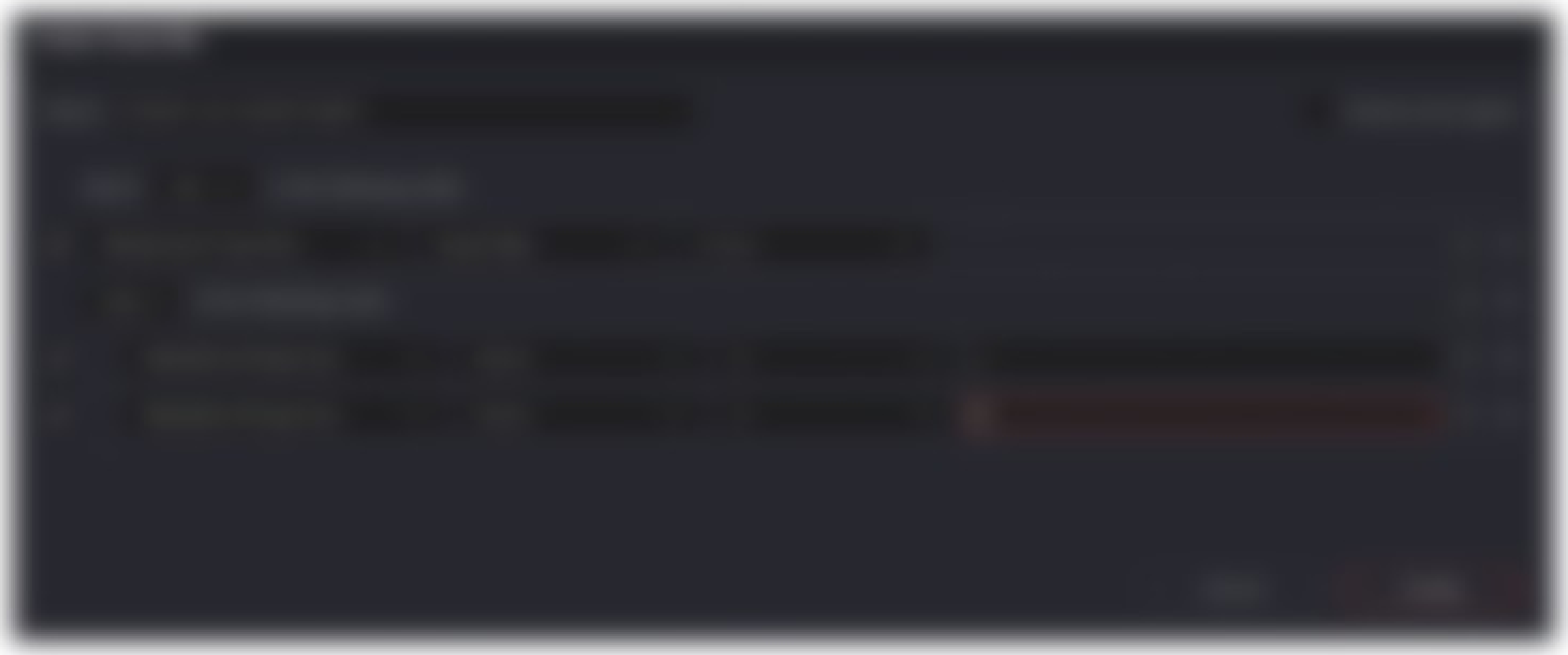
3. Change the second dropdown menu to Good Take and leave the third menu set to "Is true" to reveal the good takes in the media pool.



- Option-click (macOS) or Alt-click (Windows) the Add Criteria button (+) to add a new subset of Any/All rules.

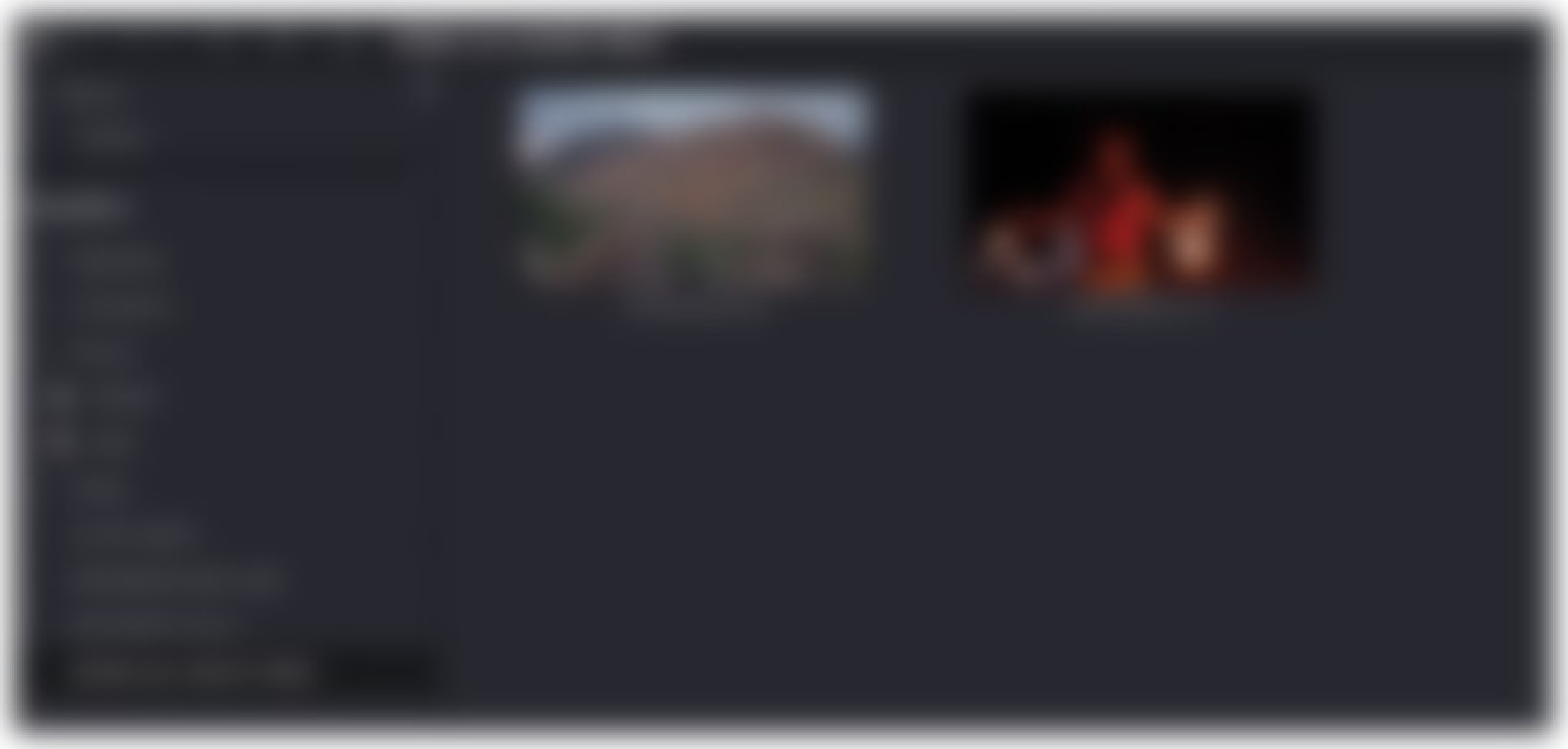


- Change the new "Match All of the following rules" menu to "Any" and change the second dropdown menu to "Scene," the third dropdown menu to "is," and type 2 in the final field.
- Click the Add Criteria button (+) and change the final field in this rule to 3.



This will filter just the Good Takes from either scene 2 or scene 3 in the media pool.

- Click Create.



If your new smart bin is empty, find some clips in the Scene 2 and Scene 3 smart bins and mark them as Good Takes in the Inspector.

TIP To make a smart bin available across different projects, click the Show in All Projects checkbox. While this doesn't make the contents of the smart bin available in other projects (see the "Power Bins" section later in this lesson), it will enable you to reuse the rules for that smart bin in another project (including existing projects). This is very useful if you often use the same rules for smart bins across multiple projects. These smart bins are available in a smart bin folder called User Smart Bins.

Creating Subclips

Another technique commonly used by editors dealing with large amounts of footage, especially long clips, is to create a series of subclips. You encountered subclips in Lesson 1 when you edited soundbites from the interview, and the subclips made it easier to work with smaller portions of footage rather than the very long interview clips they were taken from.

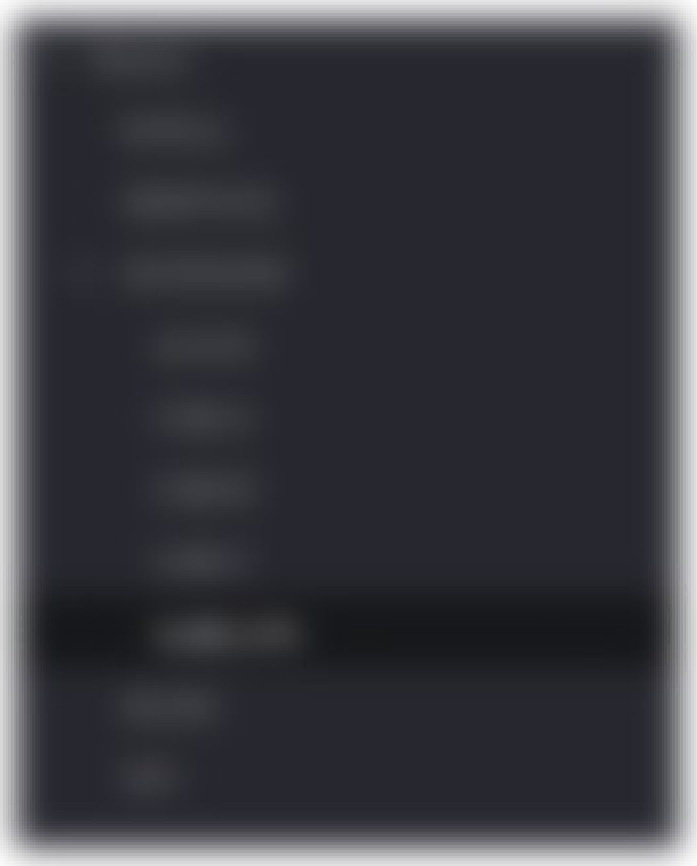
The important thing to remember about subclips is that, while they are created from a longer clip, they refer to the same source media files on your system. As a result, they don't take up any more storage space on your system, regardless of how many subclips you create.

Also, while subclips initially inherit the metadata of the clip they are created from, the subclip itself is a completely independent clip. This means that you can store them in different bins, and they can each have their own metadata.

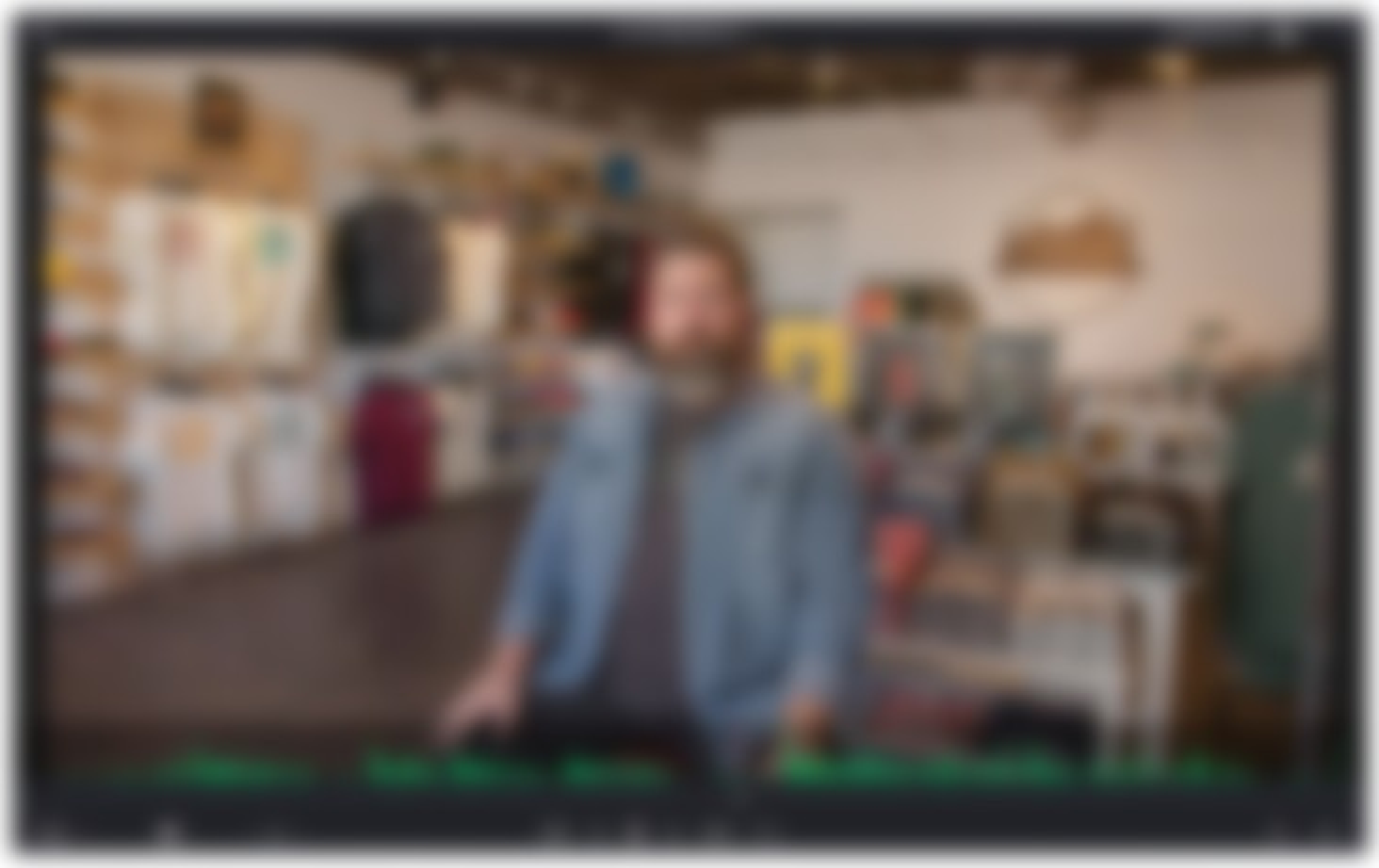
You will now create a series of subclips from the main interview camera you used in Lesson 1.

NOTE In this exercise, you'll create subclips in the media page. However, the same techniques can be used to create subclips from clips in the source viewer in the edit page.

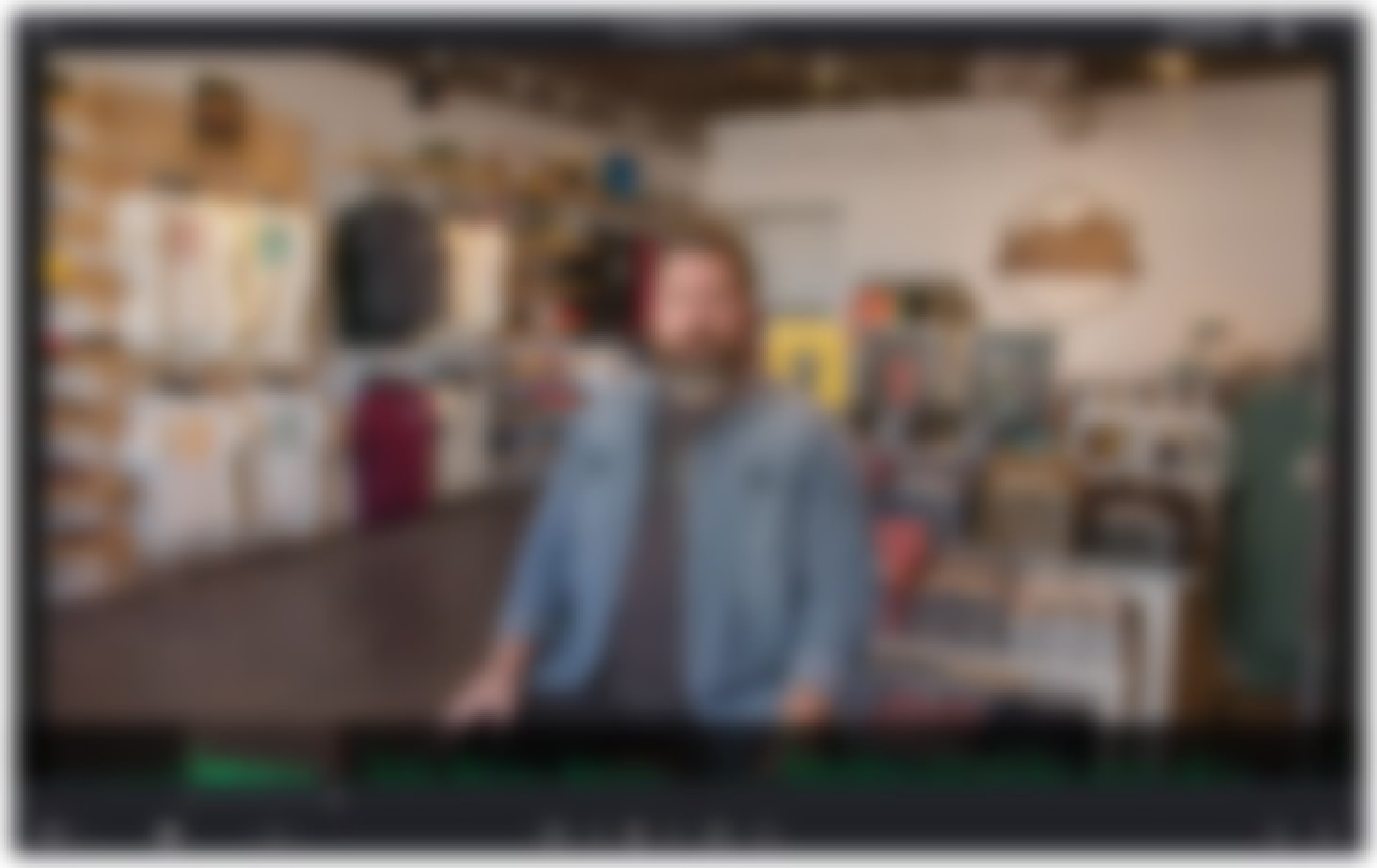
- Select all the clips in the INTERVIEW A-CAM smart bin and drag them into the viewer.
- In the INTERVIEW bin, create a new bin and name it **SUBCLIPS**.



- Use the Recent Clips menu in the viewer to ensure that [illegible] is active in the viewer. Click the viewer's Options menu, and choose Show Audio Waveforms in Source Clip.



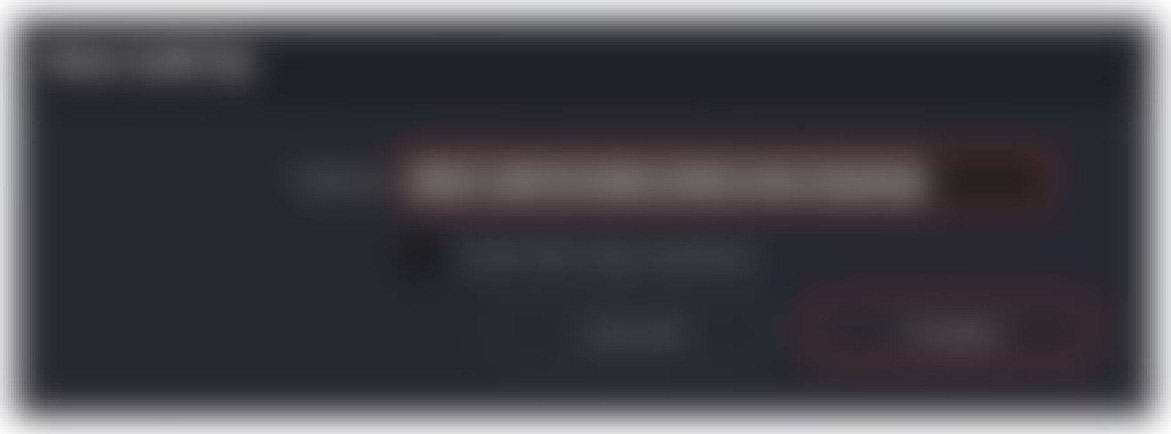
- Set an In point just before Chris says, "My name's Chris Long..." and an Out point after he says, "...Las Cruces, New Mexico."



> **TIP** You don't need to be too precise when setting In and Out points for subclips. In fact, setting them to include a little more than you intend to use is a recommended technique (see "Adjusting Subclip Limits" later in this lesson).

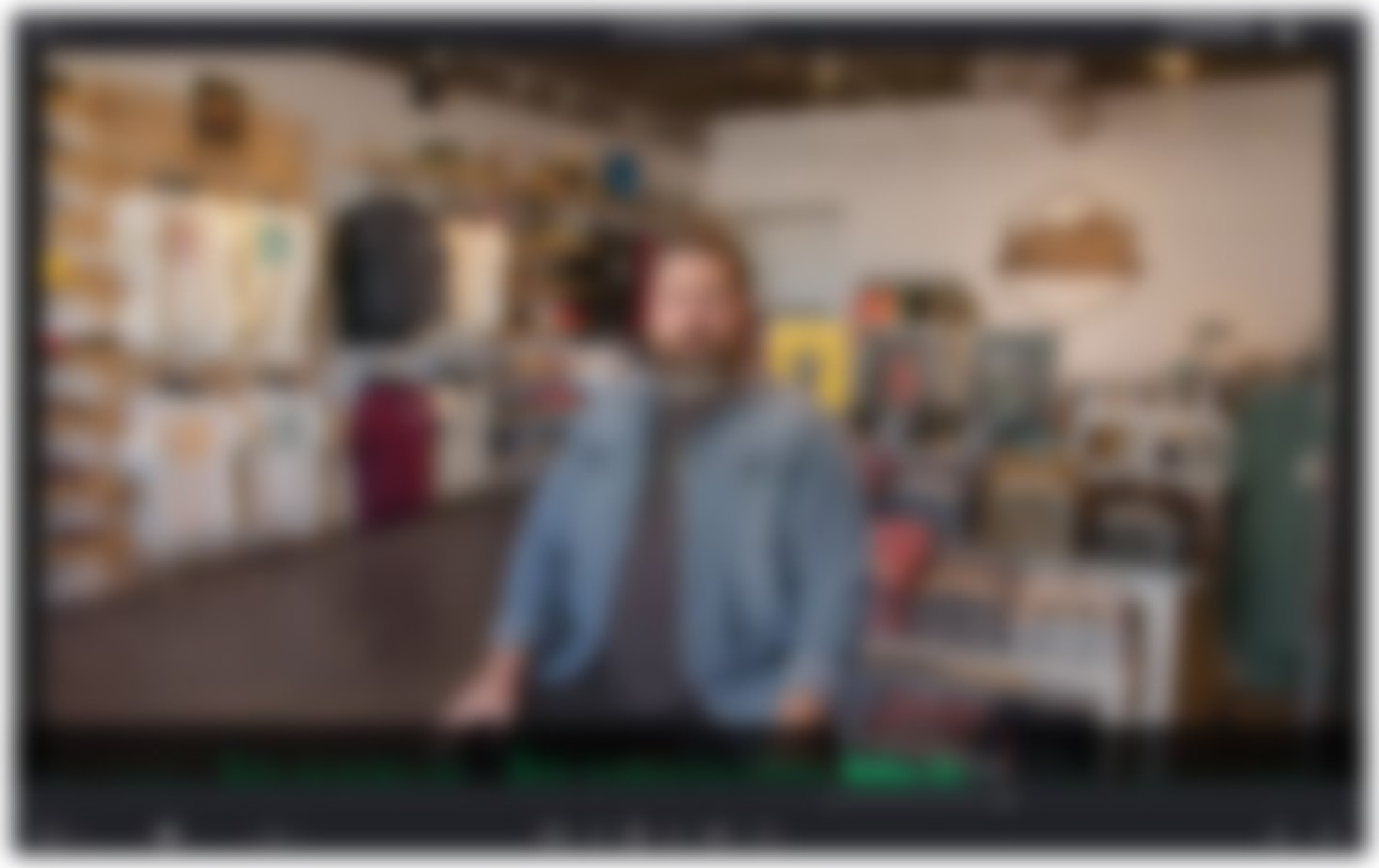
- Choose Mark > Create Subclip or press Option-B (macOS) or Alt-B (Windows).

  The New Subclip window opens, asking you to confirm the name of this subclip, which is the same filename as the original clip but with the word "Subclip" added to the end.



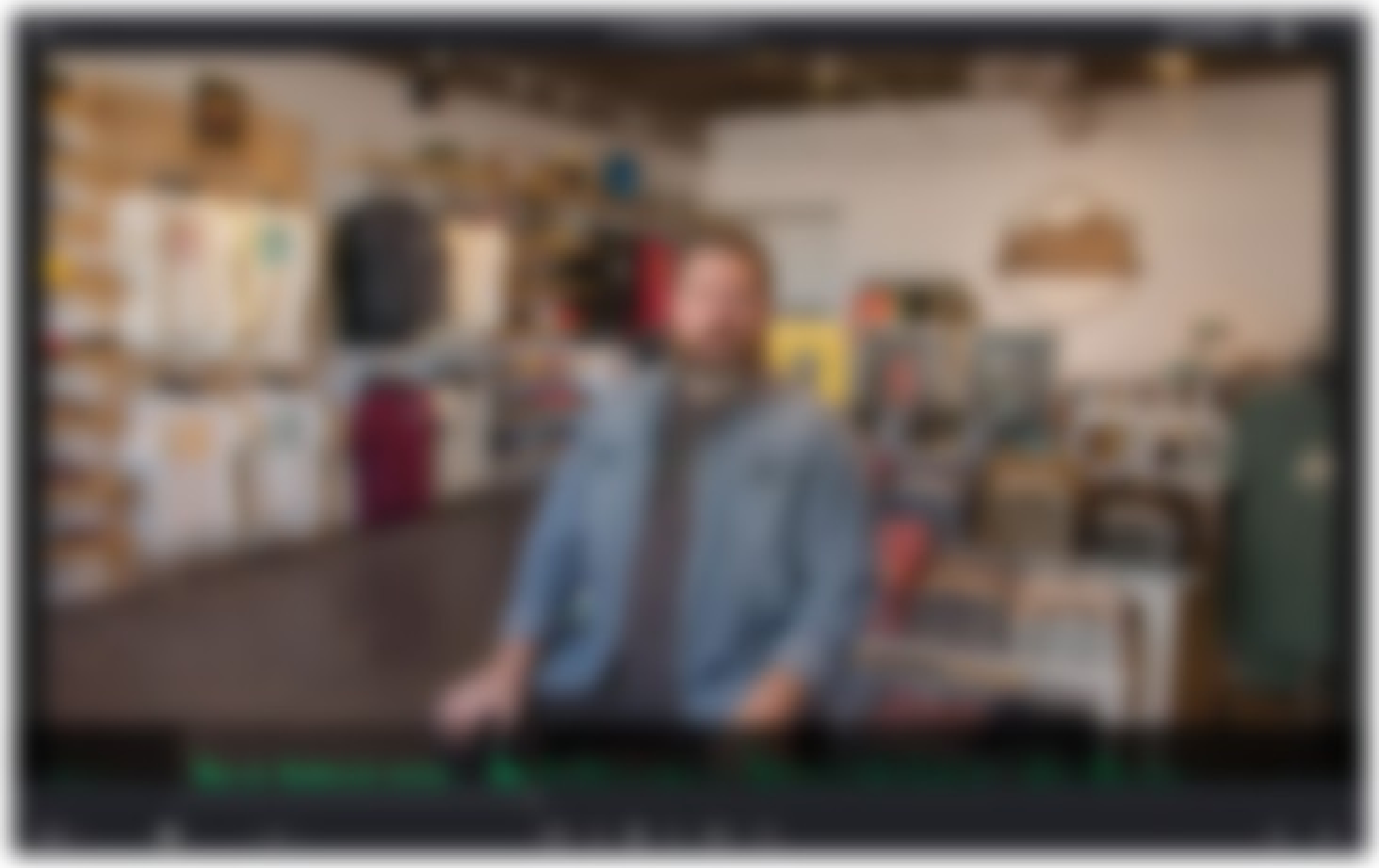
- Click Create to add the subclip to the current bin.

- From the viewer's recent clips menu, choose the clip [illegible] and set an In point just before Chris says, "That's what really inspires us..." and an Out point after he says, "...the design process starts."

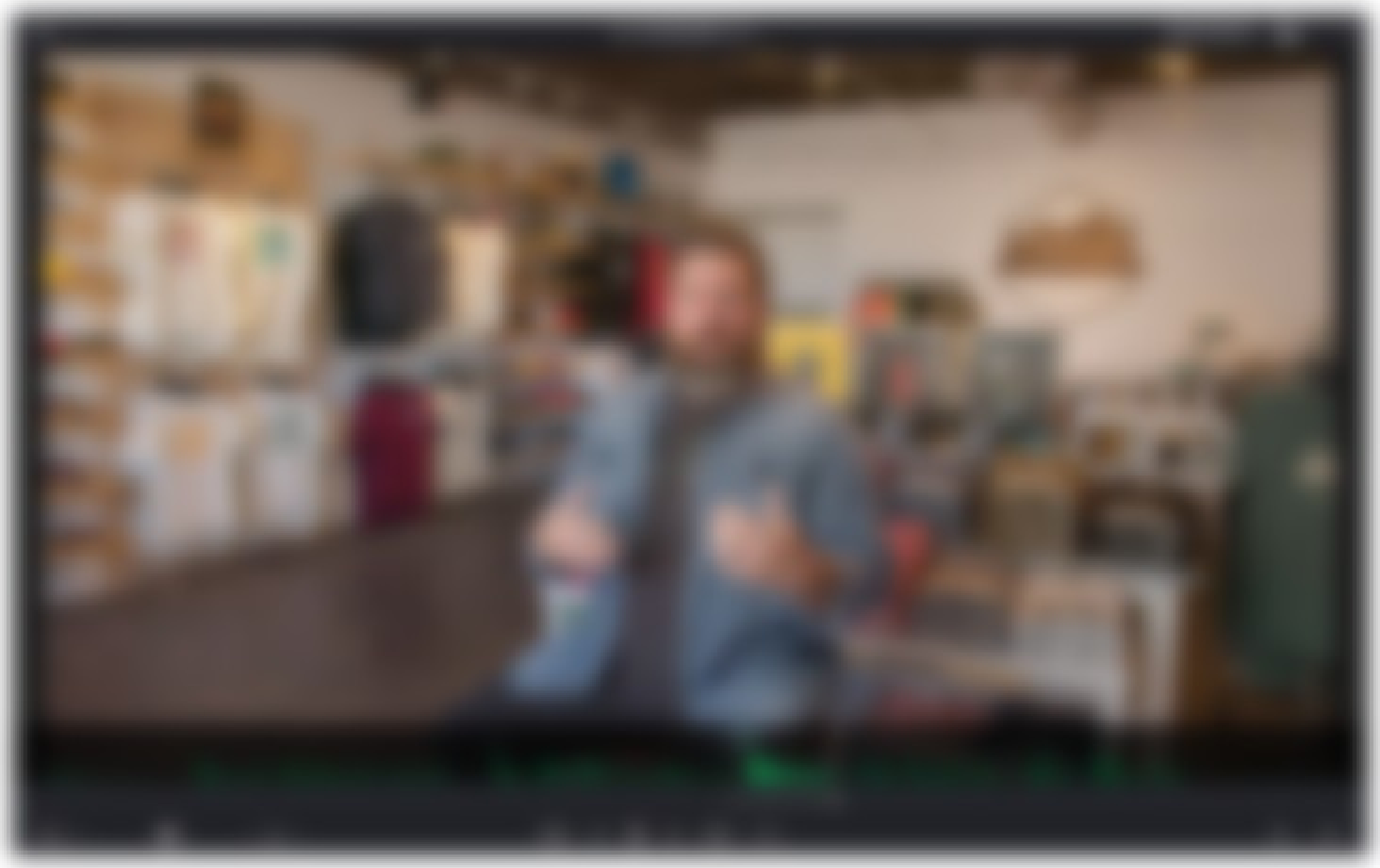


- Drag the clip from the viewer into the SUBCLIPS bin in the media pool and click Create in the New Subclip window.
- From the viewer's recent clips menu, choose the clip [illegible].

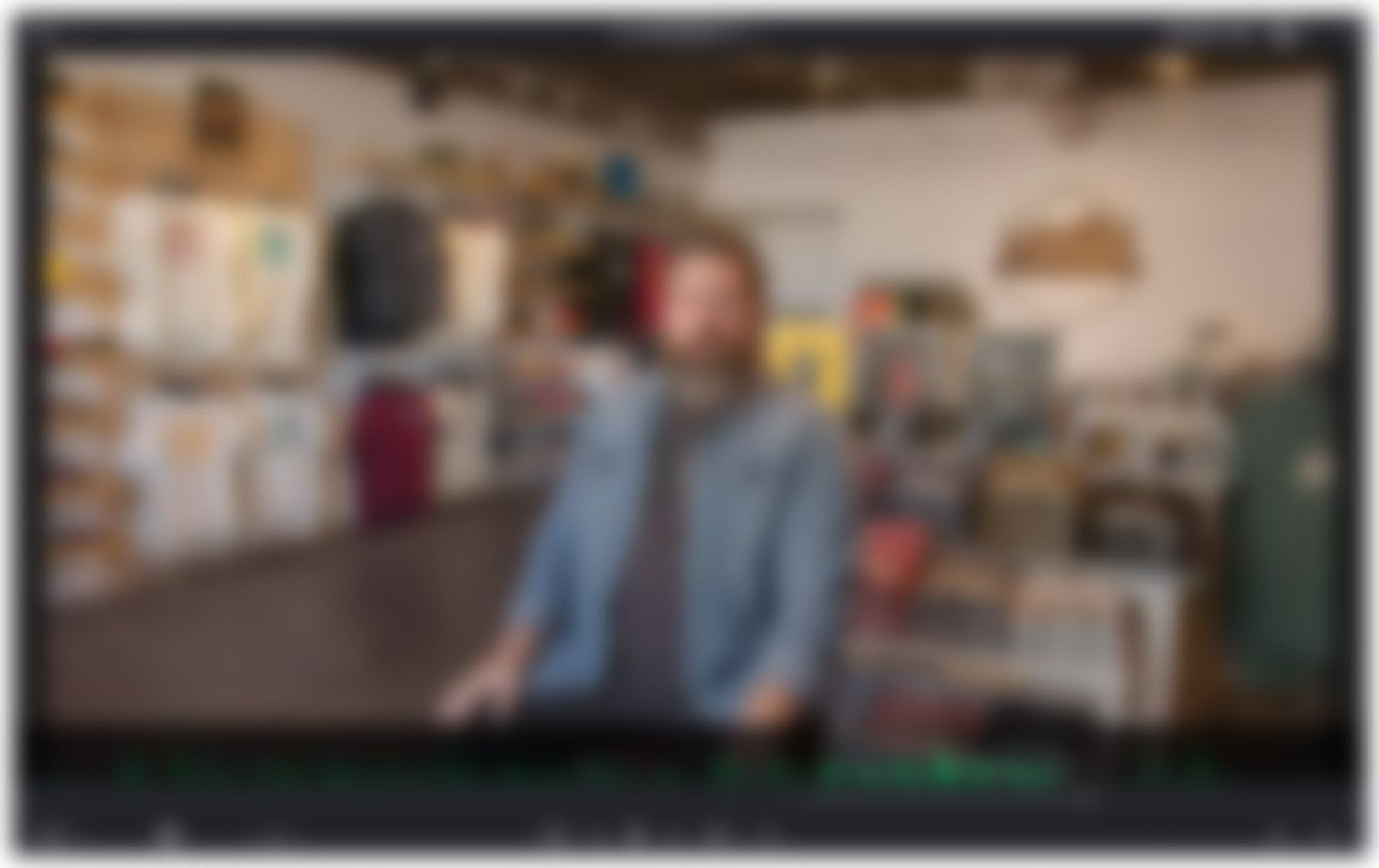
- Set an In point just before Chris says, "We want people to experience..." and an Out point after he says "...changed my life."



- Again, drag the clip from the viewer into the SUBCLIPS bin and click Create in the New Subclip window.
- Continue playing the clip in the viewer and set another In and Out point around where Chris says, "Our brand is really a reflection of our community and who we are."

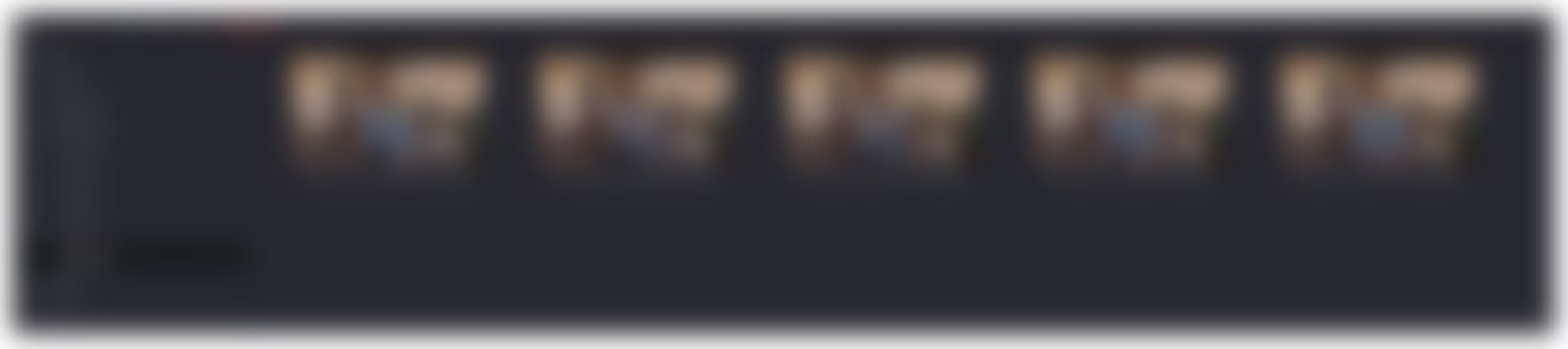


- Drag the clip into the SUBCLIPS bin and click Create.
- Select clip [illegible] from the viewer's recent clips list, and mark an In point where Chris says, "We're just telling our story," and an Out point after he says, "That's why we say experience the southwest."



- Drag the clip into the SUBCLIPS bin and click Create to create the final subclip for this exercise.

  You now have five subclips in the SUBCLIPS bin.

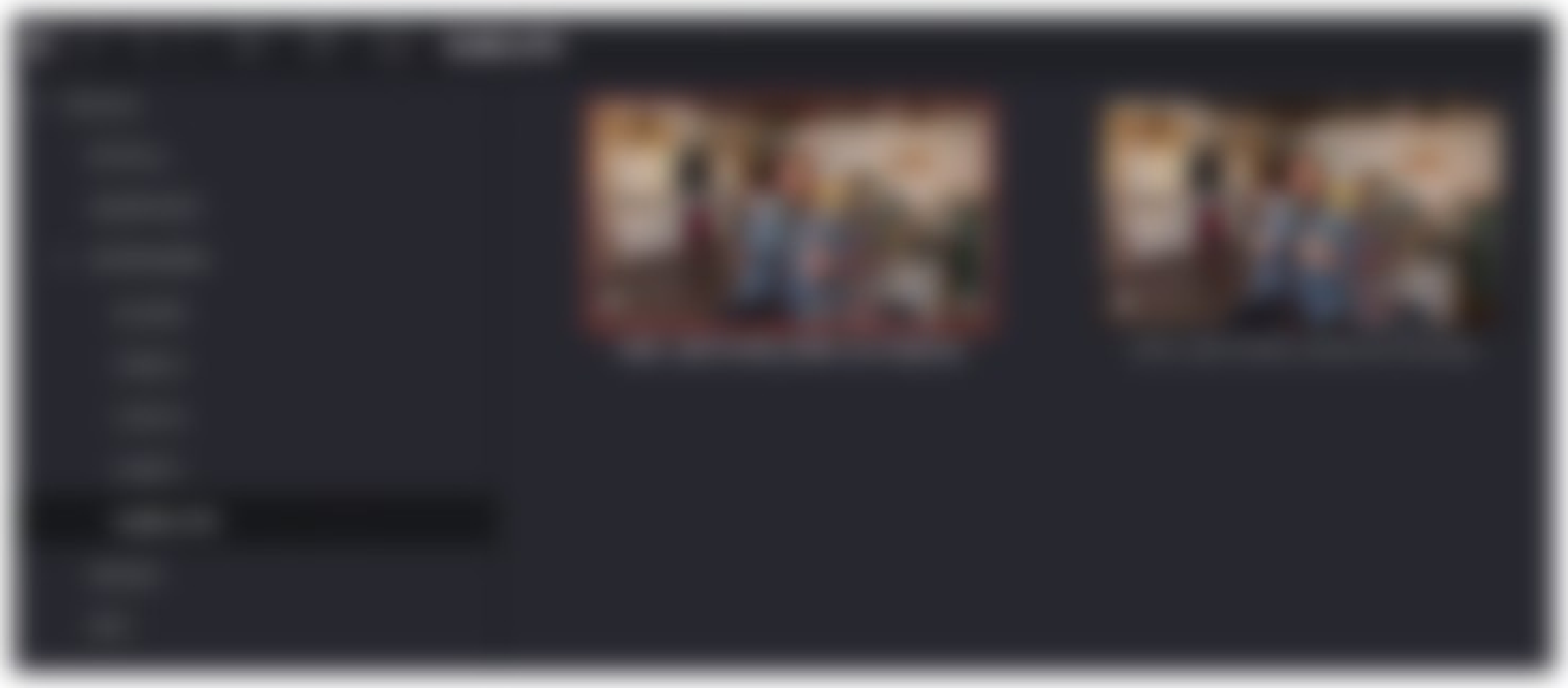


Modifying Subclip Metadata

Now that you've created the subclips, you can use some of the metadata tricks you've learned throughout this lesson.

1. In the media pool's Sort menu, choose Start TC to arrange these subclips based on their starting timecode.

2. Select the first clip, [illegible]



3. Play the clip in the viewer to reminder yourself of the soundbite you've subclipped.

4 In the Metadata panel, type **Intro** in the Description field.

5 Select the second subclip, [illegible], and type **Inspiration** in the Description field.

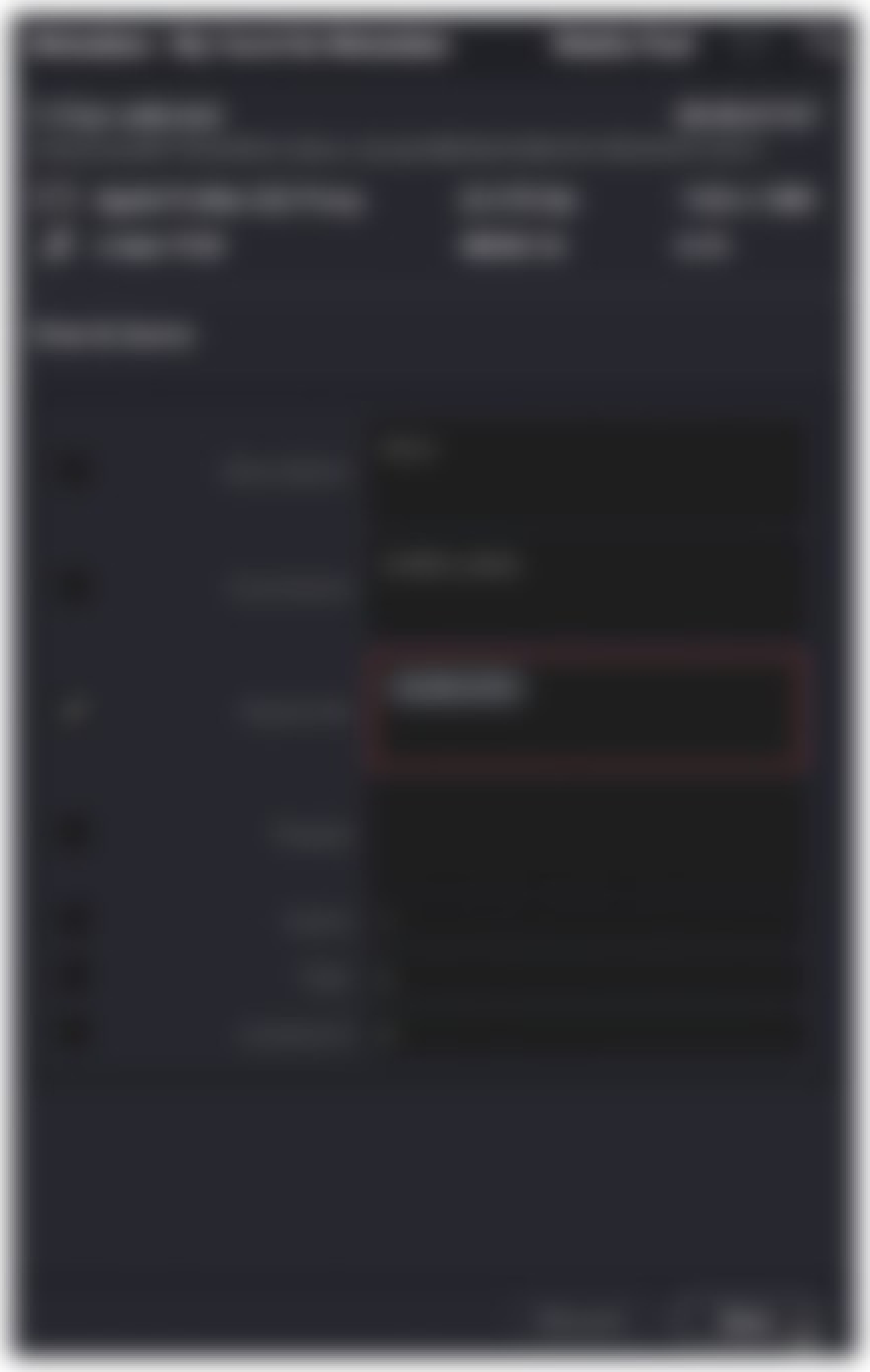
6 Select the third subclip, [illegible], and type **[illegible]** in the Description field.

7 Select the fourth subclip, the first clip called [illegible], and type **Experiences** in the Description field.

8 Select the fifth subclip, also called [illegible], and type **Brand** in the Description field.

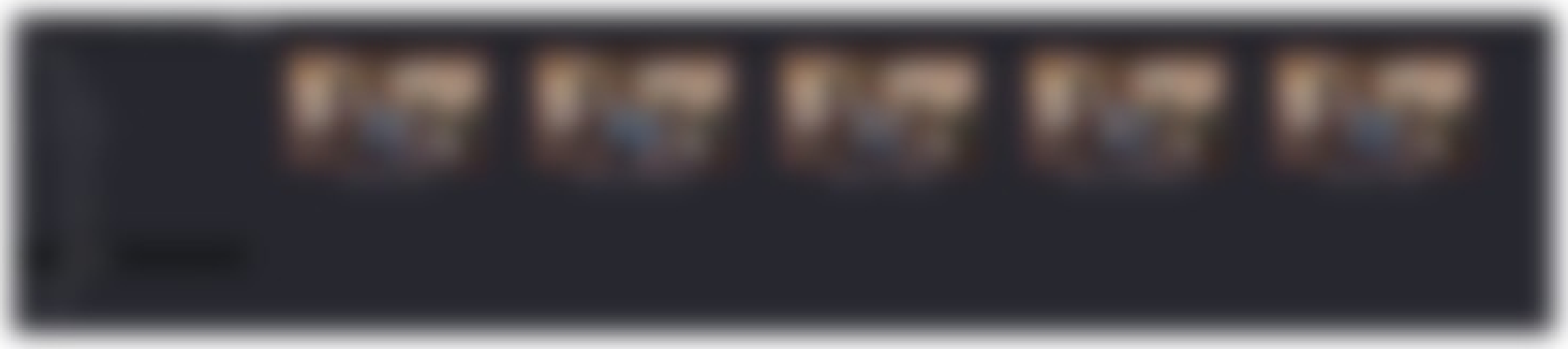
NOTE There are two clips in this bin with the same name because they were originally subclipped from the same source clip. Sorting the media pool by starting timecode puts these clips in the order they were recorded.

- [illegible]

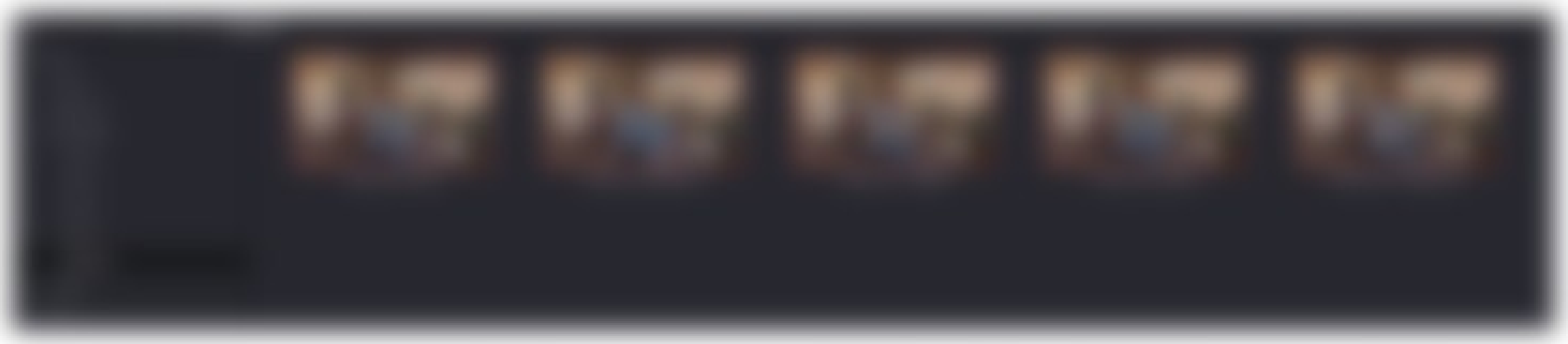


- [illegible]
- [illegible]

- Click away from the Name field to rename all the subclips appropriately.



- Change the media pool's Sort menu back to Clip Name to reorder the clips based on their new clip names.



You can now edit using these subclips just like any other clip, as you did in Lesson 1.

Adjusting Subclip Limits

One limitation of a subclip is that, even though it references the original source media file, it is limited to the mark in and out points you used to create it. Therefore, it's good practice to set your mark in and out points a little before and after the portion you want to subclip, leaving a little wiggle room when you later trim the clips in the timeline.

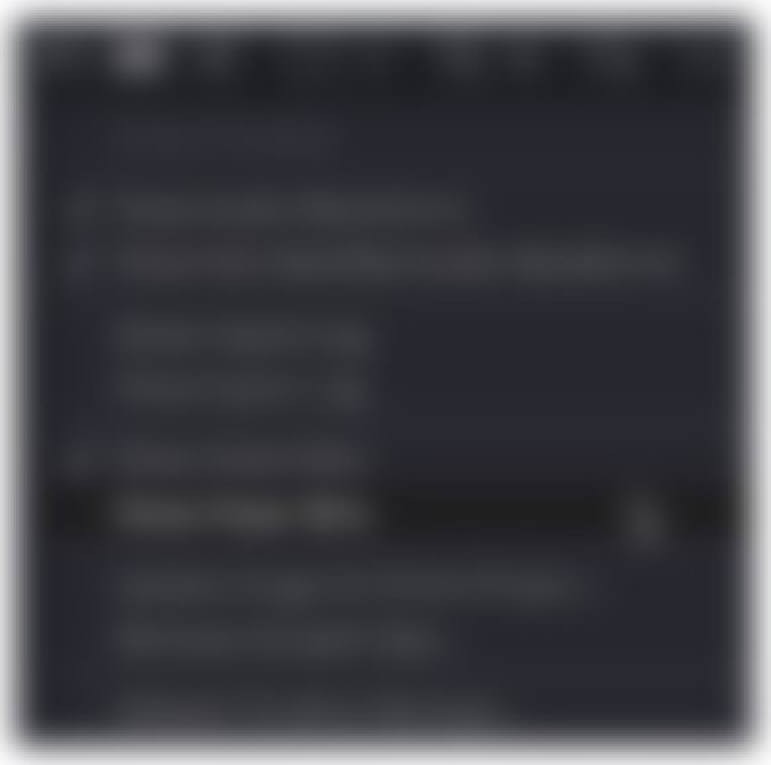
However, when you find that you need a few extra frames not included in your subclip, you can always extend the limits of a subclip by right-clicking a subclip and choosing Clip Operations > Edit Subclip.

This allows you to adjust the start and end timecodes for the subclip, updating the limits of the subclip in both the media pool and the timeline simultaneously.

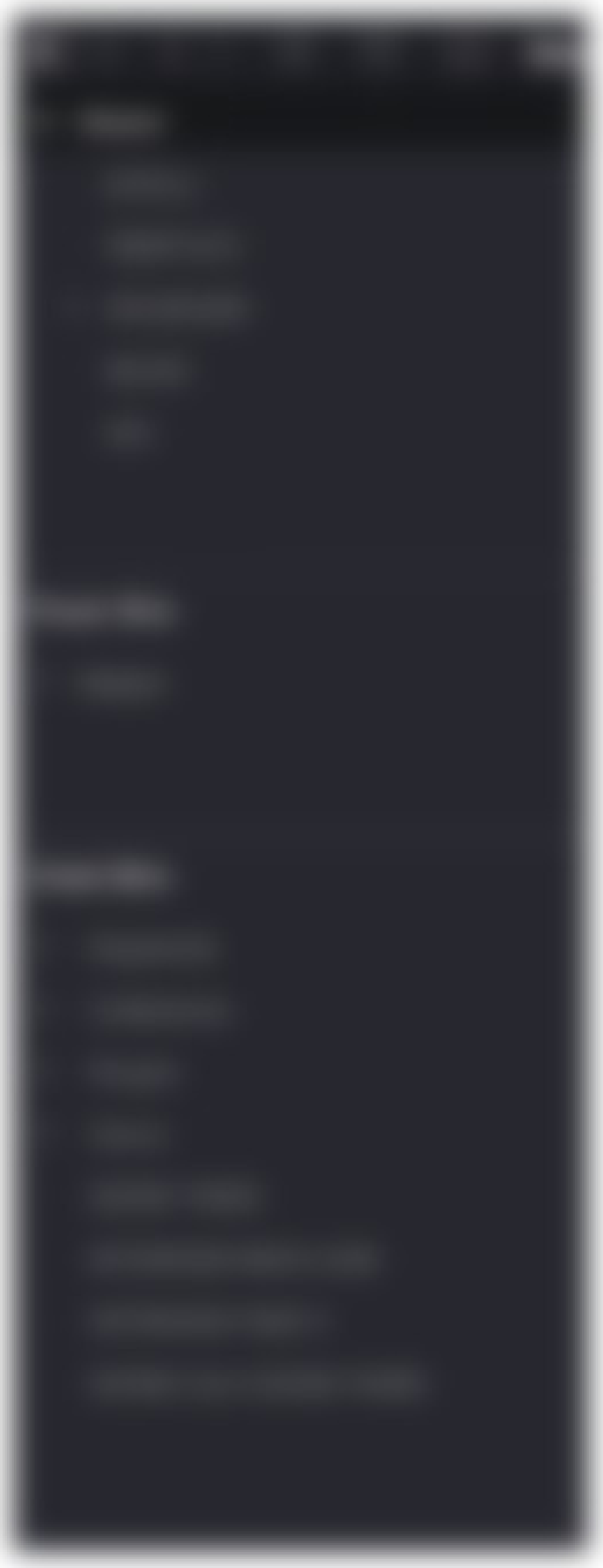
Power Bins

Throughout this lesson, you've been using regular bins and smart bins, both of which are great organizational tools to use within a project. However, a third bin type available in DaVinci Resolve is the power bin. Unlike regular bins or smart bins that exist only within the current project, power bins are available across every project within the current project library. They are useful for storing elements you want to reuse across two separate projects, such as graphics, titles, sound effects, or music files.

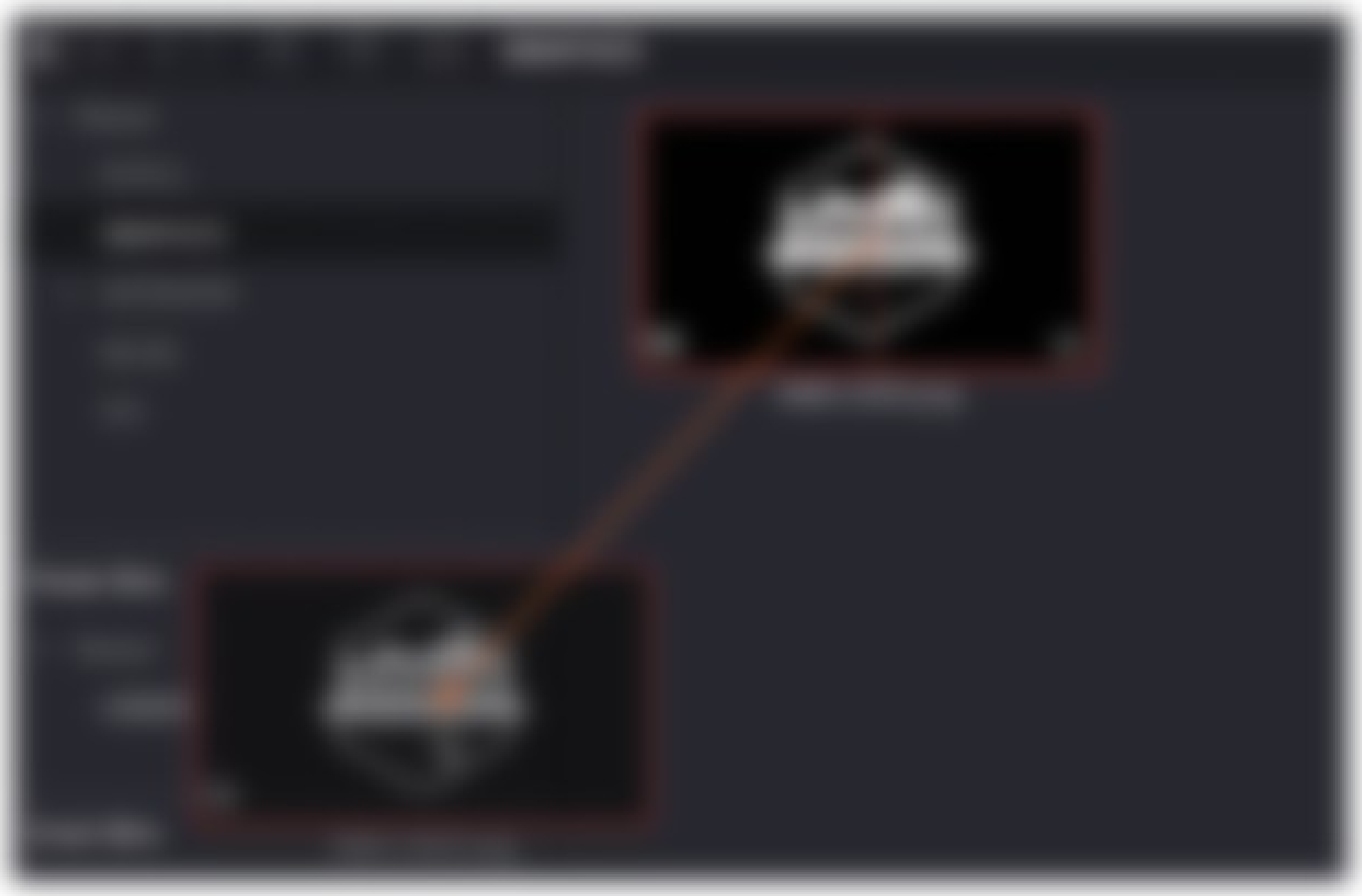
- Click the media pool's options menu and choose Show Power Bins.



Power bins are displayed in the media pool above the smart bins.



- Select the Power Bins Master bin and press Shift-Command-N (macOS) or Shift-Ctrl-N (Windows) to add a new power bin. Name the bin **LOGOS**.
- Select the Graphics bin currently in your project, which contains a graphic file called [illegible], and drag this clip to the LOGOS power bin.



The graphic will now appear in the power bin.

Power bins are accessible from every project in the current project library, so the image file (plus its associated metadata) will now be easily accessible for any other project, although the media files remain in the same place. The next time you find yourself with a series of projects that share elements, whether sound effects, graphics or common video elements, you can use power bins to save time manually importing clips and any required metadata into different projects.

NOTE Multicam clips, compound clips, timelines, and Fusion clips cannot be placed in power bins. Instead, you can choose to export a bin with these elements if you need to transfer them between projects (see "Exporting Metadata and Bins" above).

You should now have a good understanding of just how powerful Resolve is at helping you organize your projects. Remember, while some projects may require much more organization than others, the techniques demonstrated throughout this lesson can be applied at any point you're working on a project. In many cases, these techniques can be applied as readily in the edit page as they can in the media page. Project organization doesn't just occur once at the start of a project; it is something you will constantly refine as you edit.

Lesson Review

1. True or false? You can save a preset of your current project settings to make future project configuration easier.
2. Where can you change the configuration of a clip's audio channels from stereo to mono?
   a) Media pool
   b) Audio Configuration panel in the Inspector
   c) Clip Attributes
3. What method(s) can you use to auto sync audio to video files in the media page?
   a) Waveform
   b) Timecode
   c) Transcription
4. True or false? Subclips create duplicates of the original media files on your hard drive.
5. Which type of bin allows you access to its contents across different projects in the current project library?
   a) Smart bins
   b) Super bins
   c) Power bins

Answers

1. True. Project presets are saved in the Presets panel of the Project Settings.
2. b) and c) Changing a clip's audio channels configuration from stereo to mono can be done in either the Inspector's Audio Configuration panel or Clip Attributes.
3. a) and b) Waveforms and timecode can be used to auto sync audio.
4. False. Subclips do not create new media files on your hard drive; they link directly to the original media file.
5. c) Power bins.

Lesson 6

AI Workflows

In the previous lessons, you have been exploring the tried and tested approaches to creative editing that have been used for decades by editors worldwide. Whether you are working on the latest feature film, cutting an episodic television program, or about to publish your next YouTube video, the techniques you've learned will serve you well as you progress with your editing at many different levels and across various genres.

However, technology never stands still, and that's as true for video editing as it is for almost all walks of modern life. Professional high-end cameras, which would have cost tens of thousands of dollars just a few years ago, are now readily affordable. This means you are quite likely to have huge amounts of data that you'll need to wade through. This has implications for how you store your media and approach your editing.

Time

This lesson takes approximately 60 minutes to complete.

Goals

Setting Up the Project [illegible]
Generating Proxy Files [illegible]
AI Transcription (Studio Only) [illegible]
Creating Subclips with Transcription [illegible]
Editing Using Transcription [illegible]
Editing Transcribed Clips in the Timeline [illegible]
Using IntelliScript (Studio Only) [illegible]
Timeline Editing [illegible]
AI Music Editor (Studio Only) [illegible]
Lesson Review [illegible]

Moreover, the dramatic increase in the capabilities of AI (artificial intelligence) models has extended into many areas of creative work, and video editing has not remained untouched. DaVinci Resolve Studio 20 has several AI features, such as AI Multicam SmartSwitch, as mentioned previously in Lesson 4. In this lesson, you'll learn how some of those AI features can be applied to assist you in jump-starting your editing, while other AI features will be explored in later lessons.

Setting Up the Project

To explore how DaVinci Resolve can enhance your workflow, you will import a project that uses the Organ Mountain Outfitters footage.

- Open DaVinci Resolve and, in the Project Manager, click Import.
- Navigate to R20 Editor's Guide > Lesson 6, select the AI WORKFLOWS.drp project file, and click Open.
- Double-click the AI WORKFLOWS project to open it and relink the media files.
- If necessary, select the Media button or press Shift-2 to switch to the media page.
- Right-click any bin in the bin list and choose Sort By > Name to organize the bin list by name.

This project has all the clips for the Organ Mountain Outfitters promo imported and organized. All, that is, except for the subclips, which haven't been created. However, you'll start by generating proxy media for these clips.

Generating Proxy Files

Modern digital video files are highly complex assets that contain huge amounts of information, as attested to by their file sizes, with many individual files easily measuring in the tens of gigabytes (GBs) and many projects in the terabytes (TBs) in size.

Working with camera original content is ideal when color grading, but when it comes to editing, these large, complex files can slow you down if they overtax the hardware you're working on. As you try out different shots, trimming and adjusting clips, you need an accurate feel for the pacing of a scene and the changes you're making. A computer that cannot process media efficiently or a drive that is not fast enough to play high-resolution or high-frame-rate media can result in a frustrating editing experience.

To ensure that your system is maintaining real-time performance, you can check the GPU and frame rate playback indicator at the top of the source and timeline viewers. If the indicator is green, all is well. However, if it changes to red, this indicates that the available

GPU power of your computer is insufficient for real-time playback, and the frame rate indicator drops accordingly.

If this happens only when playing back footage, it likely indicates that your computer isn't powerful enough to work with this material or, more likely, the hard drive isn't fast enough to deliver the data rates that the footage requires. In these cases, it's worth considering generating proxy media.

Proxy media is typically smaller and more efficient than the camera original media, requiring less processing power and less speedy hard drives. Blackmagic Design has provided a convenient method for creating proxy media for use in DaVinci Resolve while retaining a relationship with the camera originals. Generating proxy media enables the speed you want when editing yet leaves you only one click away from the camera original media when you need it for color grading or VFX work.

You can choose to generate proxy files directly from DaVinci Resolve or by using the Blackmagic Proxy Generator. Both have advantages, depending on your workflow.

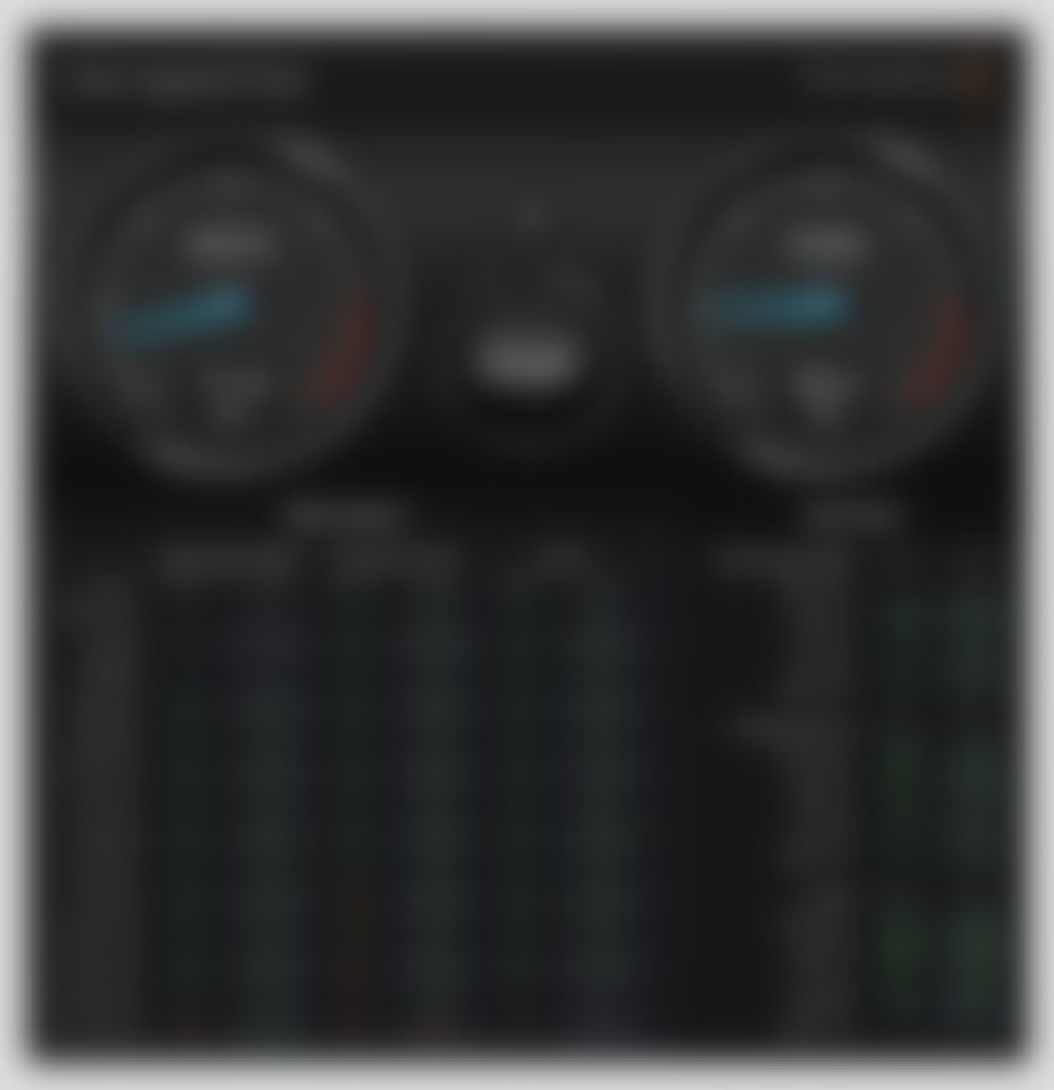
NOTE The media files included with this book have been optimized for easier delivery by reducing their file size. Therefore, you should have no problem playing these clips on your computer, even from a reasonably slow hard drive. Nevertheless, learning how, why, and when to create proxy media is an important step to understanding broader DaVinci Resolve workflows.

Is Your Drive Fast Enough?

Since video files are very large, most editors work with a dedicated media drive attached to their system. This media drive is usually the largest drive for storing the huge amounts of video and audio files required for even a simple project. But size, literally, isn't everything.

Another major consideration for your media drive is the speed of the drive and its connection to the computer. You can have the largest capacity hard drive money can buy, but if the connection to the computer is too slow, then your video files won't play smoothly, and you will suffer from dropped frames, resulting in choppy, inconsistent playback, which is never desirable when you're editing and trying to judge whether a cut is working or not.

To assess the potential of your chosen media drive to read or write a given video file at a variety of resolutions and frame rates, you can use the free Blackmagic Disk Speed Test app. macOS users can download this as a stand-alone app from the Apple Mac App Store, and Windows users can install it as part of the Desktop Video installer available from the Blackmagic Design Capture and Playback support page at https://www.blackmagicdesign.com/support/family/capture-and-playback.

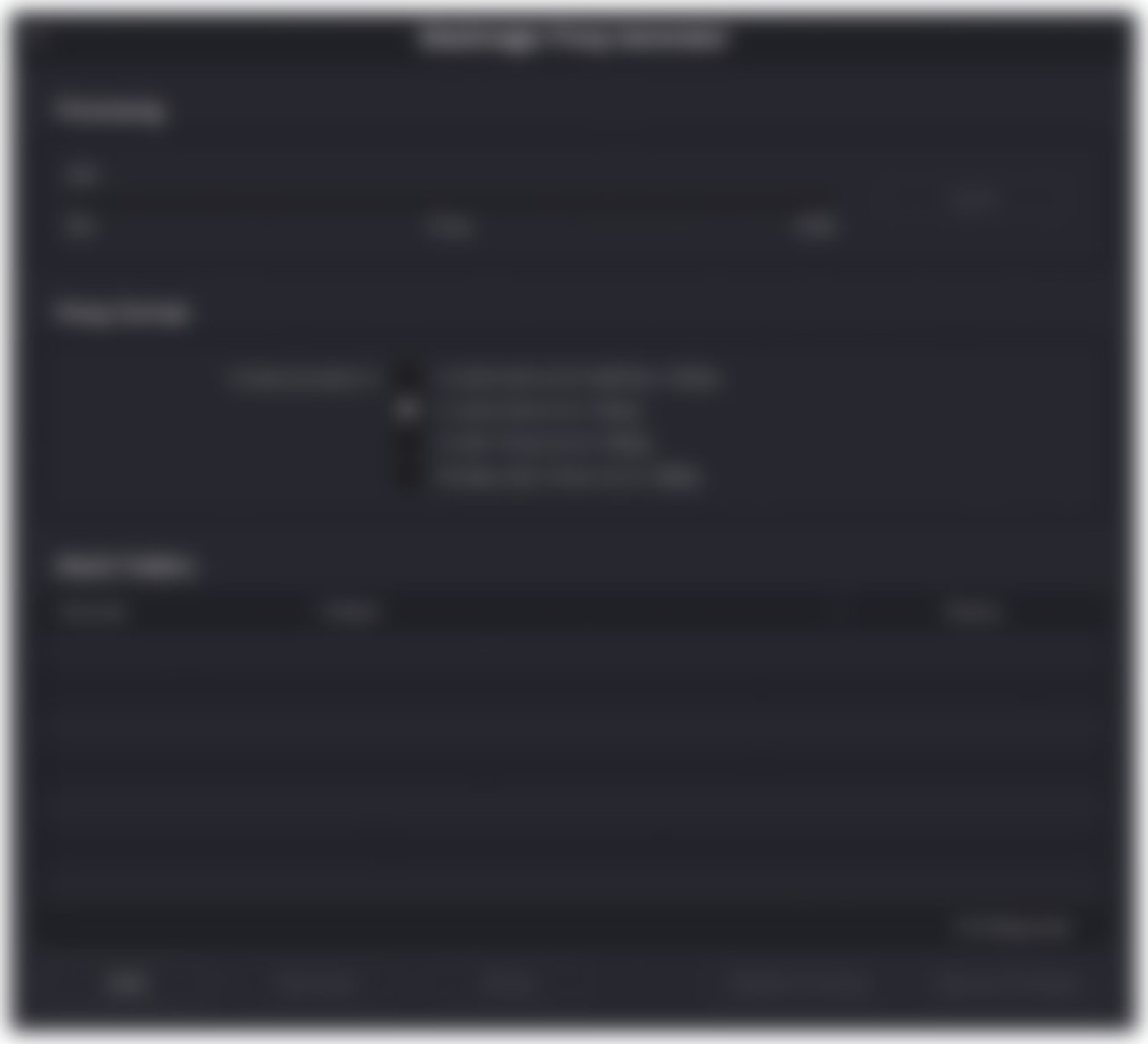


In the "Will it Work?" section, the Blackmagic Speed Test gives you an idea of which resolutions your drive can play back if it is in either Blackmagic RAW, ProRes 422 HQ, or H.265. The "How Fast" section indicates how many frames per second your drive can support in each of the three formats and at different resolutions. This last section is important if you're trying to edit multicam footage, which typically has multiple streams of video playing simultaneously.

Using Blackmagic Proxy Generator

Blackmagic Proxy Generator is a separate program installed alongside DaVinci Resolve that can automatically create proxy media from source video files placed in a designated watch folder. It is a lightweight application that can be left running in the background, and DaVinci Resolve will automatically recognize and use the proxy media as it becomes available. Moreover, Blackmagic Proxy Generator can be used to manage proxy files quickly and easily.

1 Open Blackmagic Proxy Generator. If a file browser window also opens, click Cancel.

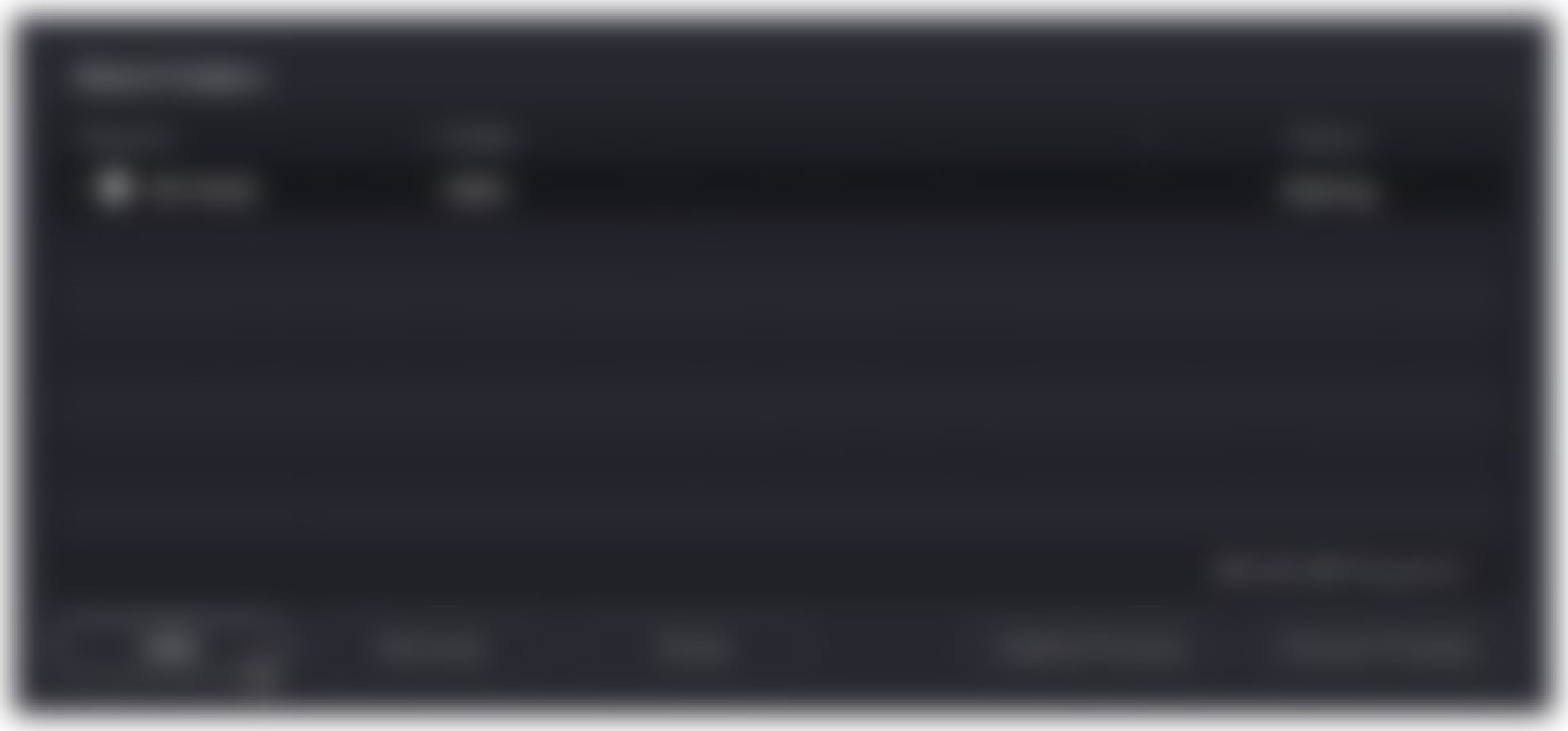


NOTE If a notification appears asking for permission to access your files, click Allow.

Blackmagic Proxy Generator is a simple program that has no complex settings.

The first step in using Blackmagic Proxy Generator is to set a "watch folder." A watch folder is simply a normal folder on your system that contains your source media files, which the Proxy Generator will continue to monitor.

- Click the Add button to add a watch folder location, navigate to R20 Editor's Guide / Media / 1080, and click Open.

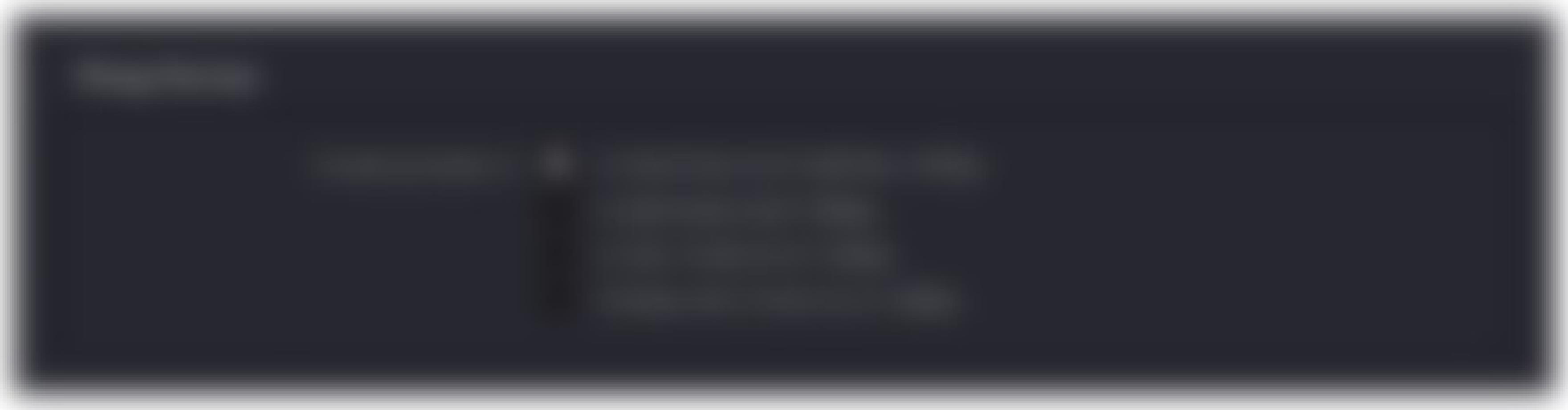


The watch folder is added to the list, detailing the volume, the specific folder, and its current status. You can add as many watch folders to the list as required.

TIP You can drag folders directly into the list of watch folders from the Finder (macOS) or File Explorer (Windows).

You can choose one of four preset settings for your proxy media. A value at the bottom right of the list of watch folders indicates the amount of storage required to generate the proxies for the selected location(s).

- In the Proxy Format section, choose the H.264/HEVC 4:2:0 Half Res 1080p option.



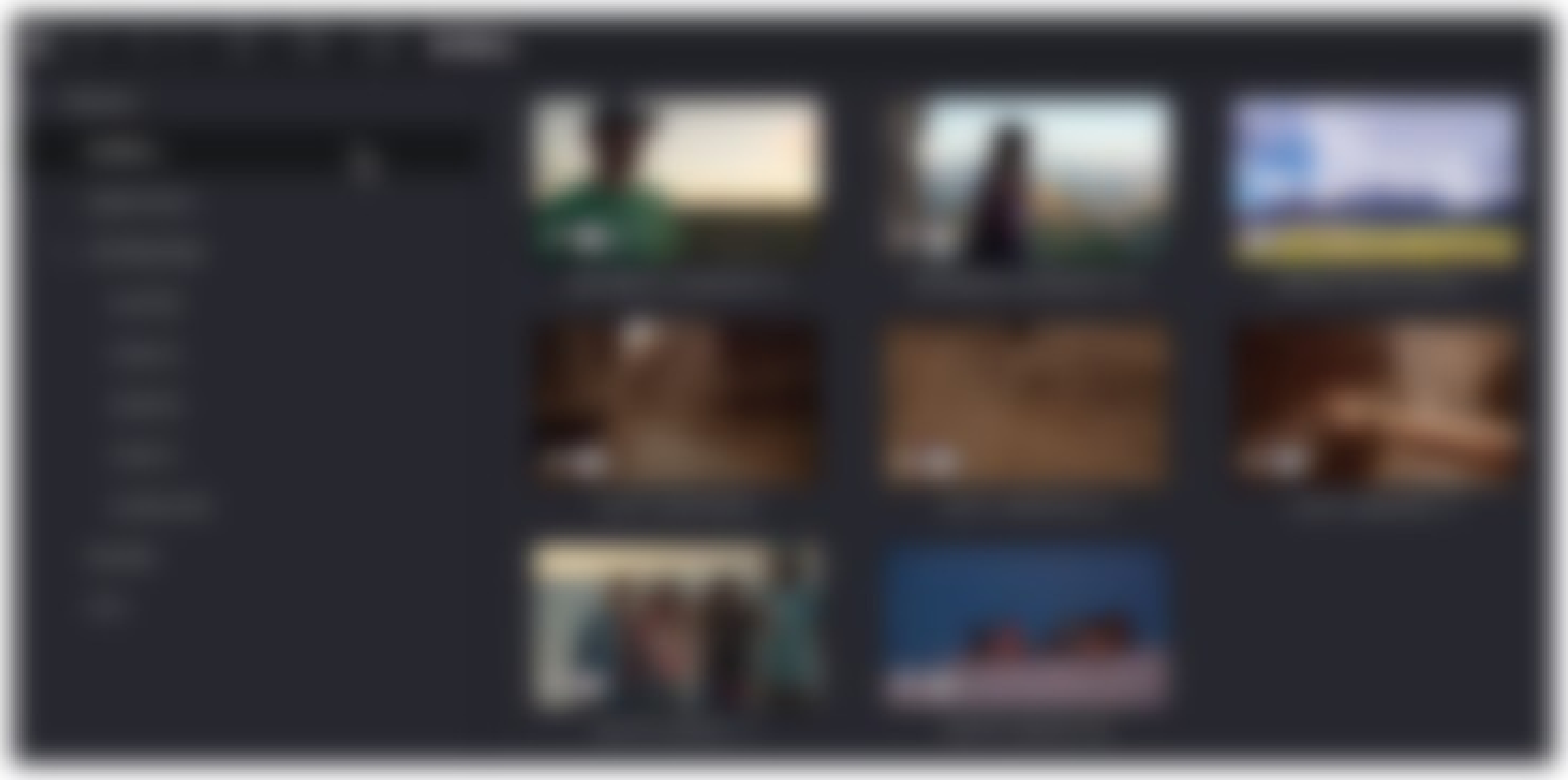
This option will create proxy media at one half the resolution of 1080 HD media (960 x 540) using the H.264 video codec. This will be useful for editing but not grading or VFX work, mainly due to the 8-bit and 4:2:0 chroma subsampling properties of these files and the low resolution.

- Click Start.

Blackmagic Proxy Generator begins processing the source video clips in the watch folder, placing the generated proxy media in a Proxy subfolder in the same location as the source media. This allows DaVinci Resolve to automatically use the relevant proxy media for clips in this source folder.

NOTE Unless you click the Stop button, Blackmagic Proxy Generator will continue to monitor the watch folder(s) you've chosen. If any new source files are placed in these folders, the proxy media will be generated automatically without you needing to restart the process.

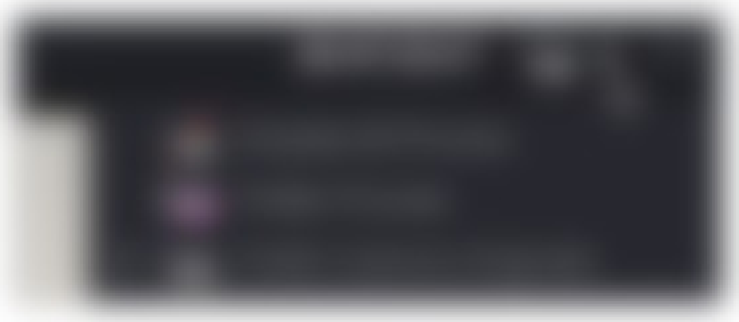
- Return to DaVinci Resolve and select the B-ROLL bin in the media pool.



The clips in this bin now have a new status icon, the proxy status indicator, specifying that these clips have proxy media associated with them.

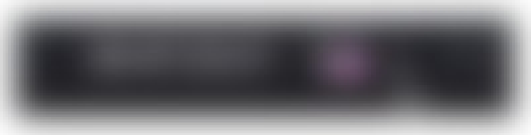
The proxy status indicator displays the white HQ icon, meaning that DaVinci Resolve is currently using the original, high-quality source media and will be displayed on any clip in the media pool or in the edit page and color page timelines whenever proxy files are available for a clip.

- In the viewer, click the Proxy Handling Selector menu.

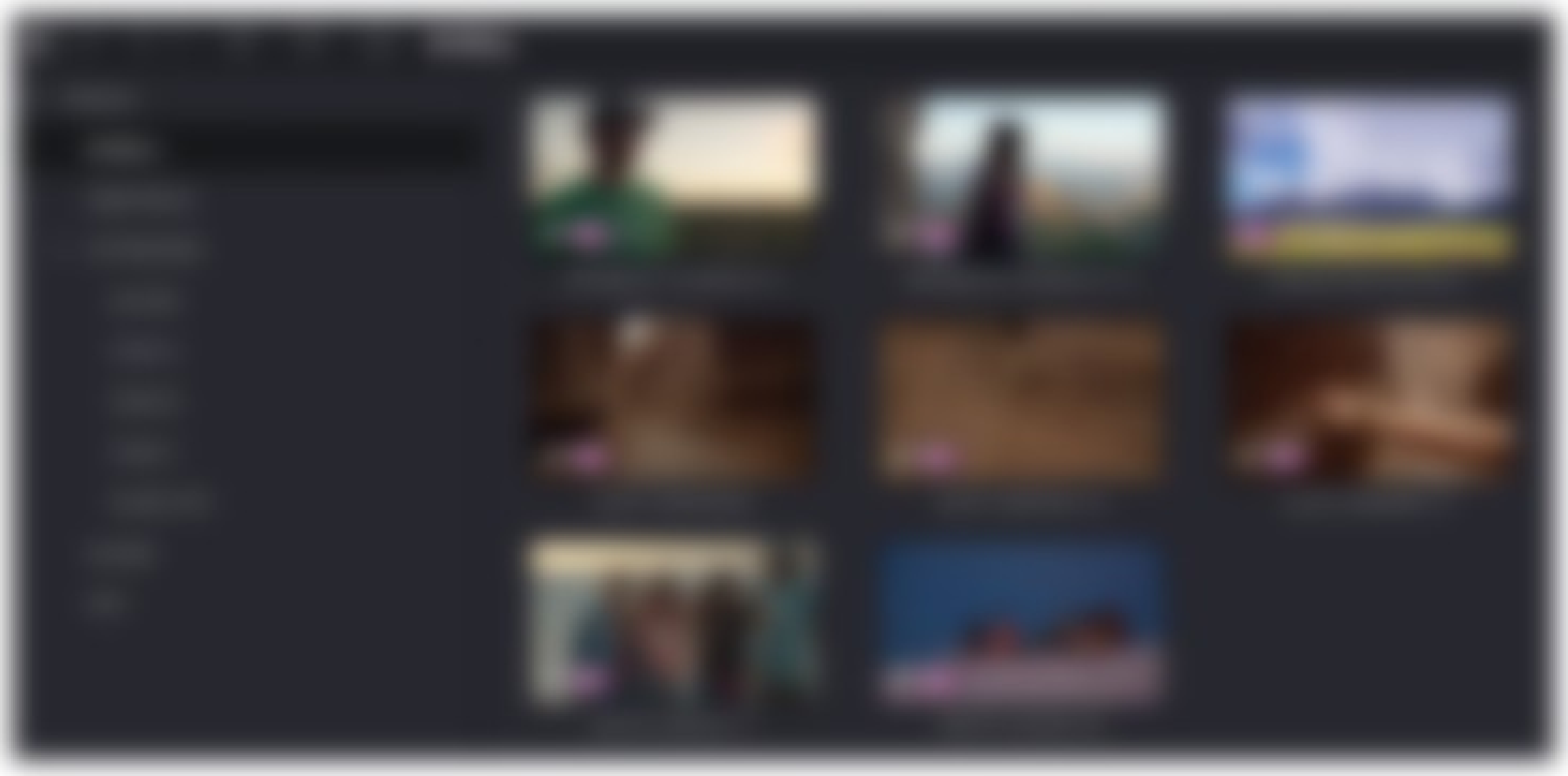


By default, this is set to Prefer Camera Originals.

- Choose Prefer Proxies.



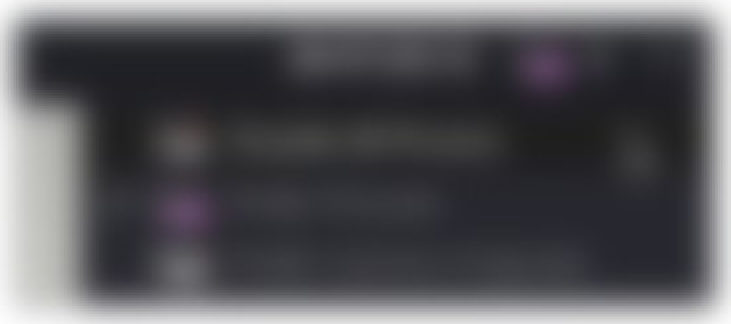
The Proxy Handling Selector menu now displays the purple PX badge, indicating that DaVinci Resolve is using proxy media instead of the original camera media.



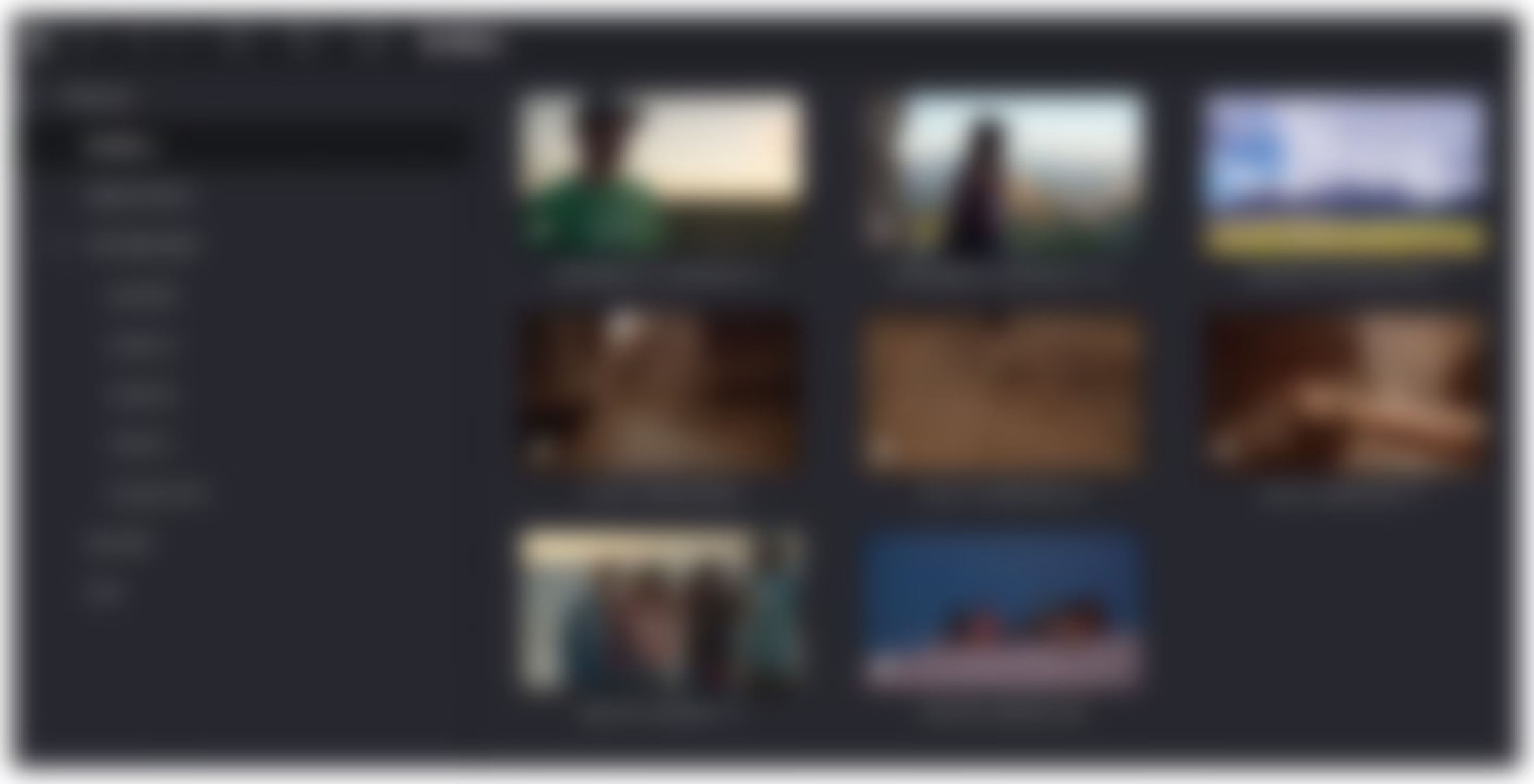
The clips' proxy status indicators also change to specify the clips using proxy media.

The lower quality proxy media will help improve your editing workflow, especially when using very high resolution or high frame rate source media or attempting to play back multiple streams of video when editing multicam footage. Once the footage is cut, the colorist or VFX artist can easily switch from using the proxy media back to the original files by changing the Proxy Handling Selector back to Prefer Camera Originals.

- Click the Proxy Handling Selector and choose Disable All Proxies.



The icons for the clips in the media pool return to normal, indicating that the proxy files are no longer being used, but the proxy media remains available.



9 In the media pool, click the List view.

10 Right-click the top of the Clip Name column and, in the list that appears, select the Proxy and Proxy Media Path columns.

The Proxy column appears to the right of the Clip Name column and details the proxy file resolution, and the Proxy Media Path column details the exact location of the proxy media on your system.

NOTE Clip information, such as resolution and codec, will still refer to the original files, even when you prefer to use proxy media. Remember, the proxy media did not replace the camera original files, so Resolve continues to display the camera original parameters.

11 Click the Proxy Handling Selector and choose Prefer Camera Originals.

12 Return to viewing the thumbnails in the media pool.

Managing Proxy Files Using Blackmagic Proxy Generator

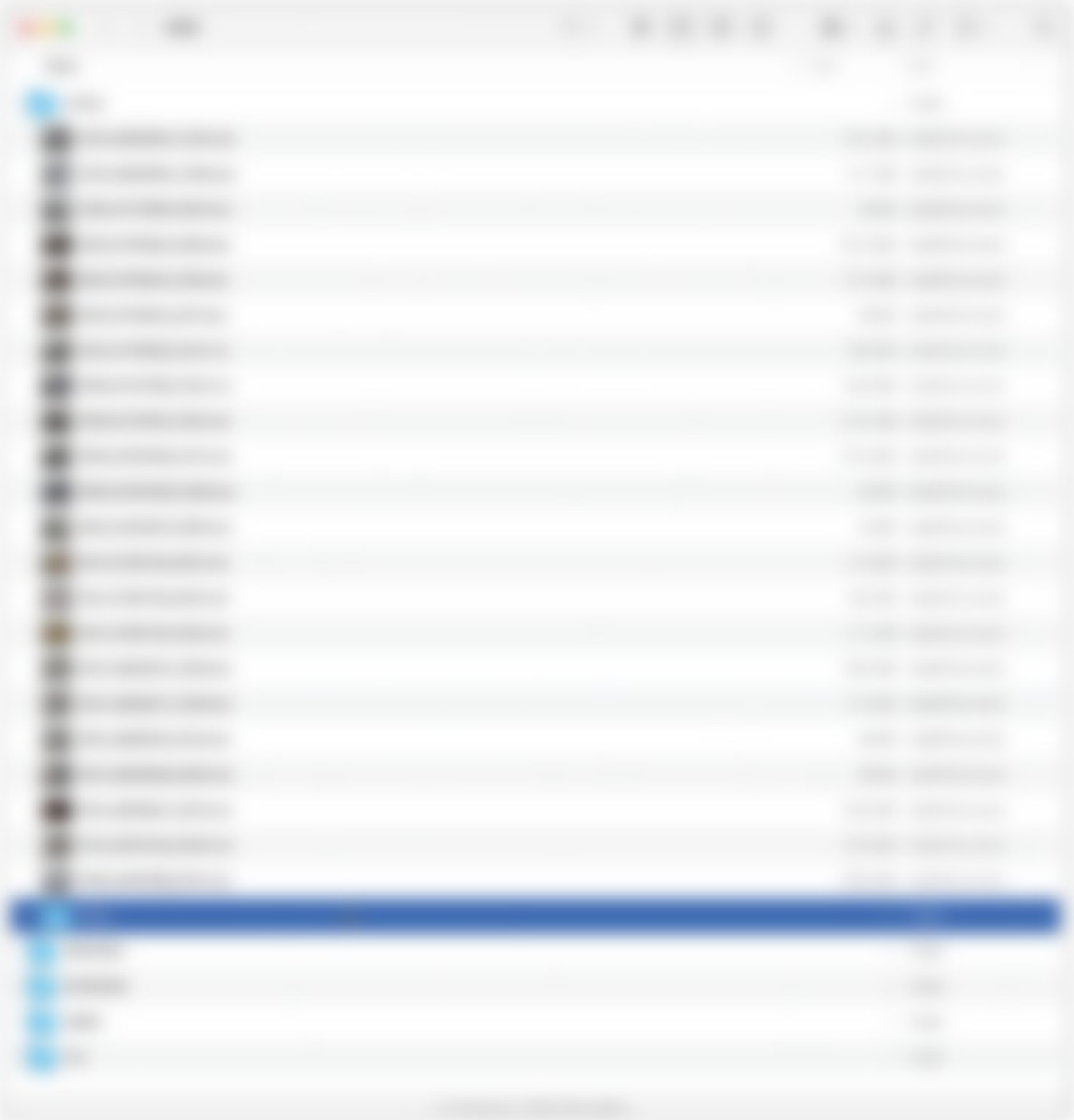
You can also use Blackmagic Proxy Generator to manage your proxy media.

1 Return to Blackmagic Proxy Generator and click Stop.

2 Select the DMO folder in the list of watch folders and click Show.

A Finder window (macOS) or a File Explorer window (Windows) opens to reveal the DMO source media folder.

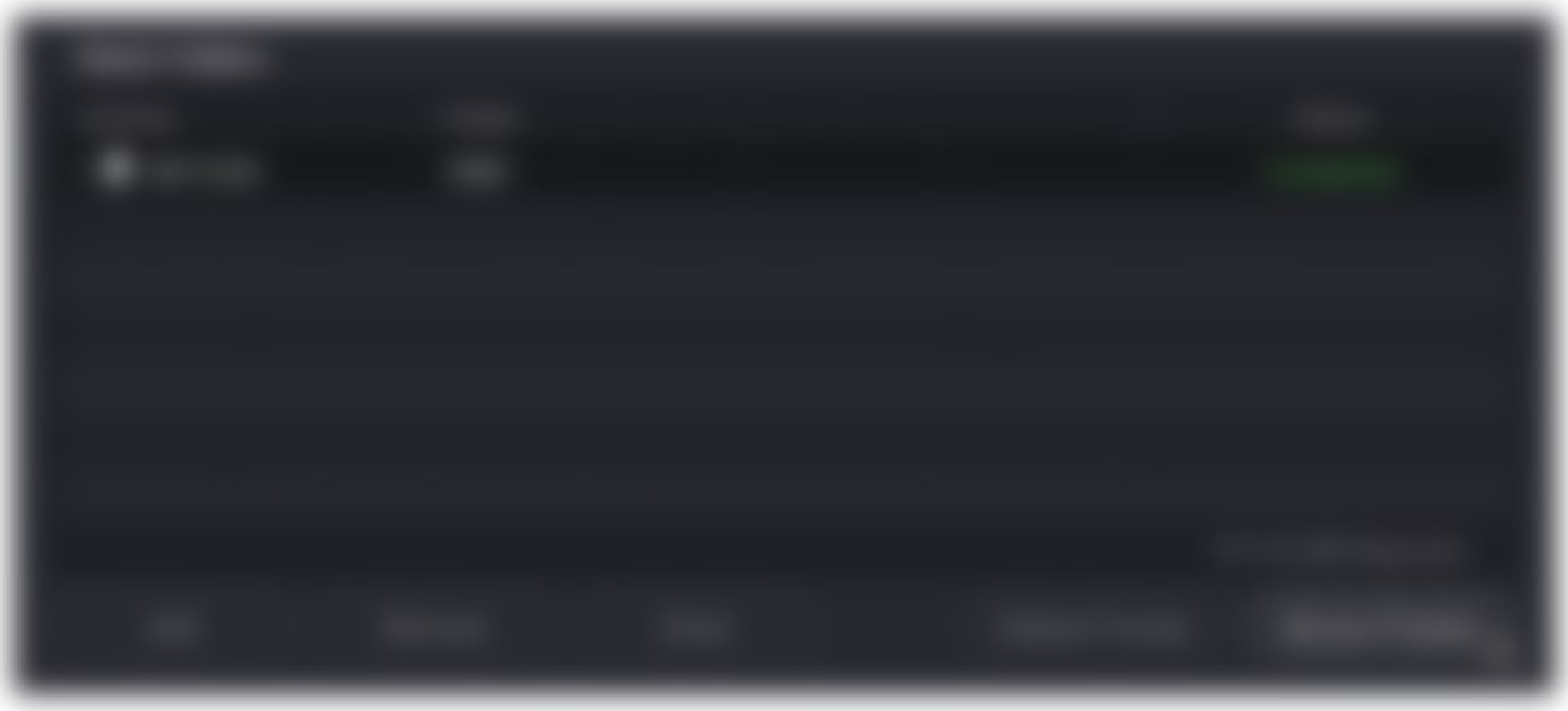
- Open the B-ROLL folder to reveal the source files and a new Proxy subfolder.



- Open the Proxy subfolder to reveal the generated proxy media files, noting the difference in file sizes between these new files and the original media.

  Part of the simplicity of working with proxy media in DaVinci Resolve is that Resolve will automatically use any relevant media it finds in the Proxy subfolder as proxy media without you having to do anything except generate the files in this location.

- In Blackmagic Proxy Generator, click the Extract Proxies button.



- Use the window that opens to navigate to R20 Editors Guide > Lesson 06 > PROXIES and click Open.

  Blackmagic Proxy Generator will extract the proxy media from the watch folder and copy it to the new location.

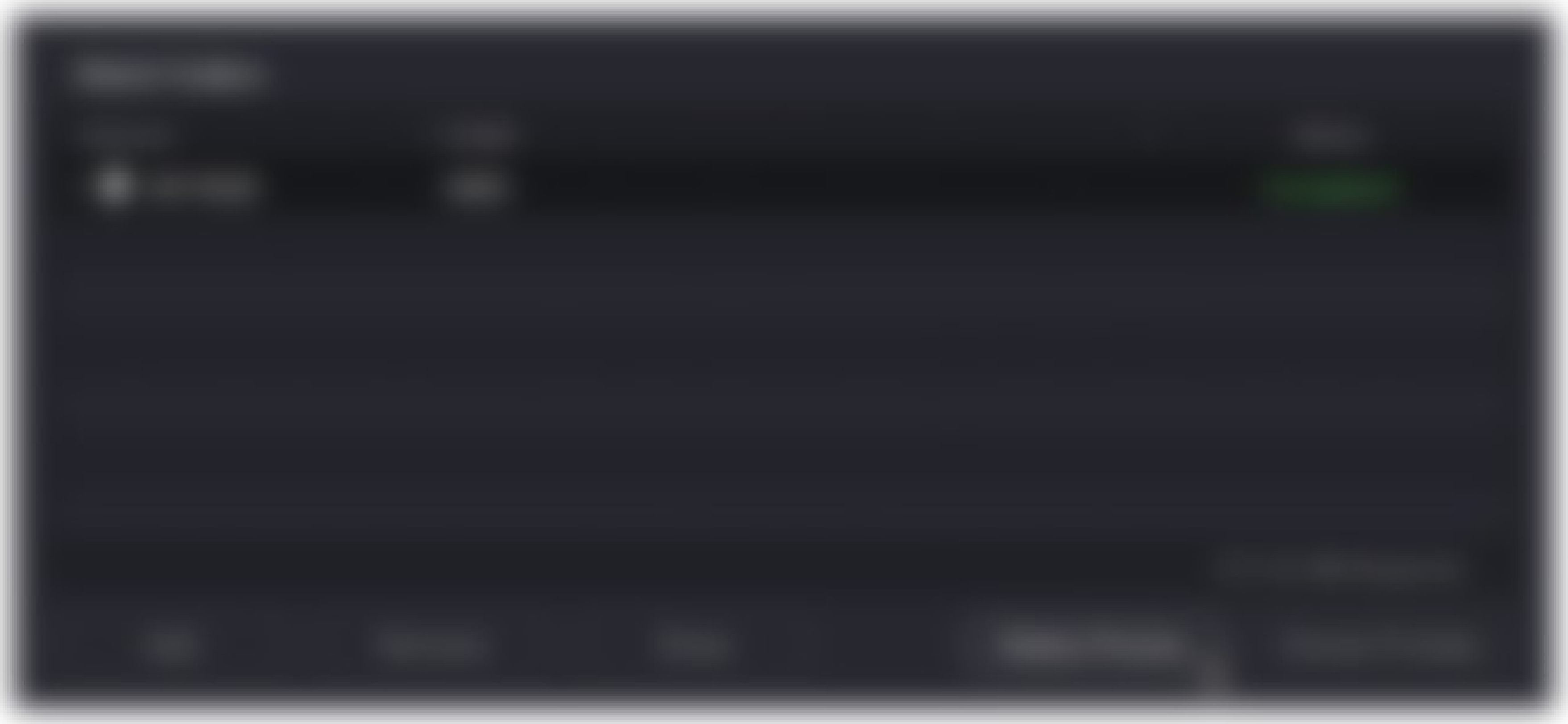
- Once the process has completed, click Done.
- On your computer, open a new Finder window (macOS) or File Explorer window (Windows) and navigate to R20 Editors Guide > Lesson 06 > PROXIES.

This folder contains the same file structure used for the source media but crucially does not contain the original source media, just copies of the proxy media in the Proxy subfolders.

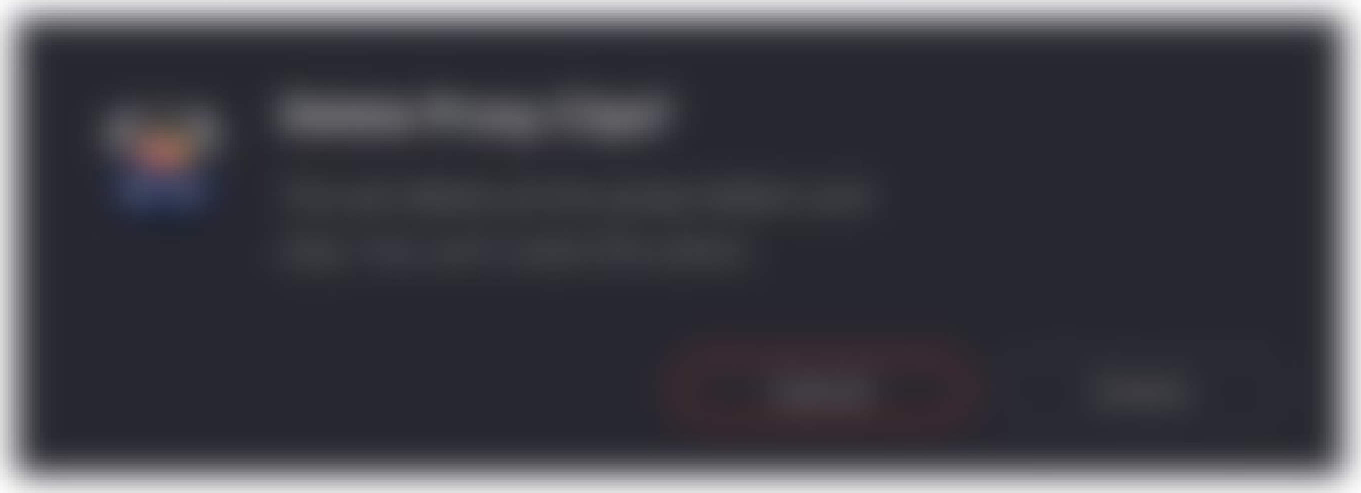
NOTE Where proxy media wasn't created, as with the MUSIC and SFX folders, the source files have been copied. However, as of the time of this writing, graphics files are not included and should be managed manually.

Why is this important? Well, it now means you have an entire copy of all the proxy media for your project. Proxy media is easier to send to other editors for them to work on remotely, especially when using cloud services.

- In Blackmagic Proxy Generator, click Delete Proxies for the selected watch folder.



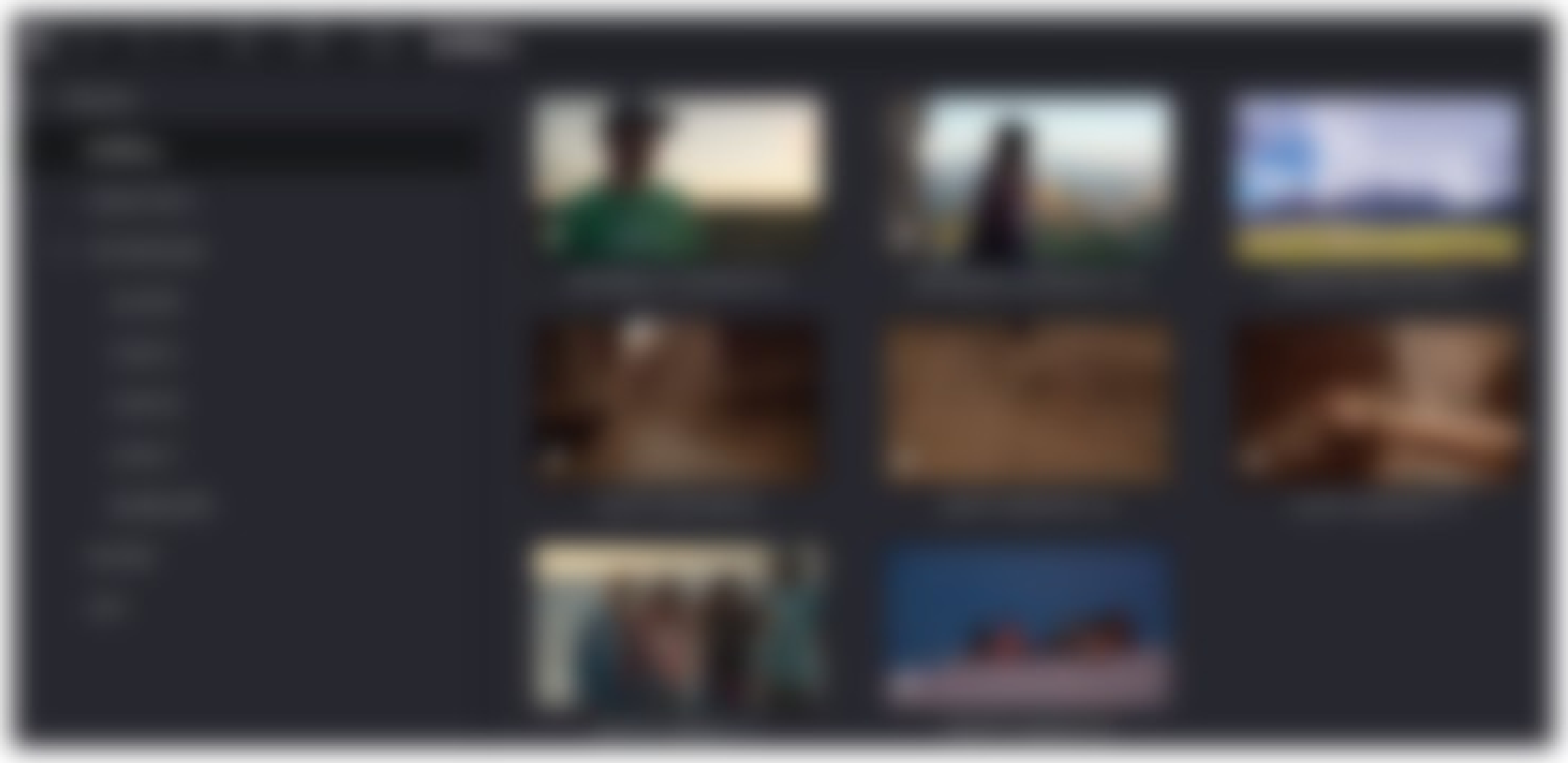
A warning appears confirming that you want to delete all the proxy folders and clips.



Don't panic! This warning refers to the proxy media files and folders only. Your original source clips are safe from being deleted.

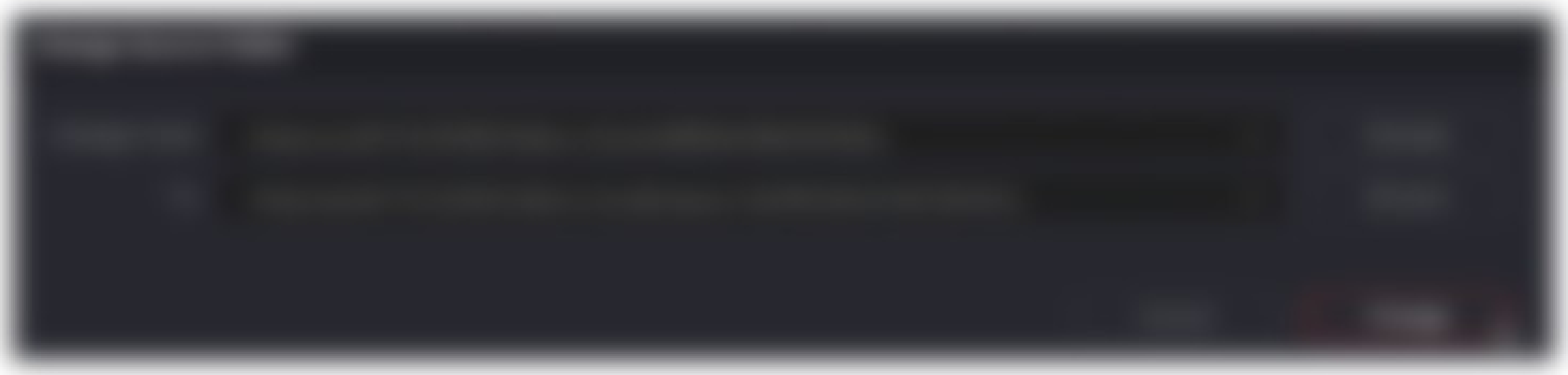
- Click Delete, and once the delete process has completed, click Done.

- Return to DaVinci Resolve and select the B-ROLL bin.



The Proxy Handling menu is still set to Prefer Camera Originals but notice that the proxy status indicator has disappeared from the clips' thumbnails now that the proxy media has been deleted.

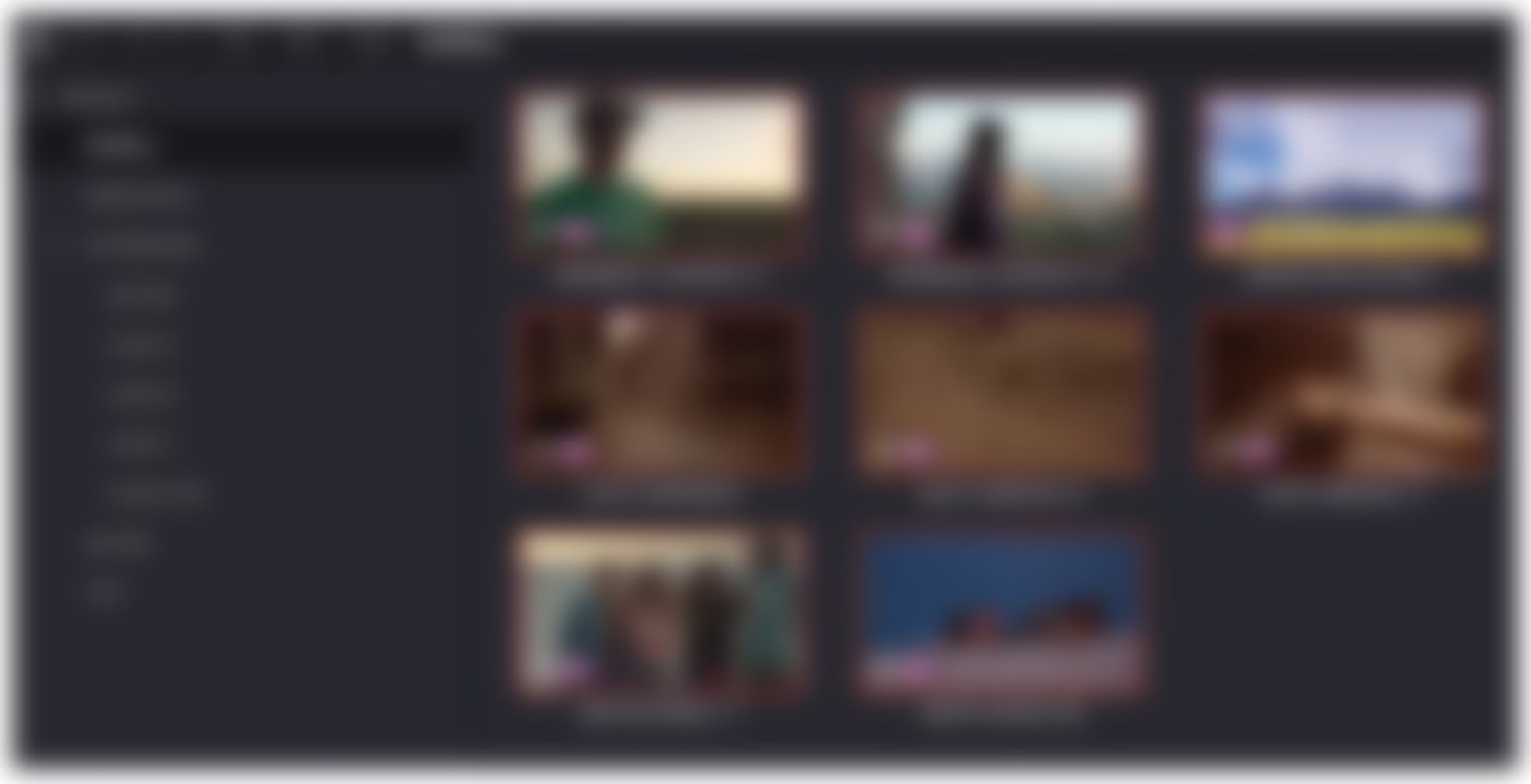
- Select all the clips in the B-ROLL bin, right-click them, and choose Clip Operations > Change Source Folder.
- In the Change Source Folder window, click the To field's Browse button, navigate to R20 Editor's Guide > Lesson 06 > PROXIES > VIDEO > B-ROLL, and click Open.



- Ensure that the new path is correct in the To field and click Change.

TIP You can manually enter the new path in the Change Source Folder window if you prefer.

Instantly, DaVinci Resolve looks to the new location for the media, and because the proxy files are in this location, the proxy status indicators (without the X) ignore return to the clips, indicating they are using the proxy media even though the Proxy Handling menu is still set to Prefer Camera Originals.

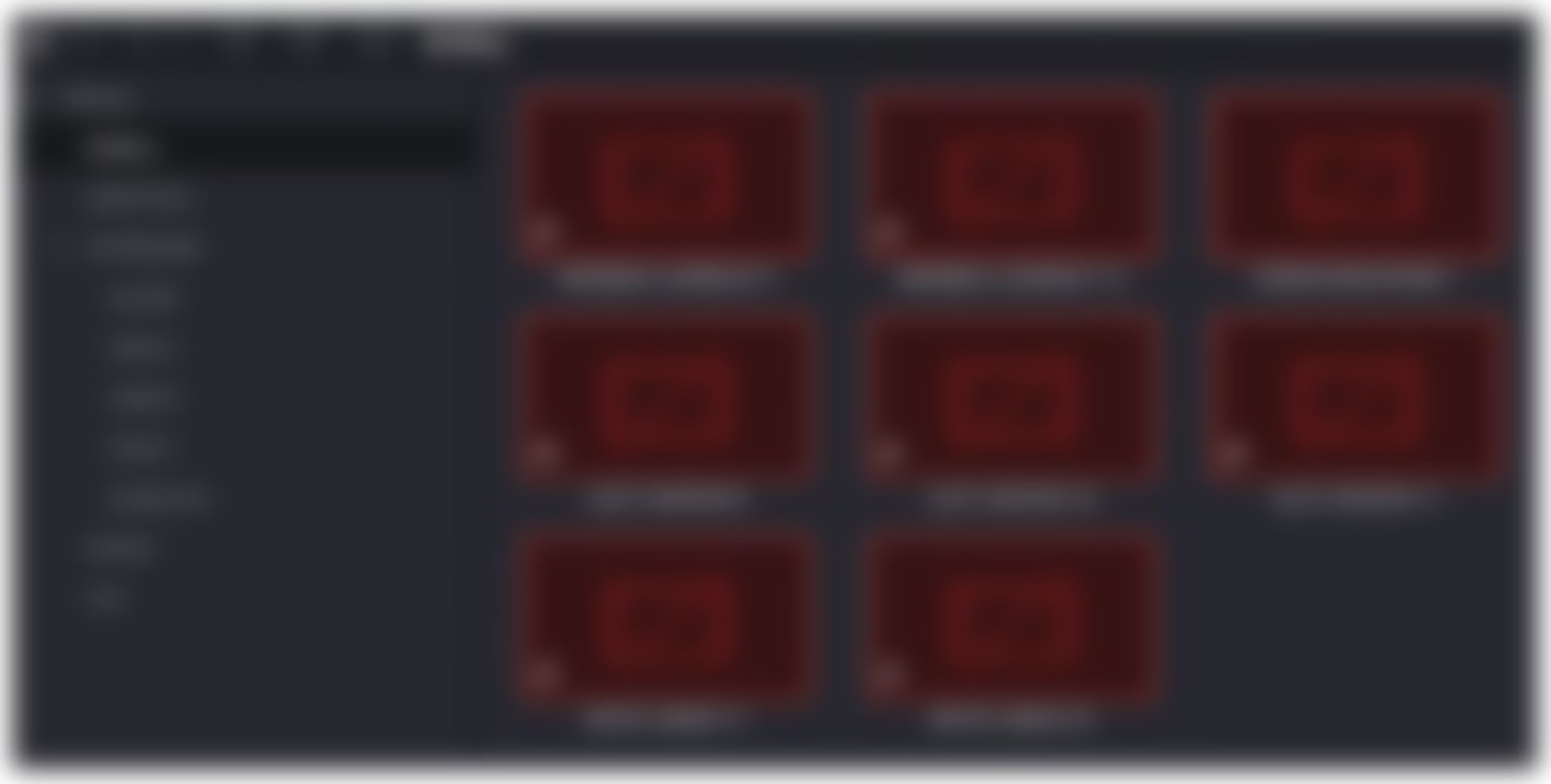


This is because even though the original source media isn't in the PROXY folder, the proxy files are and until such time as the source media is in this location, DaVinci Resolve will continue using the proxy media instead.

- To verify this, in the Proxy Handling menu, select Prefer Proxies.

  There is no change in the status of these clips since they were already using the proxy files.

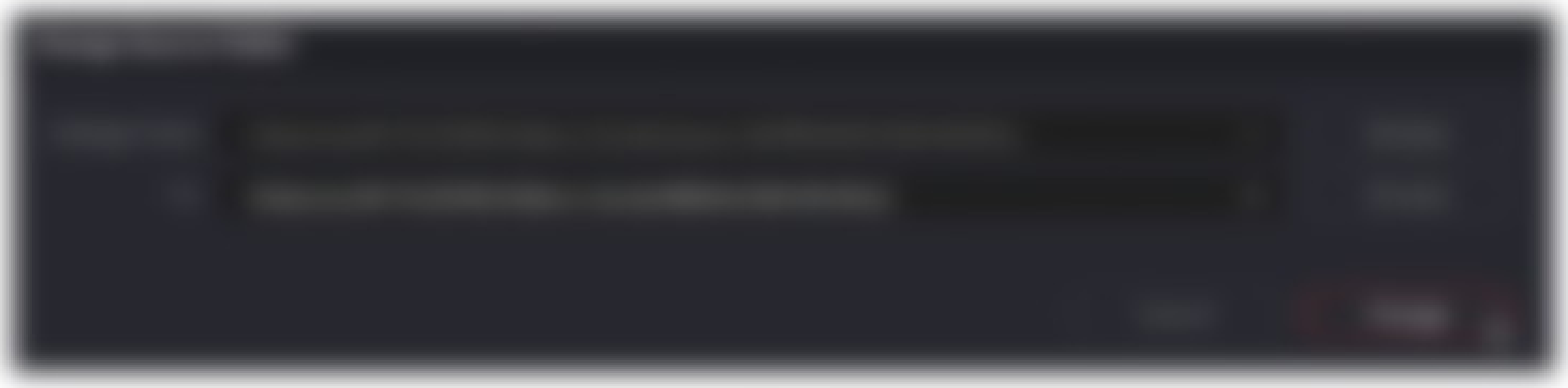
- Change the Proxy Handling menu to Disable Proxies.



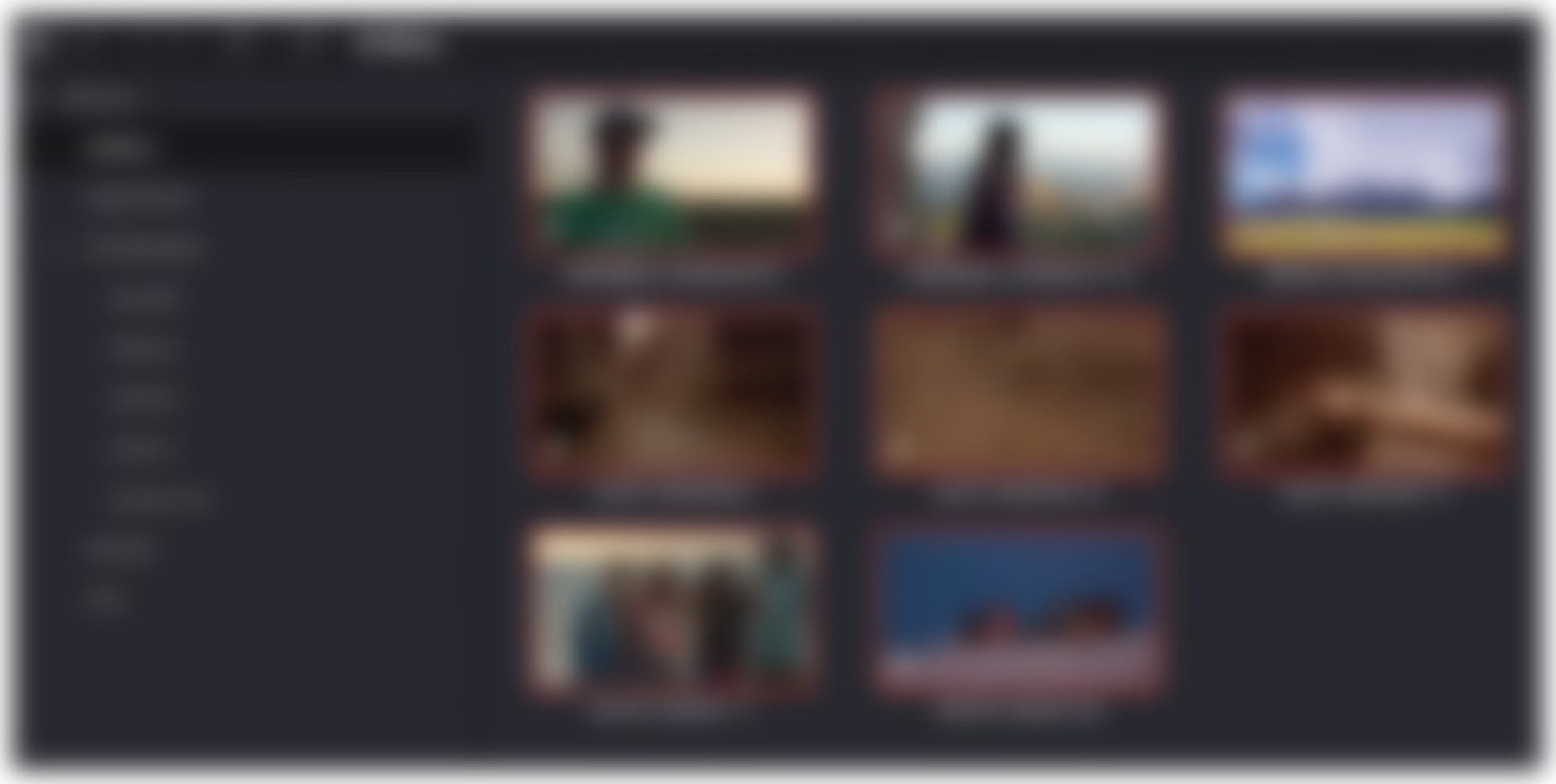
All the media in the bin now displays as offline since the original media is not available in this location.

- Select all the clips in the B-ROLL bin, right-click them, and choose Clip Operations > Change Source Folder.

- In the Change Source Folder window, use the To dropdown menu to select the original file location for your R20 Editor's Guide > MEDIA > CMEC > B-ROLL folder and click Change.



The media instantly relinks to the original files.

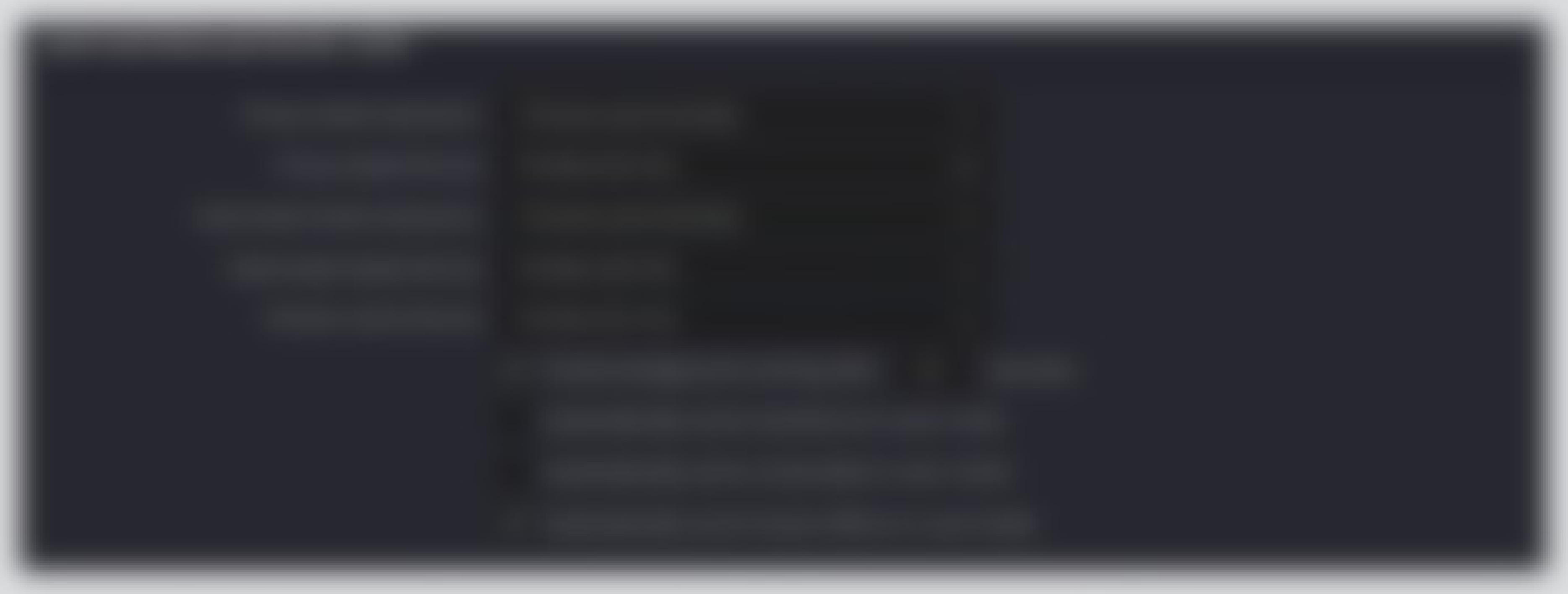


As you can see, generating proxy media using the Blackmagic Proxy Generator is not only quick and easy, but it can also be used to quickly manage all your proxy media files.

Generating Proxy Media from the Media Pool

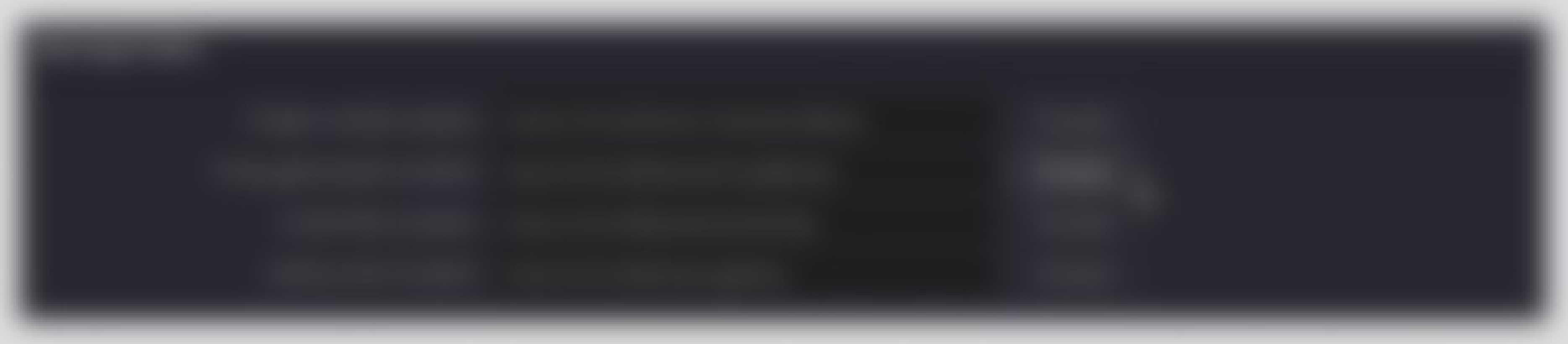
An alternative way of creating proxy media is directly from the media pool in DaVinci Resolve. This can be useful if you only need to generate proxy media for a limited number of clips, since the Proxy Generator application will generate proxies for all the media in a watch folder and cannot be used to generate proxy media for individual source files. It also has the additional advantage that you can choose from a greater number of resolution and format options and allows you to specify where the proxy files are generated on your system.

You can specify the proxy media resolution and format in Project Settings > Master Settings > Optimized Media and Render Cache.



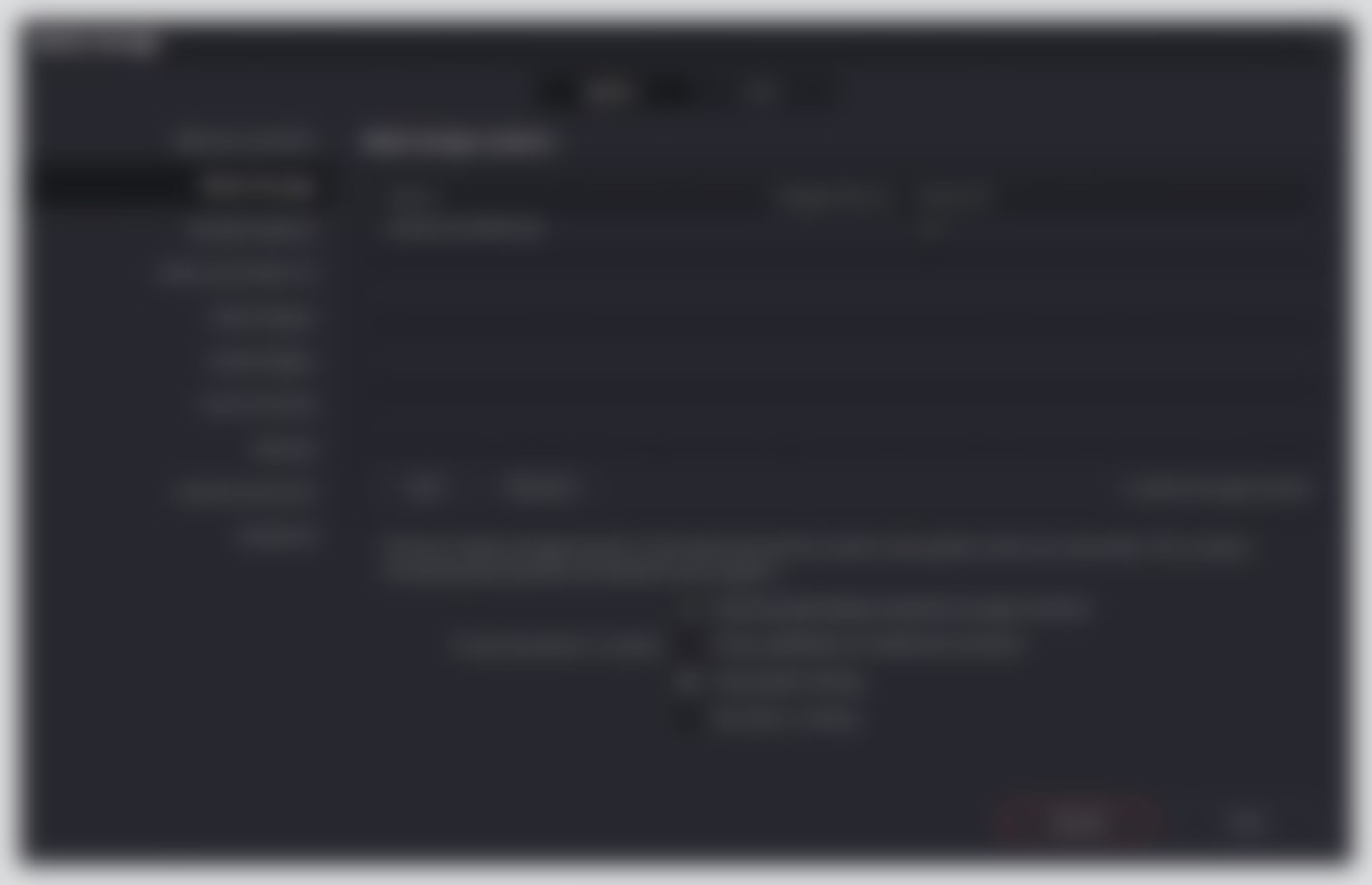
Leaving the Resolution menu set to "Choose automatically" will create proxies at the Timeline Resolution unless the source clips have a smaller resolution, in which case those proxies will use the source resolution. The Proxy media format menu contains a list of codecs for your proxy media, although it is set to ProRes 422 HQ by default.

In the Working Folders, the "Proxy generation location" specifies where the proxy media will be created for this project.



continued

There is an additional set of relevant settings in DaVinci Resolve > Preferences > System > Media Storage. Here, you'll find three Proxy Generation Location options:



- **Proxy subfolders in media file locations** will create the proxy media in a "Proxy" folder in the same location as the source media file.
- **Use project setting** creates the proxy media in the location specified in the Project Settings.
- **Ask when creating** allows you to manually select the location where the proxy media will be created.

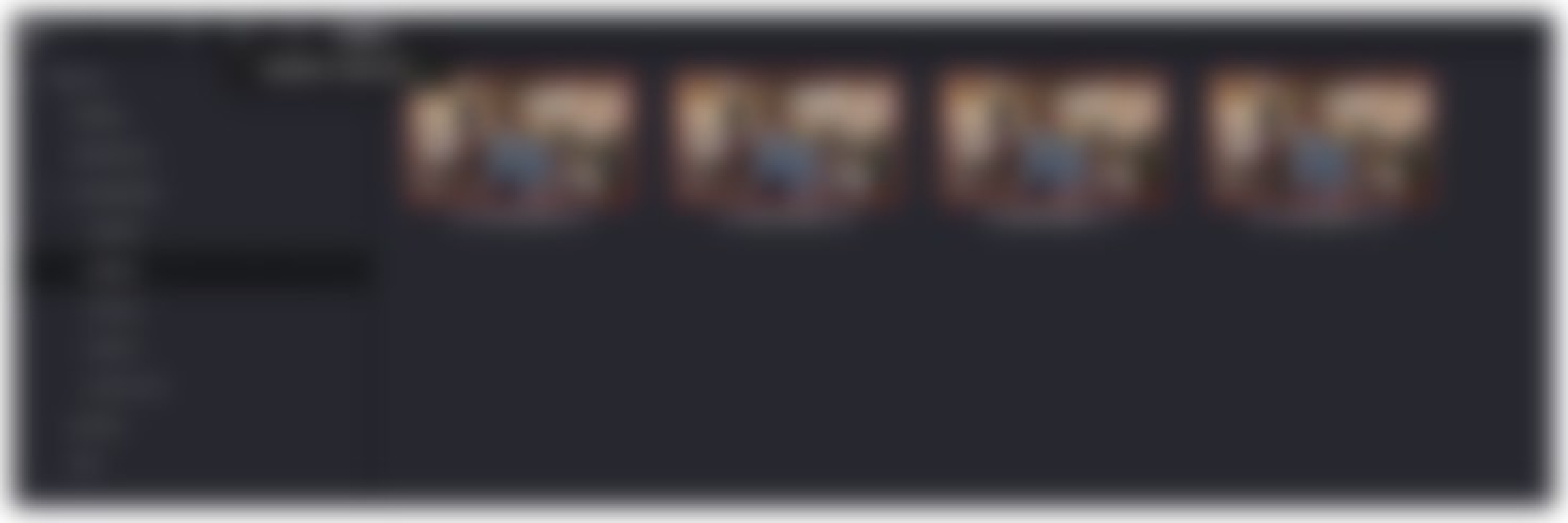
Once you have verified the resolution, format, and location for your proxy media, simply right click any clip in the media pool and choose Generate Proxy Media. However, unlike using the Proxy Generator, you will have to wait until all the proxies have been generated before you can continue working.

AI Transcription (Studio Only)

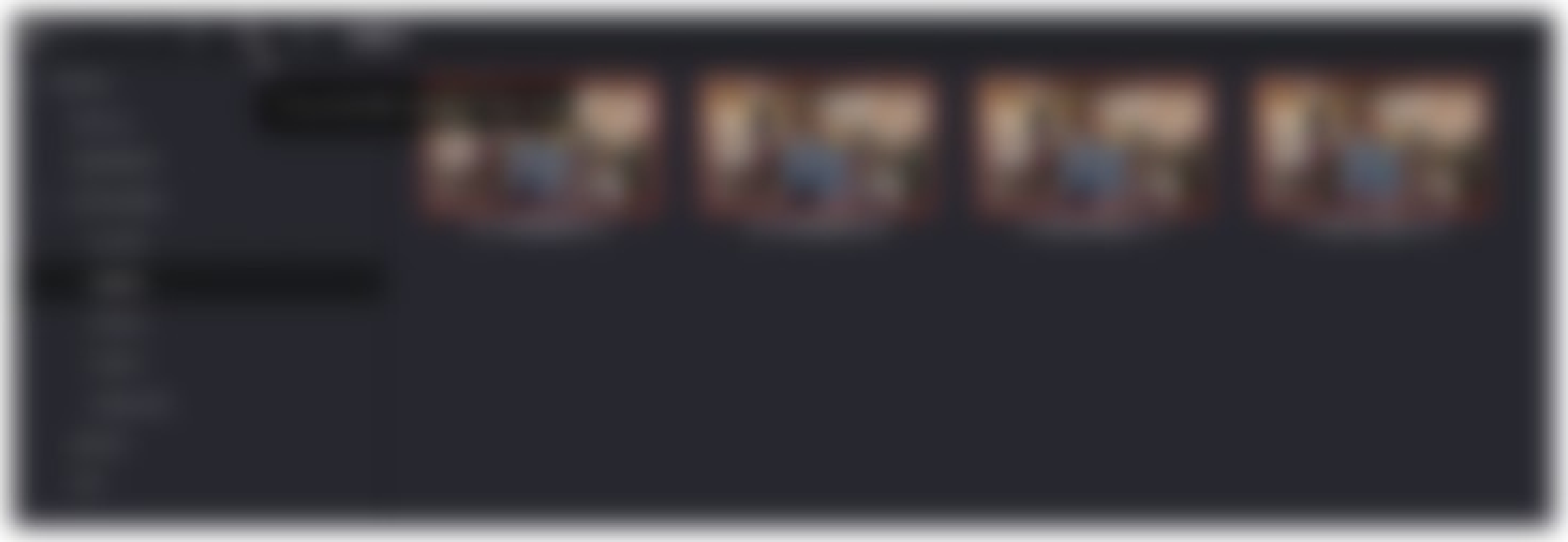
If you work with footage that contains spoken words (such as interviews, presenter pieces to camera, voiceover audio, or drama footage), having an accurate transcript of what is said and when it is said can dramatically speed up your editing process. Think back to the previous lesson when you were creating the series of soundbites from Chris's interview. Now imagine just how much easier it would have been if you could just locate the portion needed for the soundbite by scanning or searching through the text of what he said!

Traditionally, transcriptions would have been created by production team members listening to the clips and manually transcribing them, along with timecode references as to where those words would be found on the source footage. These days, you can get DaVinci Resolve Studio to do this for you!

- In the CAM A bin, select the four interview clips.
- At the top of the media pool, right-click the Transcribe button and choose Speaker Detection, or right-click the clips and choose AI Tools > Audio Transcription > Use Speaker Detection.



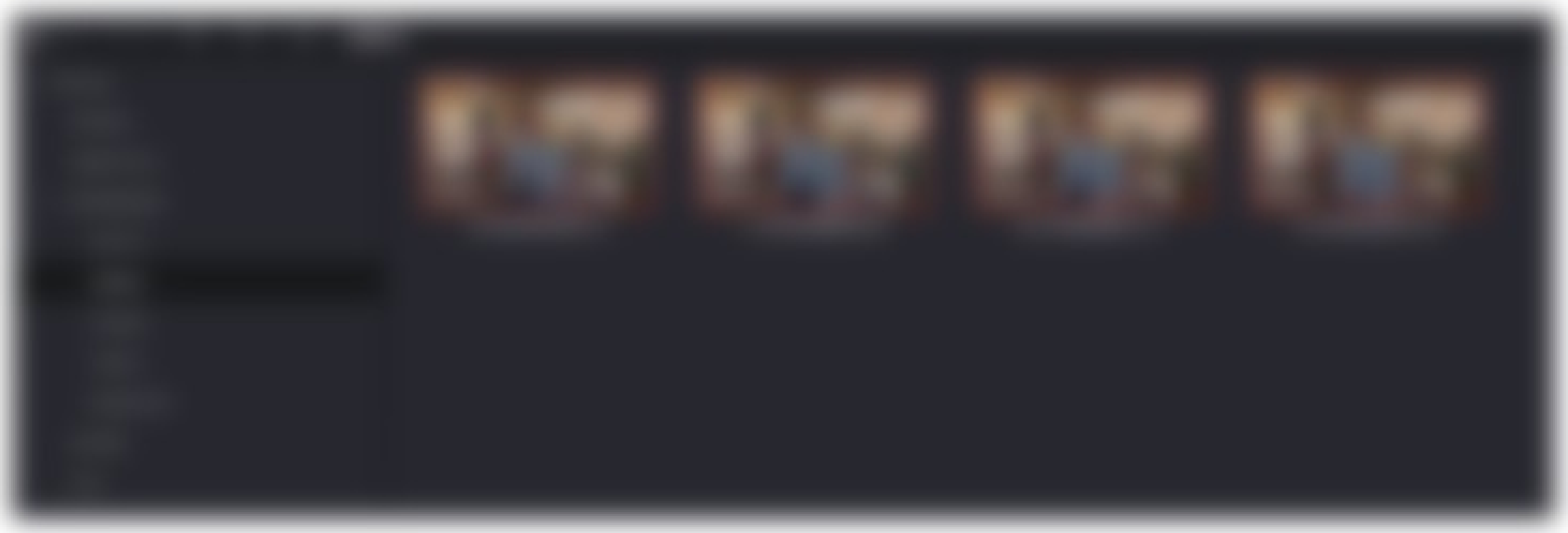
- Once Speaker Detection has been enabled, click the Transcribe button, or right-click the clips and choose AI Tools > Audio Transcription > Transcribe.



The Transcribing Audio window will display the progress and speed of the audio transcription process.

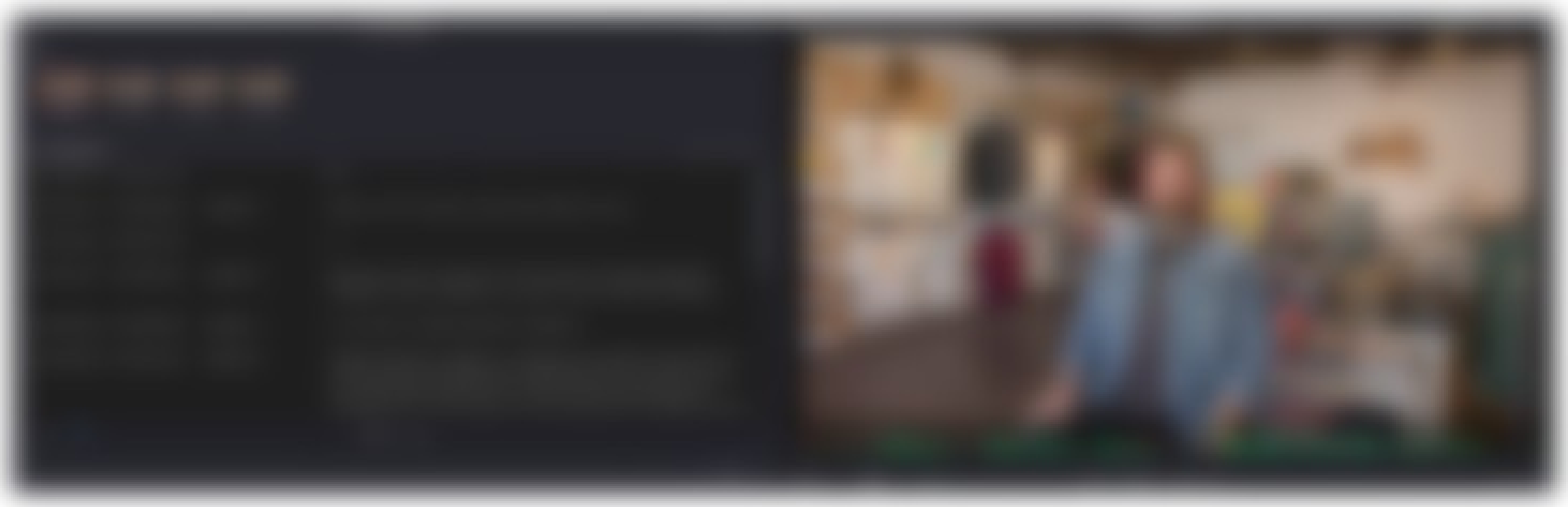
Once the transcription is complete, the AI Transcription window appears, listing the four selected clips.

You will also see that a new icon has appeared on the clips' thumbnails in the media pool, indicating that these clips have been transcribed.

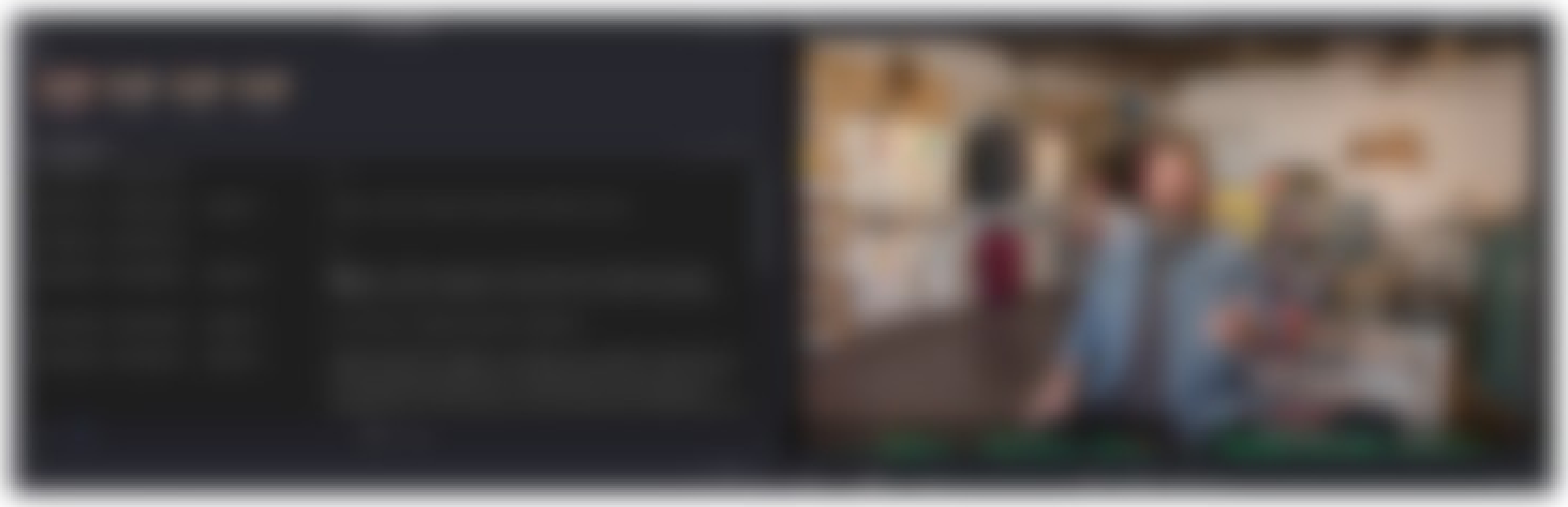


TIP To work better with the AI Transcription window, move it over the Media Storage panel in the media page. You can also increase or decrease the font size of the text by clicking the A+ or A- buttons in the AI Transcription window.

- From the viewer's Options menu (…), choose Show Audio Waveforms in Source Clip and click the first video clip in the AI Transcription window to view its transcription and automatically open it in the viewer.



- In the Transcription window, click the word "My" where Chris introduces himself.



The word is highlighted by the red indicator, and the playhead moves to the same location in the viewer.

- Press the Spacebar to play forward through the interview, watching each word highlight as Chris says them, and then press the Spacebar to stop playback after he says "Mexico."

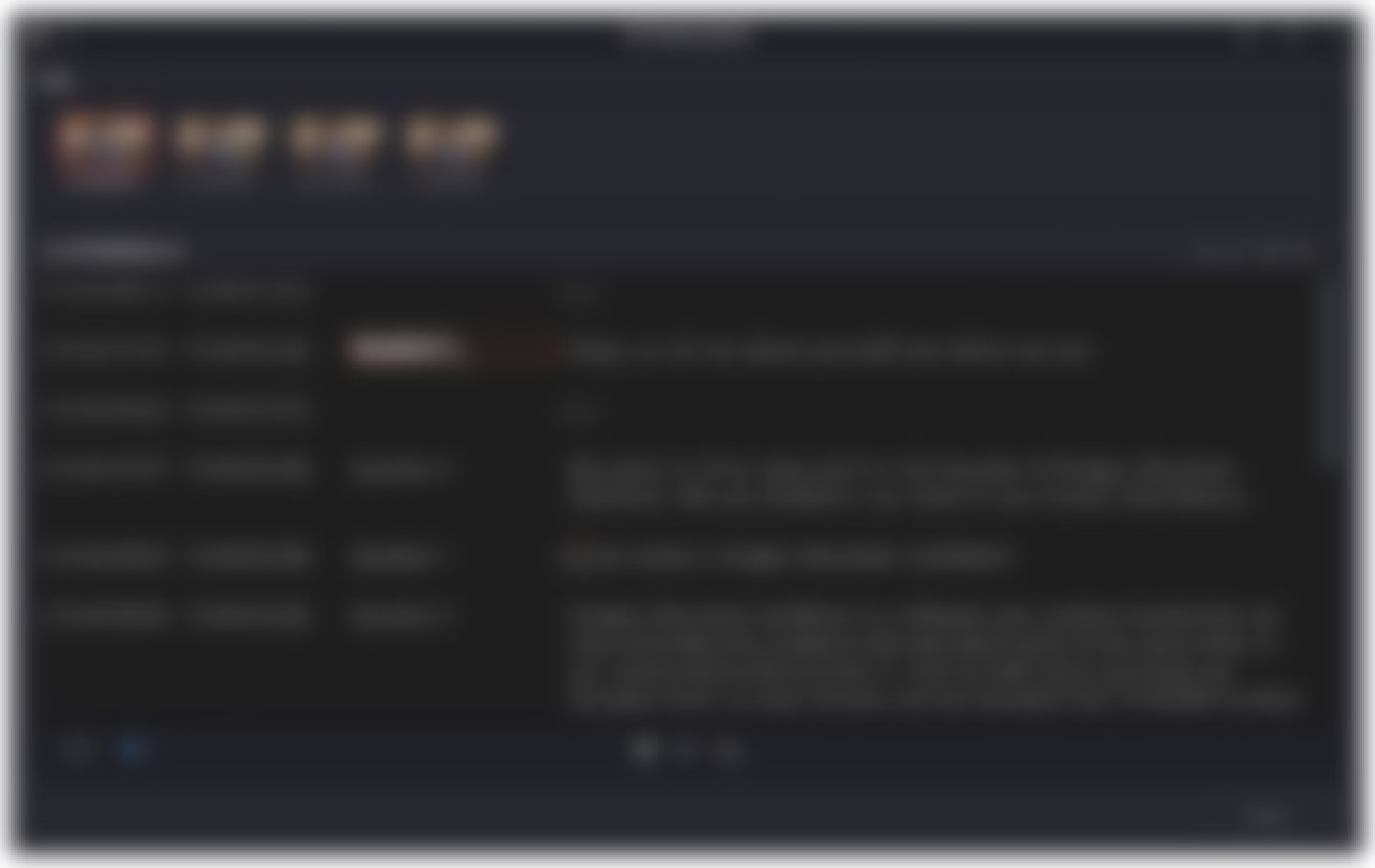
> **NOTE** You can also use the JKL editing shortcut keys to play through the Transcription window for the selected clip.

How cool is that? Now you can just scan through the text of Chris's interview clips, looking for the relevant soundbites, and click a word to take you directly to that part of the interview.

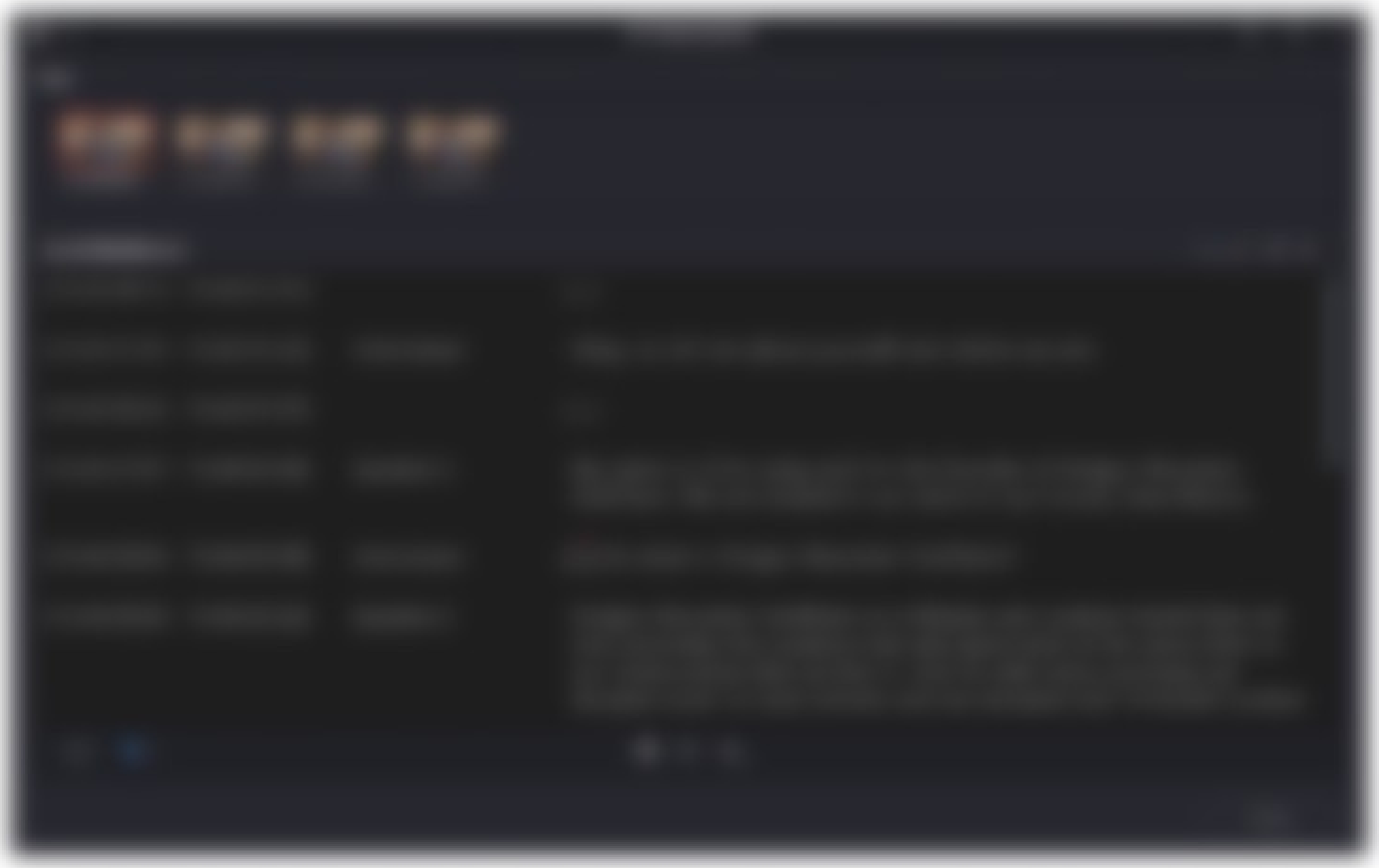
Making Changes to the Transcription

DaVinci Resolve has made a good attempt at transcribing the interview audio and correctly identifying that different people are speaking, but it could probably use a bit of tidying up.

- In the transcript, double-click Speaker 1 to make it editable.

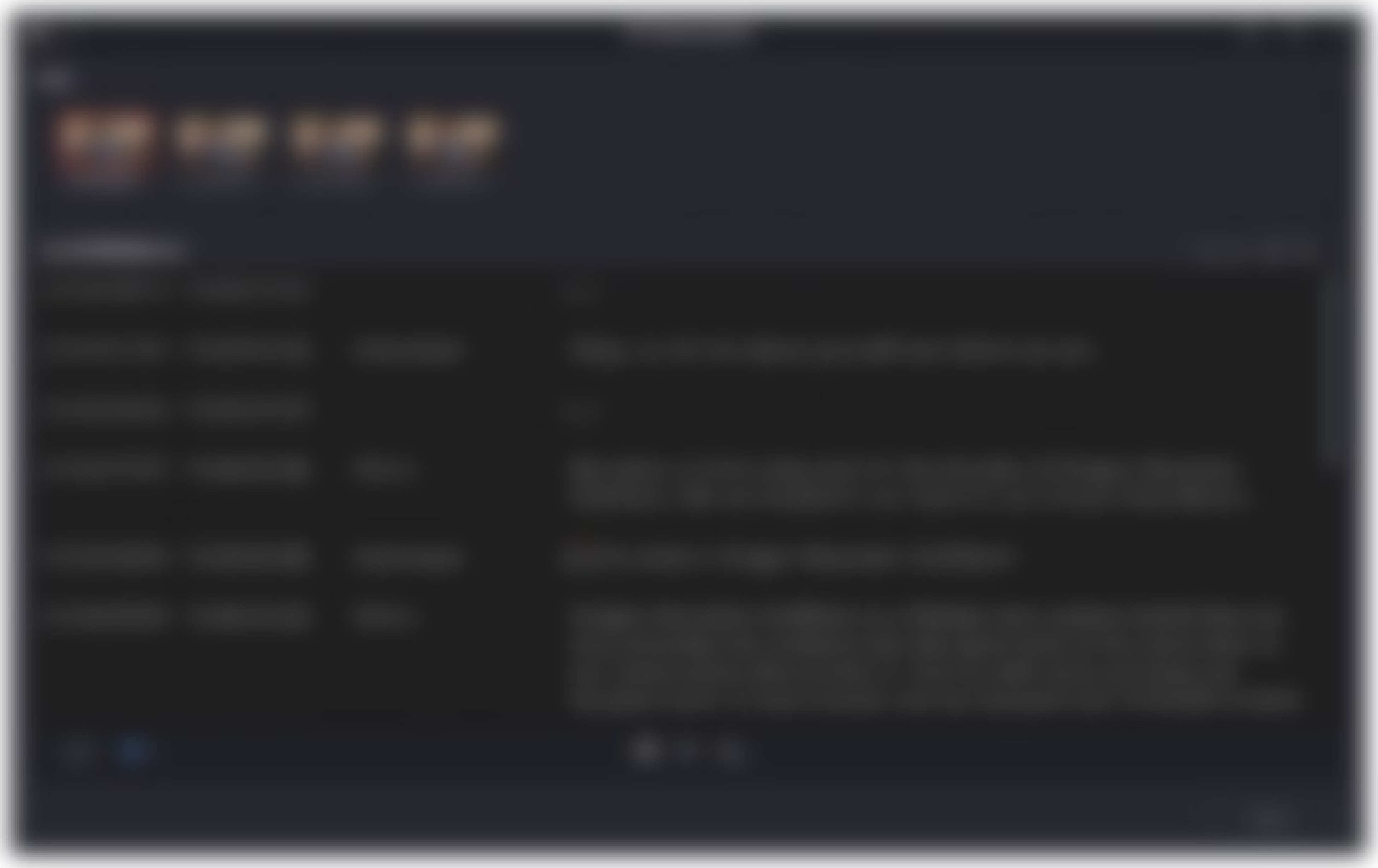


- Change Speaker 1 to **Interviewer** and press Return (Enter).



Now Speaker 1 has been identified as the interviewer across all the transcribed clips.

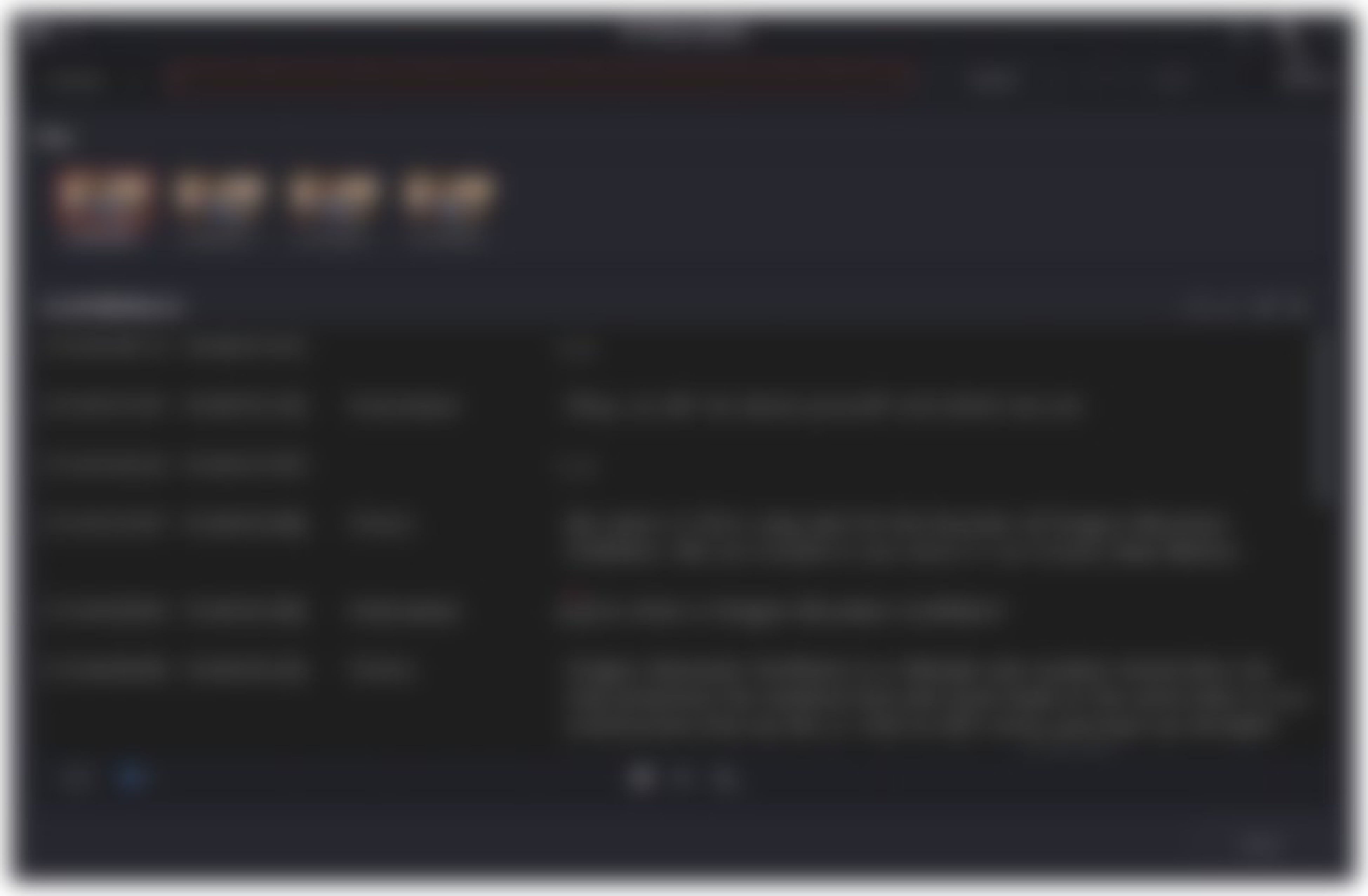
- Double-click Speaker 2 and change the name to **Chris** to identify Chris Long as the speaker, and press Return (Enter).



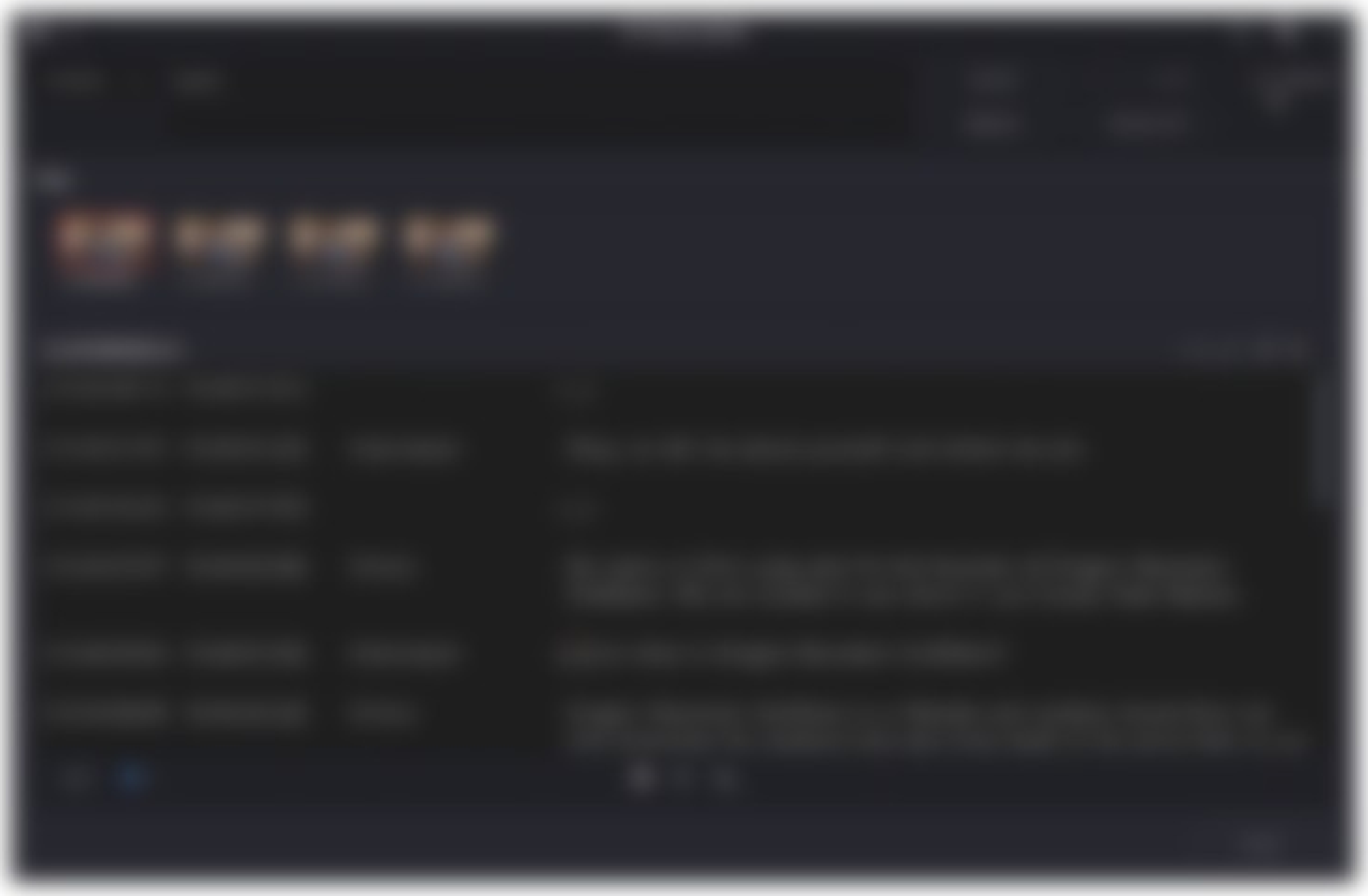
NOTE You can change the speaker assigned to any part of the transcription by highlighting the text, right-clicking, choosing the Assign To Speaker, and then choosing the speaker from the Assign Speaker window.

Next, you will tidy up a couple of annoying mis-transcriptions. While minor mistakes are easy to overlook, it's best to have as accurate a transcript as possible.

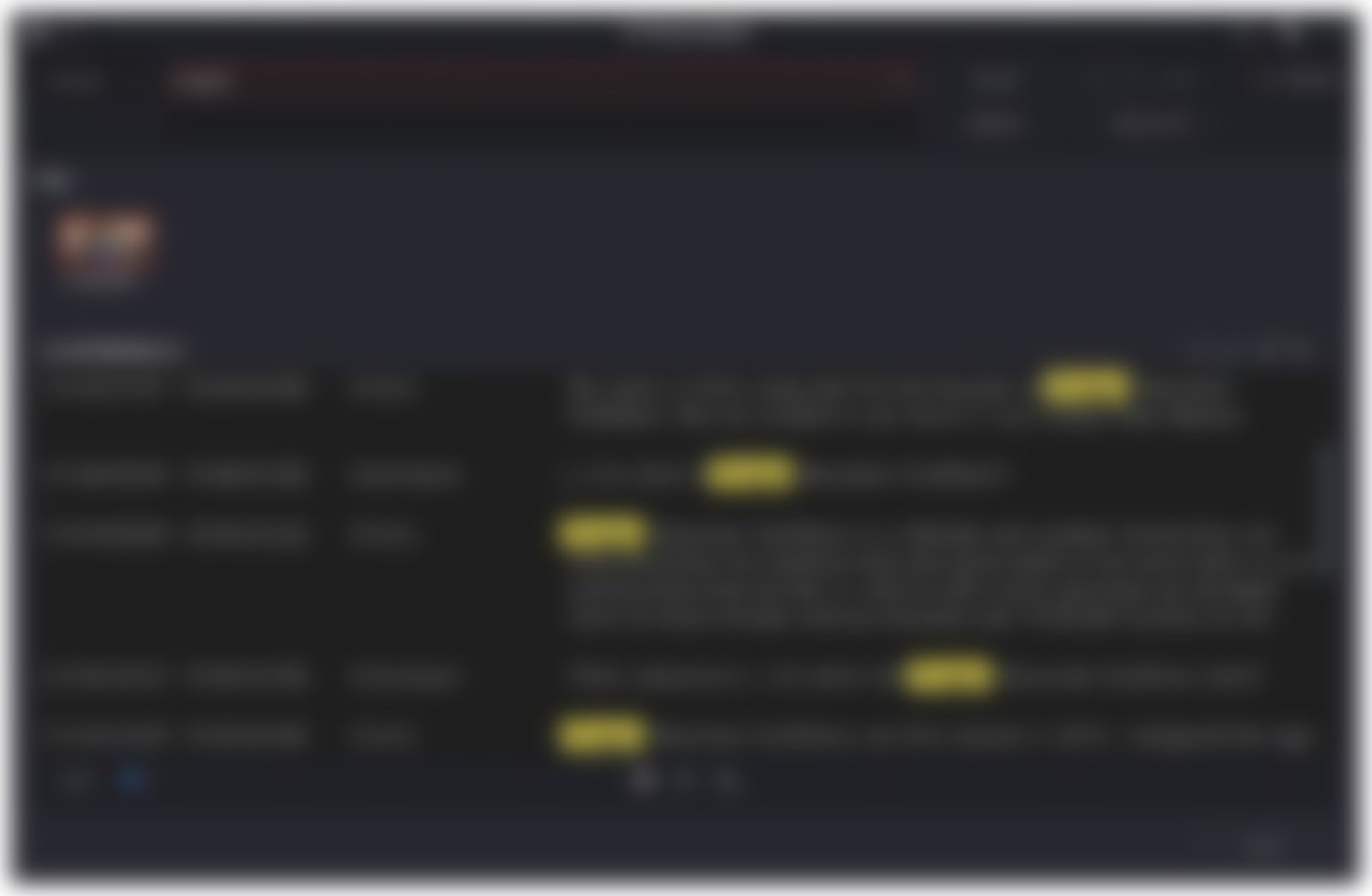
- Click the Search button at the top of the AI Transcription window, which will allow you to search through all the currently loaded clips.



- Click the Replace option to open a second text field. You will use this to specify the correction to the transcript.



- In the Search field, type **Dragon** and click Search.



Every instance of the word "Dragon" is highlighted in the transcript.

- [illegible]

[illegible]

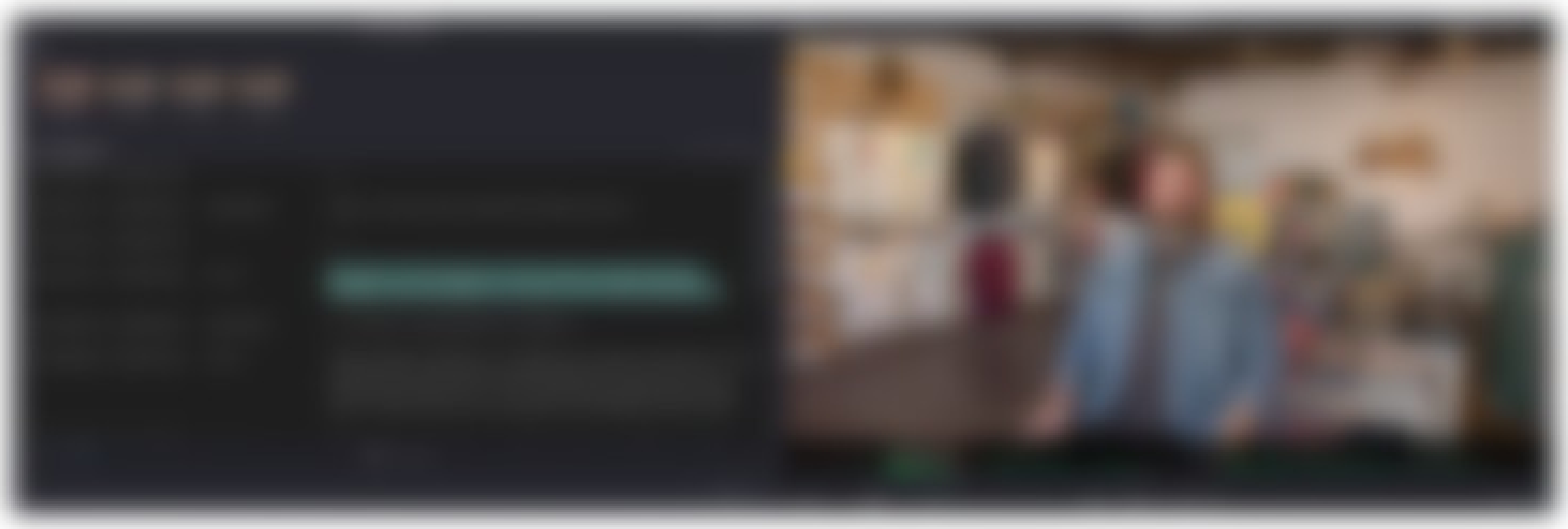
[illegible]

- [illegible]

Creating Subclips with Transcription

In addition to helping you navigate to parts of the transcribed audio, the Transcription window also enables you to create subclips and edit selected parts of the transcript.

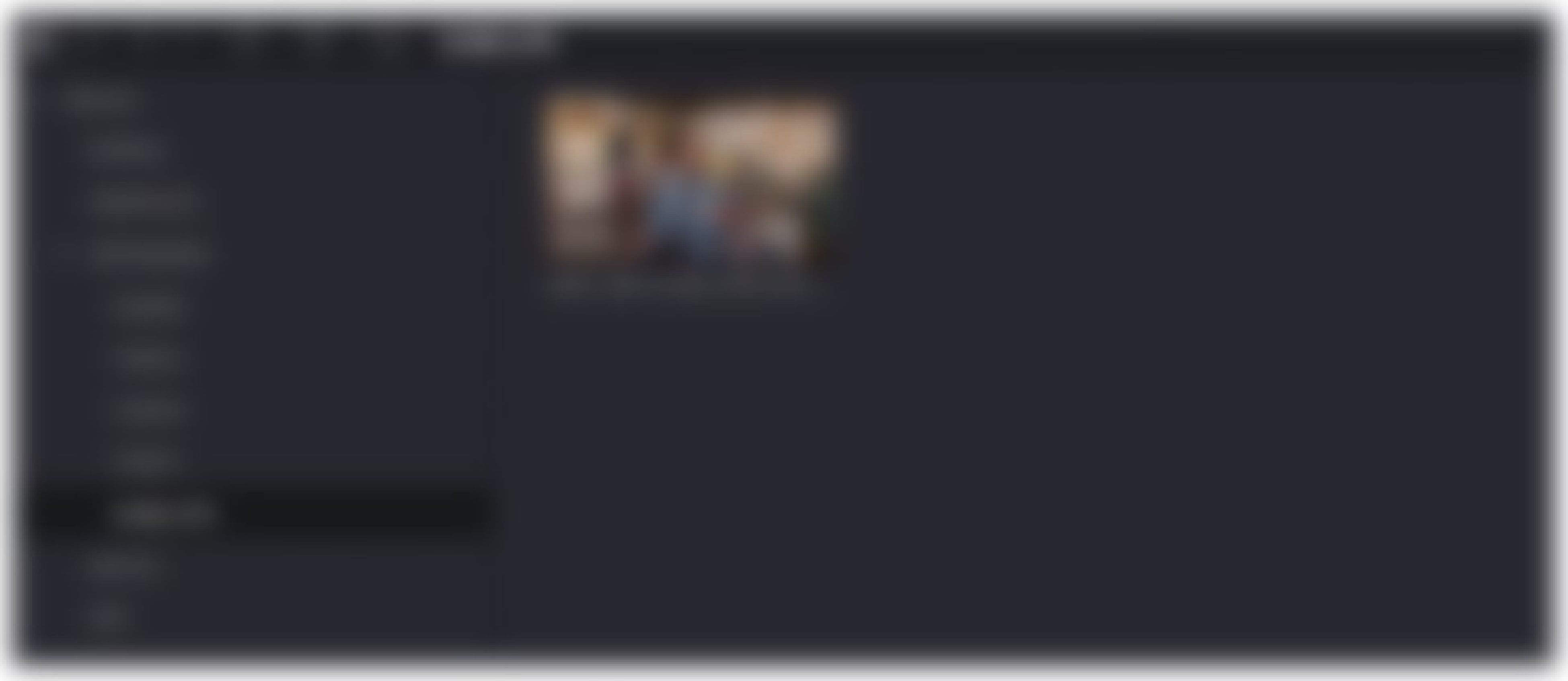
- In the media pool, select the (currently empty) SUBCLIPS bin.
- In the Transcription window, click and hold your mouse button and drag through the first part of the transcript where Chris introduces himself.



This automatically adds In and Out points to the appropriate part of the clip in the viewer.

- In the bottom corner of the Transcription window, click the Create Sub Clip button.

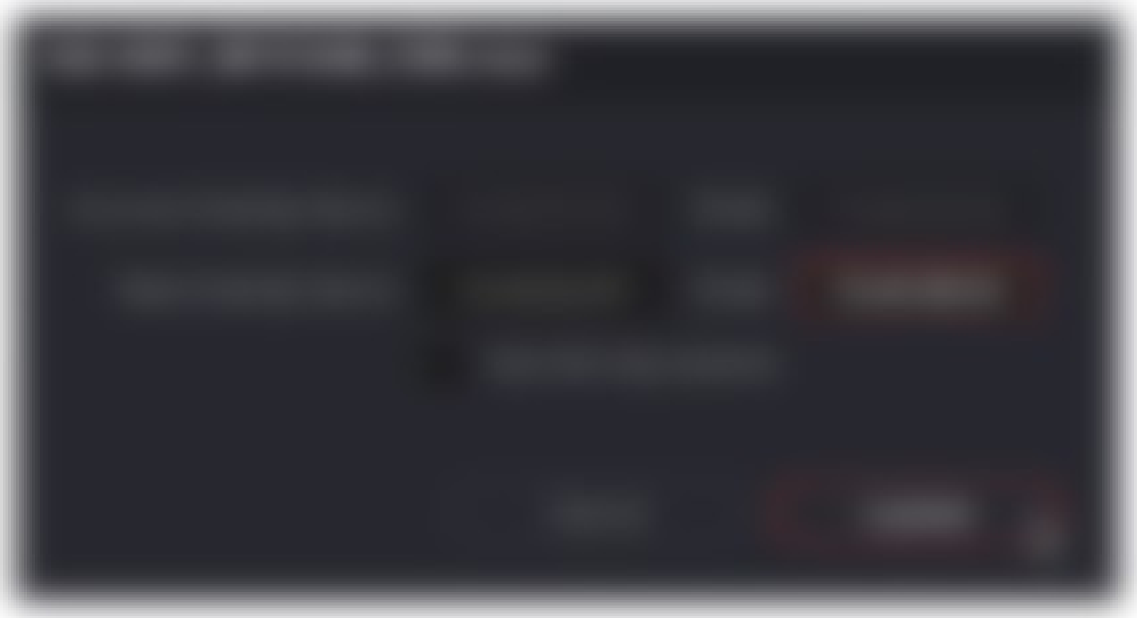
- Click Create in the New Subclip window.



The subclip is added to the SUBCLIPS bin. Notice that it also has the transcription icon.

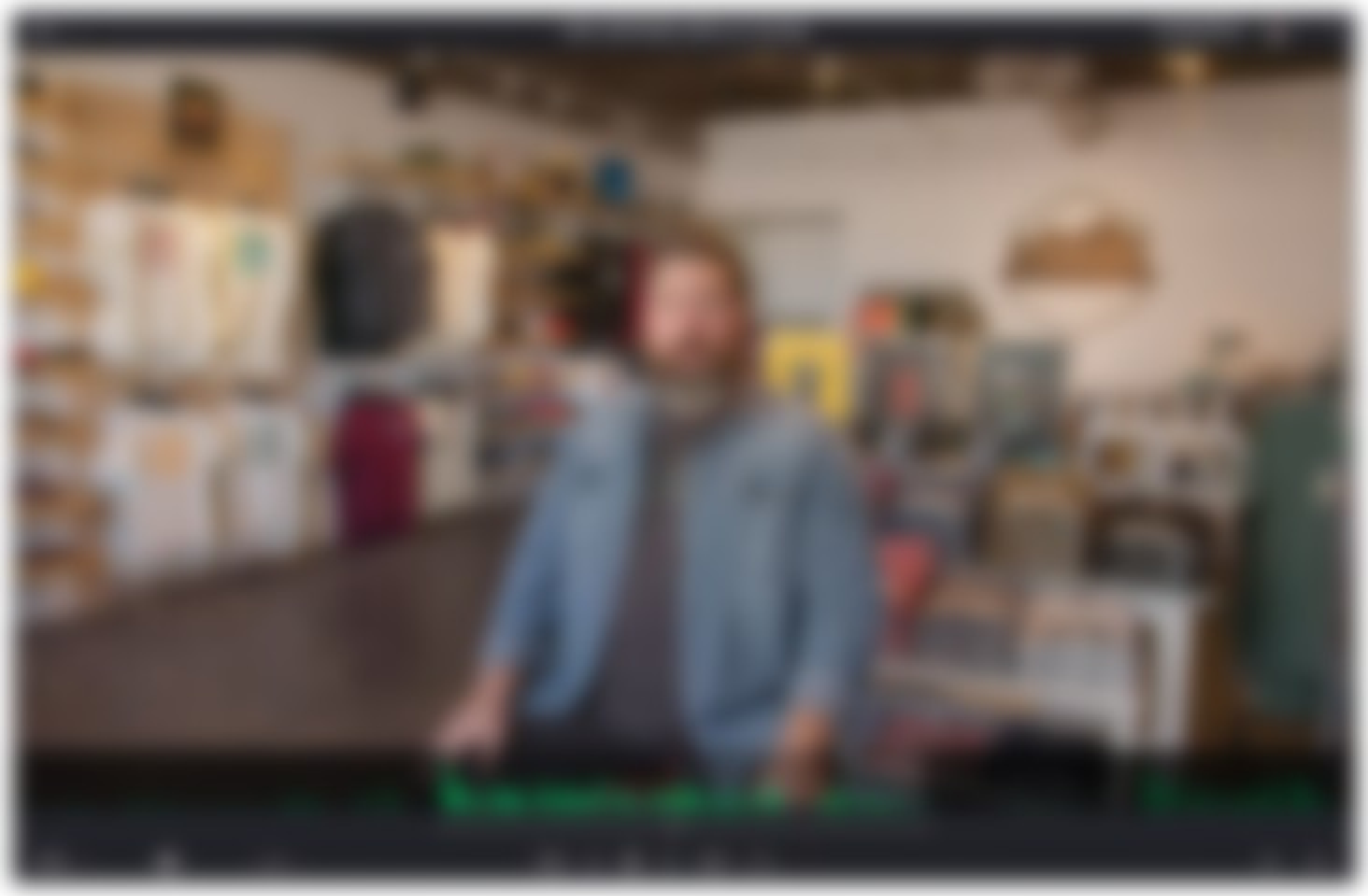
Unfortunately, selecting parts of the transcript like this is very unrefined, and the subclips will probably need to be adjusted afterward to give you a few extra seconds of handles on either side of the soundbite.

- Right-click the subclip and choose Clip Operations > Edit Subclip.
- In the Edit Subclip window, change the New Subclip Start option to 3 seconds earlier and Ends to 3 seconds later.



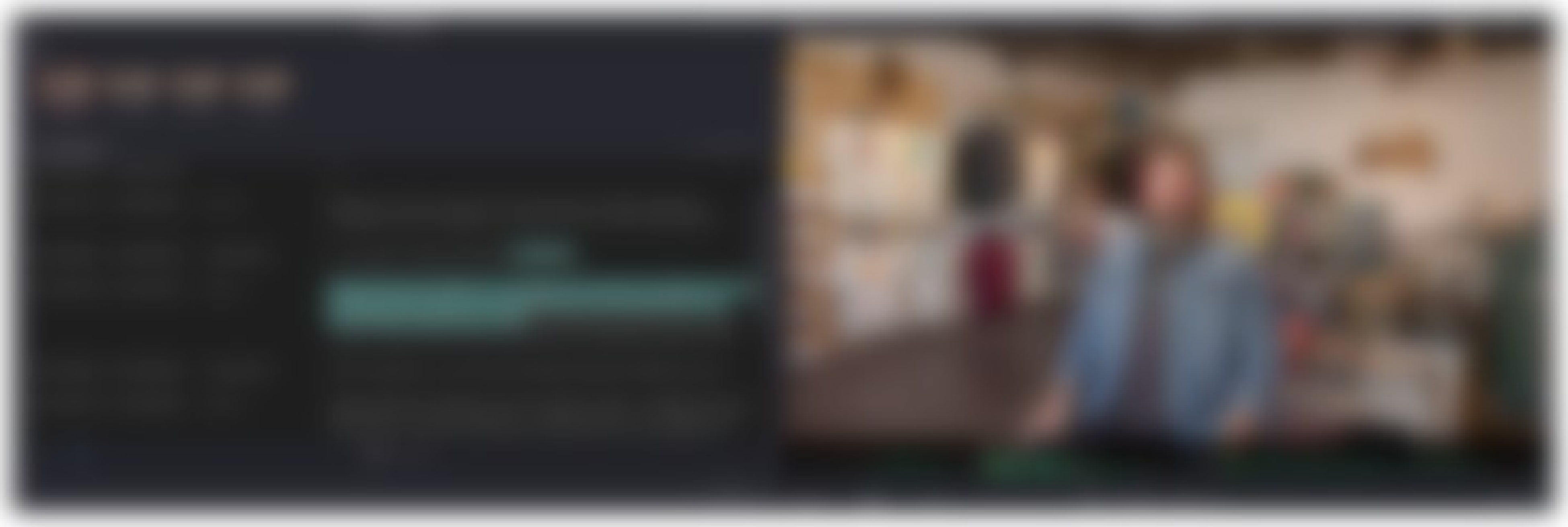
- Click Update.

The subclip now has an additional 3 seconds before and after the originally set In and Out points.



However, you can use your judgment to add your own In and Out points.

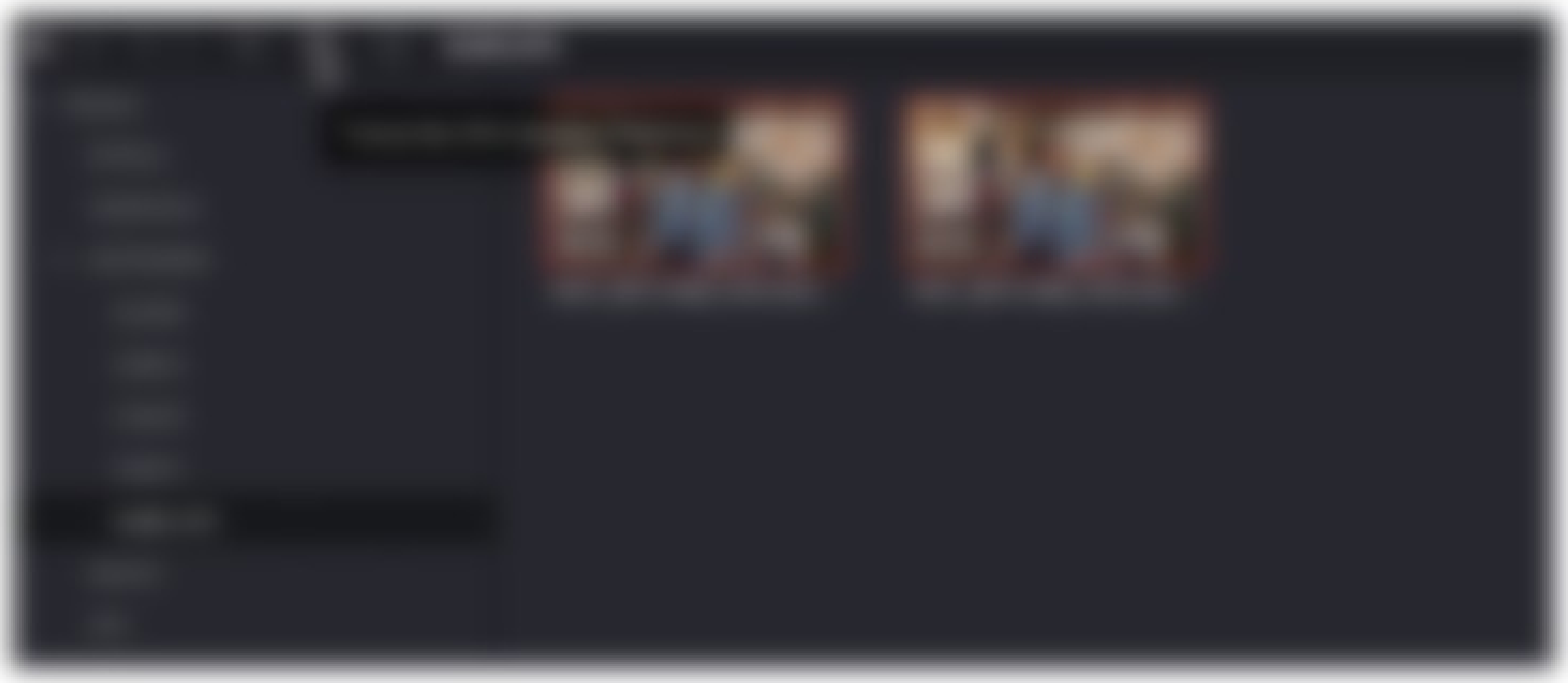
- In the Transcription window, select the first word of Chris's next answer, where he says, "Finger Mountain Outfitters is a lifestyle and outdoor brand…"
- Use J, K, and L to refine the playhead position so it's a little further back from the start of the answer and press I to add an In point.
- Press L to play forward until after Chris says "…communities that we live in," and press O to add an Out point.



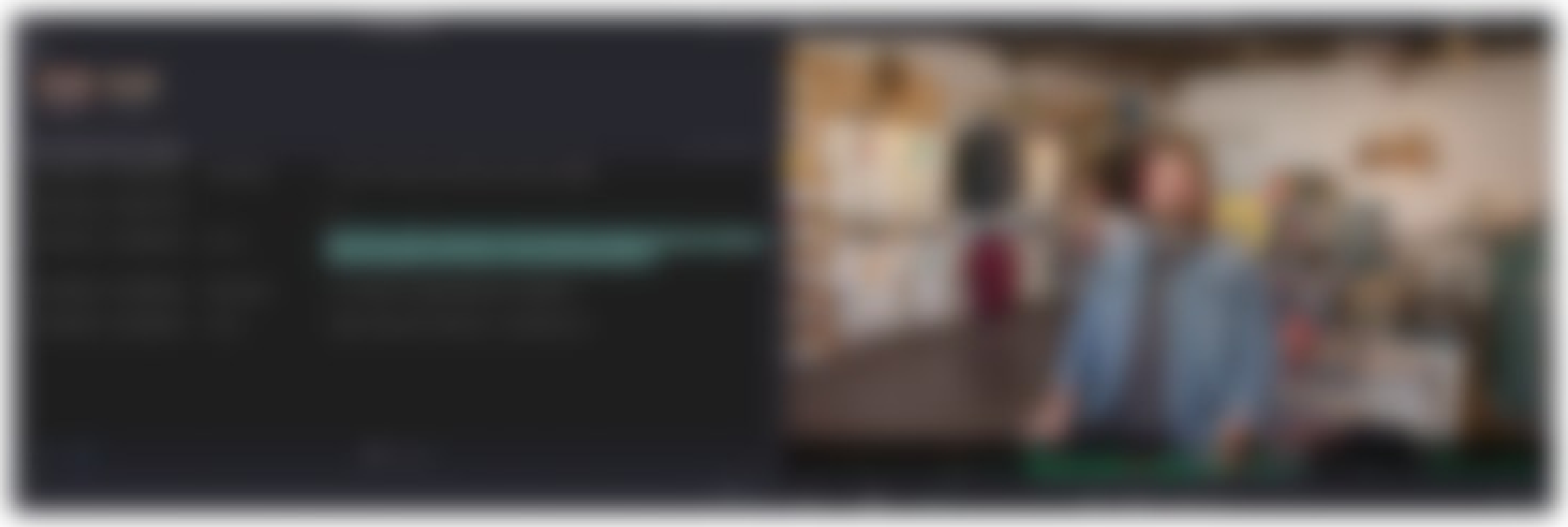
- With the In and Out points set in roughly the right place, press Option-B (macOS) or Alt-B (Windows) to open the New Subclip window and click Create to add the new subclip to the selected bin.

TIP You can preview the portion of the interview you've marked with In and Out points by clicking the Play In to Out button or by pressing Option-/ (forward slash) in macOS or Alt-/ (forward slash) in Windows.

- In the media pool, select the two subclips and click the Transcription button.



The Transcription window opens immediately because the subclips already have the relevant transcription from the parent clip and displays the transcribed audio for this clip, showing you exactly what Chris says.



You can now easily see the text of what Chris is talking about! This will make it easier to add appropriate information in the Description or Comments metadata fields.

- Click the Close button to close the AI Transcription window.

  With the help of the transcribed audio, you've been able to quickly create these subclips and add additional metadata that you can use to rename the subclips or find them easily in the media pool.

Editing Using Transcription

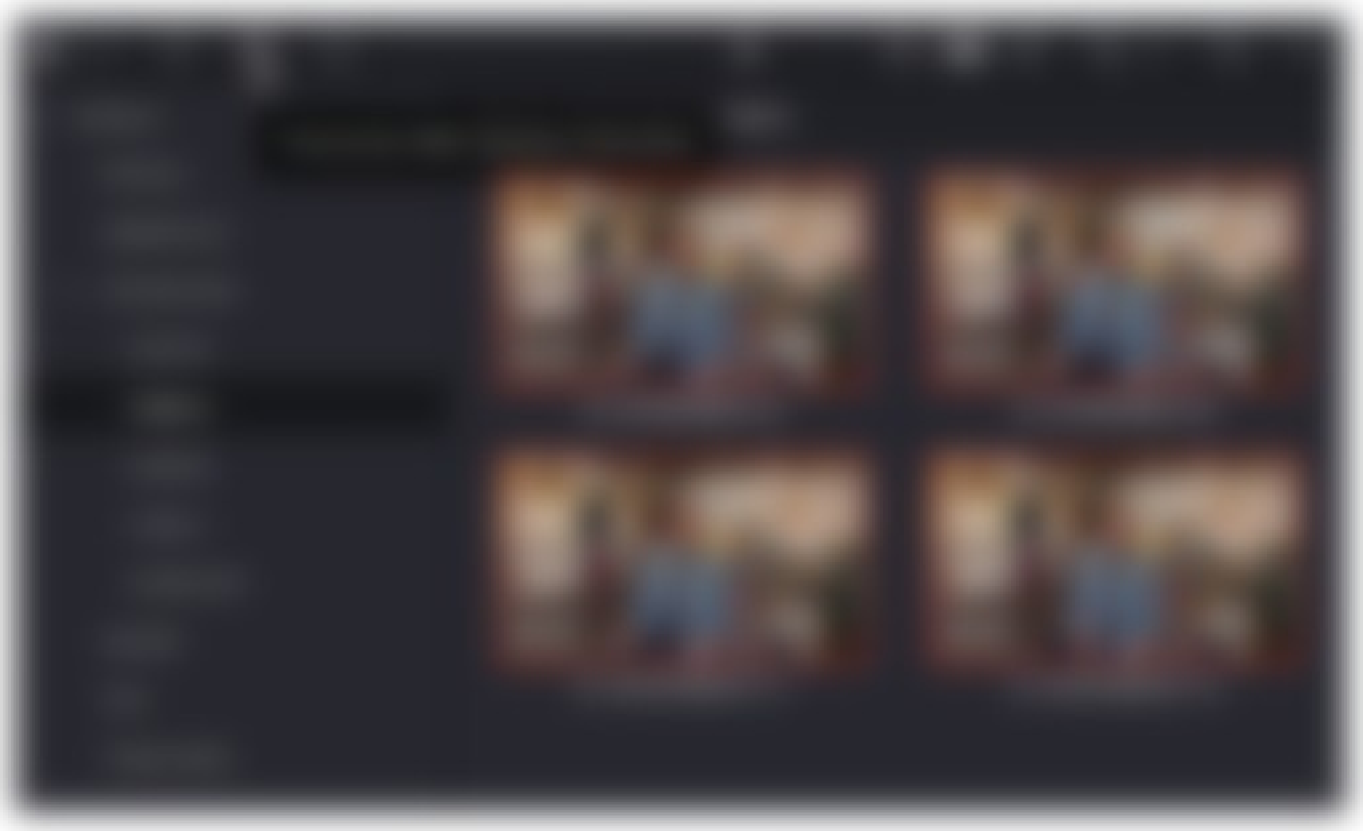
In addition to using AI Transcription to search the interview for soundbites and to create subclips, you can also use it to build basic rough cuts of the dialogue clips, often referred to as a radio edit because you are simply putting all the soundbites together in a single timeline.

Of course, in order to make an edit, you'll need a timeline in the edit page.

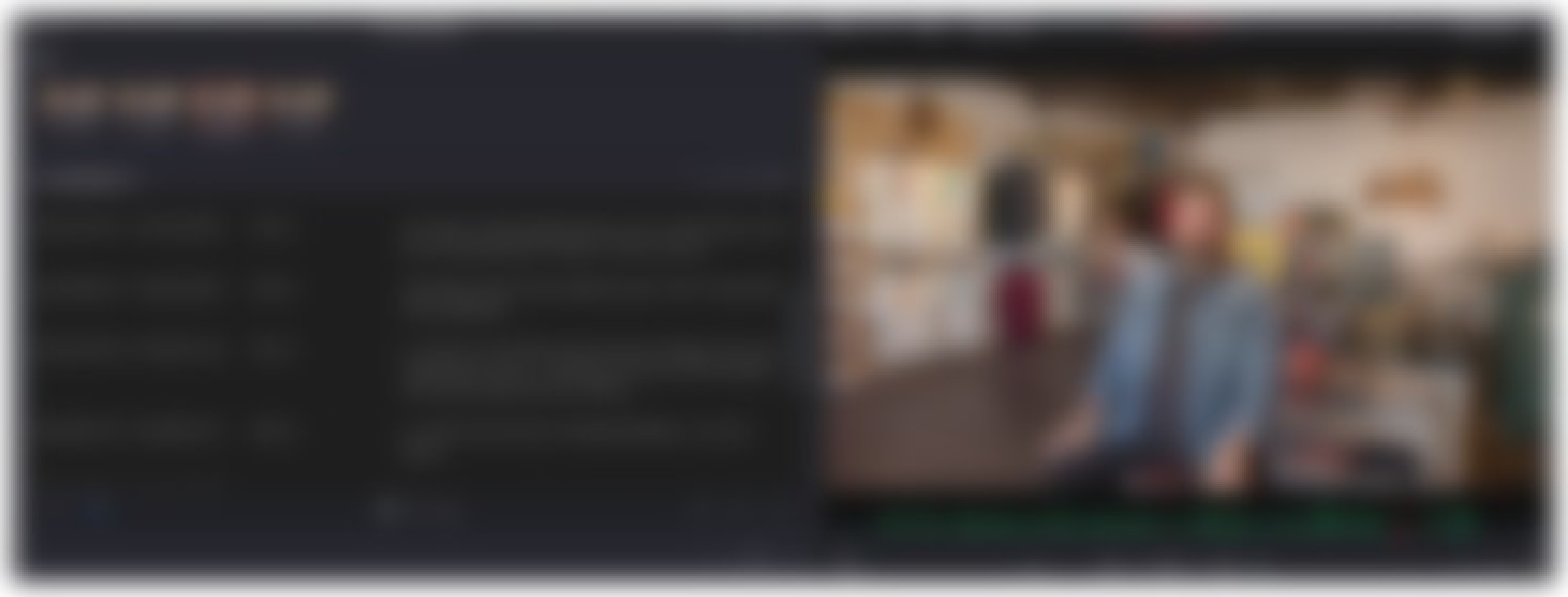
- Press Shift-4 to switch to the edit page.
- In the media pool, select the Master bin and choose File > New Bin or press Shift-Command-N (macOS) or Shift-Ctrl-N (Windows).
- Rename the new bin **Timelines** and select it in the bin list.
- Choose File > New Timeline or press Command-N (macOS) or Ctrl-N (Windows).

- In the New Timeline window, change the name to **[illegible]** and change the Audio Track Type to Mono.

- Click Create.
- Select all the interview clips in the [illegible] bin and click the Transcription button.

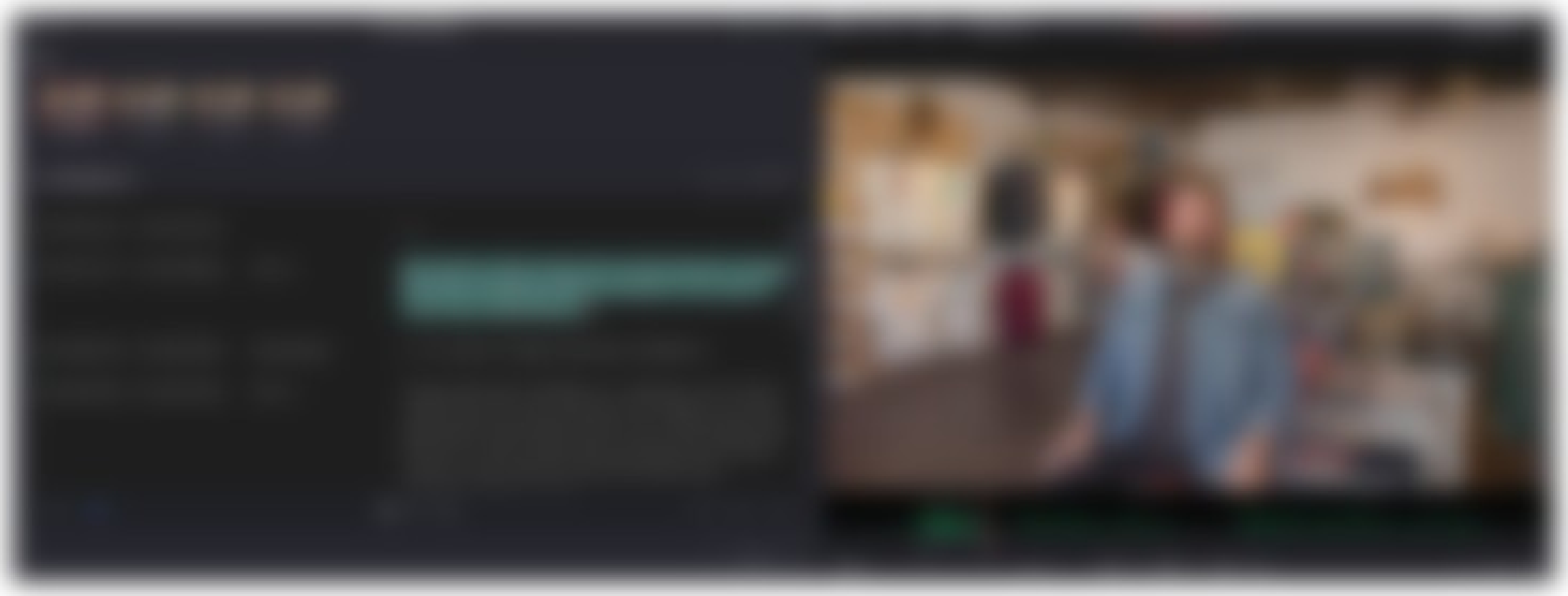


The selected clips open in the AI Transcription window, with a couple more buttons than appeared in the media page.

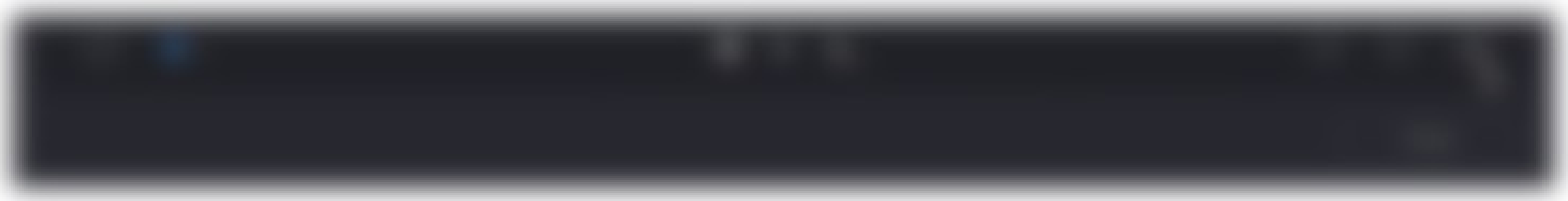


TIP You may want to resize the AI Transcription window so it sits over the media pool for ease of use and enable the audio waveforms in the source viewer.

- Select the first clip, which opens in the source viewer, and highlight the portion of the transcript where Chris introduces himself, automatically setting In and Out points in the source viewer.



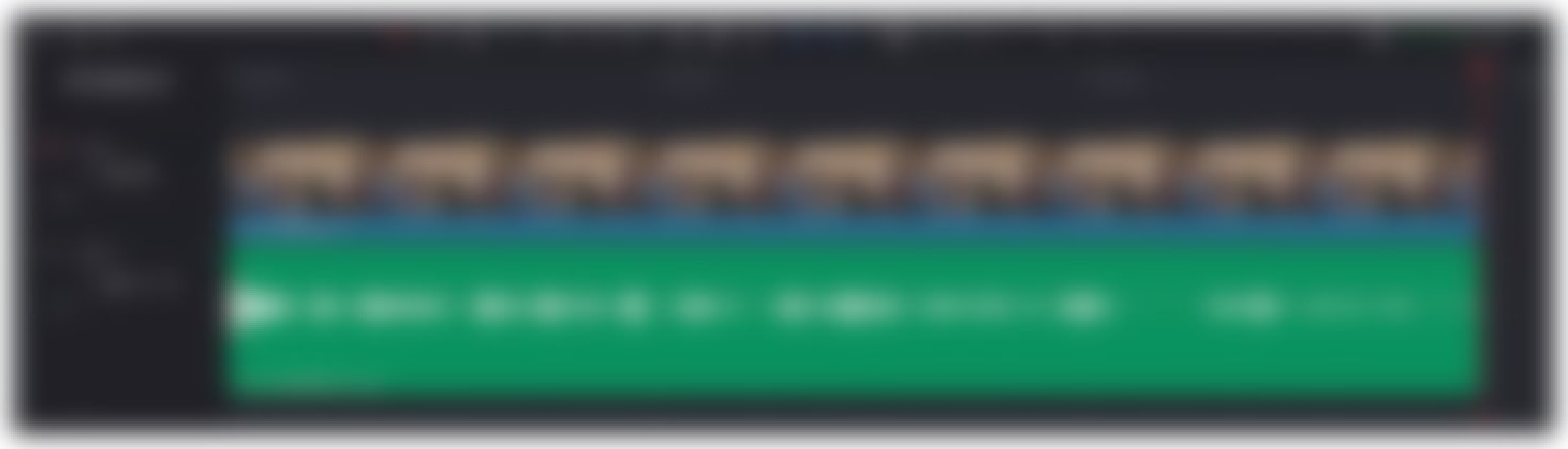
- In the lower right corner of the Transcription window, click the Append button.



The marked portion of the clip is added into the timeline.

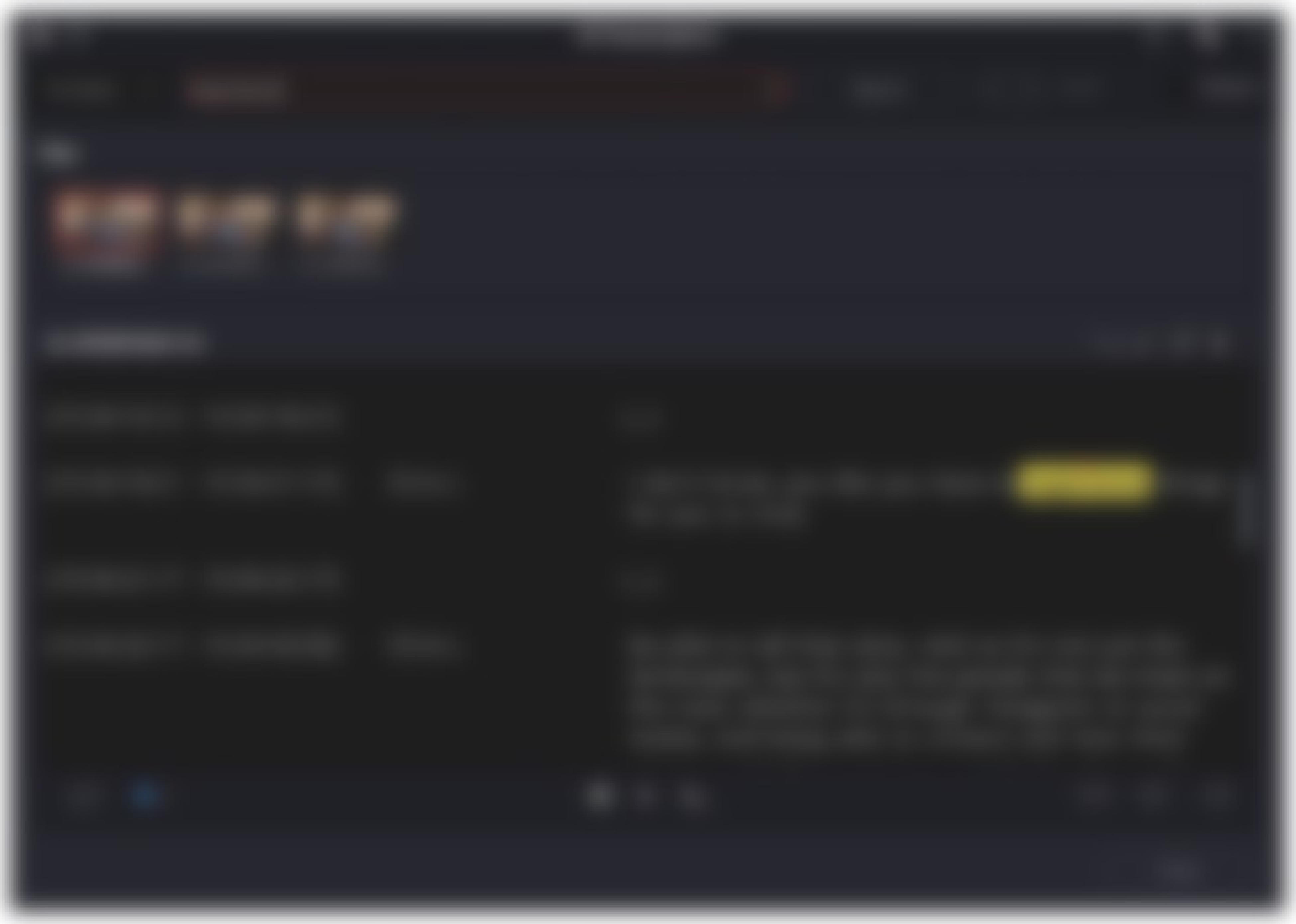
NOTE The three editing buttons in the Transcription window are for Place on Top, Insert, and Append edits. However, you can use any available edit functions via the timeline viewer overlays, shortcuts, Edit menu commands, or timeline toolbar buttons.

- In the timeline, click the Full Extent Zoom button.



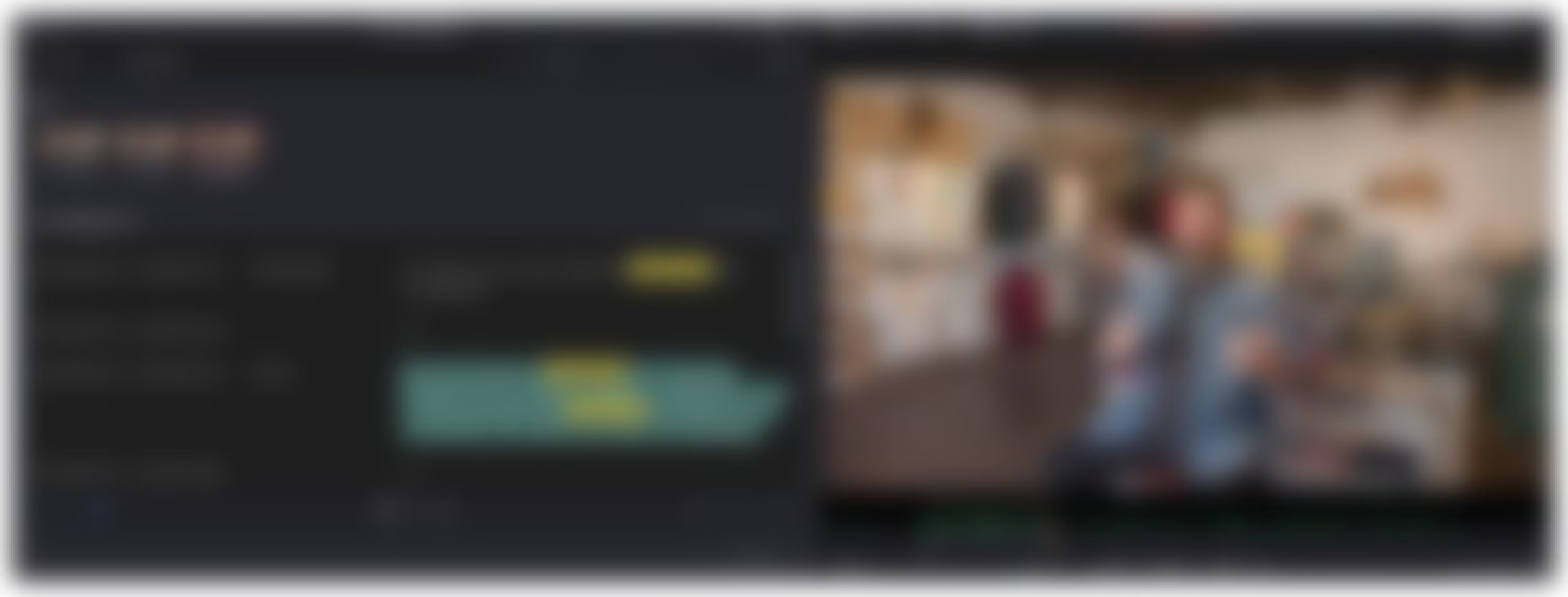
- In the Transcription window, click the Search button and type **experience** in the Search field.

- Click Search.

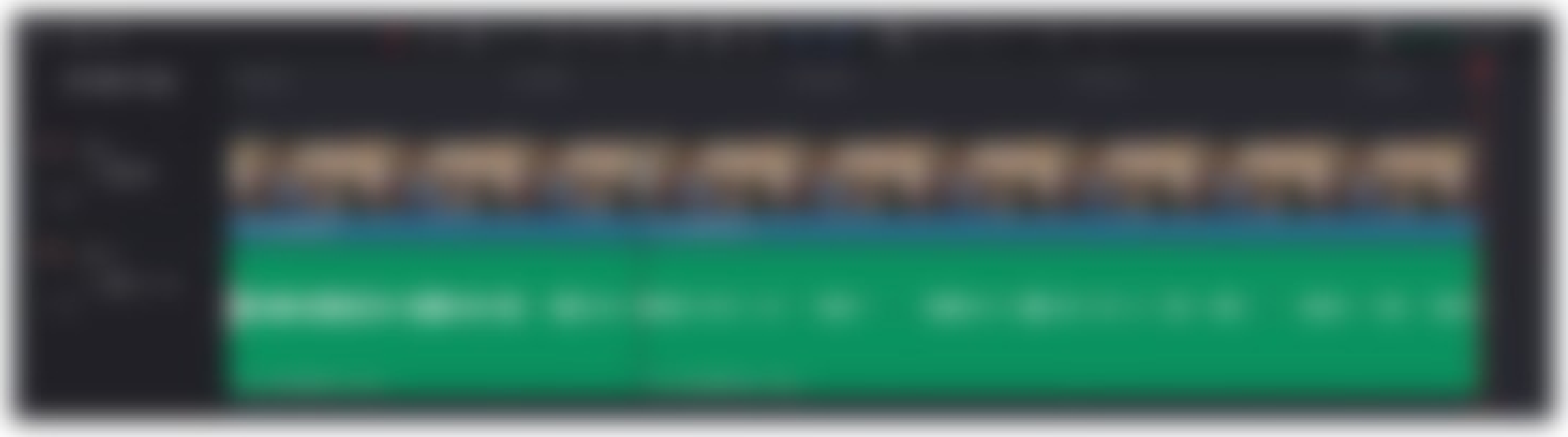


Three clips have the word "experience" in their transcription.

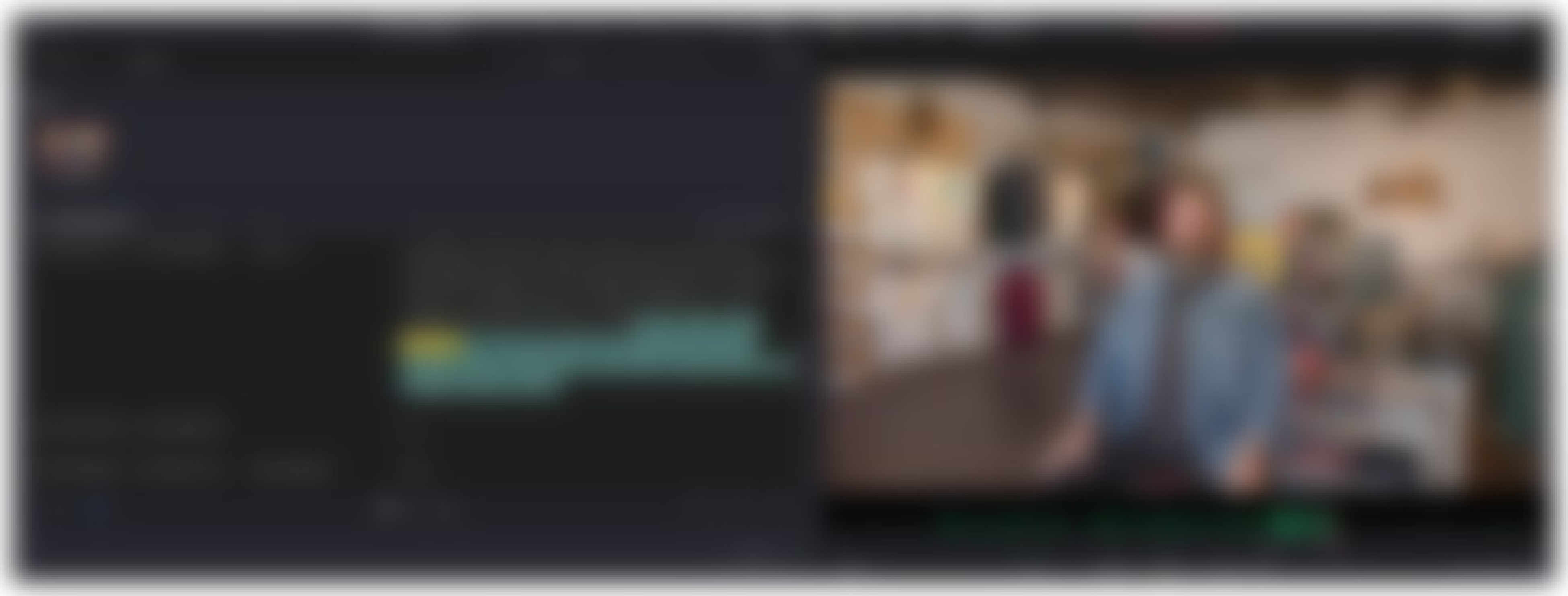
- Select the third clip to open [illegible] in the source viewer and highlight the portion of the interview where he says, "We want people to experience the Southwest because... the culture, the food, the landscapes."



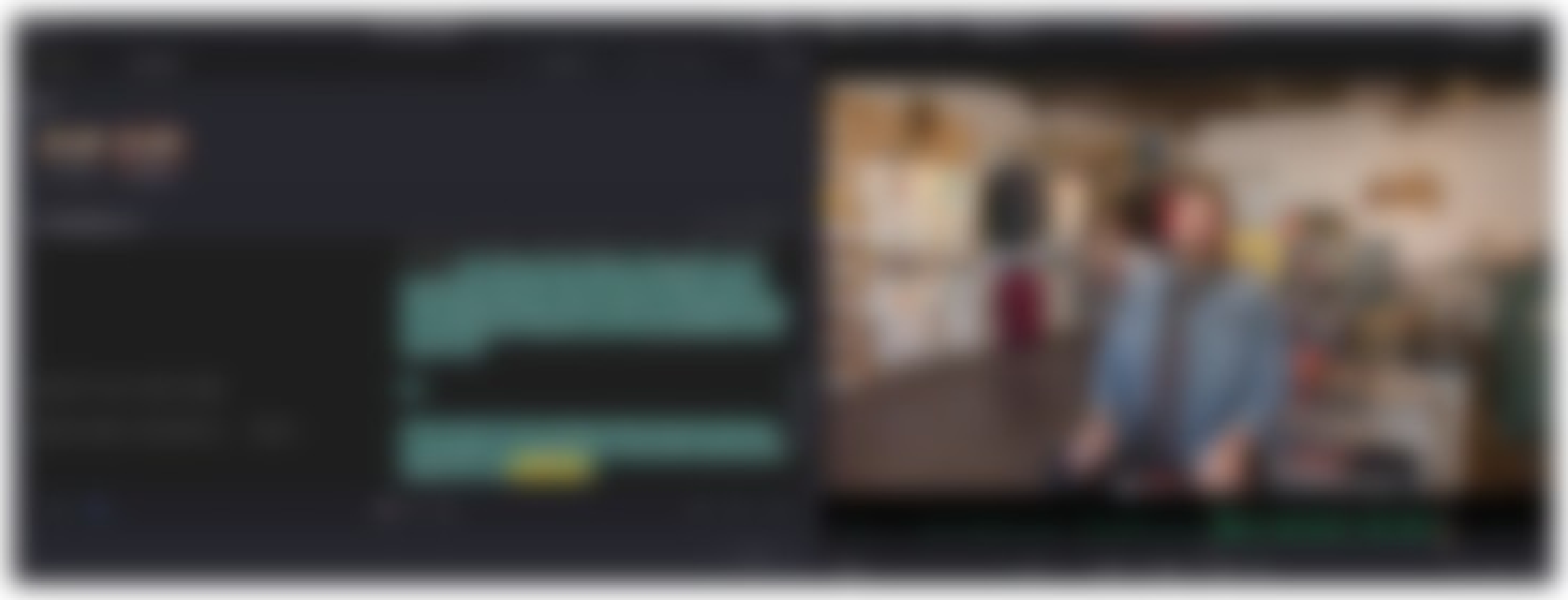
- Press SHIFT-F12 to append the clip in the timeline.



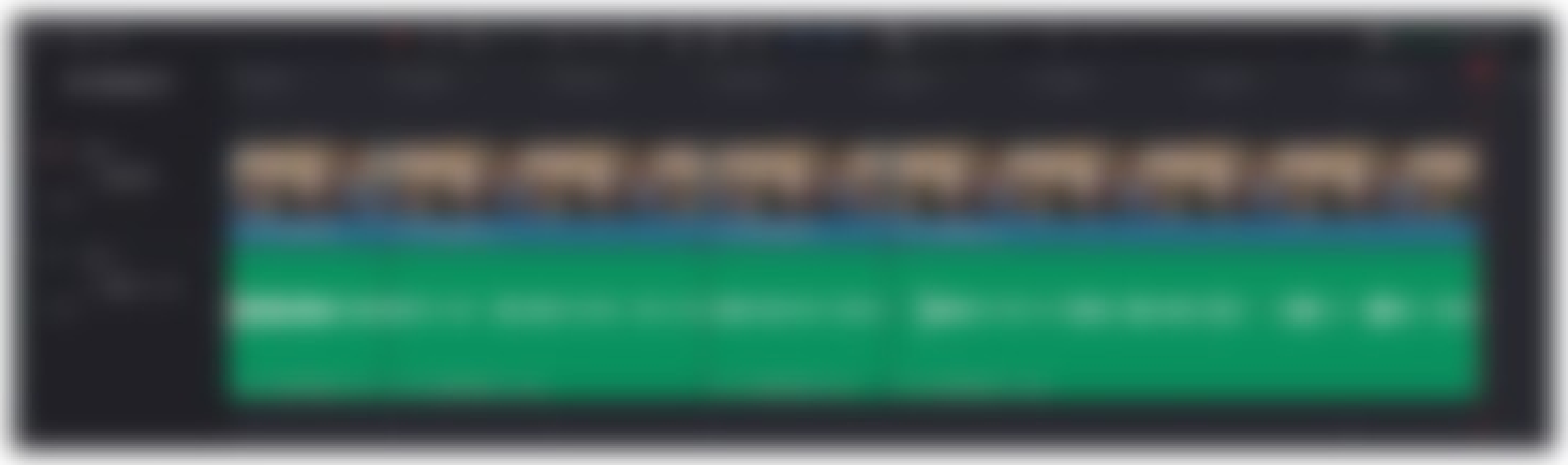
- In the Search field, type **inspires** and click Search.
- Highlight the part of the transcription where Chris says, "That's what really inspires us [illegible] design process starts."



- Press Shift-F12 to perform an Append edit.
- In the Search field, type **southwest** and click Search.
- Select the second clip displayed in the Transcription window and highlight the part of the interview where Chris says, "Our brand is really a reflection ... experience the southwest."



- Press Shift-F12 to perform an Append edit.



- In the AI Transcription window, clear the Search field and close the search controls.

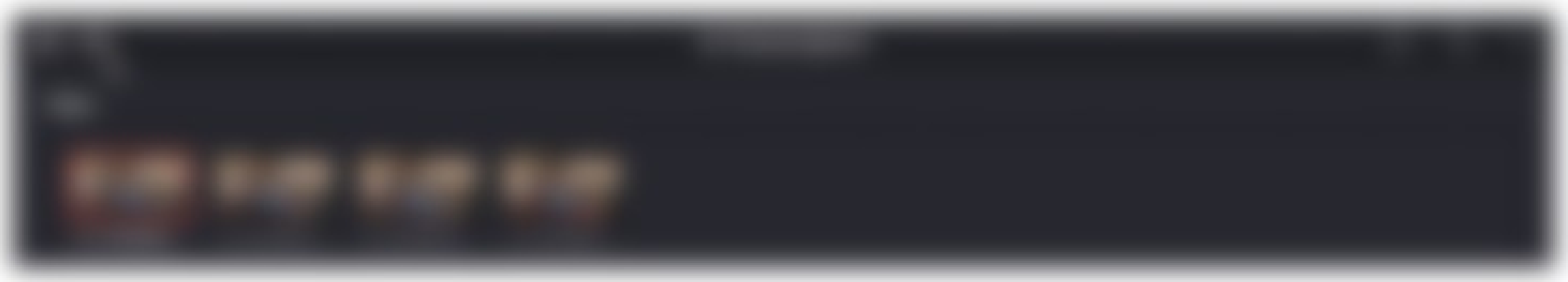
Using the transcript of the interview makes it much easier to locate the different soundbites effectively for a simple sync pull.

NOTE You can remove the audio transcription for any clip by right-clicking the clip and choosing Audio Transcription > Clear Transcription.

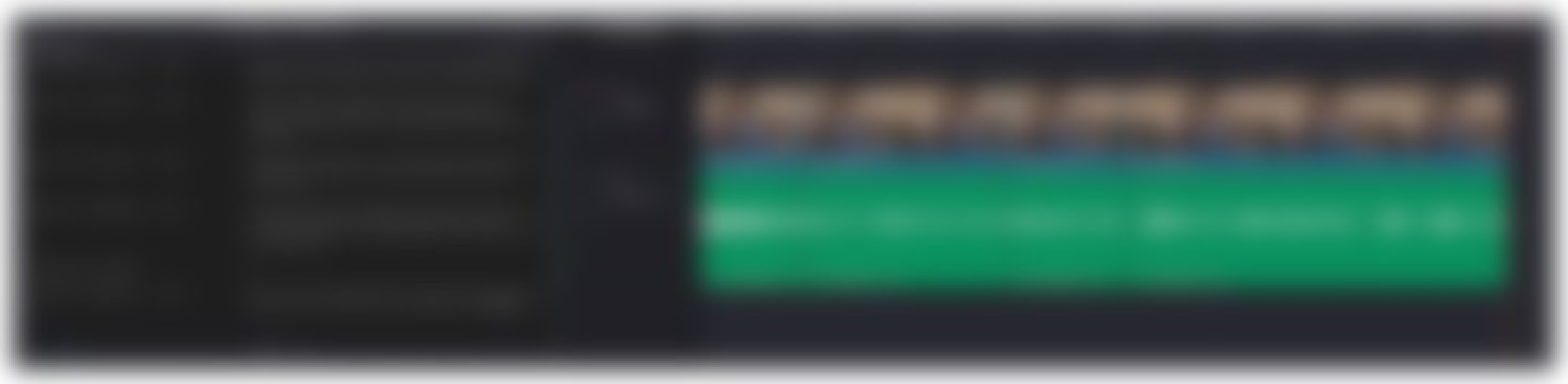
Editing Transcribed Clips in the Timeline

You can also use the Transcription window for editing transcribed clips directly in the timeline.

- In the top-left corner of the Transcription window, click the Timeline button.

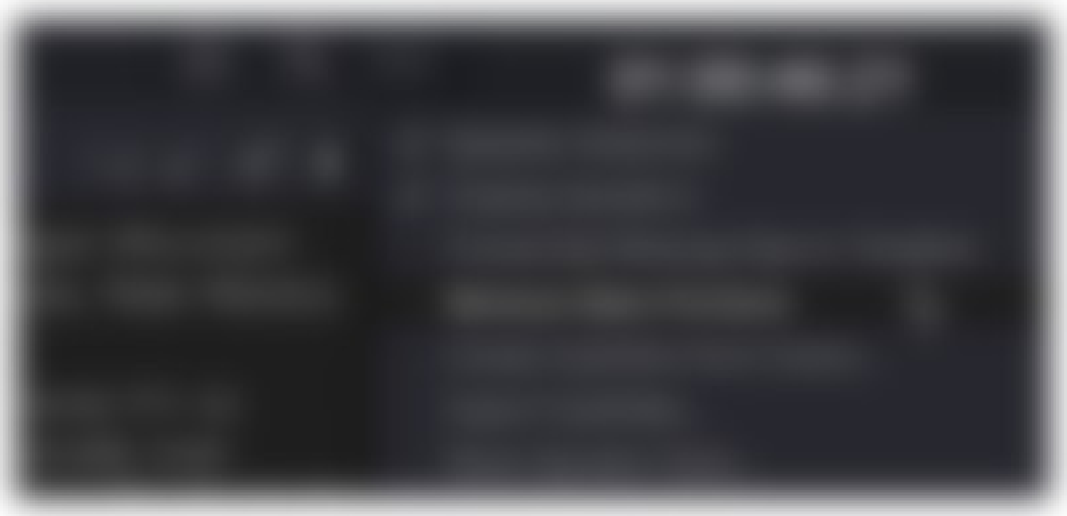


The Transcription window now displays the transcription for the clips in the timeline.

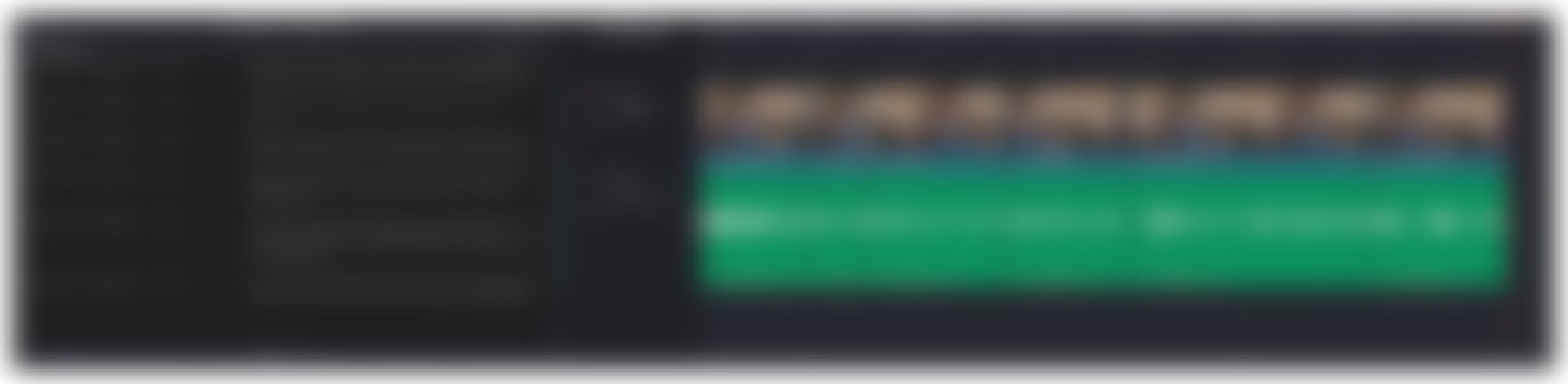


You'll see in a couple of places that the transcription is represented by a set of ellipses (...). This represents a portion of the audio where no transcribable audio is present and is considered to be a silent portion.

- Click the Transcription window's Options menu (...) and choose Remove Silent Portions.



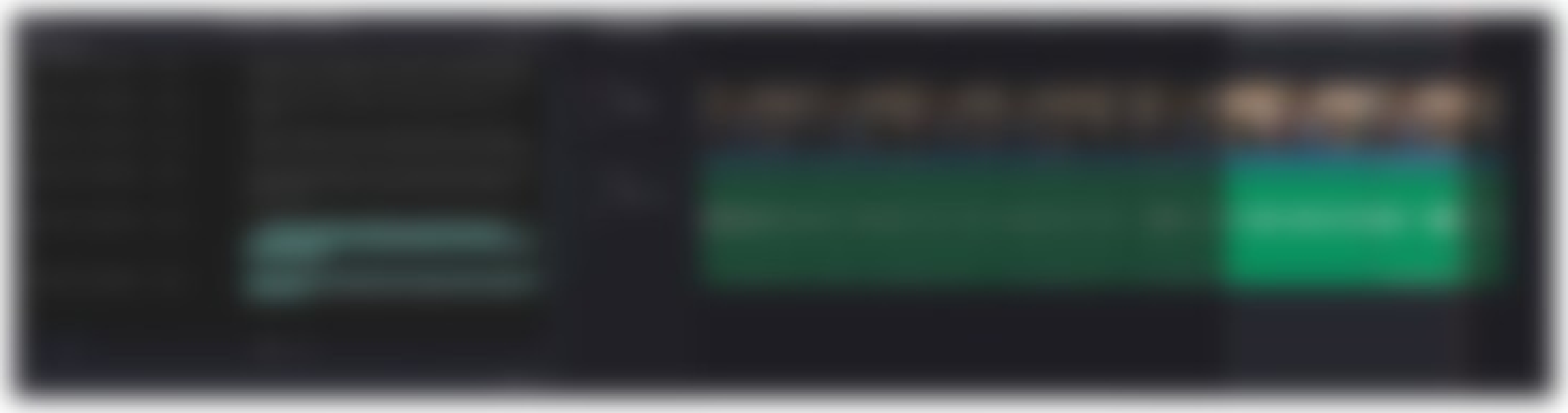
The silent parts of the transcription is removed from the timeline transcription, and the timeline clips are trimmed accordingly.



[illegible]

[illegible]

- [illegible]



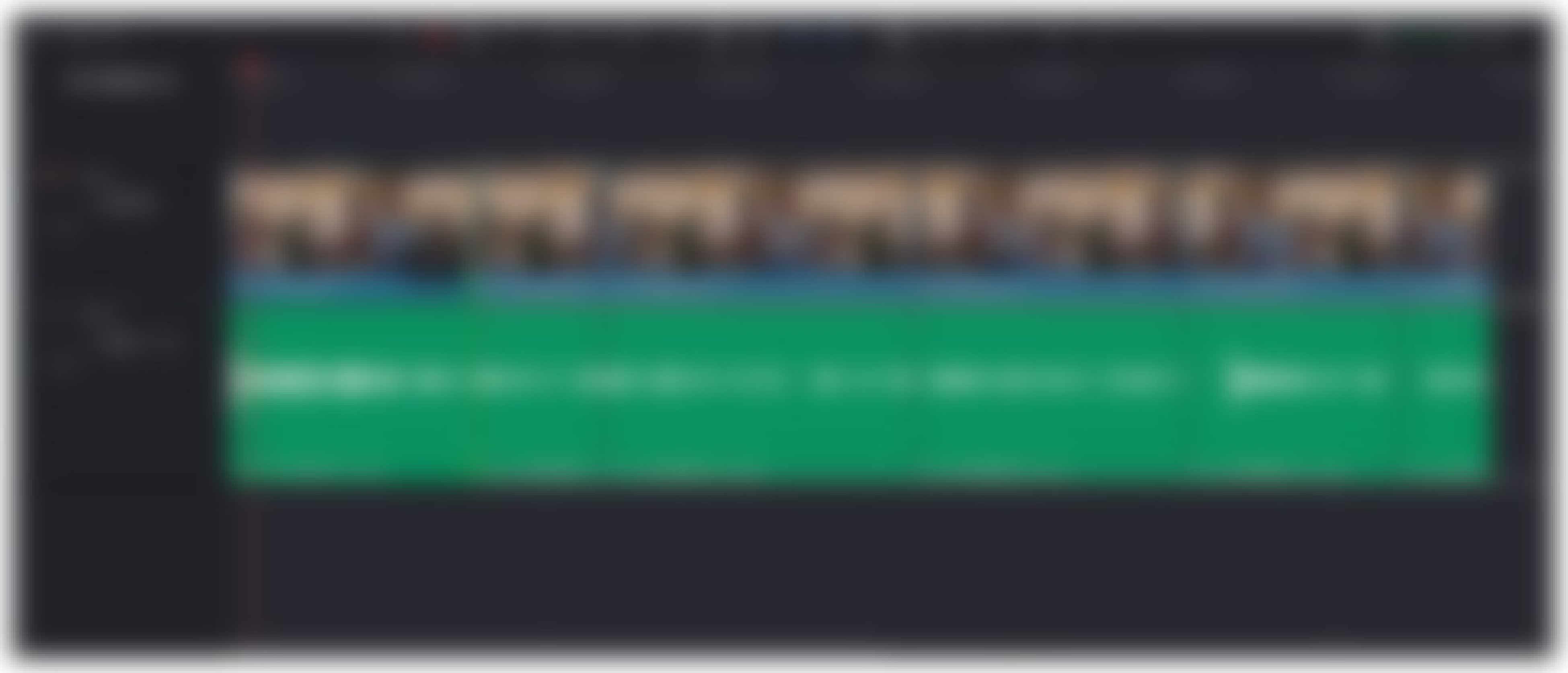
- [illegible]

- [illegible]

[illegible]

[illegible]

- Work through each edit point in the timeline, rippling the start and end points of each clip to refine the edits between the soundbites as necessary.



TIP If you trim the clips with the mouse, it can be useful to have Audio Scrubbing enabled (Shift-S) and Snapping disabled (N) during this process. It will make it easier to judge the adjustments you're making.

- When you have refined the edit sufficiently, move the playhead back to the start of the timeline and play through to review your changes.
- In the AI Transcription window, click Close.

NOTE The Transcription window has basic Copy, Cut, Paste, and Delete functions if you right-click a selected part of the transcript. However, these aren't really video editing functions. Delete and Cut will always leave a gap in the timeline (even if Trim Edit mode is active), and Paste will always overwrite the content in the timeline. This, coupled with the fact that the transcription doesn't honor the timeline's In and Out points, will result in a very confused timeline very quickly. If you wish to reorder the soundbites, do not use the Transcription window directly. Instead, use the Edit > Swap Clip Towards Left/Right commands. Alternatively, you can use Edit > Ripple Cut to remove a selected clip from the timeline and place it on your computer's clipboard, and then use Edit > Paste Insert to insert the clip from the clipboard back in the timeline at the current playhead position. Any changes in the clip order in the timeline will be reflected in the Transcription window.

Transferring Transcriptions

What if the audio for these clips has been transcribed for one project, but you want to use the same clips for another project? Unfortunately, transcription metadata isn't kept with the source media and isn't part of the standard clip metadata you were able to easily export and import in the previous lesson. However, there are still several options for transferring transcriptions between projects.

Power Bins — You can add the transcribed audio clips to a power bin, which can then be used to add the transcribed clips to another project in the same project library.

Export Subtitles — You can also export a transcription as a subtitle (.srt) file. This will have basic timecode and text information that can then be used when the same clip is imported into another project. In the Transcription window, click the Options menu (...) and choose Export Subtitle for the selected clip. Once the subtitle has been exported, right-click the clip in another project and choose Audio Transcription > Import from Subtitle. Once imported, DaVinci Resolve will use the timecode information in the subtitle to recreate the transcription. However, this won't be as precise as generating the transcription using the DaVinci Resolve Neural Engine.

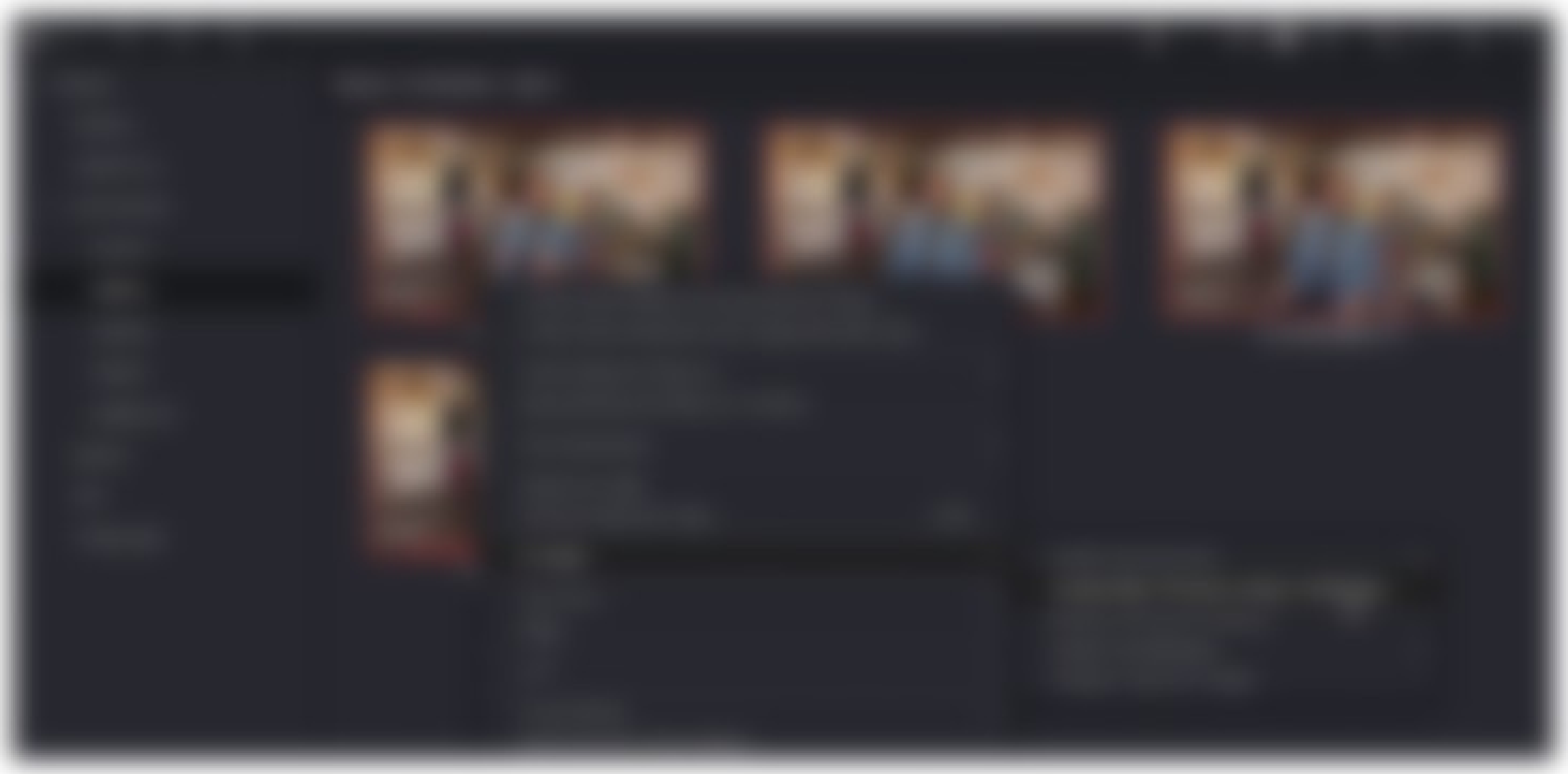
Export Bin — Another option is to export the bin containing the transcribed clips by choosing File > Export > Bin. This will create a DaVinci Resolve Bin file (.drb), which can be imported into another DaVinci Resolve system, along with the clips' transcriptions.

If necessary, you can also export a simple text file of the entire transcription for a clip by clicking the Export button in the top right of the Transcription window – although, since there's no timecode reference with this file, its use for editing is limited.

Using IntelliScript (Studio Only)

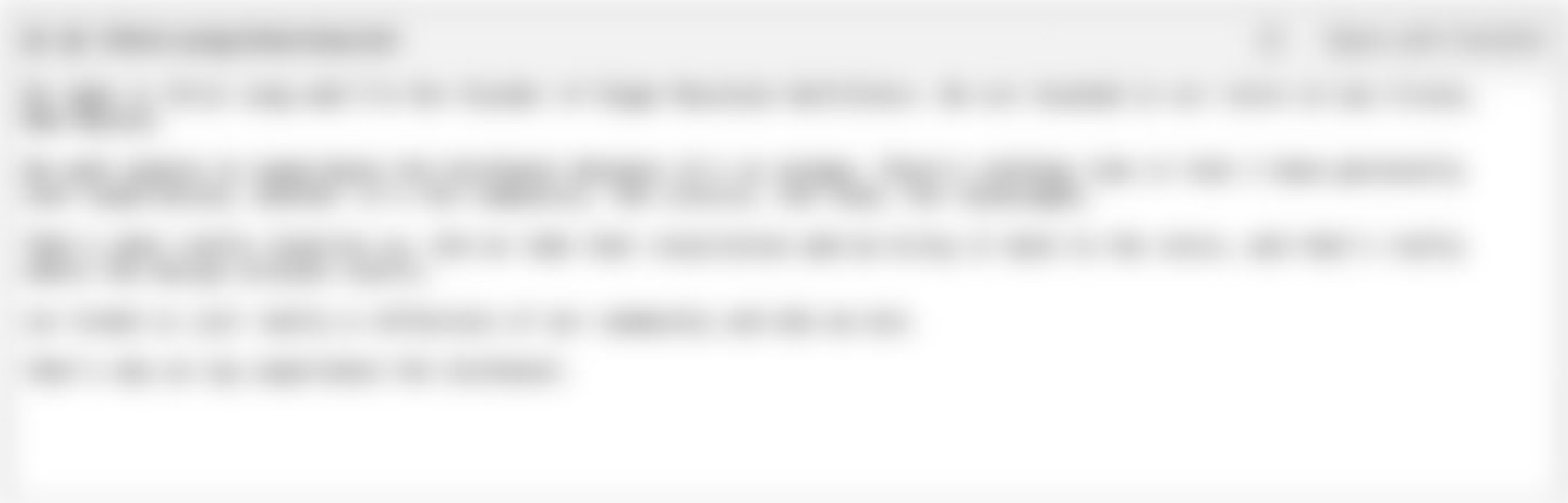
Instead of using a generated transcription to manually piece together a sync pull, you can use the built-in IntelliScript function, which lets you quickly assemble rough cuts of dialogue and even organizes multiple takes for you in the timeline.

1. In the [illegible] bin, select all the transcribed clips, right-click, and choose AI Tools > Create New Timeline Using IntelliScript.



2. Navigate to R20 Editor's Guide > Lesson [illegible] > SCRIPTS and select the [illegible] Long Interview.txt file.

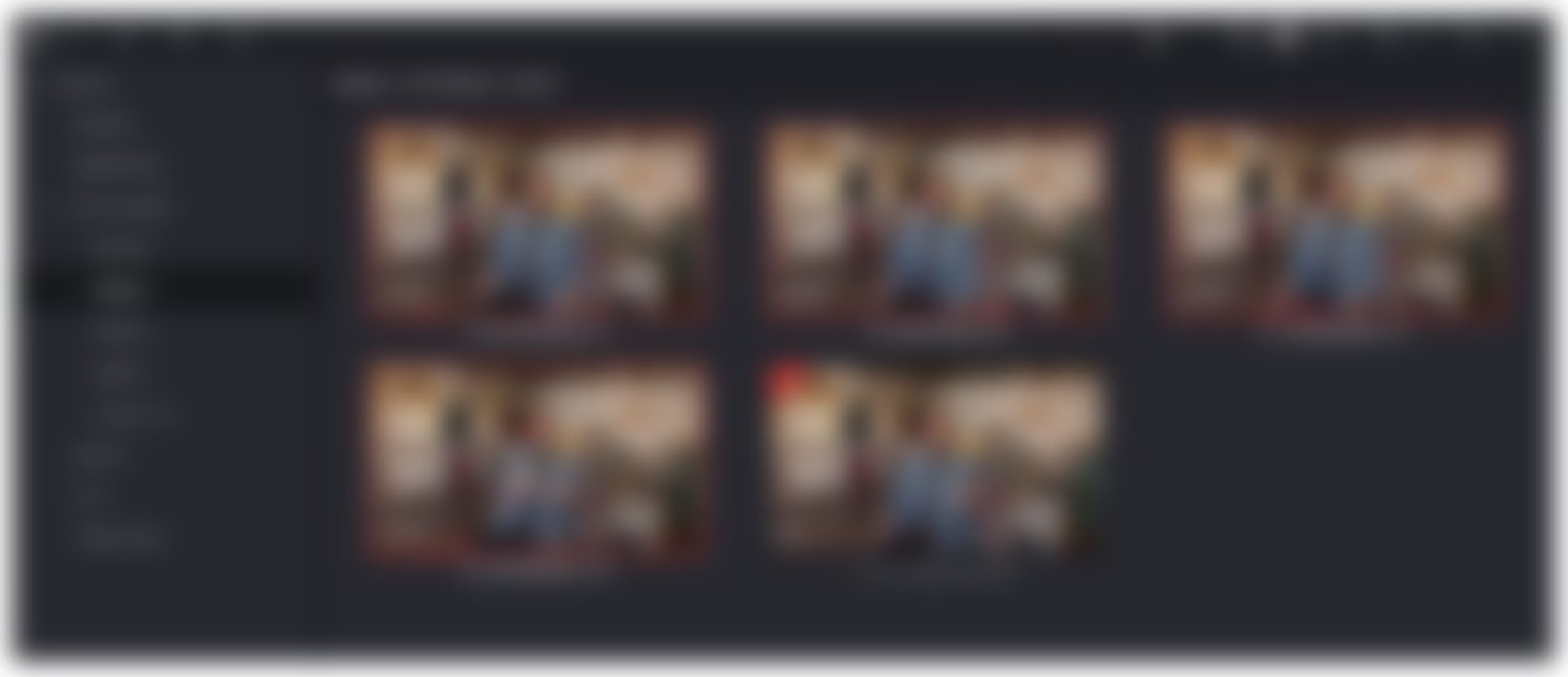
   This file is a simple plain text file. You can create these from any text editing or word processing application.



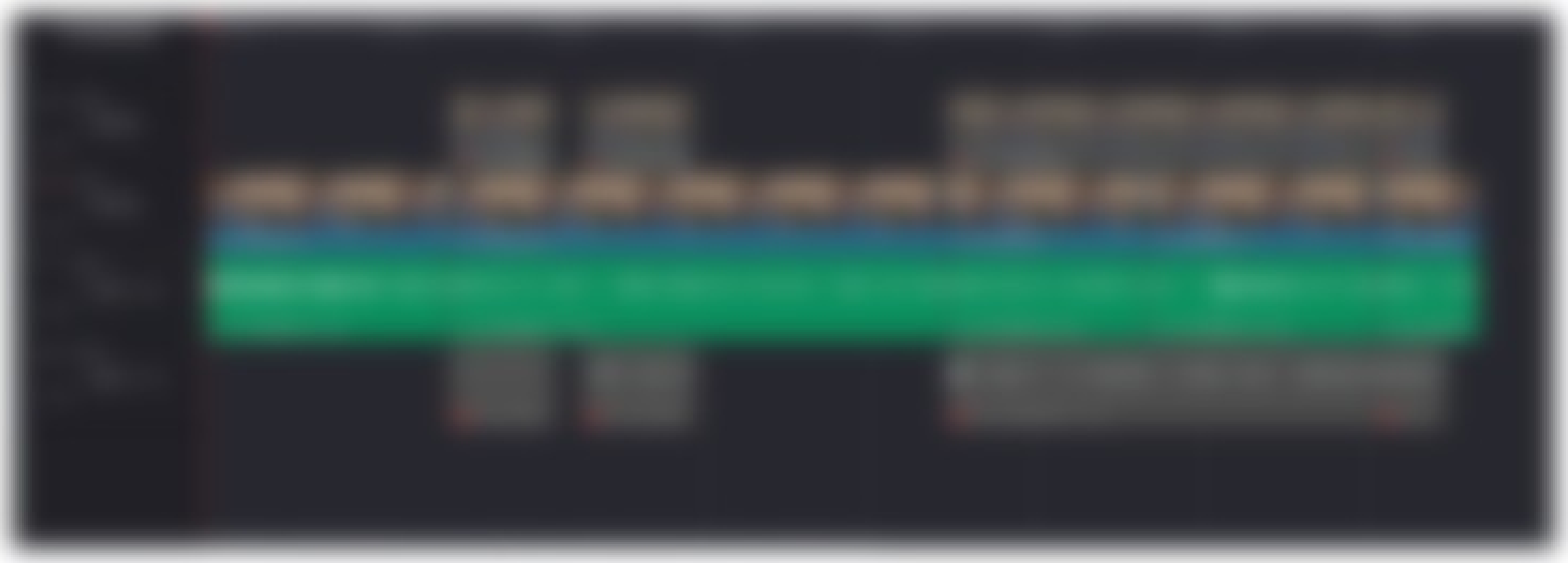
TIP You can export a text file of a transcribed clip by clicking the "Export" button at the top of the AI Transcription window.

- Click Open.

A new timeline is added to the bin.



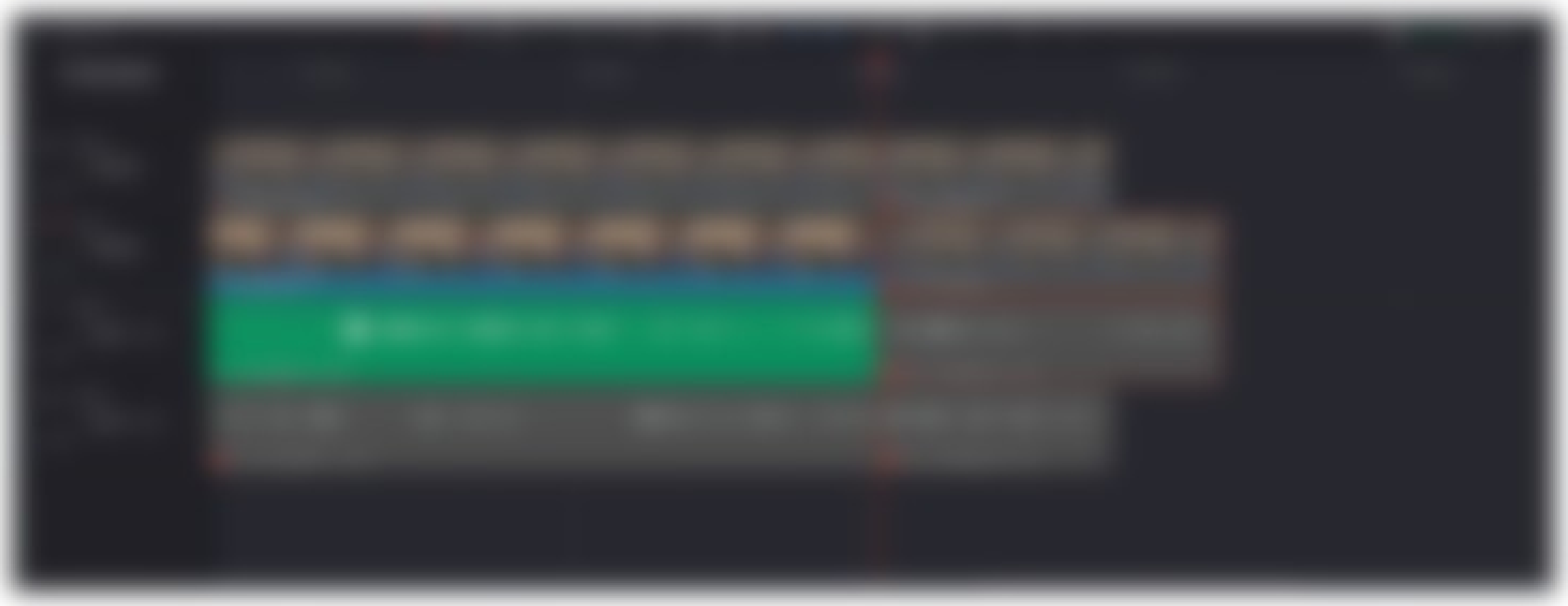
The new timeline automatically opens in the timeline panel.



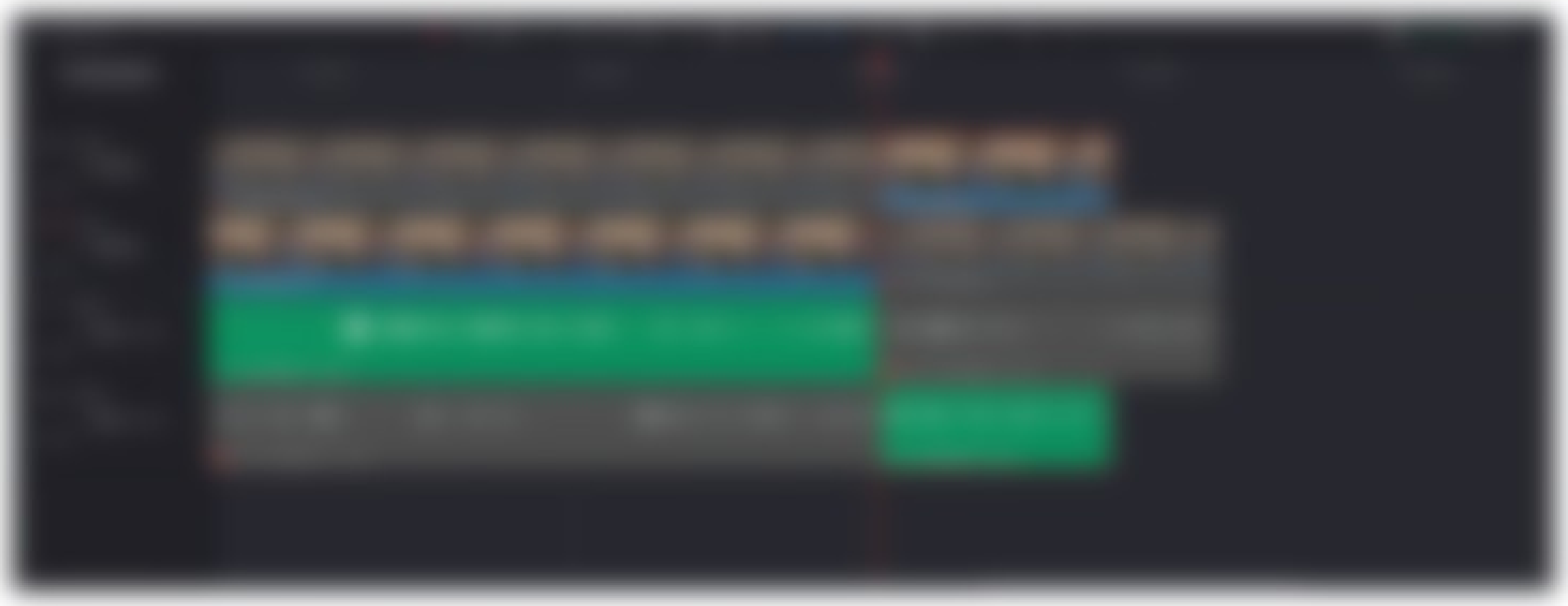
The IntelliScript process has matched the text in the .txt file with the transcribed audio, automatically building a timeline of the soundbites. The clips on Video 1 represent the best takes of the soundbites. The disabled clips on tracks other than Video 1 are alternative takes.

- Play the last clip on Video 1, which is Chris's "experience the Southeast" invite.

- Using Selection mode, select the clip on Video 1, right-click, and deselect Enable Clip, or press D to disable the clip in the timeline.



- Press Command-up Arrow (macOS) or Ctrl-up Arrow (Windows) to select the clip above on Video 2 and press D to enable that clip.



- Play the alternative take and compare the different options.

This timeline is the equivalent of the sync pull you created earlier in this lesson. You can then use this timeline as the basis for editing the soundbites for an initial rough cut, as you did in Lesson 7.

Timeline Editing

The next exercise for this lesson is a favorite technique used by many editors, particularly those who work with large numbers of clips and use a source timeline. You used a slight variation of this workflow when you initially created the timeline for the first multicam editing exercise in Lesson [illegible].

First, you'll import a timeline featuring the trimmed and transcribed soundbites clips.

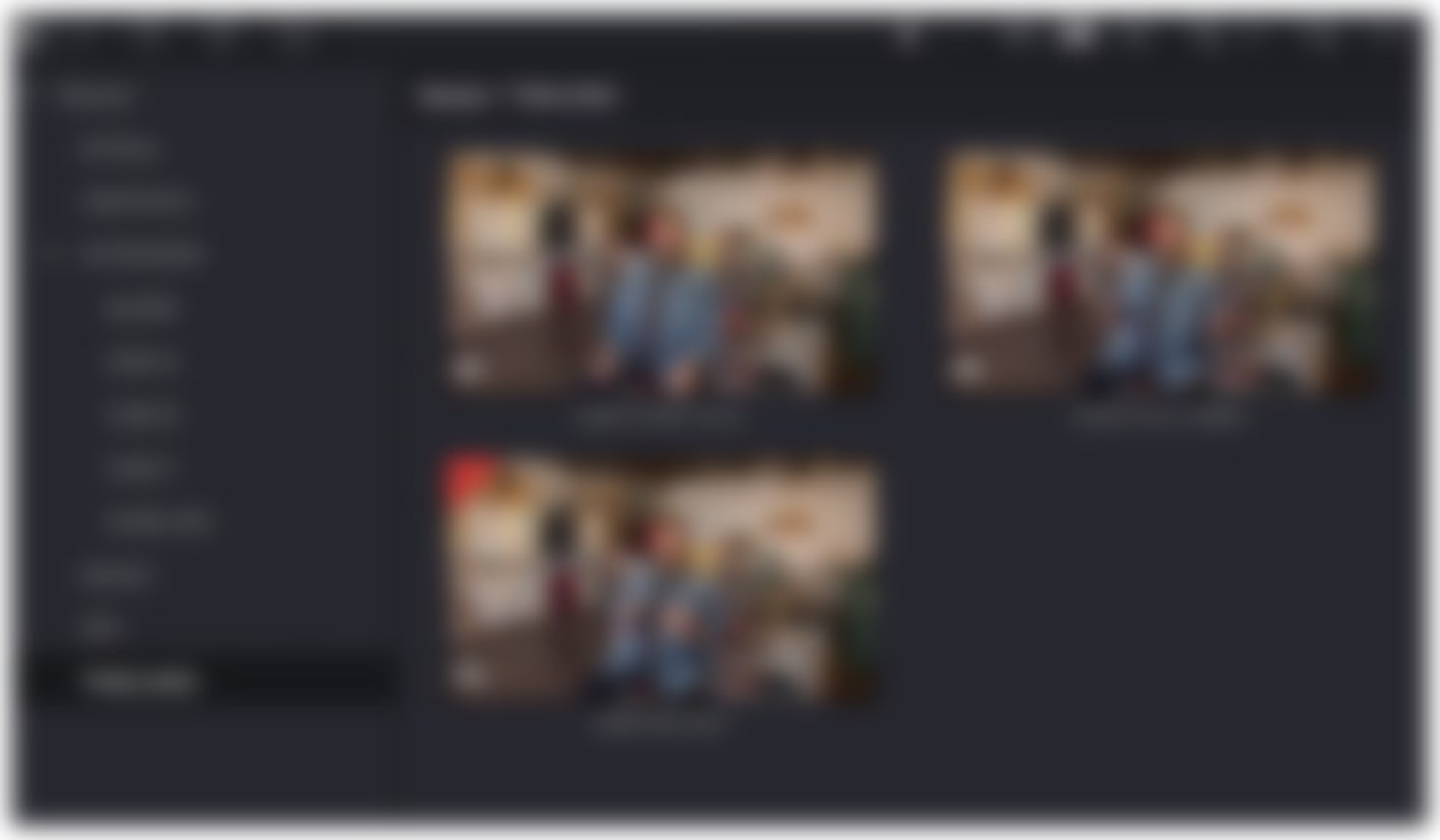
1. In the media pool, select the TIMELINES bin and choose File > Import > Timeline.
2. Navigate to [illegible] Editor's Guide > Lesson [illegible], select the [illegible] file, and click Open.

   When you import this timeline, it also attempts to import the synch audio as separate clips and will ask you to relink the clips.

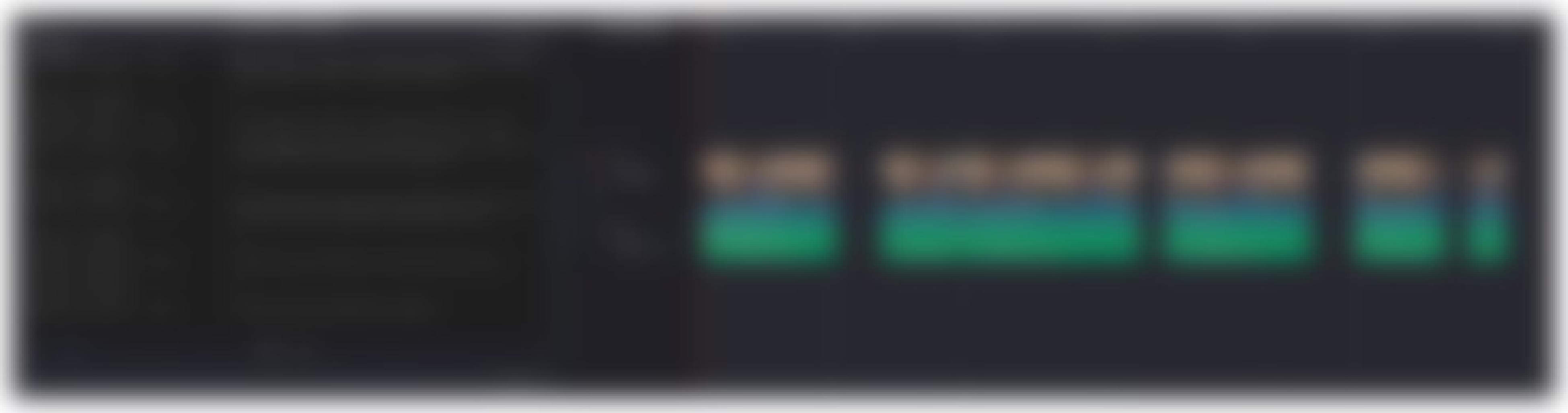
3. Click Cancel and, in the media pool, select the offline audio clips, right-click them, and choose Remove Selected Clips or press Shift-Backspace.
4. Click Delete to remove the unnecessary clips from your media pool.

   The timeline contains trimmed and pared soundbites from Chris's interview.

5. In the media pool, duplicate the [illegible] timeline and rename it **[illegible]**.
6. Ensure the [illegible] timeline is open and display the other timelines in the bin.



- In the media pool, ensure that the current timeline is selected and click the Transcribe button, or right-click the timeline and choose AI Tools > Audio Transcription > Transcribe, to open the Transcription window to display the transcript for the clips in the timeline.



NOTE If the timeline contains clips that weren't initially transcribed, clicking the Transcribe button will initiate the Transcription process for those clips.

This timeline has the soundbites edited similarly to how you cut them in Lesson 1, so it should be familiar to you.

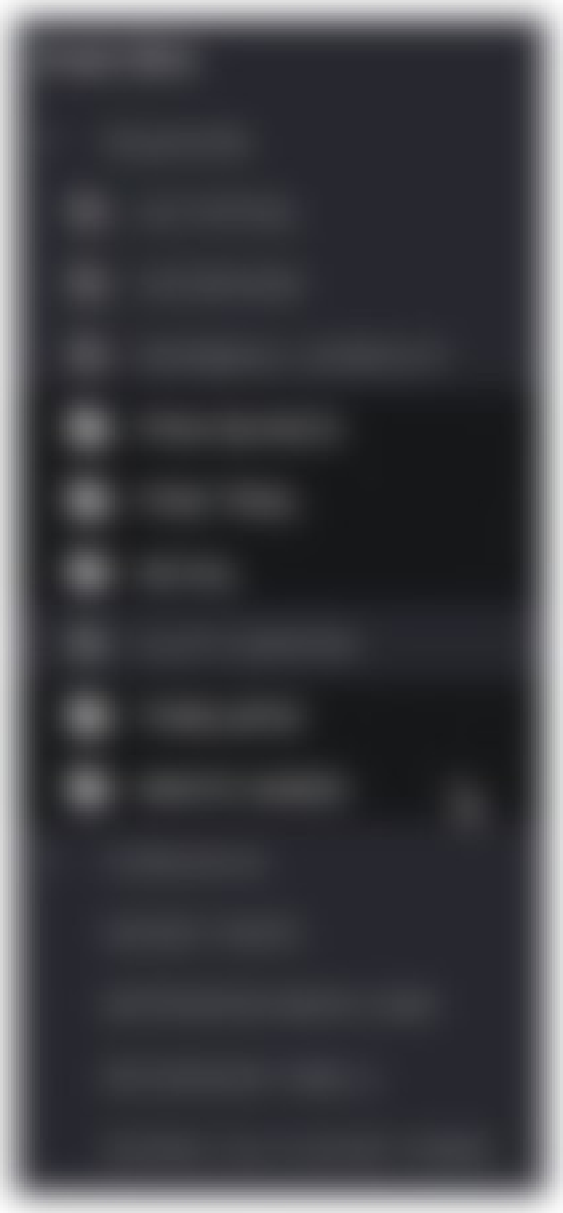
- Play the timeline and review the transcript to refamiliarize yourself with the soundbites, including the gaps that have been added and which appear in the Transcription window as ellipses (...).
- When you have finished, close the Transcription window.

When you previously edited this footage back in Lesson 1, you were directed to open certain clips at certain times. In a real-world workflow, working in this manner might mean opening several individual clips in the source viewer or using Live Media Preview before you locate the clip(s) you want to use. This often requires a lot of clicking as you open different clips and switch between different bins and/or smart bins.

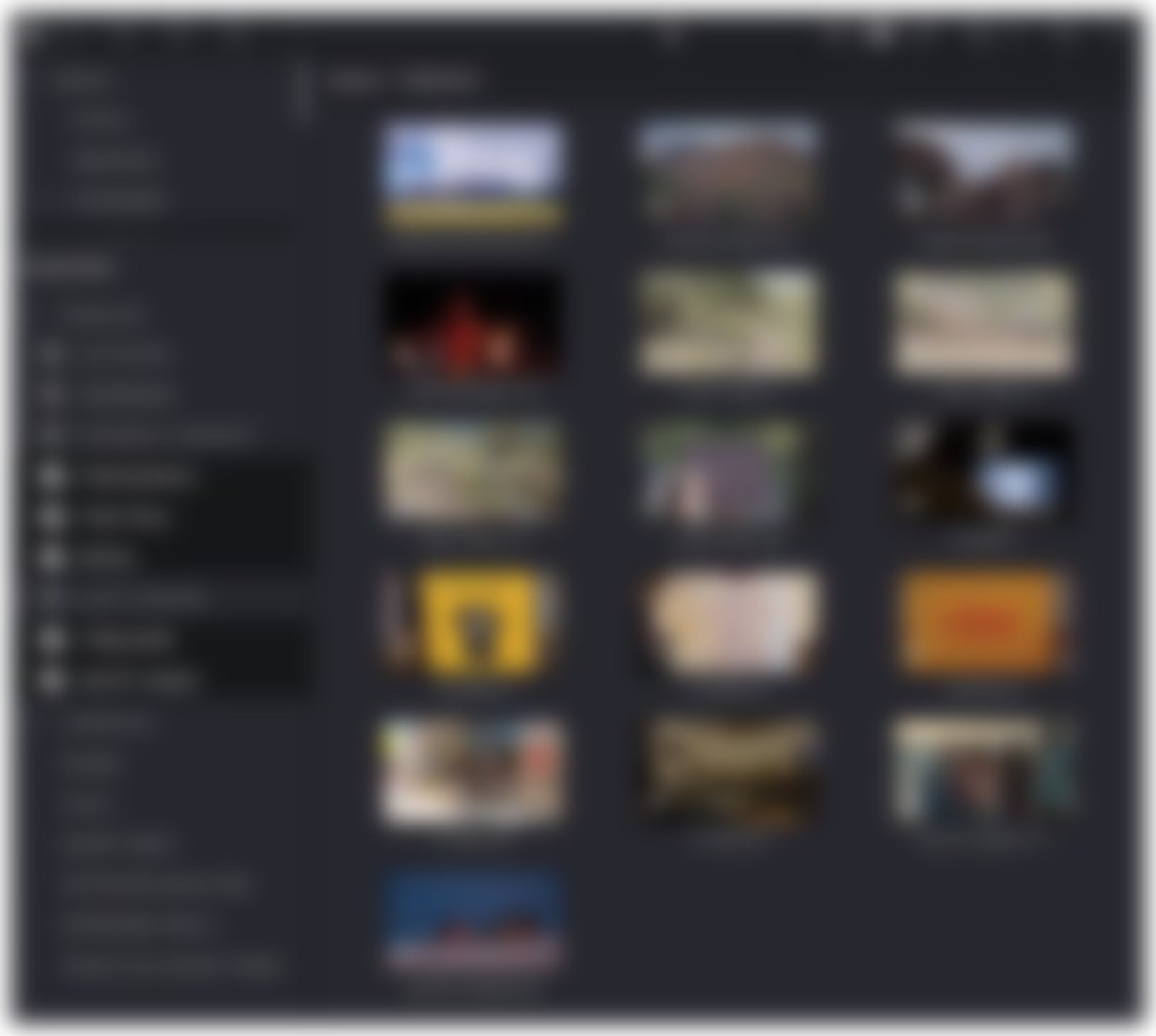
To minimize this, many editors like to place the clips they want to focus on in their own timeline, which they can then use to edit from. Hence the term "source timeline." You will follow this workflow by selecting the clips you want to work with and placing them in their own timeline.

NOTE This is very similar to using the Source Tape function in the source viewer (see Lesson 1); however, this is much more flexible in allowing you to choose the specific contents of the source timeline rather than using the entire contents of a selected bin.

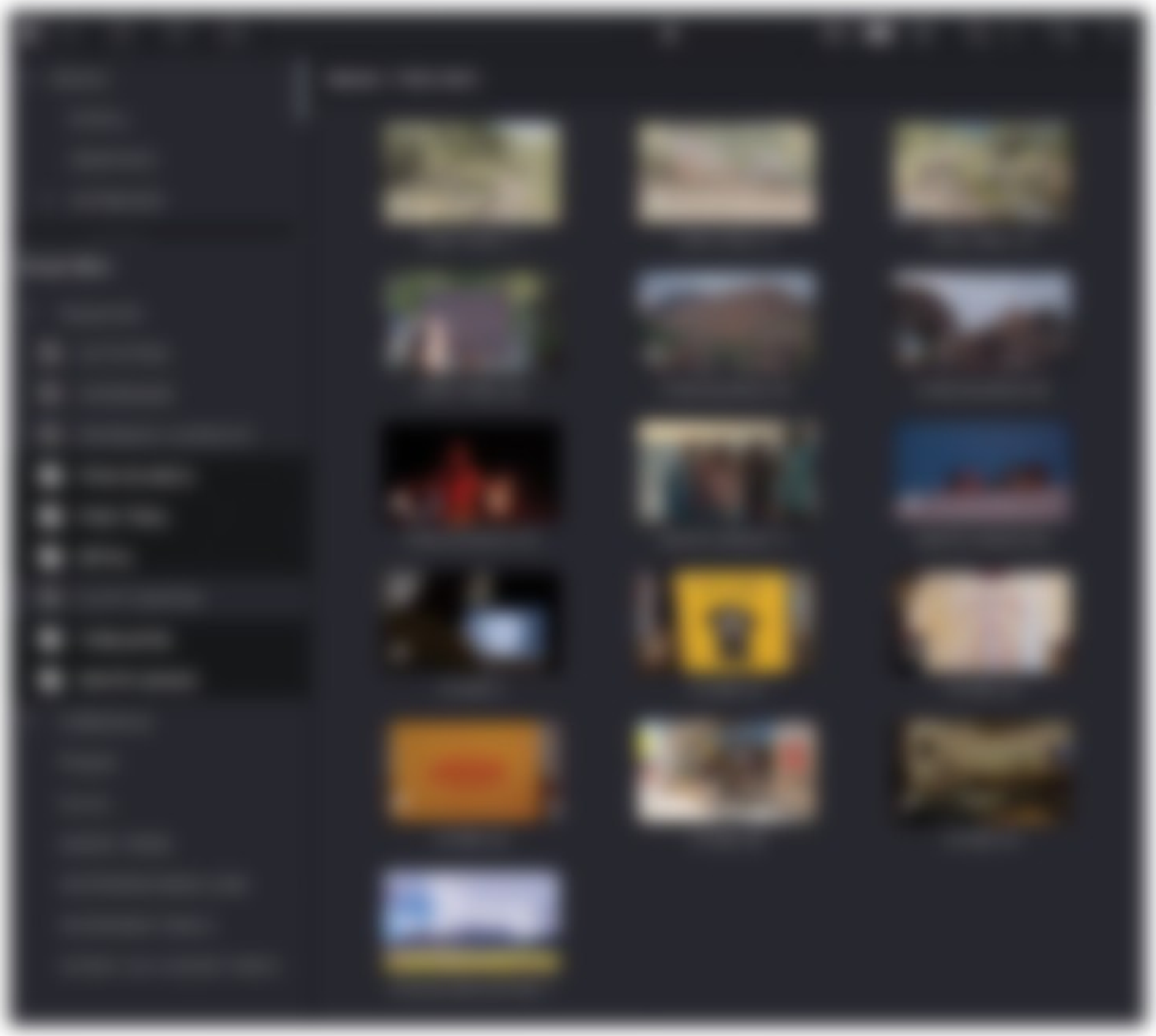
- In the media pool, open the Keywords smart bin list and Command-click (macOS) or Ctrl-click (Windows) the PAN BLANCO, PINK TRAIL, RETAIL, TIMELAPSE, and WHITE SANDS smart bins.



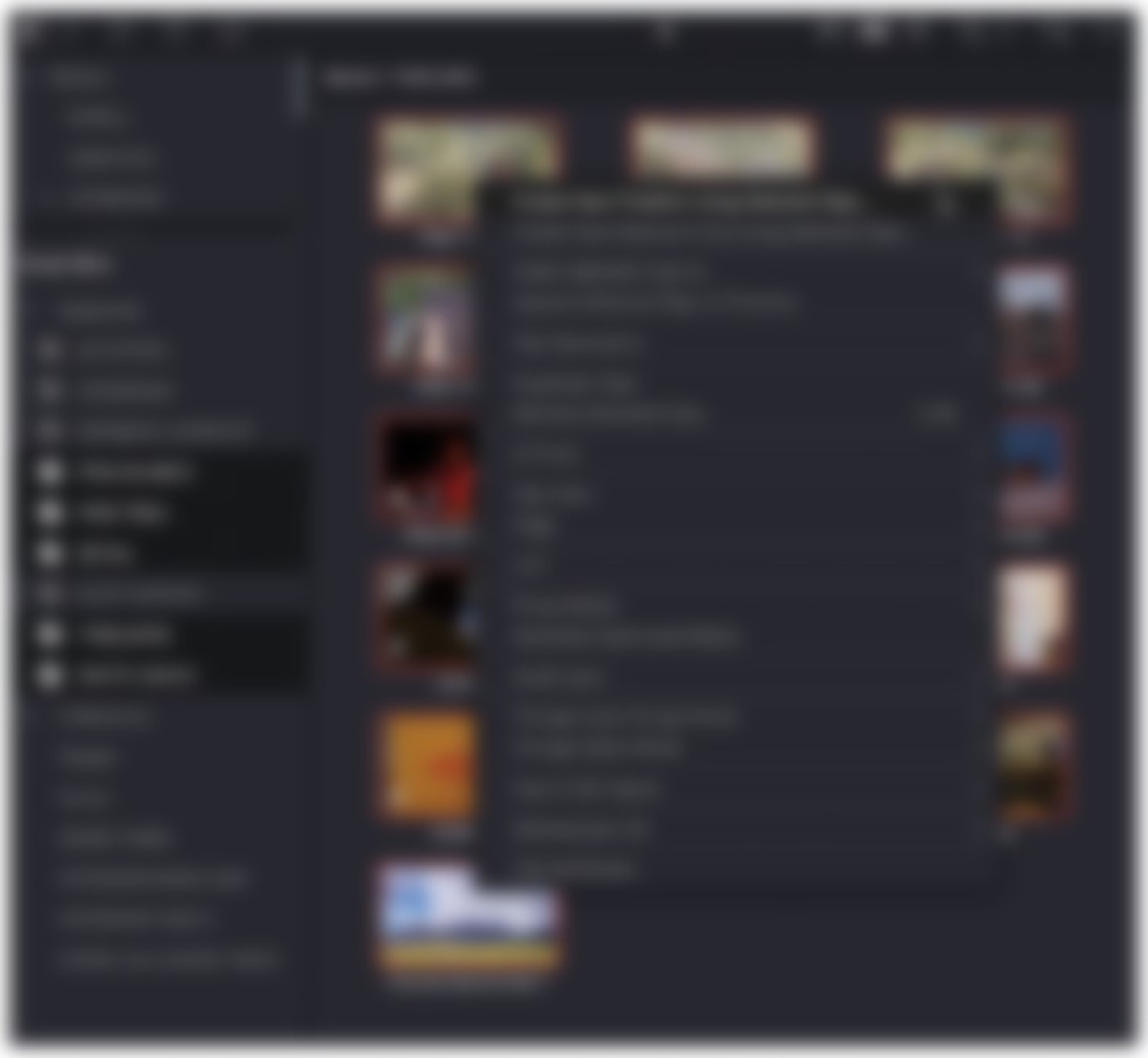
Selecting all these smart bins displays their contents together in the media pool.



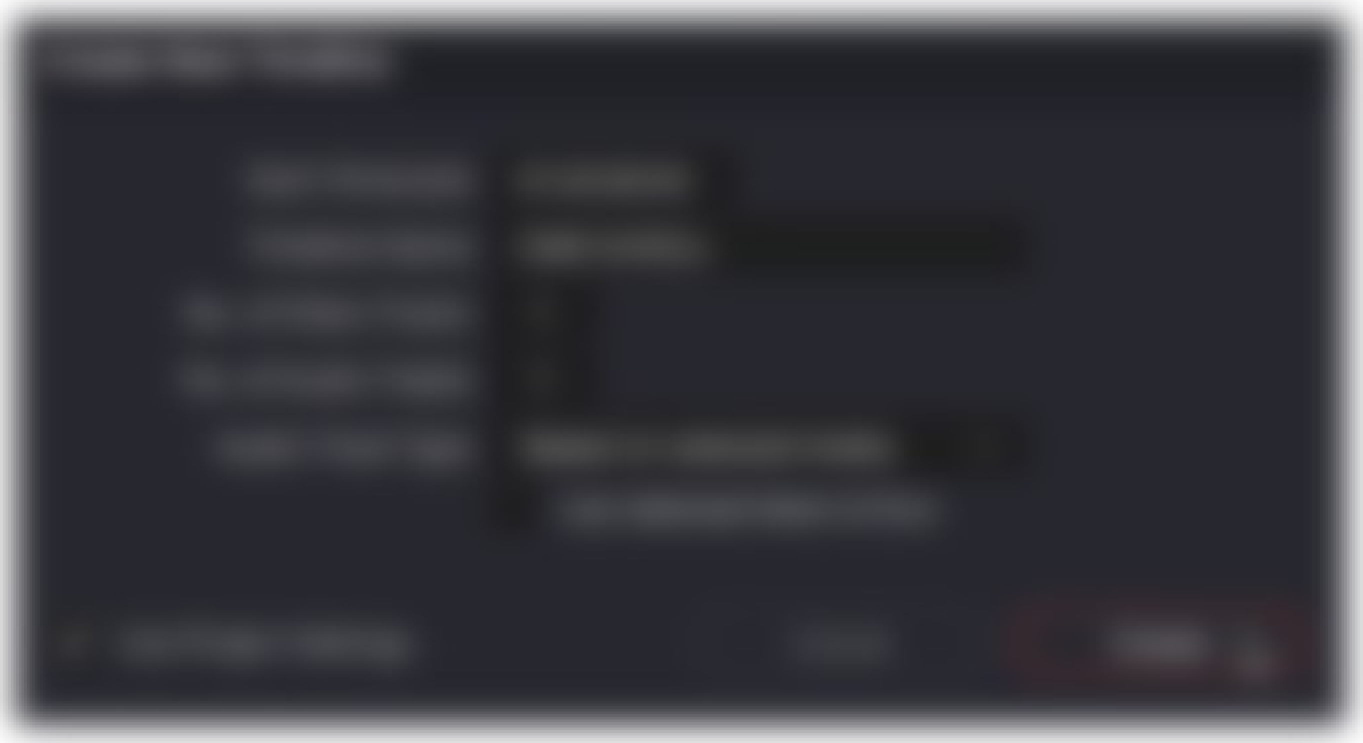
- In the media pool Sort menu, choose to sort the footage by Scene.



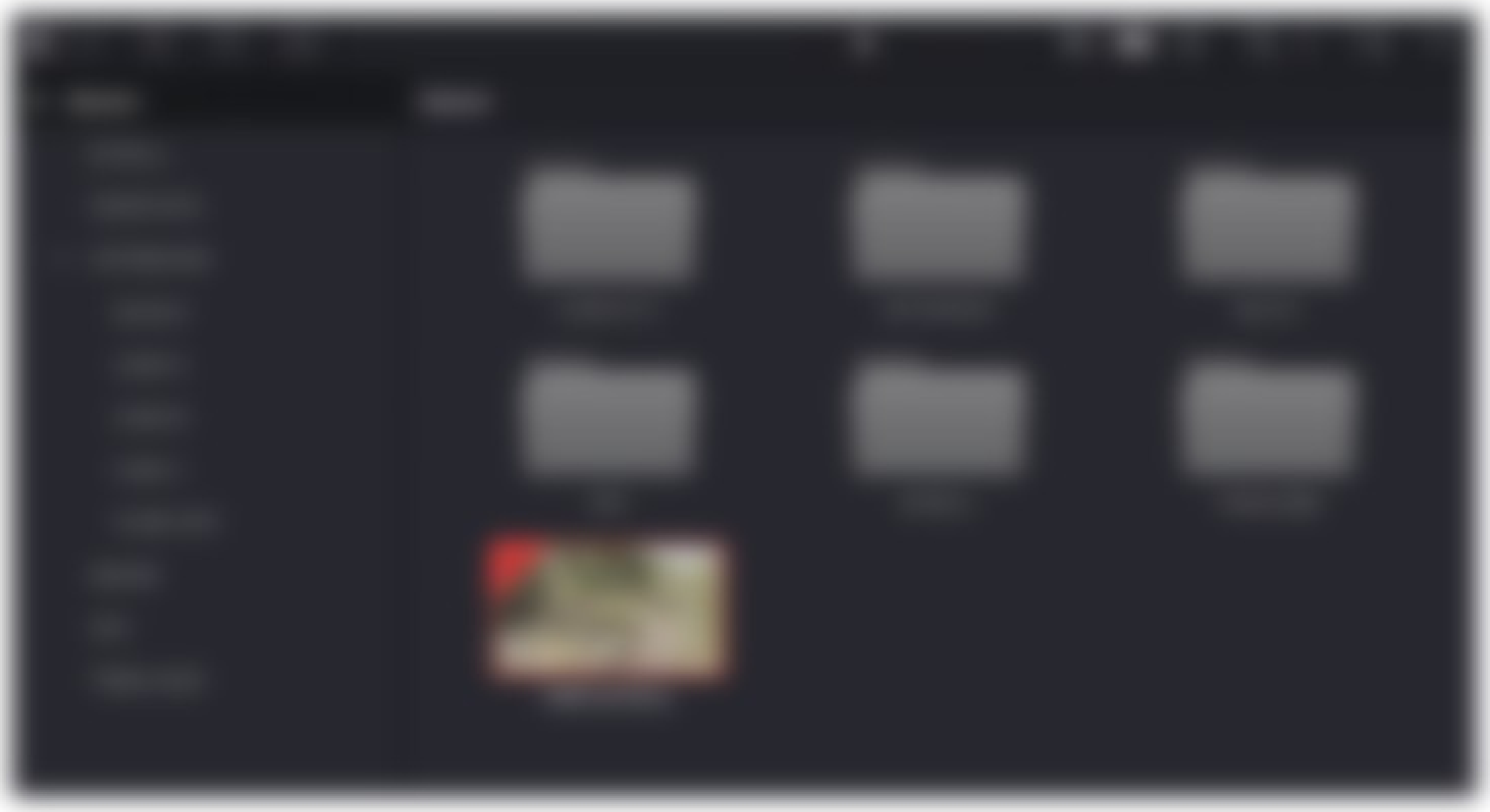
- Select all the clips displayed in the media pool, right-click them, and choose Create New Timeline Using Selected Clips.



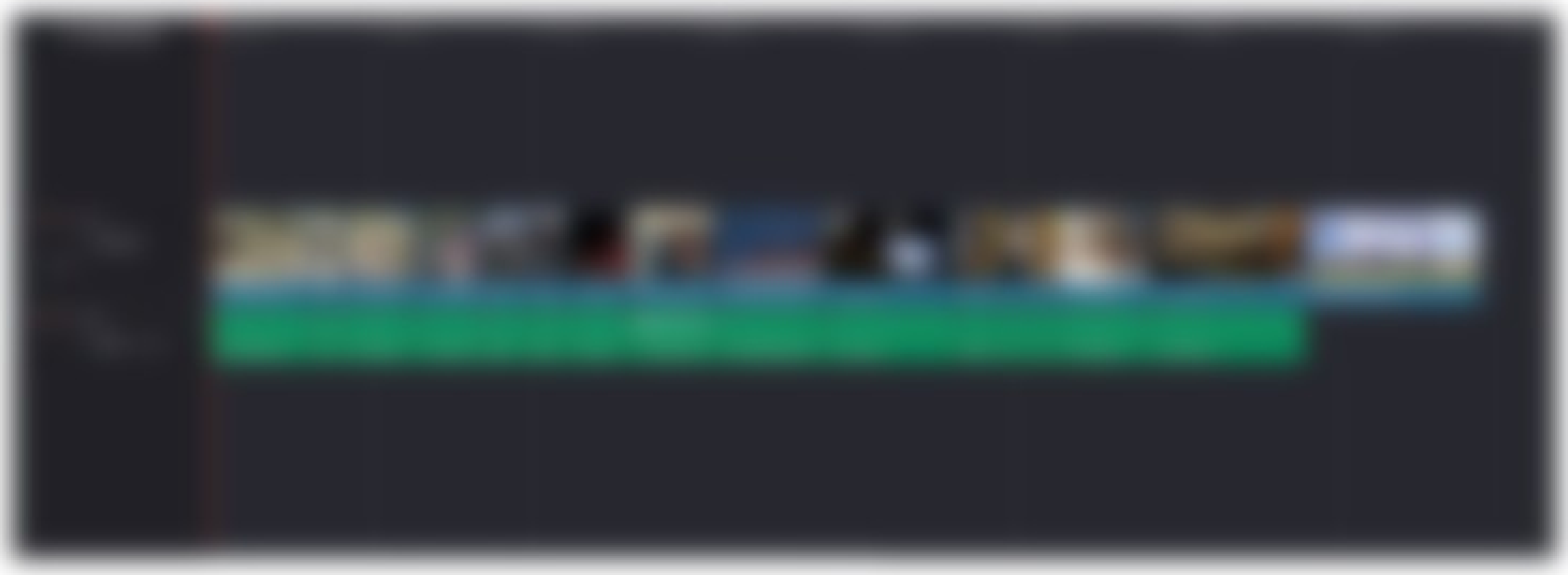
- In the Create New Timeline window, change the Timeline Name to **BMX B-ROLL**, uncheck Use Selected Mark In/Out, and then click Create.



- The new timeline is created in the media pool and opens in the timeline panel.



Notice how the clips are arranged in the timeline in the order they were in the media pool (by scene).

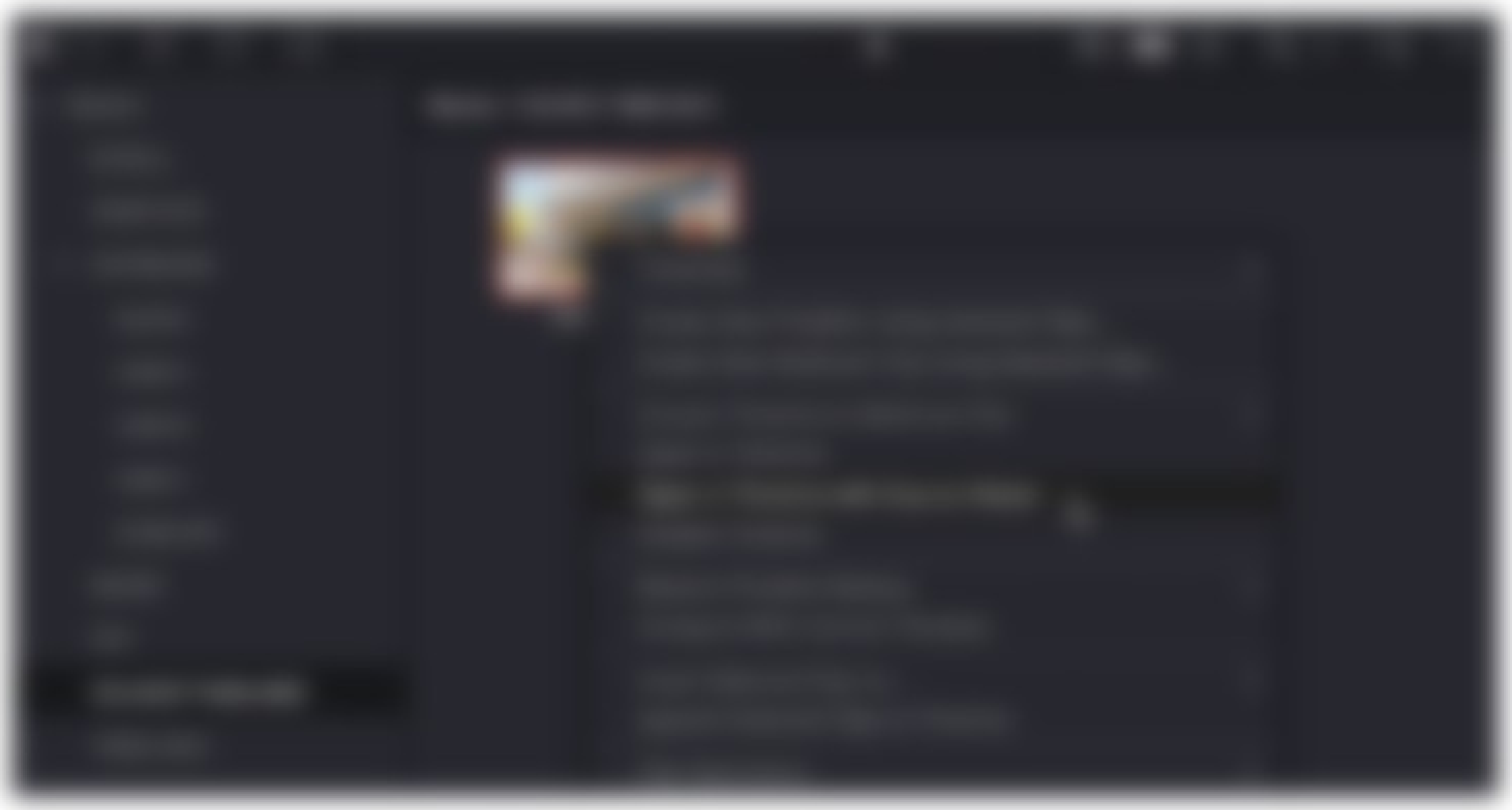


NOTE The timeline is automatically created at the top level of the project in the Master bin since no specific bin was selected in the media pool when the timeline was created.

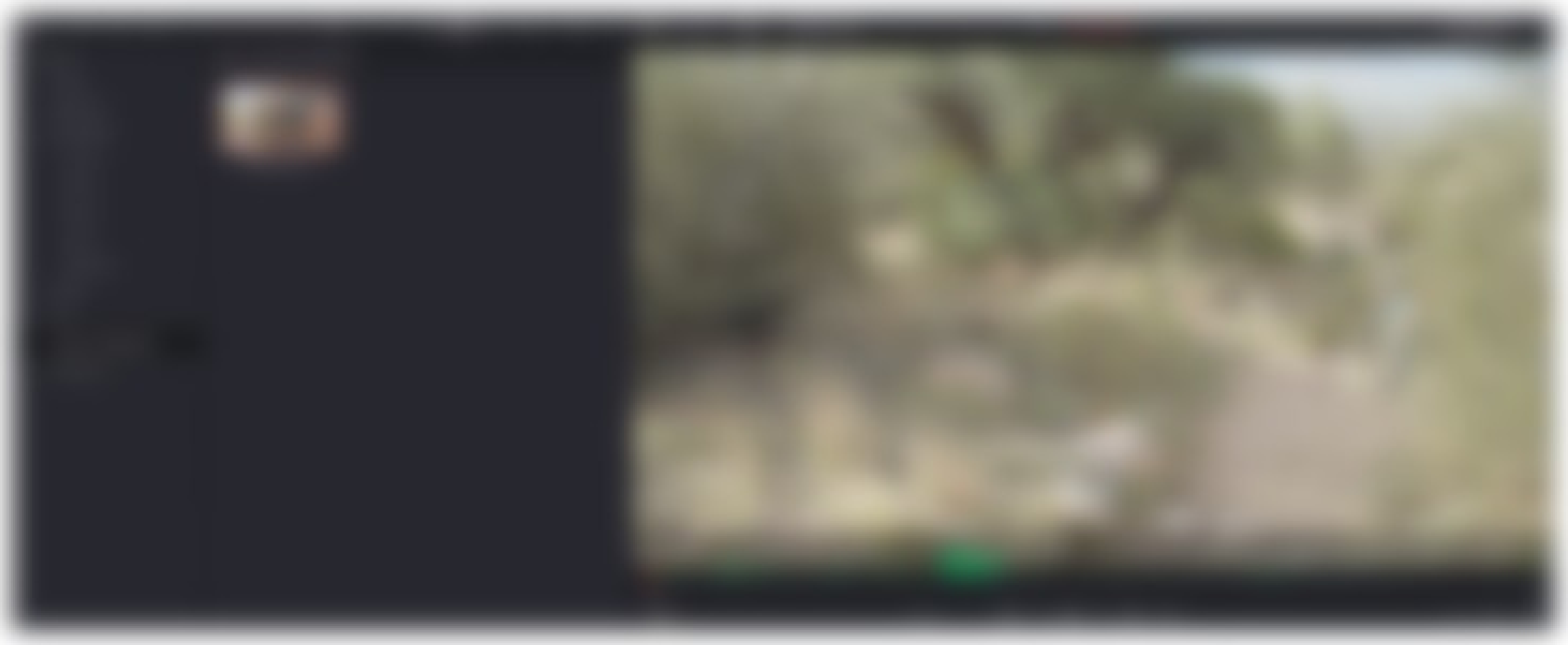
- In the media pool, right-click the [illegible] timeline and choose Clip Operations > Create Bin with Selected Clips.
- Rename the new bin **SOURCE TIMELINES**.
- Choose File > Close Current Timeline and use the timeline viewer's dropdown menu to reopen the [illegible] timeline.

Now, you'll use the DMO B-ROLL as a source for your edits. This requires opening the DMO B-ROLL timeline in the source viewer.

- Right-click the **DMO B-ROLL** timeline in the media pool and choose Open in Timeline with Source Viewer.

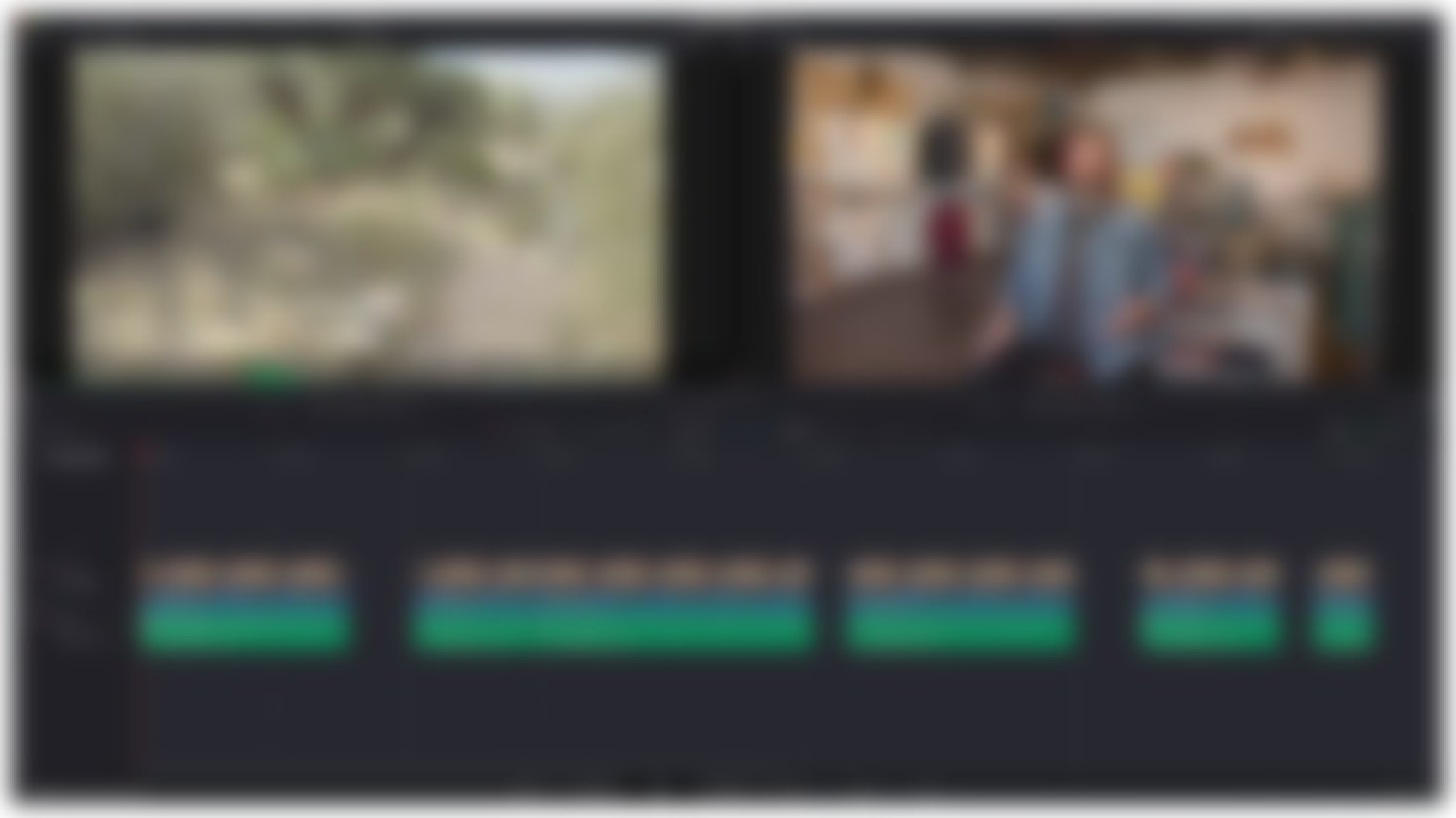


TIP You can also press Return (Enter) to open a selected timeline in the source viewer, or drag a timeline directly into the source viewer.



NOTE When a timeline is open in the source viewer, the clip name displays a timeline symbol next to the name.

- Clear the [illegible] point.

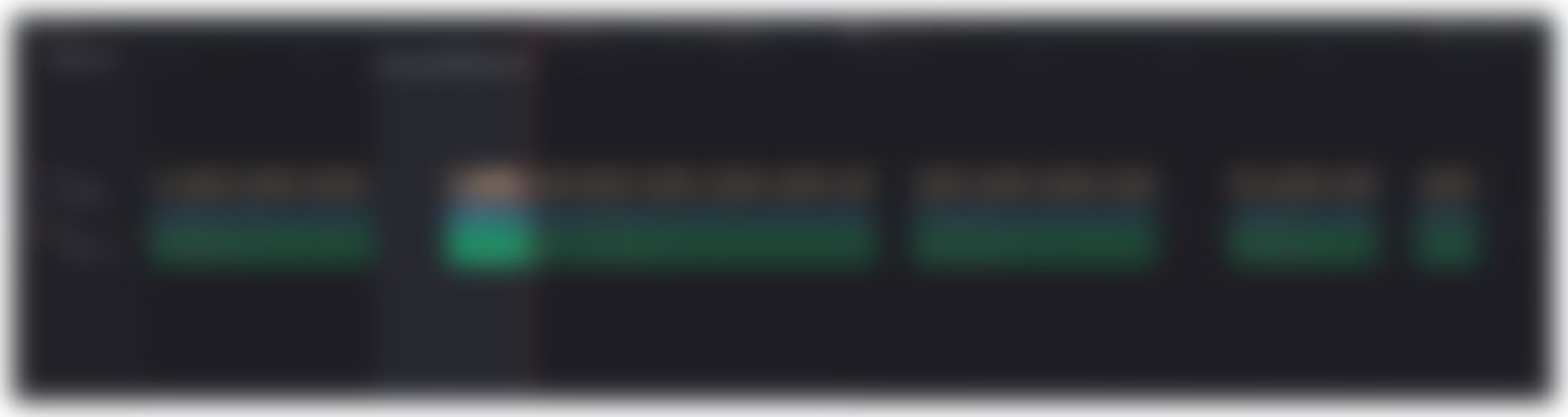


Now you have all your source clips loaded in the source viewer as a single element.

Editing from the Source Timeline

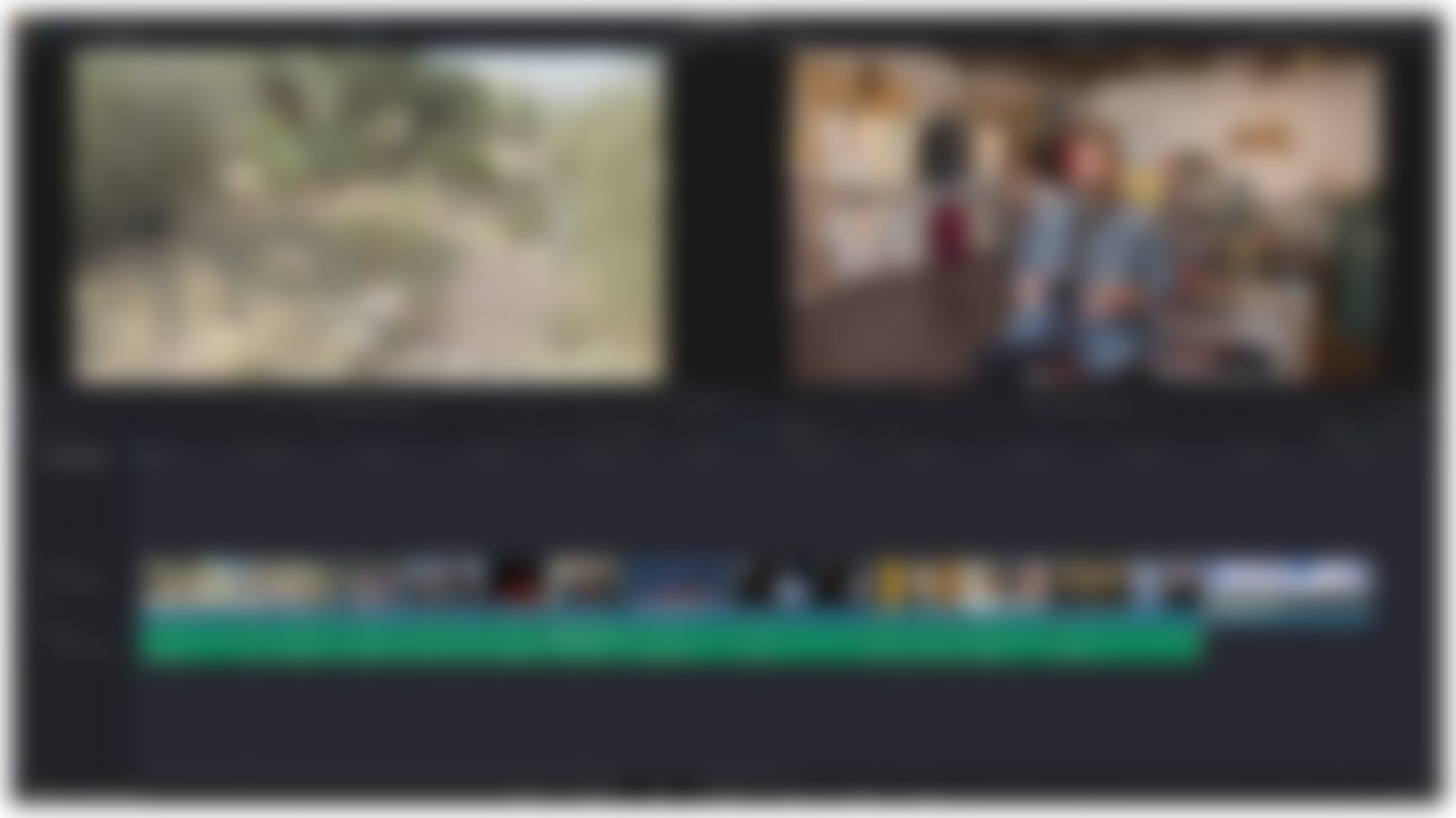
You can start editing from the source timeline directly into the [illegible] timeline using all the familiar editing functions.

- In the timeline, set an In point at the end of Christi's first soundbite and an Out point after he says, "We want people to experience the southwest because..."

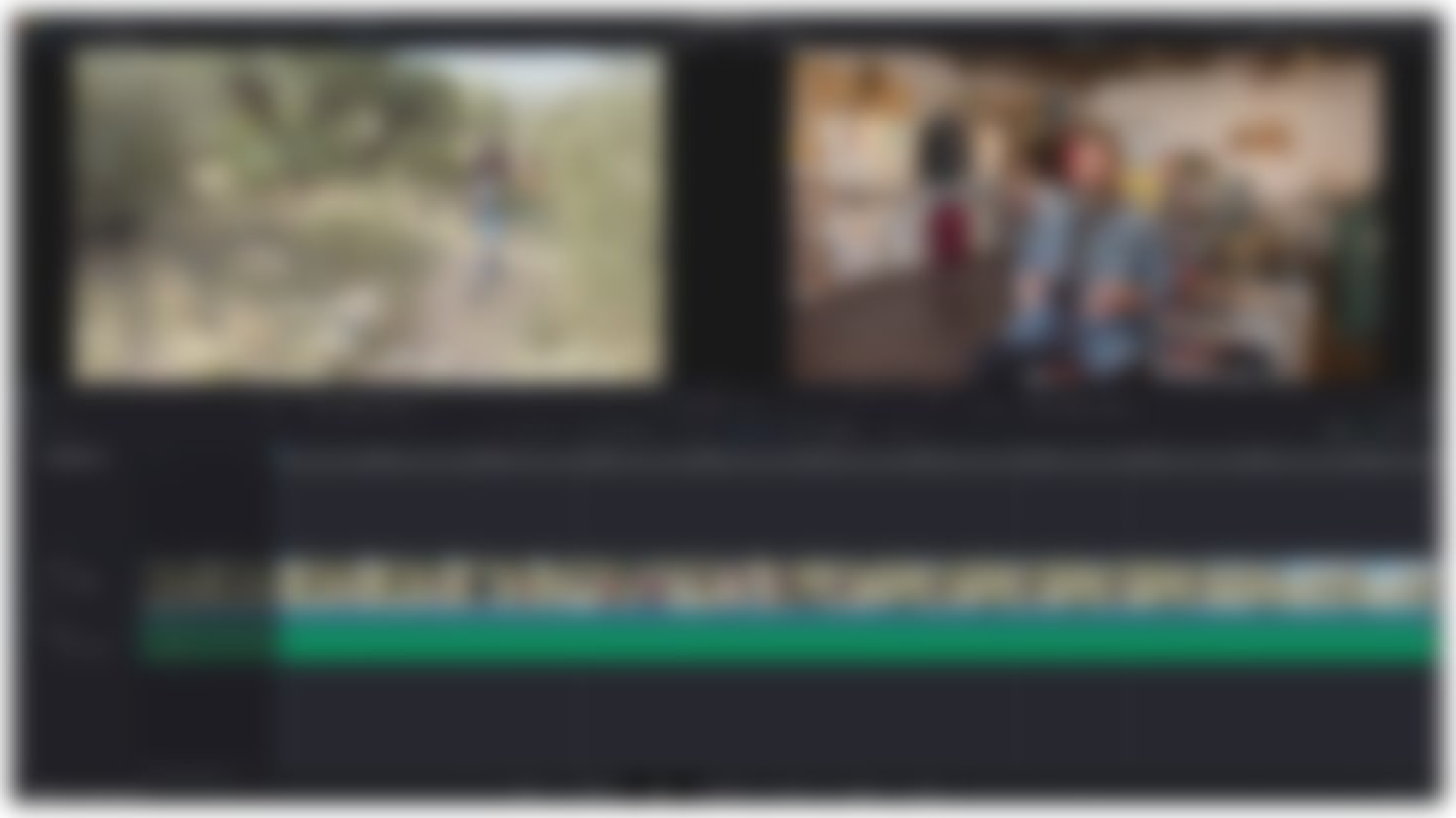


- In the source viewer, click the Timeline button.

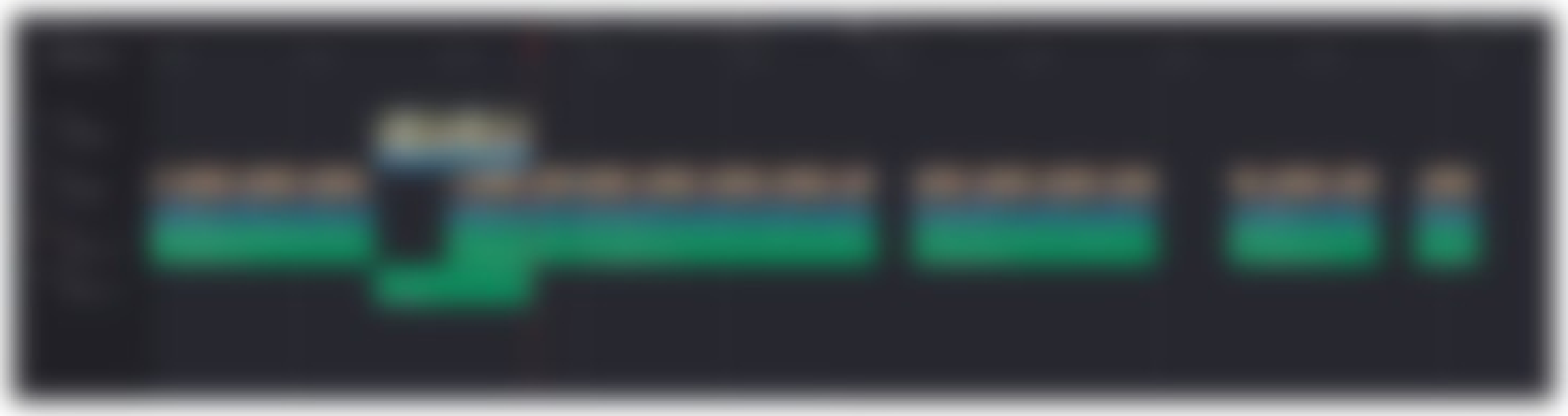
The contents of the source viewer appear in a read-only timeline (as denoted by the blue playhead).



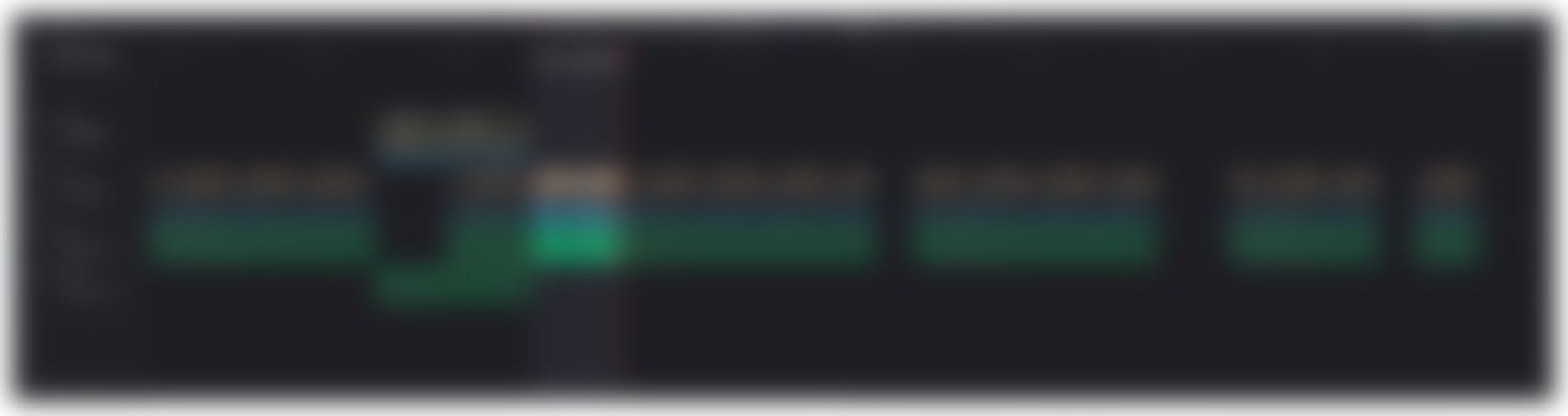
- Play through the first clip in the source timeline, setting an In point where the girl takes her second step. If necessary, use the timeline zoom controls to help refine the source playhead's position.



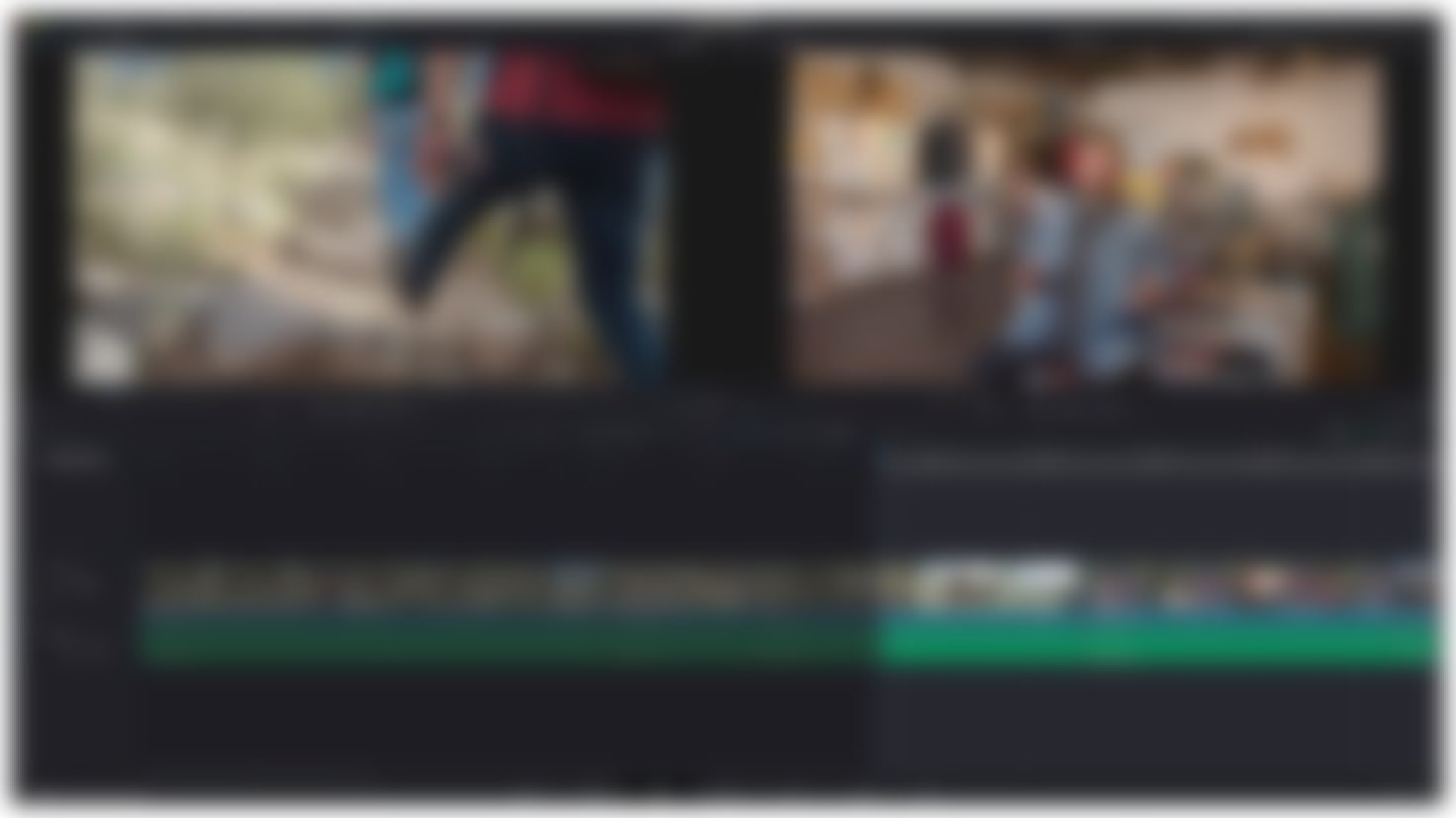
- Press F12 to make a Place on Top edit and switch back to the timeline in the timeline viewer.



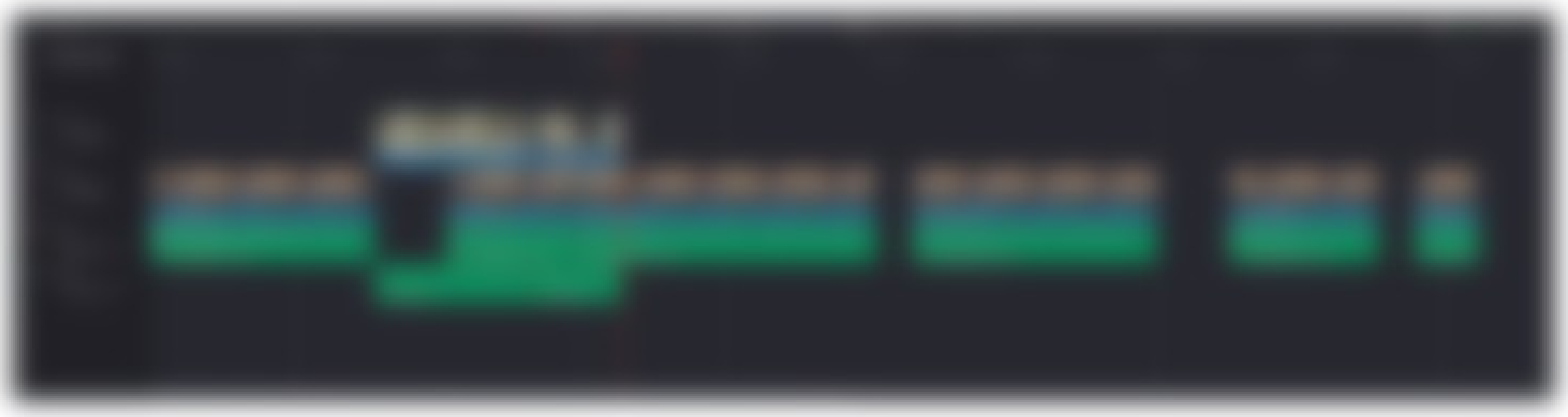
- In the timeline, add an In point at the end of PINE TRAIL 5 and an Out point after Chris says "…there is nothing like it."



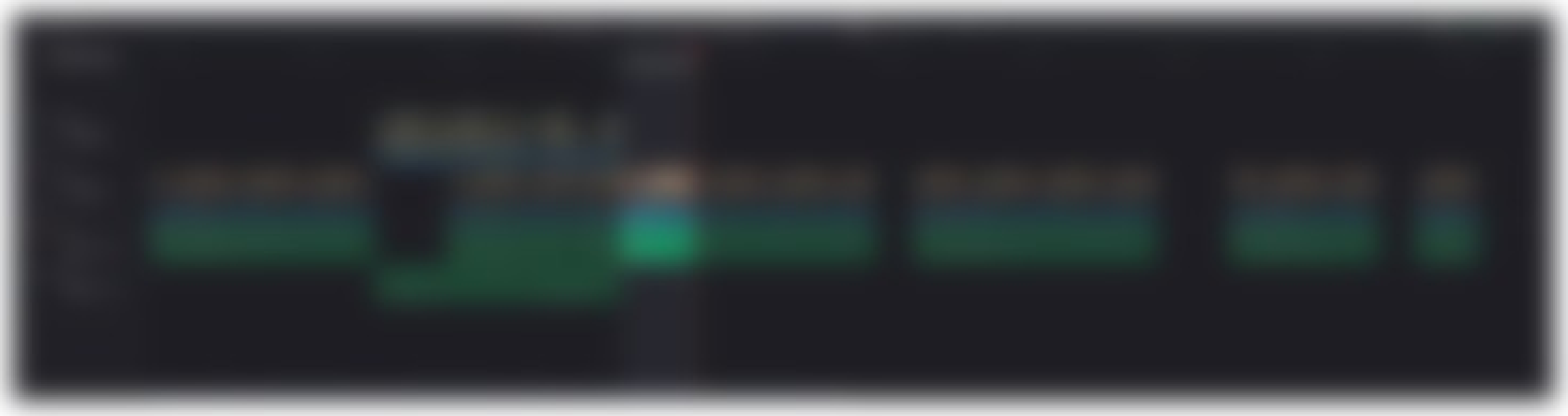
- Press Q to switch back to the source viewer and the source timeline, and press the Down Arrow twice to jump to the start of the clip, where the three friends walk into the shot. Use the JKL keys to play through the clip and add an In point where the second guy enters with his left leg outstretched.



- Press F12 to make a Place on Top edit.

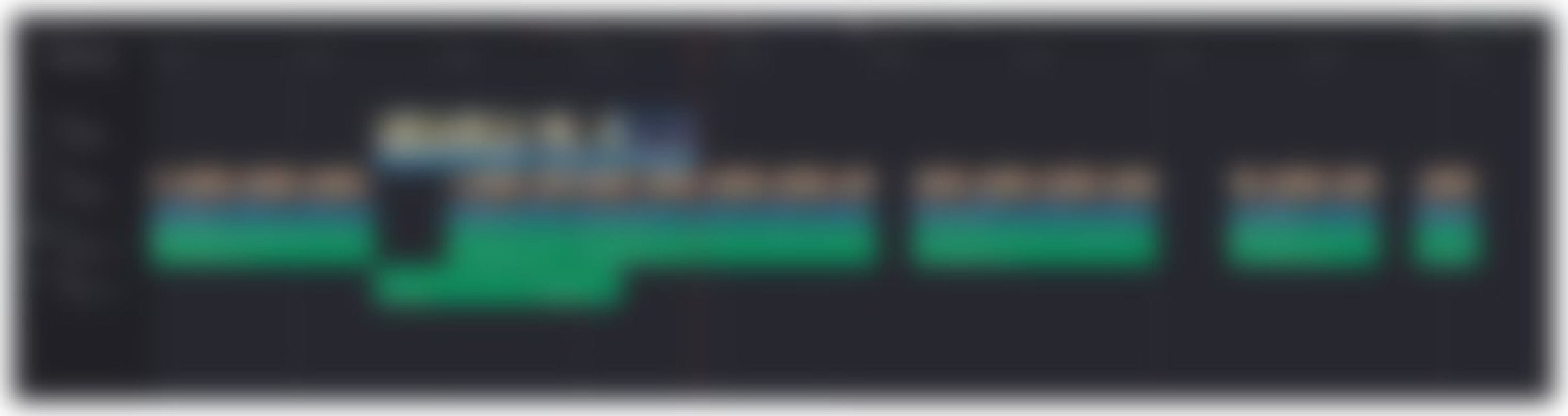


- In the timeline, mark an In point at the end of this new clip, and an Out point after Chris says, "... ever experienced."

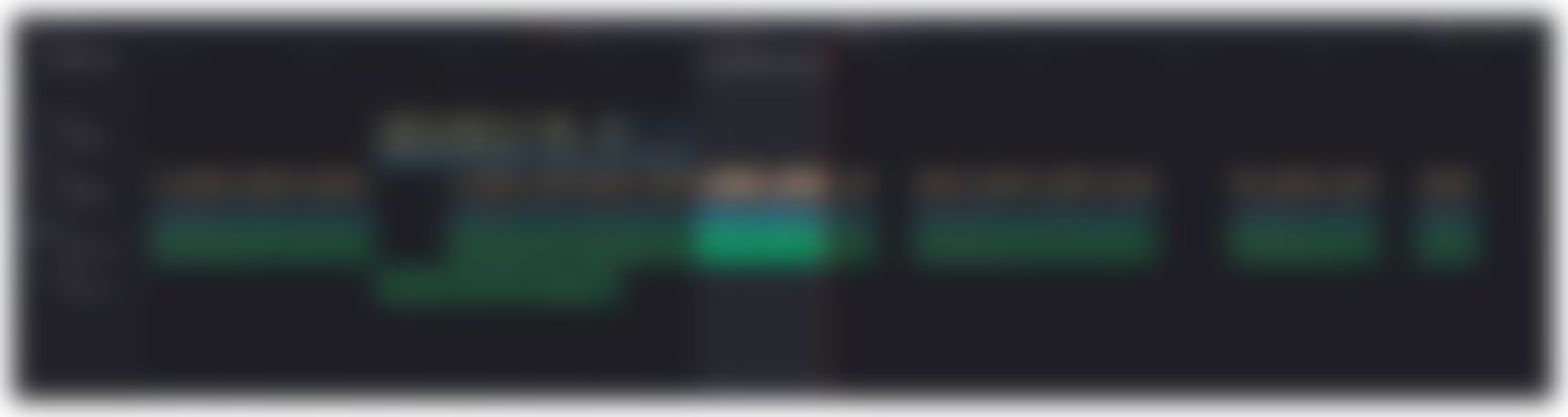


- Press Q and scroll through the source viewer and source timeline until you locate the shot of the four friends sitting on the sand. Mark an In point where the girl on the left sprinkles sand from her hand.

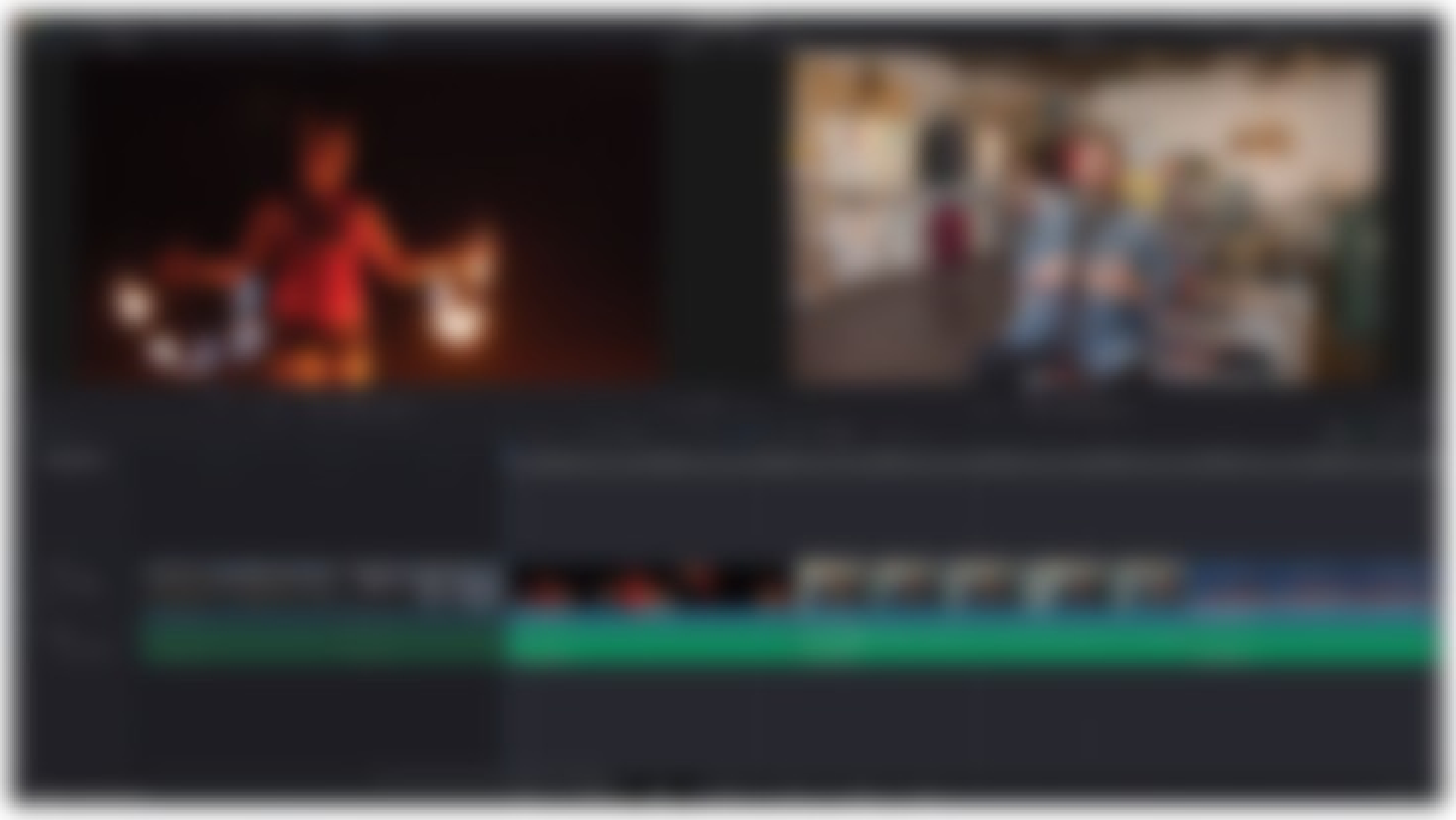
- Press Q to switch back to the timeline viewer, press Option-Command-1 (macOS) or Alt-Ctrl-1 (Windows) to disable the A1 destination control in the timeline, and press F12 to make a Place on Top edit.



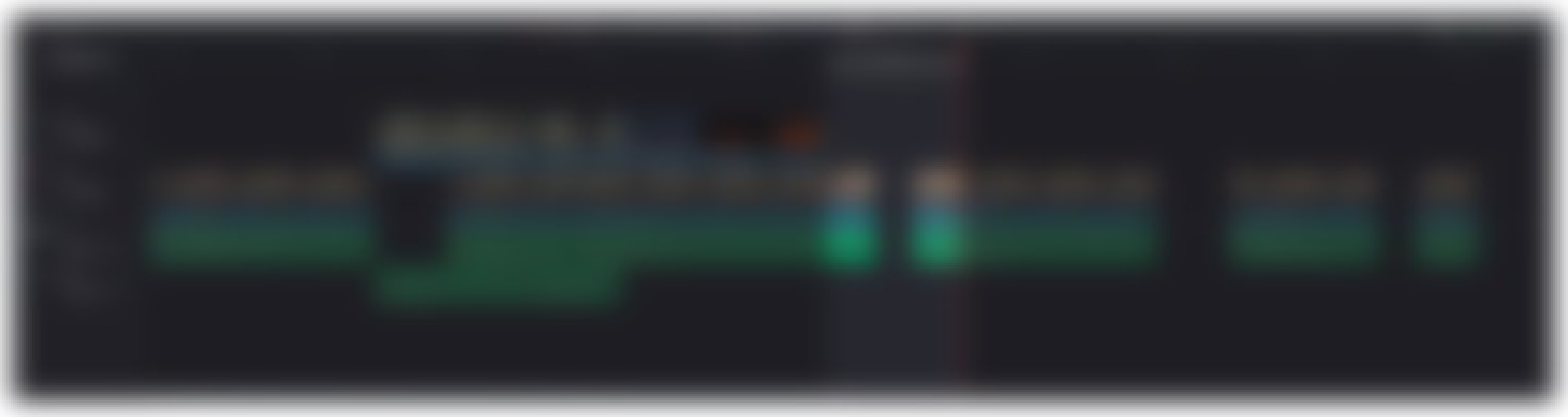
- In the timeline, set an In point at the end of [illegible] and an Out point after Chris says "... the food..."



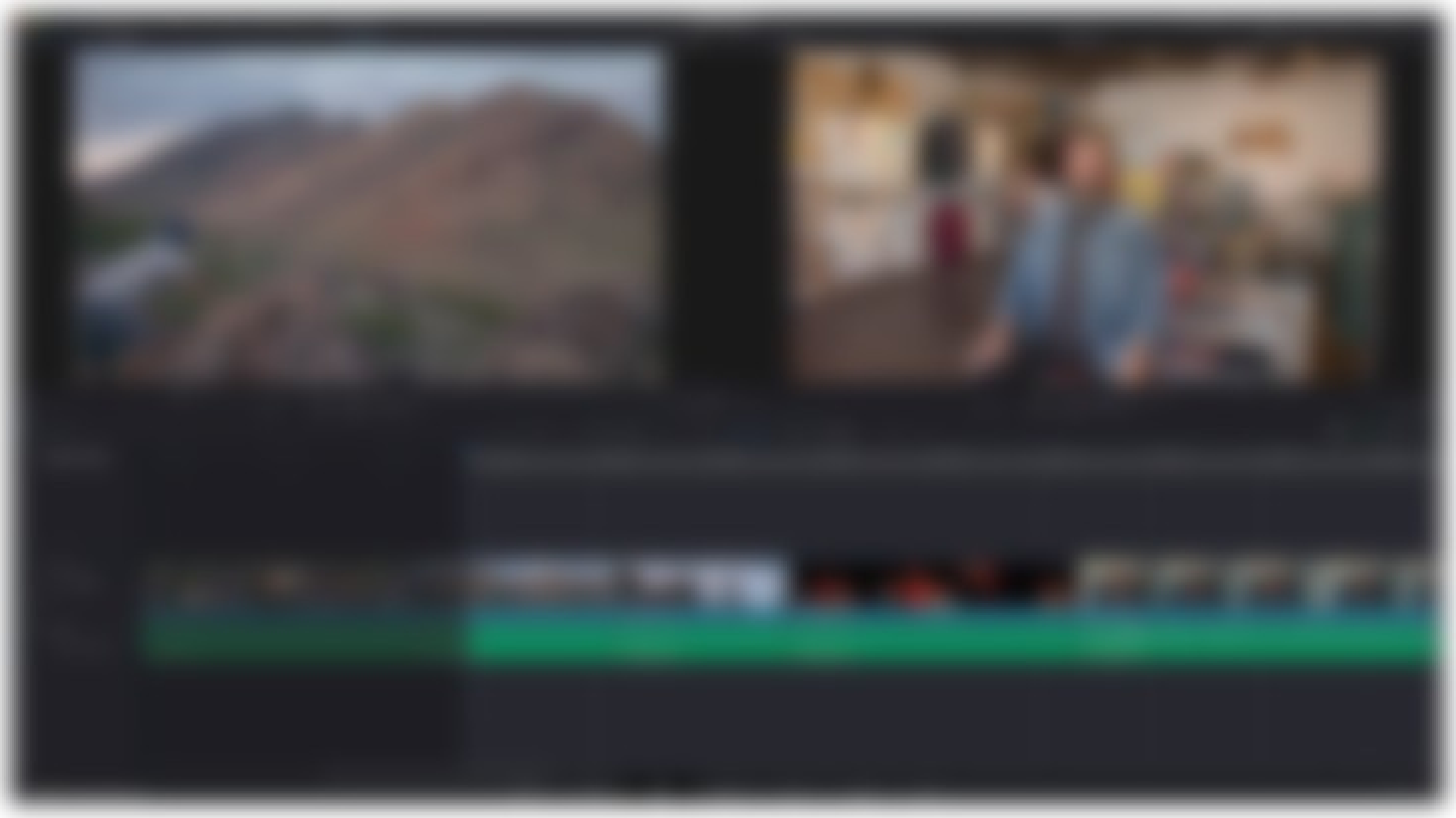
- Press Q and add an In point at the start of the shot of the fire dancer.



- Press F12 for a Place on Top edit.
- In the timeline, mark an In point at the end of [illegible] and an Out point after Chris says, "That's what really inspires us."



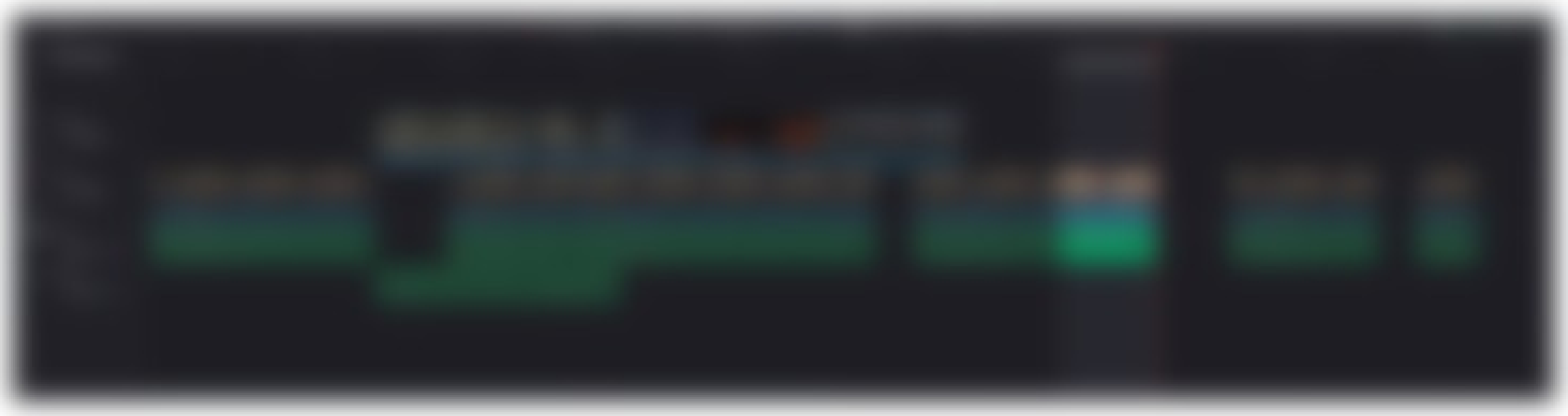
- In the source viewer, mark an In point as the guy jumps into the rocks.



- Press F12 for a Place on Top edit.

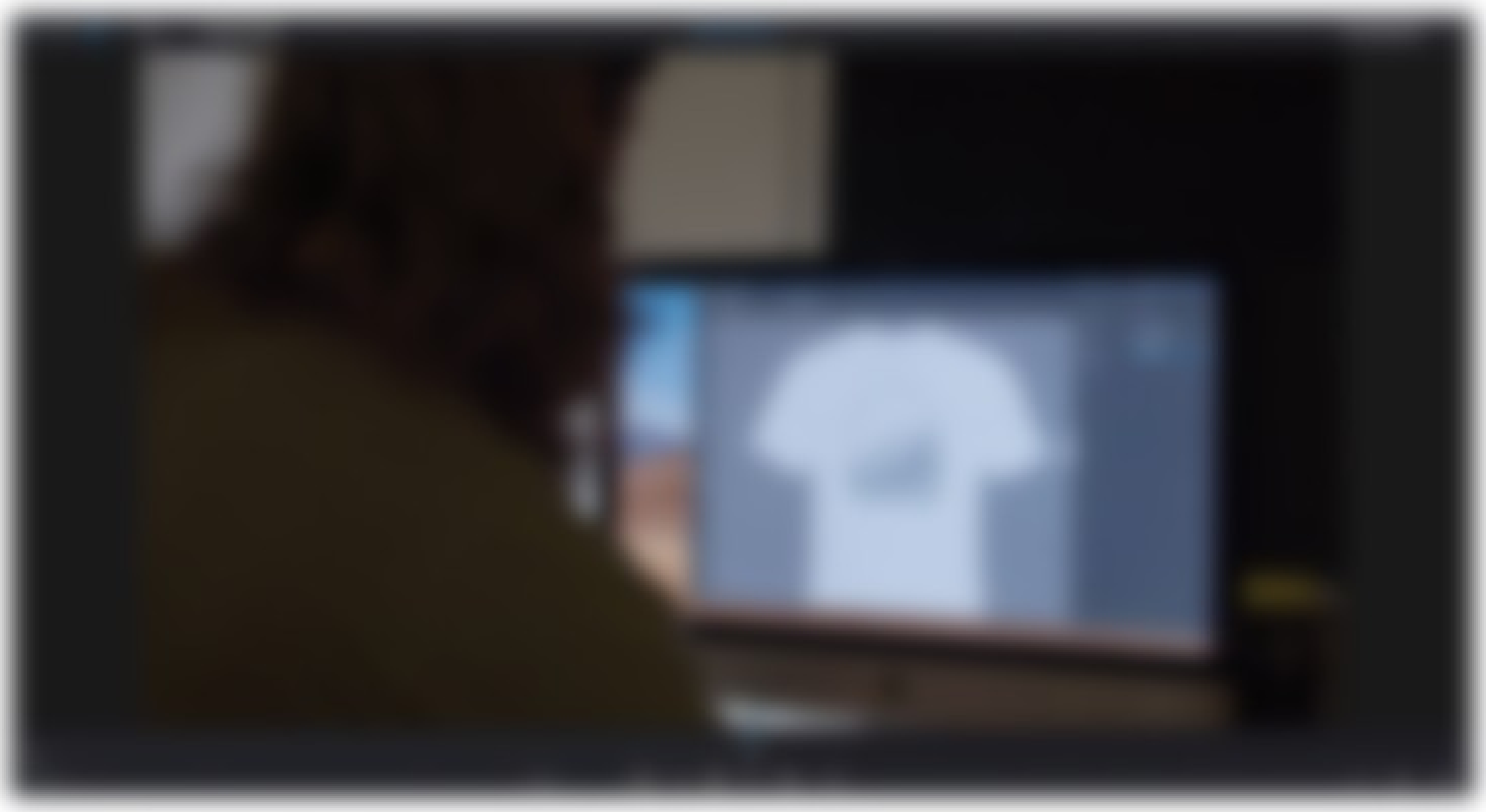
  Of course, you can also backtime clips into the timeline, just as you've done previously. Remember, though, that you only need an Out point in the source or timeline viewer.

- In the timeline, set an In point after Chris says "...we bring it back to the store..." and an Out point at the end of this soundbite (press ' (apostrophe) to jump to the last frame of the clip).



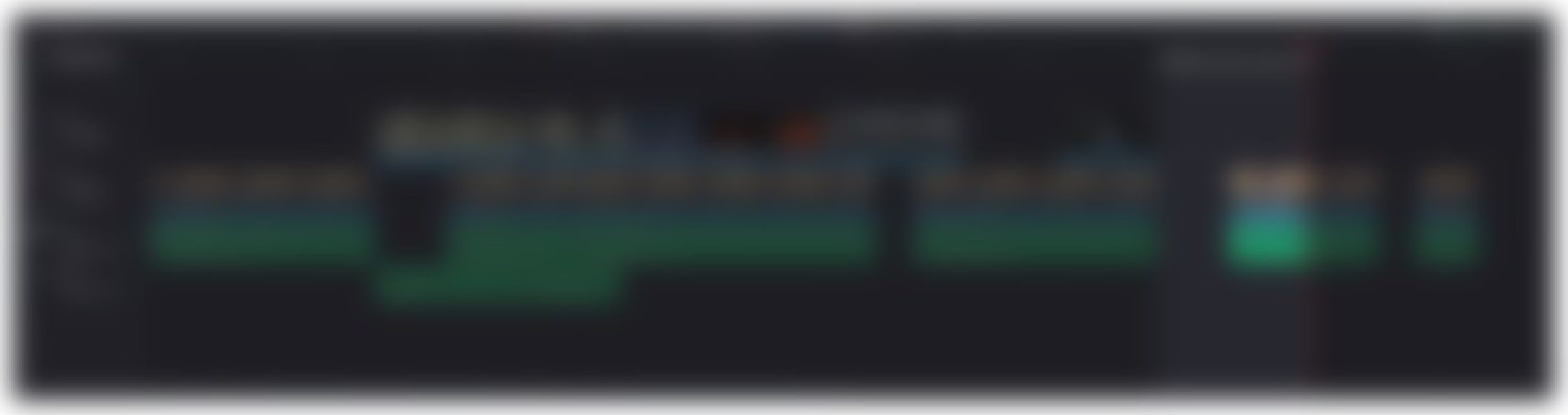
- In the source viewer, find the shot of the guy designing T-shirts on the computer and set an Out point just before the black circle appears on the screen for the first time.

- Press Option-I (macOS) or Alt-I (Windows) to remove the In point in the source viewer.

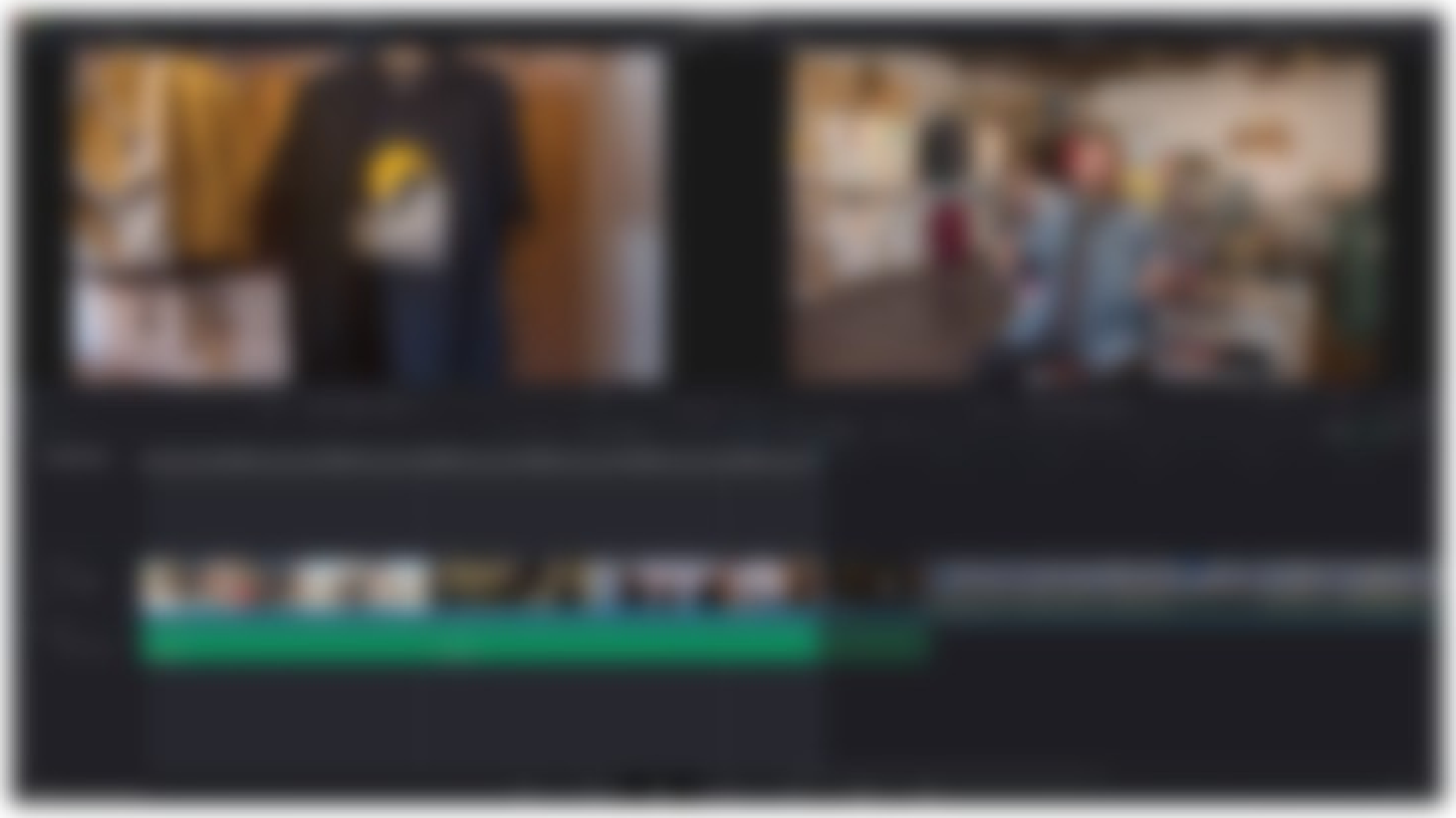


- Press F12 for a backtimed Place on Top edit.

- In the timeline, add an In point at the end of STORE 2 and an Out point after Chris says "... really a reflection of..."

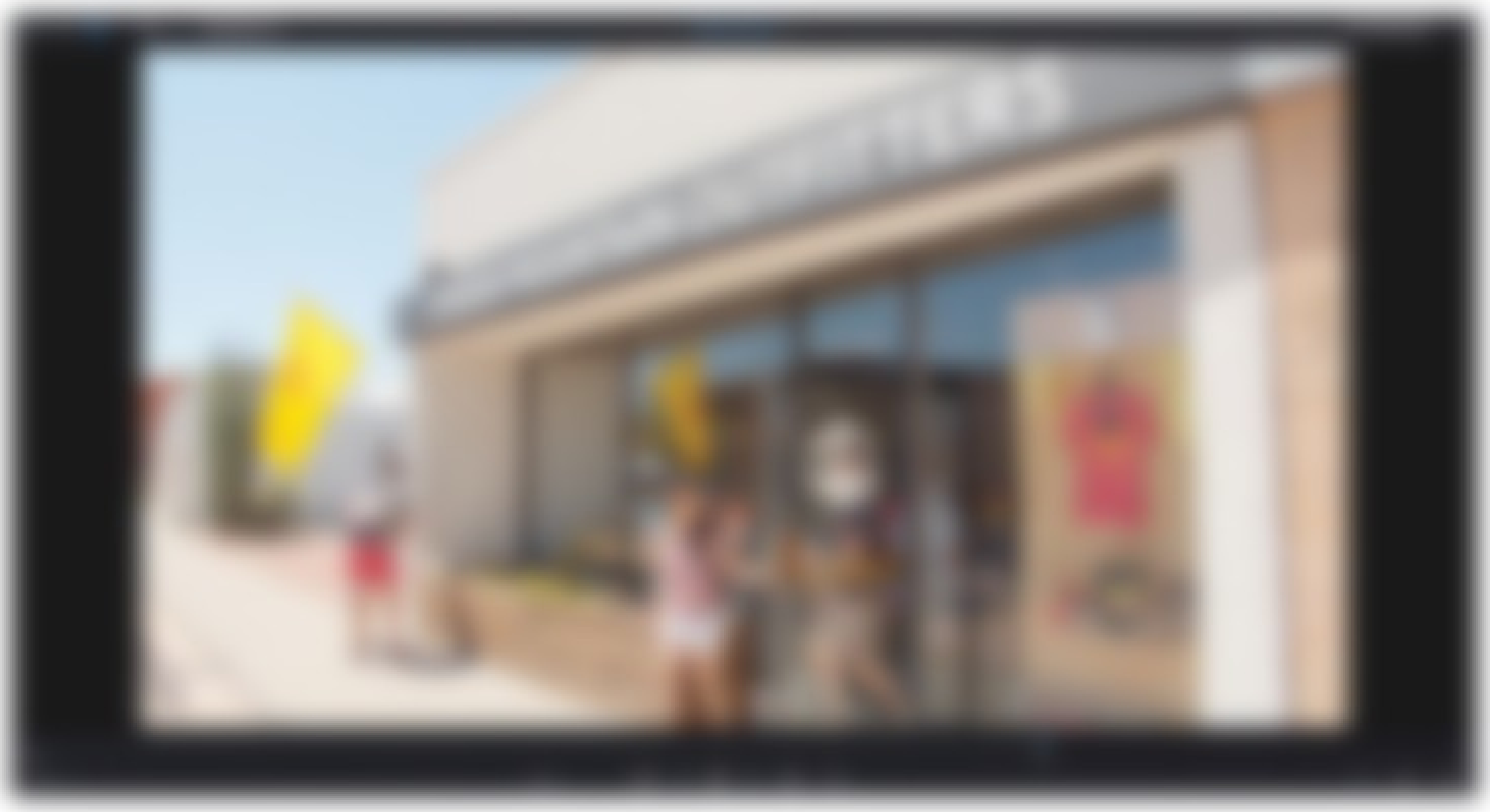


- Press O and set an Out point on the shot of the girl hanging up the T-shirt.



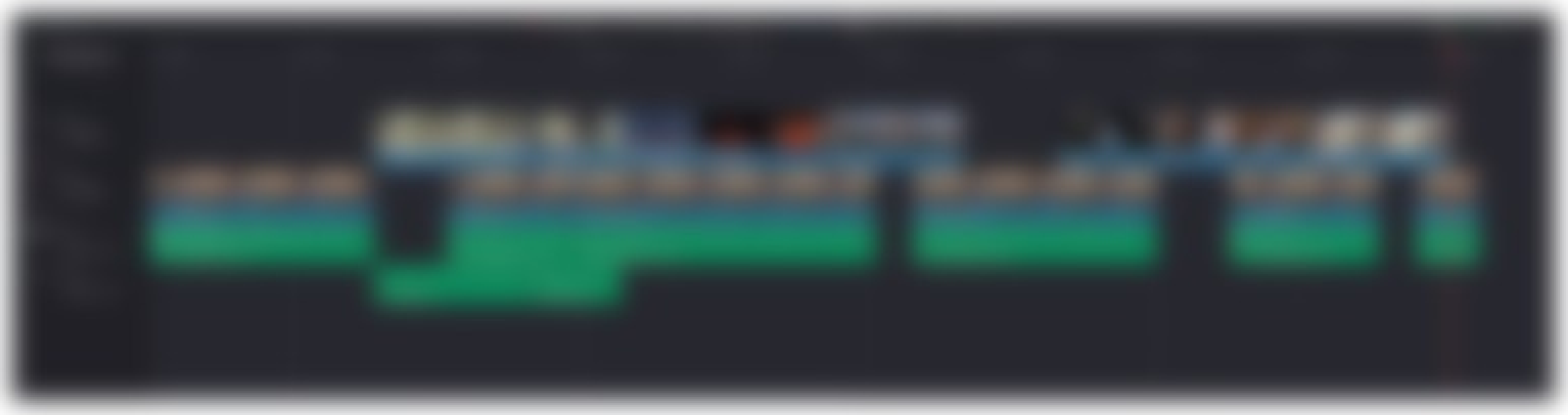
- Make a Place on Top edit.
- Set an In point in the timeline and an Out point before Chris says, "... experience the southwest."

- Press Q to switch to the source viewer and set an Out point on the shot where the girl in the black hat walks out of the Organ Mountain Outfitters store, and make a Place on Top edit.



- Click the Source Clip button at the top of the source viewer to close the source timeline.

Hopefully, you will see how efficient this technique is. By placing the B-Roll clips in the timeline and having that timeline open in the source viewer, it's much easier to scrub through the footage to review the available shots and locate the one you want to use without having to constantly open different clips from the media pool (although as you saw earlier in Lesson 3, this approach also has its own advantages). What's more, you can use all the editing functions, such as Insert, Replace, and Ripple Overwrite, in the same way using this technique instead of copying and pasting between timelines.



AI Music Editor (Studio Only)

There's one final AI-powered feature that many editors will find extremely useful: the AI Music Editor. This feature allows you to quickly edit music clips to a desired length. To explore this feature, you will add an alternative piece of music to your re-edited timeline and have DaVinci Resolve Studio cut the music to the correct duration.

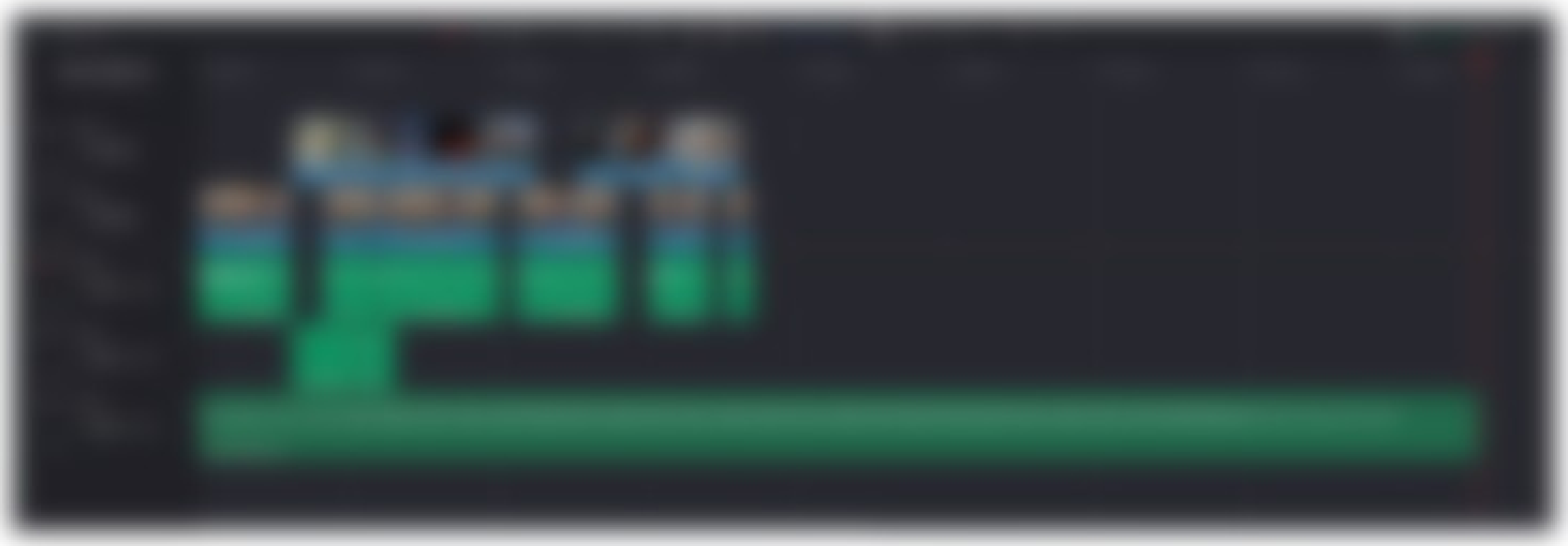
NOTE AI Music Editor works effectively with beat-driven music. It is not intended for free-form, ambient, or non-beat-driven material.

1. Open the media pool, select the MUSIC bin, and open the [illegible] clip in the source viewer.

   This is an alternative music track the client would like you to use.

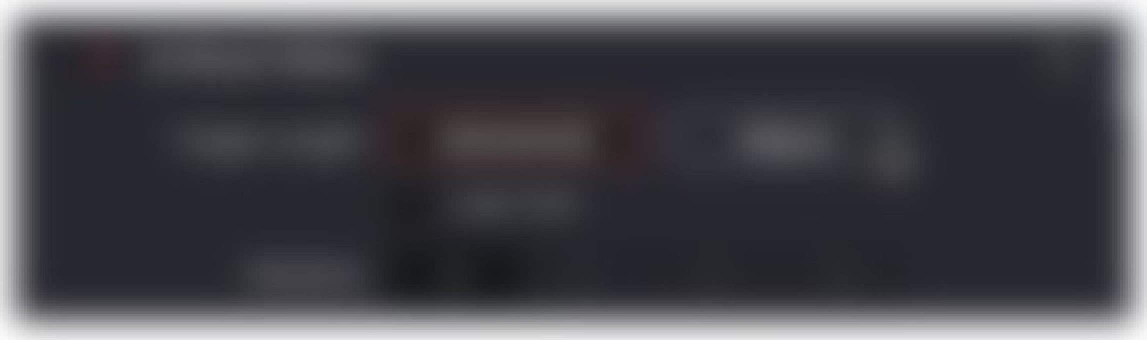
2. Return the timeline playhead to the beginning of the timeline and press Option-Command-1 (macOS) or Alt-Ctrl-1 (Windows) to enable the AI [illegible] control in the timeline.

- Press F12 to make a Place on Top edit, adding the music track to a new Audio 3 track.

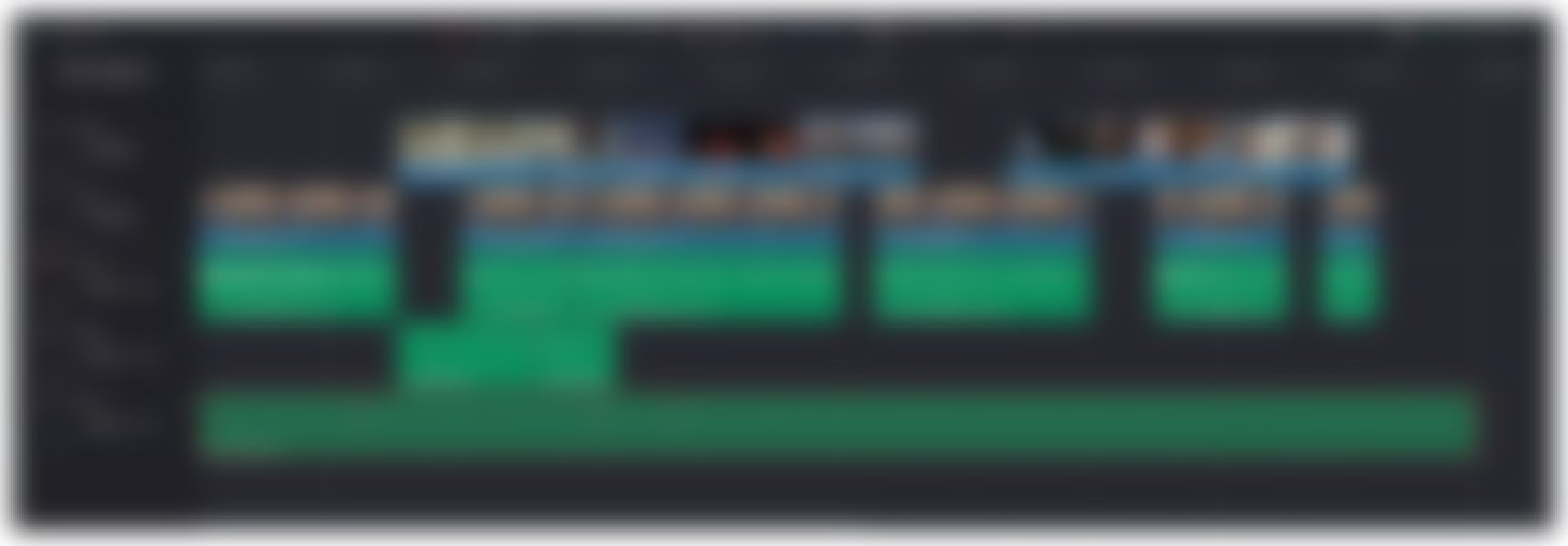


As you can see, this music cut is far too long for your edit.

- Select the [illegible] clip in the timeline and open the Inspector.
- In the AI Music Editor controls, enter **[illegible]** in the Target Length box (which equates to 45 seconds) and click Adjust.



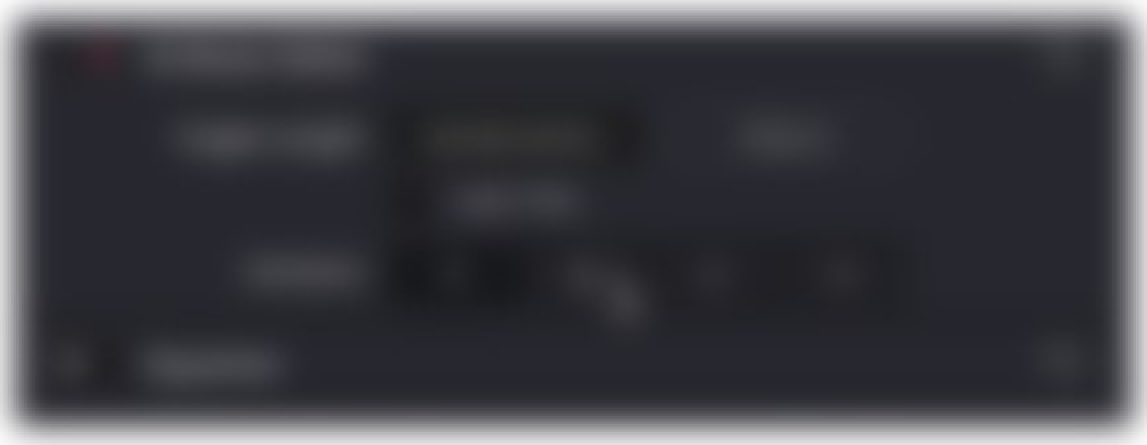
After the AI Music Editor completes its analysis, the music track is cut to time, with jagged lines representing where the track has been edited.



NOTE The edited clip is actually a specialized Music Editor clip, which allows you to further trim your edit. If you want to access the underlying edit, select the clip in the timeline and choose Clip > Decompose in Place, which reveals the individual edits, along with any crossfades created. However, keep in mind that once decomposed, you can't make further adjustments to the music using the AI Music Editor.

The AI Music Editor may not give you the precise duration you entered since it's not performing any retiming of the music. Instead, it is performing edits to get the best results. However, it does provide you with different versions from which you can choose.

- In the AI Music Editor controls in the Inspector, click the Version 2 option.



The timeline updates with the alternative cut.

- Click Versions 3 and 4 to preview the different edits.

TIP To reset the AI Music Editor and remove the edits it has added, click the Reset button in the controls in the Inspector.

However, you can also drag the clip to the desired duration.

- In the AI Music Editor controls, enable the Live Trim option.

- Place your mouse pointer over the outgoing portion of the music clip to see the new icon that indicates you're live trimming the clip.

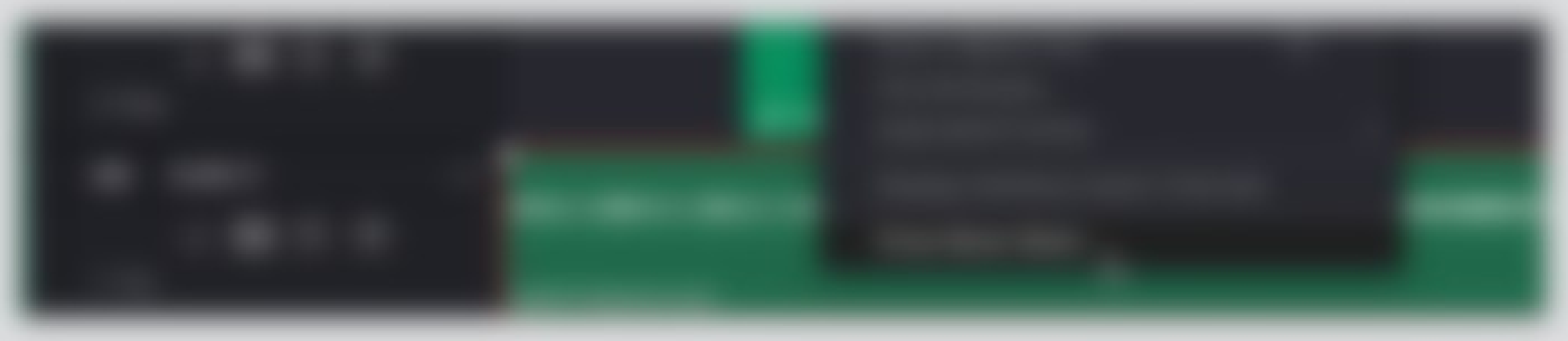
- Drag the end of the music clip to the new duration.

- Release the mouse button to dynamically update the AI Music Editor results.

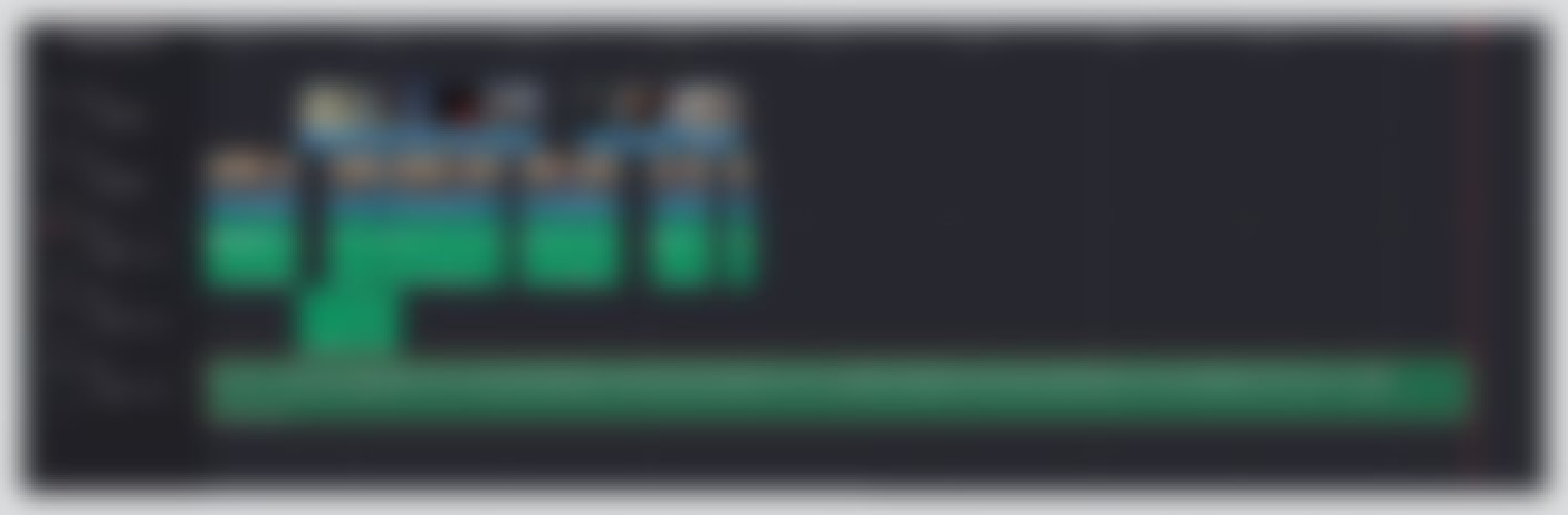
Using Beat Markers

An alternative to the AI Music Editor is to cut the music yourself, just like editors have been doing for decades. To help with this, you can choose to have DaVinci Resolve Studio show you the beats of the music.

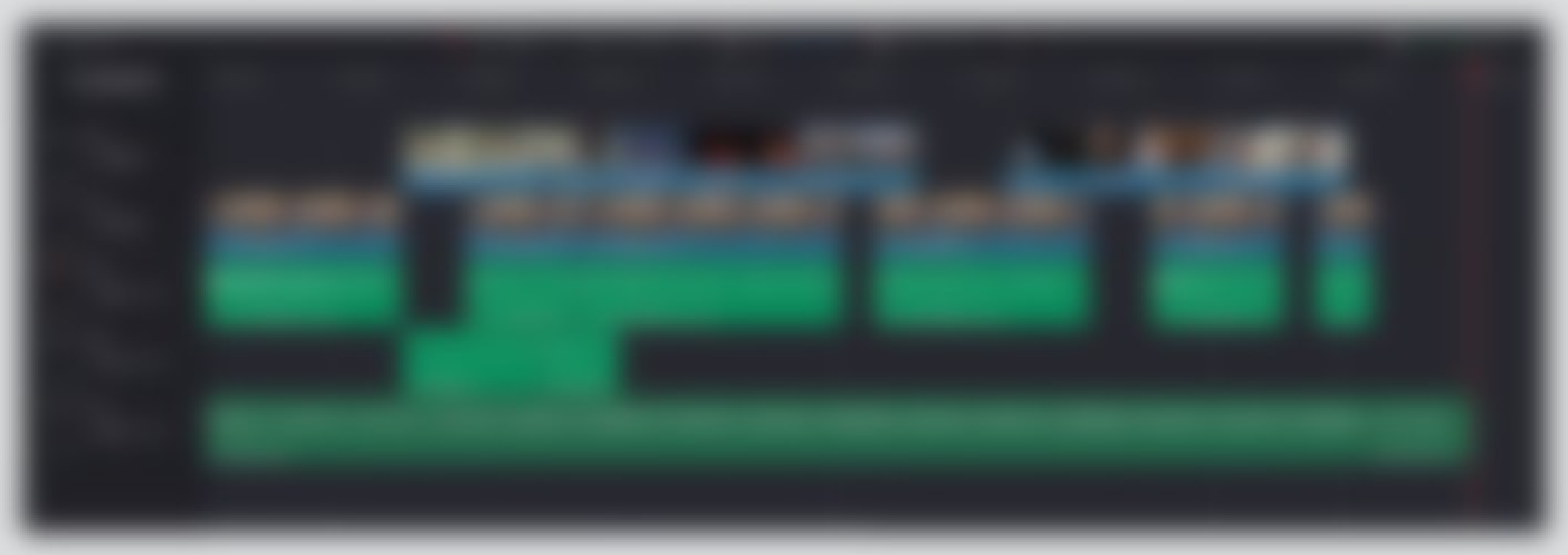
Simply right click a music clip in the timeline and choose Show Music Beats.



Once the analysis has completed, the music beats are displayed as a series of vertical lines.



You can use these music beat indicators to help you accurately edit the music track to your desired duration without resorting to the AI Music Editor.



Congratulations! You have successfully re-edited another rough cut of the Organ Mountain Outfitters promo using slightly different techniques than you initially used in earlier lessons, including employing DaVinci Resolve Studio's AI features to help. Of course, you'll still need to refine this rough cut. So while AI can currently assist you, particularly in the early stages of editing, you'll still have to apply the subsequent creativity and precision yourself!

Lesson Review

1. Which application can easily create proxy media for editing?
    a) Resolve Proxy Maker
    b) Blackmagic Proxy Generator
    c) Blackmagic Proxy Creator
2. True or false? Proxy media replaces the source media files used in your project.
3. How is a silent portion of a clip represented in the Transcription window?
    a) [illegible]
    b) [silent portion]
    c) [illegible]
4. How can you see the individual clips in a timeline in the source viewer?
    a) Drag the timeline from the source viewer into the timeline viewer.
    b) Click the Source Tape button in the source viewer.
    c) Click the Timeline button in the source viewer.
5. True or false? The AI Music Editor applies retiming and pitch adjustments to your music clips to achieve the best timing.

Answers

1. b) Blackmagic Proxy Generator
2. False. Proxy media files are created alongside your source media files. Your original full-resolution media files remain intact. You can disable proxy media by choosing Playback > Proxy Handling > Disable All Proxies.
3. a) Silent portions are presented in the transcript by (...).
4. c) Click the Timeline button in the source viewer.
5. False. AI Music Editor does not use retiming or pitch adjustments, but instead uses editing techniques to fit the material to the desired duration.

Lesson 7

Edit Page Effects

Building graphics sequences is a valuable skill in any editor's arsenal. Multilayered composites that combine video, audio, graphics, and text, often with animated elements, are regularly incorporated into an edit. It often falls to the editor to build these composites and apply some level of keyframed animation, either as pre-viz (previsualization) for motion graphics or as the final content.

This lesson introduces the compositing and animation features available to you in DaVinci Resolve's edit page, together with some specialized effects to help you achieve common tasks quickly and effectively.

Time

This lesson takes approximately 90 minutes to complete.

Goals

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Compositing Using Tracking Mattes	392
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Setting Up the Project

To begin this lesson, you will import a DaVinci Resolve project and configure the edit page workspace for working with effects.

1. Open DaVinci Resolve, and in the Project Manager, right-click an empty area and choose Import Project. Navigate to R20 Editors Guide > Lesson 17, select the **EDIT PAGE EFFECTS.drp** project file, and choose Open.

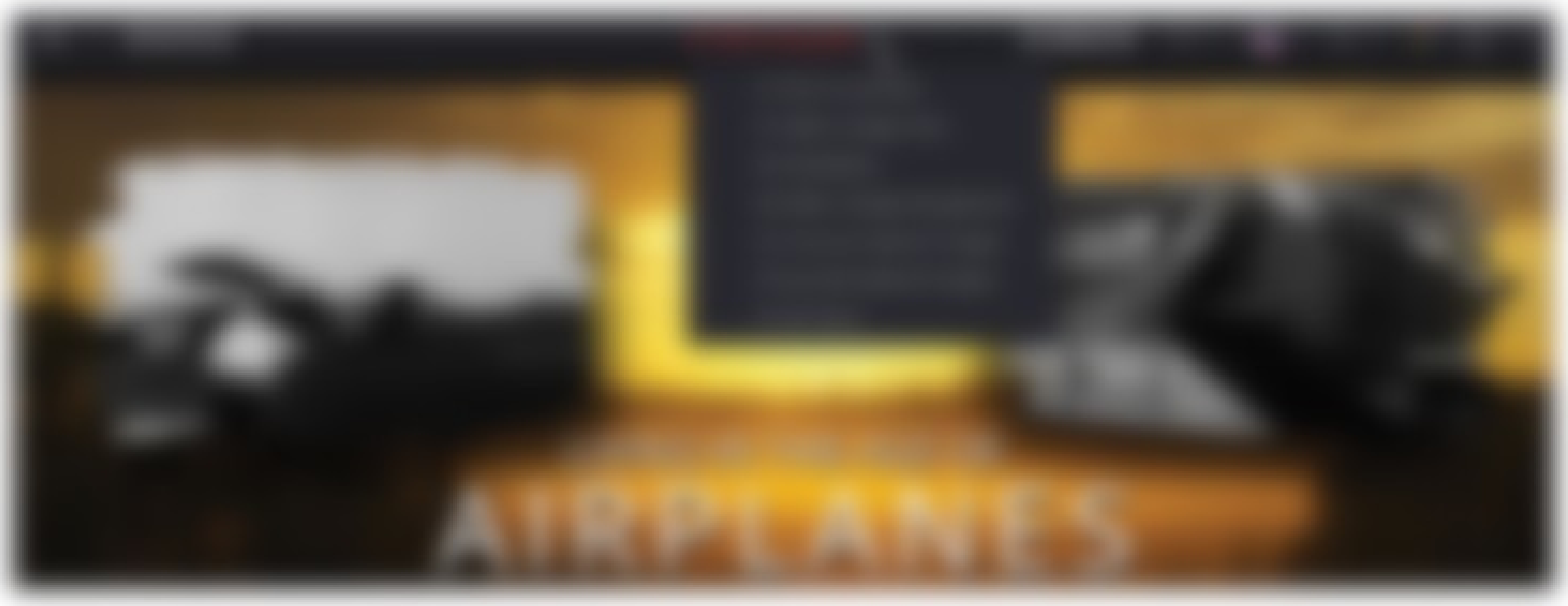
   The Project is imported and added to the Project Manager.

2. Open the project, click the Edit page button, and relink the media files using the Relink Media button.

3. If necessary, choose Workspace > Reset UI Layout to reset the interface to its default setting.

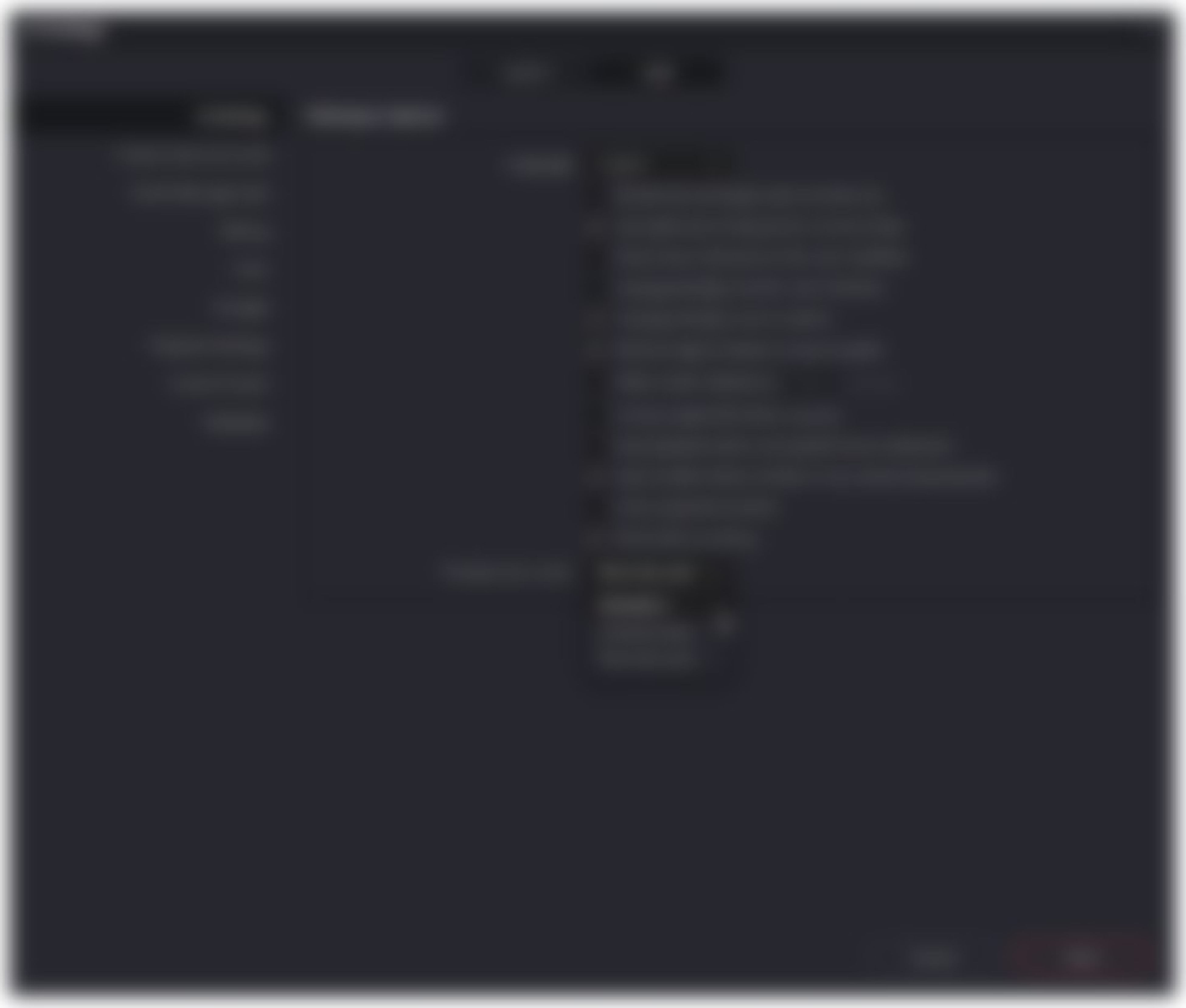
   The project contains several bins and timelines for the different exercises you'll follow throughout this lesson.

- Click the Select Timeline dropdown menu above the timeline viewer.

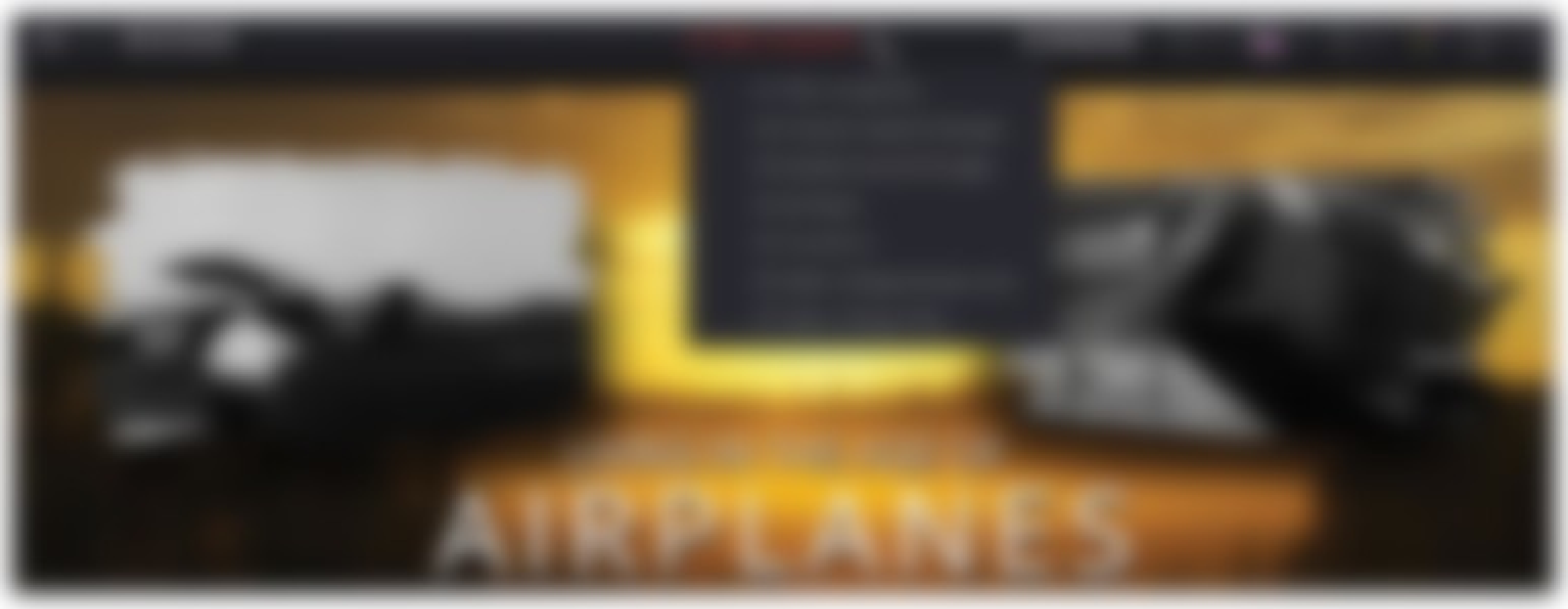


The Timeline menu lists all timelines in the current project and can be a useful way of easily switching timelines. By default, DaVinci Resolve arranges the list of timelines in Recently Used order, so recently accessed timelines appear at the top.

- Choose DaVinci Resolve > Preferences or press Command-, (comma) in macOS or Ctrl-, (comma) in Windows to open the Preferences window, and select the User tab.
- In the UI Settings, click the menu for Timeline Sort Order and choose Alphabetic.



- Click Save to save the change and close the Preferences window.
- Click the Select Timeline menu again to view the sort order change and ensure that the 01 Title Composite timeline is open.



You are now ready to start the first exercise in this lesson.

Compositing Using Traveling Mattes

A common task that many editors face is the need to resize clips. This could be as simple as changing the framing of a shot to exclude a microphone that has unintentionally wandered into the frame, or it could be to build something a little more creative.

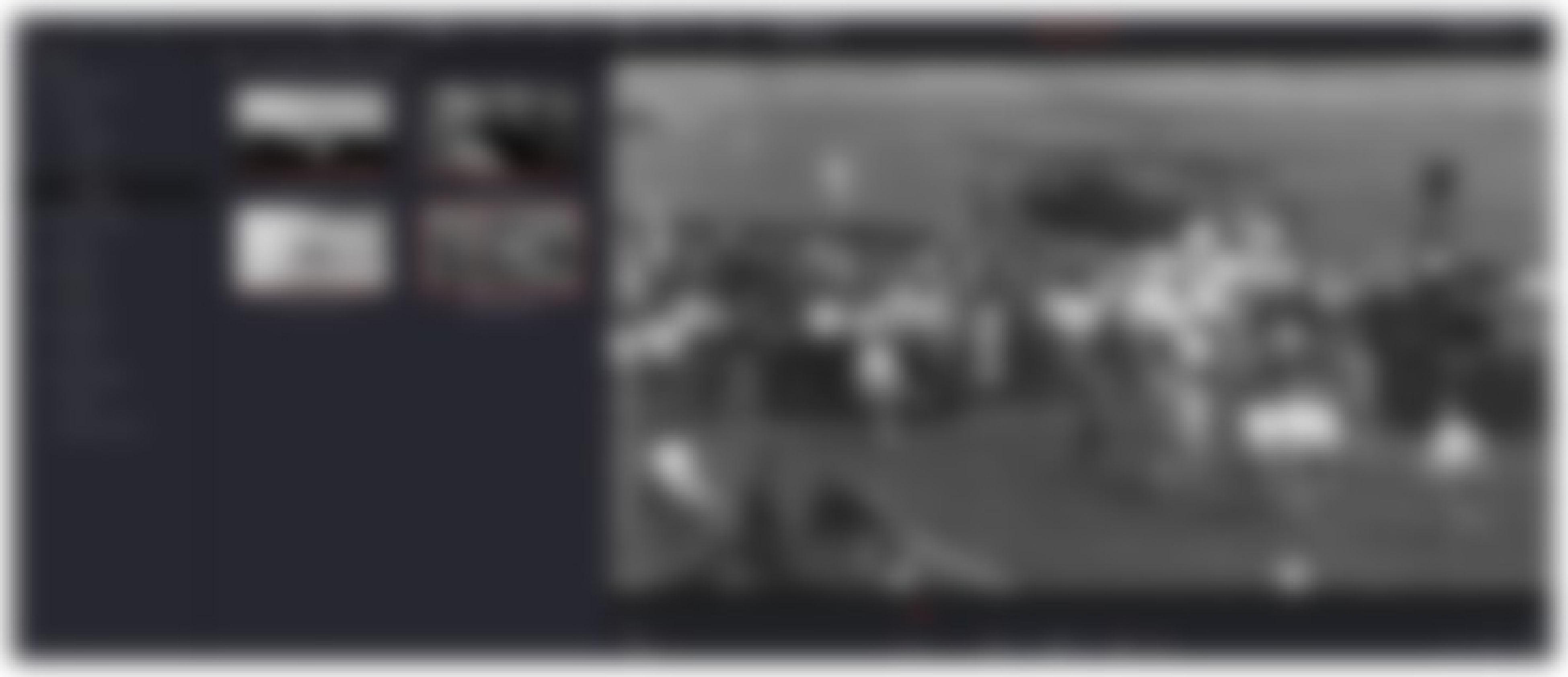
In the first exercise in this lesson, you'll composite a shot with a traveling matte and then resize and position the result into the overall composite.

The 01 Title Composite timeline is a short sequence of archival footage composited over a background image. Each of the archive clips has a stylized "painted" edge to it. After a second or so, an animated Fusion title animates in, announcing the title of the film Living in the Age of Airplanes.

Your job is to use the compositing functions available in the edit page to replace the final archive image and place it in the bottom right corner of the timeline viewer.

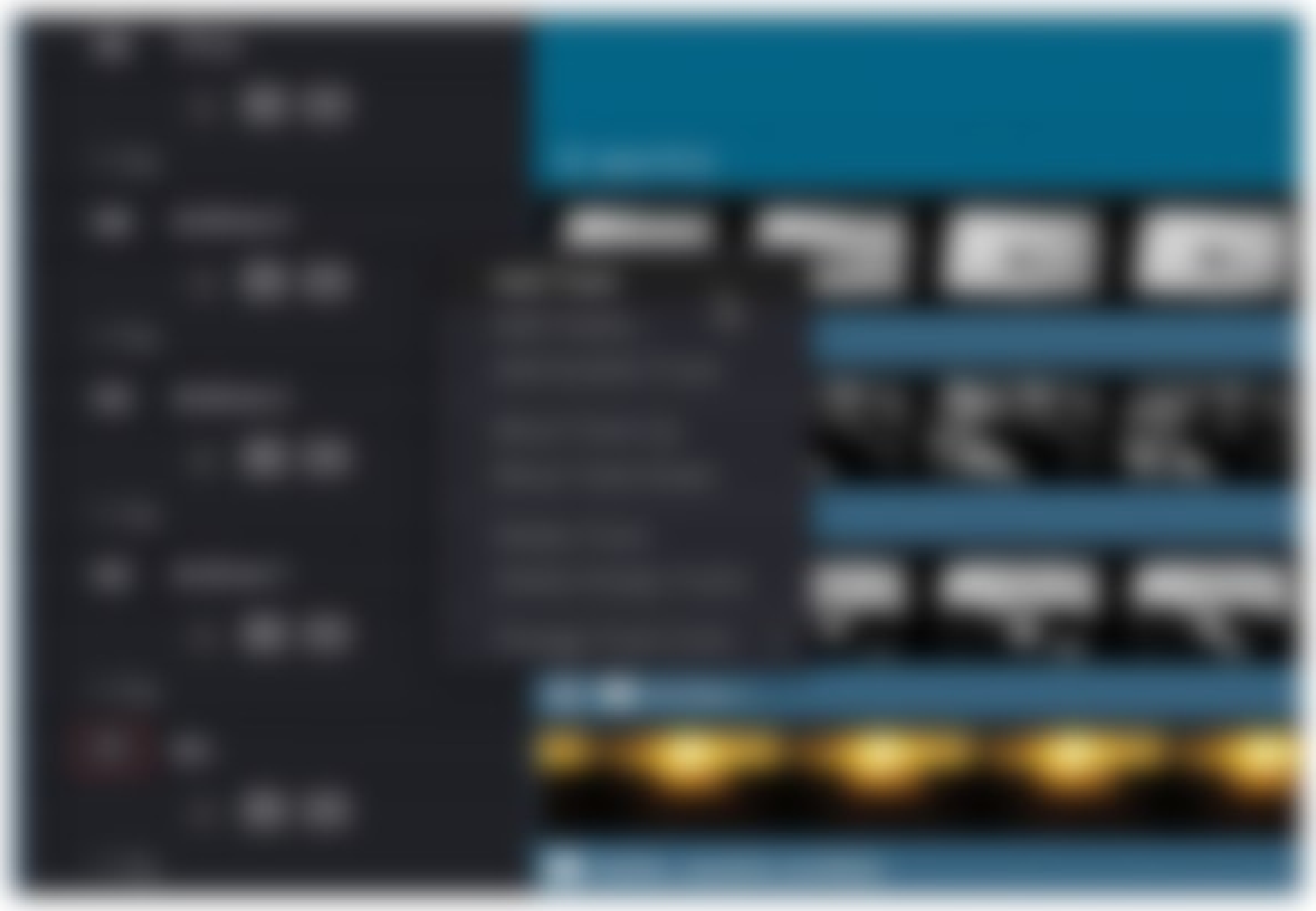
First, you'll need to create a new video track in the timeline to accommodate the new clip.

1. In the bin list, select the Archive bin and open the clip [illegible] in the source viewer.

   This clip is a short archive clip from the early days of powered flight.

2. Right-click the track header for the Archive 3 video track and choose Add Track.

[illegible]

- [illegible]

[illegible]

- [illegible]

[illegible]

- [illegible]

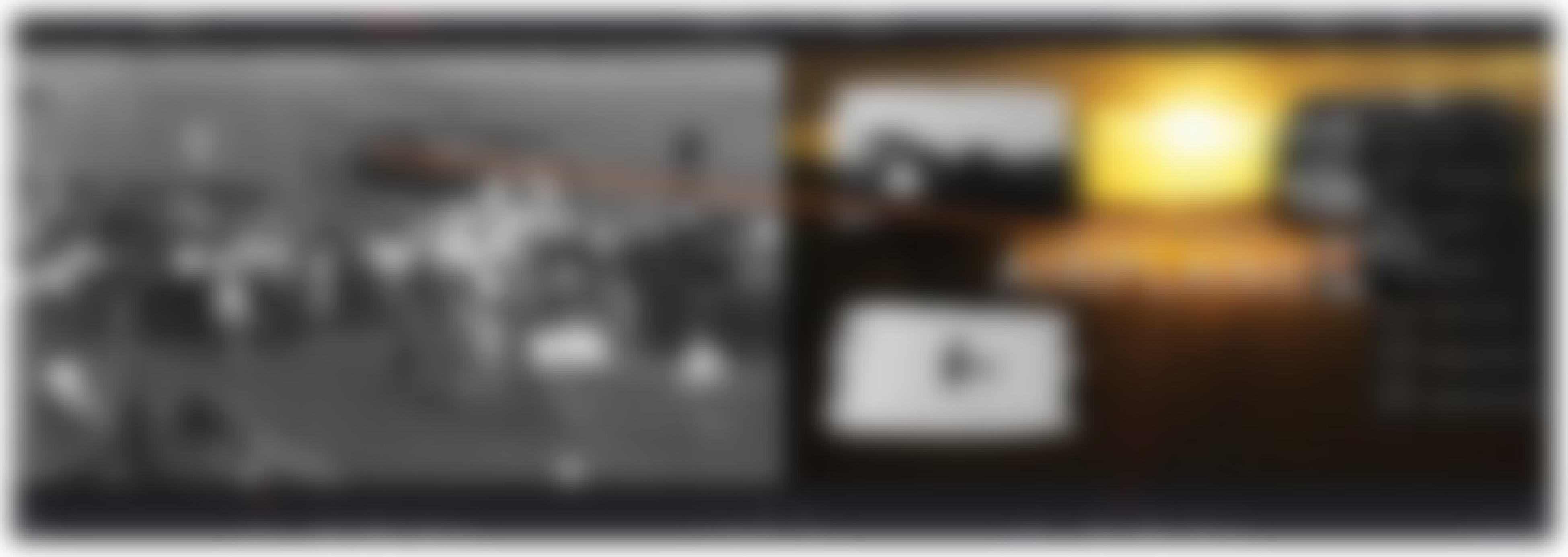
[illegible]

[illegible]

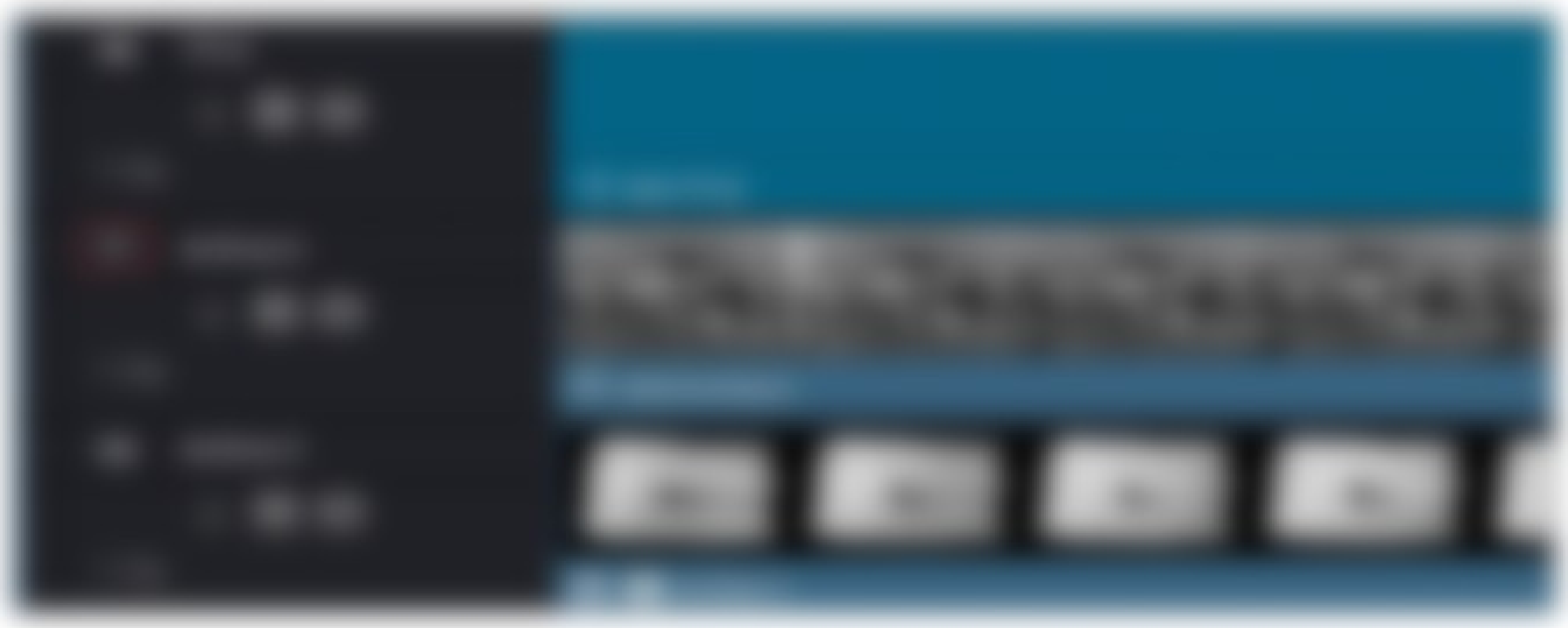
[illegible]

[illegible]

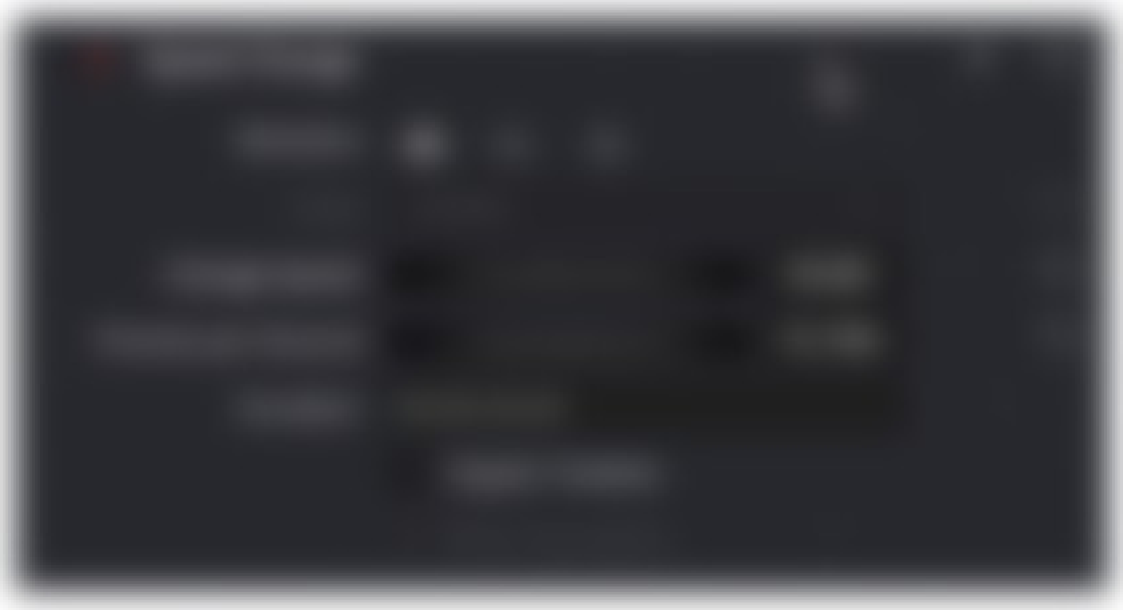
- Drag the clip from the source viewer to the Fit to Fill option in the timeline viewer overlays.



The clip is edited onto the targeted track, and its speed is automatically adjusted as indicated by the speed icon next to the clip's name in the timeline.



- To check the new speed of the clip, select the [illegible] clip in the timeline, open the Inspector, and reveal the Speed Change controls.



The clip is now running at about [illegible] of its original speed.

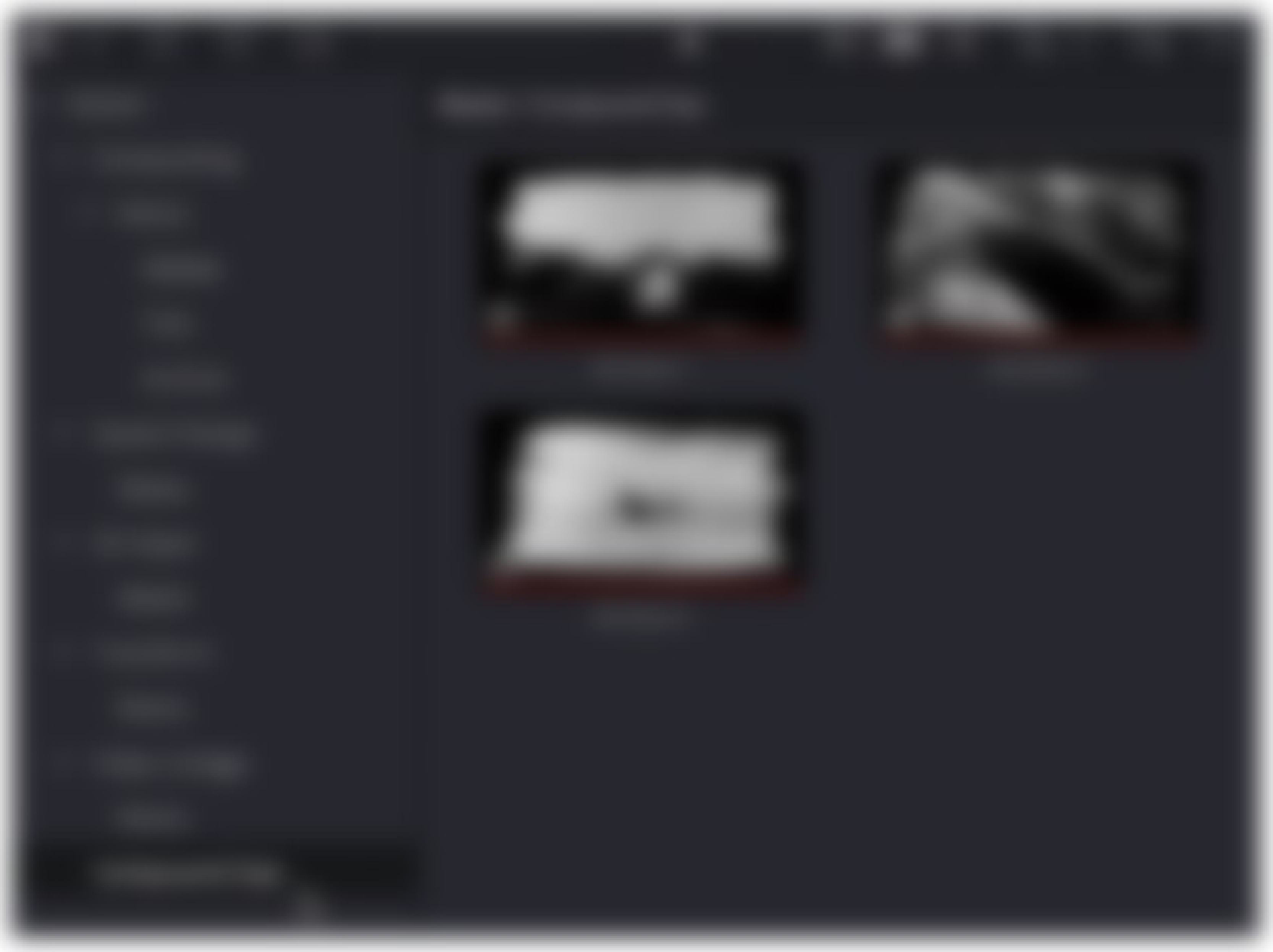
- Close the Inspector.

NOTE When editing a longer source clip to a shorter timeline duration, the speed of the source clip is increased proportionately with the shorter duration.

Creating a Compound Clip

To create the "painted edge" effect on this clip, you need to combine the clip with a matte clip on another timeline track. However, to keep the timeline organized and not add tracks unnecessarily, you will instead place the clip into a compound clip.

1 In the media pool, select the Compound Clips bin.



This bin already includes the three compound clips that have already been created for this project.

2 In the timeline, ensure that the [illegible] clip is still selected and choose Clip > New Compound Clip.

The New Compound Clip window opens.

- Name the compound clip you are creating **Archive 4** and click Create.

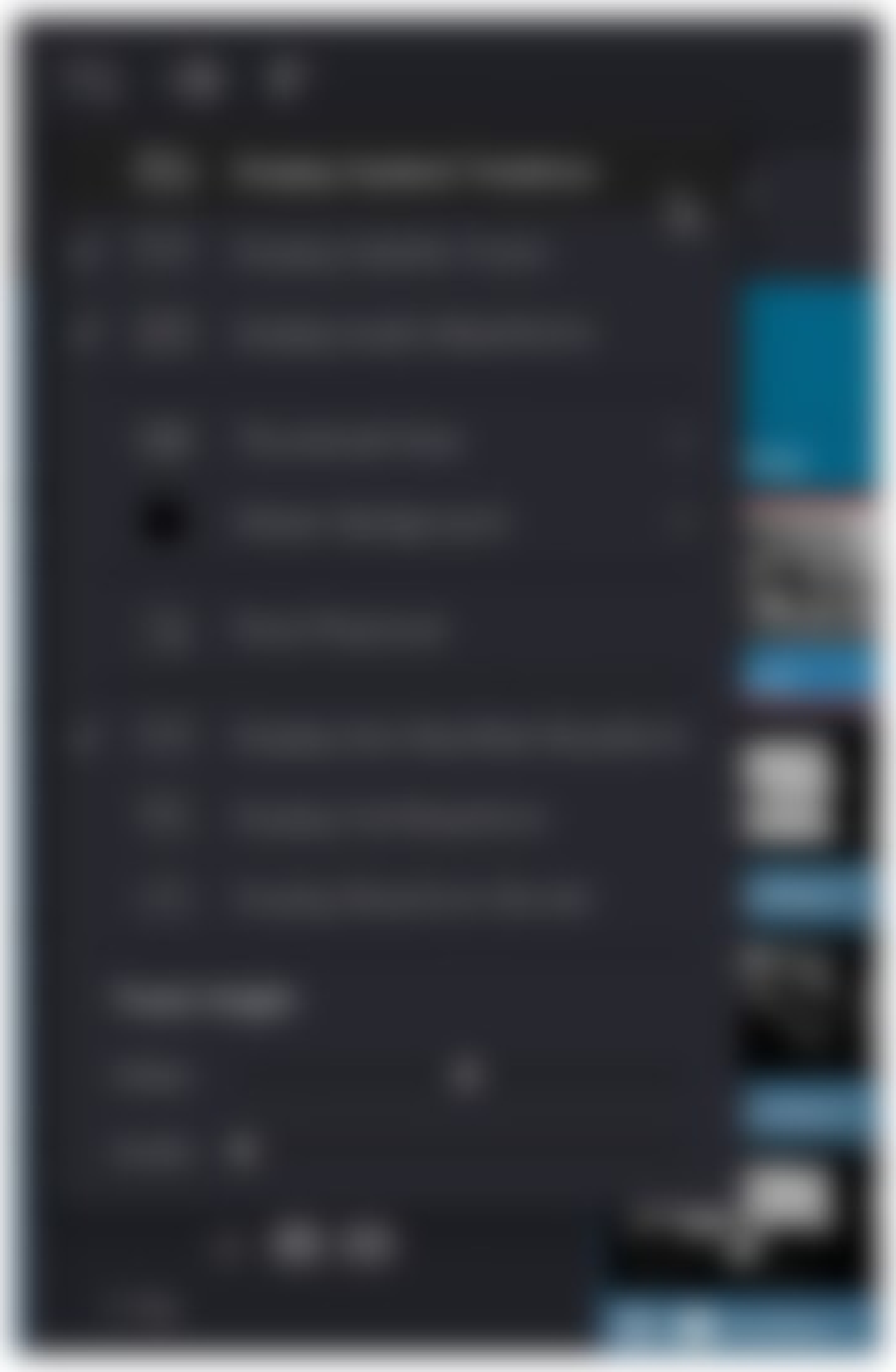
The selected clip is now nested into the new Archive 4 compound clip, as indicated by the compound clip icon next to the compound clip's name in the timeline.

The new compound clip is added to the selected bin in the media pool.

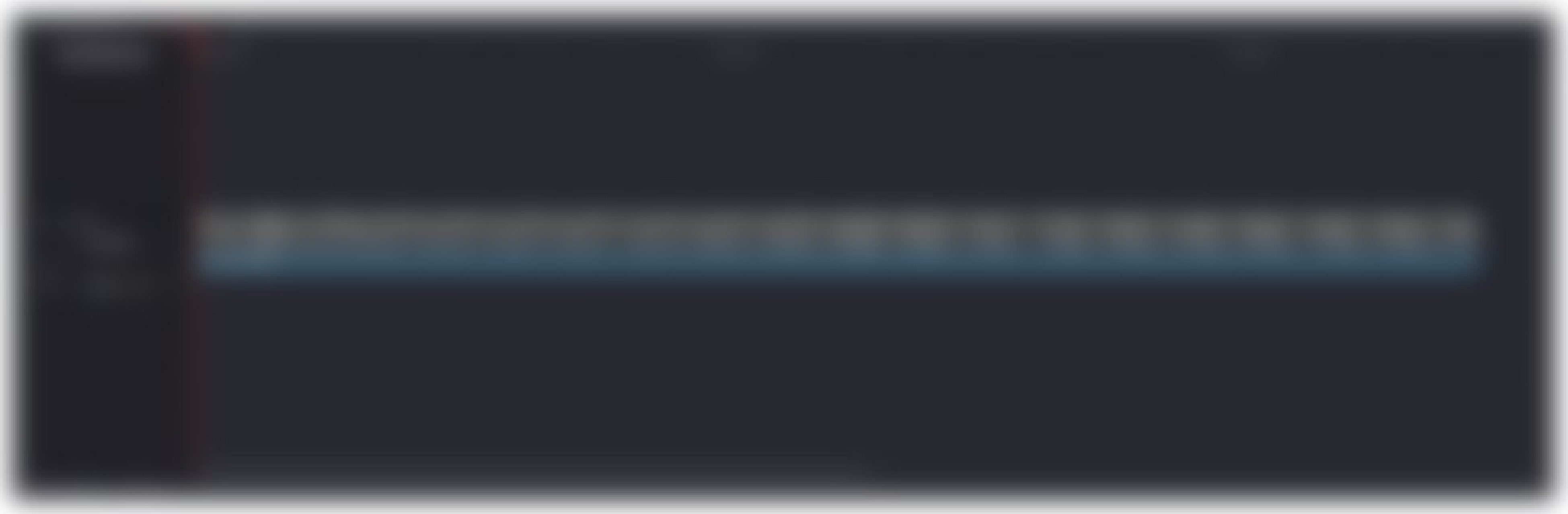
Adding the Traveling Matte

Next, you'll create the stylized edging for this clip. To do so, you'll add an image file to use as a matte inside the compound clip.

1. In the Timeline View Options menu, enable Stacked Timelines and display the timeline tabs.

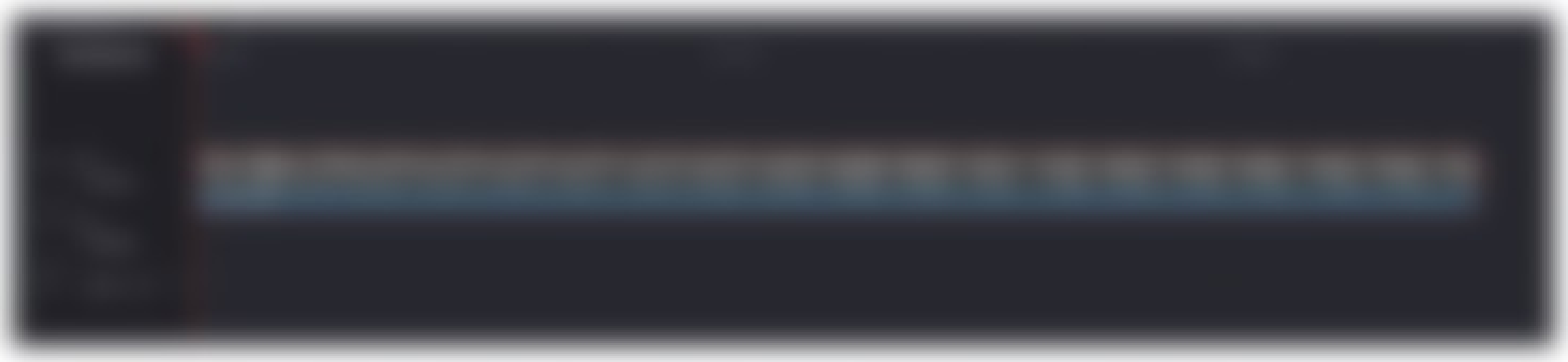


2. Ensure that the **[illegible]** compound clip is still selected in the timeline and choose Clip > Open in Timeline, or right-click the clip in the timeline and choose Open in Timeline to open the compound clip in its own timeline tab, much like the multicam clip in Lesson [illegible].

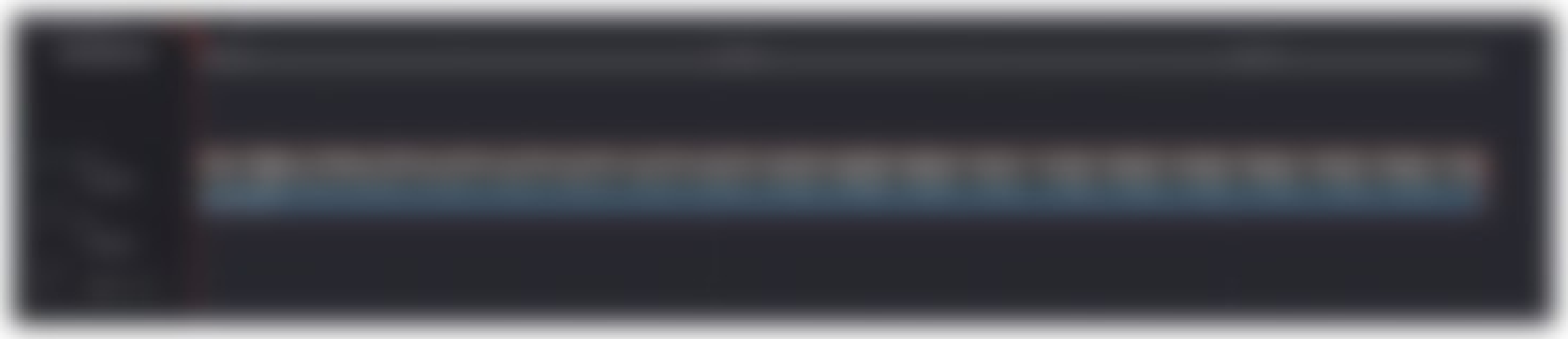


Similar to that multicam clip, any changes you make in this timeline will be seen in the compound clip in the main **[illegible]** timeline.

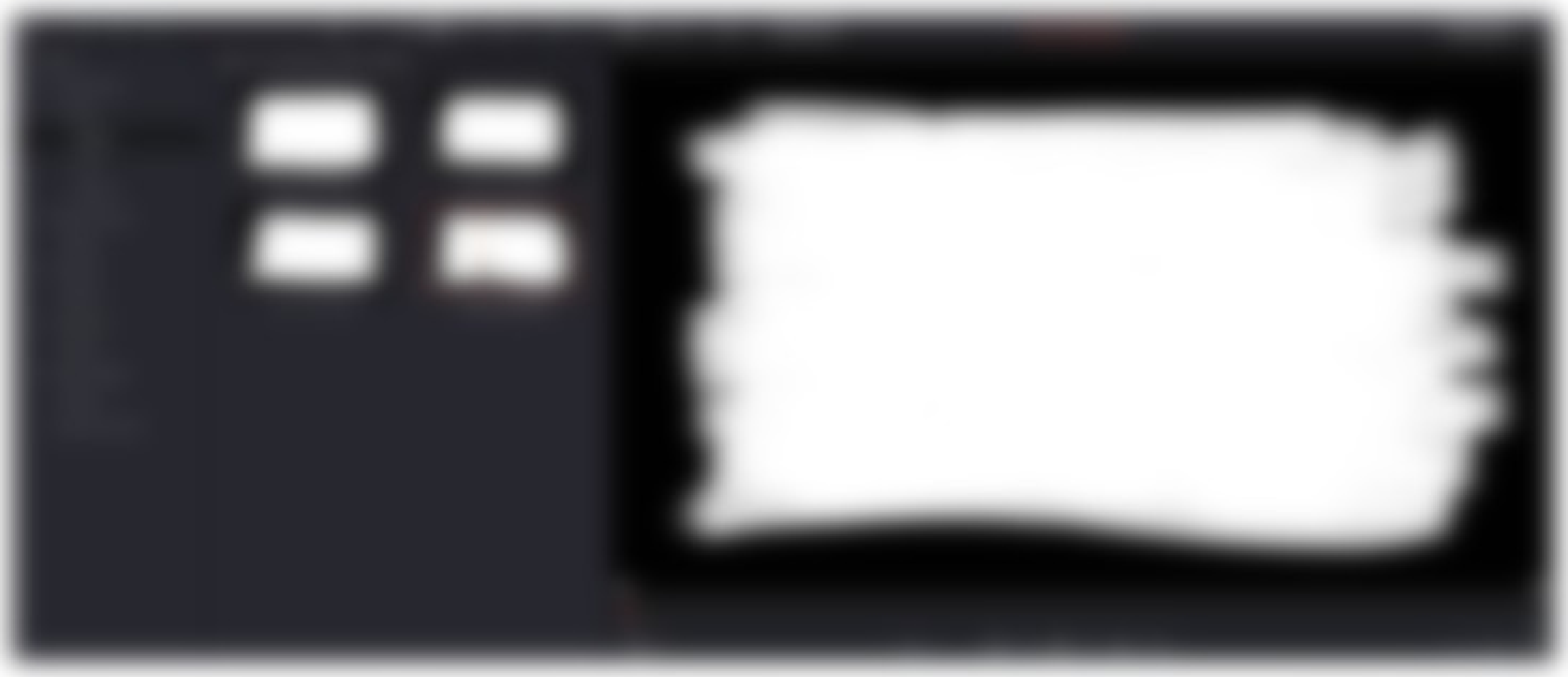
3. Select the **[illegible]** clip in the compound clip timeline and press Option-Up Arrow (macOS) or Alt-Up Arrow (Windows) to move it up one track and automatically create a new Video 2 track.



4. With the **[illegible]** clip still selected, press Shift-D to mark its duration.

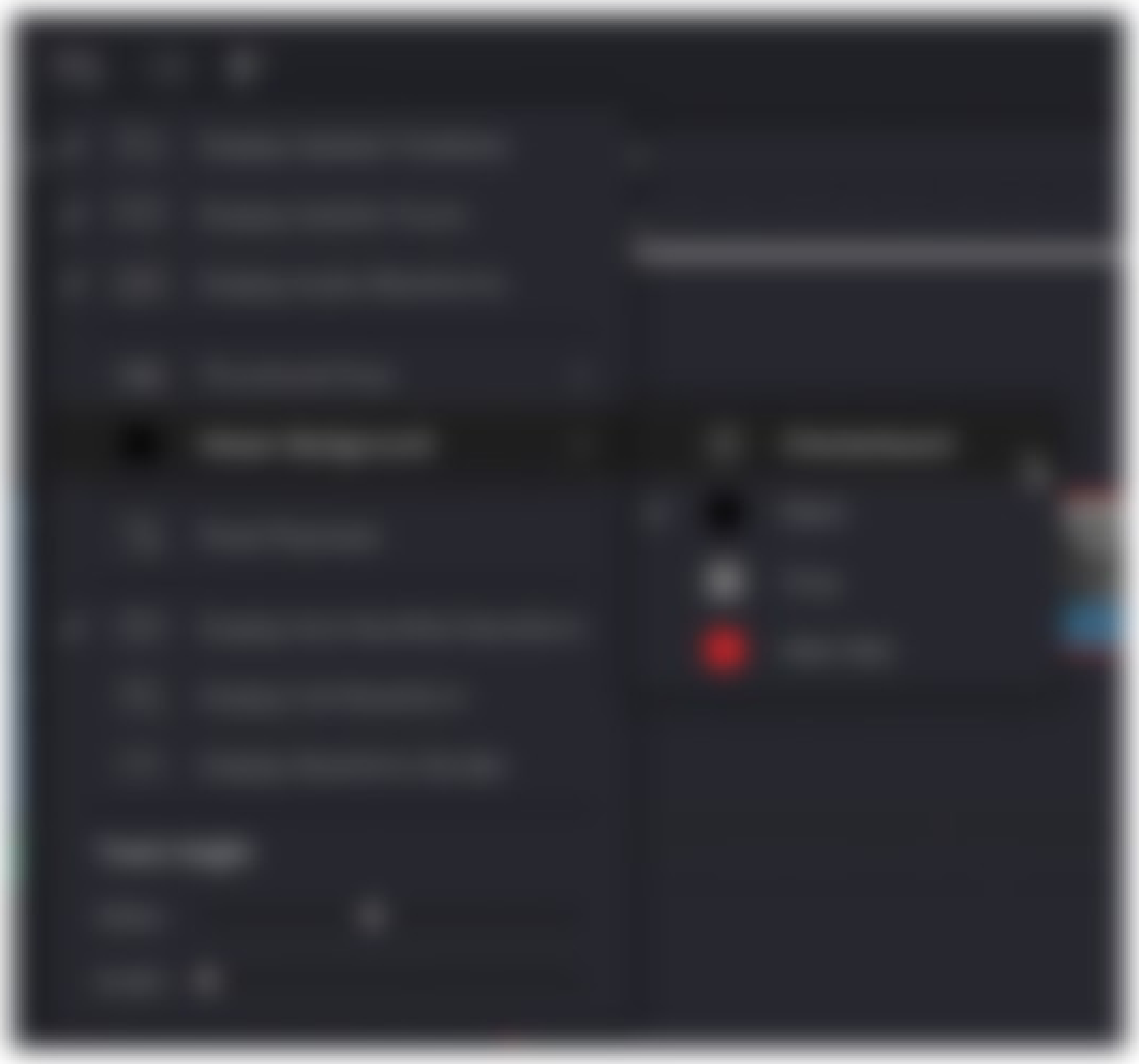


5. From the Mattes bin in the media pool, open the **[illegible]** clip in the source viewer.

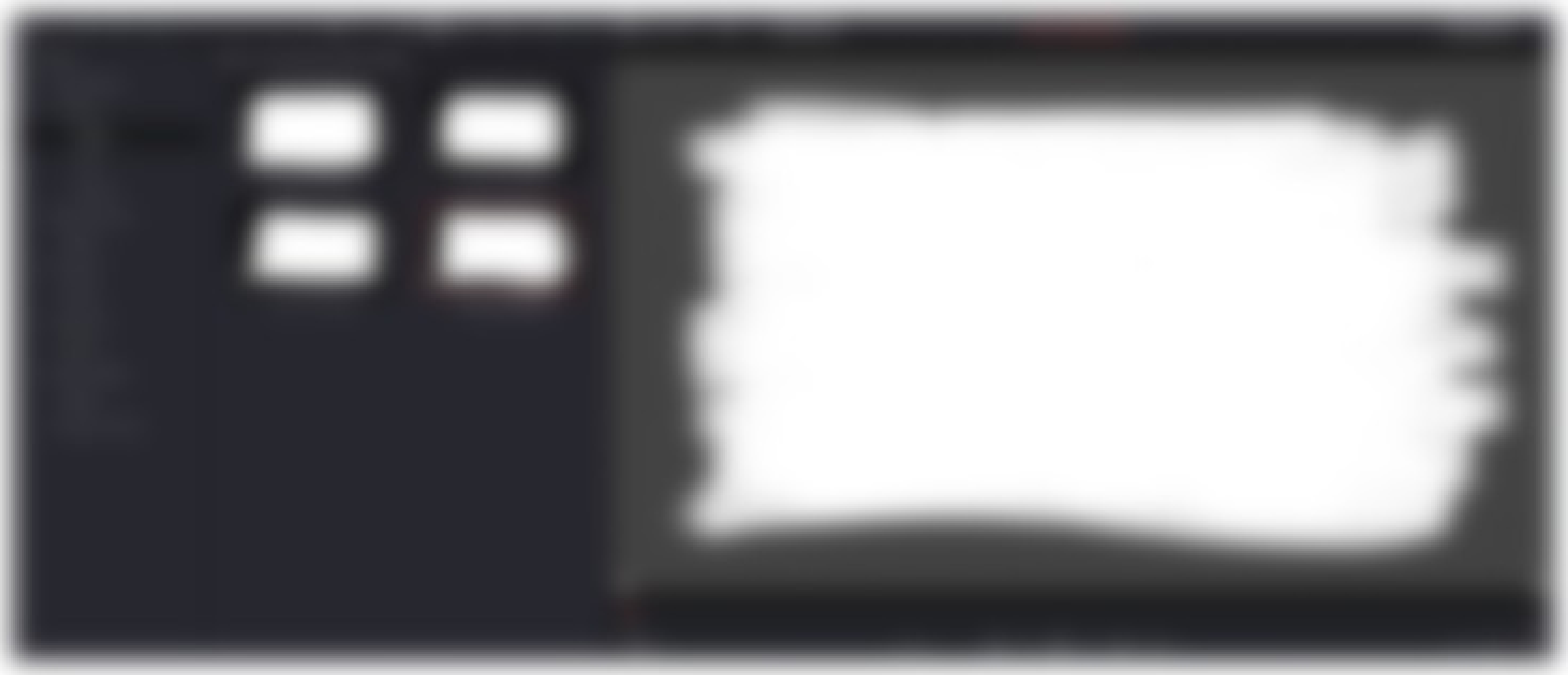


This image was created using a graphics package and was saved as a PNG file with an alpha channel that you will use to composite it with the **[illegible]** clip.

- In the Timeline View Options menu, select Viewer Background > Checkerboard.

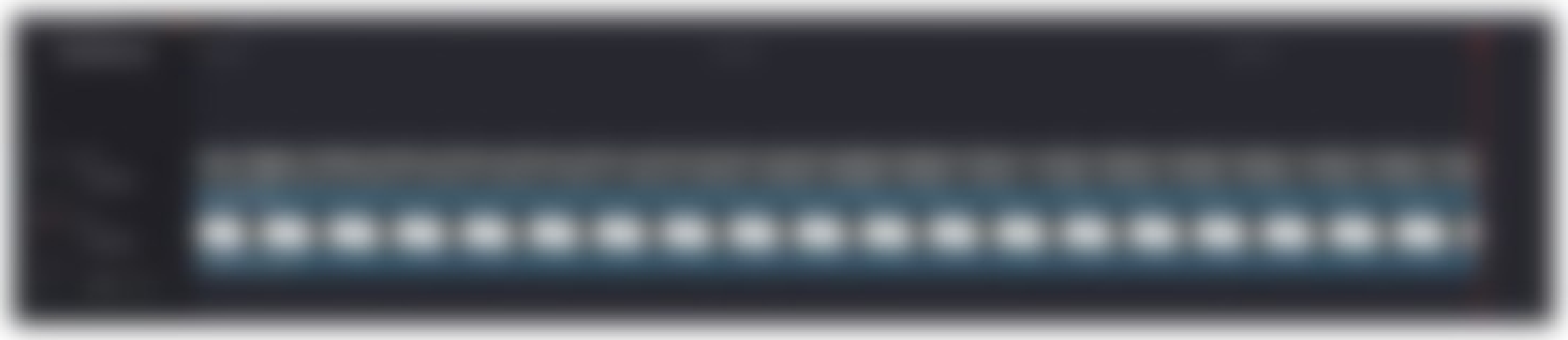


The viewer now displays the checkerboard where the alpha channel is used to determine transparency.



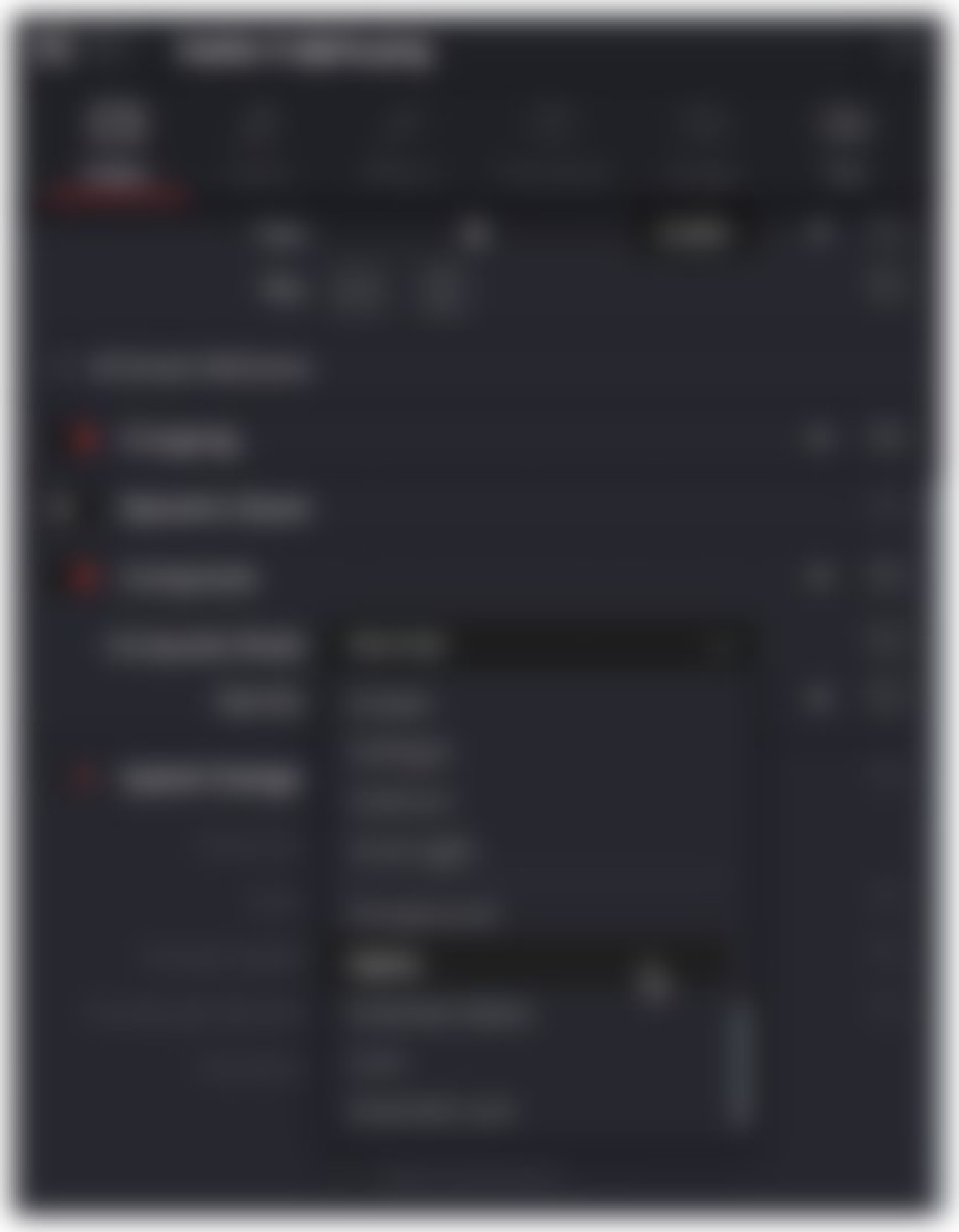
NOTE An alpha channel is an extra channel saved alongside the usual RGB channels of an image and can be used to aid compositing in image and video editing software. If an image doesn't have an alpha channel, you can still use it as a matte by using the image's luminance, or luma.

- Drag the matte from the source viewer to the Fit to Fill overlay, or press SHIFT-F11, to edit the clip onto the currently targeted track in the timeline (Video 1) at the correct duration.



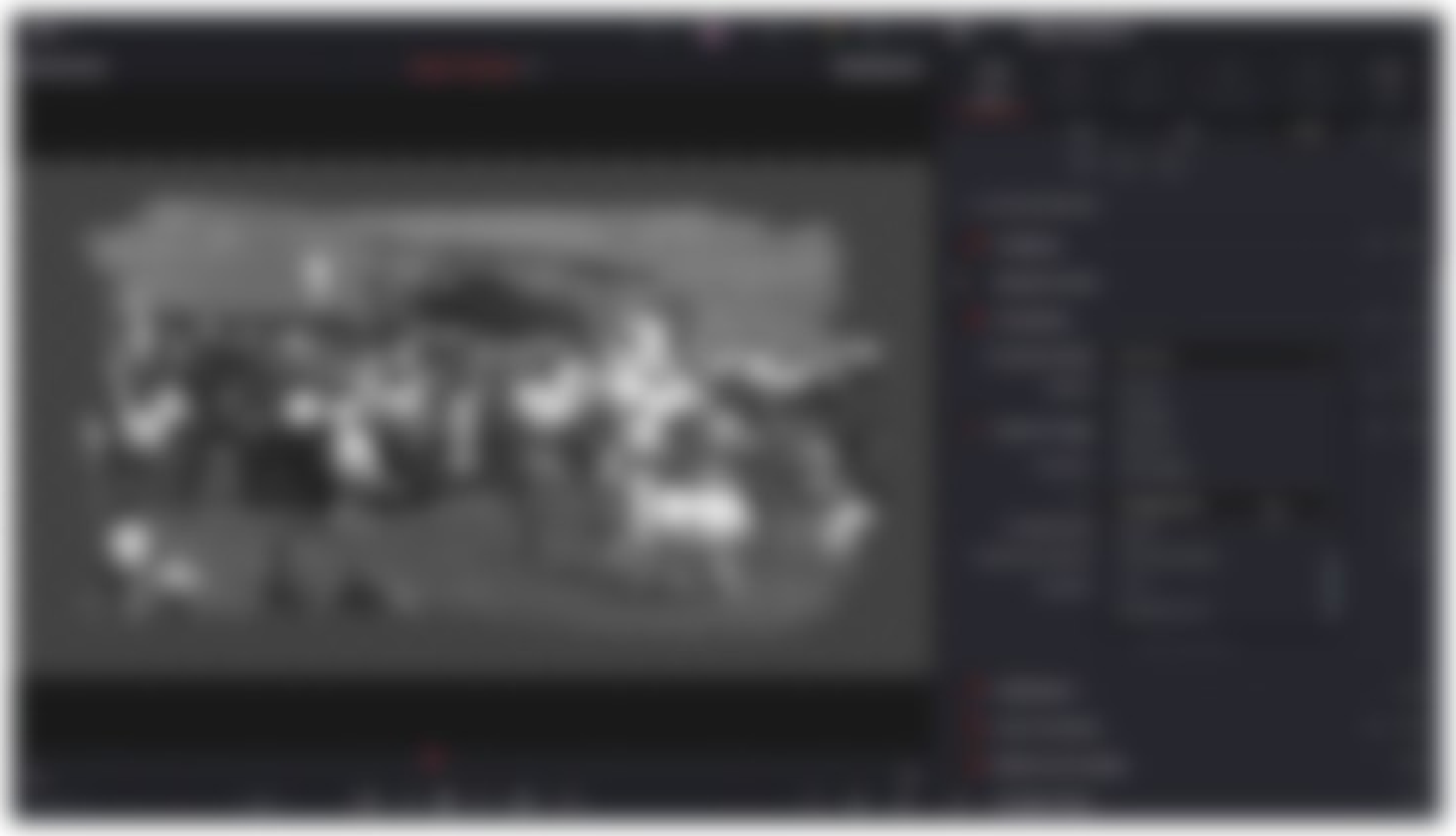
You now need to configure how these two layers are interacting with each other in the timeline.

- Select the **matte-1-alpha.png** clip in the timeline, open the Inspector and, in the Composite controls, change the Composite Mode dropdown menu to Alpha.

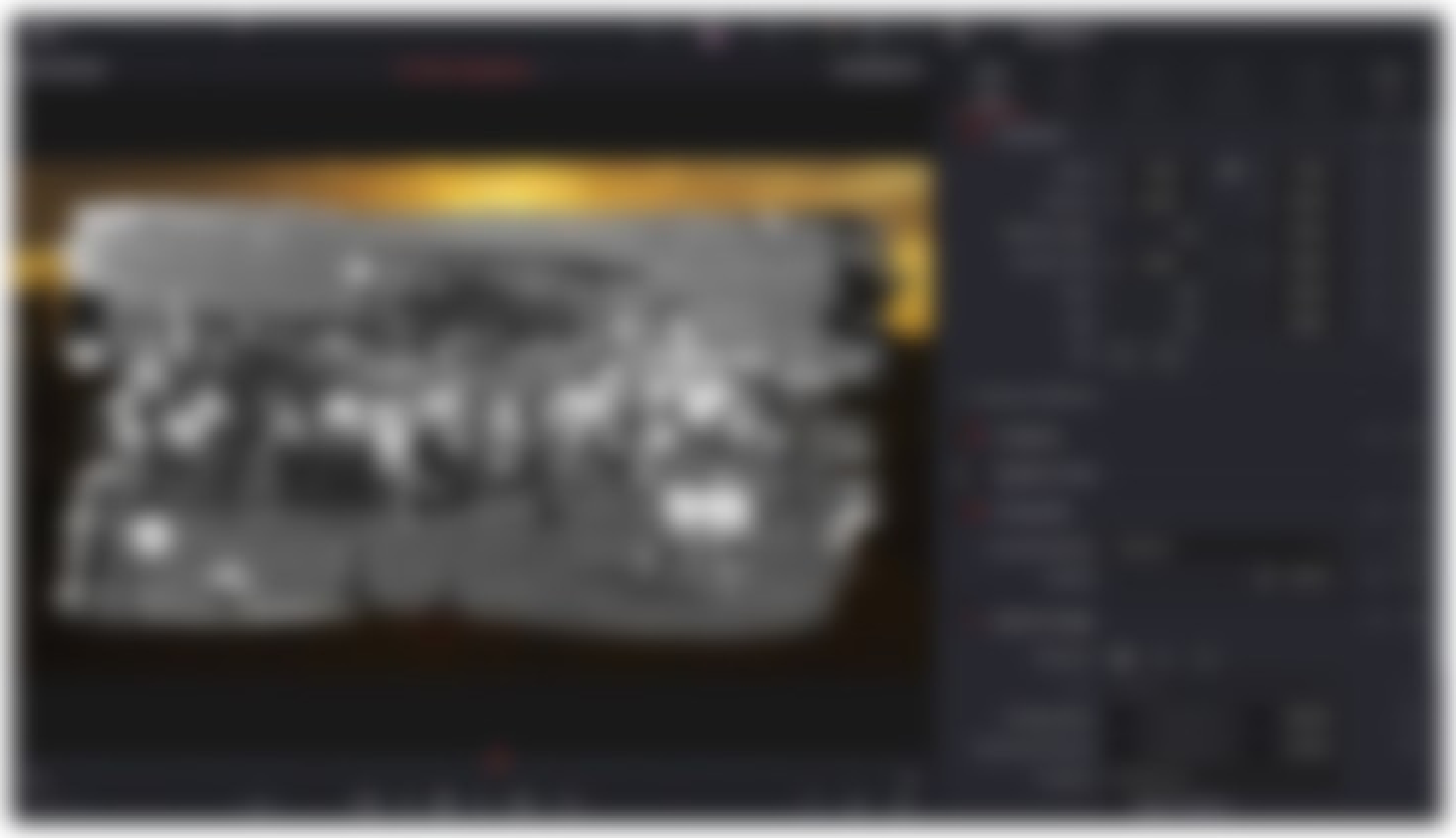


NOTE If you were using matte without an alpha channel, you can use [illegible] the Luma.

9. Select the **[illegible]** clip in the timeline and change the Composite Mode to Foreground to composite the clip using the matte's alpha channel.



10. Click the timeline tab for the **01 Title Composite** timeline and from the Timeline View Options menu, deselect the Stacked Timelines option.

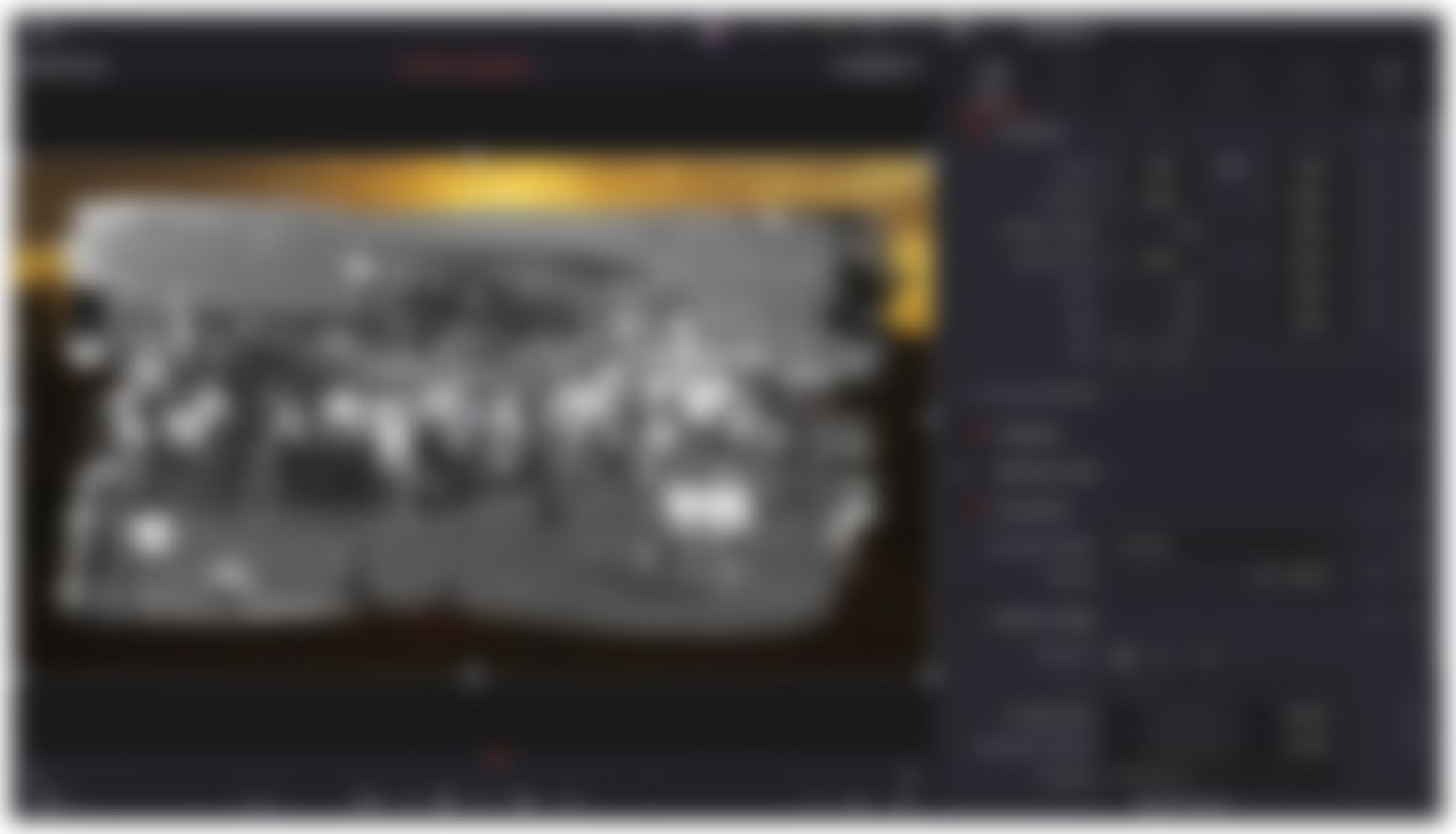


You can now see that the compound clip is composited within the main 01 Title Composite timeline.

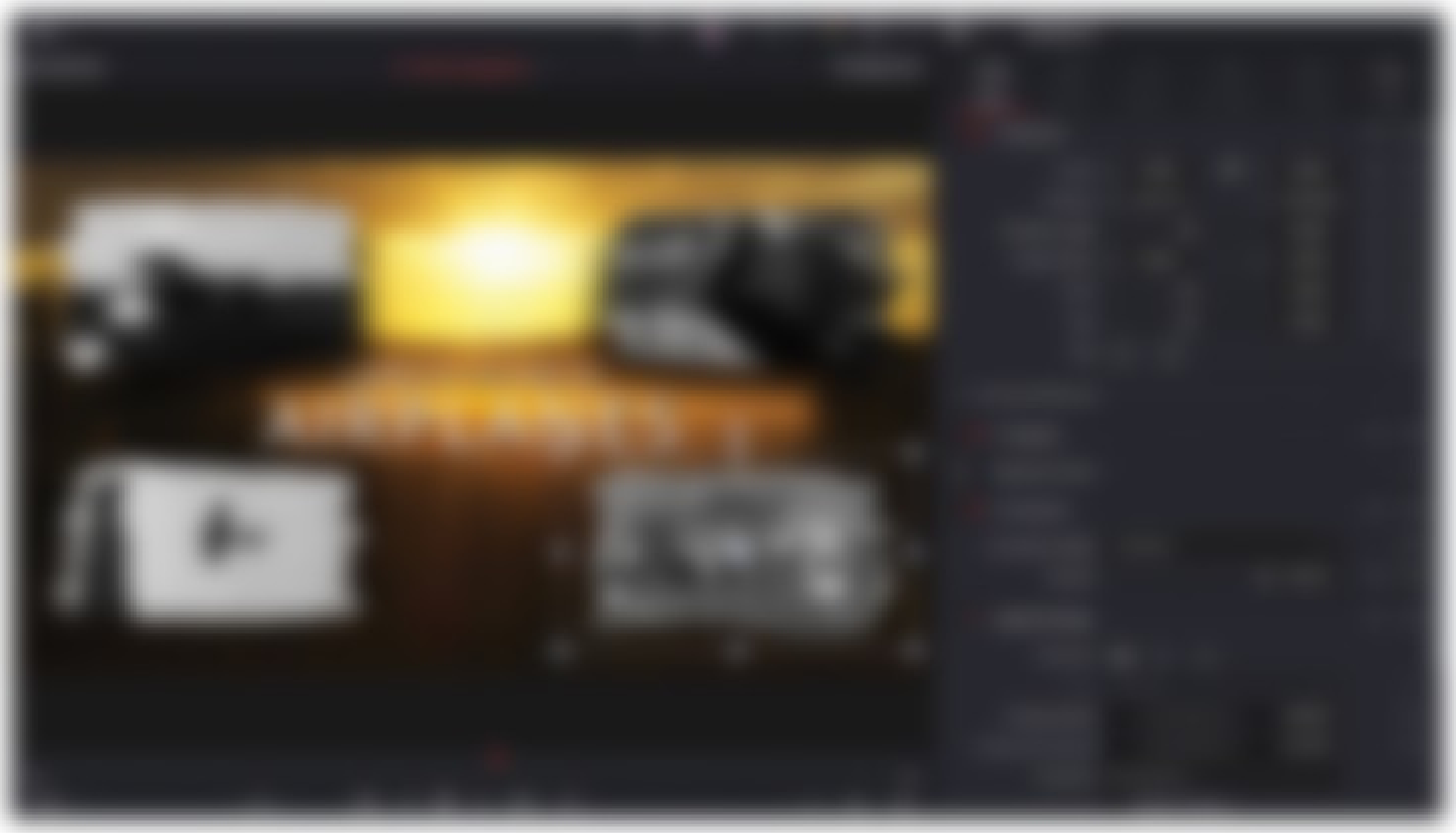
Resizing the Composited Image

The final stage is to adjust the size and positioning of this clip in the overall composite.

1 Select the **Archive 4** compound clip in the timeline and choose View > Viewer Overlay > Transform to enable the onscreen controls.



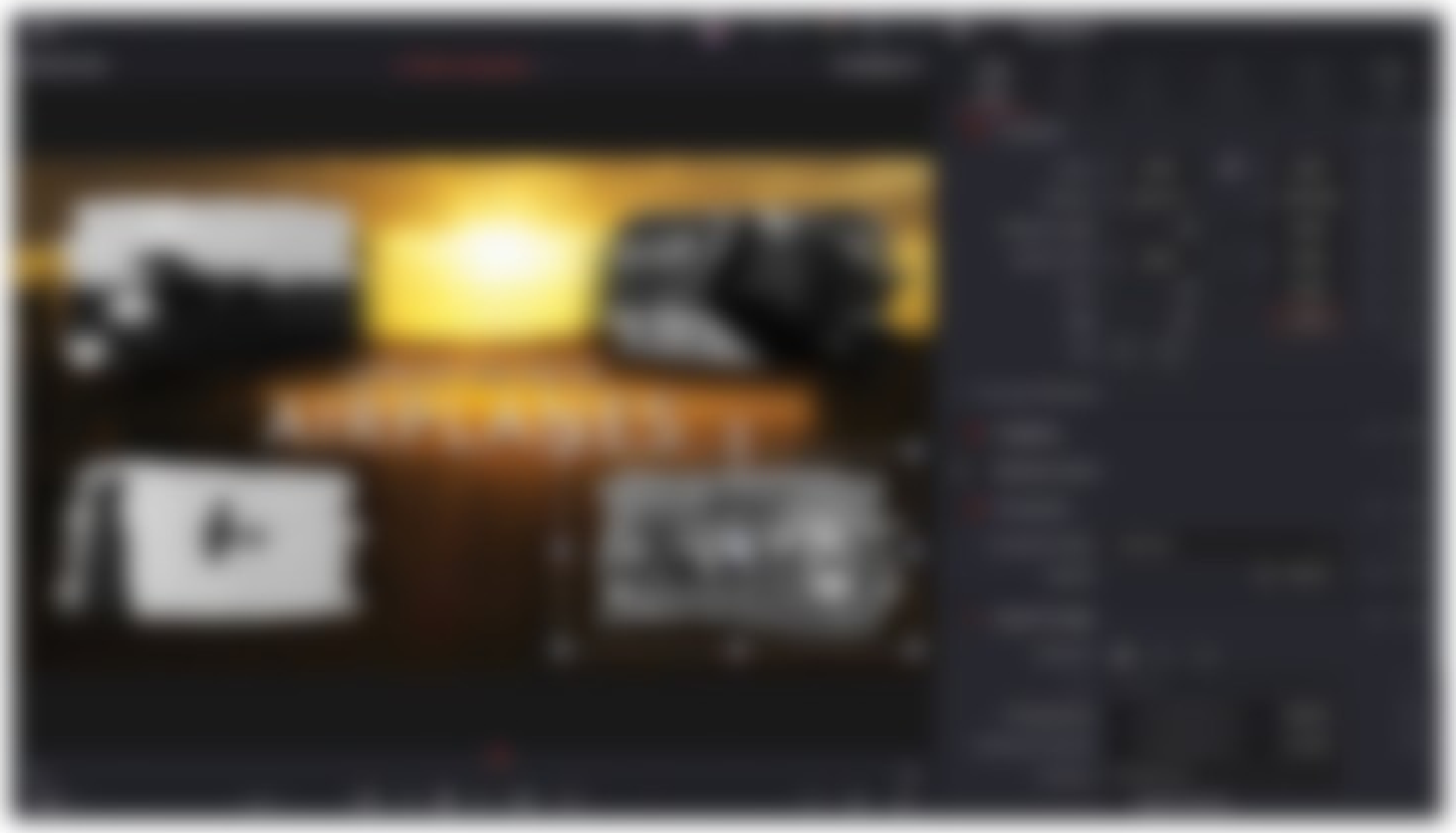
2 Use the corner handles to resize the selected image to about a third of its original size and drag the image into the lower right corner of the timeline viewer.



> **TIP** You can use the Zoom and Position controls in the Video tab in the Inspector to specify precise values if required.

Now you can add the slight sense of perspective that has been added to all the previously composited clips.

[illegible] In the Inspector, adjust the Yaw of the selected clip to about [illegible] to add a slight "twist" to the image in the timeline viewer.



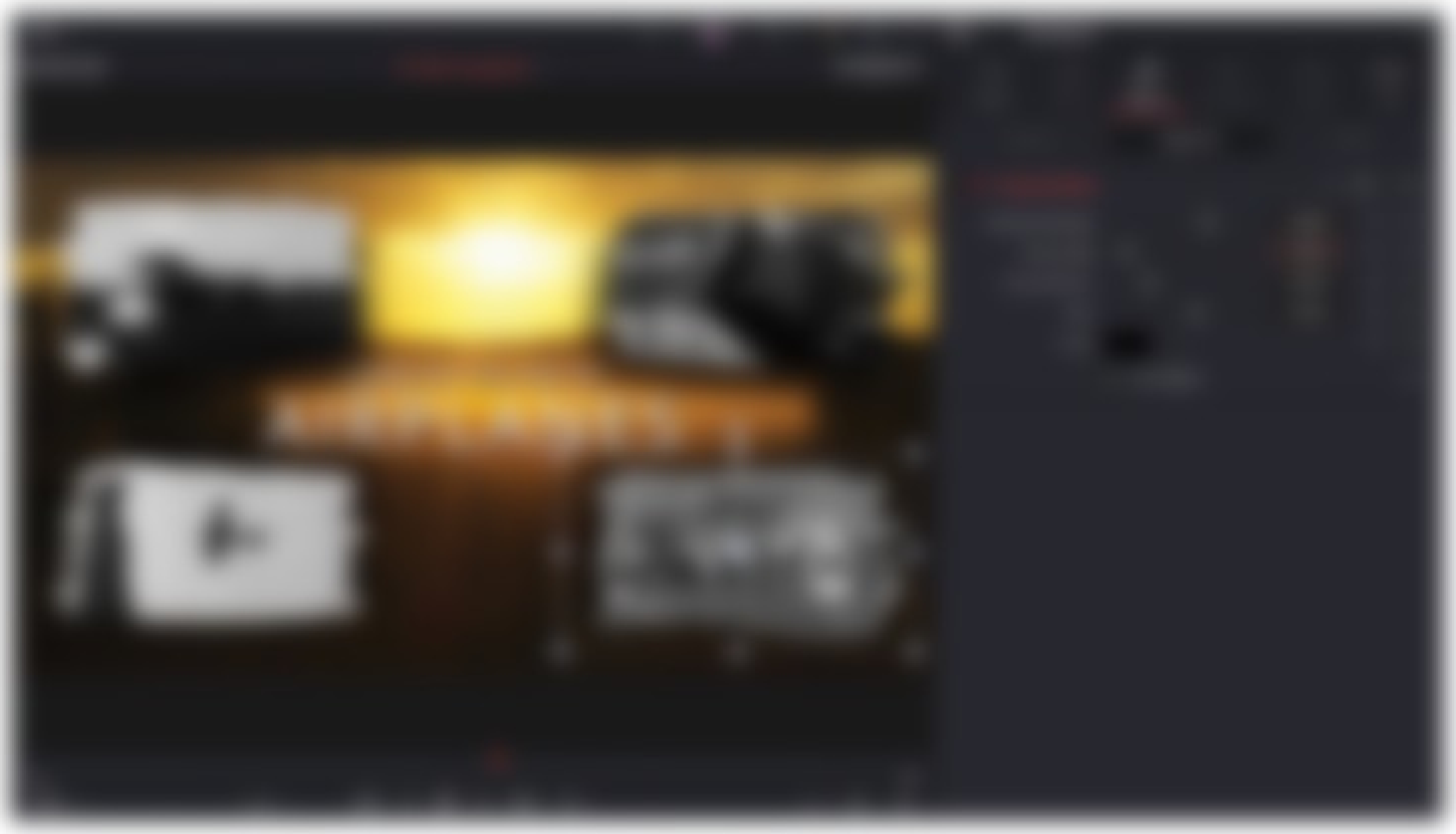
Finally, you will copy the drop shadow effects that have been applied to each of the other composited clips in this composite.

[illegible] Select any one of the other composited clips in the timeline (Archive 1, Archive 2, or Archive 3 — it doesn't matter which, since they all have the same general drop shadow applied) and choose Edit > Copy or press Command-C (macOS) or Ctrl-C (Windows).

- Select the Archive A compound clip in the timeline and choose Edit > Paste Attributes or press Option-V (macOS) or Alt-V (Windows).

- You only need to paste the Drop Shadow plug-in from your selected clip, so deselect the Position, Tilt, and Zoom parameters, and click Apply.

- With the Archive 4 clip still selected, click the Effects tab in the Inspector and adjust the Drop Angle of the drop shadow effect you just pasted to a value of around -140 to angle the drop shadow inward toward the title.



- When you've made your adjustments, choose View > Viewer Overlays > Toggle On/Off, press Shift-` (grave accent), or click the timeline viewer's overlay control to turn off the onscreen controls and play back the completed composite to review your work.

> **TIP** If you want to ensure that the new compound clip is the same size as the other composited compound clips, you can copy any of those other clips and then choose to paste attributes to the new compound clip, choosing to paste the Zoom and/or Position values as required.

About Real-Time Performance and the Render Cache

DaVinci Resolve is high-performance software that is optimized to deliver real-time effects at high resolutions on a variety of workstations. To ensure that your system is maintaining real-time performance, you can check the GPU and frame rate playback indicator at the top of the viewers. If the indicator is green, all is well. However, if it changes to red, this indicates that the available GPU power of your computer is insufficient for real-time playback, and the frame rate indicator drops accordingly. Depending on your system specs, this is probably most noticeable when trying to play back clips with multiple color corrections or a portion of the timeline with many effects and/or titles.

While DaVinci Resolve includes several options you can employ when your real-time performance drops, one of the simplest solutions is to enable the Render Cache by choosing Playback > Render Cache and choosing one of the three options:

- **Off** — No render caching takes place, and all timeline clips, grades, effects, and titles are attempted to be played in real time.
- **Smart** — Automatically caches intensive effects and timeline clips in formats judged too processor intensive to play in real time.
- **User** — Allows you to manually specify which timeline clips will be cached, along with automatically caching all Fusion titles and effects as part of the Project Settings.

Smart is arguably the easiest option to use since it will do much of the work for you, and you can always manually flag a clip to cache by right-clicking the clip and choosing Render Cache Color Output.

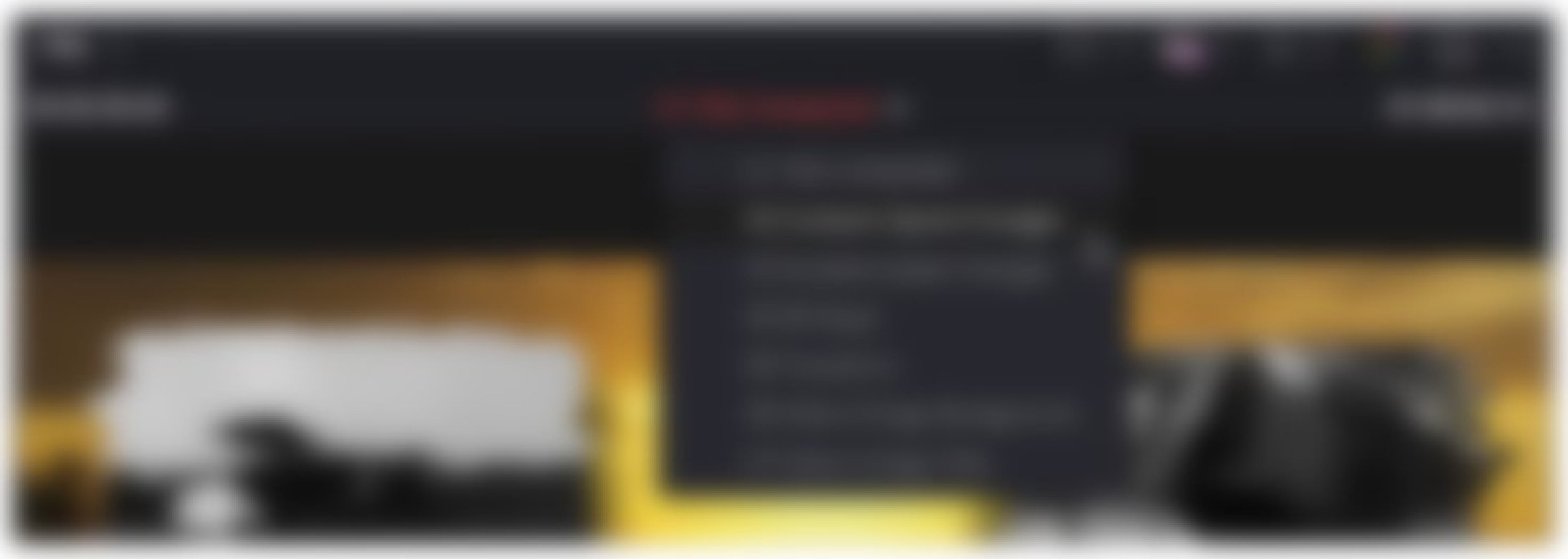
You can clean up the render cache for the current timeline at any point by choosing Playback > Delete Render Cache and choosing All, Unused, or Selected Clips.

Option-R (macOS) or Alt-R (Windows) allows you to cycle between the three render caching options.

Changing Clip Speed

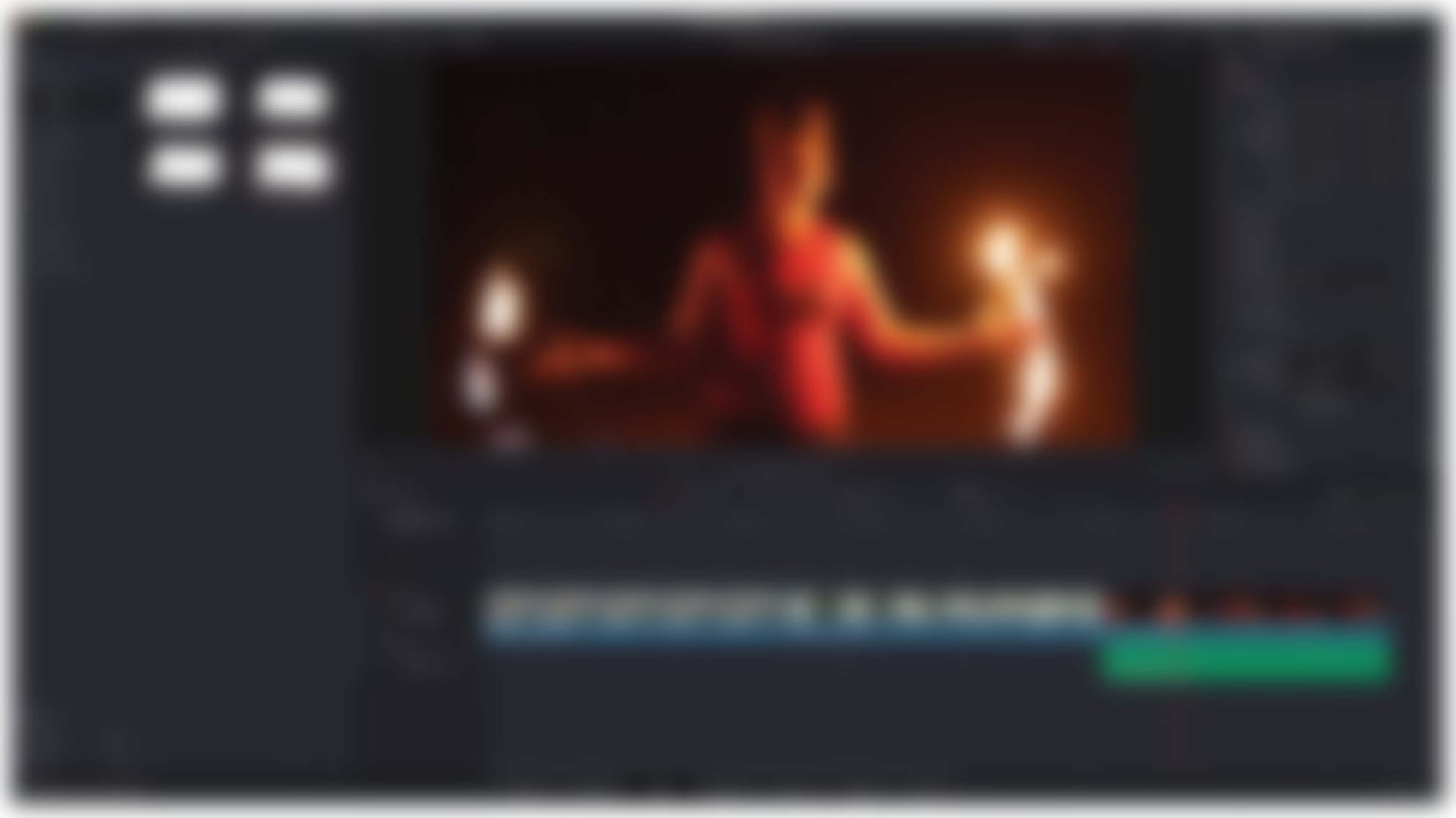
Changing the speed of a clip is a very common task for many editors and can be easily achieved by either editing the clip into the timeline using a Fit to Fill edit or adjusting the Speed Change controls once a clip is already in the timeline. However, there are several considerations to keep in mind when making these changes. In the next exercise, you will explore some of these options in relation to constant speed changes—that is, changes to the speed of a clip that affect the whole clip in the same way. In later exercises, you will explore the more complex task of creating variable speed changes.

1 From the timeline viewer menu, select the 02 Constant Speed Changes timeline to open it.

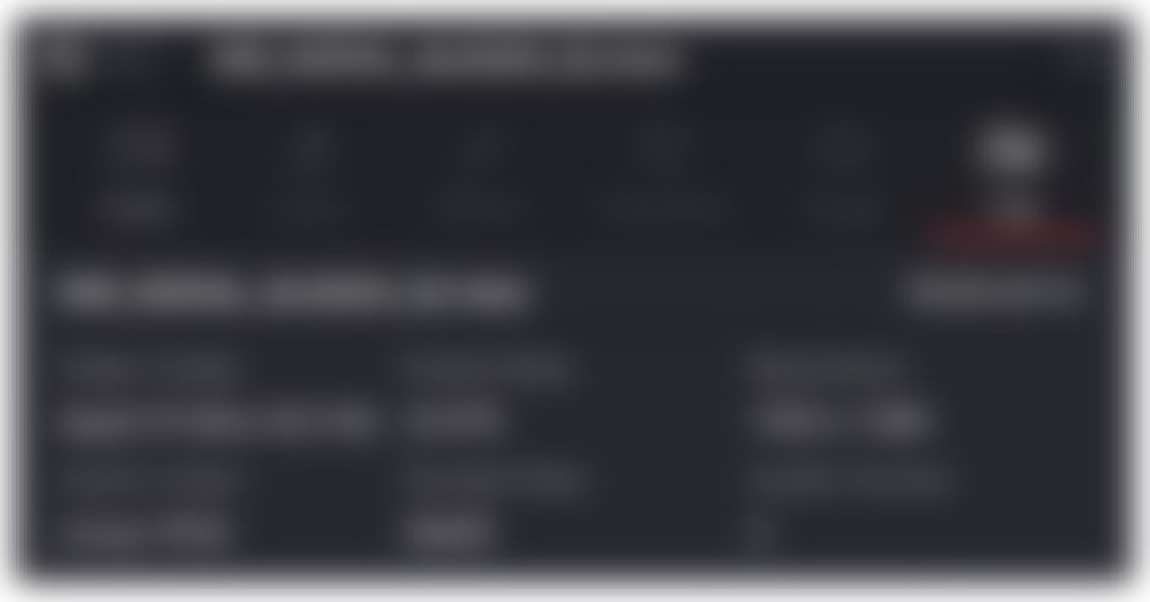


TIP To move to the next ordered timeline, you can choose Playback > Next Timeline, or choose Next Timeline from the Timeline Viewer's Options (...) menu. Similar options are available for switching to the previous timeline by choosing Playback > Previous Timeline or Previous Timeline from the Timeline Viewer's Options (...) menu.

- Choose Workspace > Single Viewer Mode.

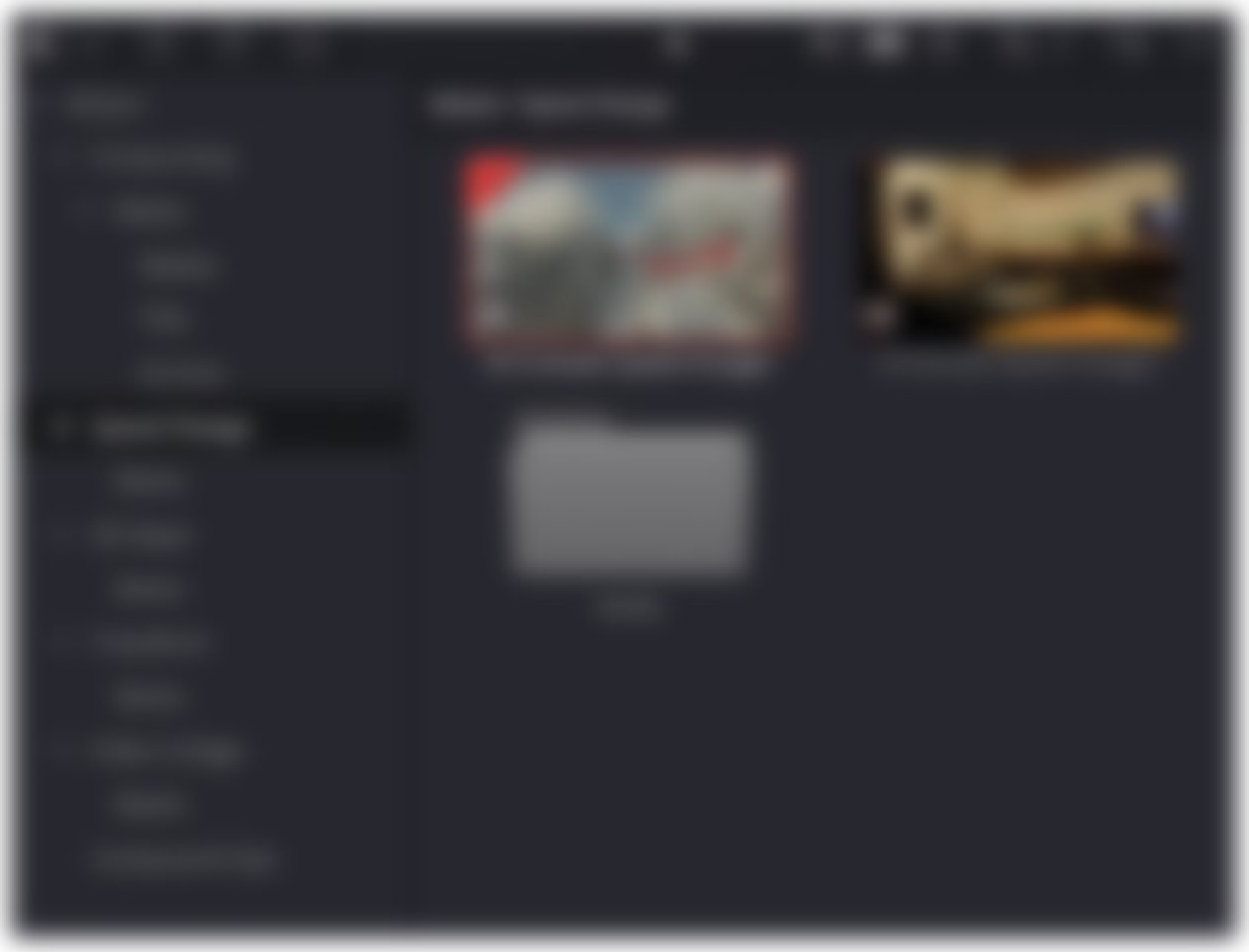


- In the Inspector, click the File tab and then select each timeline clip in turn to verify its frame rate.

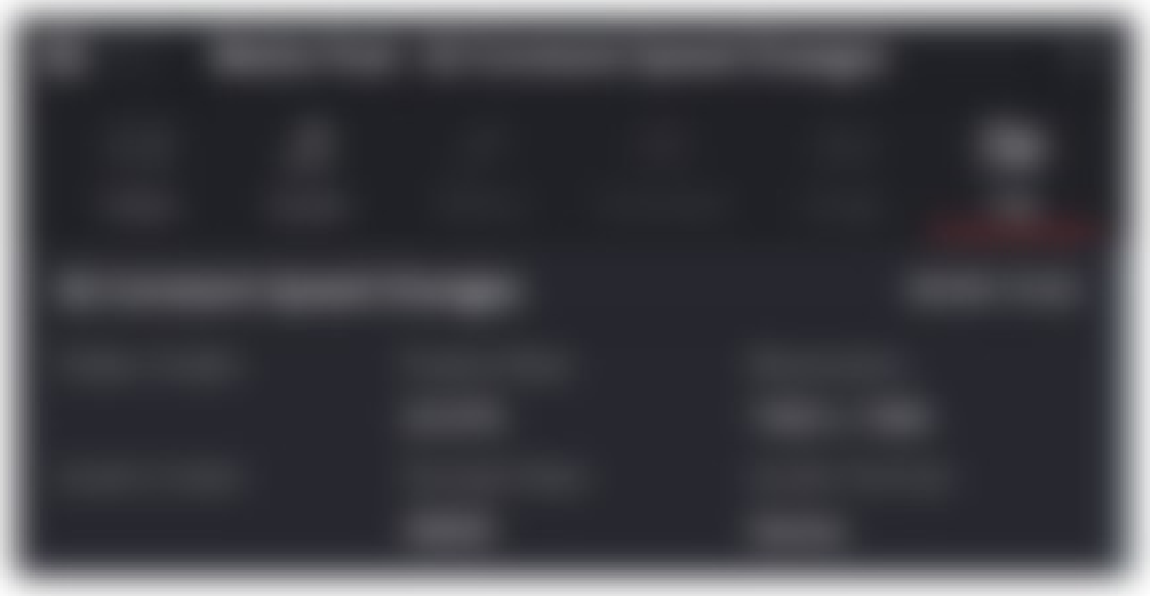


You should be able to verify that the first two clips have a frame rate of 23.976 frames per second, and the final clip is 60 fps.

- Choose Timeline > Find Timeline in Media Pool to reveal the current timeline in the Speed Change bin in the media pool.

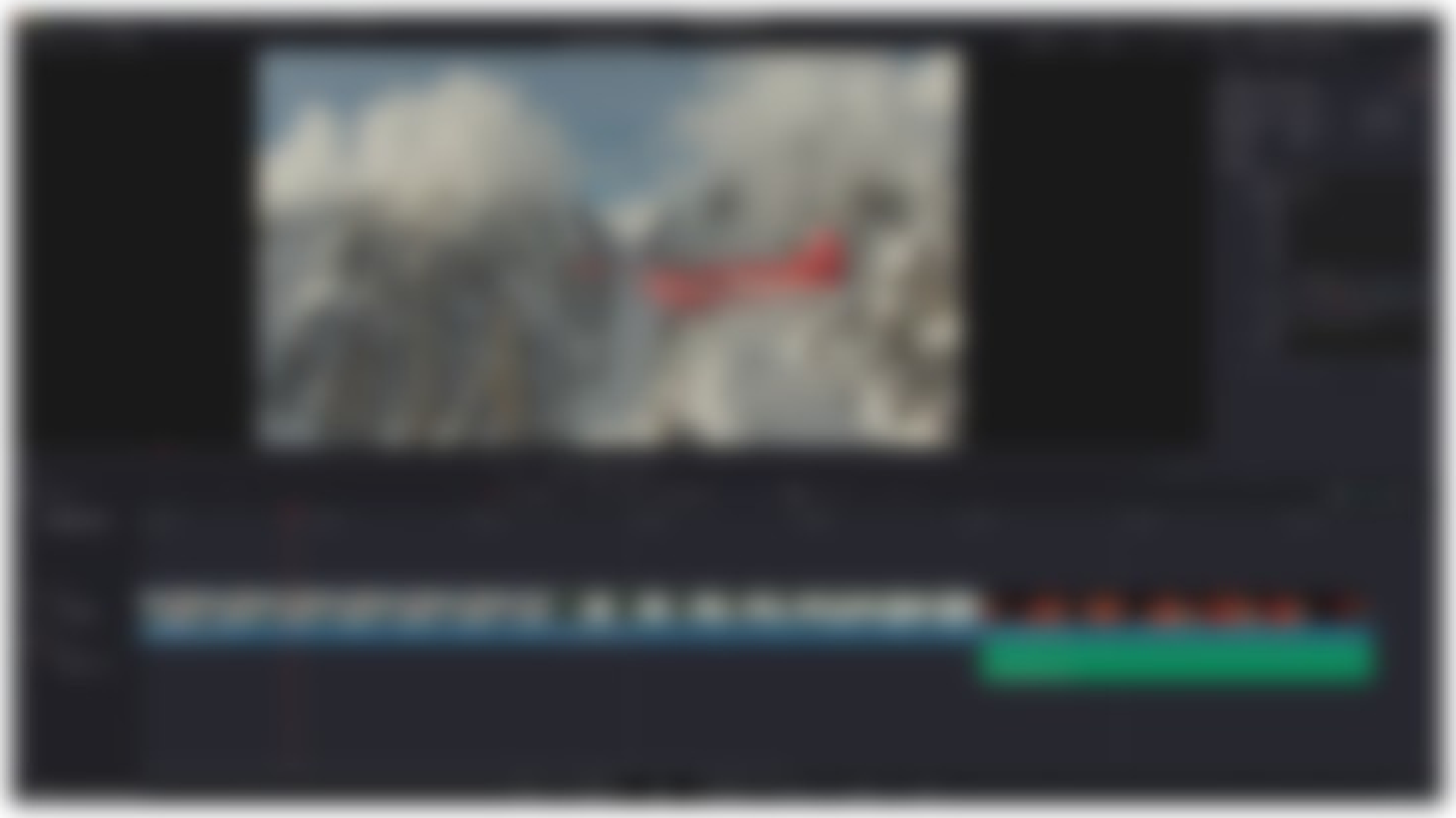


- With the 02 Constant Speed Changes timeline still selected in the media pool, use the File Inspector to verify that this timeline has a frame rate of 23.976 fps.

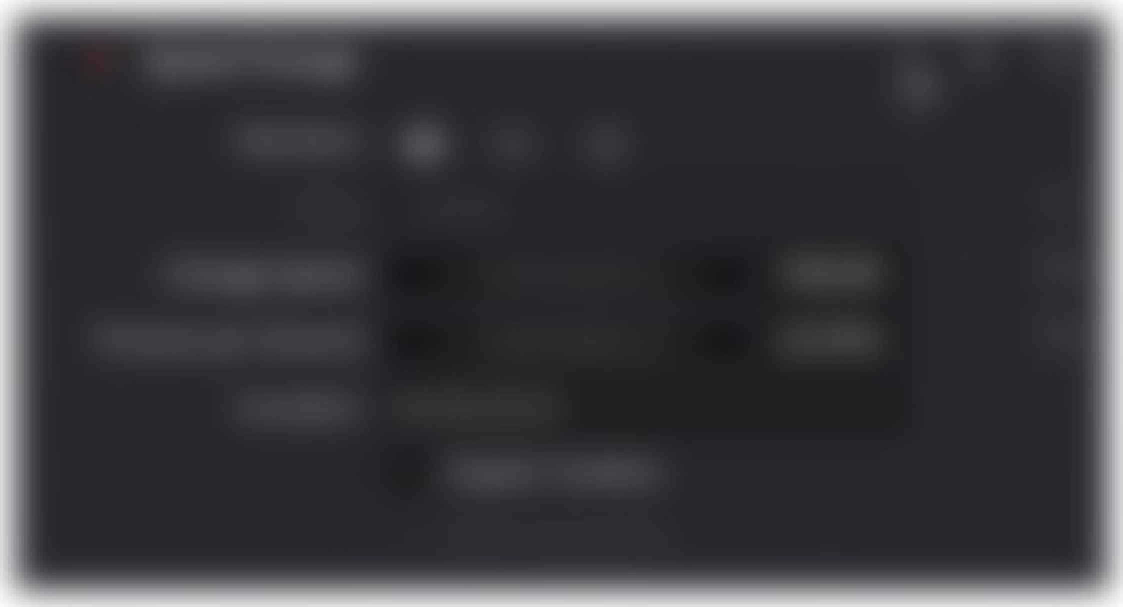


Whenever you make speed changes, it's important to consider the frame rate of the clip and the frame rate of the timeline.

- Close the media pool and place your playhead over the first clip in the timeline of the red plane flying over the mountains.

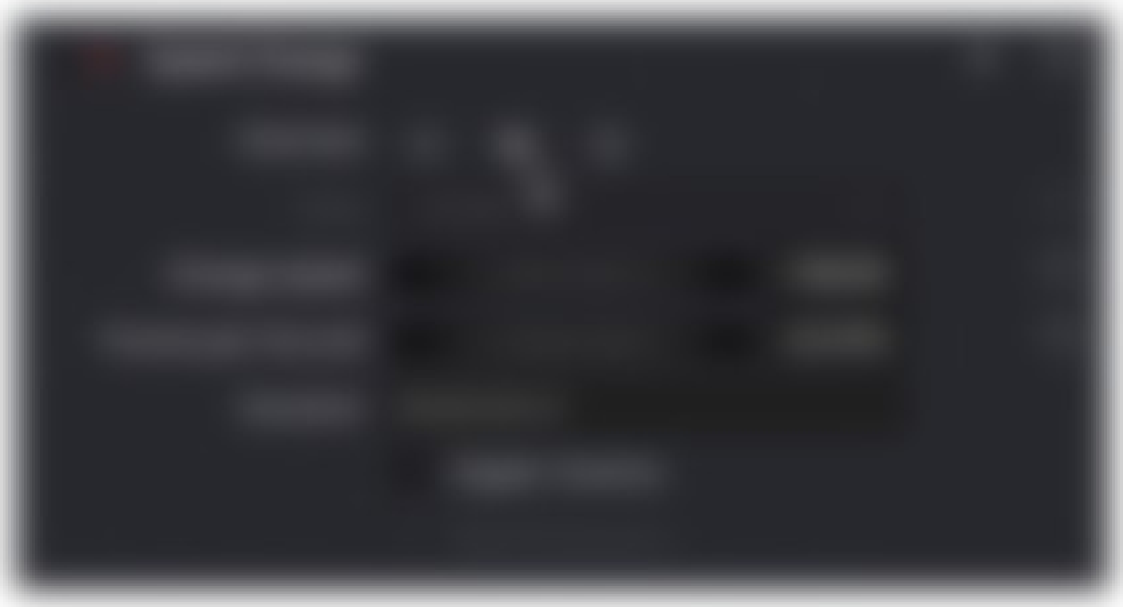


- In the Inspector, click the Video tab and click the Speed Change category to expand the controls.



The Speed Change controls have some simple changes you can make to the clip's speed.

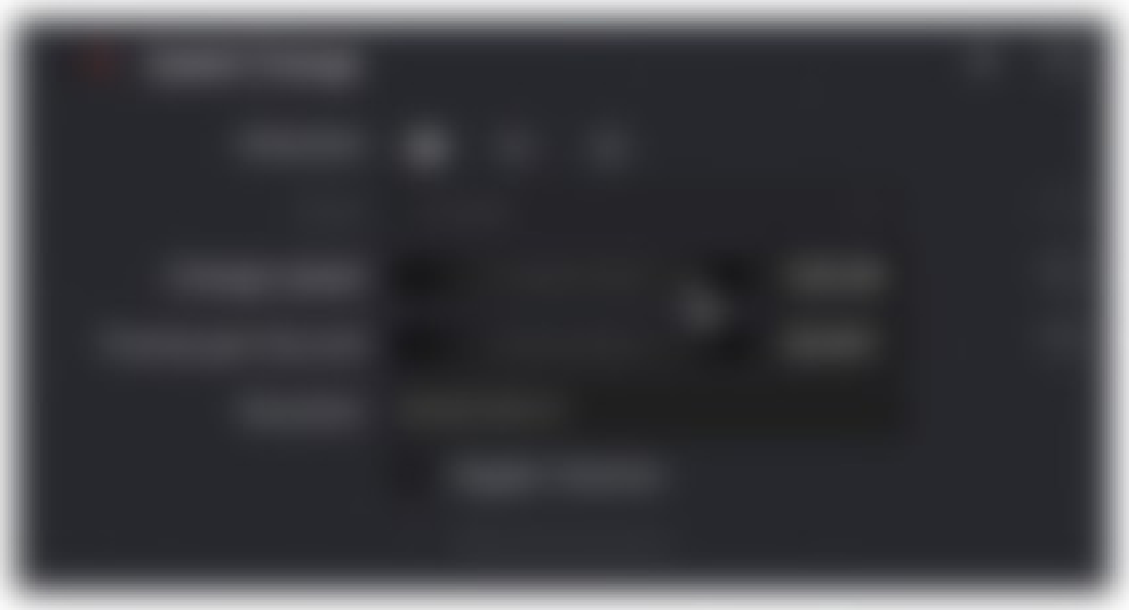
- Click the second Direction control to reverse the clip's playback speed.



- Click the first Direction control to return the clip back to forward playback.

> **NOTE** The third Direction control will create a freeze, or still, frame starting at the playhead and lasting for the rest of the clip's duration in the timeline. Alternatively, you can create a freeze frame for the entire clip from the frame under the playhead by choosing Clip > Freeze Frame or pressing Shift-R. Click the Speed Control reset button at the top right of the speed change controls to reset any of these changes.

- In the Change Speed control, drag the wheel to the right to increase the clip's speed.



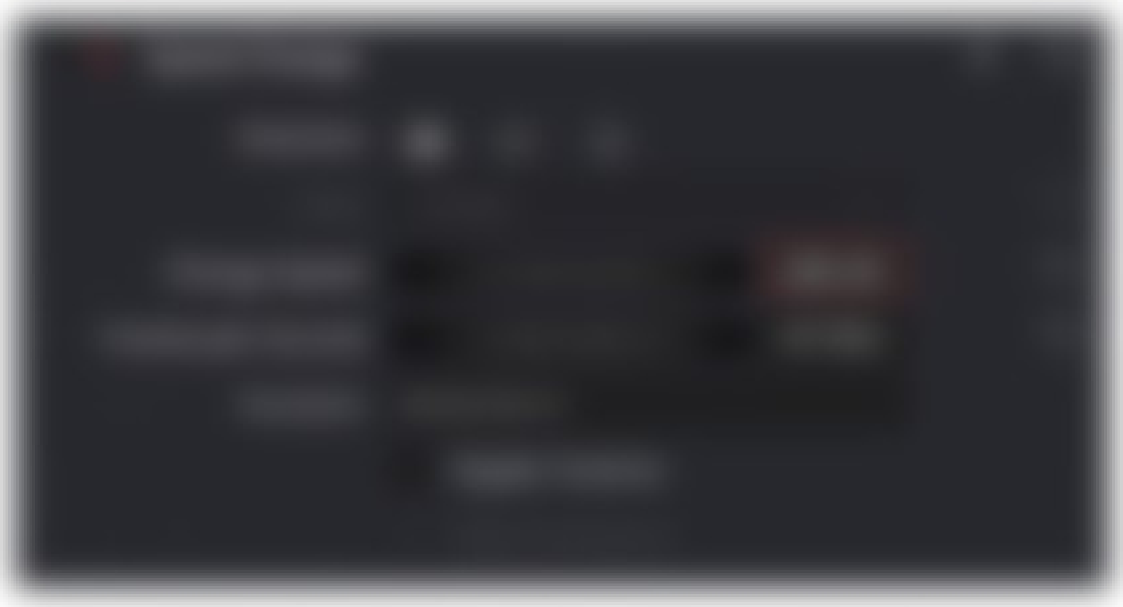
As you increase the clip's speed, the frames per second value also increases proportionally.

- Increase the clip's speed to about 135%, so the clip is playing back at about 32.3 frames per second.
- Play the clip in the timeline and carefully review how it's playing back.

Toward the end of the clip, as the camera starts to pan around toward the rear of the plane, you should see a stuttering in playback.

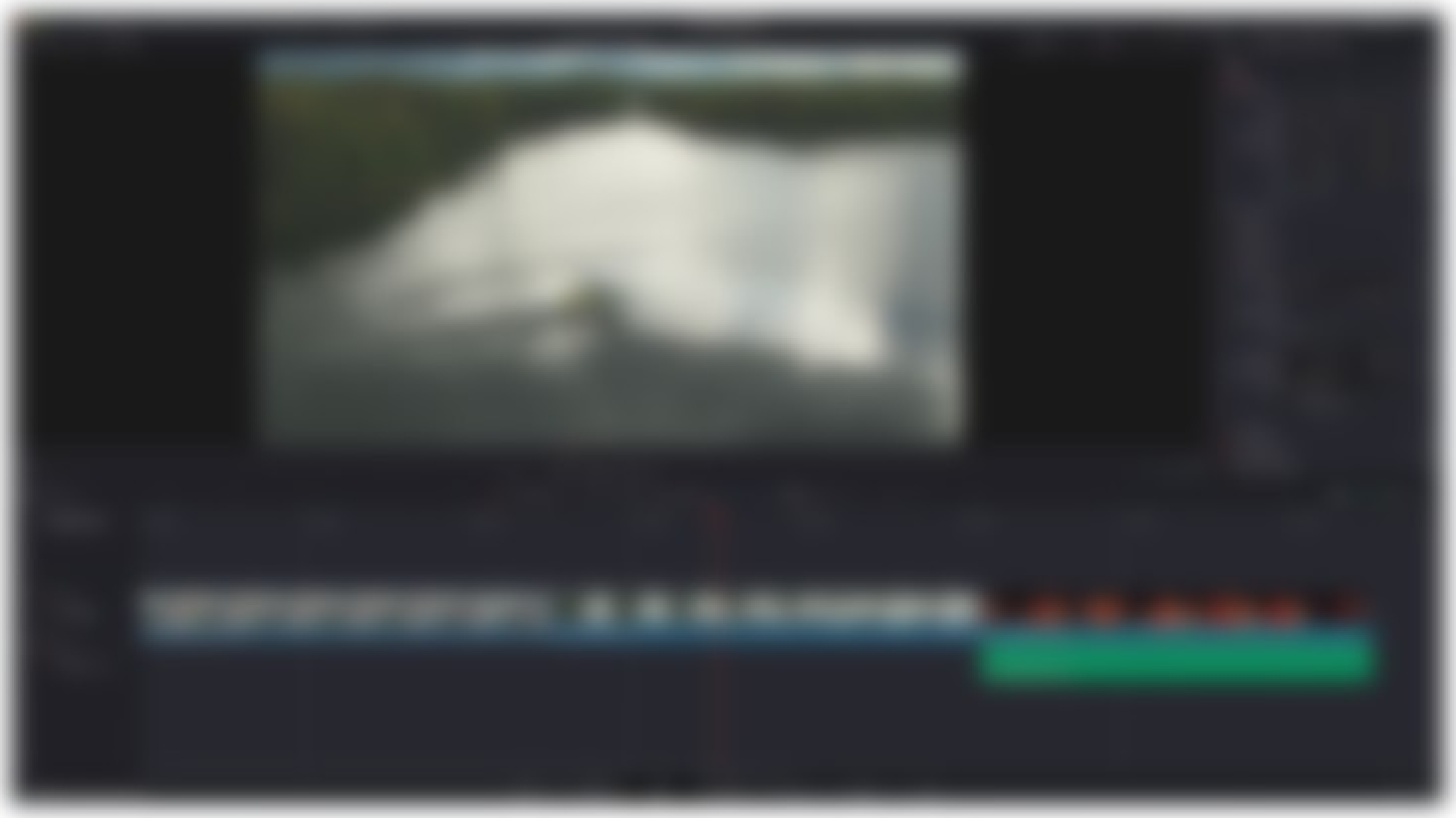
This is because the clip is now playing back at a speed that means that different frames of the clip must be skipped in order to play back at the timeline frame rate. Since the clip speed is now "off speed" from the timeline, it results in the stuttering playback you're seeing. In these cases, it's easier to ensure that the clip is playing back at a speed that is comparable to the timeline frame rate.

- In the Inspector, click the Change Speed field and type **[illegible]** to change the playback speed to [illegible], or around [illegible] frames per second.

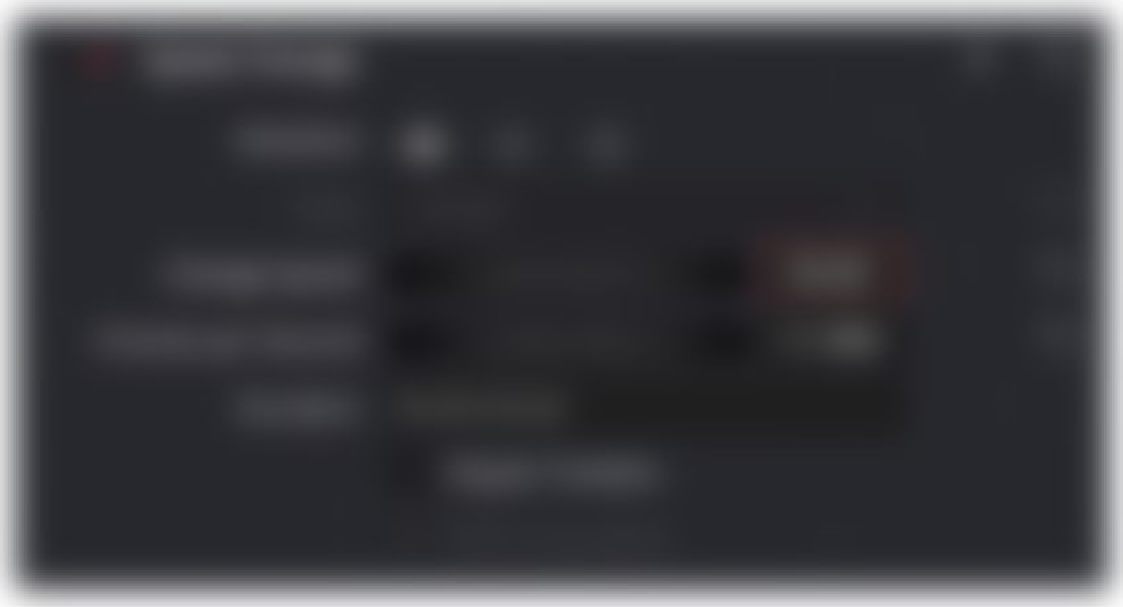


The clip now plays back without the noticeable stuttering you saw previously.

- Place the playhead over the next clip in the timeline, of the seaplane preparing for takeoff from a lake in Alaska.



- In the Speed Change controls, change the Change Speed field to **[illegible]**.



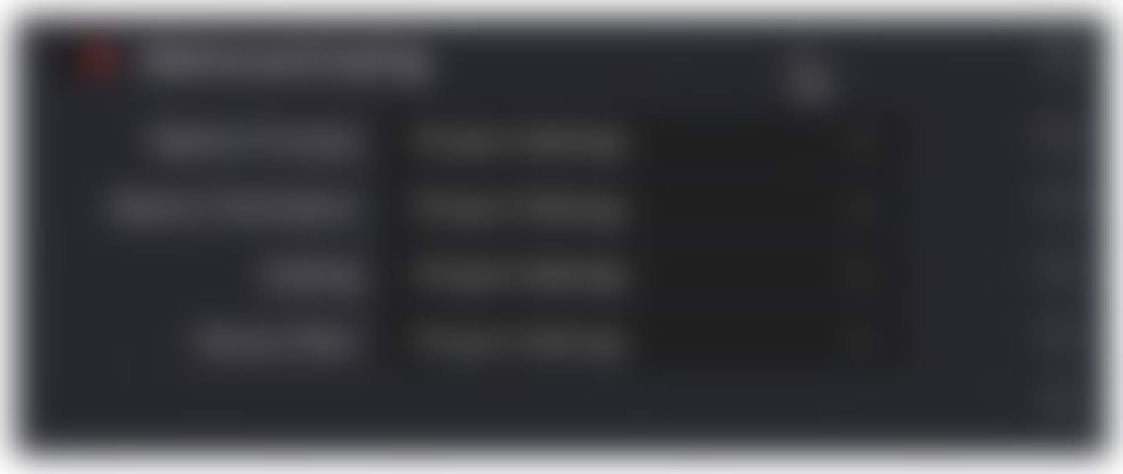
- Play back the clip to review the speed change.

  This time you will notice that the whole clip plays back with a stutter.

  The reason for this is that the clip is now playing back at around 12 frames per second in a 23.976 fps timeline. This necessitates DaVinci Resolve having to repeat each frame of the clip to make up for the difference. This is one of the reasons footage might be shot at higher frame rates than it will need to be edited at: to get smoother slow motion shots.

  Thankfully, DaVinci Resolve provides several controls that can be useful when attempting to adjust footage like this.

- In the Inspector, click the Retime and Scaling controls to expand them to reveal the Retime Process menu.



  Currently, the clip is using Project Settings for any retime processes you apply to it, which, for this project, is set to the Resolve default of Nearest. This option essentially repeats video frames as necessary when slowing a clip's speed below its original frame rate. Two other options are available in this menu: Frame Blend and Optical Flow.

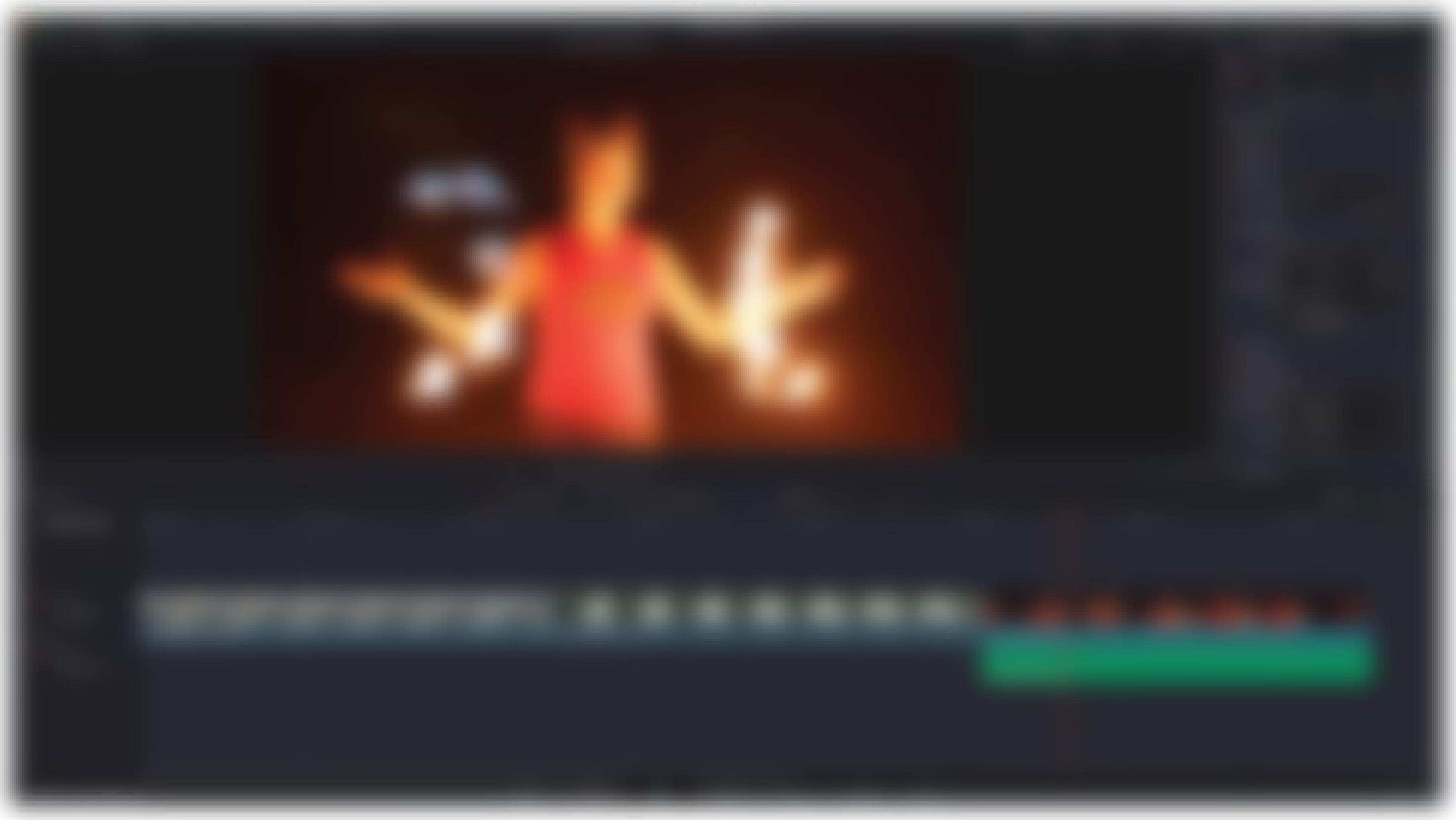
- Change the Retime Process to Frame Blend and play back the seaplane clip to review the change.

Frame Blend applies short dissolves between the duplicated frames to smooth out the movement within the slowed clip. Depending on the footage, it can often create a smoother result than using Nearest without too much processing.

- Change the Retime Process menu to Optical Flow and play the seaplane clip again to review the difference.

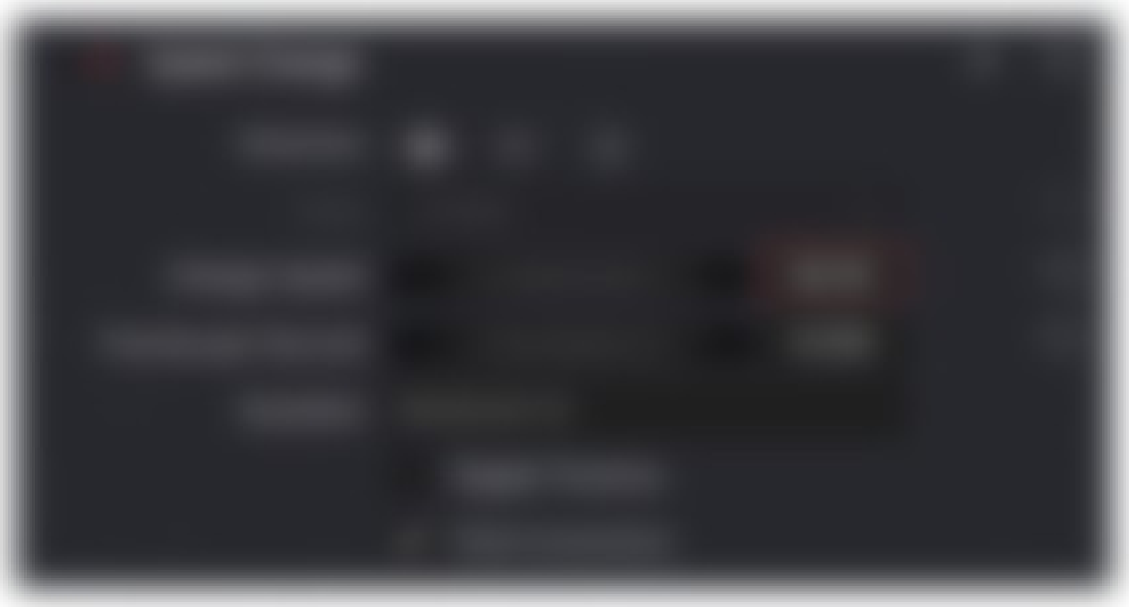
Optical Flow is a useful process to apply to clips running slower than 100% since it will attempt to create new frames in between the original frames. In cases such as this clip, it can work well, but when one object passes in front of another, it can often result in an undesirable "ripping" of pixels. You will explore how to minimize this issue later in this lesson (see "Changing Retime Processing and Motion Estimation").

- Place your playhead over the third and final clip in the timeline, the shot of the girl dancing with the flaming sticks.



This clip was originally shot at 60 frames per second. You previously used this shot in the OMO Edit timeline in Lesson 1 and throughout Lesson 2. As it did in those lessons, it currently plays fine in this 23.976 frames per second timeline. However, because it was shot at a much higher frame rate, you can slow it down considerably.

- In the Speed Change controls, change the Change Speed field to **40%**.



- Play back the clip to review the change.

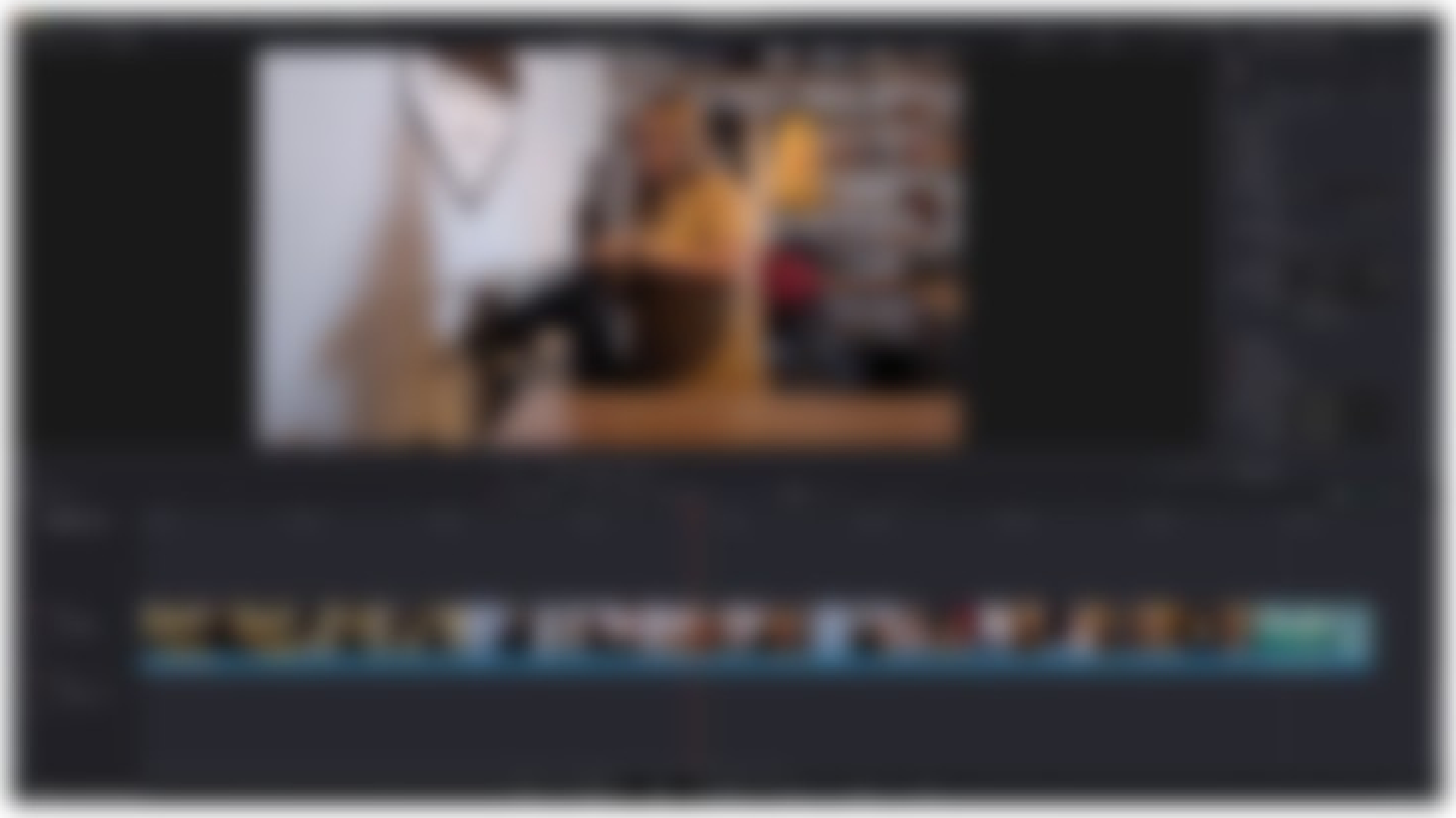
The clip now plays back in smooth slow motion since it's now utilizing all the frames that were shot as part of the original clip, frames that were initially not being played.

NOTE The Frames per Second control for this clip is rather misleading, as it does not refer to the frame rate of the source clip but rather the frame rate of the timeline. That's why it's important to understand and be able to identify what frame rate your source clip is.

Variable Speed Changes

Editors are often called upon to make more creative speed change adjustments that involve changing the speed of a clip over time so that one part of a clip plays at a different speed than another part. This technique is commonly referred to as variable speed changes, which can be achieved using Resolve's Retime controls.

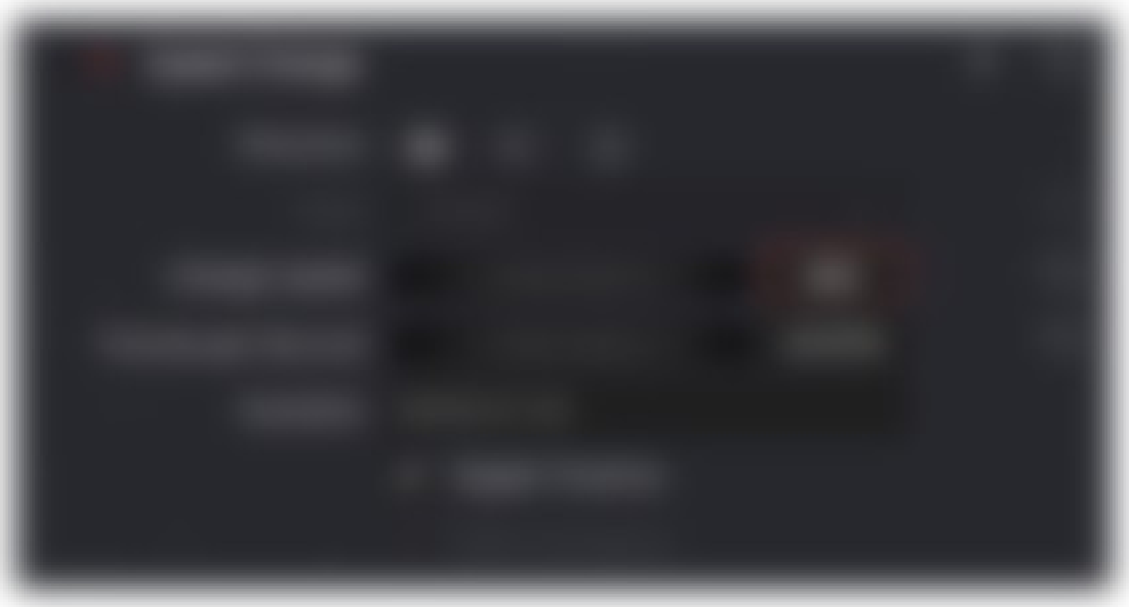
1. From the Timeline dropdown menu, choose the 01 Variable Speed Changes timeline, or choose Playback > Next Timeline.



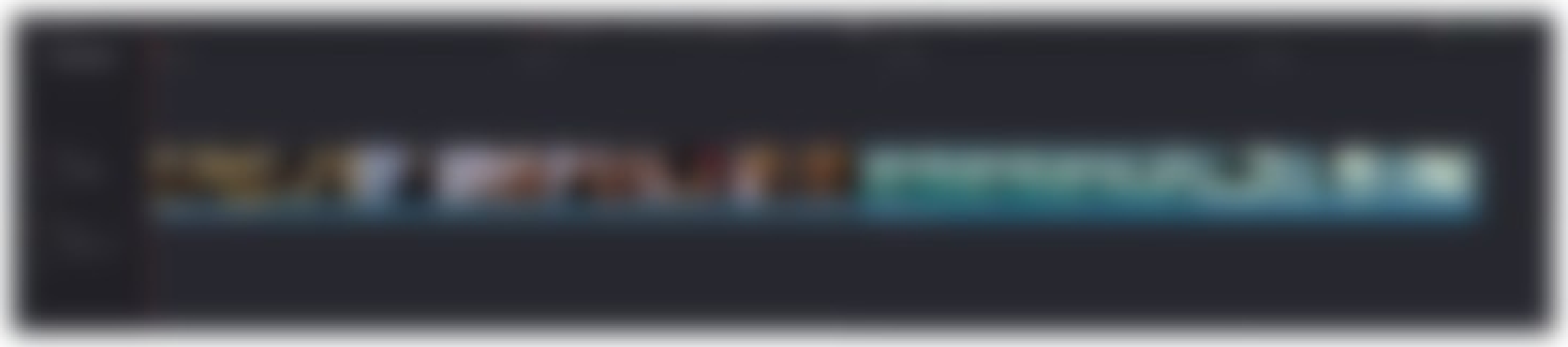
The current timeline contains two clips to which you will apply different speed changes. The first is a long clip that follows the journey of an Organ Mountain Outfitters T-shirt from being printed in the backroom to being displayed and ready to buy in the shop.

Currently, the clip runs for around 40 seconds from start to end. You can make the result more visually interesting and also reduce the duration of the shot by adjusting the speed of this clip.

2. Move the playhead to the start of the timeline. Then, in the Inspector's Speed Change controls, select the Ripple Timeline option and change the Speed% to [illegible].



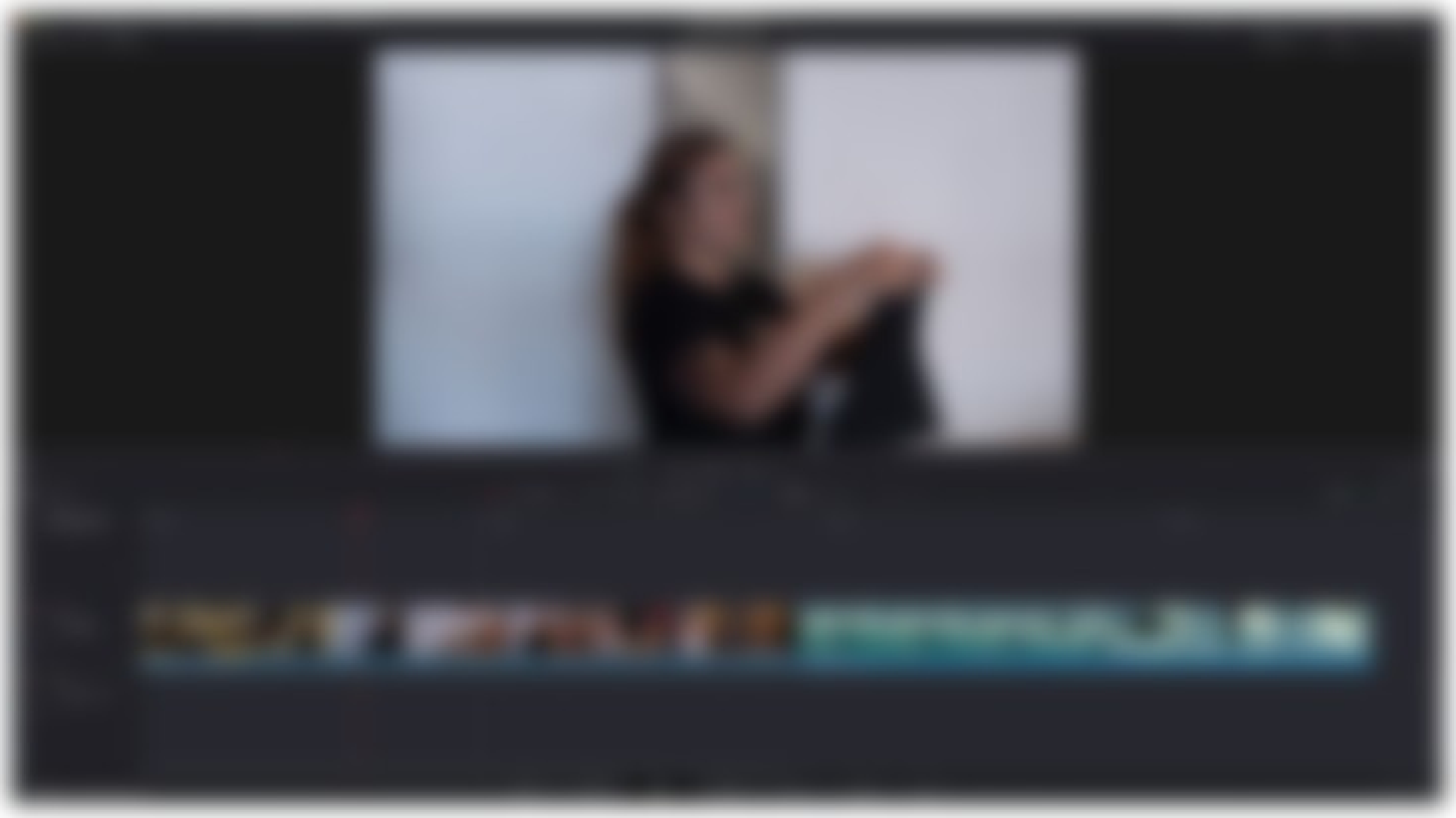
Because you changed the Ripple Timeline option before you adjusted the speed of the clip, the rest of the footage in the timeline has rippled to accommodate the clip's new retimed duration.



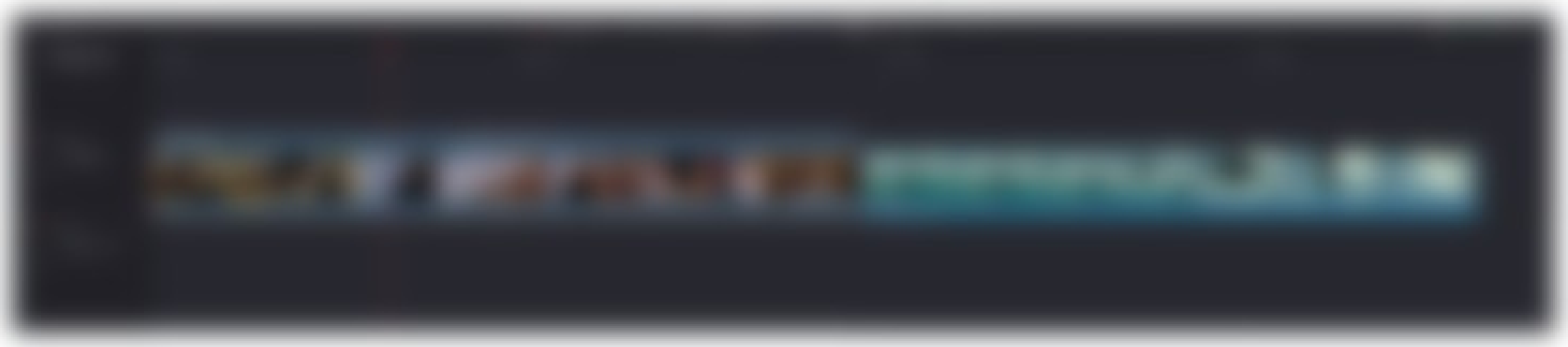
Adding the Speed Points

To create a variable speed change, you must add speed points for each change you wish to make to the speed of the clip.

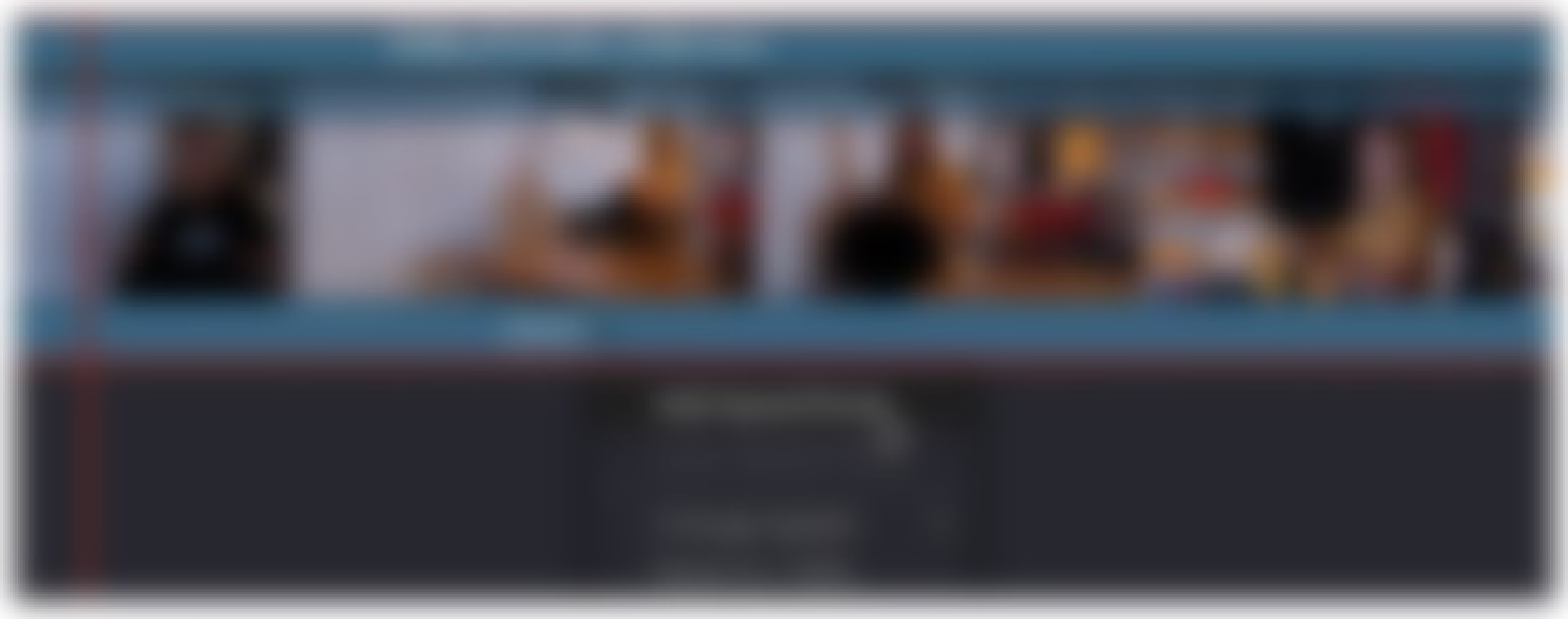
1. Close the Inspector. You will make all the changes you need directly in the timeline.
2. In the timeline, place the playhead somewhere around the point where the first girl is passing the T-shirt to the second girl (around a third of the way into the clip).



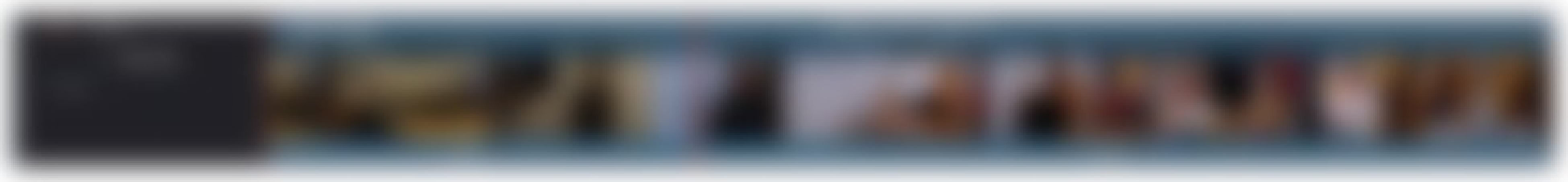
- Select the clip in the timeline and choose Clip > Retime Controls or press Command-R (macOS) or Ctrl-R (Windows) to display the clip's retime controls along the top of the timeline clip.



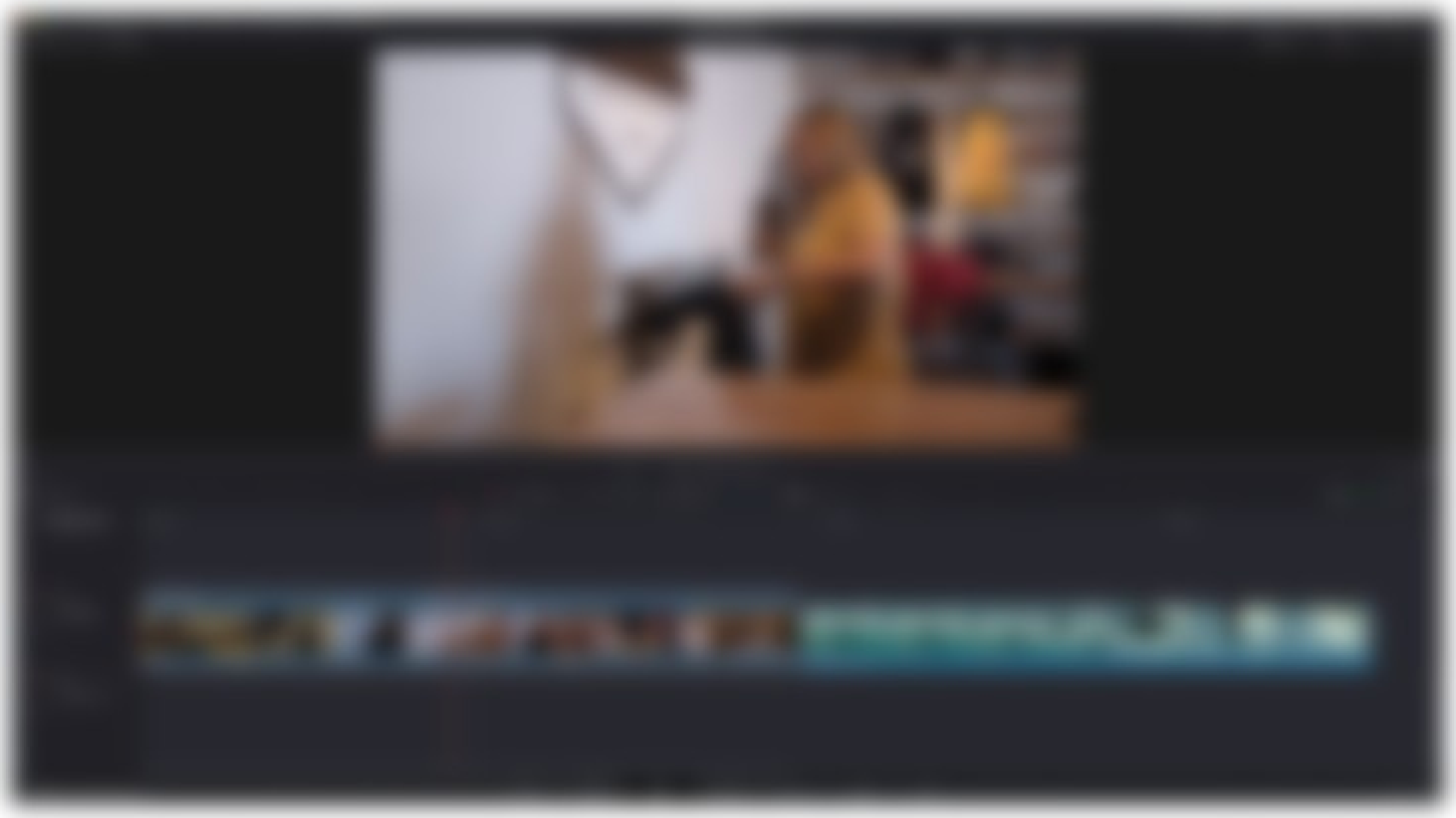
- Click the Clip Speed dropdown menu (the black triangle next to the clip's speed) and choose Add Speed Point.



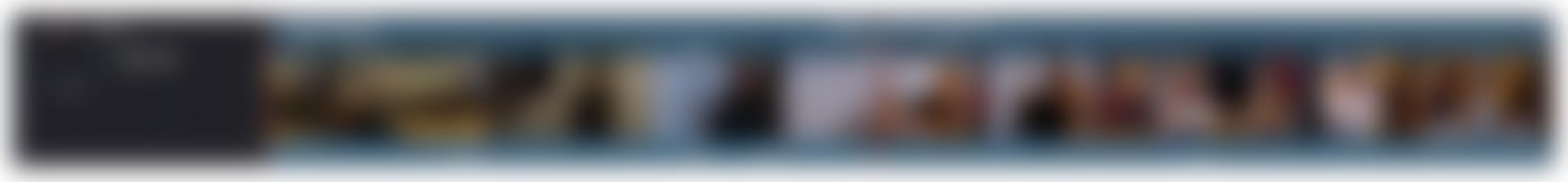
A Speed Point is added to the clip at the playhead's location, and the retime controls now display two 100% speed segments on the clip.



- Move the playhead forward until the second girl has taken the T-shirt and is reaching for the clothing hanger.

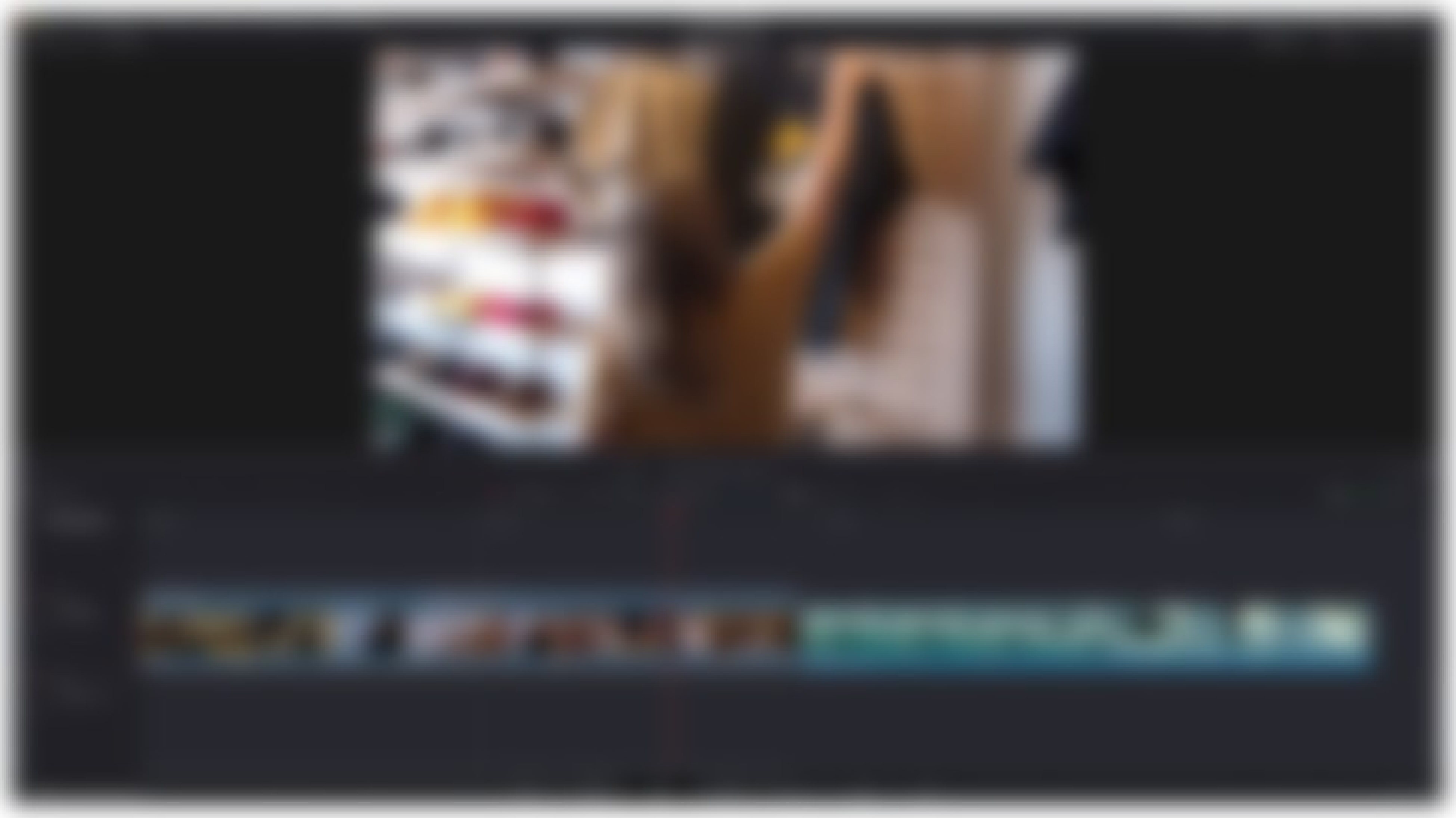


- Click the Clip Speed menu for the second speed segment and choose Add Speed Point to add an additional speed point at the playhead's location in the clip, thereby creating a third speed segment.

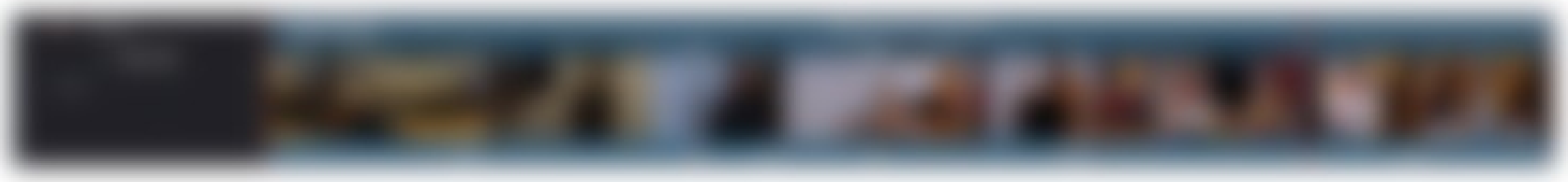


With the retime controls enabled for a clip, you can use a shortcut to quickly add speed points.

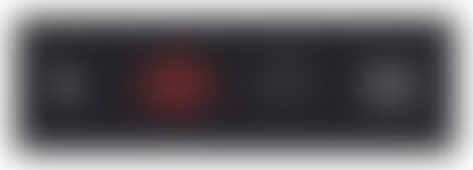
- Place the playhead at the point where the second girl hangs the T-shirt in the shop and press Command-[(Mac) or Ctrl-[(Windows) to add a third speed point.



By adding three speed points, you have created four distinct speed segments on the clip. Each segment can have its own speed settings.

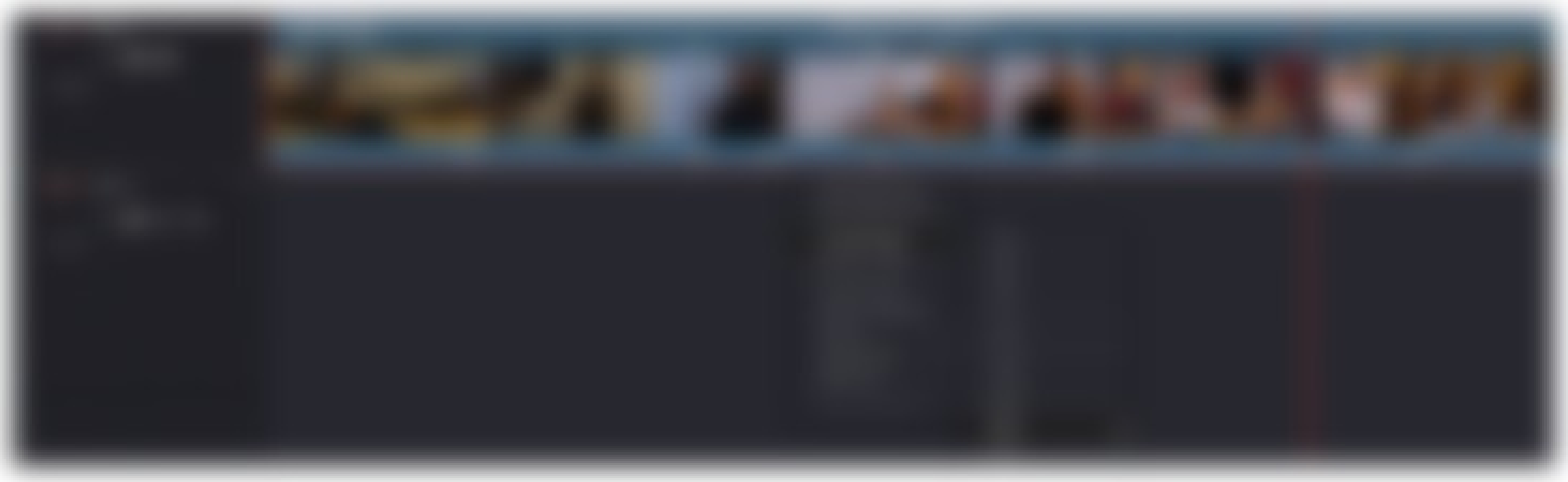


- Press T to enable Trim Edit mode.

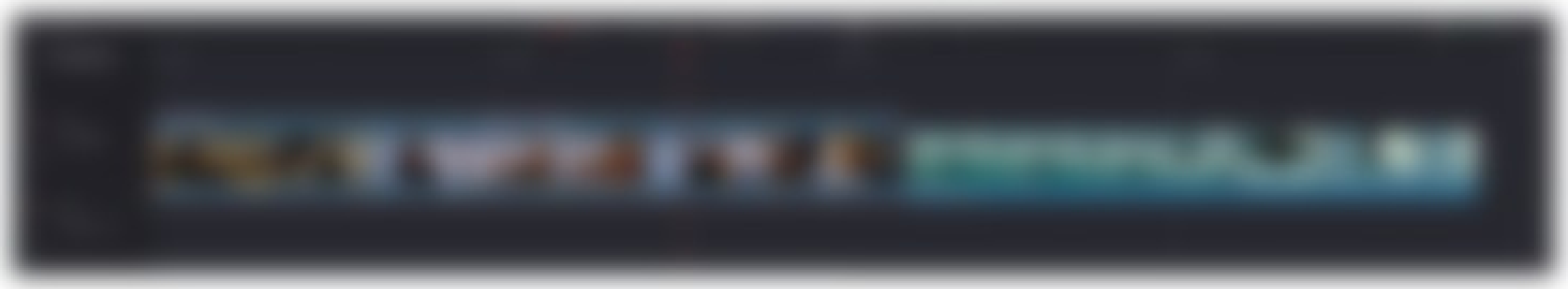


With Trim Edit mode enabled, any adjustments you make affecting the clip's overall duration will ripple the timeline.

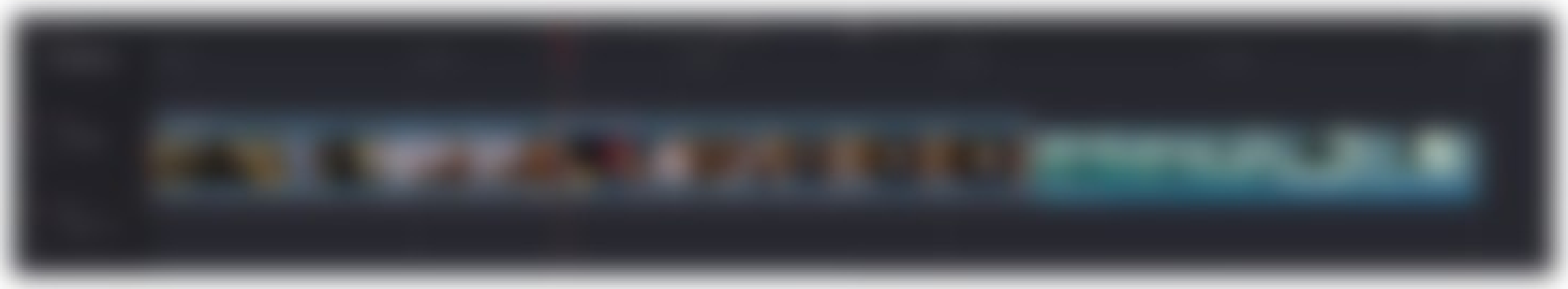
- Click the Clip Speed dropdown menu for the second speed segment after the first speed point and choose Change Speed > 200%.



This segment of the clip, between the first and second speed points, will now play back at 400% of the clip's original speed, and the rest of the timeline has rippled because you were in Trim Edit mode when you made the change.

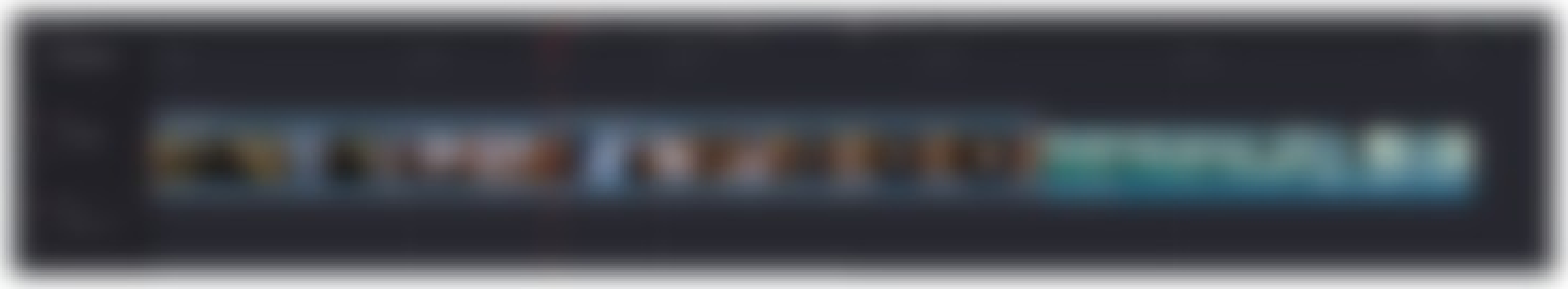


- Click the Clip Speed menu for the fourth speed segment after the third speed point and choose Change Speed > 200% to adjust that part of the clip.



You can also manually adjust the speed of the individual segments.

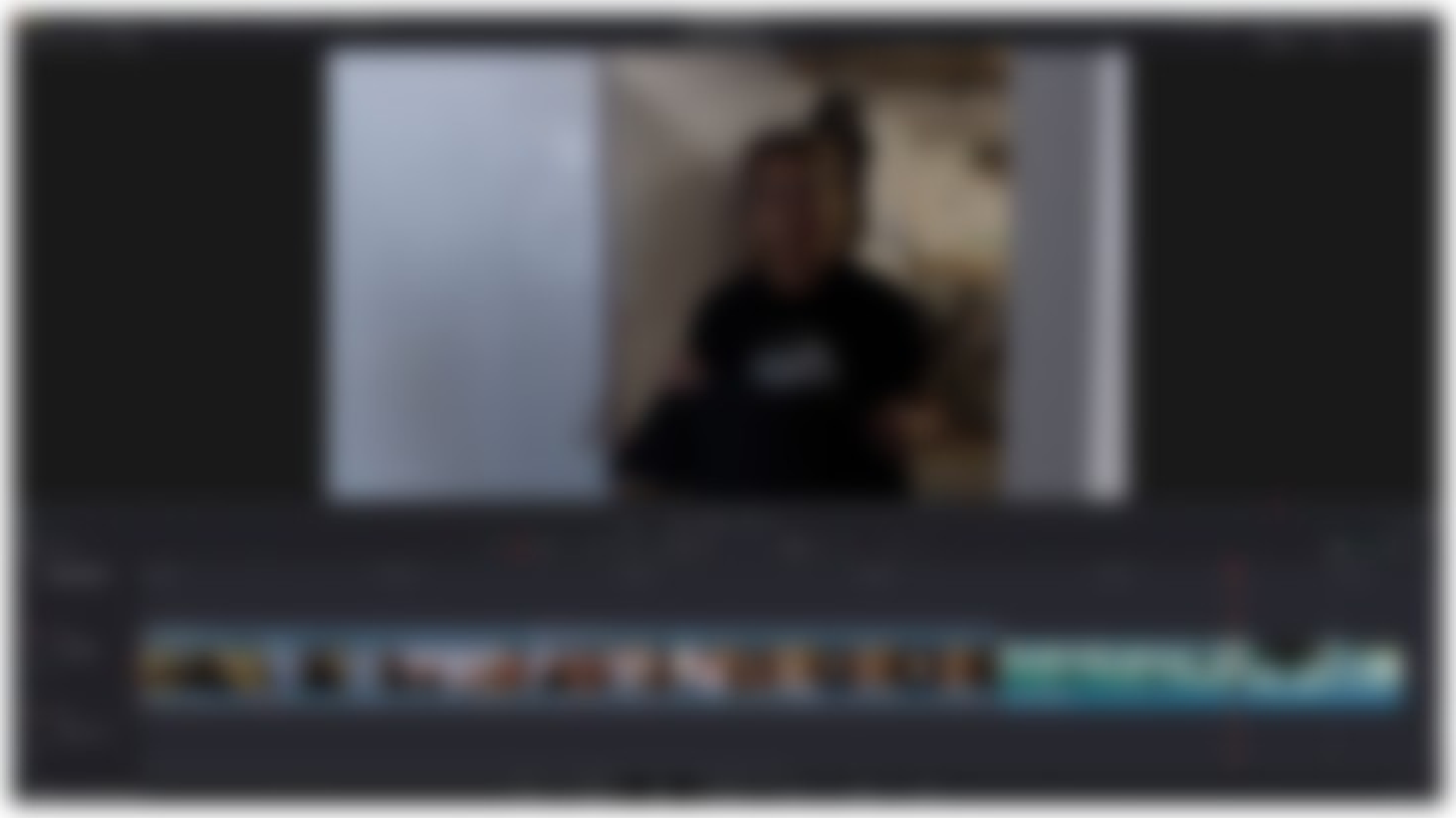
- Select the top part of the second speed point and drag it to the right to decrease the speed of the preceding speed segment to about 300%.



NOTE Manually adjusting the control points for the clip always affects the speed of the segment to the left of the speed point. To adjust the speed of the final speed segment of a clip after the final speed point, select and drag the right edge of the Change Speed control bar at the top of the clip.

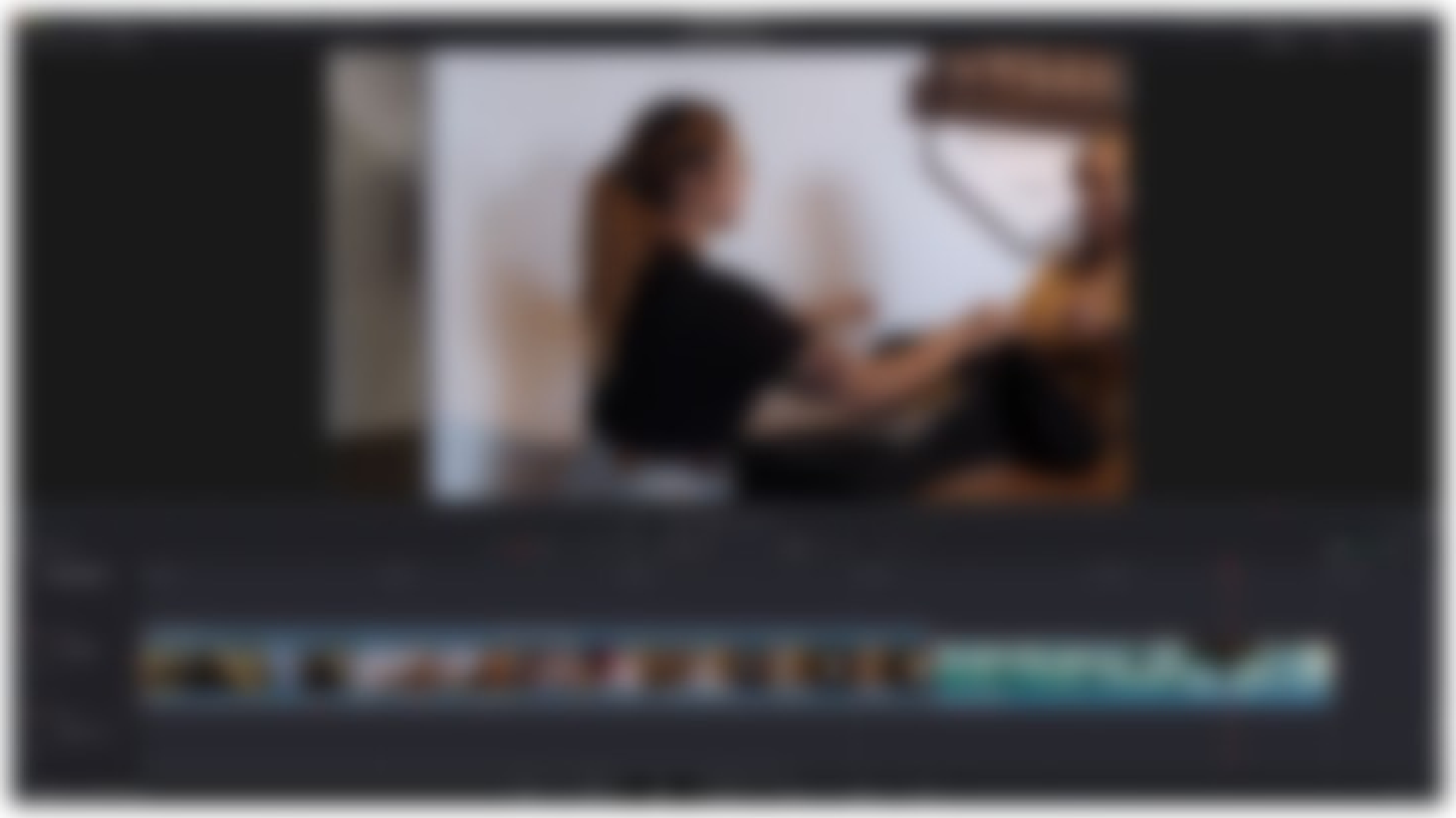
You can also refine the position of each speed point, adjusting the starting frame for each speed segment.

- Select the lower part of the first speed point and drag it to the left until the viewer shows the girl behind the room's door.



This changes the location of this speed point (between the first and second speed segments) to an earlier frame.

- Drag the same control to the right until the girl is about to hand the T-shirt over to the second girl.

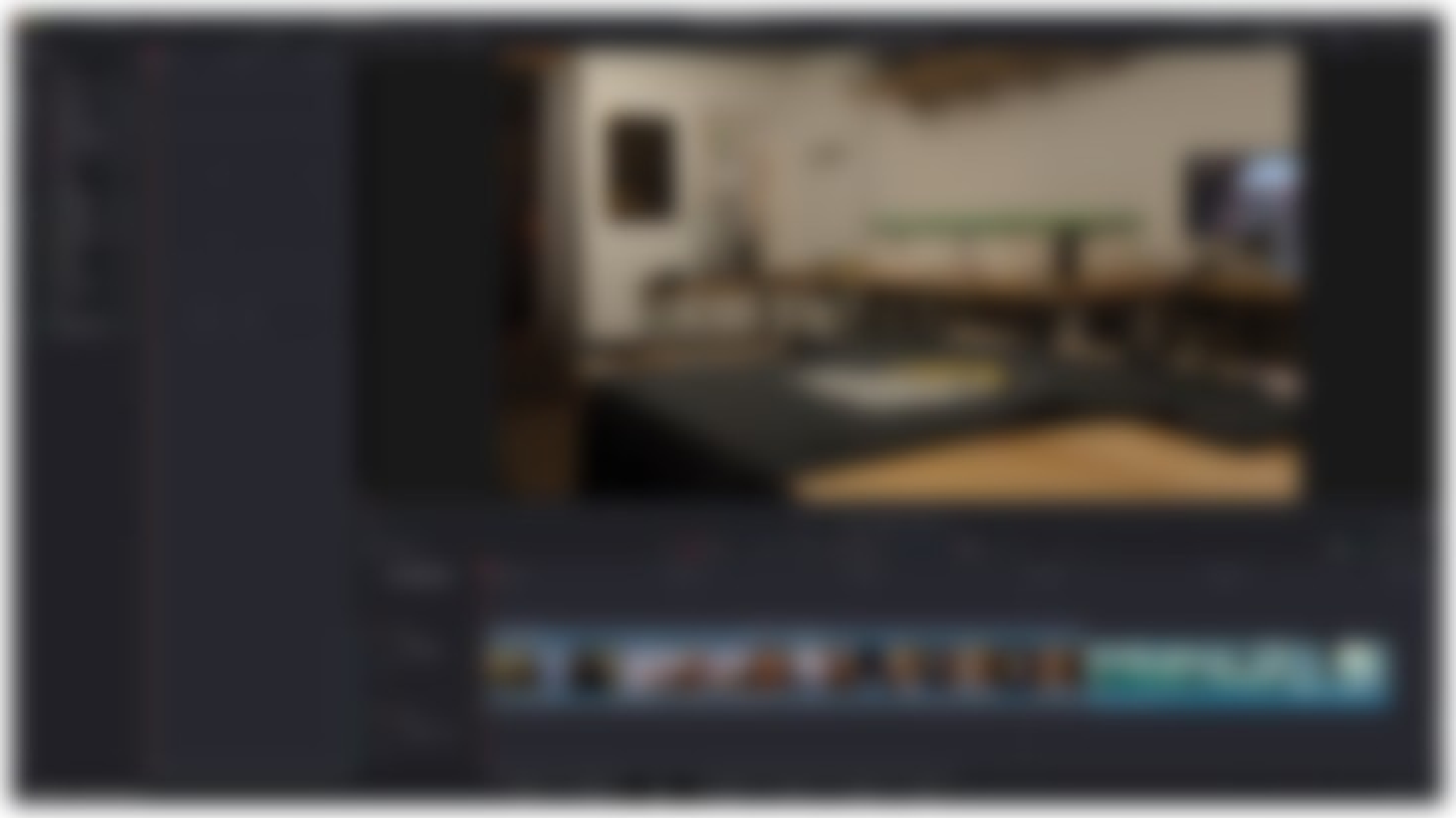


Again, this refines the position of the speed point to a slightly later frame.

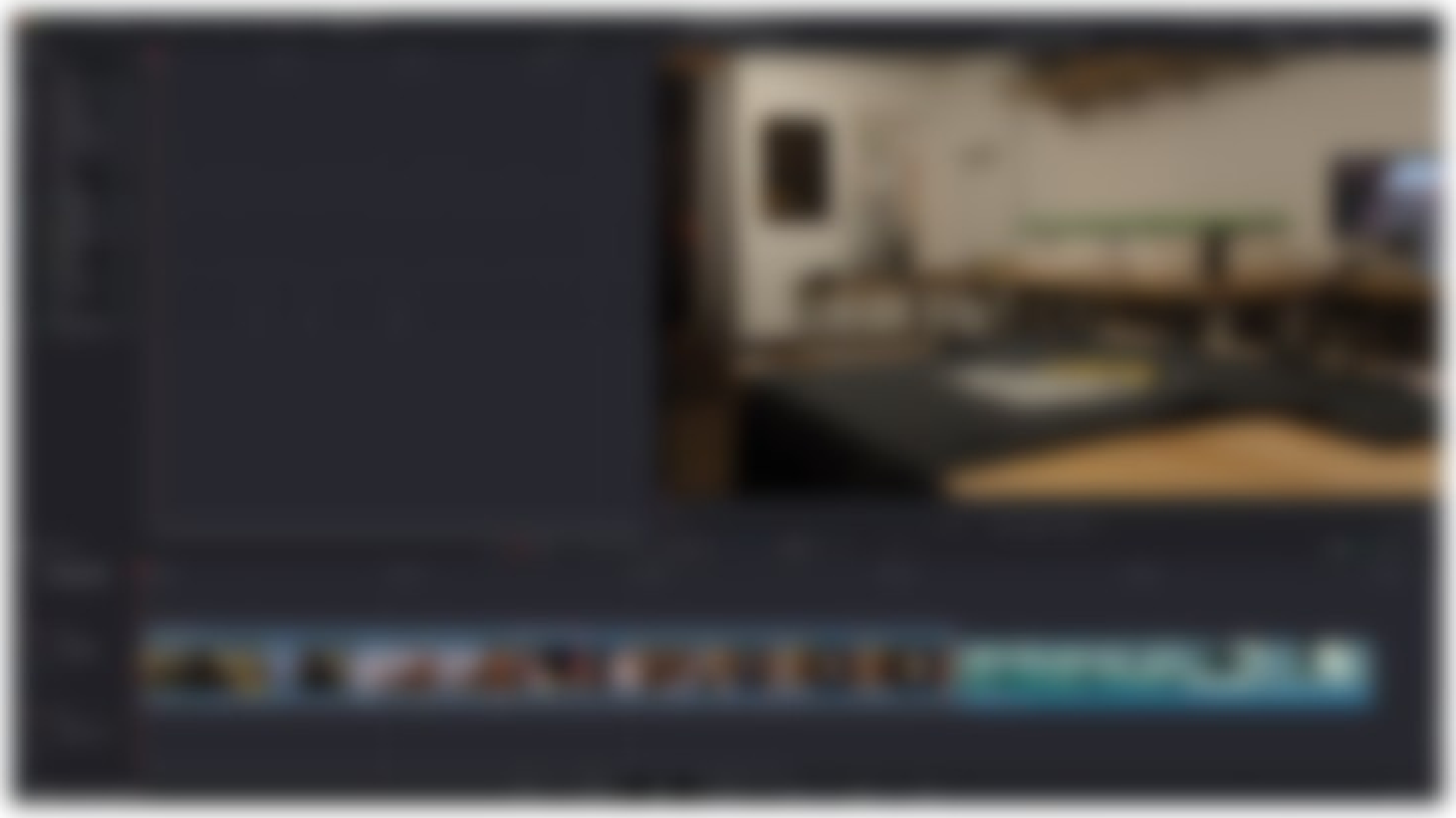
Adjusting the Retime Curve

You can make further changes to the speed of the segments between the speed points and the interpolation between each speed section using the clip's Retime Curve. You can use two retime curves to fine tune the speed of the clip; Retime Speed and/or Retime Frame. By default, both curves are active in the Retime Curve that opens below the clip.

- In the top left of the interface, click the Keyframes button to open the Keyframes panel to display the keyframes for the selected clip.

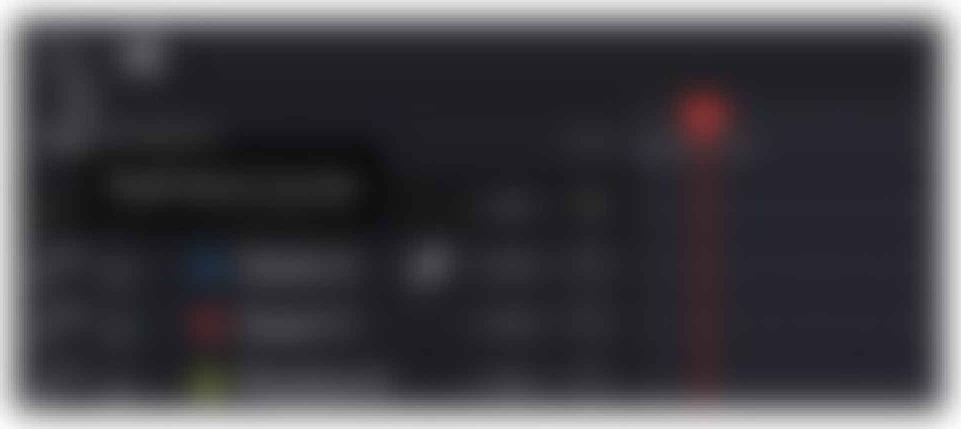


- To display the keyframes more efficiently, click the Shrink button in the top left corner of the interface and resize the Keyframes panel.

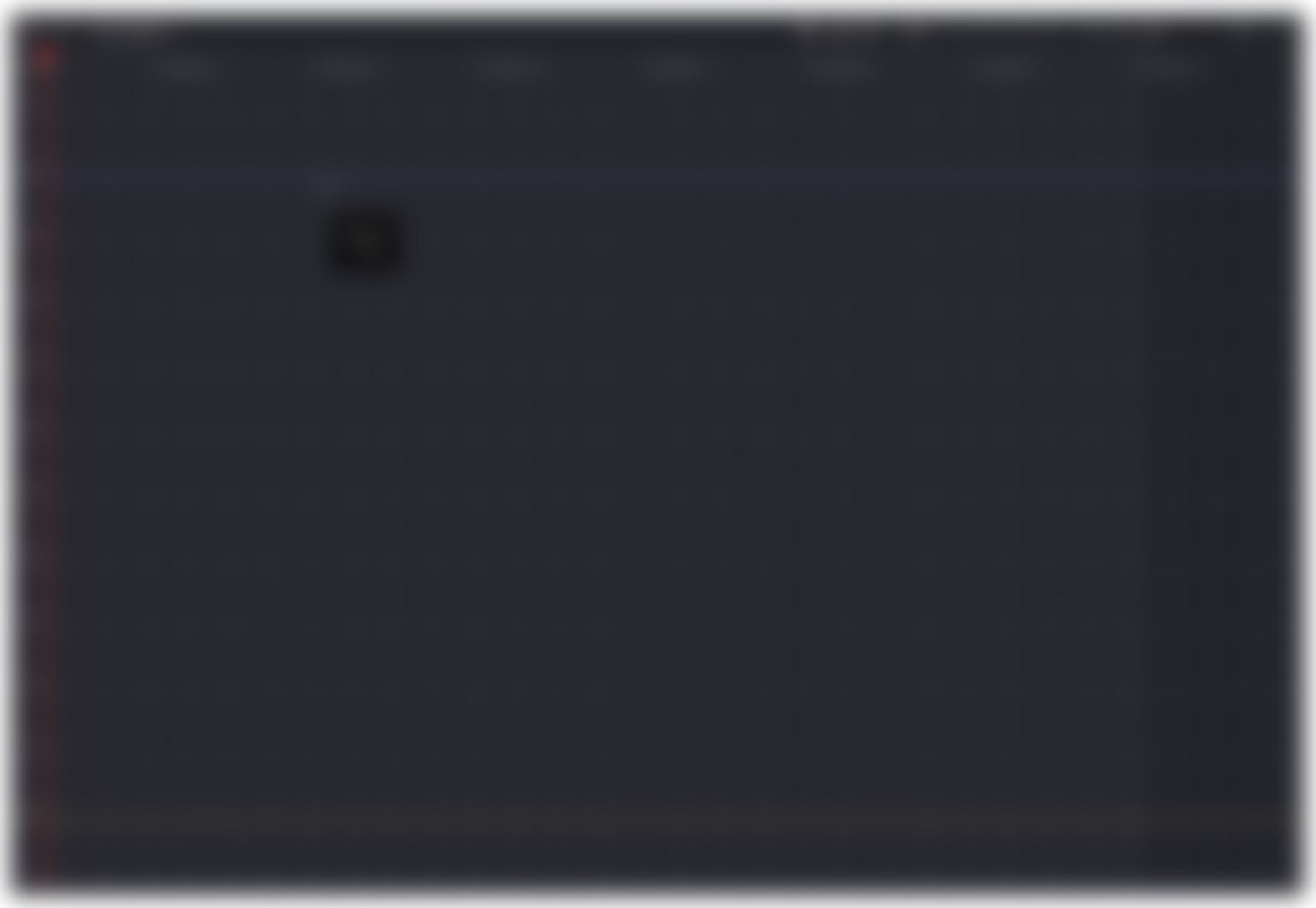


You can see your Speed Points represented by a series of keyframes in the Keyframes panel under the Retime Speed and Retime Frame controls.

- In the top left corner of the Keyframes panel, choose the Keyframes Curves option.



Currently, the Keyframes Curves only shows the Zoom and Position parameters, represented by two [illegible] horizontal lines.

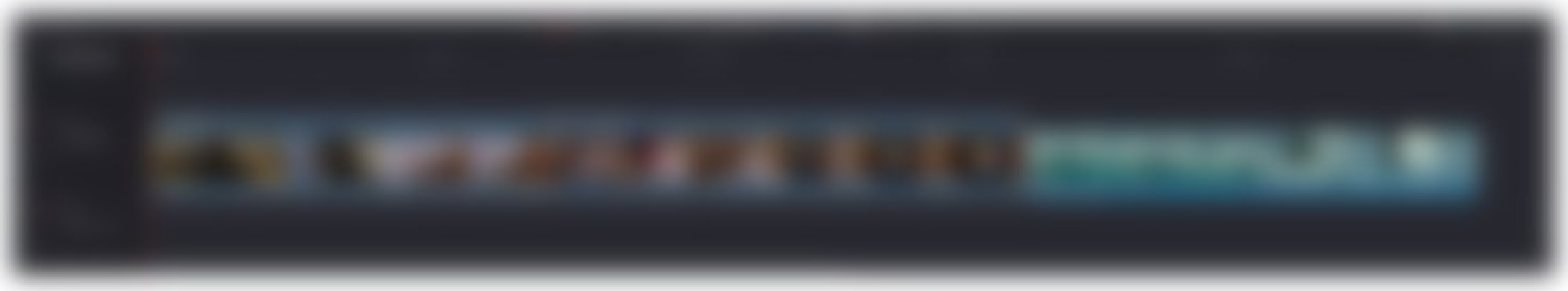


- In the Keyframes Curves display, click the Parameters / Video menu, deselect the Zoom and Position options, and select the Retime Speed option.

The Retime Speed curve displays the relative speeds of the segments, depending on how high the bar is on the curve; segments at higher points on the curve play back faster than segments at a lower point.

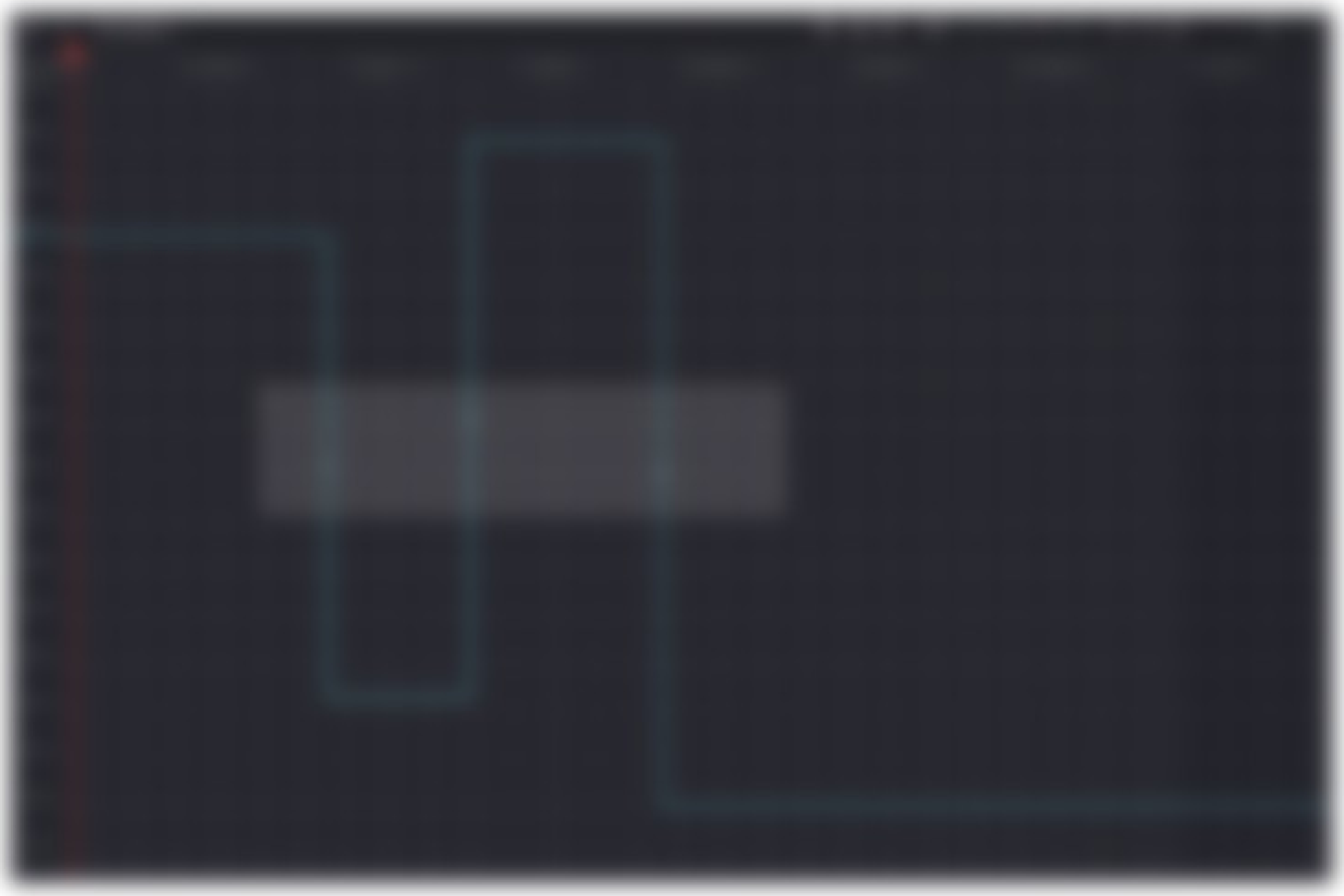
- Ensure that the timeline is still in Trim Edit mode and drag the horizontal curve between the second and third speed points up to around 500%.

This adjusts the relevant speed segment of the clip in the timeline.

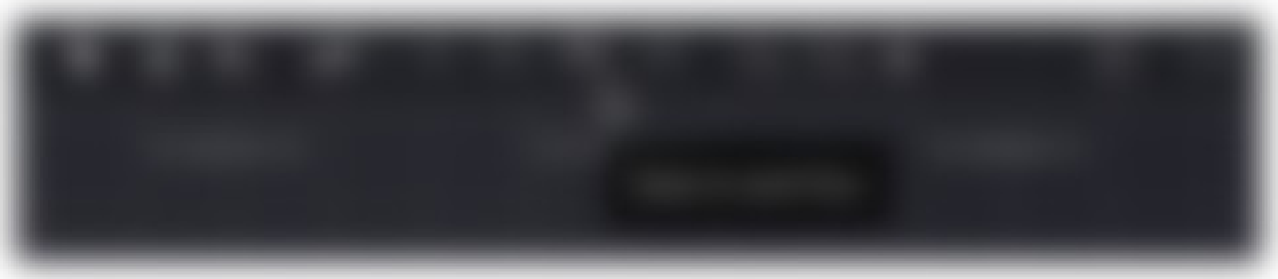


Next, you will change the interpolation over each of the speed points to create more natural changes between each segment.

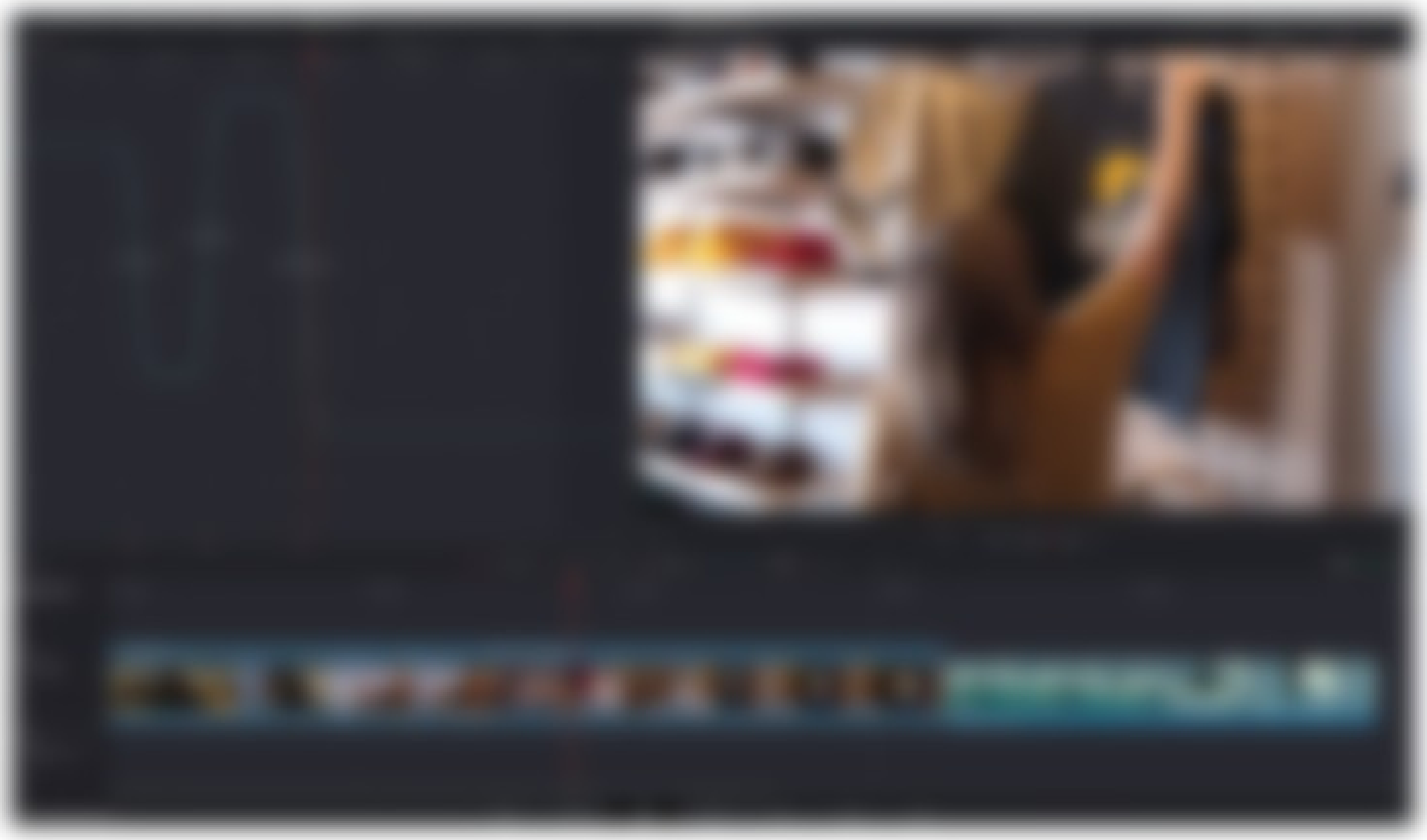
- In the Keyframes panel, select the three speed points.



- With the speed points selected, click the Ease In and Out button.



Bezier handles are added to each of the selected speed points.

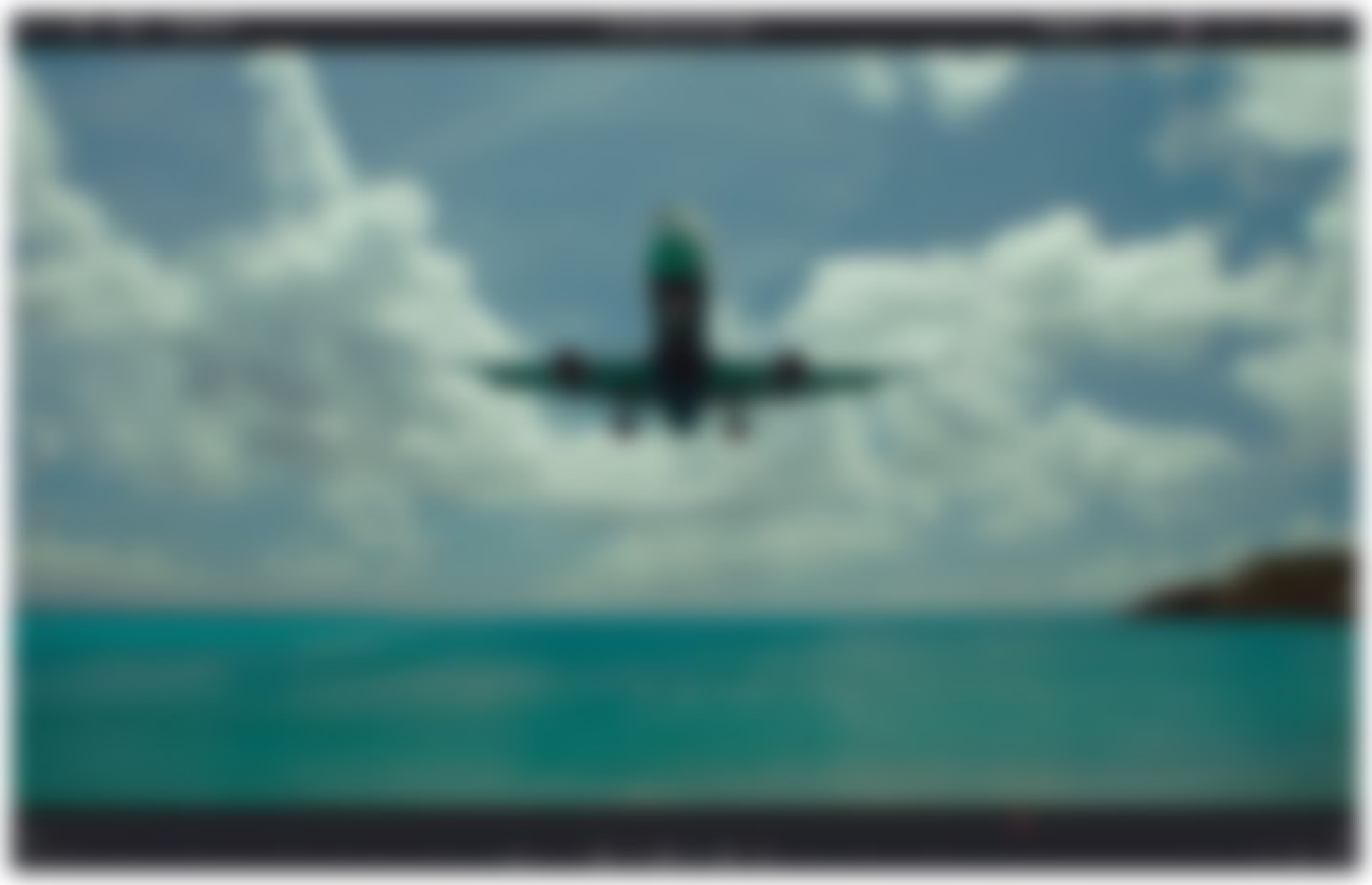


Adding the Bezier handles changes the way in which the different speeds of the two segments are interpolated. Now, instead of an instant change from one speed to another, the change happens gradually over several frames. To refine the interpolation further, simply drag the Bezier handles farther apart to make the interpolation more gradual, or drag them closer together to make the change more abrupt.

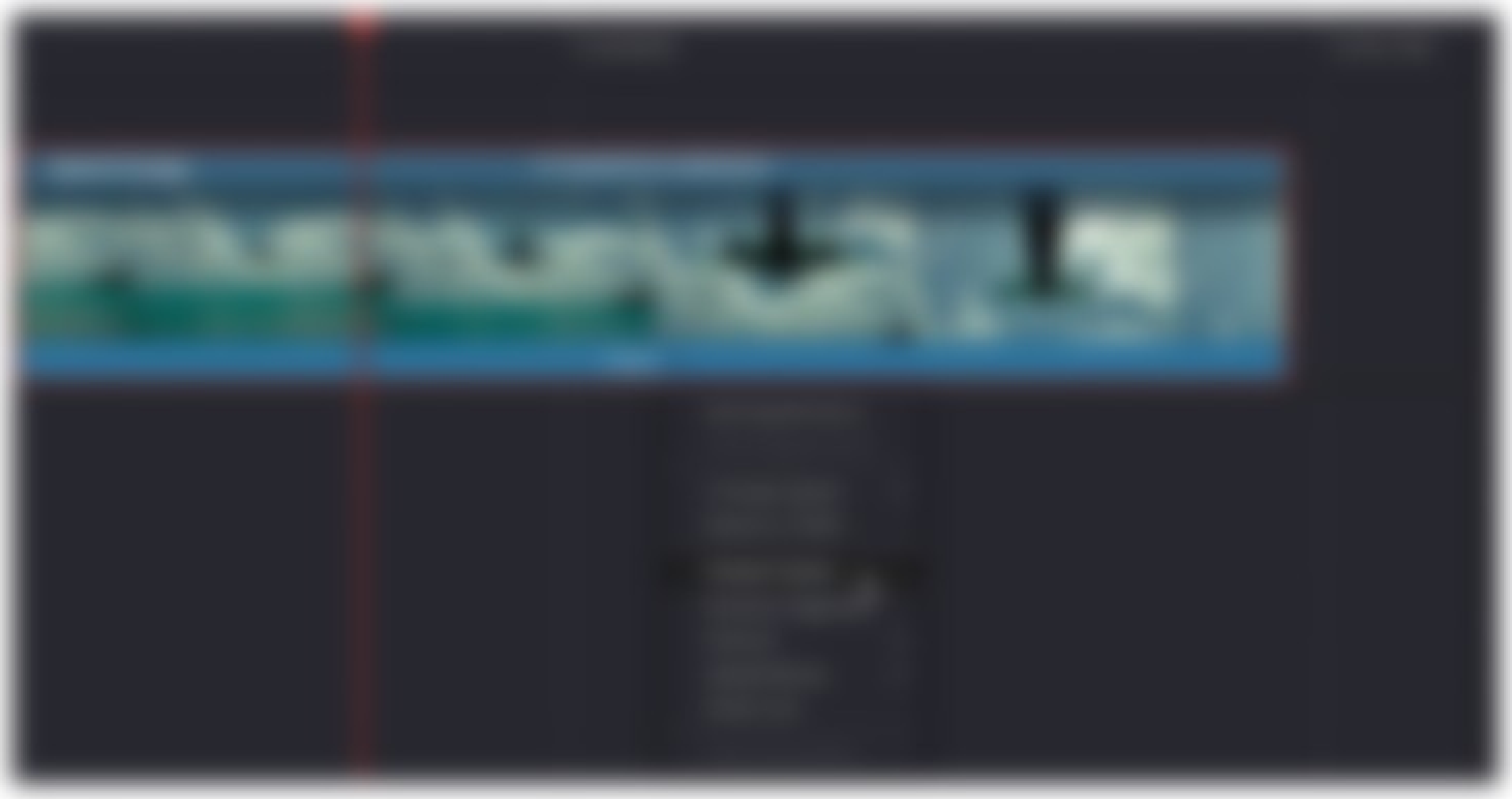
Creating Freeze Frames

Another common requirement when dealing with speed changes in a clip is to gradually slow it to a freeze frame. This technique is just as frequently used as a dramatic introduction for a character in a film or as a teaching aid in a training video.

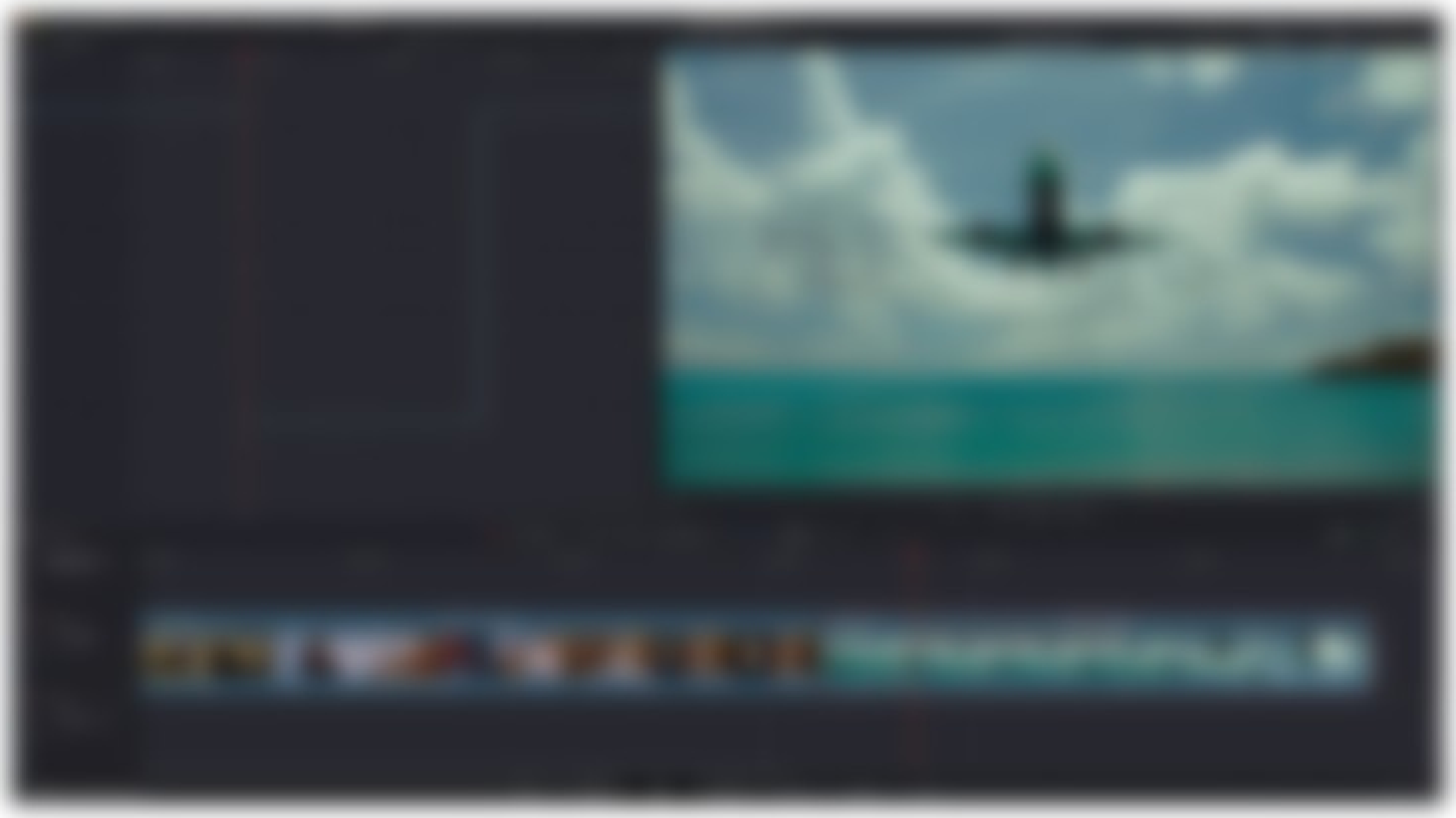
[illegible] Place the playhead over the second clip in the timeline on a frame where the airplane's undercarriage is clearly visible.



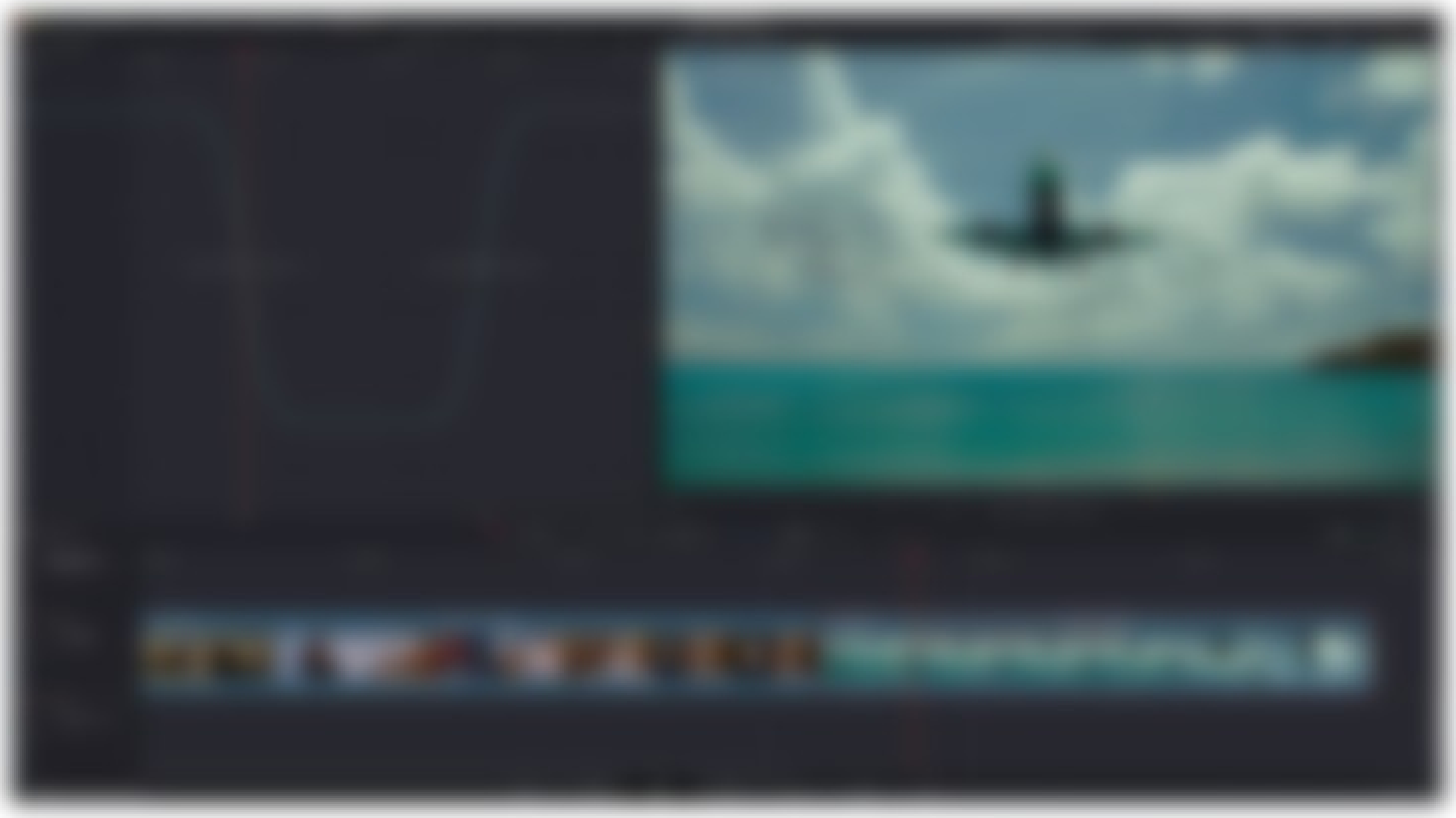
[illegible] Select the clip in the timeline, press Command-R (macOS) or Ctrl-R (Windows) to display the Retime Controls for the clip, click the Clip Speed dropdown menu, and choose Freeze Frame.



Two Speed Points are added to the clip, with a 2 second Freeze Frame between them, denoted by the red speed indicators.



- In the Keyframe panel, add Bézier handles to both of the speed points in the Retime Speed curve.



- Play back the clip to review the interpolation from 100% to 0% speed and back to 100% again.

Changing Retime Processing and Motion Estimation

You'll no doubt notice that the change between the speed segments isn't quite as smooth as you might have expected. This is due to the Retime Process used by the clip.

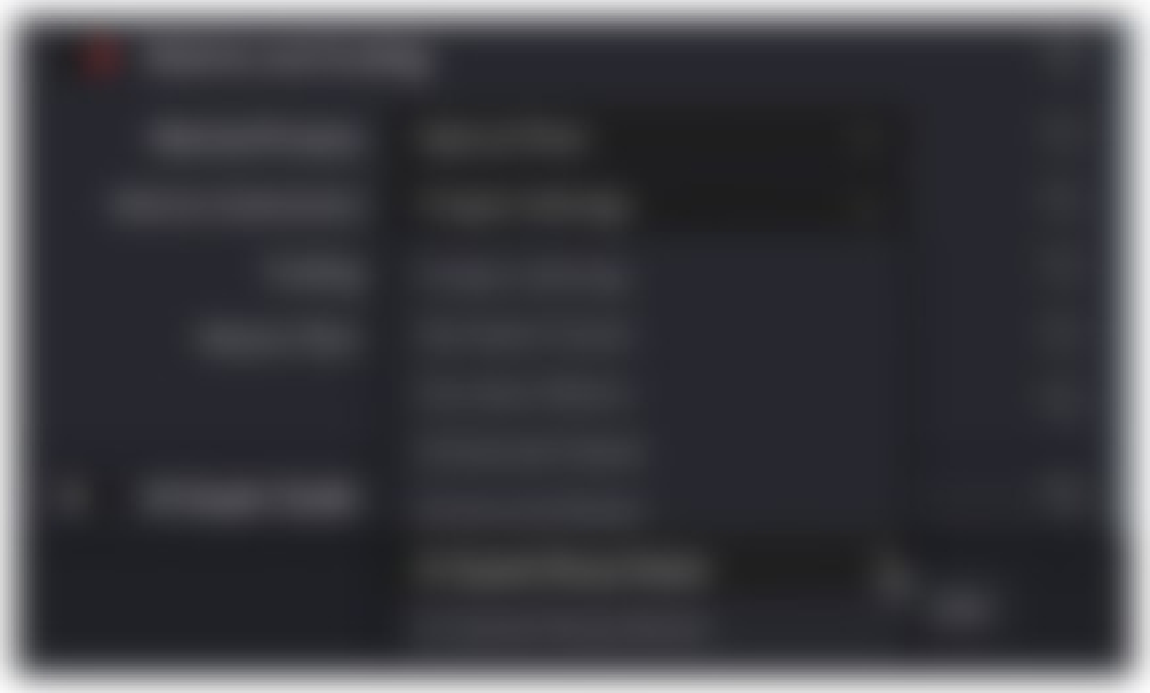
1 Open the Inspector and, in the Retime and Scaling controls, change the Retime Process option to Optical Flow and review the change.

Hmmm… this is better, but if you look closer at the results, you'll notice an '[illegible]' of frames, especially around the plane's wing tip and the cockpit area.

This can be the downside of Optical Flow, especially when one object passes in front of another at different speeds.

However, DaVinci Resolve provides further settings to help minimize this problem by allowing you to adjust the Motion Estimation used by the Optical Flow process.

NOTE Motion Estimation will be applied only if the Retime Process is set to Optical Flow in the clip or Project Settings.



Motion Estimation has several settings that become increasingly demanding. Standard Faster and Standard Better are processor-efficient settings that often yield good quality results for most situations. The default for Project Settings is Standard Faster.

Enhanced Faster and Enhanced Better should yield improved results in cases where the standard options exhibit artifacts. Both options are more computationally intensive than the Standard options, so they take longer to process.

Finally, the AI Speed Warp options allow for even better results when reducing the speed of a clip below its original frame rate, by analyzing the pixels in the image to reduce visual artifacts to a minimum. Again, there are two options: AI Speed Warp Faster and AI Speed Warp Better.

NOTE AI Speed Warp is a highly processor-intensive process, so it is available only on a clip-by-clip basis and cannot be set as an option in the Project Settings.

As always, results for each setting will vary depending on your footage.

- Change the Motion Estimation setting to AI Speed Warp Faster and play back the results.

TIP If you are having trouble playing back the results, choose Playback > Render Cache > User, right-click the clip in the timeline, and choose Render Cache Color Output.

With AI Speed Warp Faster enabled in the Motion Estimation settings for this clip, the results are vastly superior. AI Speed Warp, however, is such an intensive process that it should only be used sparingly on the most high spec machines. AI Speed Warp Faster is sufficient for this clip, although AI Speed Warp Better is also available for more problematic footage.

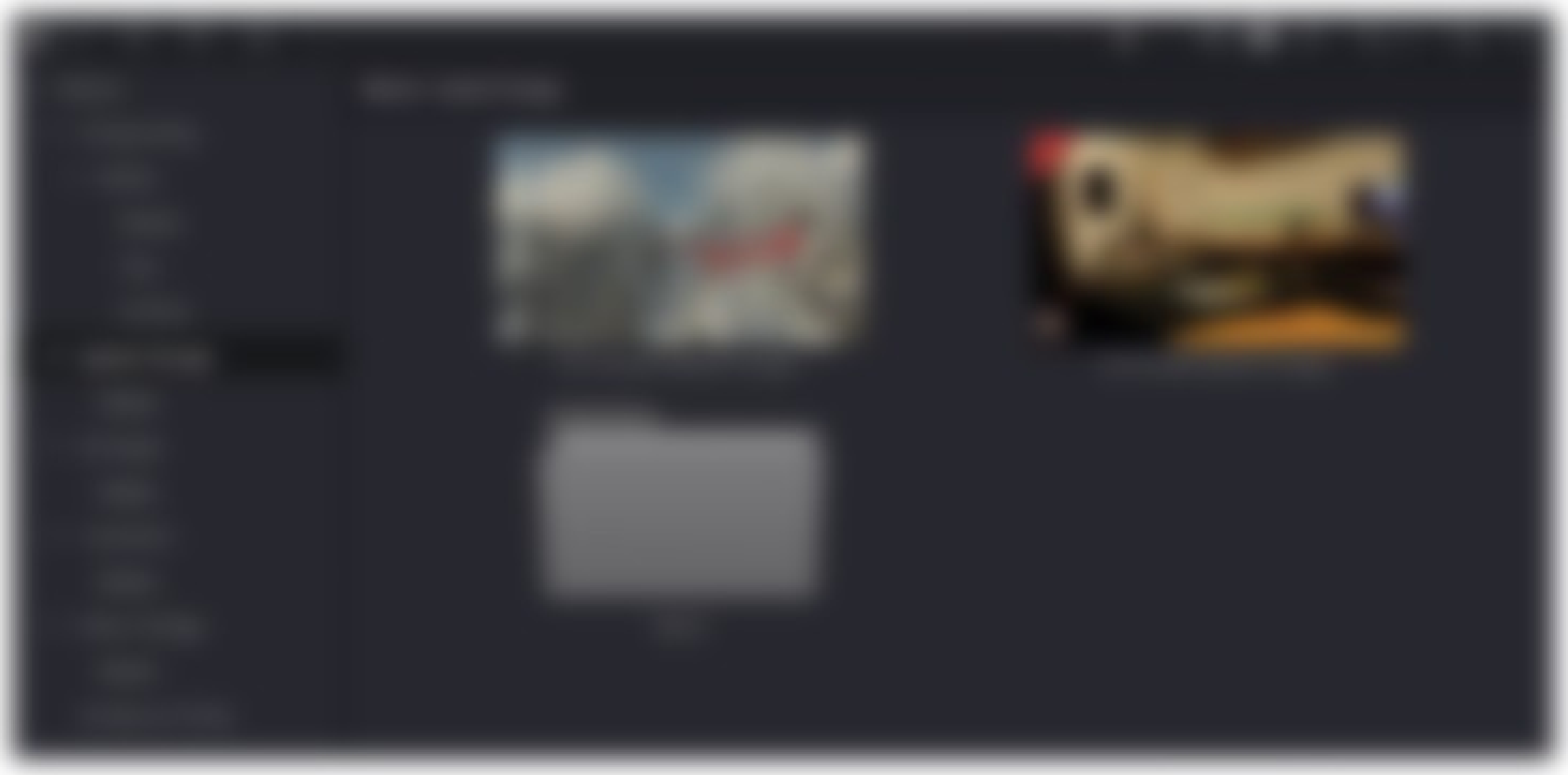
> **NOTE** If you're using the free version of DaVinci Resolve, any clip using the AI Speed Warp motion estimation setting will be watermarked.

Render in Place

The edit page has an additional feature to assist you if you're dealing with processor intensive effects, such as this AI Speed Warped clip. Render in Place allows you to easily render out selected timeline clips to an entirely new media file on your hard drive, together with any "baked in" effects. The rendered media is then automatically added to the media pool and used to "replace" the original timeline clip. This is useful when you need to grade a clip with multiple effects since you don't have to keep caching that portion of the timeline. Editors often refer to this process as a mixdown.

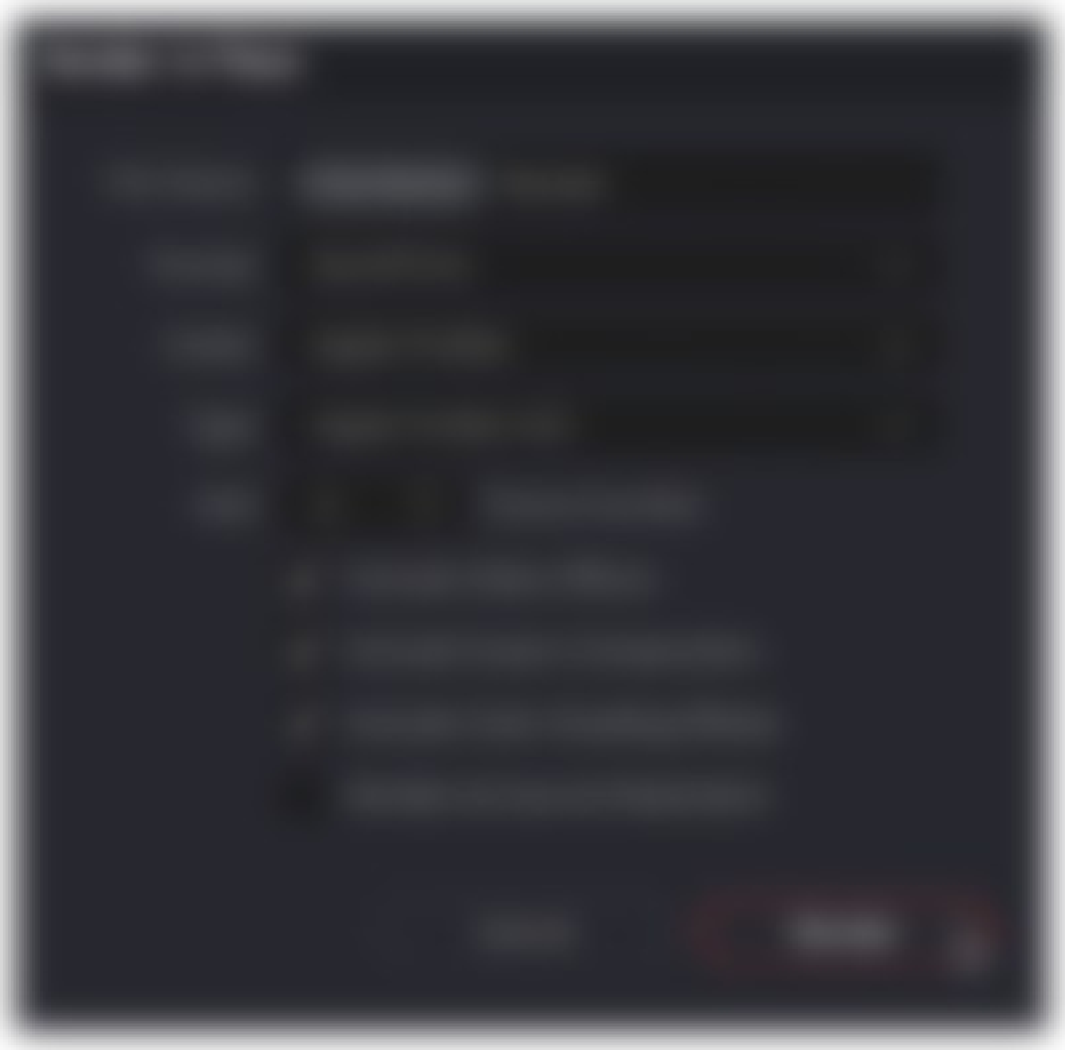
> **NOTE** Render in Place can be applied to multiple selected timeline clips and compound clips. Selecting multiple clips will render each clip in place separately but as part of a batch operation.

1 Open the media pool and select the Speed Change bin.



- In the timeline, right-click the [illegible] clip and choose Render in Place.

  The Render in Place window opens, displaying the options that will be used for creating the new media files.



  The File Name for the rendered file uses the clip's name followed by "Render" like the variable you used in Chapter 12. You can also choose what format your rendered file will be, any handles you'd like to add, whether you want to include video effects (such as the retimed speed in this example), Fusion compositions, and grades from the color page. You can also choose to create the render at the source file's resolution if required.

- Leave the options set to their defaults and click Render.

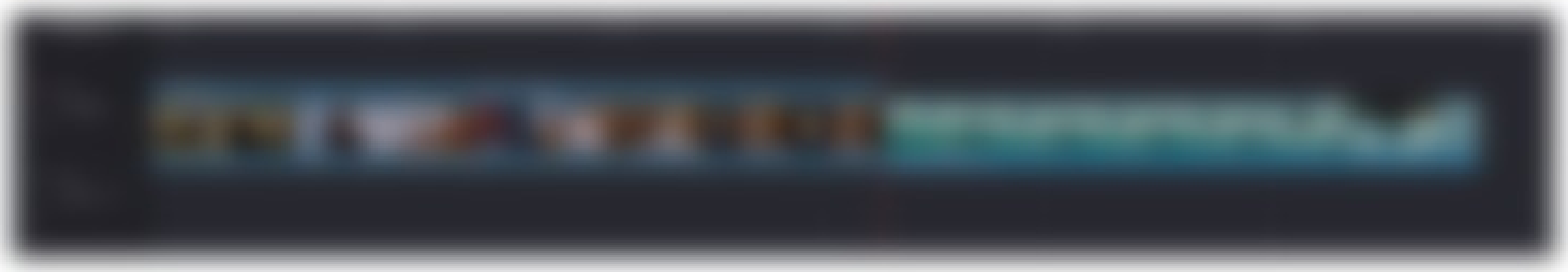
  You'll be asked where the new media should be placed on your system.

  NOTE By default, this location will be [Project Media Location] > [Project Name] > Renders.

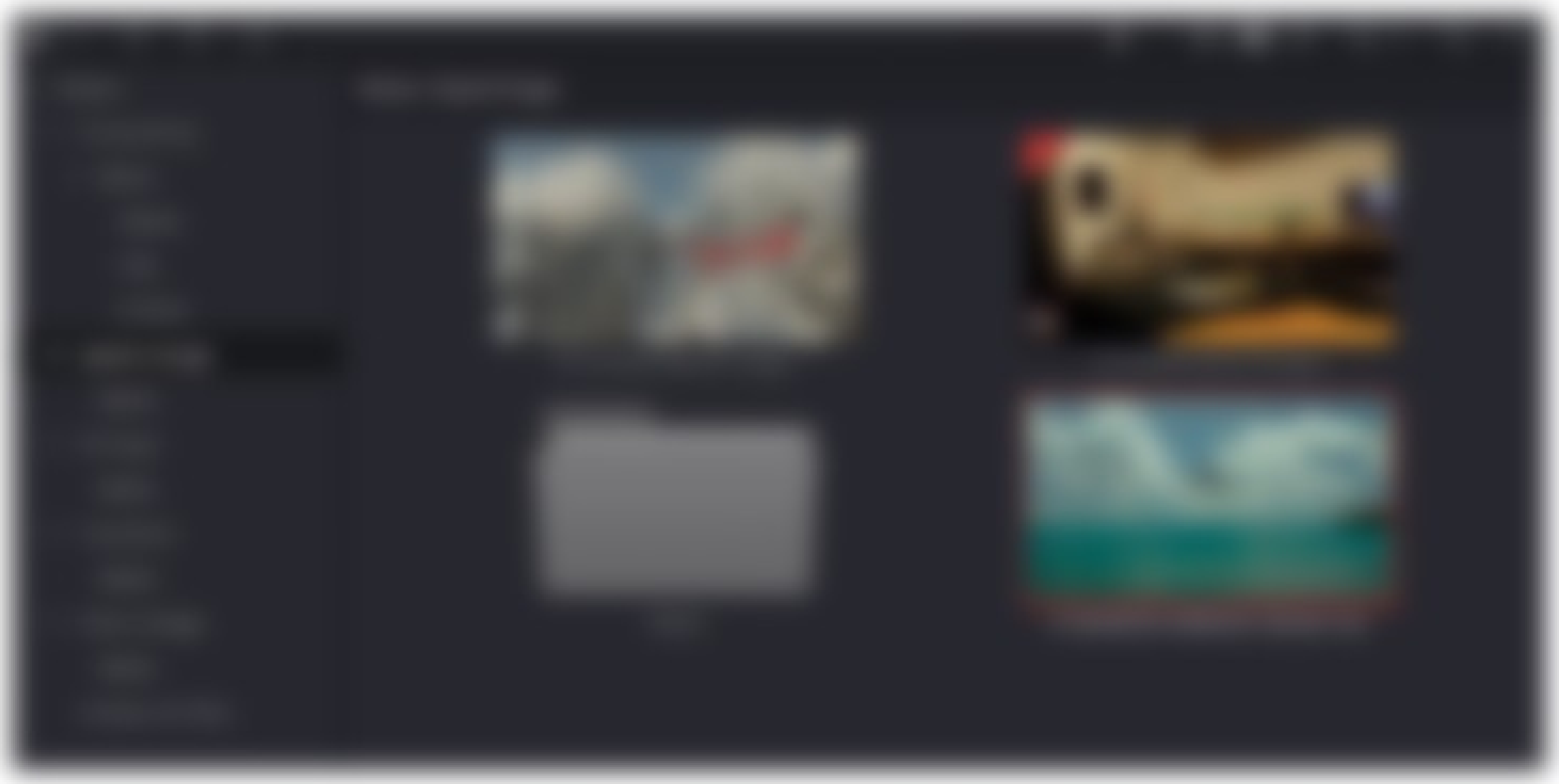
- Navigate to R20 Editor's Guide > Lesson 07 > Render in Place and click Open.

The new media file is created in the chosen location.

Once the process is complete, the original 07 MOUNTAIN OVERVIEW timeline clip has been replaced with the newly created file, called 07 MOUNTAIN OVERVIEW Render 1.mov.



The new clip has also been automatically imported and added to the selected bin in the media pool.



Because this clip now has the speed ramp "baked in," it will now play without the need to cache the clip in the timeline. However, the speed changes you've made are no longer accessible.

Thankfully, Render in Place is not just a one-way operation. Once a clip has been rendered in place, you can always revert the process if you need to refine the effects further.

[illegible] In the timeline, right-click the [illegible] clip and choose Decompose to Original.

The original clip and the editable speed changes are returned to the timeline, but the rendered version remains in the media pool and on your hard drive. This allows you to refine the effect further before creating an additional rendered in-place clip if required, with each render having an incremental filename, e.g., [illegible], [illegible] etc.

> **TIP** It can be useful to color code clips as you render them in place so that you can quickly identify which clips can be decomposed to the original later. Alternatively, you can simply place the new clip on a video track above the original clip in the timeline.

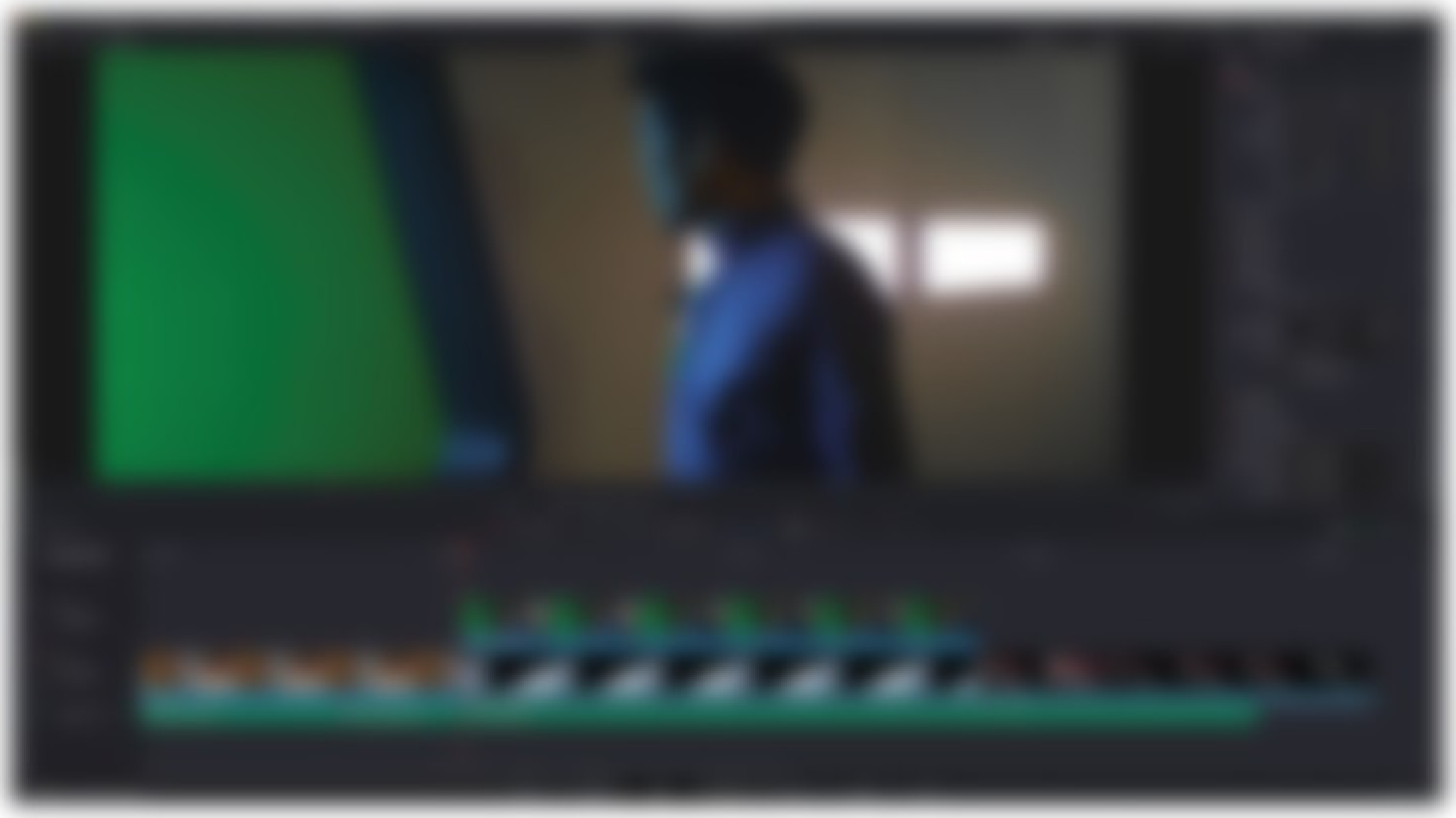
3D Keyer FX

A common effects task many editors face is having to work with green- or blue-screen footage. This footage is designed to be keyed against a background plate and is a common technique used in fantasy and science fiction films, as well as in many TV shows and online videos, where you may want your talent to appear against a virtual background.

Even if the shot will be finalized later by a dedicated visual effects artist, the editor may still need to create a temporary version of the composite to see how effectively the foreground and background elements will work together. If the shots can't be readily combined as planned, it is so much easier for the editor to swap takes or edit around the identified problems than it would be for the VFX artist.

In this exercise, you'll use the 3D Keyer effect to composite a shot from the short sci-fi film Hyperlight.

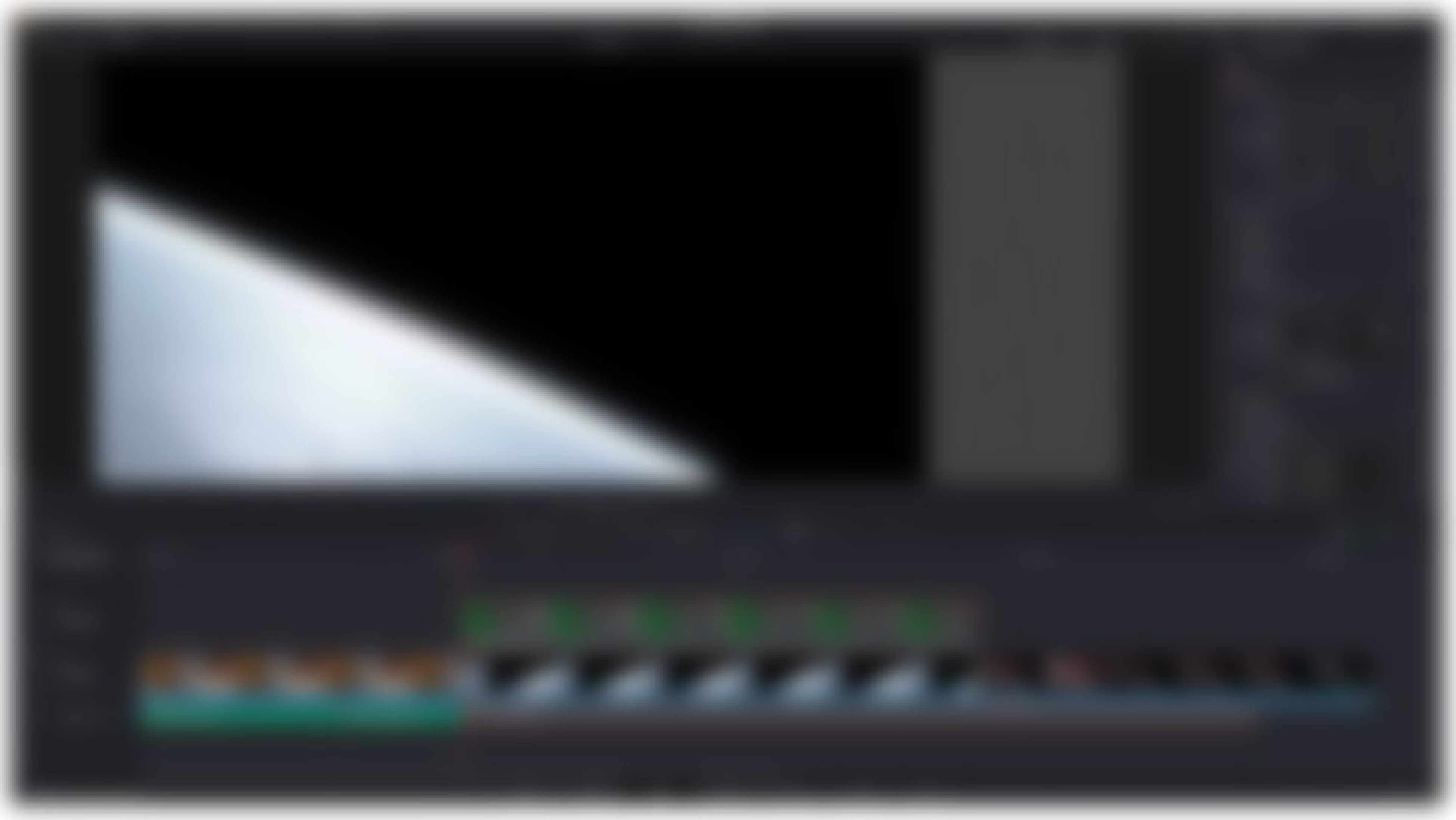
1. Close the media pool and select the **3D Keyer** timeline from the timeline viewer menu, or choose Playback > Next > Timeline.



2. Play the timeline to review the shots and then return your playhead to the start of the clip on Video 2.

   This is a short sequence of shots from the sci-fi short Hyperlight. Obviously, the second shot of the man against the green screen somewhat ruins the conceit that these two characters are supposed to be in a spaceship orbiting a planet.

3. Select the clip on Video 2 and press D to disable it in the timeline and reveal the background plate of the planet.



This is the view that the man should have outside the spaceship's window. To achieve this, you need to apply the 3D Keyer filter.

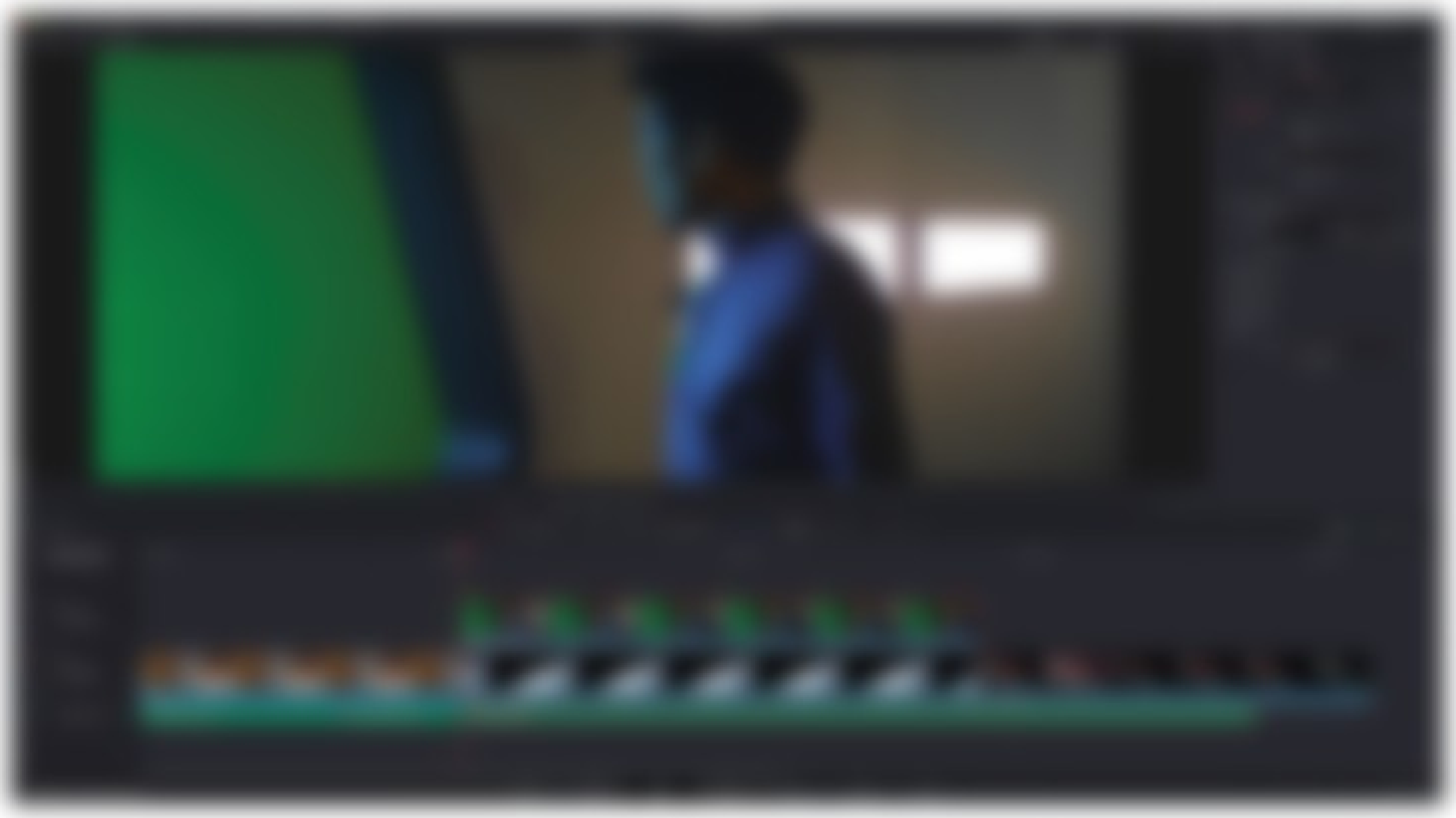
- Press D again to re-enable the clip in the timeline.
- Click the Effects button to open the Effects Library.

- Select the Open FX > Filters group, and scroll through the list of filter categories to locate the Resolve FX Key filters.

NOTE Each of the Resolve FX Key filters is based on the appropriate color page qualifiers; these filters are effectively the Inspector controls from the color page packaged and made available in the edit page. There are two color key filters you can choose to work with. For this exercise, you'll use the 3D Keyer, but even though the controls are broadly the same, the HSL Keyer is useful if you want to specifically target different combinations of hue, saturation, and brightness for a more refined key. The Luma Keyer is used to perform keys on just the luminance/brightness of a clip and is often used in conjunction with composite modes. The Alpha Matte Shrink and Grow filter can be used to further refine the keys created using the other filters.

- Double-click the 3D Keyer filter to apply it to the selected green screen clip of the man on Video 2 and close the Effects Library.

The only indication that the effect has been applied is the appearance of the FX badge in the timeline clip's information and the activation of the Effects tab of the Inspector.

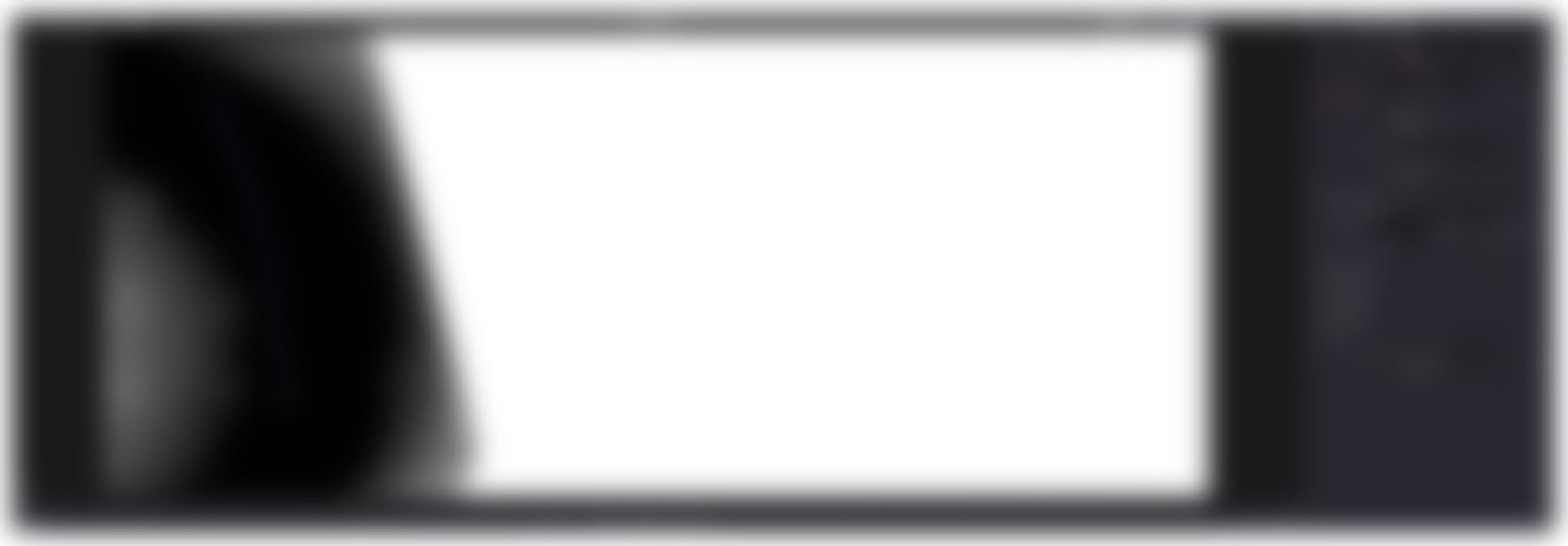


To begin compositing this shot with the background plate, you'll need to enable the viewer's onscreen effect controls.

- Choose View > Viewer Overlay > Open FX Overlay.

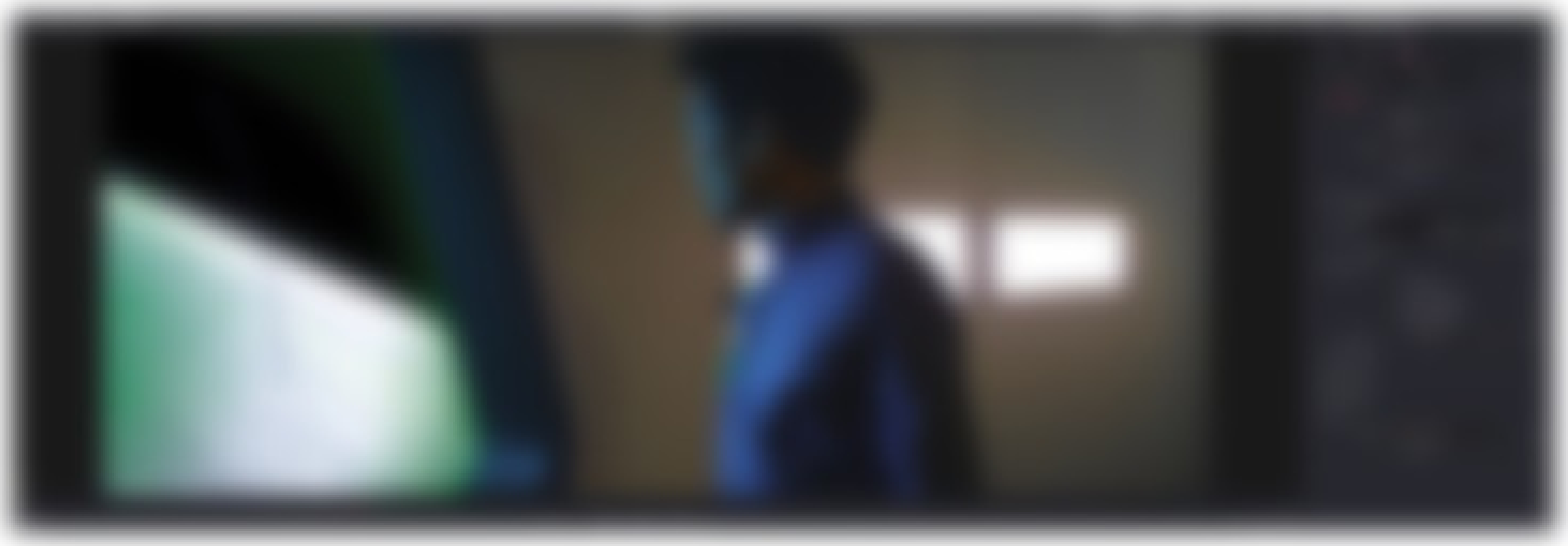
This enables the onscreen controls for any effects that have controls you can access in the viewer.

- With the first Eyedropper tool selected in the 3D Keyer controls, click and drag across the center area of the green screen.



This process samples the green screen's main hue, saturation, and luminance values highlighted by the blue onscreen controls. However, you'll notice that some parts of the green have fallen outside of this selection.

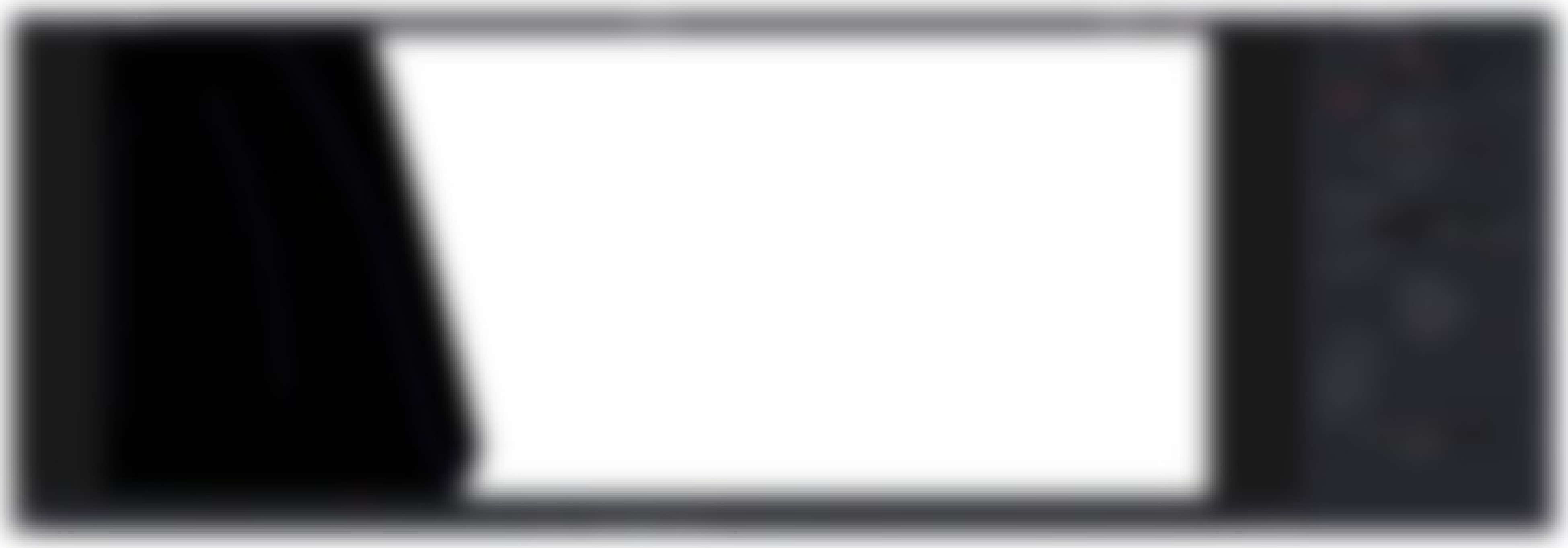
- Click the disclosure arrow for the Usage Options and select the Show Paths option to display your chosen selection path.



NOTE Selecting Show Paths automatically deselects the Smart Show Paths option.

- In the Effects Inspector, click the Add Eyedropper control to add areas of the green screen that fall outside your initial selection.

- Click and drag again to create additional selections for the key across the areas of green not included in your initial selection.

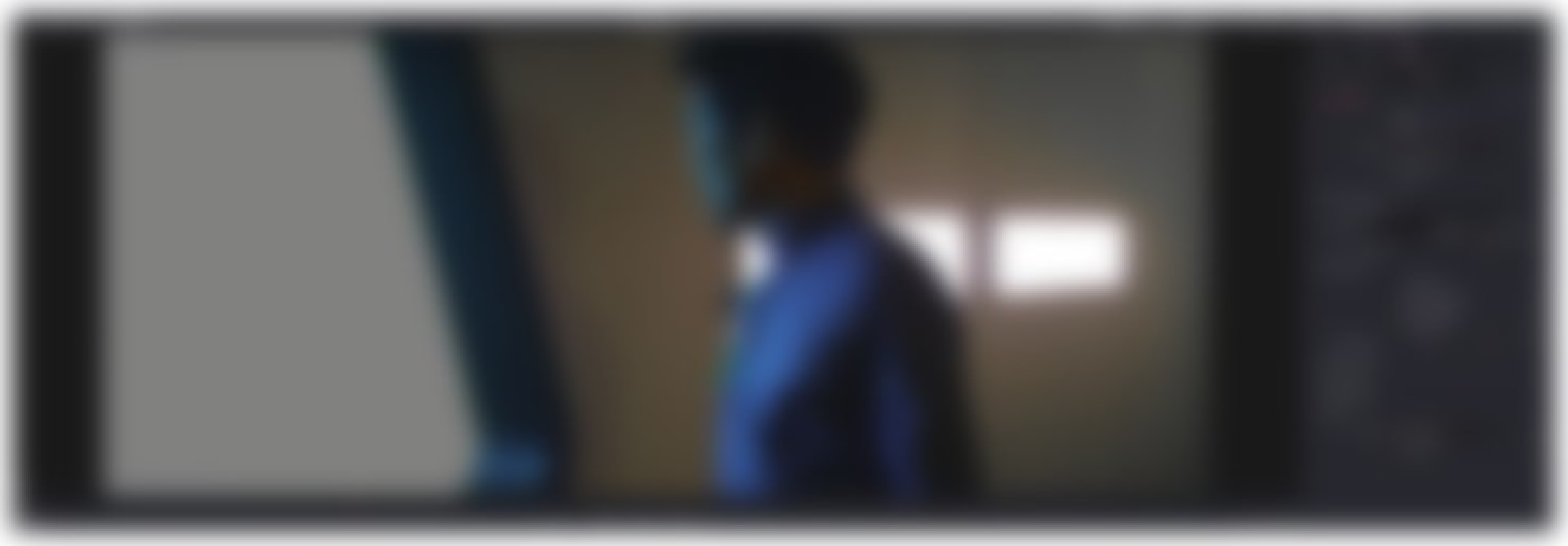


> **TIP** If you find that you have been too aggressive in your selection, and parts of the shot outside the green have been selected, you can attempt to remove those areas from the selection by using the Subtract Eyedropper control.

With additional parts of the green screen added to your selection, you'll probably notice that a green edge remains near the side of the window. To refine the key further, you'll want to see more detail about your selection.

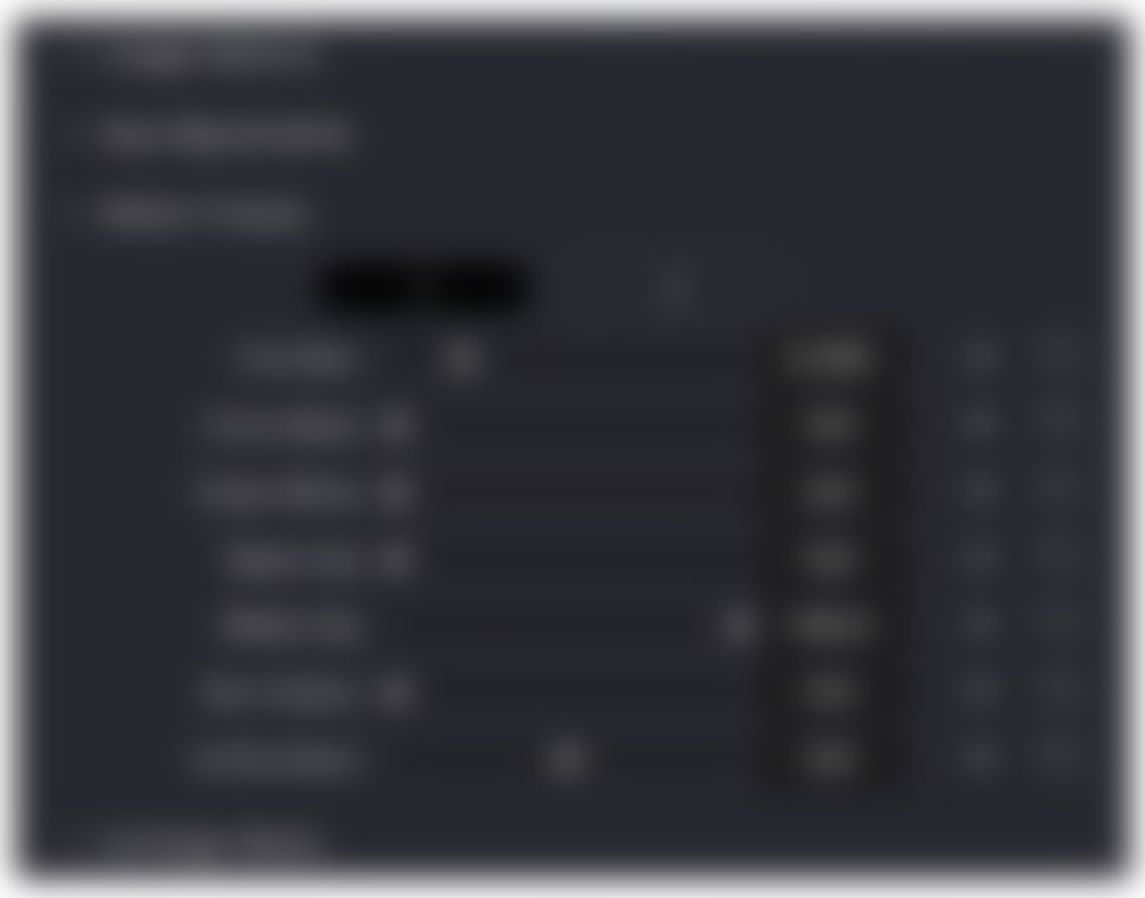
- Deselect the Show Paths option in the Usage Options.
- At the bottom of the 3D Keyer controls in the Effects Inspector, change the Output dropdown menu to Alpha Highlight.

Alpha Highlight displays the selected part of the key as a flat gray area, enabling you to easily identify the areas of green that remain around the edges of the window.



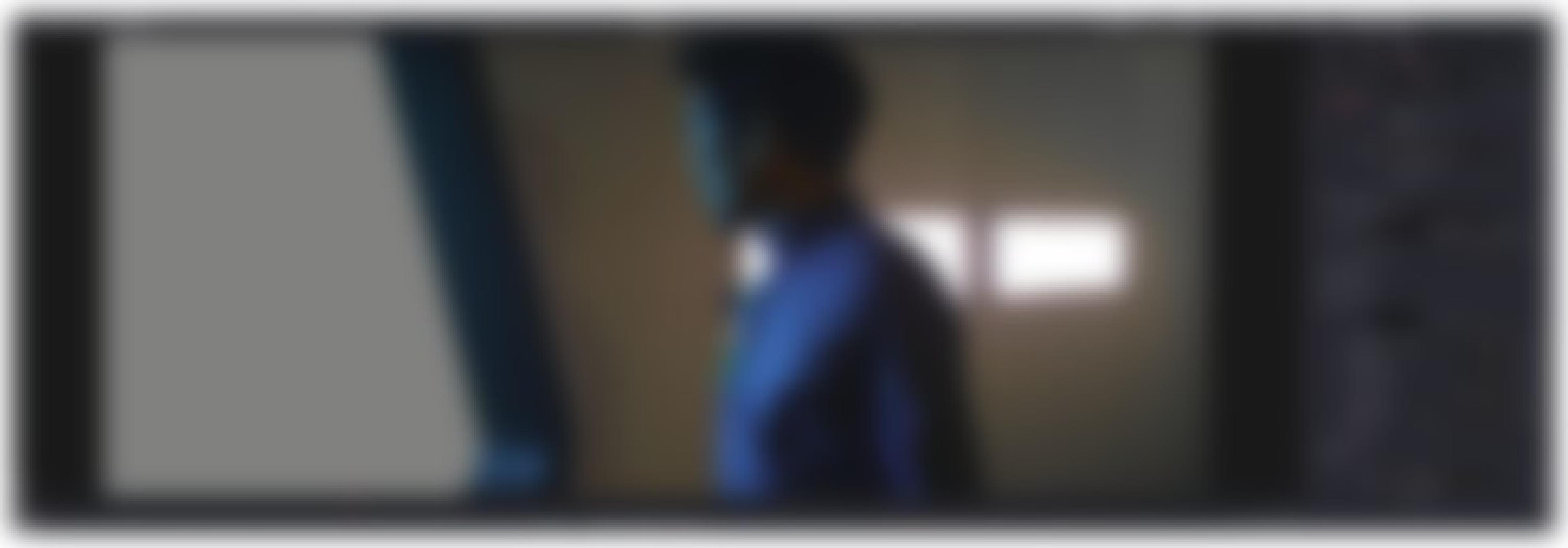
To refine the key, you need to access the Matte Finesse controls.

- In the Effects Inspector, click the disclosure arrow to collapse the Image Options controls, and then click the disclosure arrow for the Matte Finesse controls.



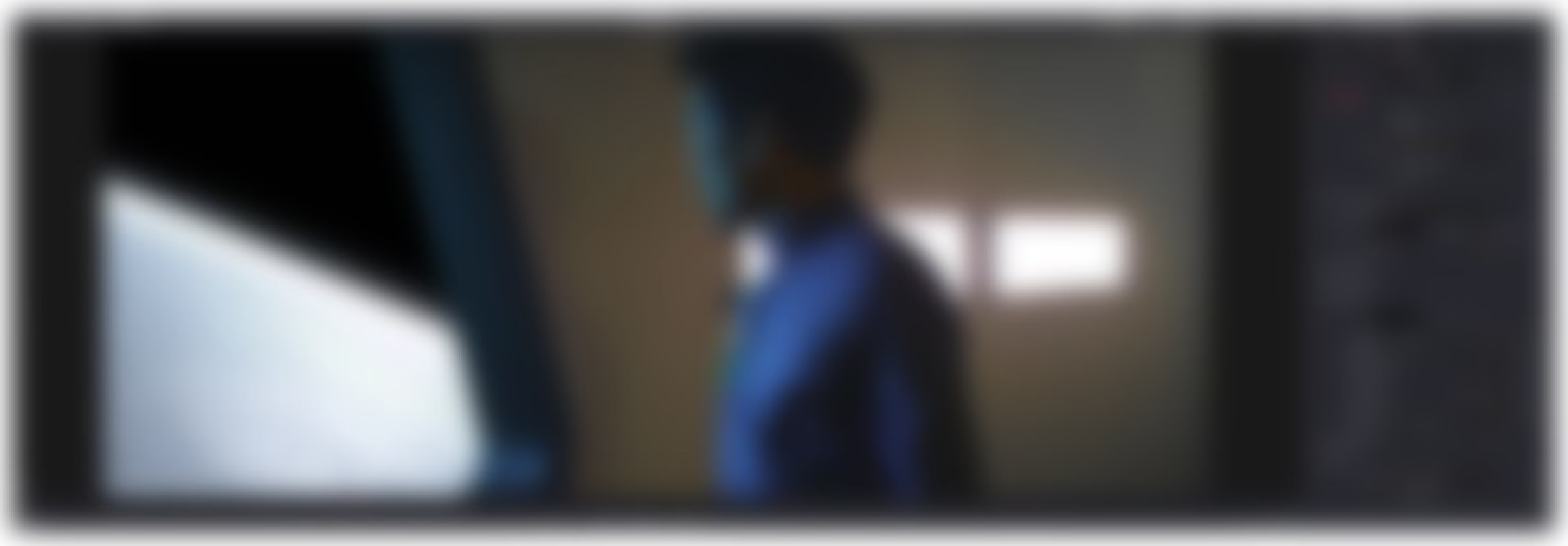
The Matte Finesse controls contain familiar parameters for adjusting the cleanliness of the matte. In this case, you just want to clean up the black areas of the key.

- Increase the Clean Black slider to further refine the key and include the final, wayward portions of the green screen in your selection.



TIP Use your mouse scroll wheel to zoom in and use the middle mouse button to pan around the clip in the timeline viewer to get a better look at the matte refinements you're making. Press Z to fit the entire shot back in the timeline viewer when you're happy with your results.

[illegible] Change the Output menu back to Final Composite to see the results so far.

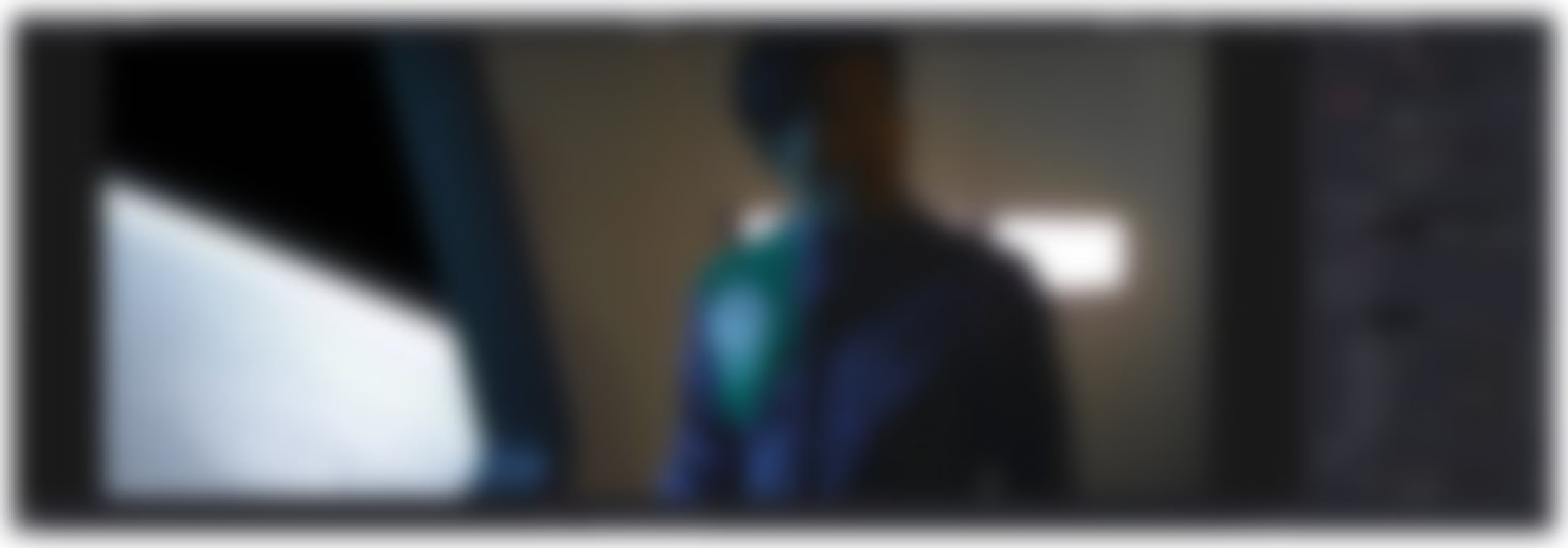


Adjusting Despill

So far, you have achieved an acceptable result, and the director is at least happy that the foreground and background elements work together as planned. However, as always, there are ways that the composite can be improved to help sell the shot further, mainly by removing some of the spill from the green screen.

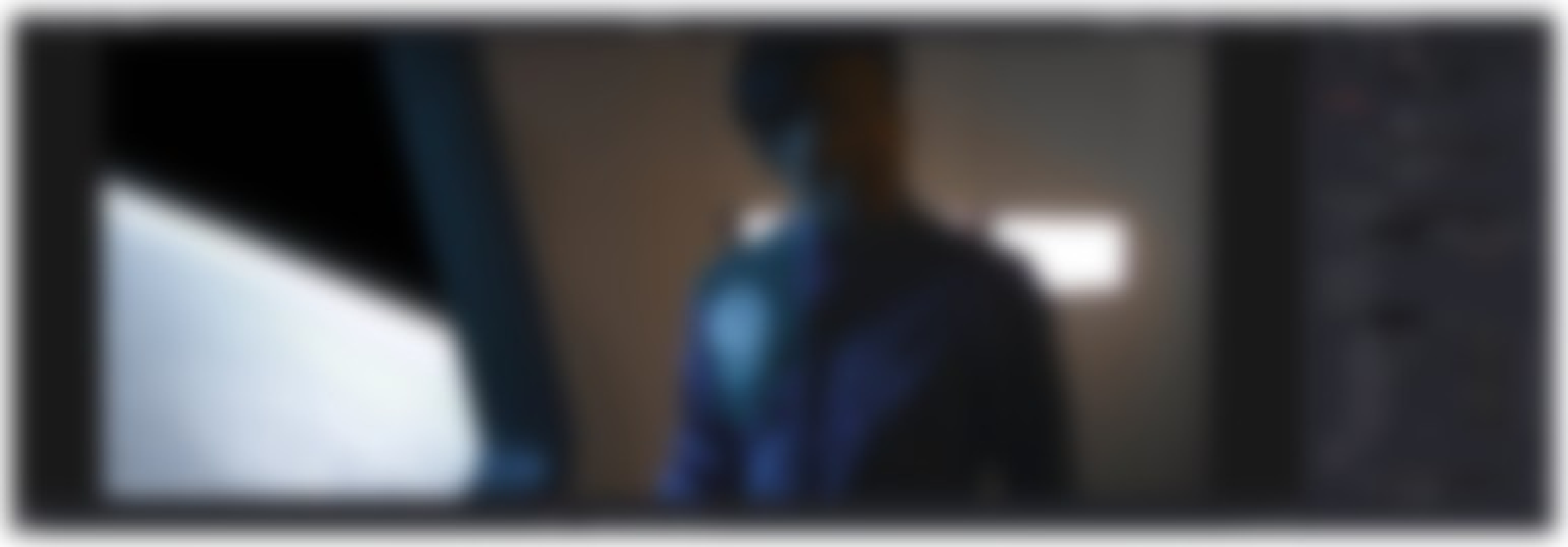
NOTE As most keying filters rely on selecting a range of hue, saturation, and luminance values to create the key, selecting the correct HSL values can be made slightly easier by having the green screen flooded with light when it is filmed. Unfortunately, depending on the size of the shot's proximity to the green screen, this can result in unwanted reflection, or spill, of the green on the foreground elements.

[illegible] Play through the clip on Video 2 until the man turns away from the window.



Look carefully, and you should see that the man's face reflects some of the green. Moreover, the upper right portion of the man's uniform (the USS? logo) also reflects light from the green screen background.

In the Effects inspector, increase the Despill slider in the Keyer Options controls to reduce the amount of spill falling onto the man's face and uniform while retaining the image's original color (you might have to be quite aggressive for this particular example).



Excellent job! You've now seen how easy it is to create a composited shot directly in the edit page using the 3D Keyer filter.

Garbage Mattes

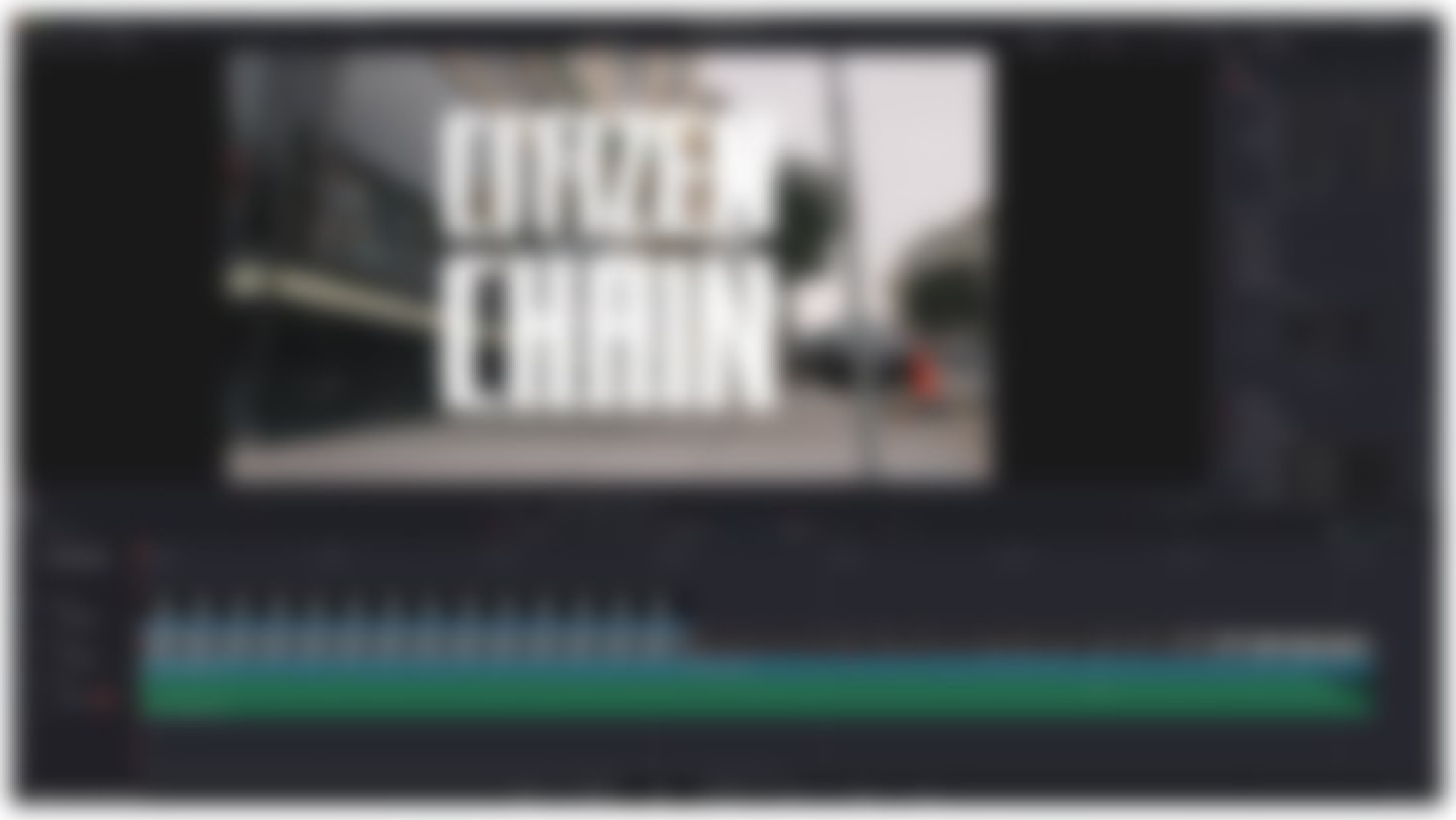
Another common technique used in compositing shots using color keyers like this is to use a garbage matte to exclude portions of the shot. This is especially useful if the green screen doesn't cover the full area within the frame or you have an errant light or microphone in the shot. This shot from Hyperlight you're working on has no requirement for a garbage matte, but the Resolve FX Keyer filters do have options for adding simple rectangular or circular mattes.

Transform FX

Another common compositing task many editors must undertake is adding elements to enhance shots, such as logos on the side of trucks or placing content on screens to make them more relevant to the scene. Earlier in this lesson, you quickly scaled and positioned a clip for a picture-in-picture effect, applying a small change to the yaw parameters for a slight change to the perspective of the clip. However, in many cases, you'll need more control over the clip than the pitch and yaw can easily provide. In those cases, you'll need to use the Transform filter to corner pin the image into place.

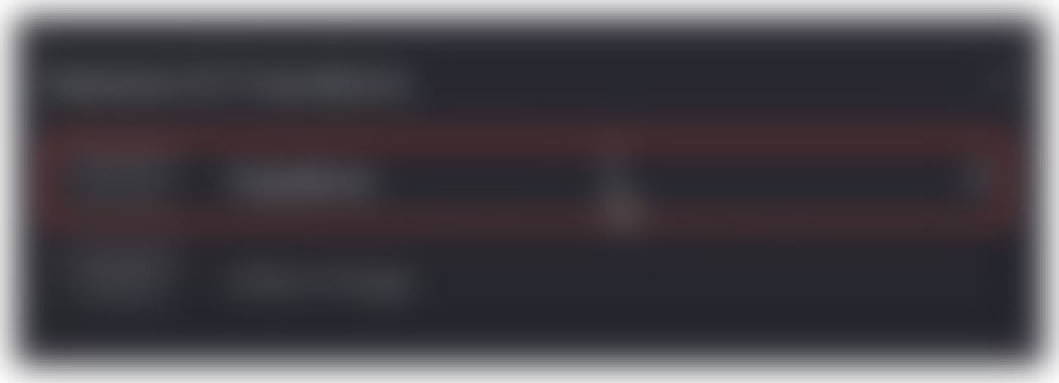
You'll explore this technique by adding a logo to a shop window.

- From the timeline viewer menu, select the **08 Transform** timeline or choose Playback > Next > Timeline.



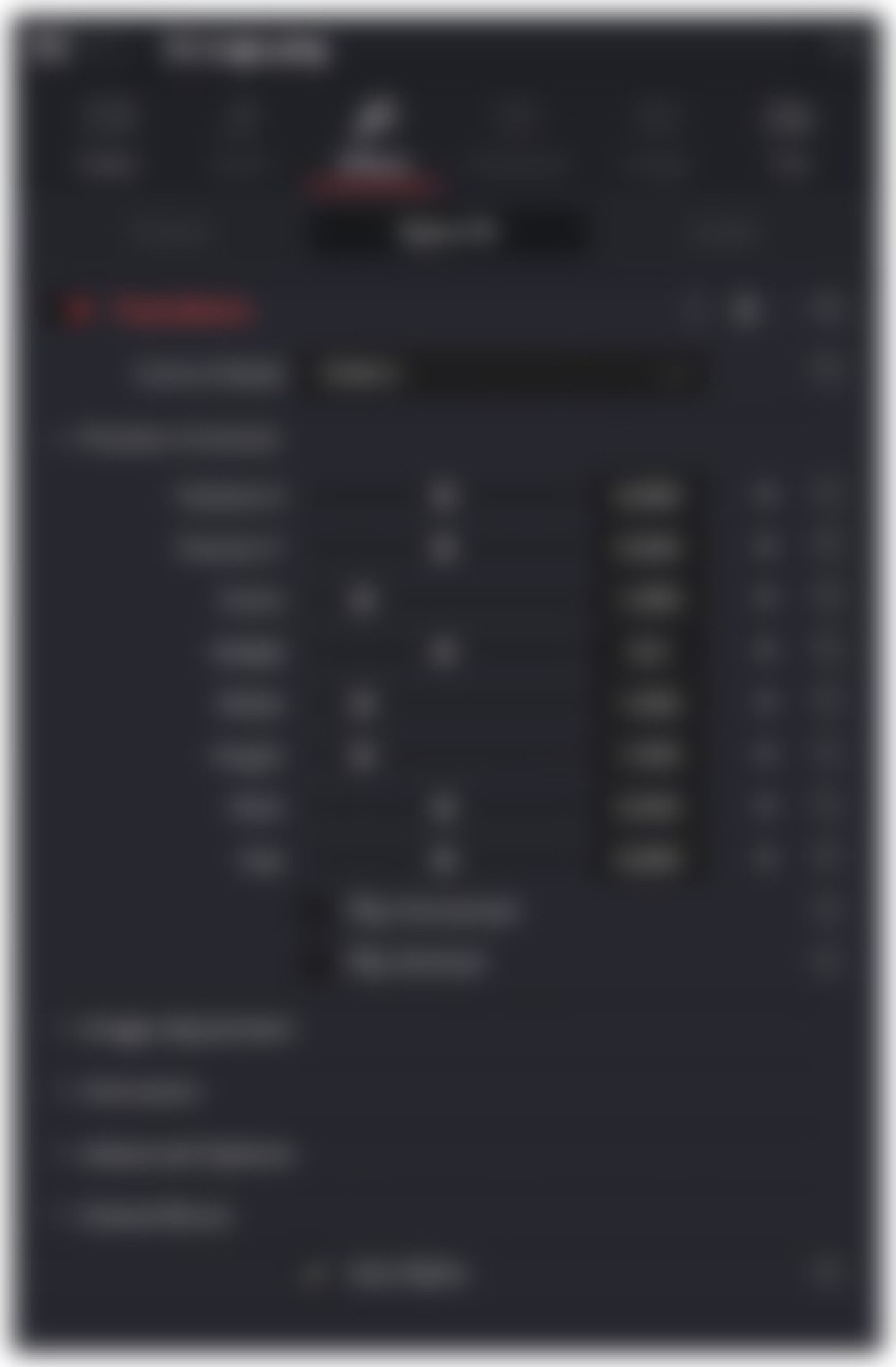
This timeline contains three shots. The first shot has a .png image of the shop's logo added over the top of it.

- In the timeline, select the **01 Logo.png** clip on the Video 2 track, open the Effects Library, and locate the ResolveFX Transform group of filters.



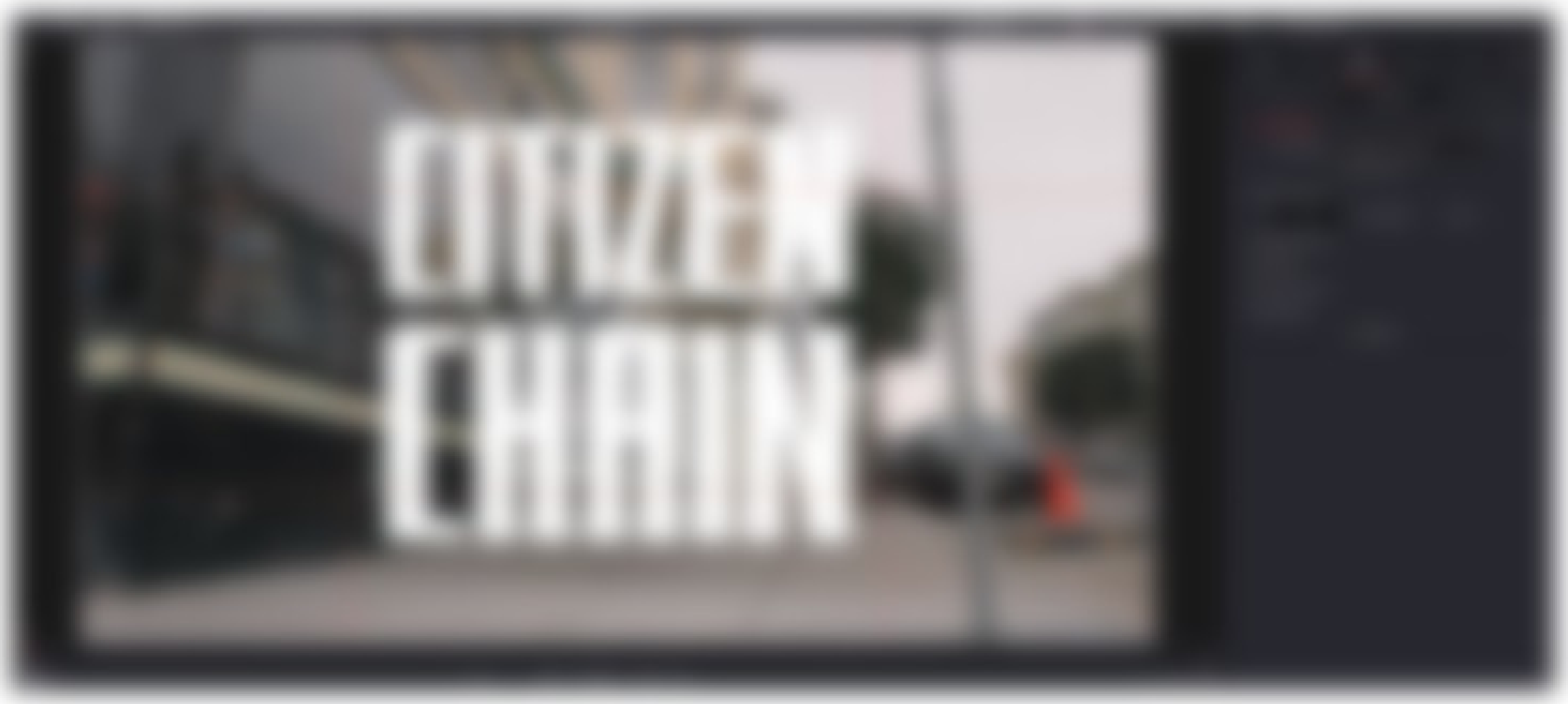
- Double-click the Transform filter to apply it to the [illegible] clip in the timeline and close the Effects library.

  Take a look at the Transform filter's controls in the Effects tab of the Inspector.



At first glance, you'd be forgiven for thinking that the Transform filter has very similar controls to the standard transform parameters available in the Video Inspector of any clip. However, this filter adds some additional controls over the standard transforms by offering advanced options that include motion blur, edge behavior, and cropping controls.

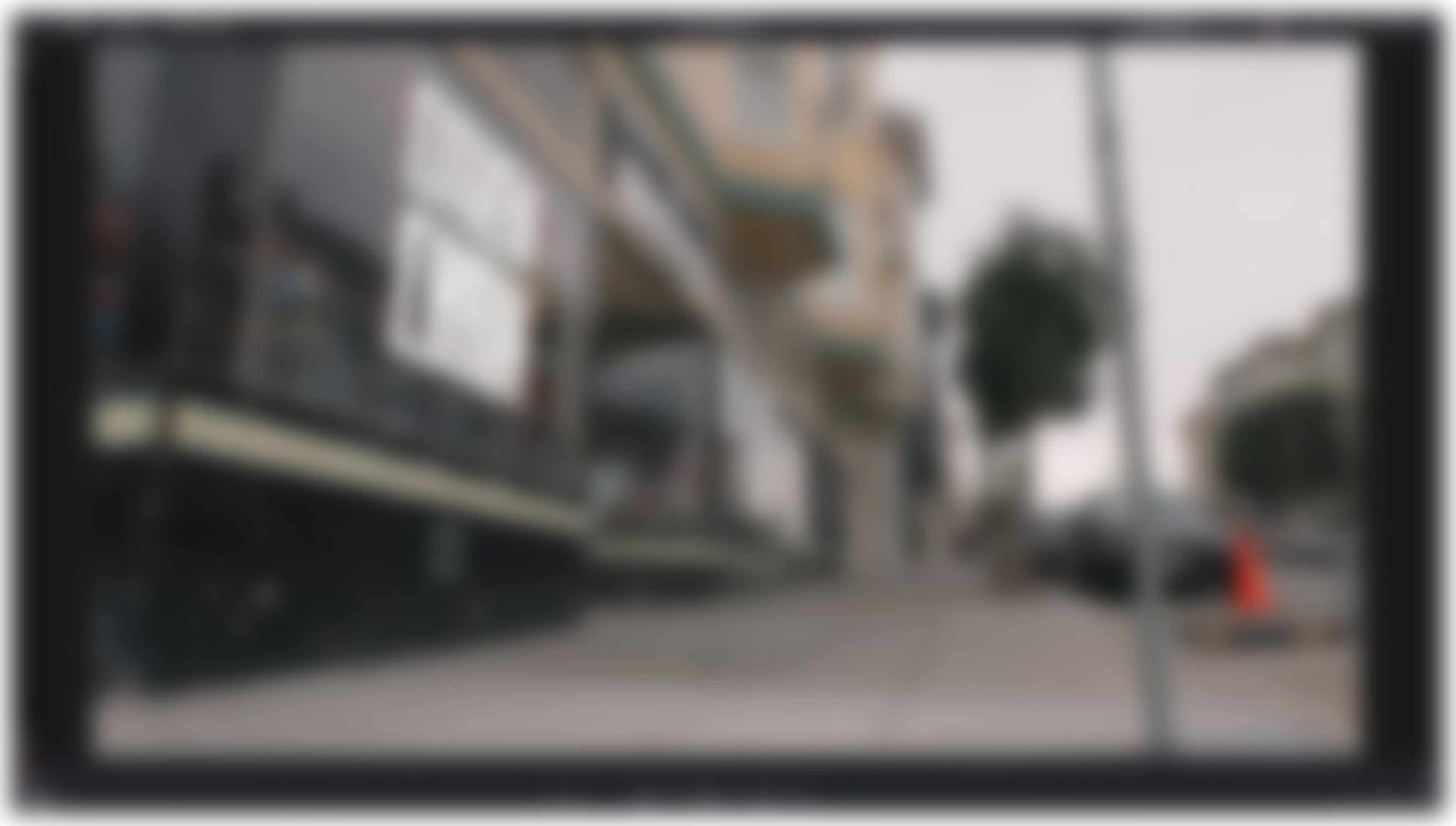
- [illegible]


CITIZEN
CHAIN

[illegible]

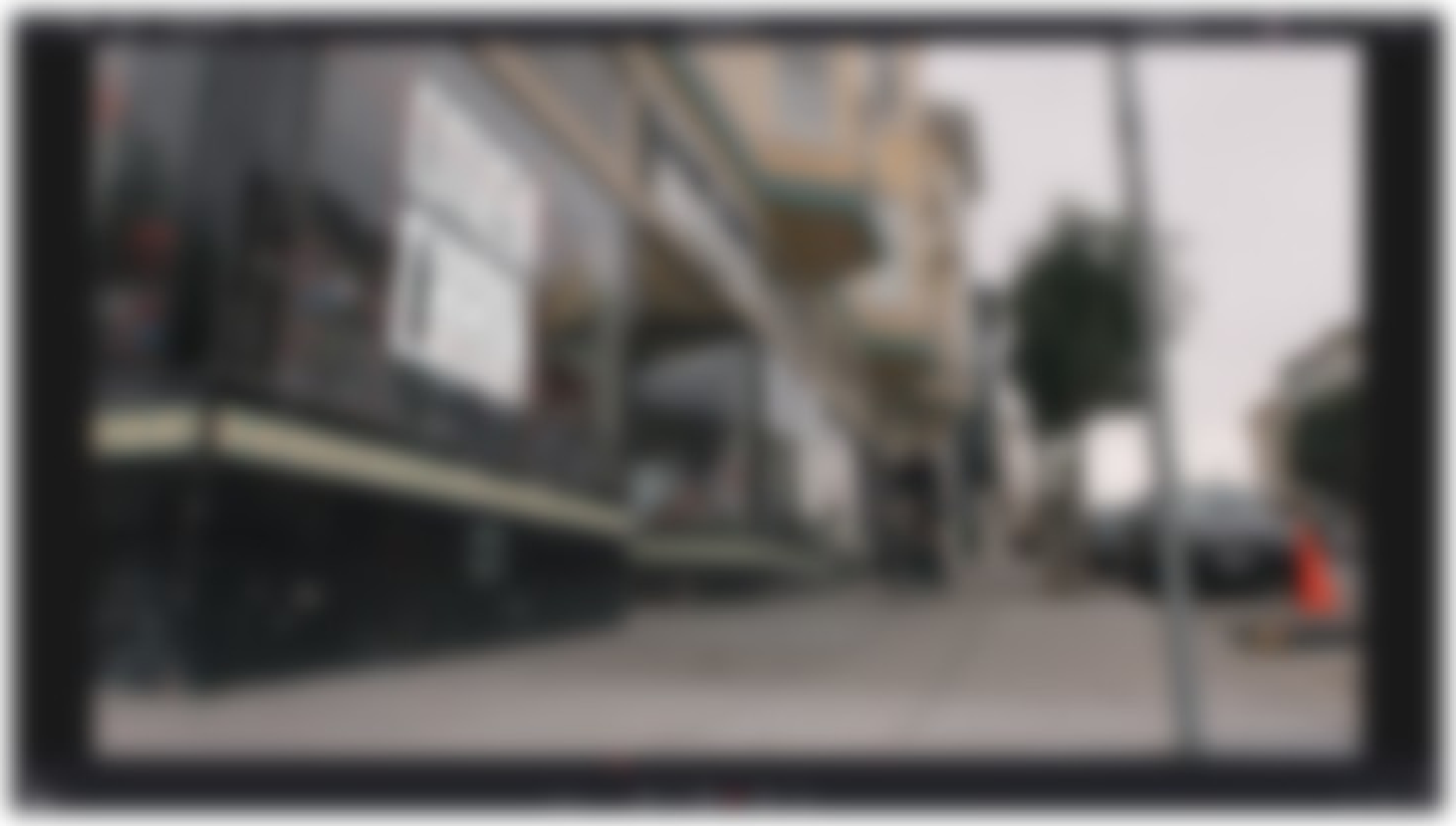
[illegible]

- [illegible]



NOTE You will need to judge where the top-left corner will sit based on how the graphic's edges align with the edges of the window because the top-left corner of the window is not visible in this shot.

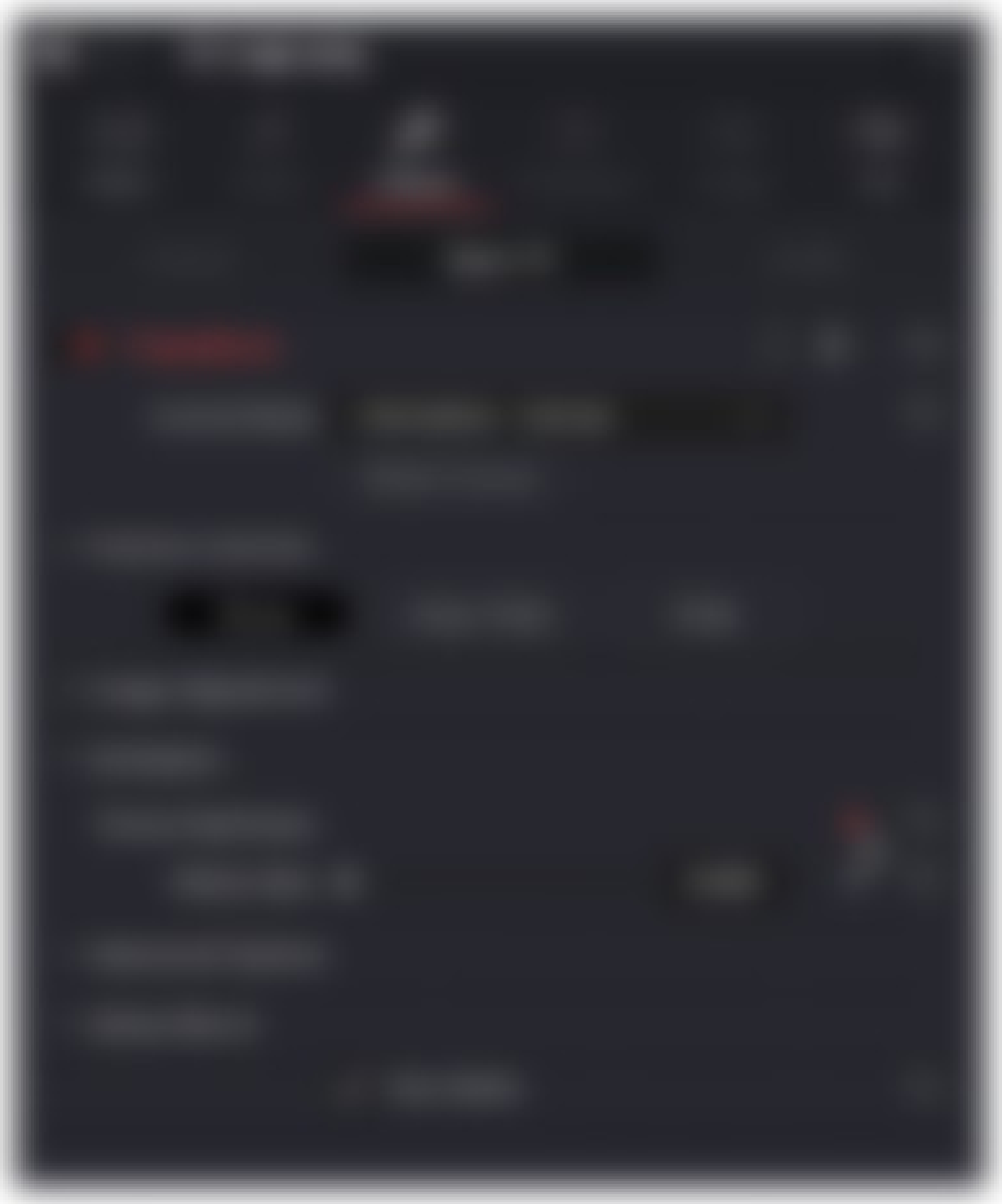
- When you're happy with the way the graphic aligns with the window, start playback.



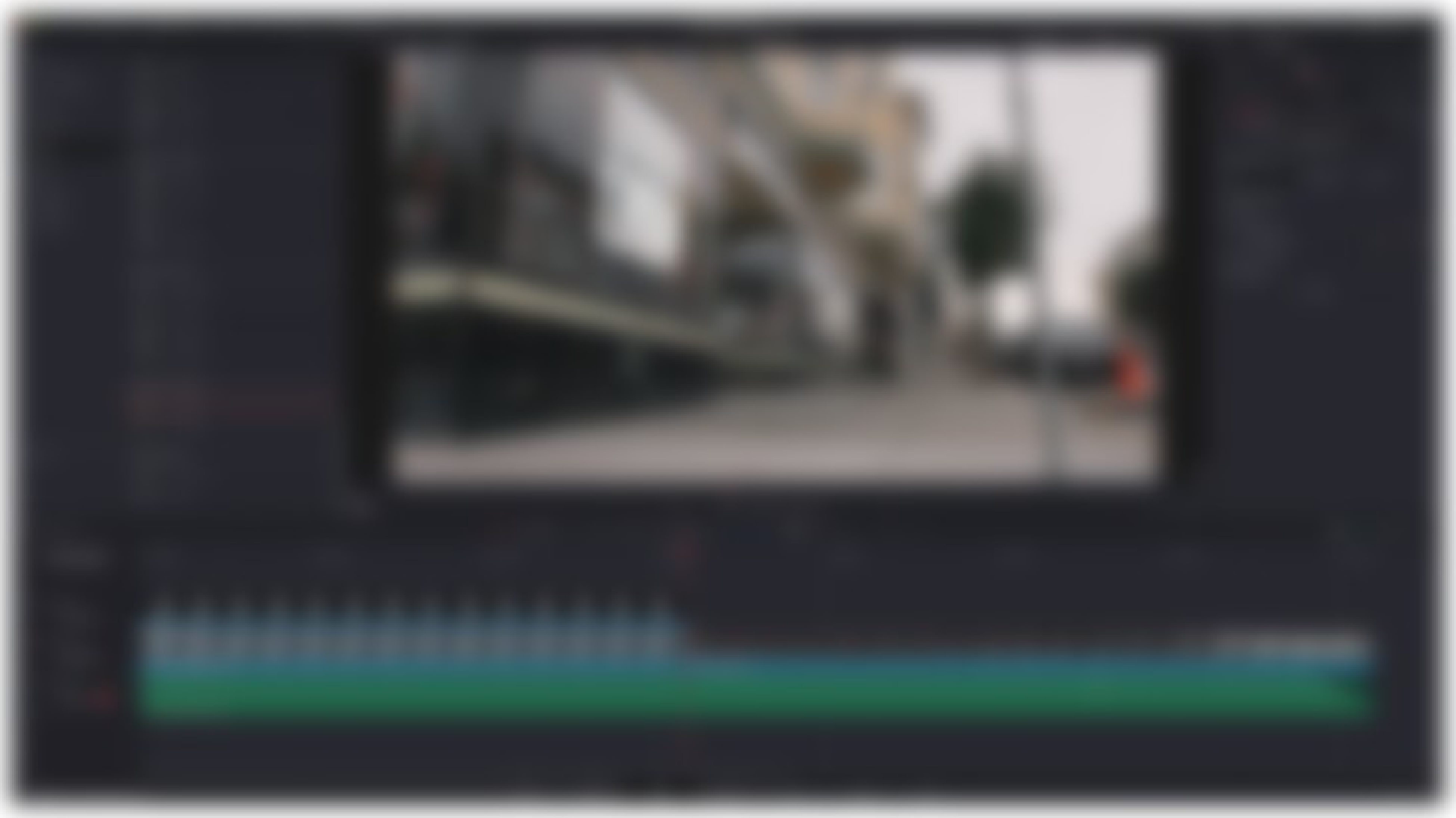
Oh dear. Now you can see that although the graphic was aligned perfectly on the first frame of the shot, because the camera tracks right, the window doesn't stay still within the frame, but the graphic does.

No problem. A couple of keyframes should help.

- Return your playhead to the start of the timeline and, in the Effects Inspector, click the disclosure arrow to open the Animation controls, and then click the keyframe button (diamond) for the Corner Keyframes control, which turns red to indicate that a keyframe has been applied at the start of the clip.



- Choose Playback > Go To > Last Frame or press ' (apostrophe) to move your playhead to the last frame of the [illegible] clip in the timeline and adjust the corner areas of the onscreen controls to align the graphic with the window once more. Another keyframe is automatically added to the clip at the playhead location.

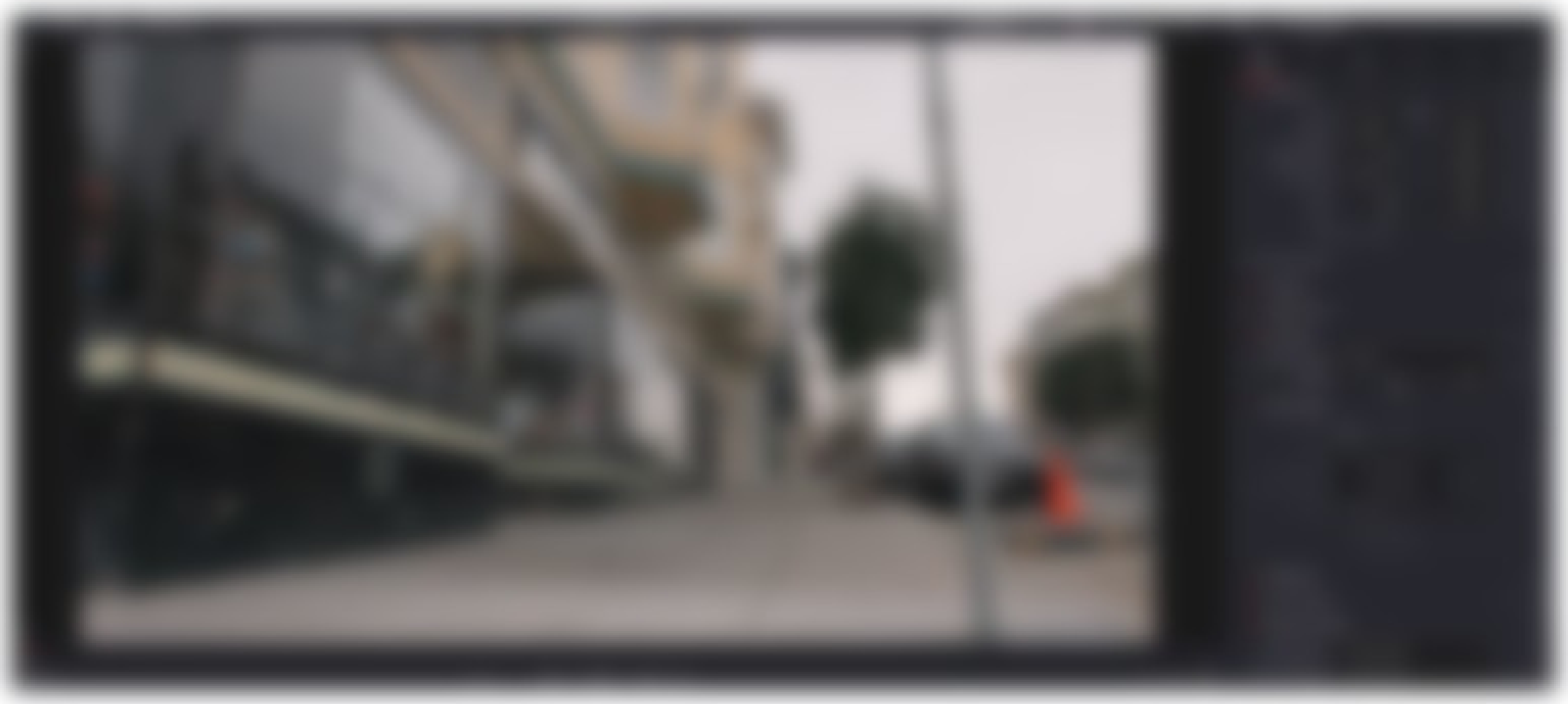


Press Shift-` (grave accent) to disable the timeline viewer's onscreen controls and review the results of the keyframing.

Perfect! The graphic now looks like it's part of the shop's window display. The keyframes allow the graphic to follow the movement of the camera. Thankfully, the camera movement is smooth and consistent. If it weren't, then more keyframes would have been needed.

One final touch will really help sell this effect. You can change the composite mode of the graphic to better integrate it with the background clip.

Click the Video tab in the Inspector for the 01 logo.png clip and, in the Composite controls, change the Composite Mode menu to Overlay and reduce the Opacity slider to around 50.00.



The Overlay composite mode increases the contrast of the underlying video clip where the graphic is the brightest; there is no change to the contrast of the clip where the .png image is transparent; and the Opacity adjustment reduces the intensity of the graphic to further integrate it with the video clip.

Congratulations! You have now learned how to distort and keyframe a clip to composite onto other shots. While more comprehensive tools for this sort of task, including trackers, are available in the Fusion and color pages (both of which are outside the scope of this book), knowing how to accomplish a simple version in the edit page is a useful technique for any editor to have up their sleeve.

NOTE The final control mode for the Transform filter is Interactive – Pins. Adjusting the image in this mode is done by manually placing control points, called pins, in the timeline viewer. Adding one pin only gives you position control. At least two points are required for scaling and rotation. Dragging one of the pins scales or rotates the image around the other pin. Using three pins, you can create perspective distortions by dragging any one of the pins. You can add up to four pins for unique corner-pinning distortions that don't rely on the regions specified by the Interactive – Canvas mode.

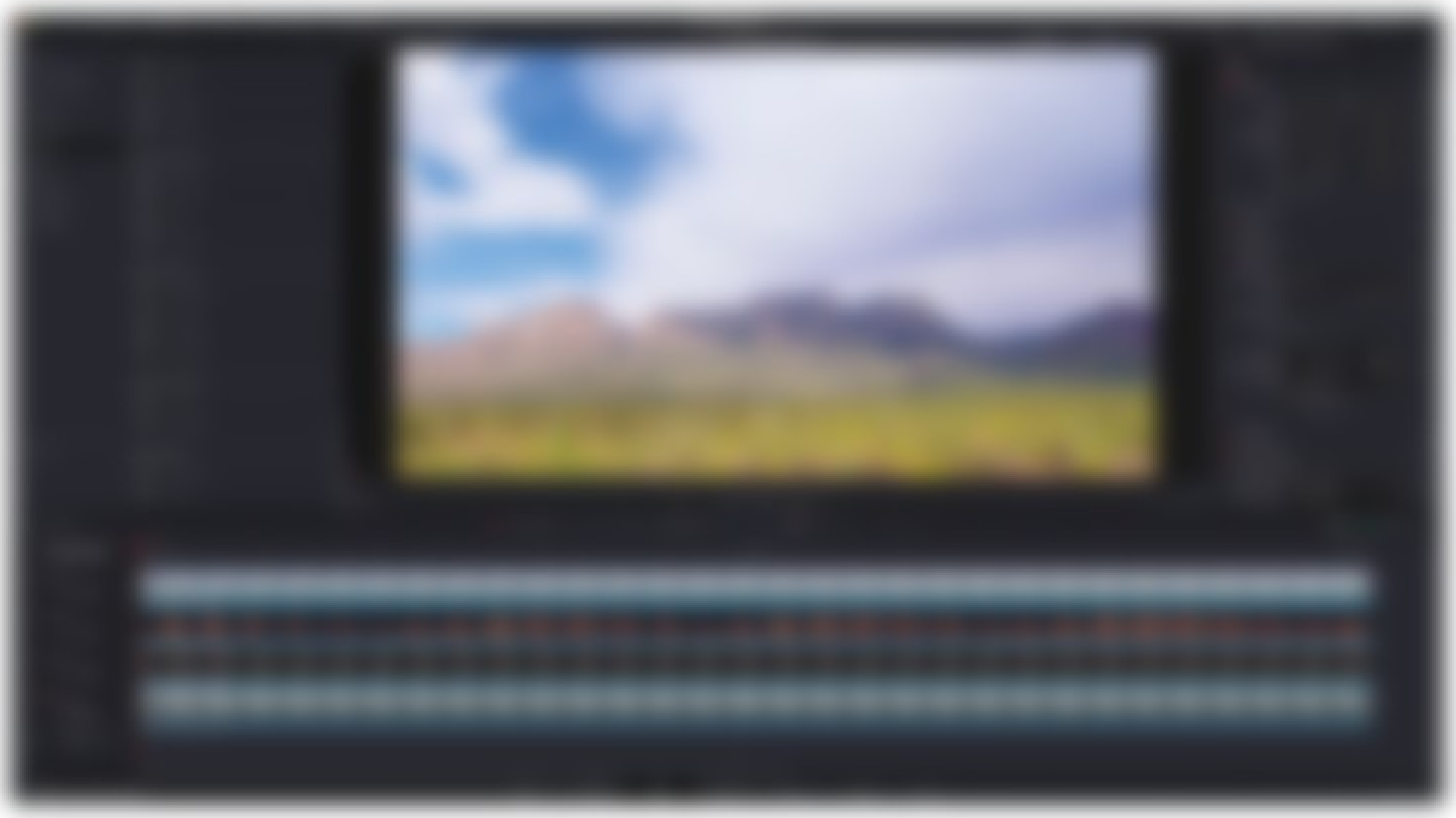
Video Collage

The final Resolve FX you will work with in this lesson is the Video Collage filter. Previously, you saw how the Transform parameters in the Video Inspector are used to adjust the Zoom and Position of a clip to create a composited effect. The Video Collage filter is designed to make it easier to create uniform, grid-based, picture-in-pictures, and other split-screen layouts. It is ideal for quickly creating a "video wall" effect, which can require the scaling and positioning of many clips.

The Video Collage filter works in two main ways. The default is Create Background, which you'll explore first.

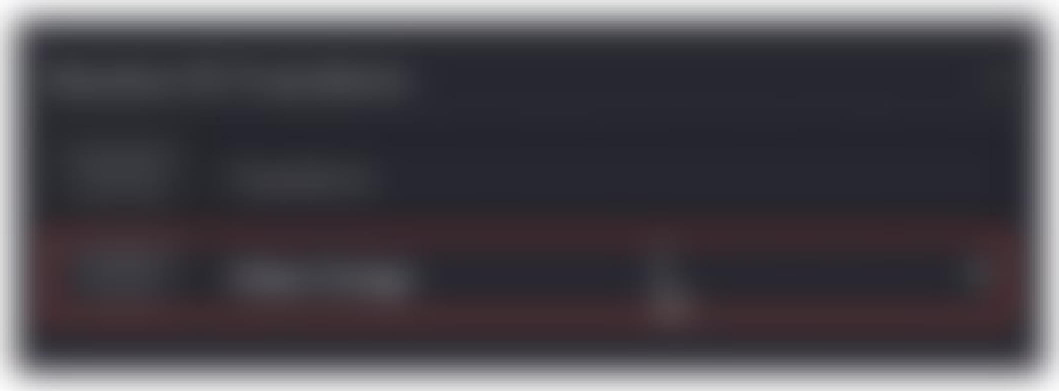
1 From the timeline viewer menu, select the 08 Video Collage Background timeline, or choose Playback > Next > Timeline.

The timeline consists of several video clips stacked on top of each other on different tracks.

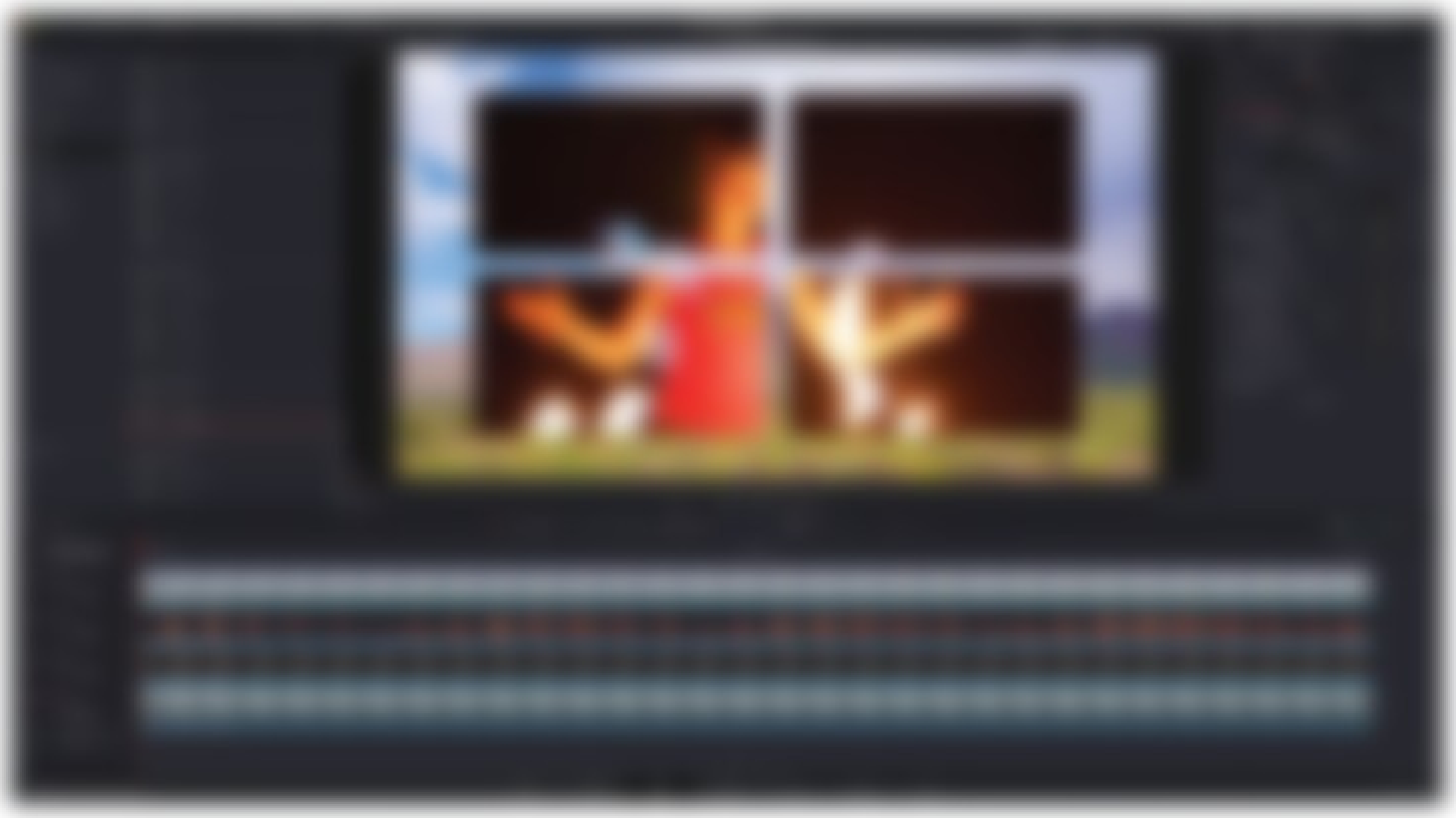


Typically, to create a picture in picture effect, all the clips on the upper video tracks would need to be scaled and positioned accordingly, similar to how the composite in the first timeline of this lesson was accomplished. However, the Video Collage filter uses the topmost clip as the background, using the clip as a "frame" and creating holes in this frame to reveal the clips on the lower tracks—"cookie cutter" style.

- In the Effects library, locate the Video Collage filter from the Resolve FX Transform group.



- Double-click the Video Collage filter to apply it to the clip on Video 4.



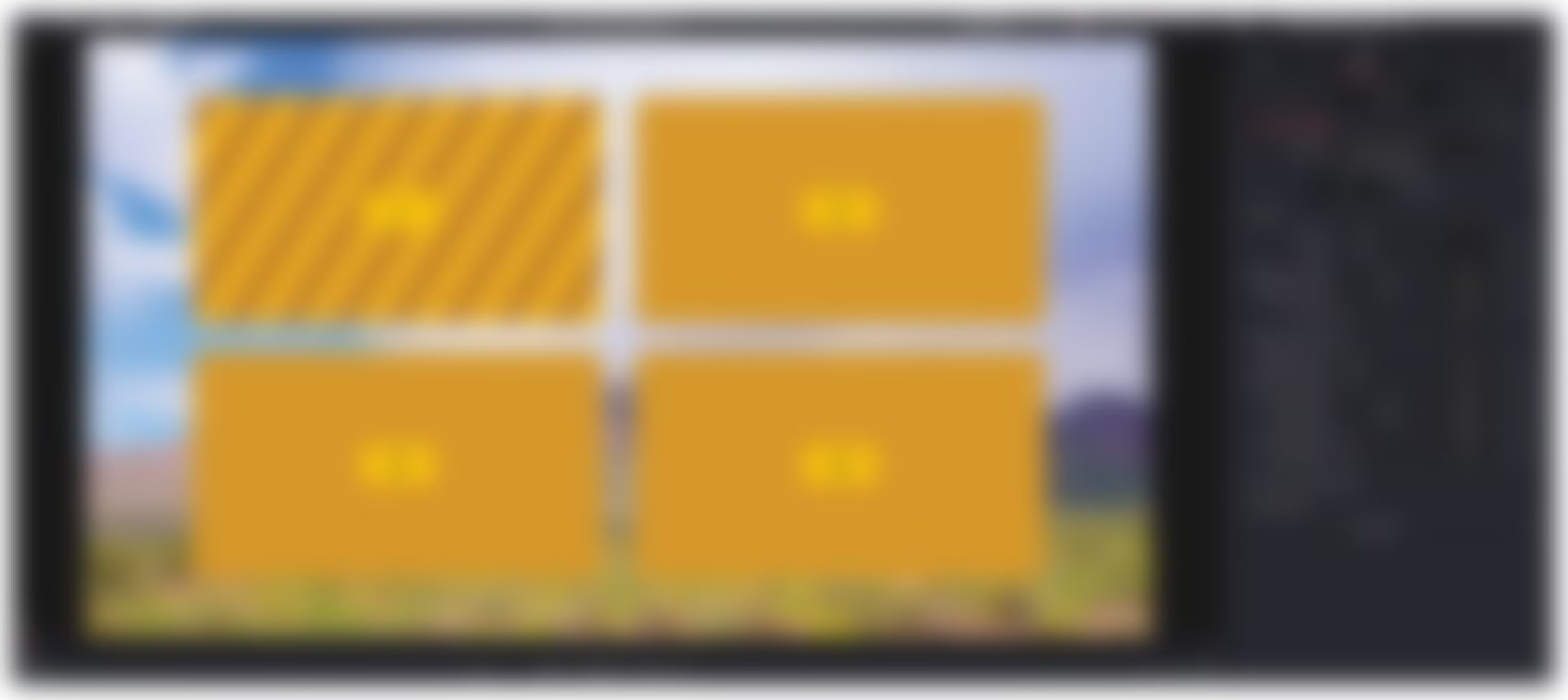
The clip on Video 3 is now displayed across four boxes. These four boxes are the "holes" created in the Video 4 clip by the Video Collage filter.

Setting the Layout

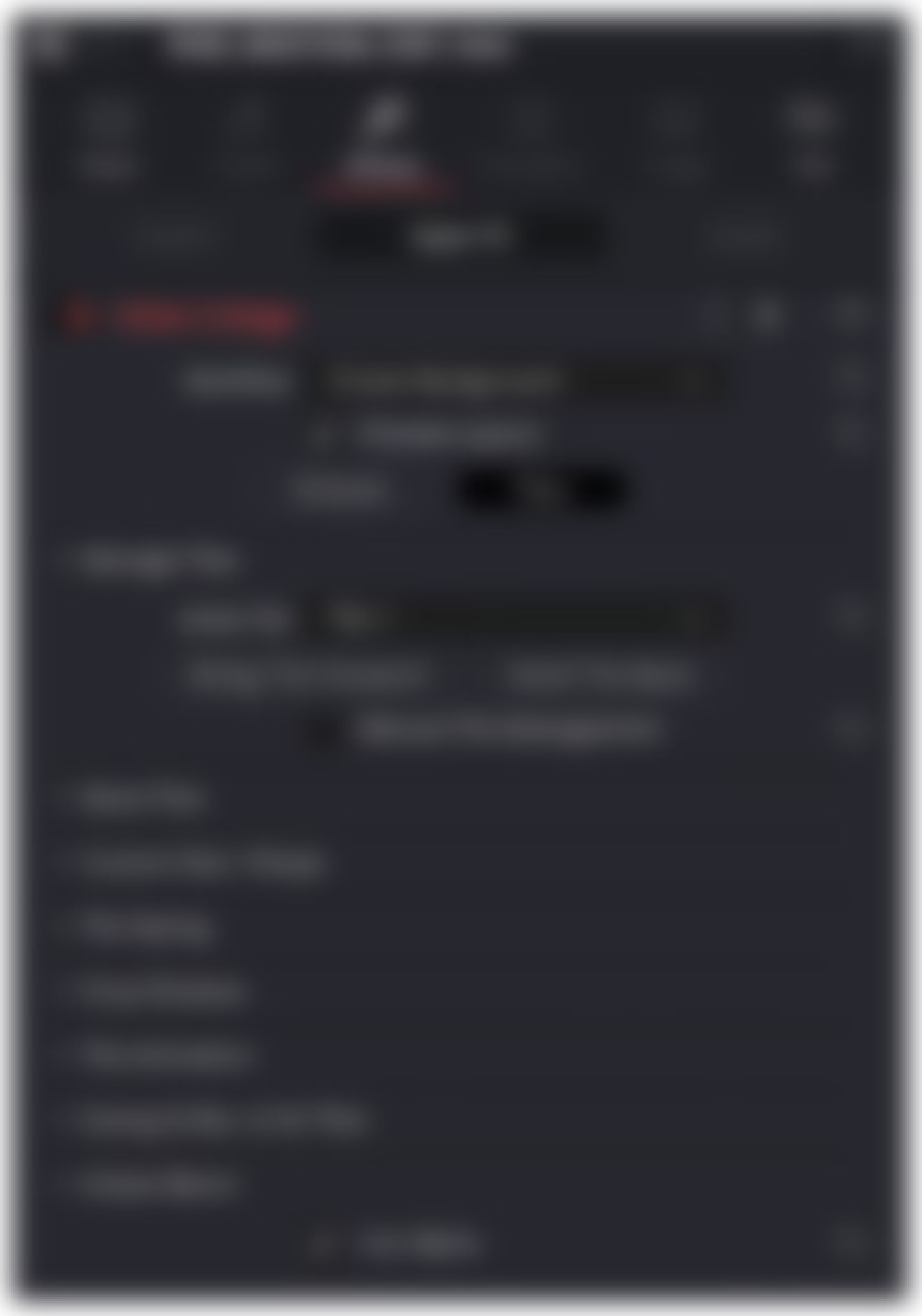
The first step in configuring the Video Collage filter is to arrange the "holes" (referred to as tiles) using the controls in the Inspector.

- In the Effects Inspector, click the Preview Layout checkbox in the Video Collage controls.

Each of the tiles is now clearly highlighted and denoted by a number. The actual number of tiles is dictated by the Columns and Rows controls in the Inspector. The tile with the shaded lines indicates the currently selected tile.

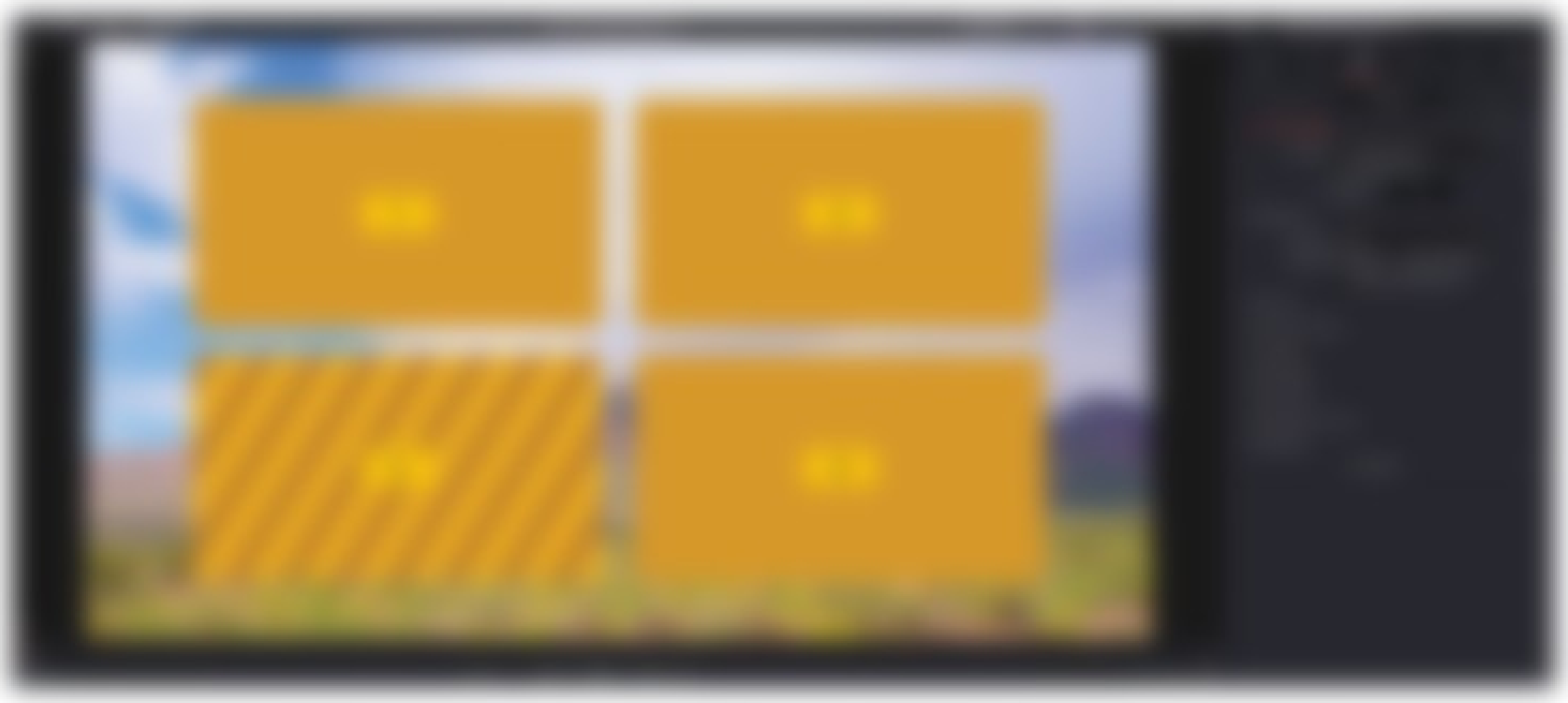


- By default, the number of Columns is set to 2, and the number of Rows is also set to 2. This is the correct basic layout for this exercise.
- In the Inspector, click the Tiles button to switch to the Tiles controls.

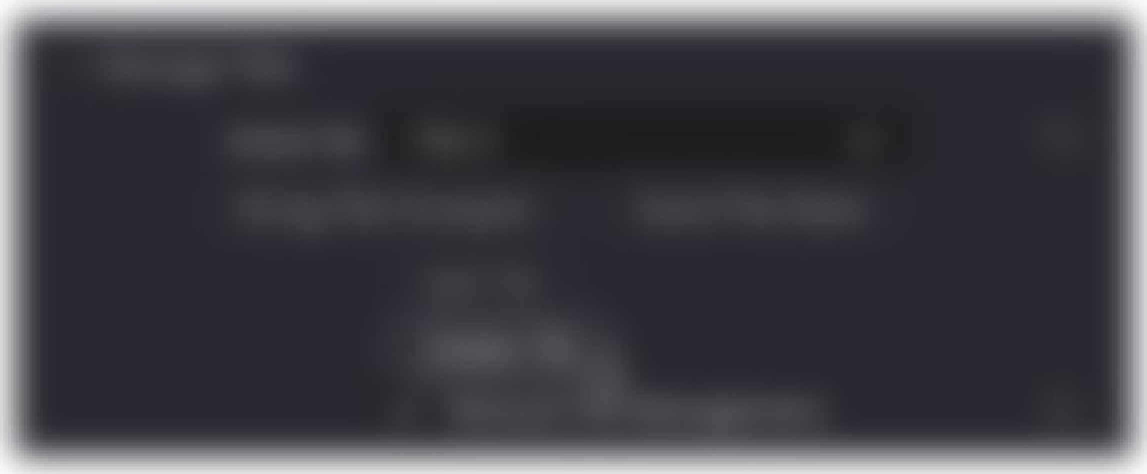


These controls allow you to customize the tiles either as a group or individually. Since you won't need Tile 3, you might as well remove it from the layout.

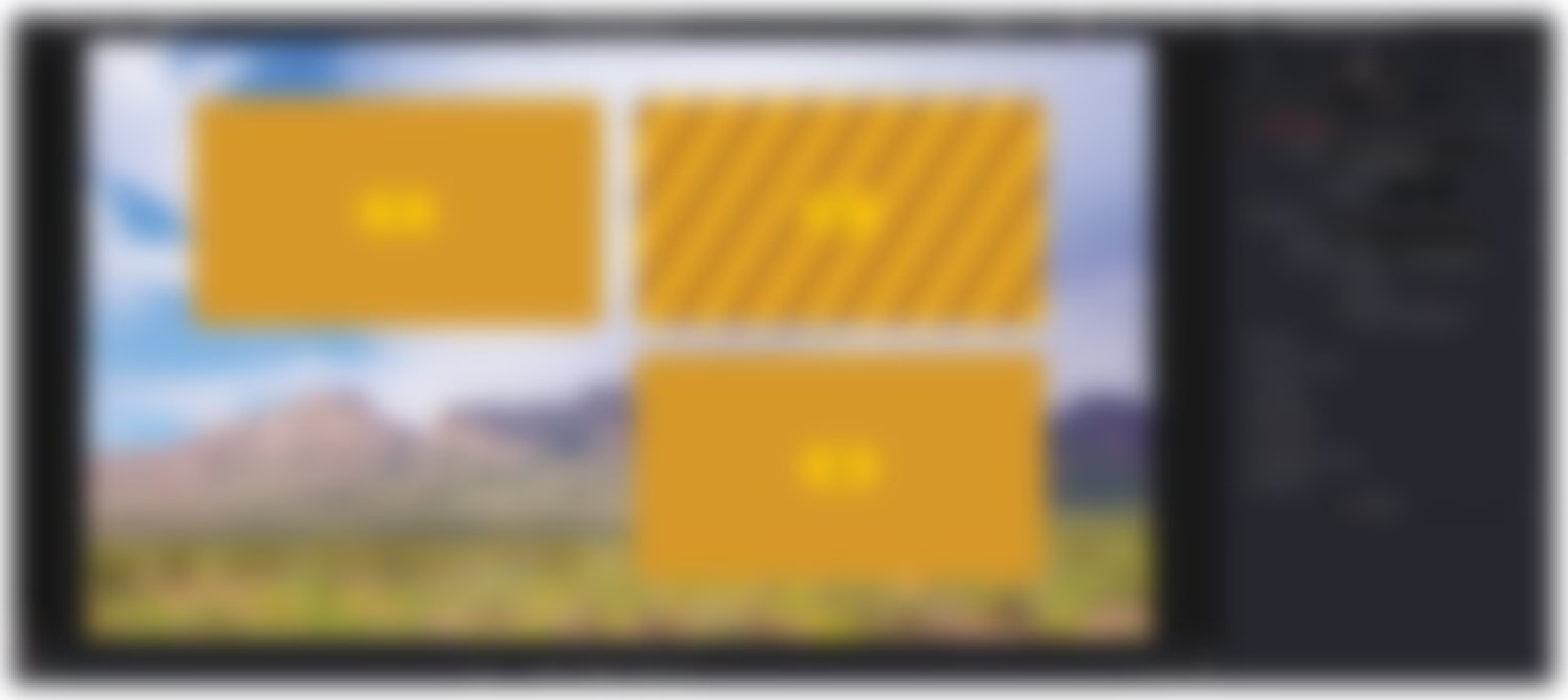
- In the Active Tile dropdown menu, choose Tile 3 to make it the active tile, as indicated by the shaded lines in the layout.



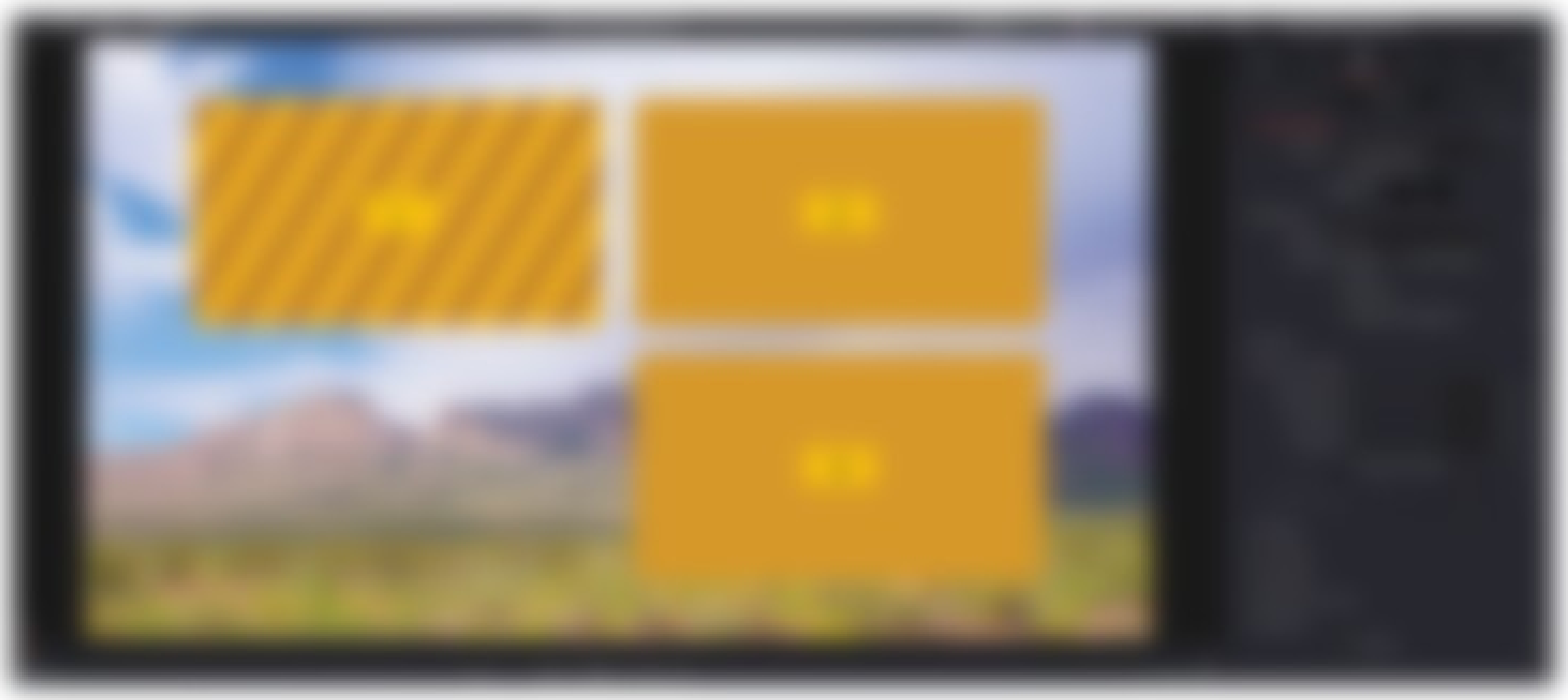
- Click the Manual Tile Management checkbox and click Delete Tile to remove Tile 3 from the layout completely.



With no Tile 3, Tile 2 now becomes the currently active tile by default.

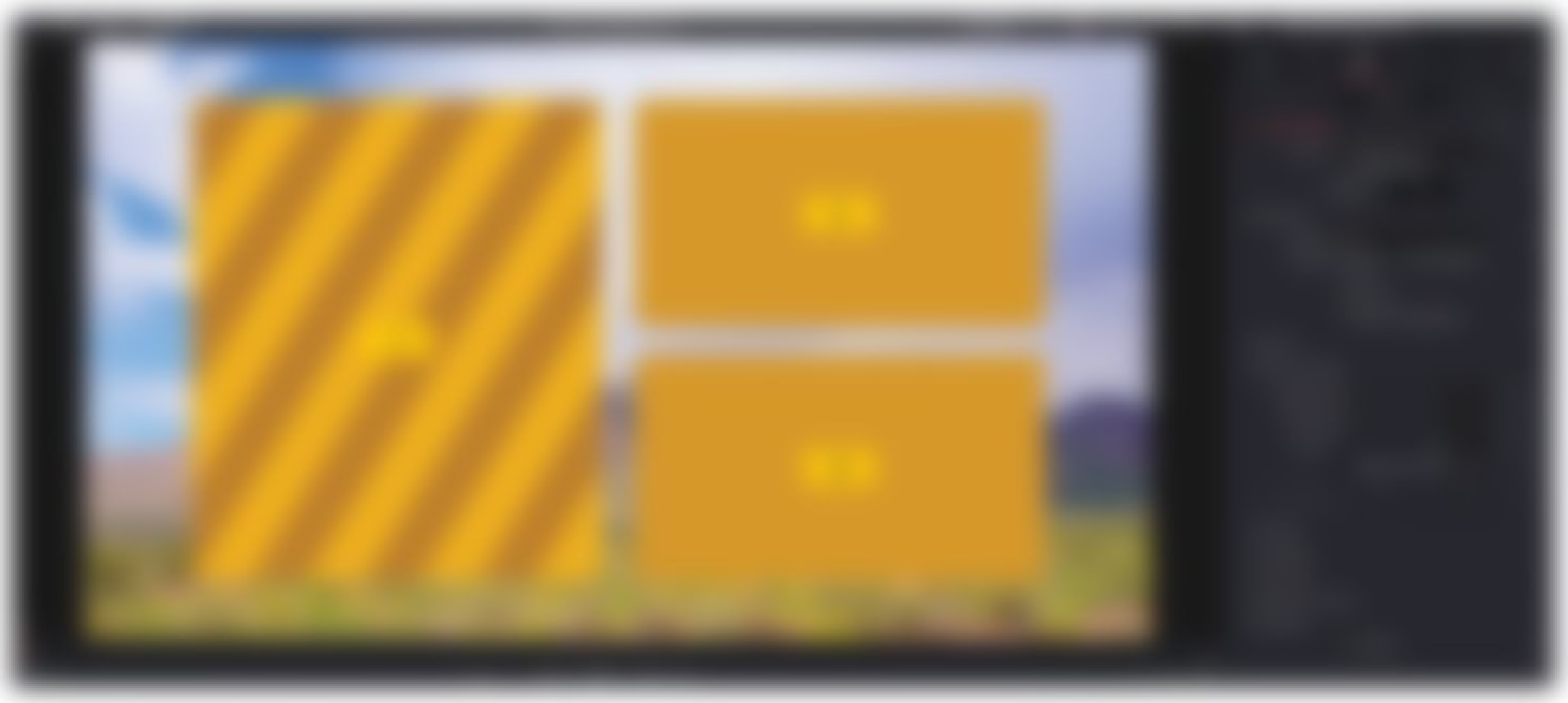


- From the Active Tile menu, choose Tile 1 to make it the currently active tile.
- Click the Custom Start/Finish disclosure arrow to reveal the controls.



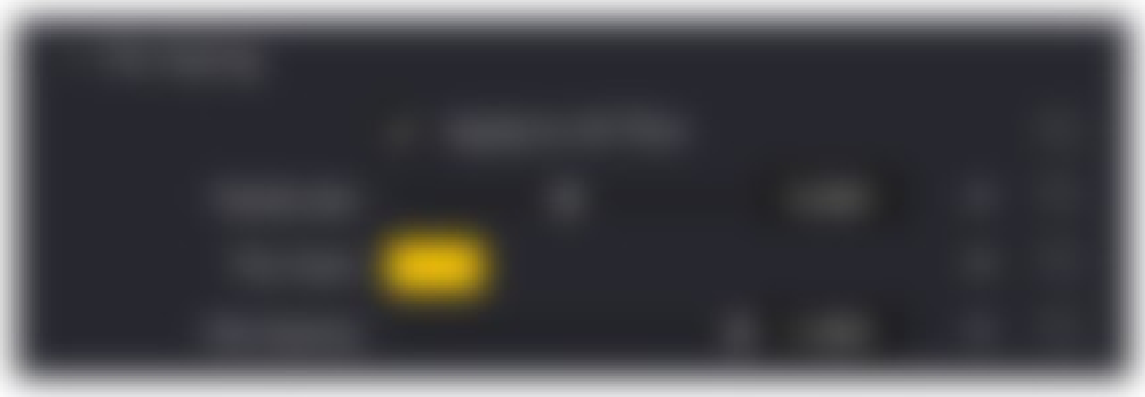
Currently, Tile 1 is occupying only one part of the grid: Column 1 and Row 1.

- Change the End Row value to 2 to expand Tile 1 into the space formerly occupied by the deleted Tile 3.



With the layout of the tiles now set, you will customize their look all together.

- Click the disclosure arrow next to Tile Styling to reveal the controls.



[illegible] Increase the Tile Border to about 0.005 to add a consistent border around all the tiles.

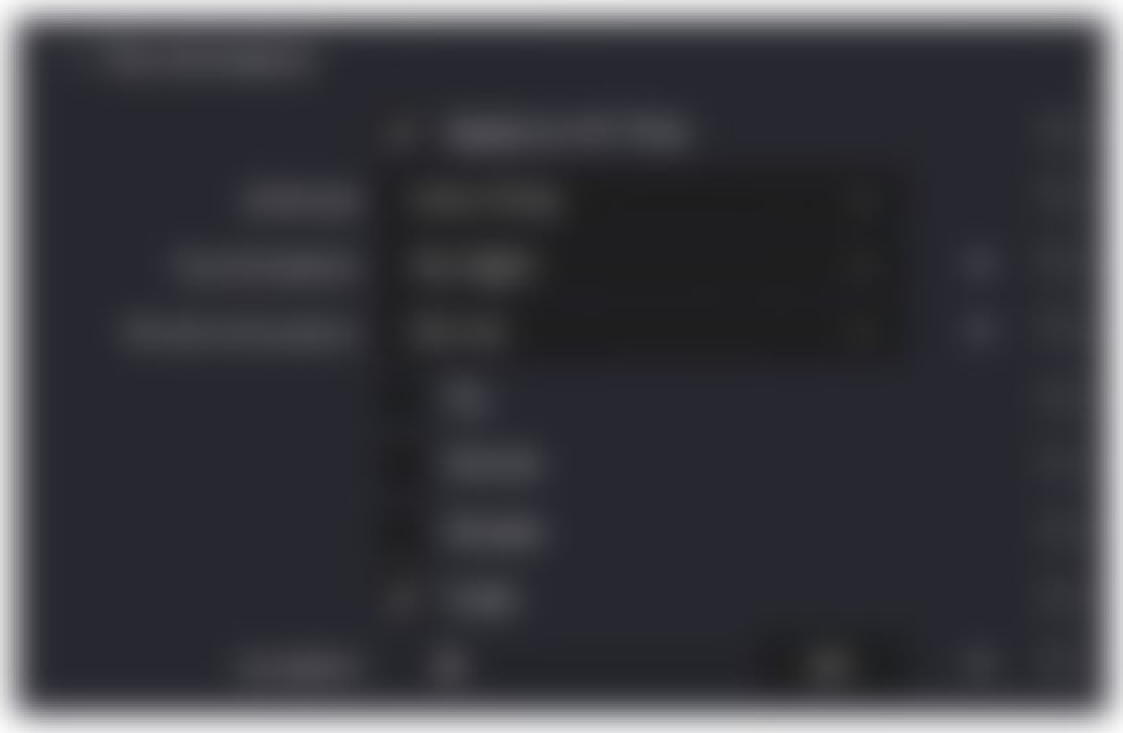
TIP You can uncheck the Apply To All Tiles checkbox to further customize the border settings for the currently selected tile, if required.

[illegible] Click the disclosure arrow for the Drop Shadow controls and increase the Strength value to around 0.50, the Drop Angle to about 90.0, the Drop Distance to about 0.01, and the Blur to about 0.50 to customize the drop shadow around each tile.

Finally, one of the more powerful aspects of the Video Collage filter is the ability to create animated intros and outros quickly and easily for each tile. These animations can be either manually keyframed or automatically generated over a customizable duration. There are four types of animations to choose from: Fade, Fly, Shrink, and Rotate. In Create Background mode, however, only the holes created by the tiles are animated, rather than their content, so Fade or Shrink are good choices here.

[illegible] Click the disclosure arrow to reveal the Tile Animation controls.

[illegible] Change the Animate menu to Intro Only, uncheck the Shrink checkbox, select the Fade checkbox, and change the Duration slider to 24 to create a 1 second fade for the tiles (this timeline is set to 24 fps).



[illegible] Play the timeline to preview the effect so far, including the fade in uniformly applied to all tiles.

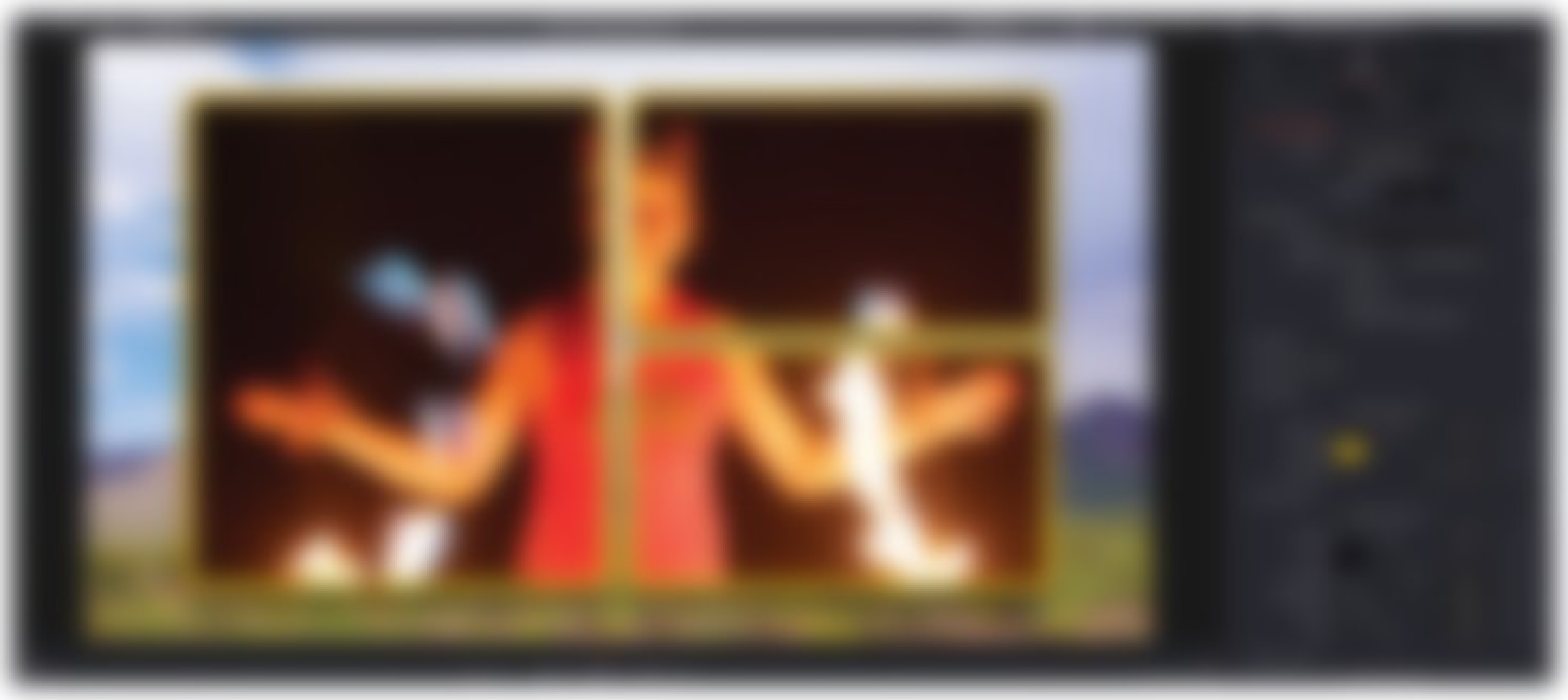
With the parameters of the Video Collage effect set, it's time to fill the tiles.

Resizing the Content

Now that you have used the Preview Layout to set up the grid, look, and animation of the Video Collage effect, it's time to turn off the Preview mode and scale the underlying clips to fill the holes in the background clip.

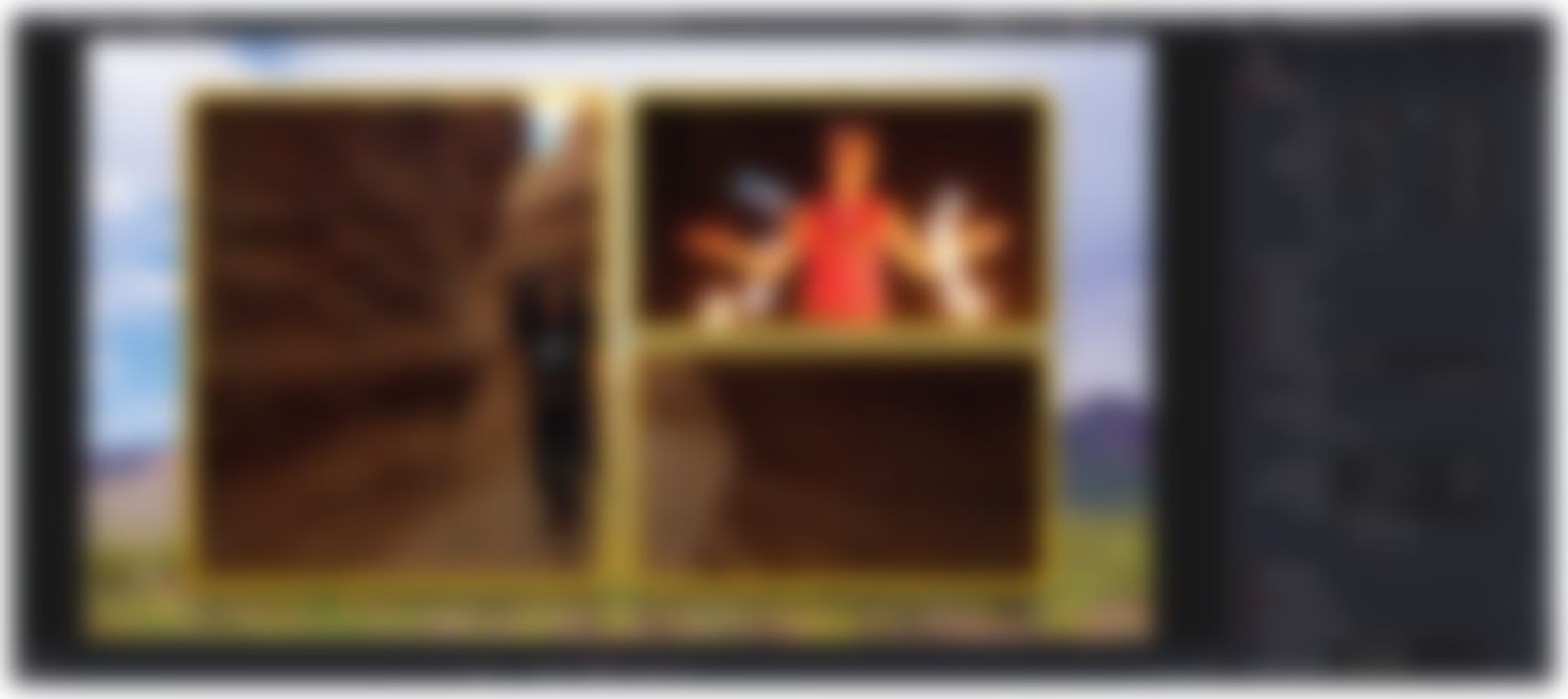
1 Position your playhead about halfway through the timeline (at about 3:00) so that you can clearly see the three tiles after their 24-frame fade in.

2 At the top of the Video Collage controls, uncheck Preview Layout.

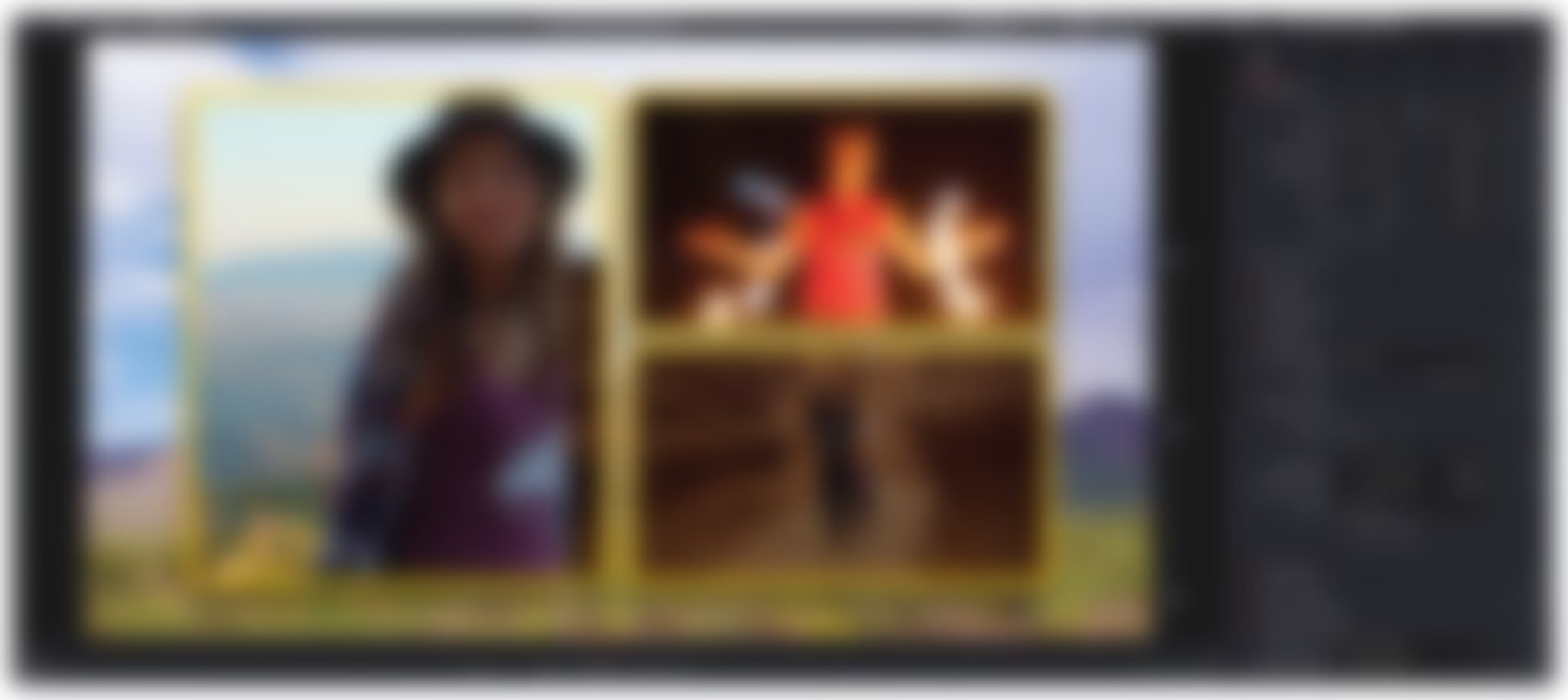


Once again, the clip on Video 3 becomes visible through the holes created by each tile. You may need to scale the clip to fit the hole created by Tile 2.

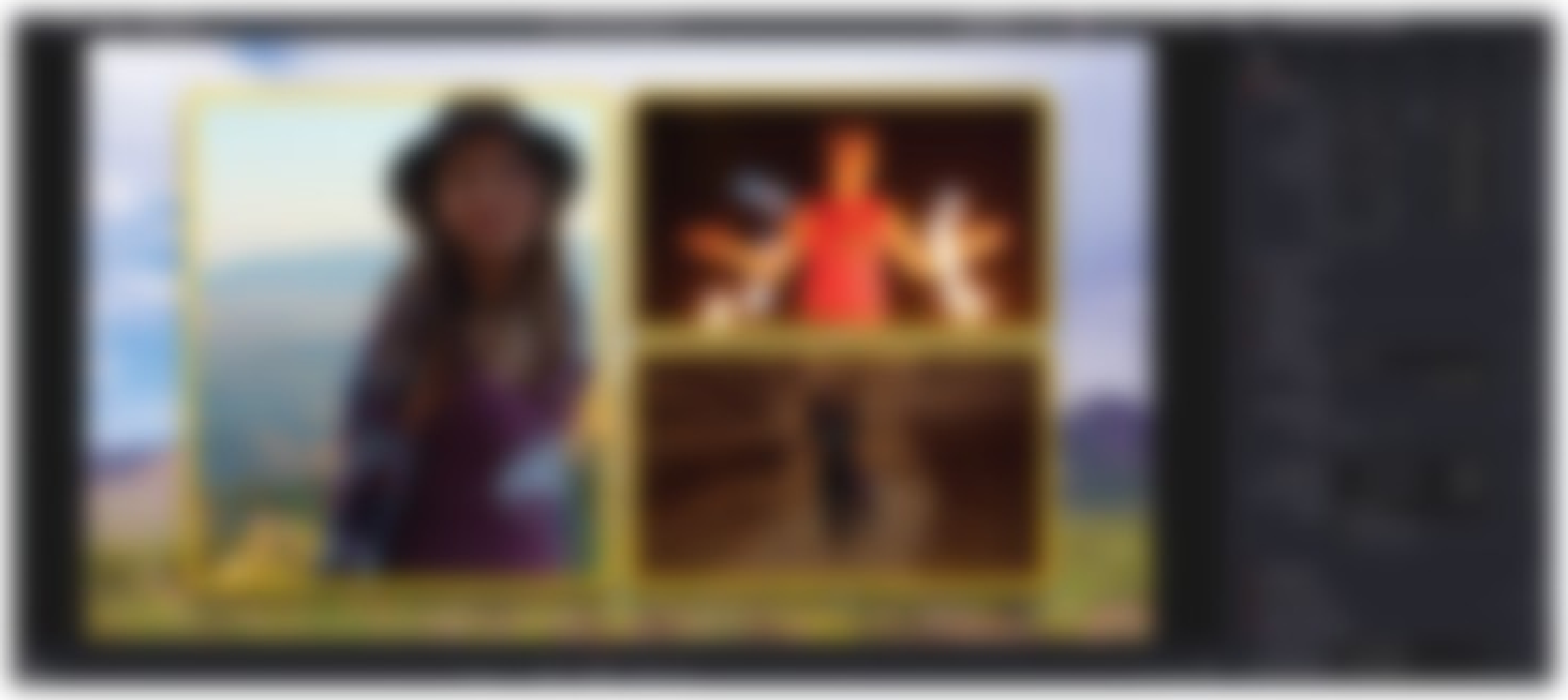
- Select the clip on Video 3 and choose View > Viewer Overlay > Transform or click the timeline viewer's onscreen controls menu, and choose Transform.
- Use the onscreen controls to adjust the zoom and position of the clip on Video 3 so it fits in the hole created by Tile 2.



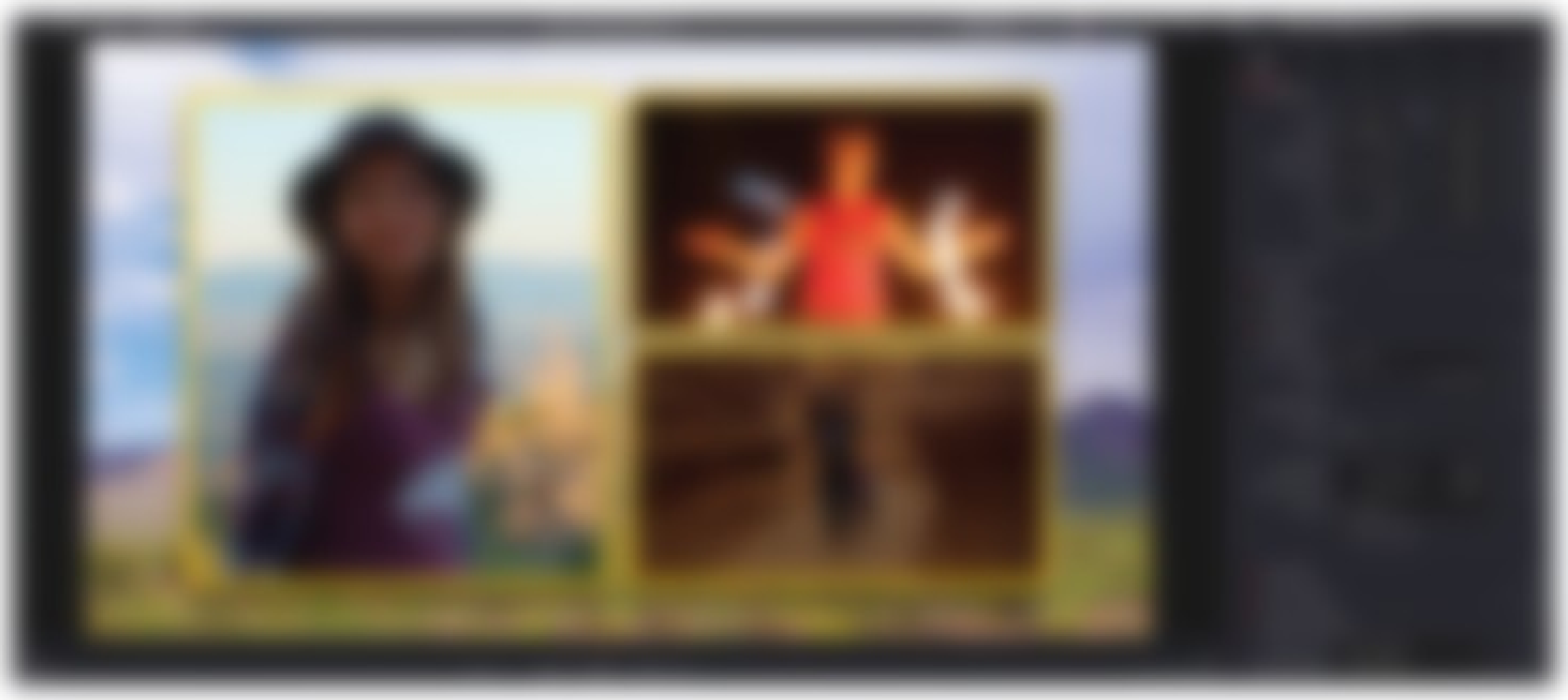
- Select the clip on Video 2 and again use the onscreen controls to size and position the clip in the hole created by Tile 3, with the girl dominant in the frame.



- As the clip's edges extend visibly beyond the edges of the tile, choose View > Viewer Overlay > Crop, or change the onscreen controls to Crop and use the onscreen controls to remove the excess from around the outside of the tile.



- Finally, choose View > Viewer Overlay > Transform or change the onscreen controls back to Transform. Select the clip on Video 1 and reposition it so the girl in the hat is framed in the hole created by Tile 1.



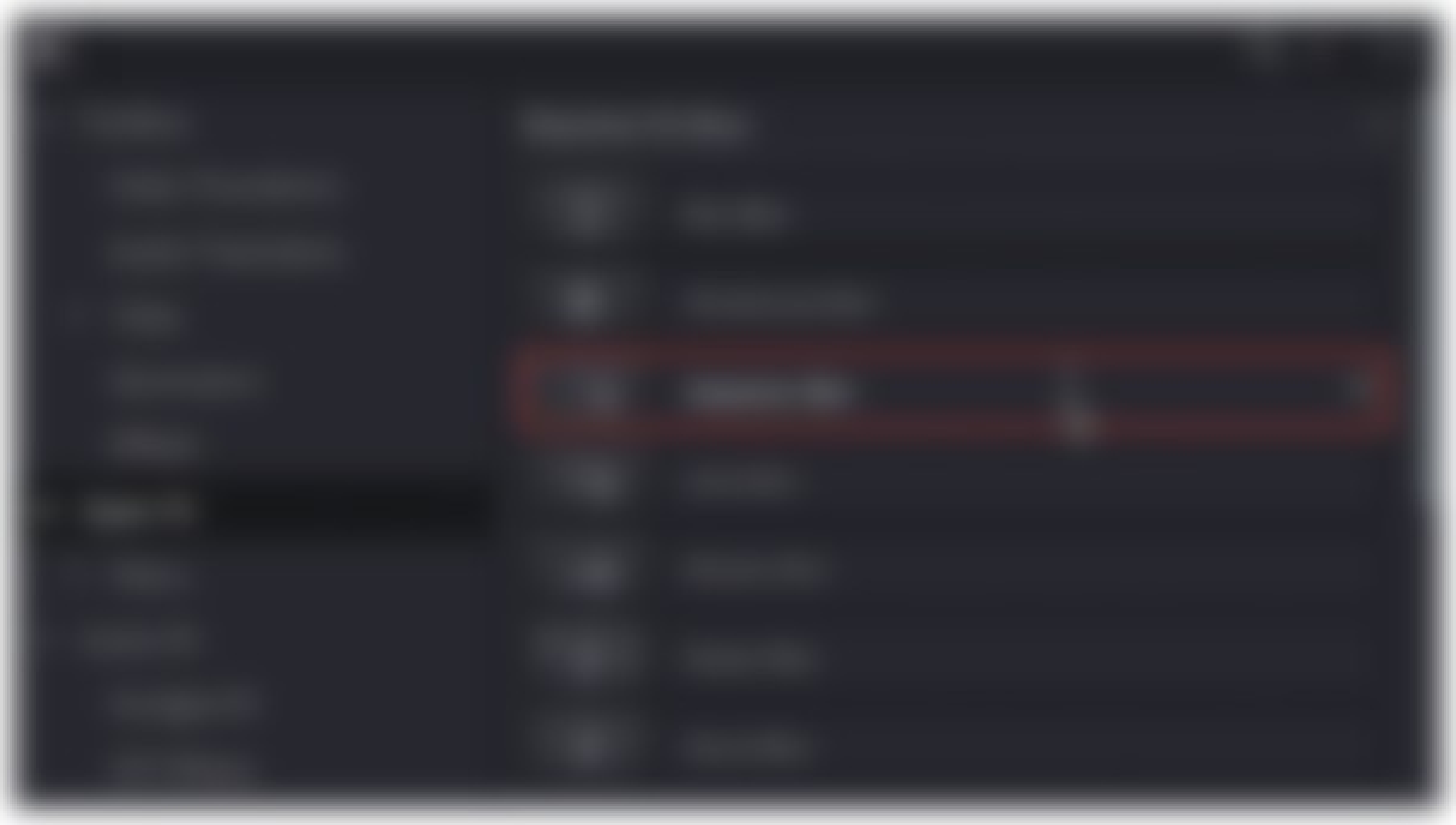
- When each clip is placed correctly within the correct holes, choose View > Viewer Overlay > Toggle On/Off, or press Shift-` (grave accent) to turn off the onscreen controls and review the timeline.

Awesome! However, as always, there's one final touch to add.

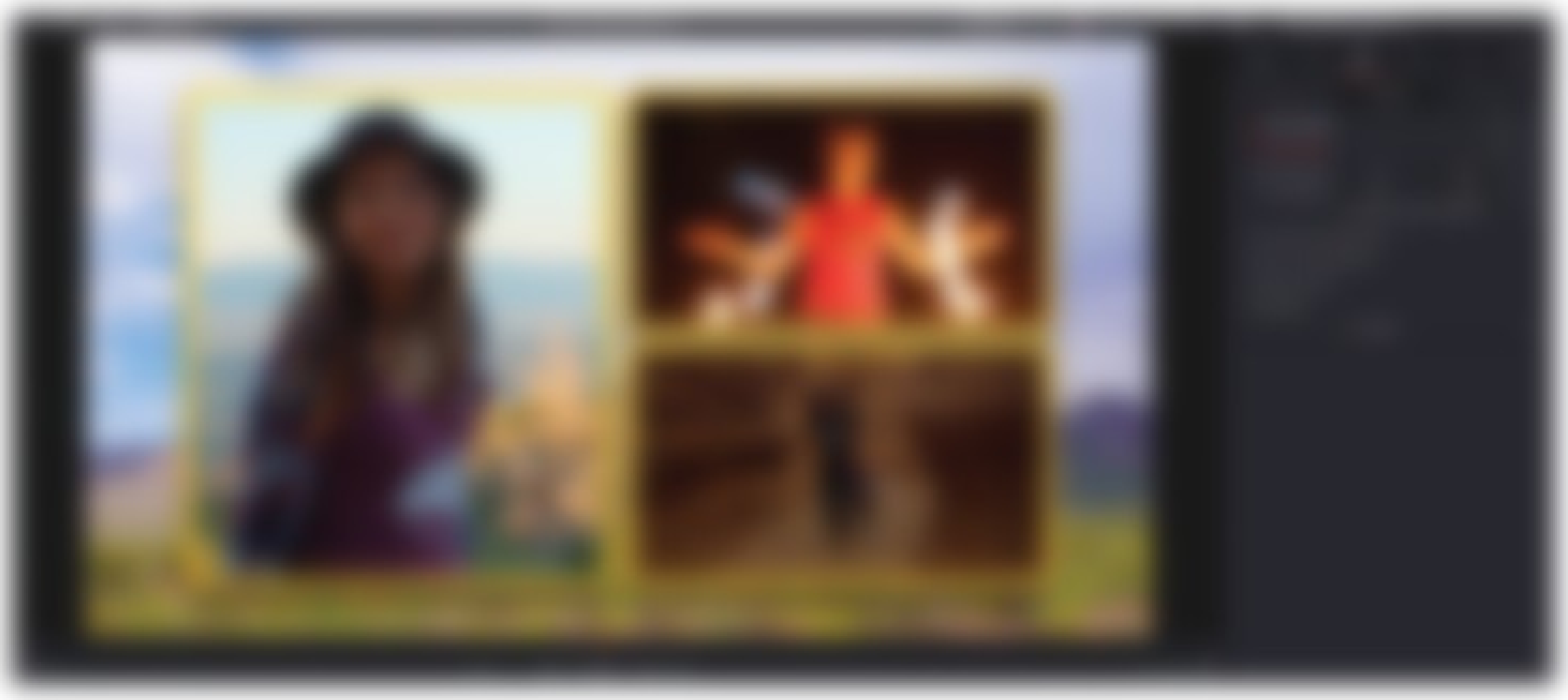
Stacking and Reordering Effects

The picture-in-picture composite you've built using the Video Collage filter looks great, but to really emphasize the foreground clips, you might want to add a gentle blur to the background.

- Deselect all clips in the timeline and, in the Effects Library, scroll to the top of the Filters list to the ResolveFX Blur category and double-click the Gaussian Blur filter to add it to the clip on V1.



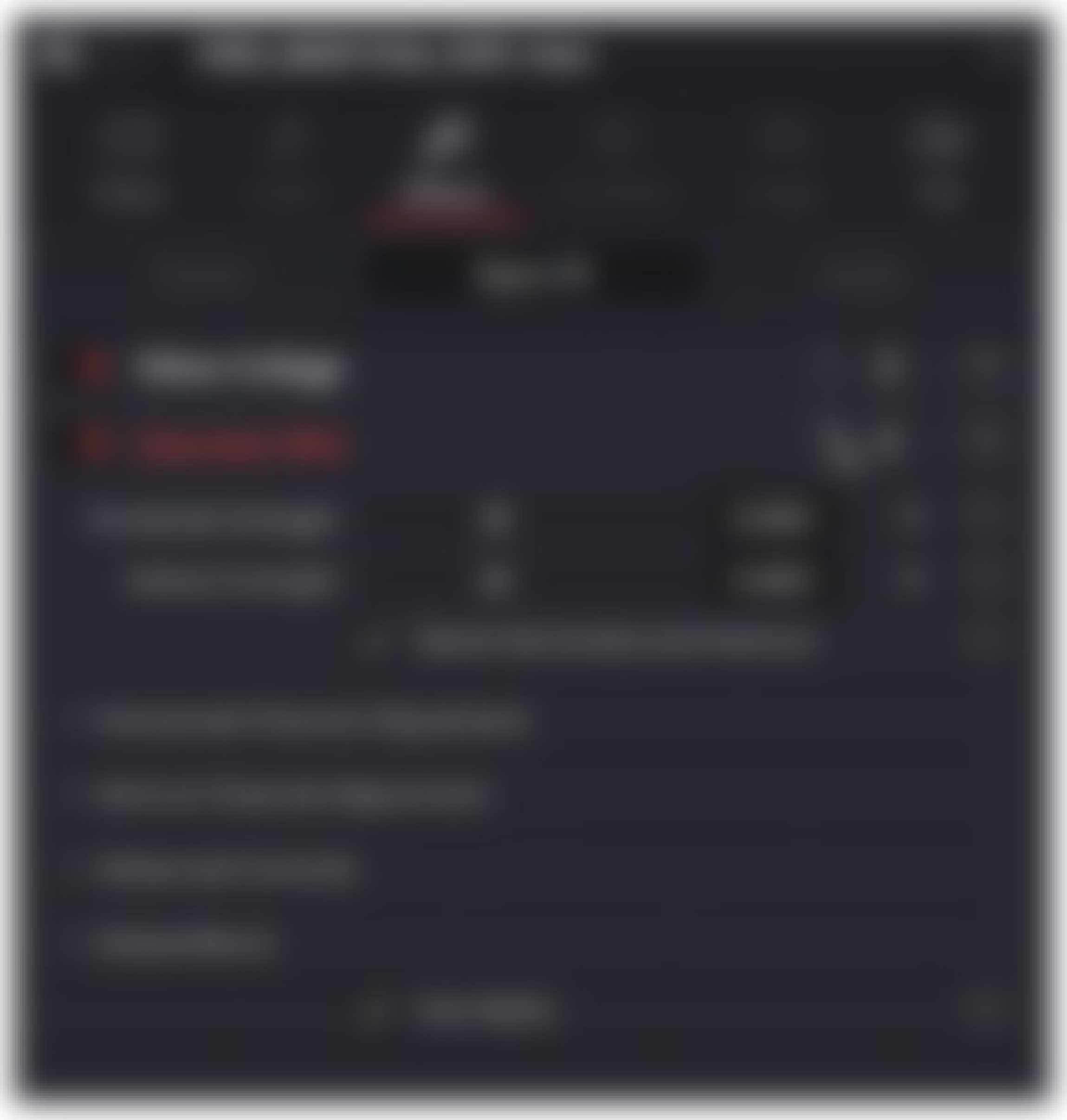
Hm. By adding the blur filter, you're simply blurring everything on that clip – including the edges of the tiles and the drop shadow.



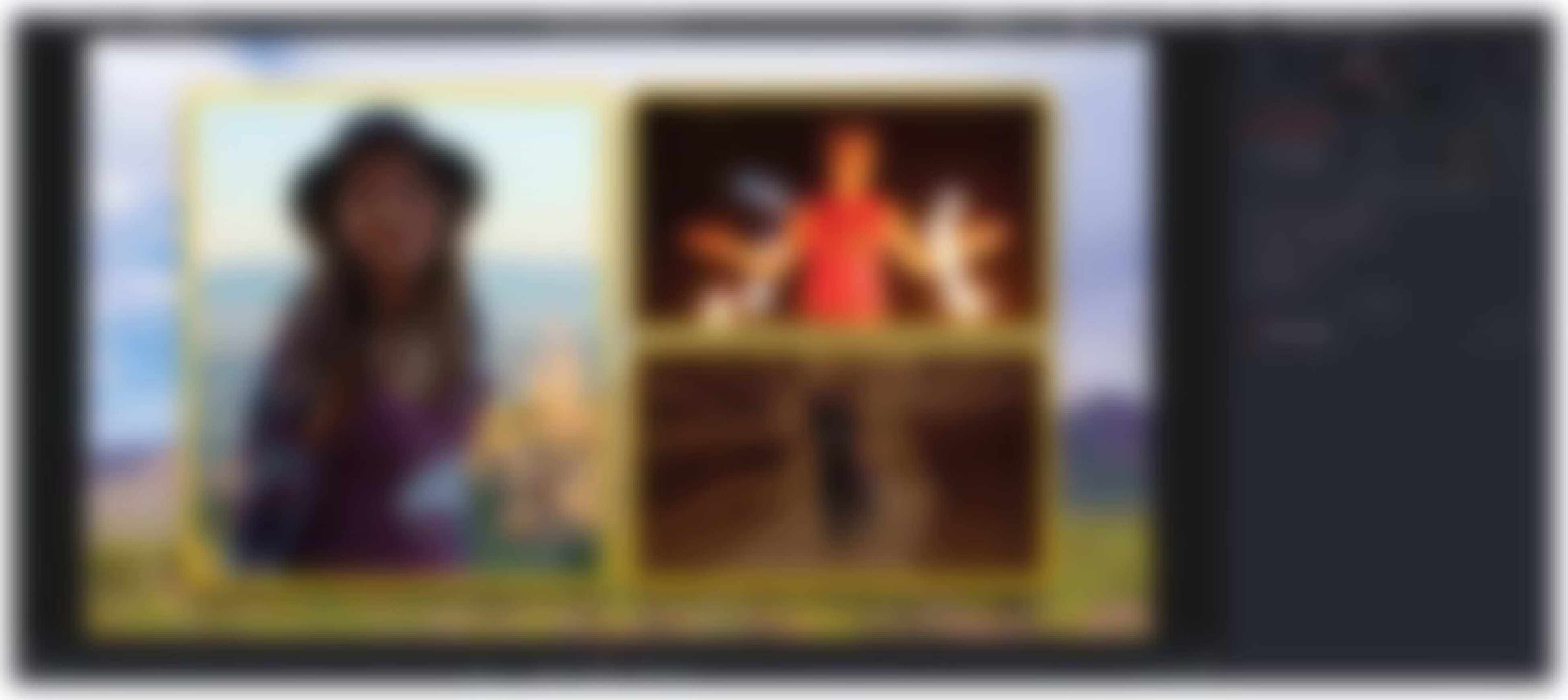
You'll need to reorder the effects on the clip to keep those elements sharp and blur only the image of the mountains.

- In the Inspector, notice that the Gaussian Blur filter is listed below the Video Collage filter because it was applied after the Video Collage.

- Click the Up Arrow control for the Gaussian Blur filter (to the left of the trash can icon) to move the blur effect above the Video Collage filter.



The background image remains blurred, but the edges of the tiles are not blurred because you have now specified the order in which these effects should be applied.



- Adjust the Gaussian Blur controls to your liking.

> **NOTE** In the edit page, only the controls for one filter can be displayed in the Effects tab at any one time; however, you can always access the controls for other effects by clicking their names as you have just done for the Gaussian Blur filter.

Excellent. You've seen how the Video Collage filter can be used to create effective picture in picture effects over and above just using the transform controls available in the Video Inspector in Create Background mode. Next, you'll explore how you can use the Video Collage in Create Tile mode.

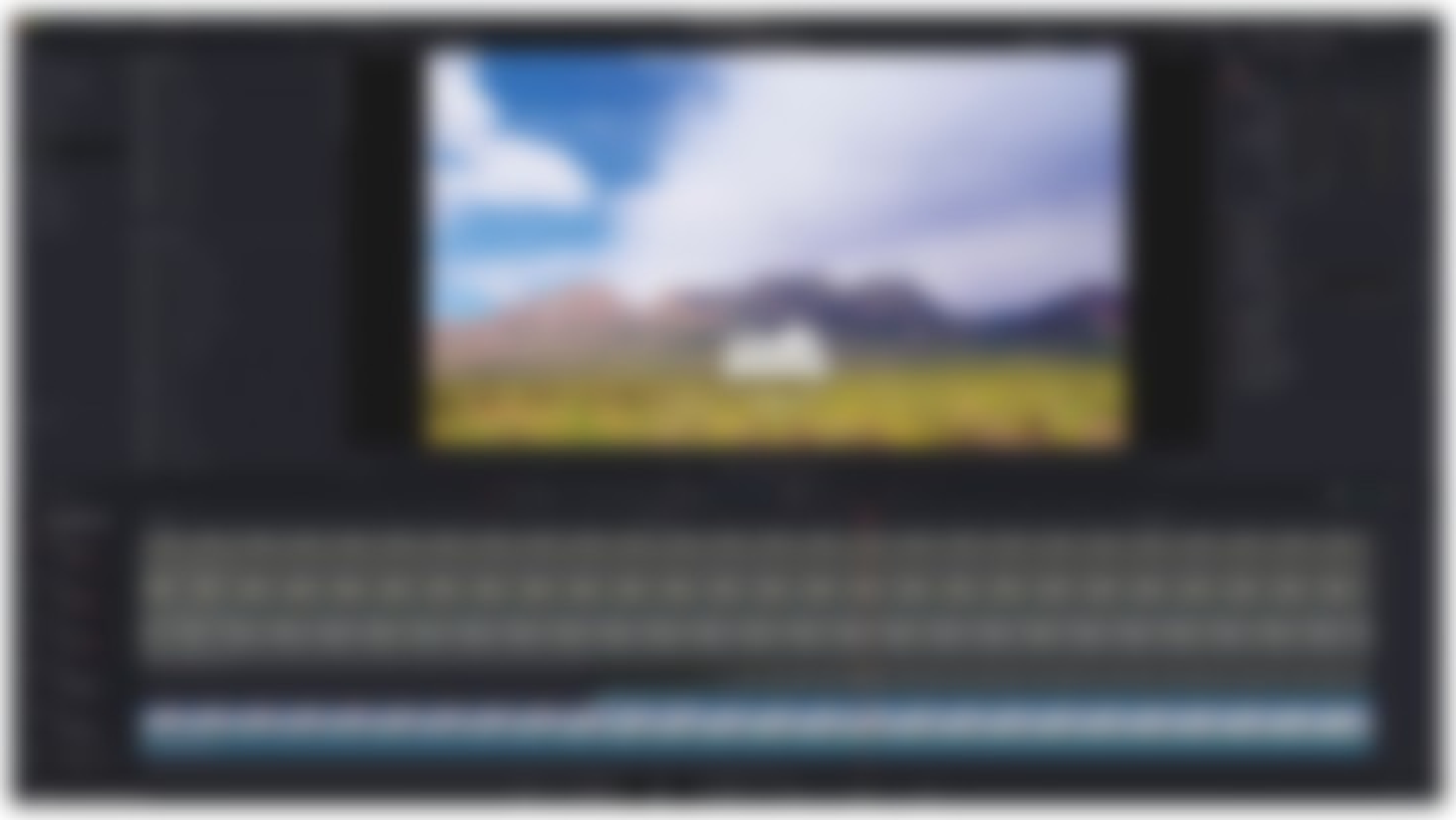
Creating Tiles with Video Collage

An alternative way of employing the Video Collage filter is to use it to create and animate clips as individual tiles, much like you did in the first exercise in this lesson. This more closely follows the traditional way of laying out a composite by having the background layer on the lowest video track and subsequent layers edited above it.

As before, it's best to set up the Video Collage on one clip using Layout Preview mode. Once you're happy with the layout and animations, you can simply copy the effects to other clips, where you can then adjust them further.

Much like editing in general, there may seem to be many complex steps involved, but once you have things set up, the payoff is well worth it.

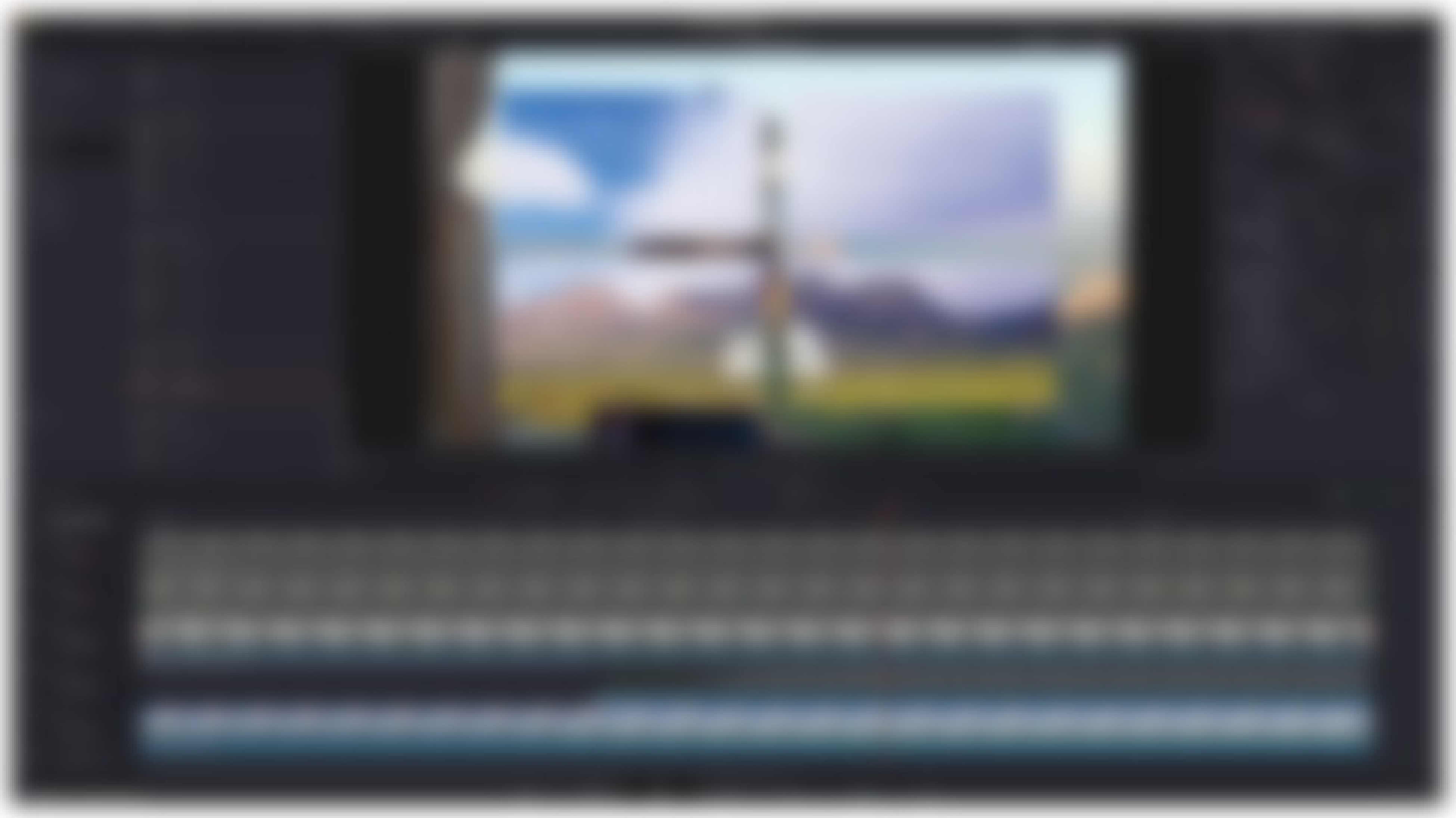
1 From the timeline viewer menu, select the 07 Video Collage Tiles timeline or choose Playback > Next > Timeline.



This timeline has been set up with the same "background" clip on Video 1 and a logo that fades in on Video 2. Videos 3 through 5 are currently disabled, but all have clips that you will use to build a custom animated intro for Organ Mountain Outfitters.

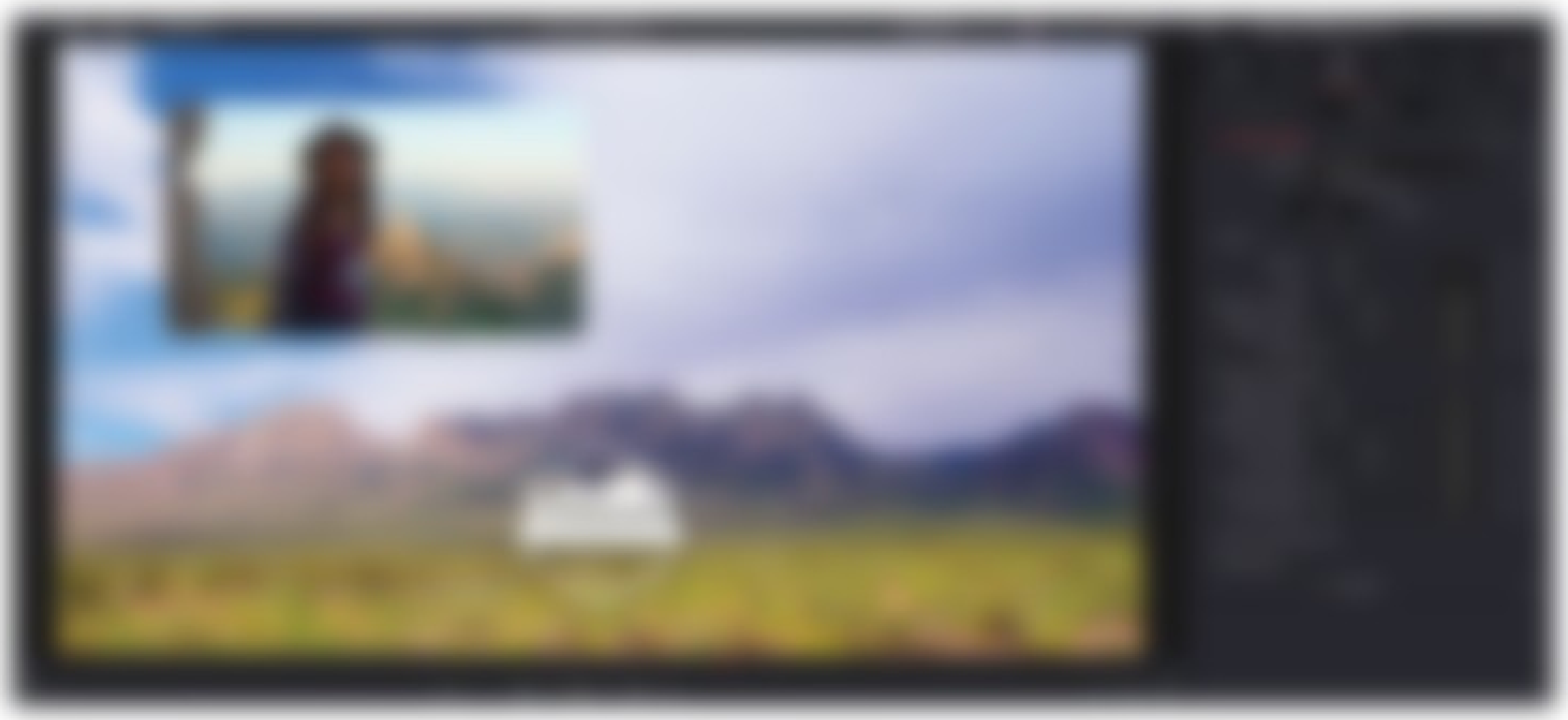
2 Enable track Video 3 in the timeline and review the shot of the girl in the hat.

- Move your playhead to the point where she has turned to look at the camera (at about 17:05).
- Select the clip on Video 3 and, from the Effects Library, locate the Resolve FX Transform group of filters and double-click the Video Collage filter to apply it to the selected clip.

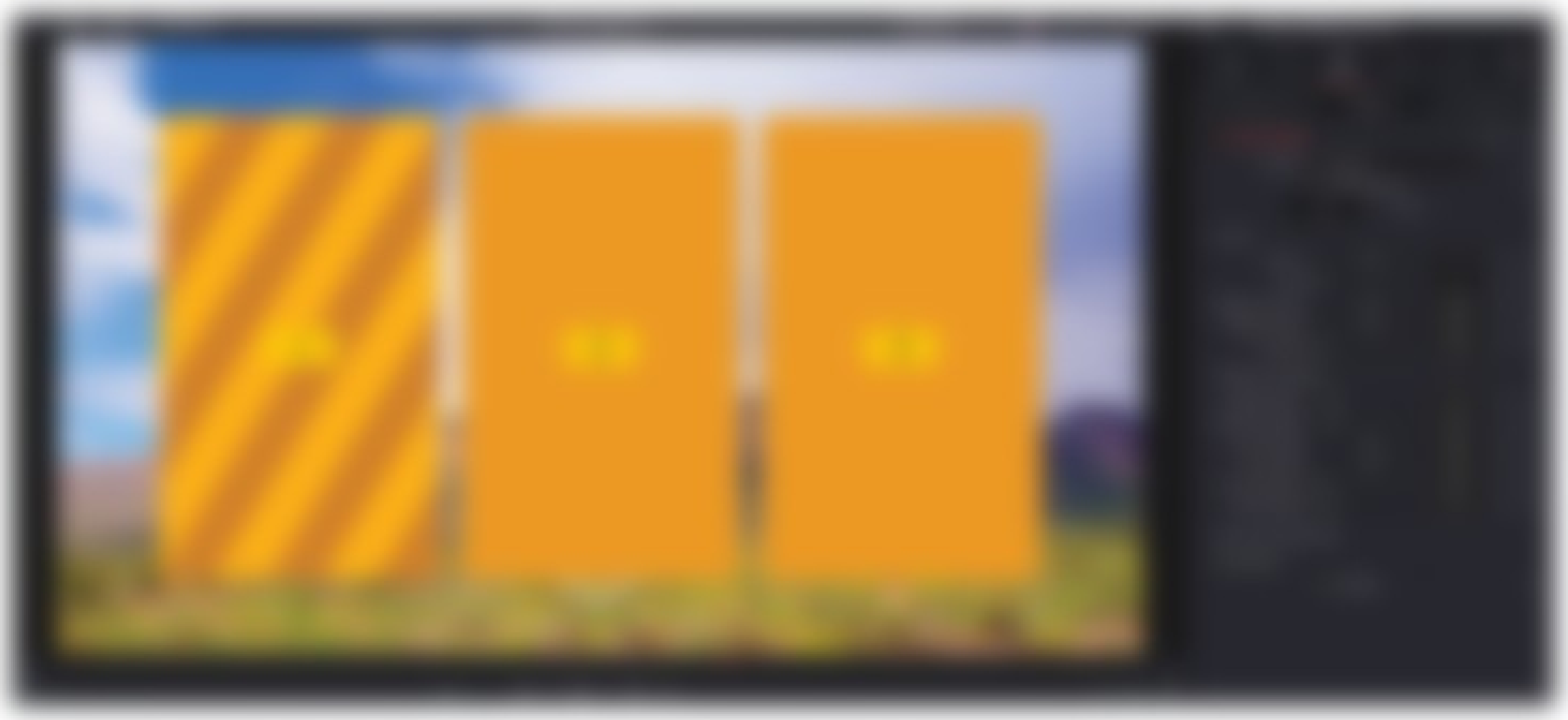


As before, the filter defaults to showing a 3x3 grid displaying the clips on the lower two video tracks, and the Inspector automatically switches to the controls for the filter you just applied.

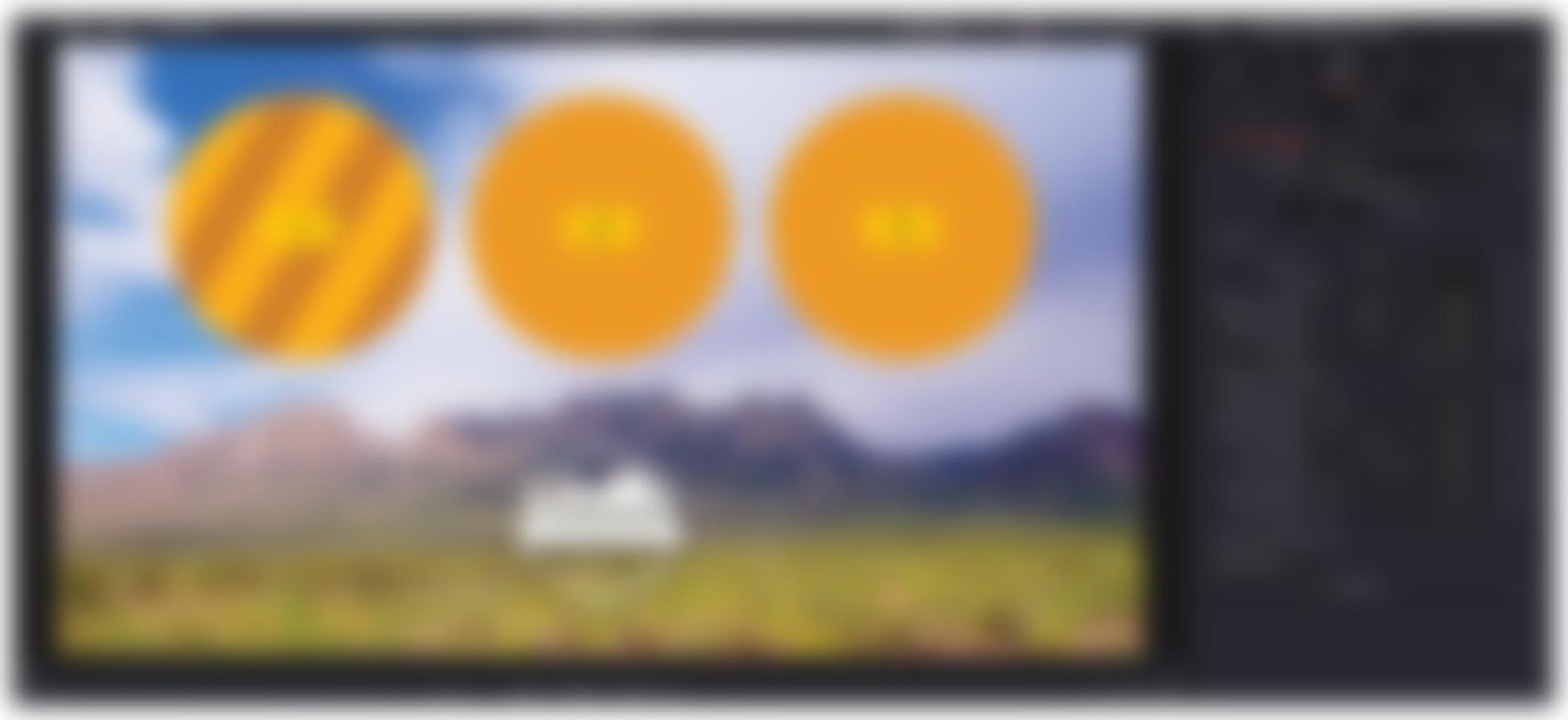
- In the Inspector, change the Workflow menu to Create Tile so the girl in the top row displays as a picture in picture.



6 Click the Preview Layout checkbox to view the familiar tile preview and change the number of Columns to 3 and the number of Rows to 1.



7 Increase the Rounding to 1.0 to create three circular tiles and change the Vertical Offset to about 0.20 so the tiles sit above the mountains. Increase the Horizontal Spacing to about 0.125 to reduce the size of the tiles.

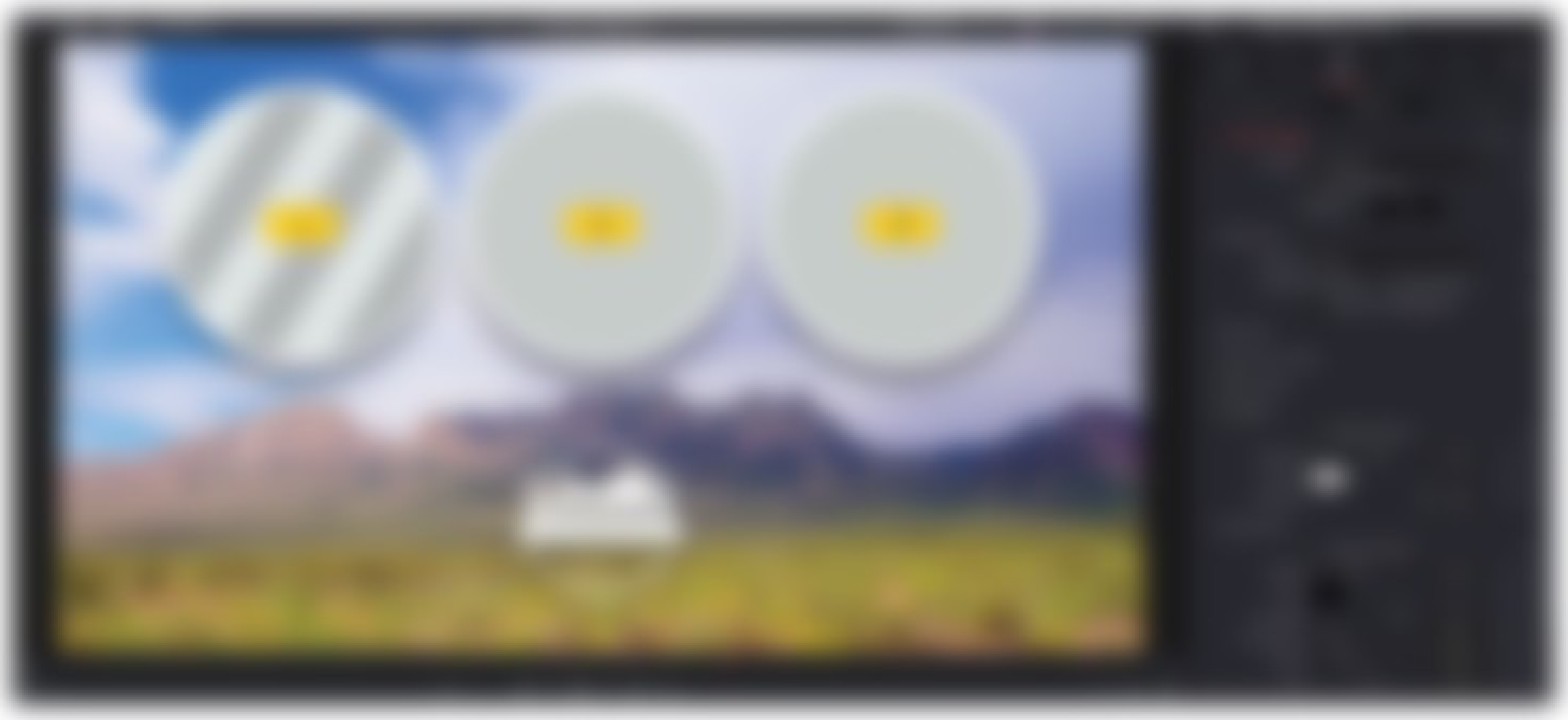


NOTE The size of the tiles is based on the Left/Right Margins and Top/Bottom Margins, with the outermost tiles placed at these margins and any additional tiles distributed evenly between those outermost tiles. Therefore, increasing the Horizontal Spacing between each tile makes each tile smaller since the outer margins haven't changed.

[illegible] Click the Tile button and open the Tile Styling controls.

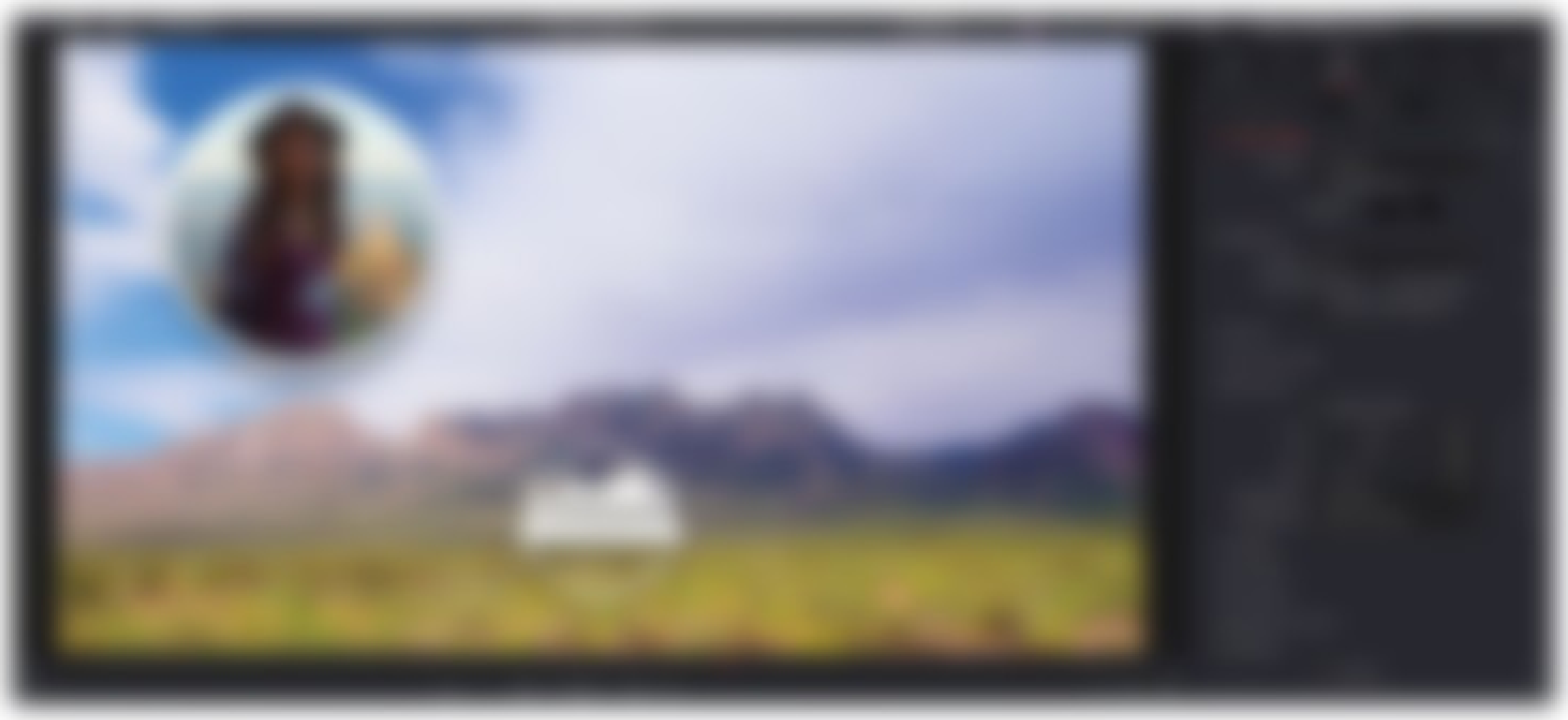
[illegible] Increase the Tile Border to about [illegible], click the Tile Color chip, and use the system color picker to select a white border to match the Organ Mountain Outfitters logo.

[illegible] Open the Drop Shadow controls and change the Strength to about [illegible], the Drop Angle to [illegible], the Drop Distance to about [illegible], and the Blur to about [illegible] to create a subtle, diffused drop shadow.



[illegible] Deselect Preview Layout to display just the current tile (Tile [illegible]) and the clip of the girl turning toward the camera.

[illegible] Open the Resize Content controls and adjust the Zoom to about [illegible] and the Pan to about [illegible] to reframe the girl in the circle, not forgetting to keep the Organ Mountain Outfitters clothing brand in shot.



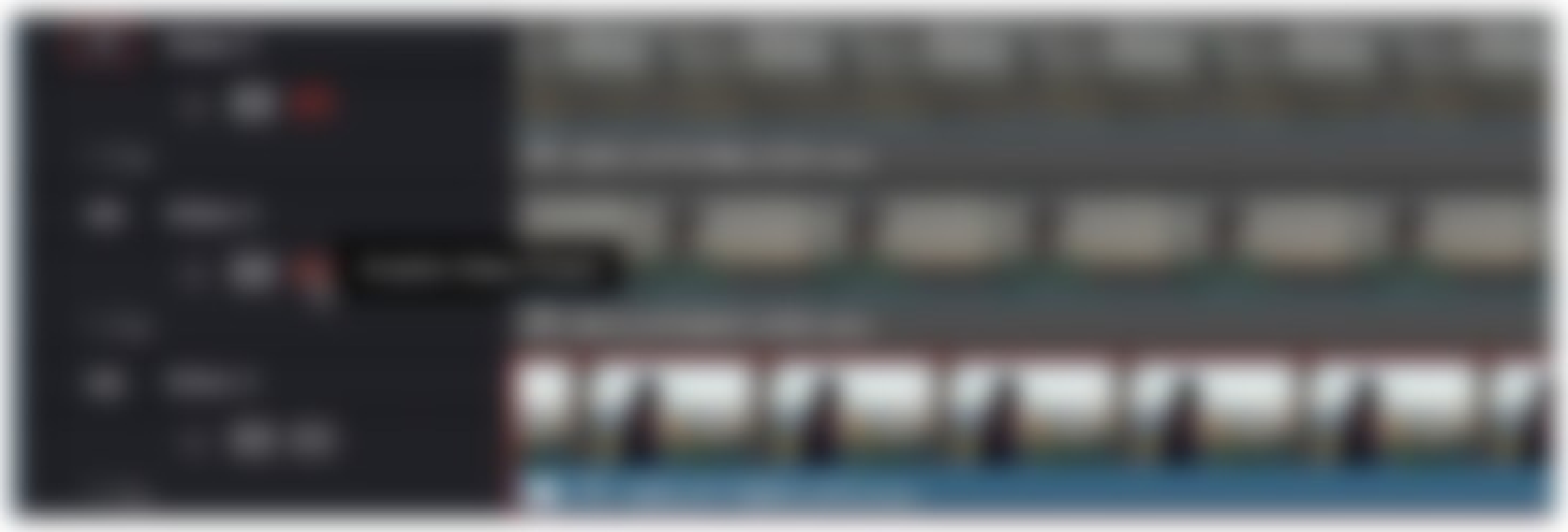
The filter is now ready to be copied to the other clips in the tracks Video [illegible] and [illegible].

Copying and Pasting Attributes

The easiest way to apply the same effect, with the same settings, to the other clips is to use the Copy and Paste Attributes commands, after which you only need to make one or two adjustments to the copied filters for the new clips.

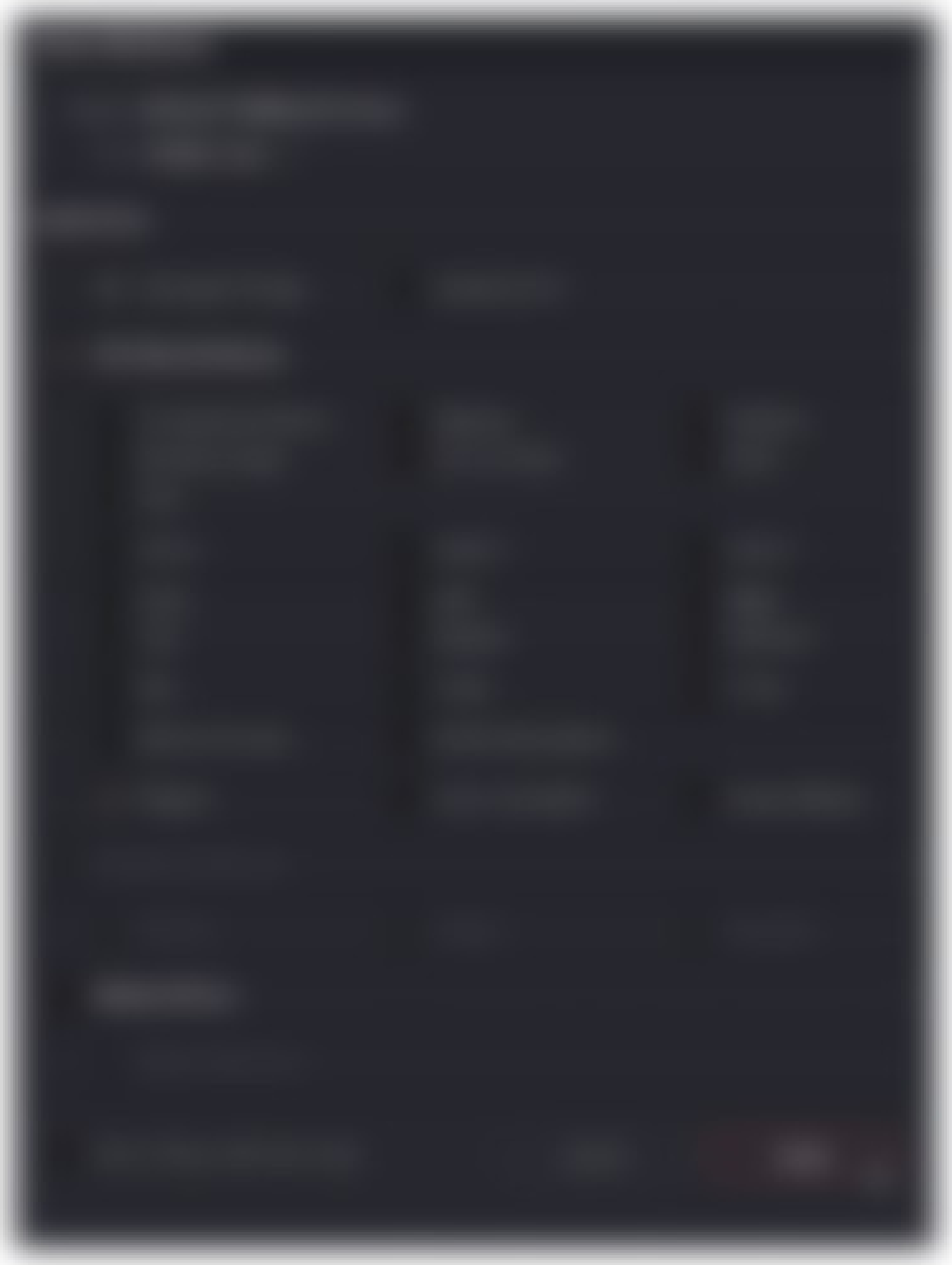
1. Ensure that the clip on Video 3 is currently selected, and then press Command-C (macOS) or Ctrl-C (Windows) or choose Edit > Copy to copy the clip.

2. Shift-click the Enable Video Track button for Video 4 or Video 1 to enable all disabled tracks.



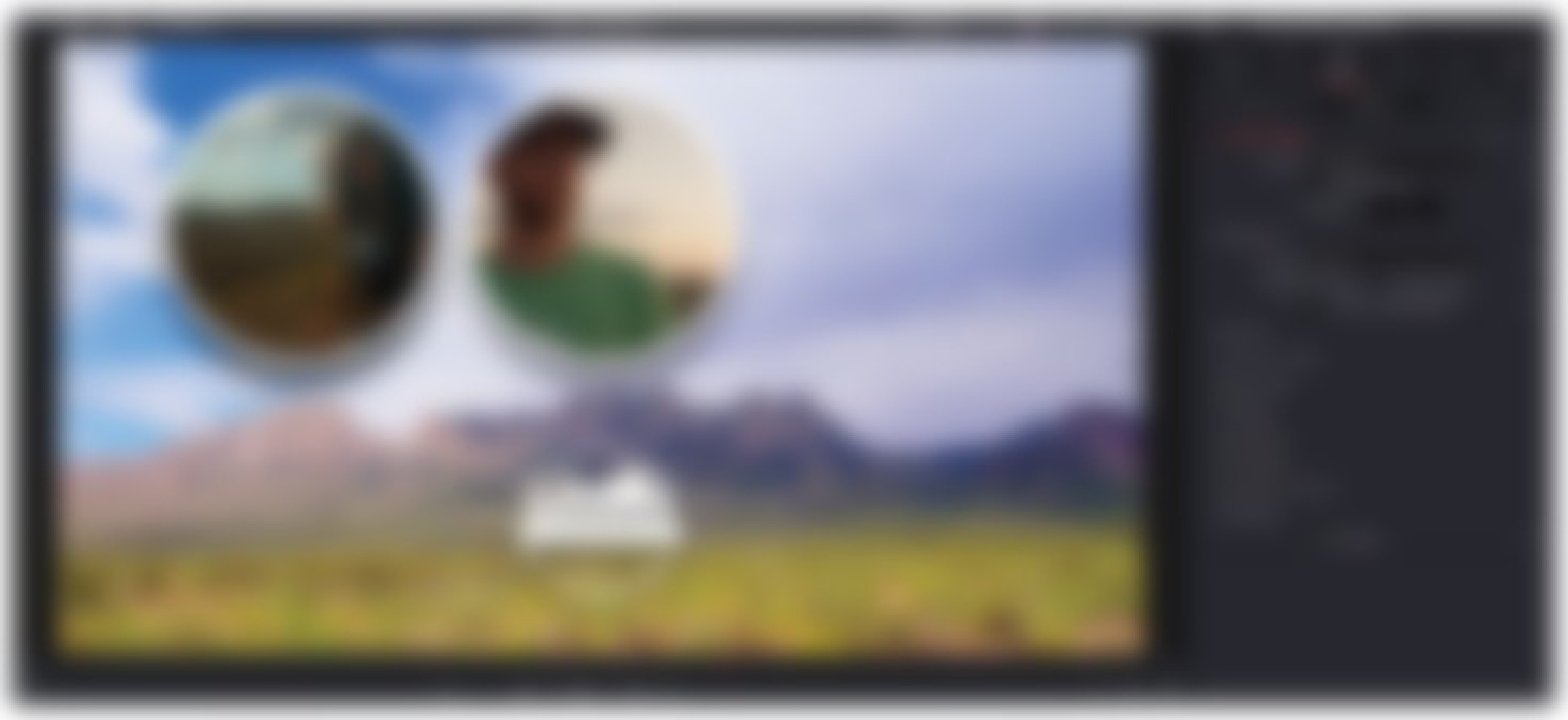
3. Select the clips on Video 4 and Video 1 and press Option-V (macOS) or Alt-V (Windows) or choose Edit > Paste Attributes.

4. In the Video Attributes section of the Paste Attributes dialog, deselect Color Correction to paste just the Video Collage plug-in from the copied clip, and click Apply.

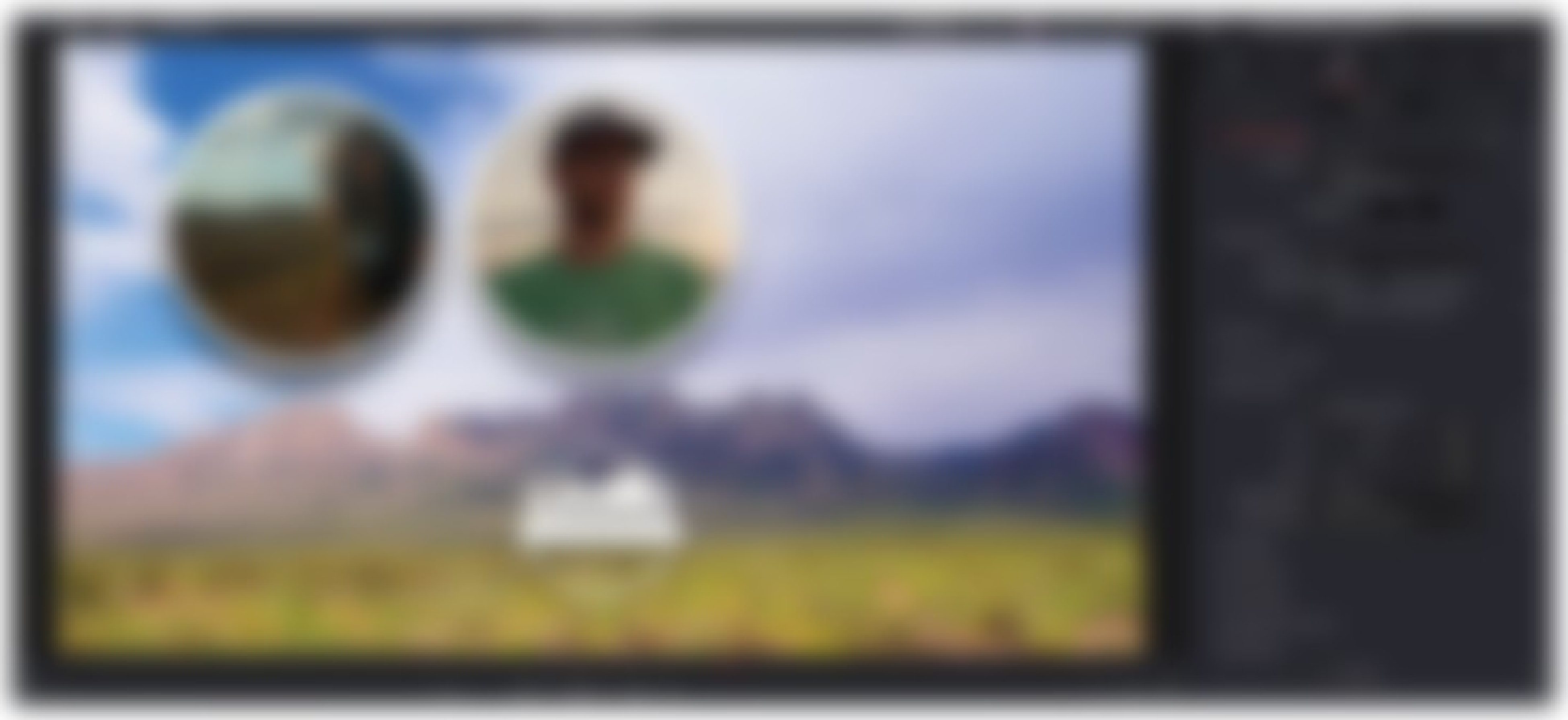


The Video Collage filter is applied to the selected clips with the same settings as the original clip from which it was copied. You will need to make a few changes to these copied filters.

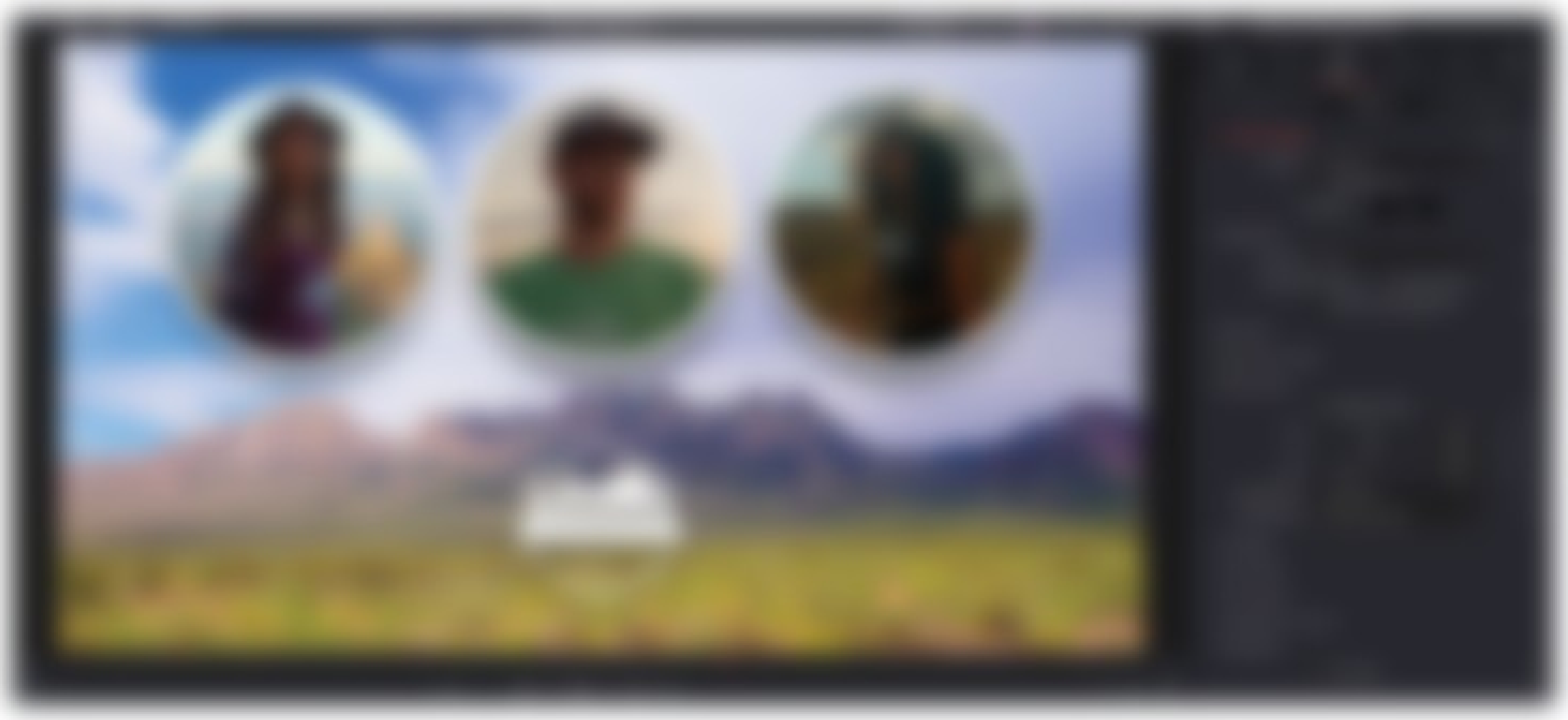
- Command-click (macOS) or Ctrl-click (Windows) the clip on Video 3 to deselect it, leaving just the clip on Video 4 selected.
- Click the Effects tab in the Inspector to reveal the Video Collage settings for the selected clip.
- In the Manage Tiles controls, change the Active Tile menu to Tile 2 so the clip on Video 4 appears in the position specified for Tile 2.



- Open the Resize Content control and change the Pan to about 0.082 and the Zoom to 0.6 to frame the shot of the guy in the Organ Mountain Outfitters shirt in the tile.



- Select the clip on Video 5, change the Active Tile menu to Tile 3 and, in the Resize Content controls, change the Pan to about -0.025 and the Zoom to about 0.45.

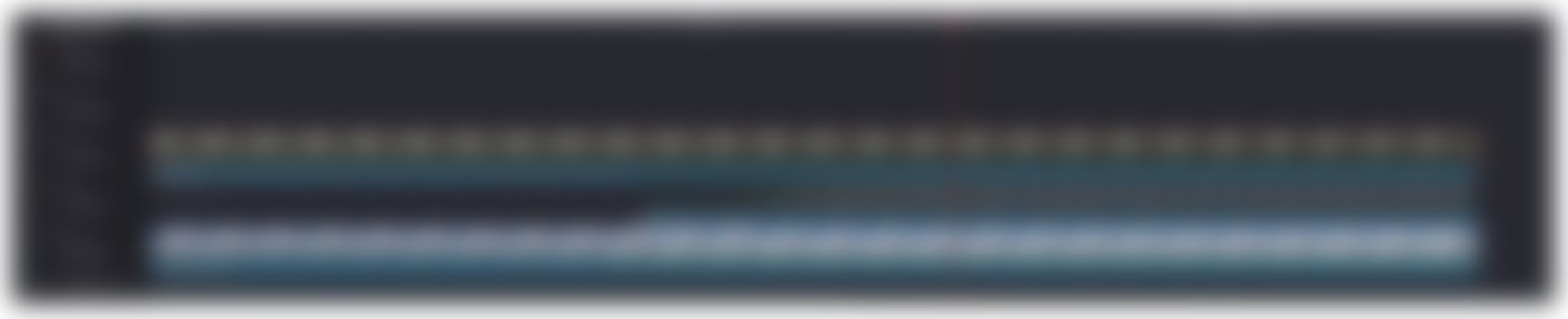


Now that you have each of the tiles styled, it's time to add some keyframed animation.

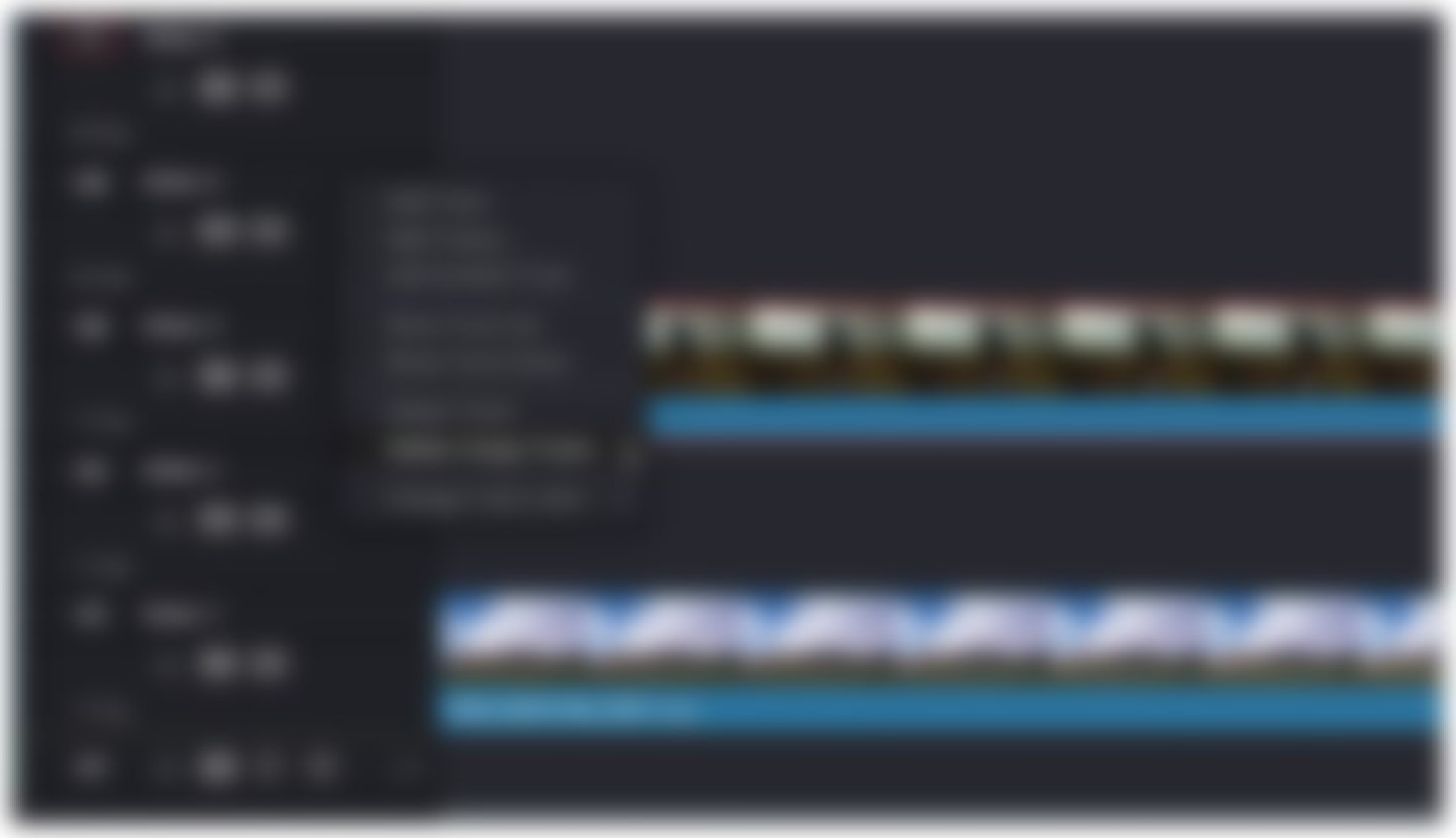
Although the Video Collage effect has its own animation parameters, it's often easier to animate multiple elements together in the same compound clip. That way, if you wish to change the animation, you only have one set of keyframes to worry about.

- Open the media pool and select the Compound Clips bin.
- Select the clips on Video 3, Video 4, and Video 5, and then choose Clip > New Compound Clip or right-click them and choose New Compound Clip.
- Name the new compound clip **Video Tiles** and click Create.

The new compound clip is added to the selected bin, and the three clips in the timeline are collapsed into a single compound clip, leaving two empty timeline tracks.

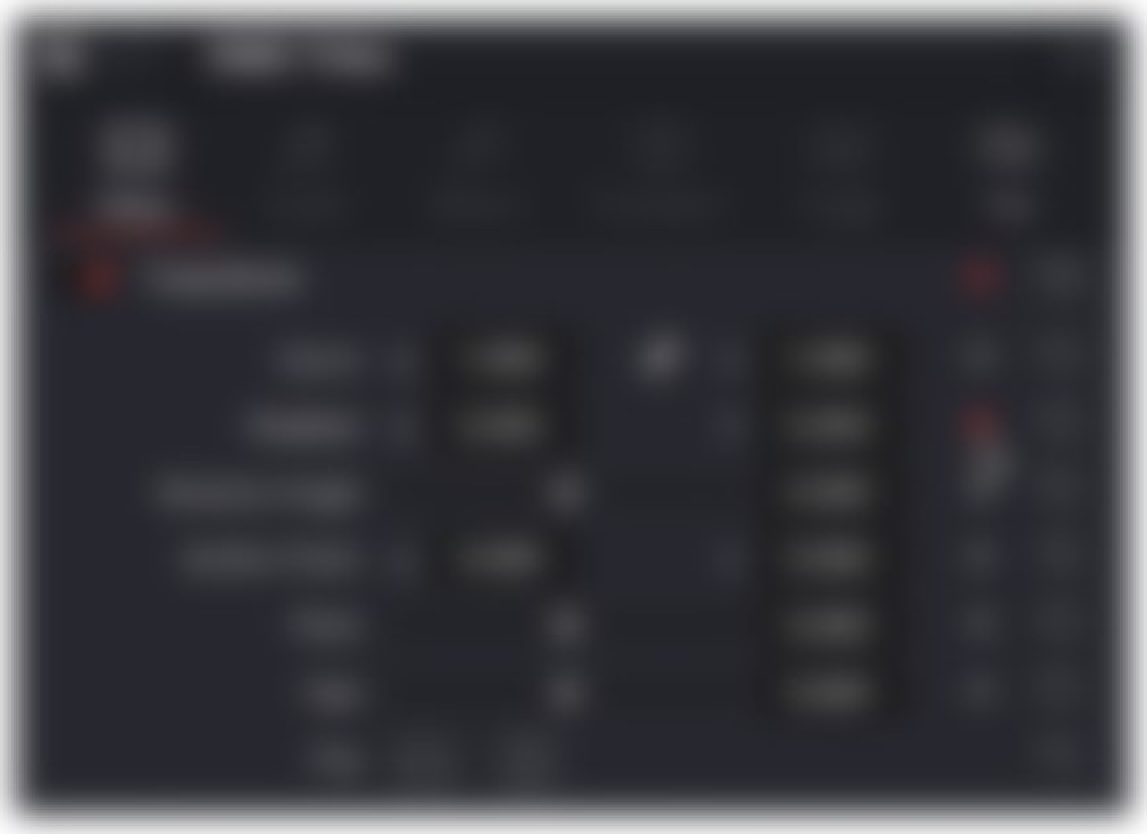


- Right-click the timeline track header and choose Delete Empty Tracks to remove the redundant video tracks.



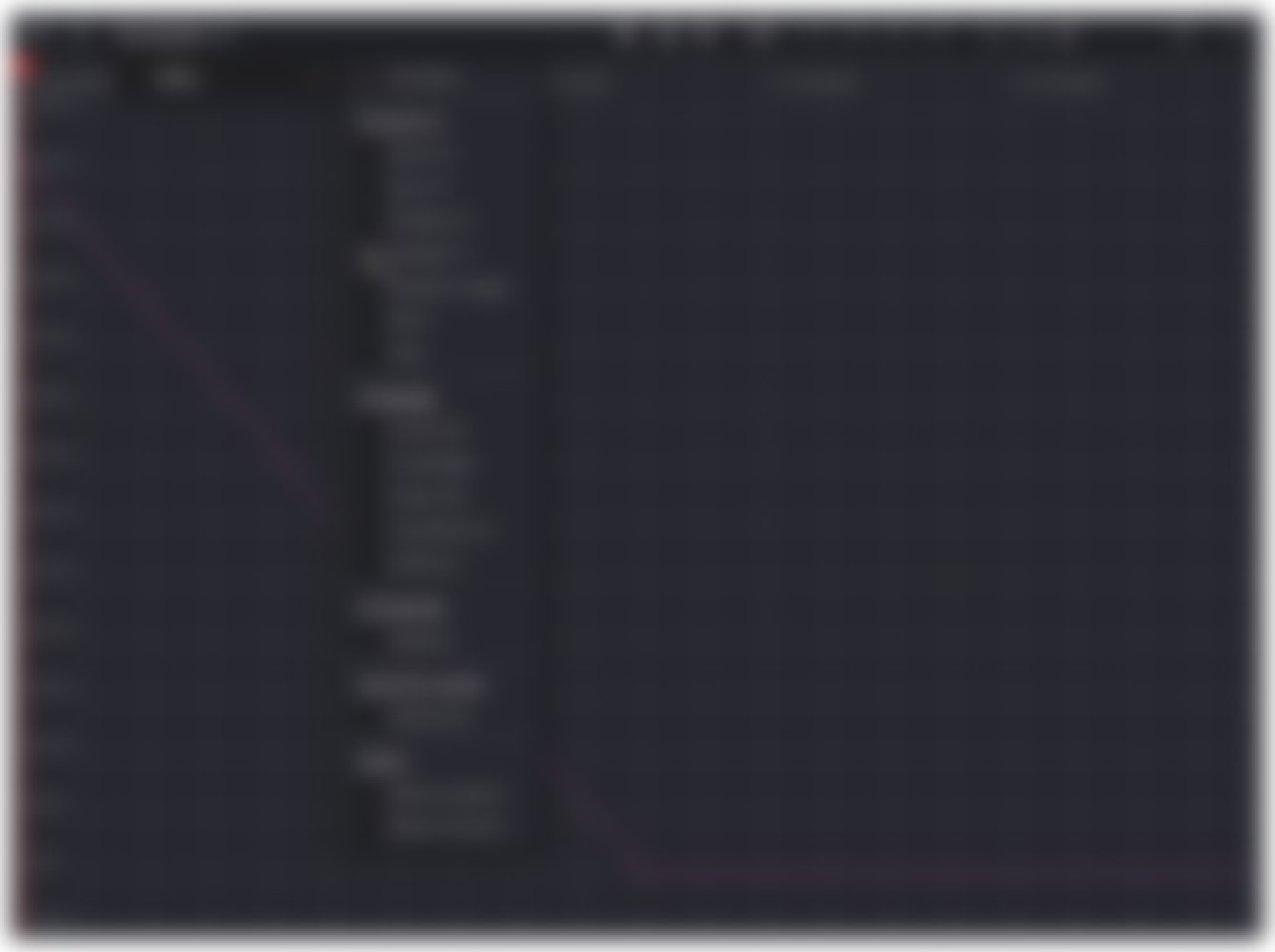
NOTE: The empty audio track will not be deleted. Each timeline must contain at least one video and one audio track.

- Place the timeline playhead at the position just as the logo on Video 2 is almost fully faded in (around [illegible]), and with the [illegible] compound clip still selected, click the Position keyframe in the Inspector.

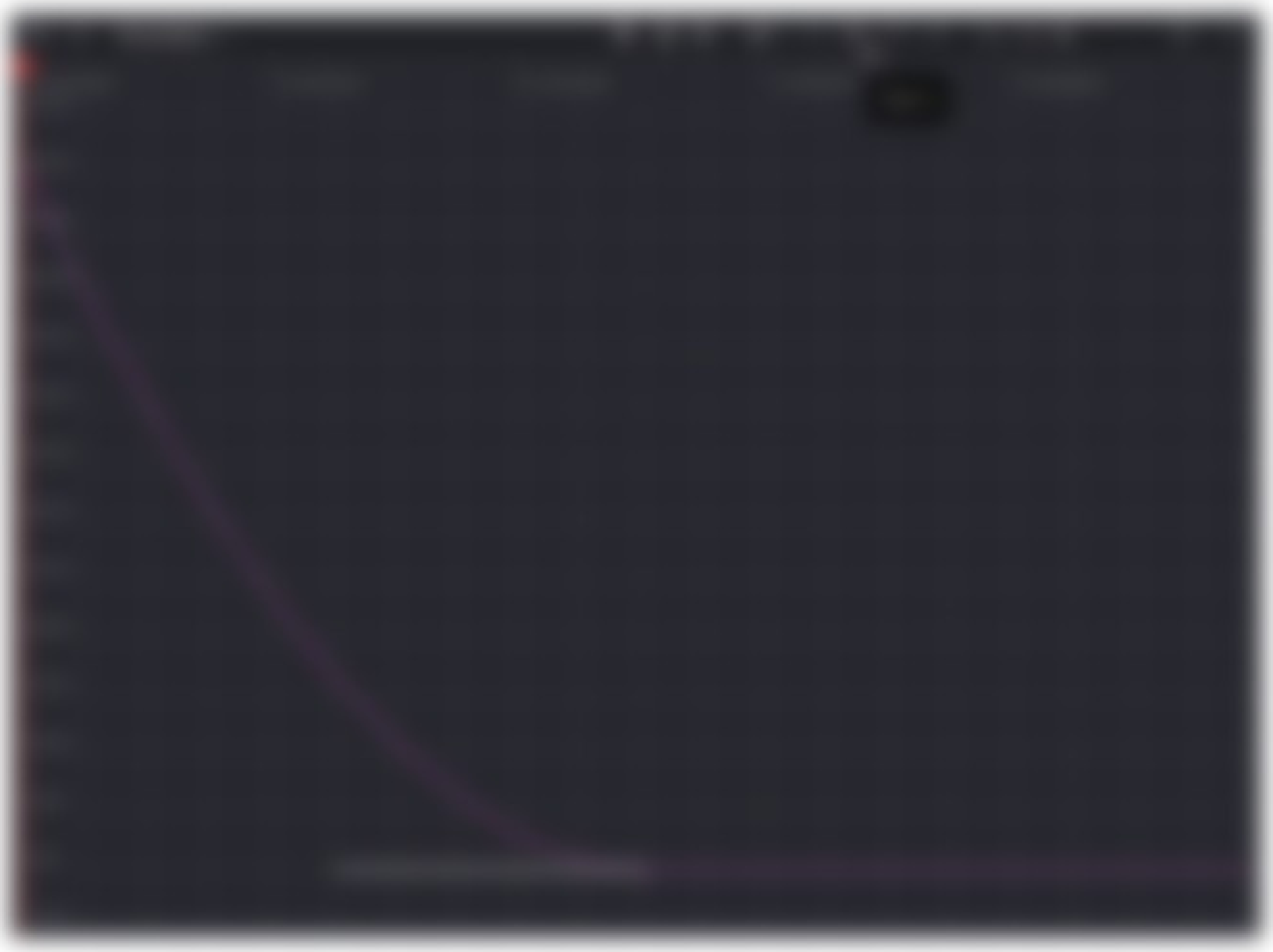


- Return the playhead to the start of the timeline and change the Y Position value to about [illegible], or until the titles have moved fully out of the top of the timeline viewer, adding a new keyframe to the position automatically.

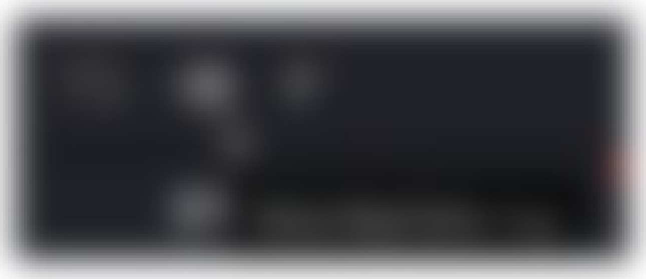
- With the compound clip still selected in the timeline, open the Keyframes panel. From the Keyframes Curves Parameters menu, select the Position Y parameter and deselect the Retime Speed parameter if necessary.



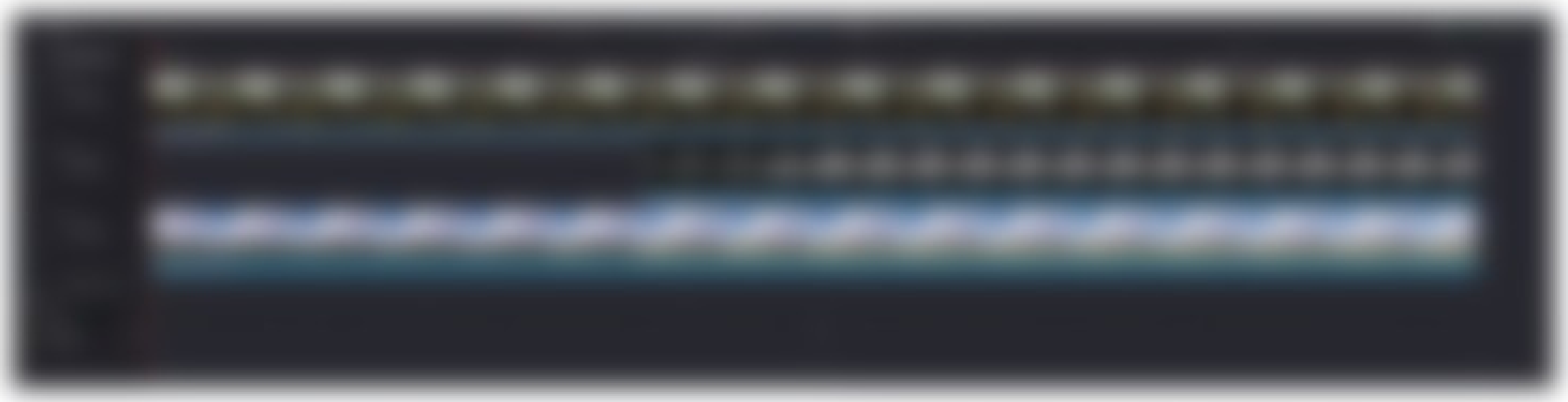
- Select the second keyframe for the Position Y curve and click the Ease In button to apply a Bézier handle to the curve.



- To change the timing of the animation, select the compound clip in the timeline, and click the Show Keyframe Track button in the top left corner of the timeline.



This displays the clip's keyframes in a separate panel in the timeline, allowing you to fine-tune the timing of the animation relative to the duration of the selected clip.



- Drag the second keyframe in the Keyframes Editor to the right to the point where the graphic on Video 2 has faded in completely.

- Click the Keyframe Track button to close the keyframe track and play back the timeline to review the animation.

TIP If you wish to manually keyframe the individual tiles created using the Video Collage effect, you'll need to nest each of the clips in their own compound clip in order to adjust the render order of the Video Collage and Transform controls. Otherwise, you will end up keyframing the contents of the tile instead of the tile itself!

Well done! You have successfully completed this lesson and can now use some of the effects included with DaVinci Resolve to complete common tasks required of editors on a daily basis.

NOTE A series of finished timelines for each of the exercises in this lesson are available for you to import into this project from R20 Editor's Guide / Lesson 07 > Timelines.

Lesson Review

1. Which DaVinci Resolve FX can be used to key blue- or green-screen footage over a background?
   a) Luma Keyer
   b) HSL Keyer
   c) 3D Keyer
2. True or false? The only way to determine whether a clip has a Resolve FX applied is to open the Inspector.
3. Which Resolve FX can be used to easily adjust a clip's pitch, yaw, width, and height values using intuitive onscreen controls?
   a) Distort
   b) Perspective
   c) Transform
4. Which Resolve FX can be used to quickly create complex but uniform picture-in-picture effects?
   a) Grid
   b) Video Collage
   c) Transform
5. True or false? Render in Place creates a video file using the render cache options in Project Settings.

Answers

1. b) and c). The Luma Keyer has no controls for selecting hue and saturation values.
2. False. The timeline clip displays a small FX badge next to the clip name.
3. c) Transform.
4. b) Video Collage.
5. False. Render cache and Render in Place use different settings.

Lesson 8

Audio Editing

Up until now, you've mainly been concentrating on the visual aspects of editing. However, your project's soundtrack is an essential part of the overall audience experience, possibly more so than the visuals. You could have the most wonderful picture editing, fantastic effects, and superb grading on your film, but if your audience can't hear what's happening clearly, they won't be able to engage with your story and will quickly switch off, figuratively and literally. That's as true today for films, TV shows, and online social media videos as it's ever been.

In this lesson, you'll explore some specific techniques for audio editing, sound design, and final mixing for your timelines.

Time

This lesson takes approximately [illegible] minutes to complete.

Goals

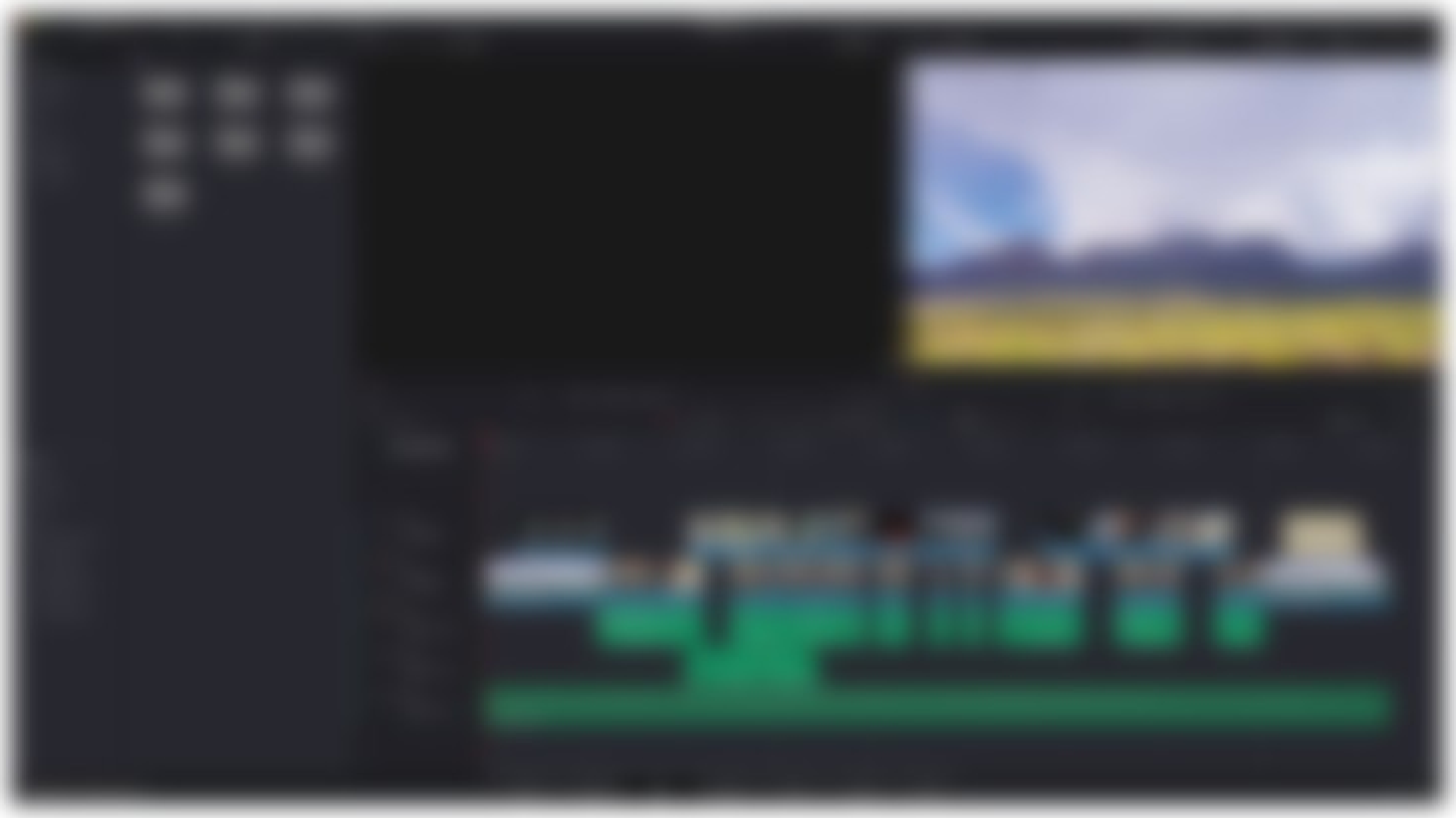
Preparing the Project [illegible]
Where Should You Start Mixing? [illegible]
Organizing the Timeline [illegible]
Adding the Sound Effects [illegible]
Syncing Foley to Onscreen Action [illegible]
Recording a Voiceover [illegible]
Balancing the Audio Clips [illegible]
Using the AI Dialogue Leveler [illegible]
Adjusting Track EQ [illegible]
Balancing the Sound Effects [illegible]
Mixing the Music [illegible]
Lesson Review [illegible]

Preparing the Project

For this lesson, you will work with a version of the Organ Mountain Outfitters promo you've been working with.

> **TIP** Ideally, you'll want to have a good set of speakers or headphones connected to your computer for this lesson to appreciate the audible subtleties.

1. Open DaVinci Resolve and, in the Project Manager, click the Import button.
2. Navigate to R20 Editor's Guide / Lesson 8, select the **OMO AUDIO.drp** file, and choose Open.
3. Double-click the imported project in the Project Manager.
4. Choose Workspace > Reset Layout.
5. Relink the media files using the Relink Media button in the media pool.
6. From the Select Timeline menu in the timeline viewer, open the **OMO EDIT AUDIO** timeline.



7. Play the timeline to reacquaint yourself with this edit.

You are now ready to start adding the sound design elements for this timeline.

When Should You Start Mixing?

Most audio work occurs toward the end of the editing process, which is the reason why this lesson is the penultimate chapter of this book.

While you will no doubt make basic adjustments to audio levels throughout the editing process, you don't really want to spend too long perfecting the audio mix until the bulk of the picture editing has been completed. This is the point that's usually referred to as picture lock, when the director or client is happy with the work so far, and the fine-tuning can begin. If you start mixing the audio too early, you may find yourself in a position where you'll have to cut out a part of the scene, or maybe the entire scene completely, in which case all your hard work and the time taken to achieve it will be wasted. This is also the reason why grading the pictures also occurs once the scene is picture locked, and no further changes should be made.

In practice, though, while picture lock may be agreed to, many edits may need further tweaking after a mix or grade has been started (or, in extreme cases, completed). In these cases, the benefit of having the editing, mixing, and grading tools together inside the same application becomes obvious, as Resolve allows you to move seamlessly from one process to another and back again just by clicking the appropriate page.

The vast majority of the timelines you will work on will have three main audio components: dialogue (words spoken by actors, interviewees, or in voiceover/commentary); effects (sounds that occur onscreen or offscreen, such as a door slamming, the tapping of an iPhone's keyboard, an aircraft approaching from a distance, or wolves howling in the wilderness); and music (which sets the tone of the scene) and, quite often, there might be several clips across different audio tracks for the same type of audio.

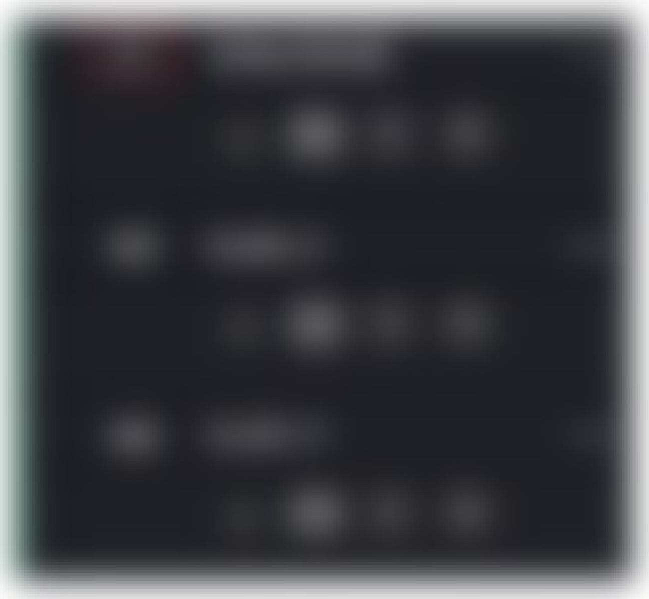
The audio in each of these groups can be internal to the scene or external. Internal audio (often referred to as diegetic sound) comes from a source the viewer can place somewhere within the scene, such as a specific person who is speaking or music playing on a radio. It doesn't always need to be emanating from a visible source to be classed as diegetic sound; the sounds of cars, buses, sirens, etc., can indicate that the scene is taking place at a busy city intersection, even though not a single vehicle may be seen onscreen. External audio (called non-diegetic sound) is anything in the soundtrack that couldn't possibly come from anything within the onscreen world, such as a narrator's voiceover or music used to enhance the audience's emotion.

Organizing the Timeline

Before you start editing sound effects and other audio clips into the timeline, it's worth taking a moment and spending a little time making sure you know what you're working with.

You will start by changing the track names so that it's easy to identify the type of audio that the track contains.

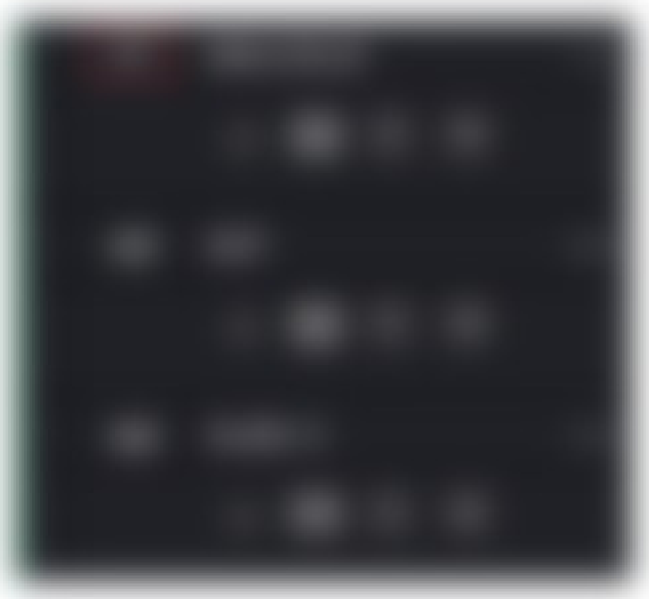
1 In the track controls, click the Audio 1 track name to highlight it and rename it **DIALOGUE**.



2 Rename the Audio 2 track **SOT**.

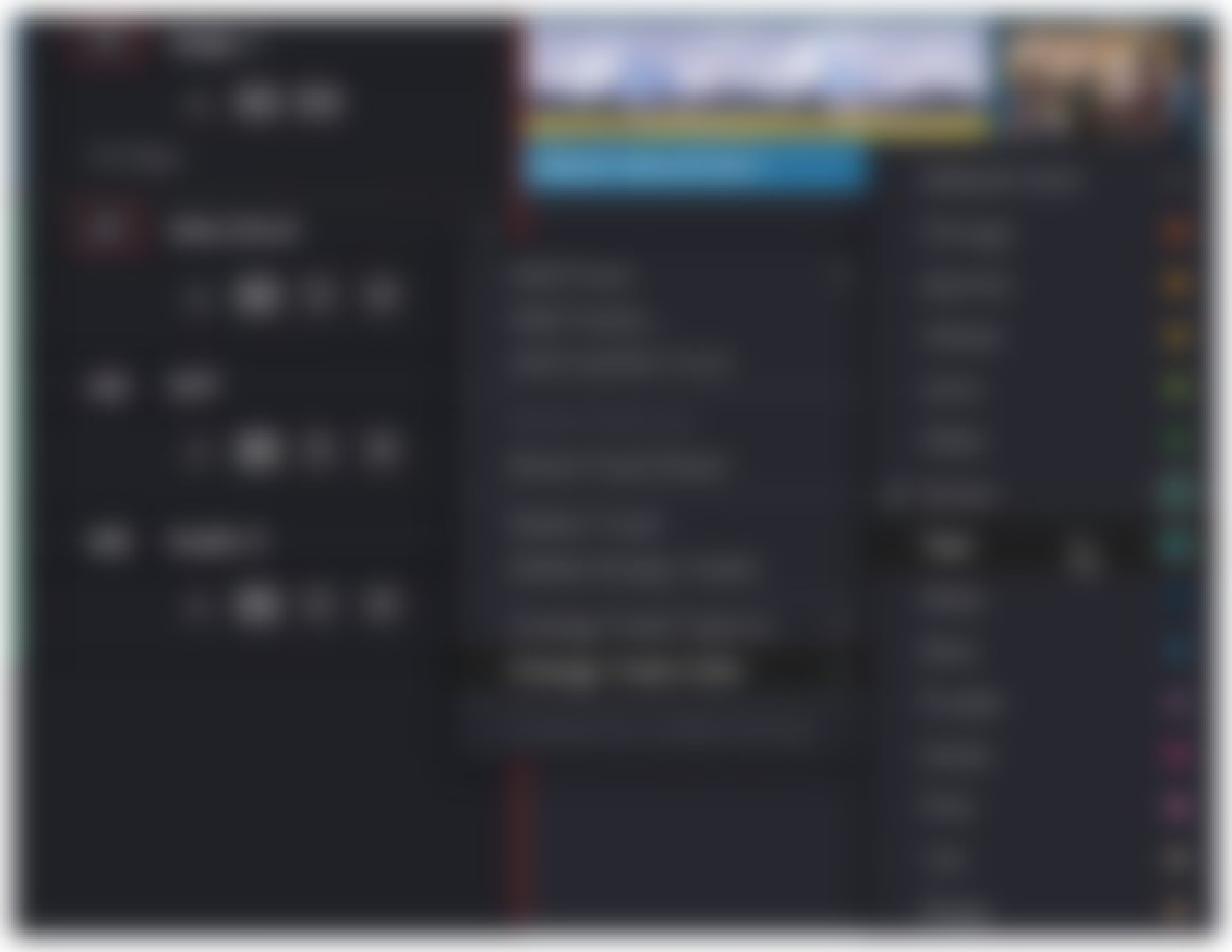
NOTE "SOT" is an acronym for "sound on tape," a somewhat anachronistic term used to refer to audio recorded on a camera.

3 Rename Audio 3 **MUSIC** for obvious reasons.



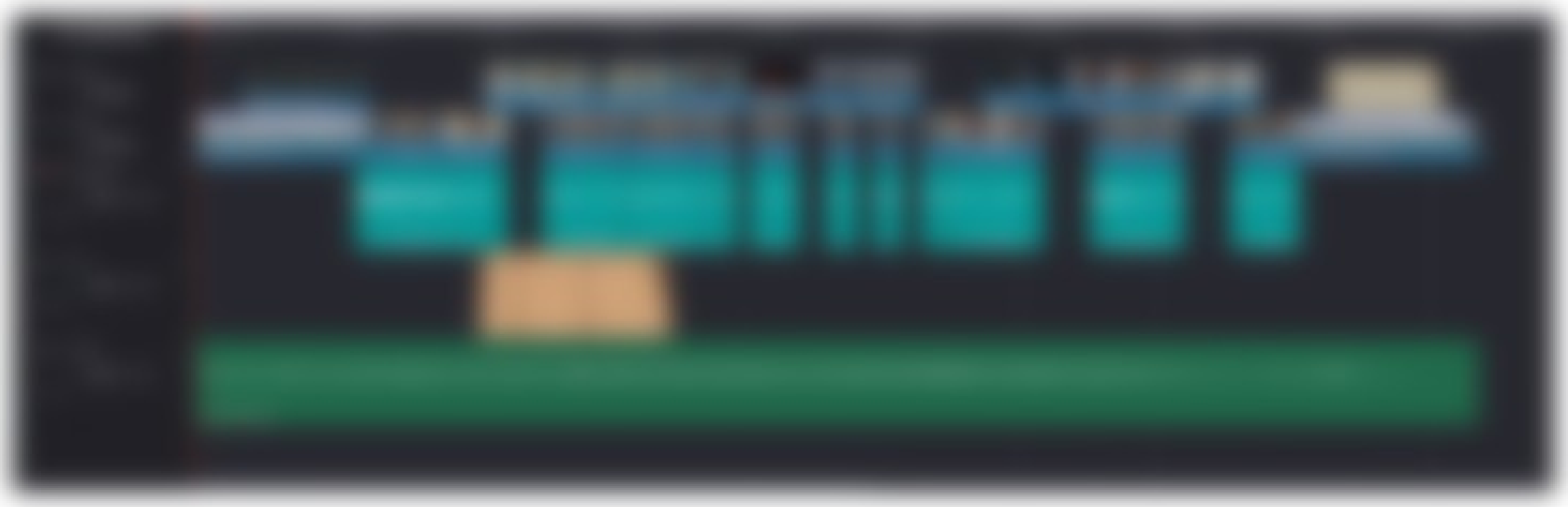
In addition to naming your tracks, you can also apply colors to the clips on specific tracks. This will help you visually identify the different audio elements.

- Right-click the track controls for the DIALOGUE track and choose Change Track Color > Teal.



- Right-click the track controls for the SFX track and choose Change Track Color > Beige.

You will leave the MUSIC track with the default green for audio tracks.



NOTE If any clips in these tracks have their own color tag applied, this will supersede the color assigned to the track.

Adding the Sound Effects

Before you start thinking about audio levels for each part of the soundtrack, there's an opportunity to add some additional sound clips to flesh out the overall sound design for the edit. Thankfully, adding audio clips in the edit page is almost identical to editing video clips.

When you initially edited this footage together, you chose not to edit the audio parts of many of the clips, mainly because that audio wasn't necessarily suitable due to wind noise on the microphone, people talking, or even music. However, you should always strive to have some sort of audio accompany your video clips, even if it has to be added later. It's very rare that we don't hear anything, even in a location that is very quiet.

- In the media pool, select the SFX bin and preview each of the seven audio clips.

NOTE These clips were taken from the Fairlight Sound Library. For more information on obtaining and using the Fairlight Sound Library, see *The Fairlight Audio Guide to DaVinci Resolve 20*.

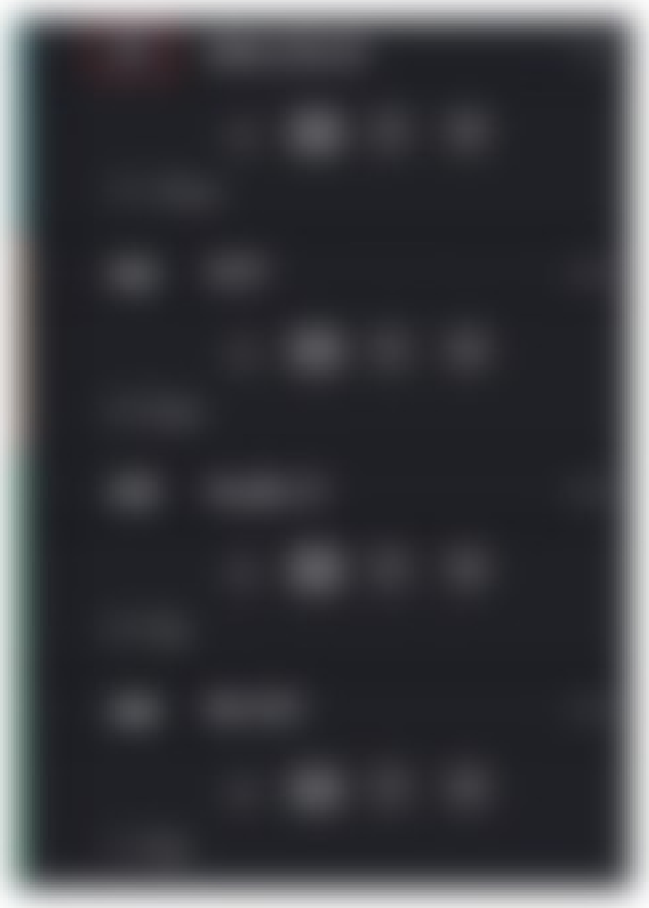
[illegible] Open the clips one at a time in the source viewer.

You should be able to identify that most of these clips are stereo, but there are two clips that are only single mono channels – specifically, **Boots on Rough Dirt Footsteps.wav** and **[illegible].wav**.

Tip Use the Audio Configuration panel in the File tab in the Inspector to verify which of these audio clips are stereo and which are mono. Alternatively, you can use the Audio tab in Clip Attributes. For more information on audio configuration, see Lesson 5.

[illegible] In the timeline, right-click the track controls for the SFX track and choose Add Track > Stereo.

A new track ([illegible]) is added to the timeline below the SFX track.

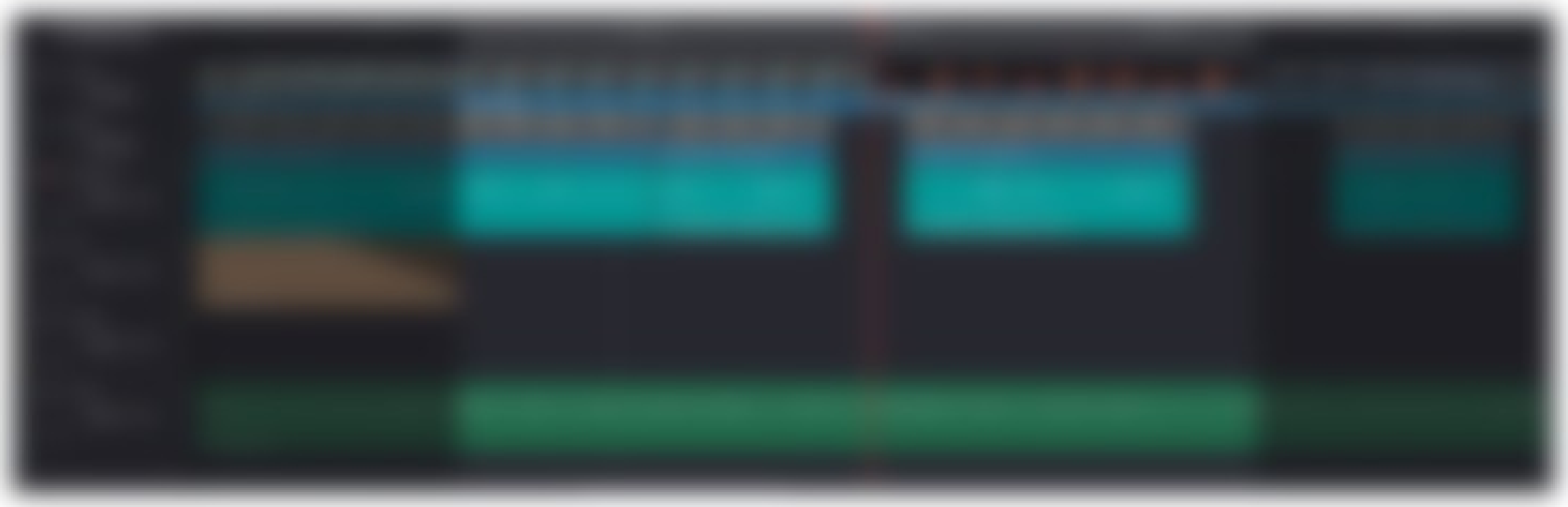


- Change the name of this track to **ATMOS**, then right-click the track controls for the track and choose Change Track Color > Yellow.

  Now you can add the appropriate sound effects to your timeline using three-point editing techniques.

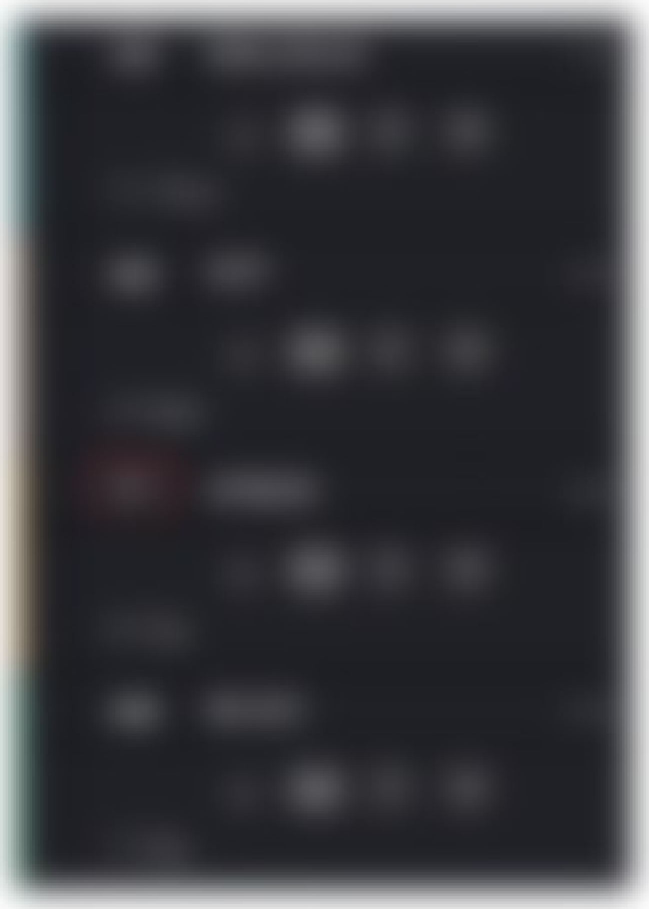
- In the timeline, select the [illegible] and [illegible] clips.
- Choose Mark > Mark Selection or press Shift-A.

  In and Out points are added to the timeline around the selected clips.

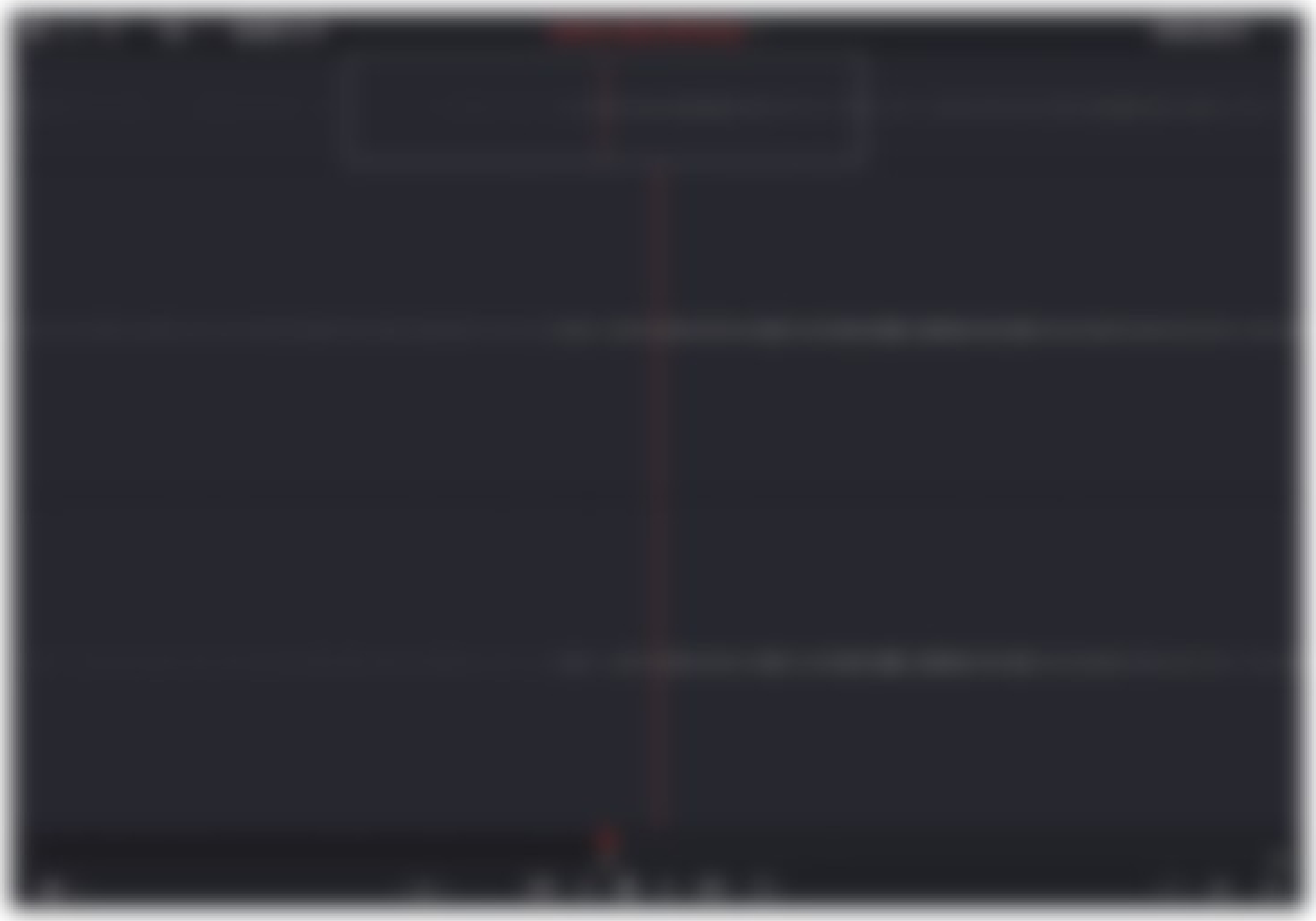


TIP Deselect the clips in the timeline to better see the marked duration.

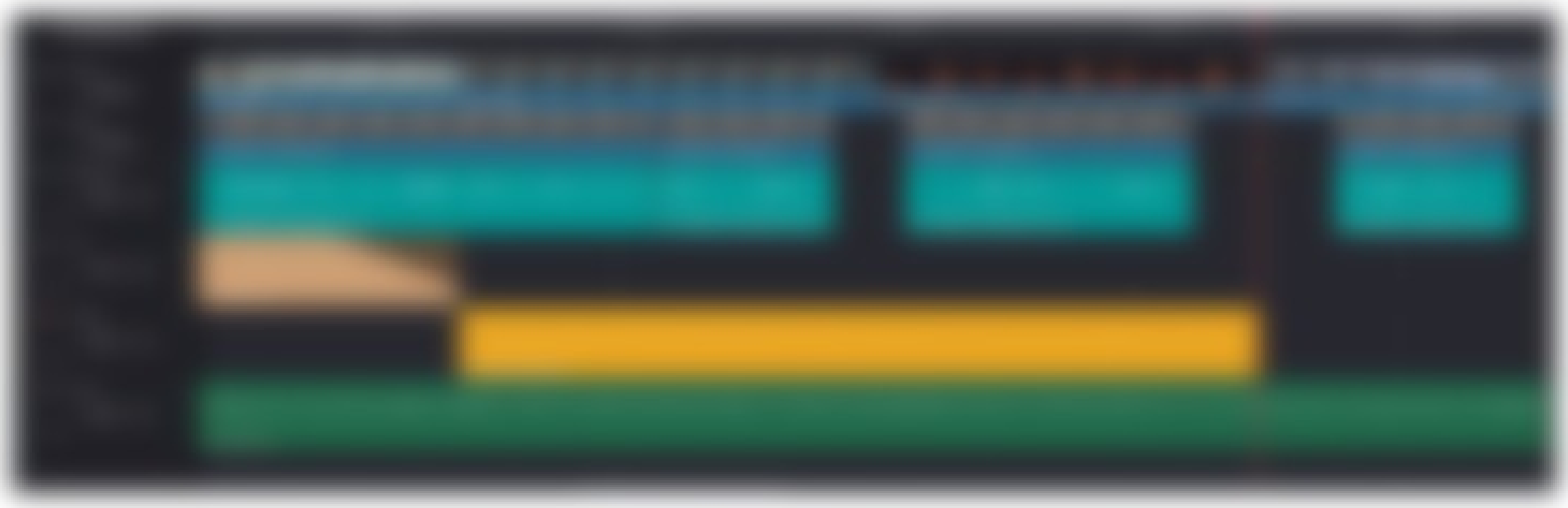
[illegible] Choose Timeline > Track Destination Selection > Audio Destination 3 or press Option-Command-3 (macOS) or Alt-Ctrl-3 (Windows) to change the A1 destination control to the [illegible] track (A3).



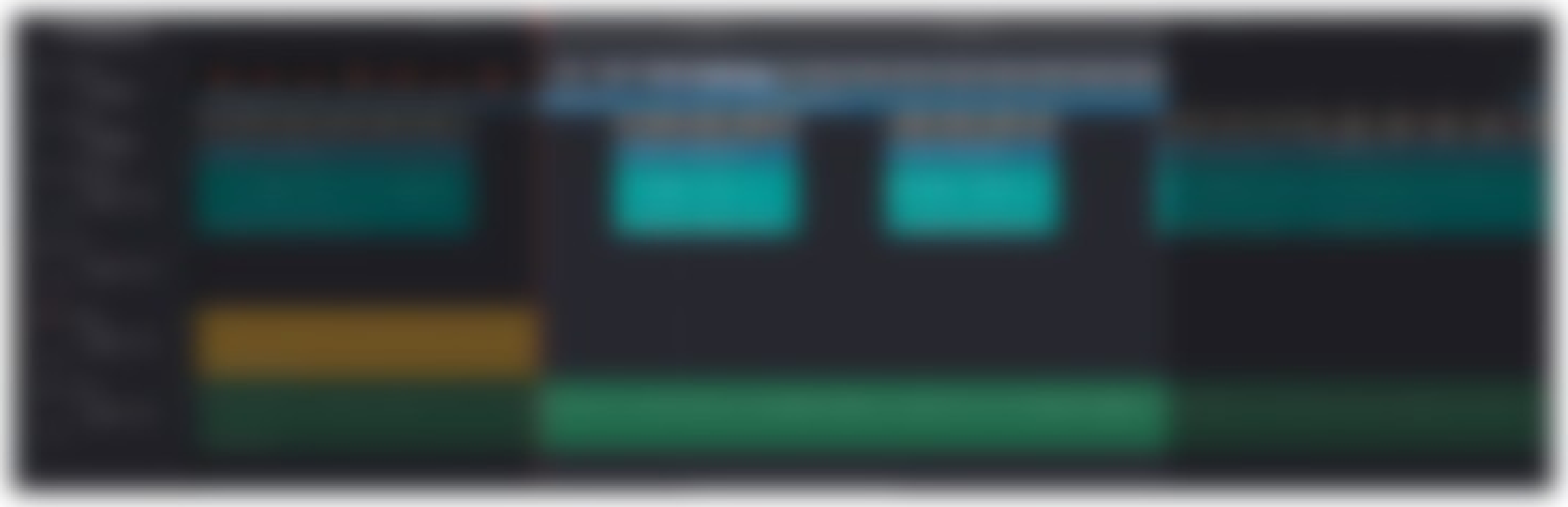
[illegible] From the SFX bin, open the clip **[illegible]** in the source viewer and set an In point at an appropriate location.



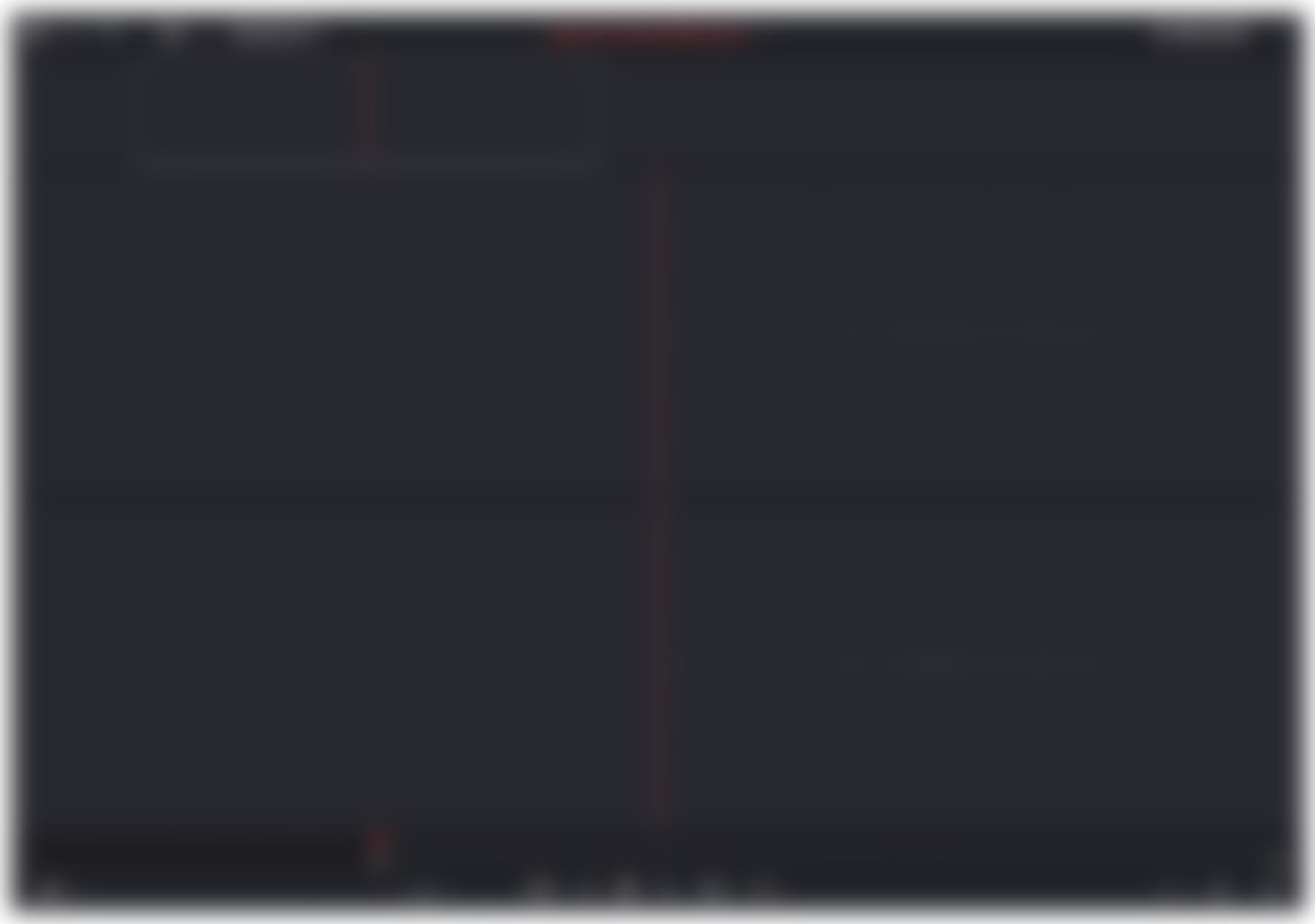
9 Make an Overwrite edit.



10 In the timeline, select the [illegible] and [illegible] clips, where the [illegible] on the rocks, and press Shift-X to mark the selection.

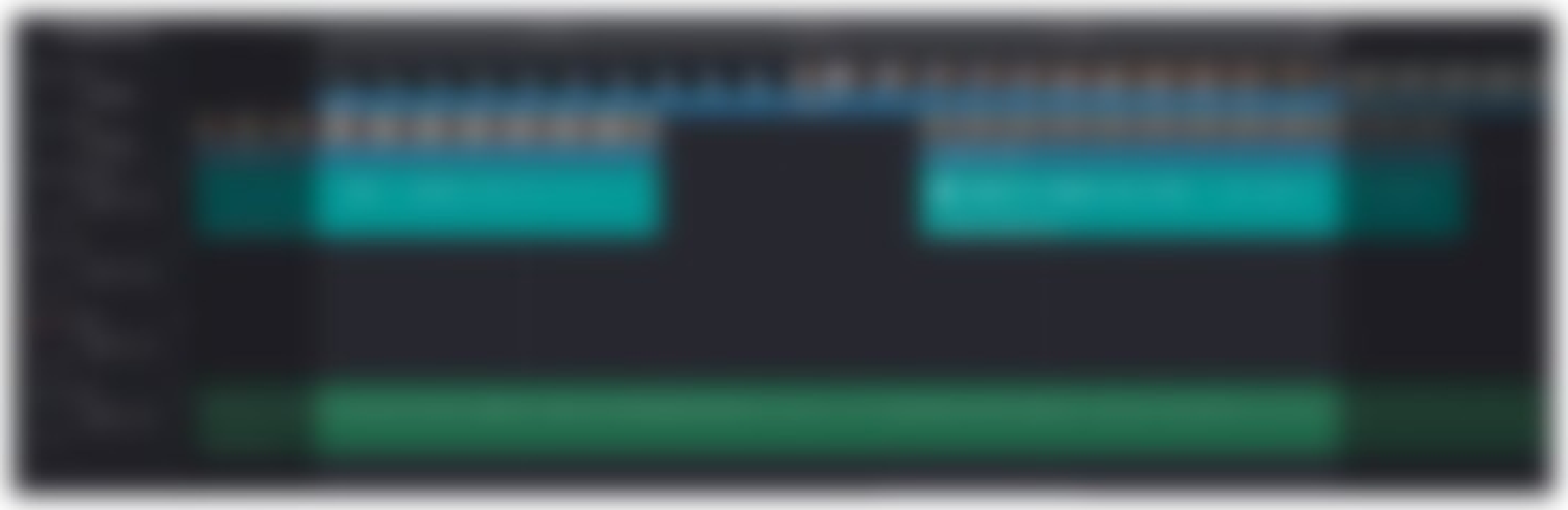


11 From the SFX bin, open the clip [illegible] in the source viewer and mark an In point at an appropriate location.

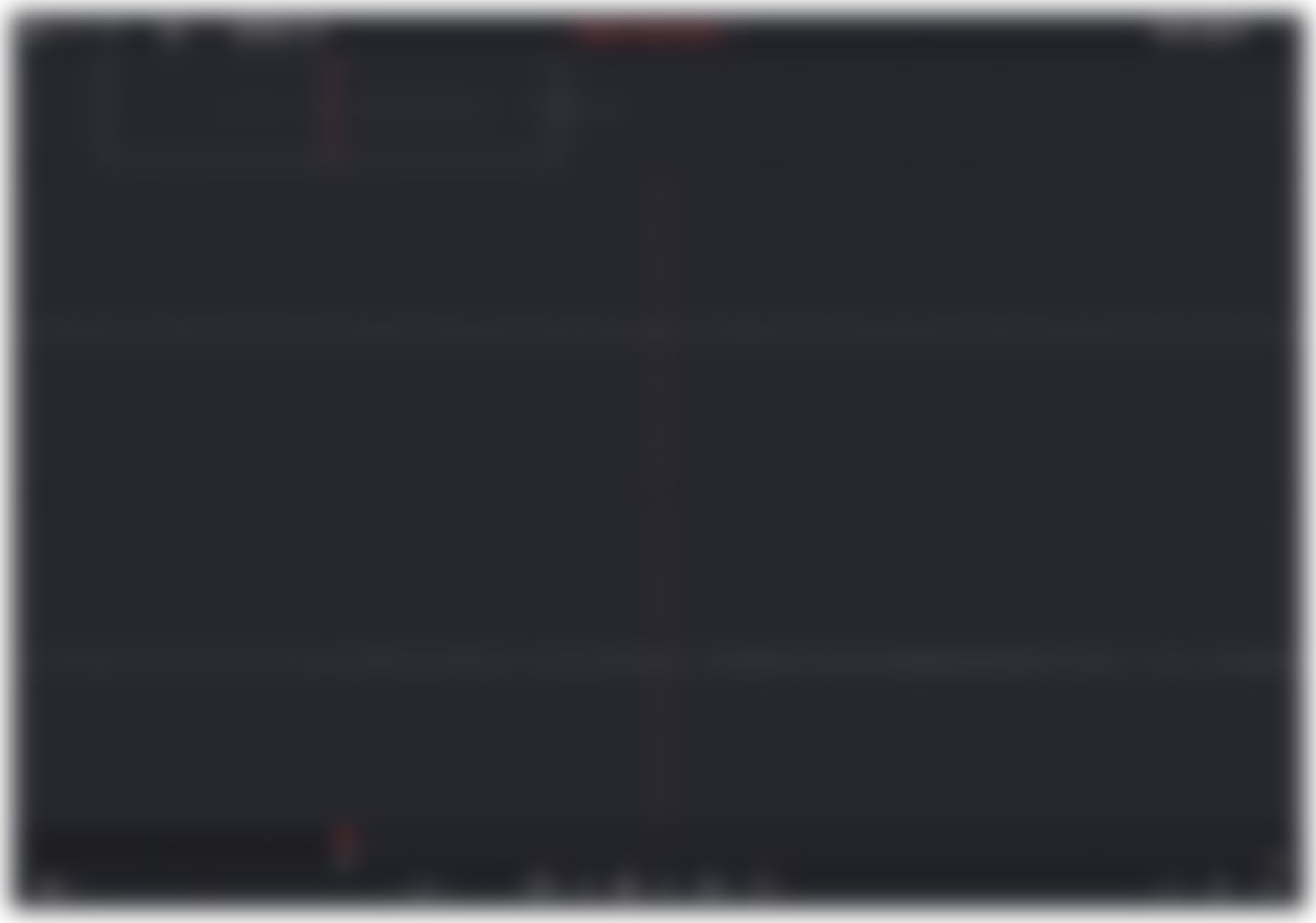


[illegible] Make an Overwrite edit.

[illegible] Select the [illegible] and [illegible] clips and press [illegible] to mark the selection.

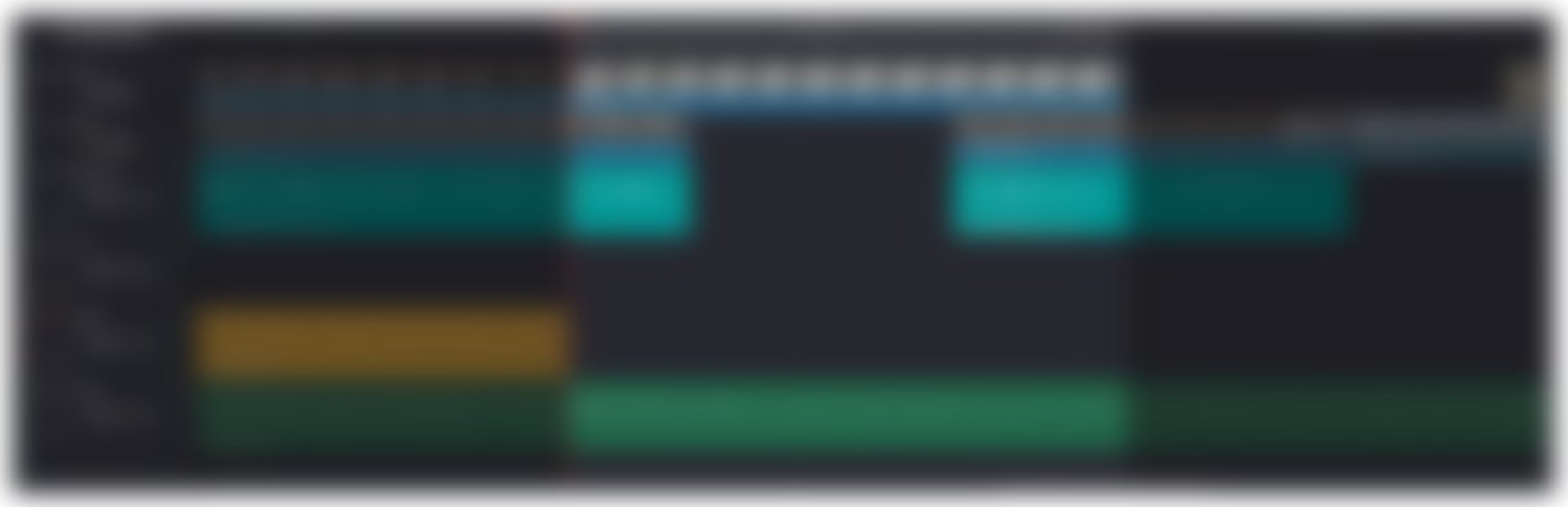


[illegible] From the SFX bin, open the [illegible] clip and set an In point at an appropriate location.

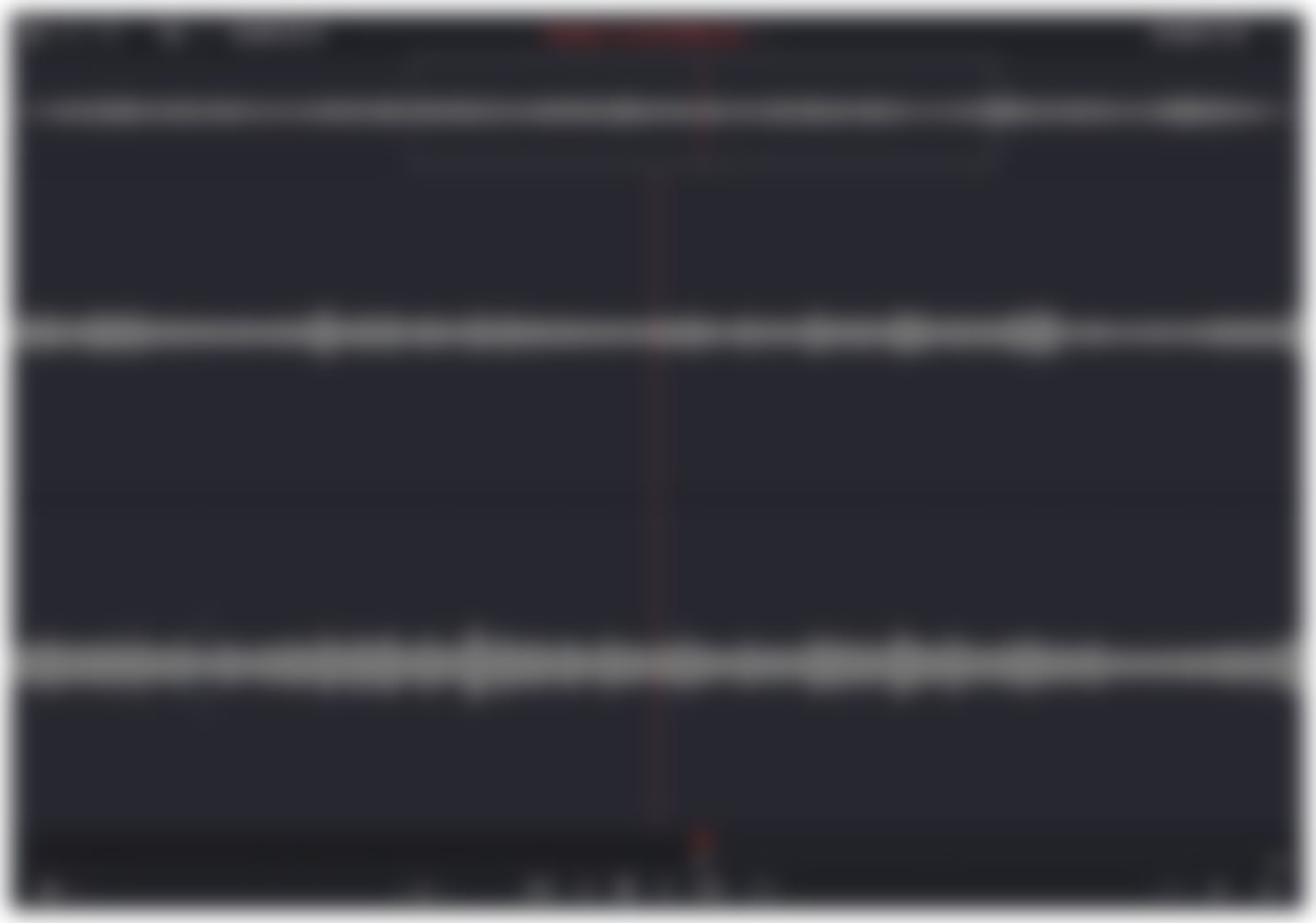


[illegible] Make an Overwrite edit.

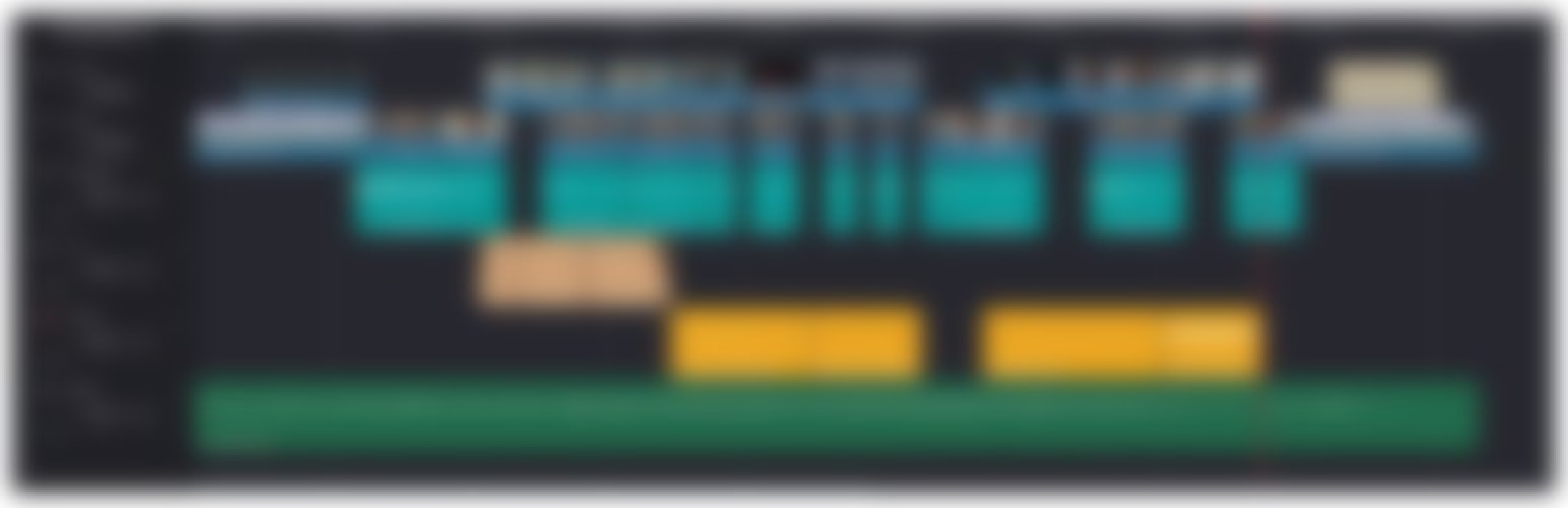
[illegible] Select the [illegible] clip and press Shift-X to mark the selection.



[illegible] From the SFX bin, open the [illegible] clip in the source viewer and add an In point at an appropriate location.



9 Make another Overwrite edit and click Full Extent Zoom.



This has quickly added a lot of atmosphere to each of these clips. You will address the clipping in their levels soon.

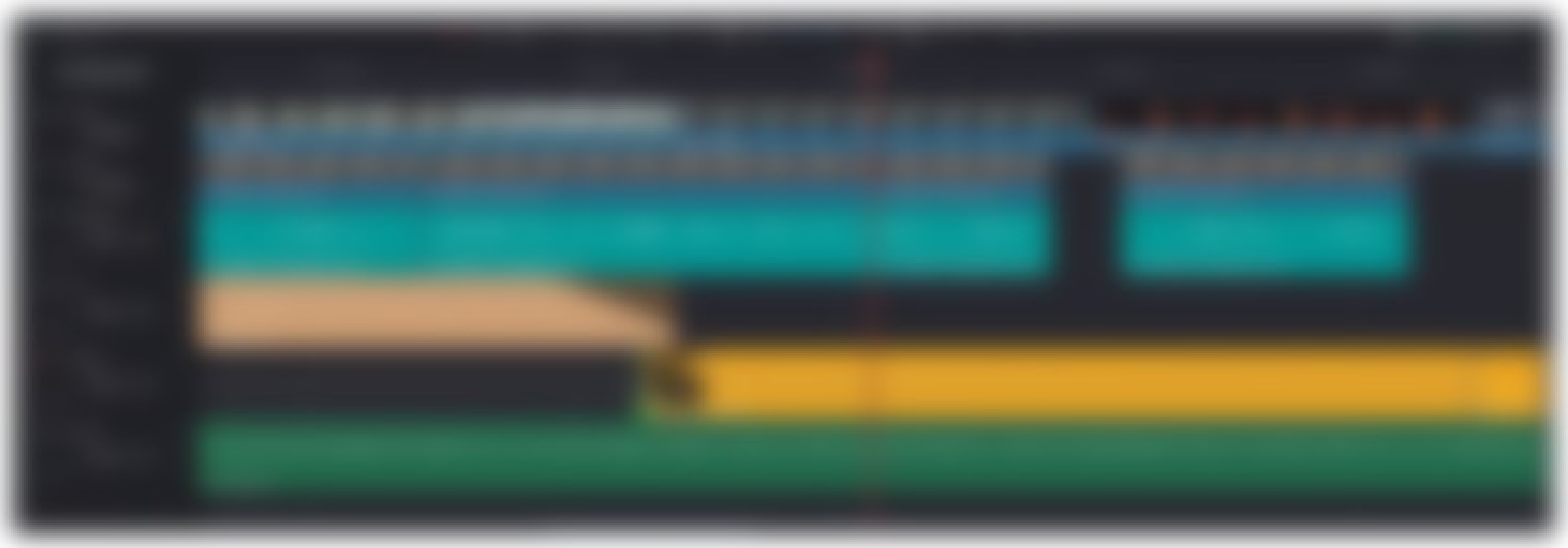
Adding Fades and Cross Dissolves

Before adding the other sound effects clips, take a moment to add some short fades to each of the clips you've just added. This will prevent the audio from cutting in and out as you refine the mix later.

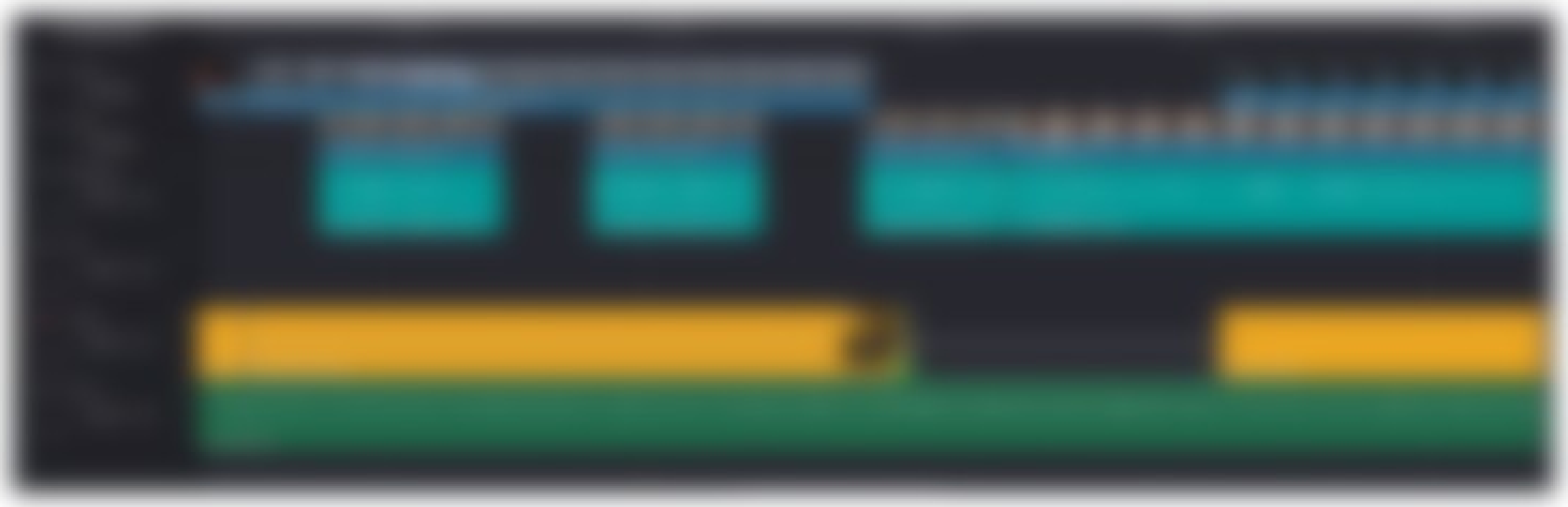
1. Place the timeline playhead over **Exterior Hotel Minicab** and click the Detail Zoom button.

2. Using the fade handle at the start of **Exterior Hotel Minicab**, add a 10-frame fade in.

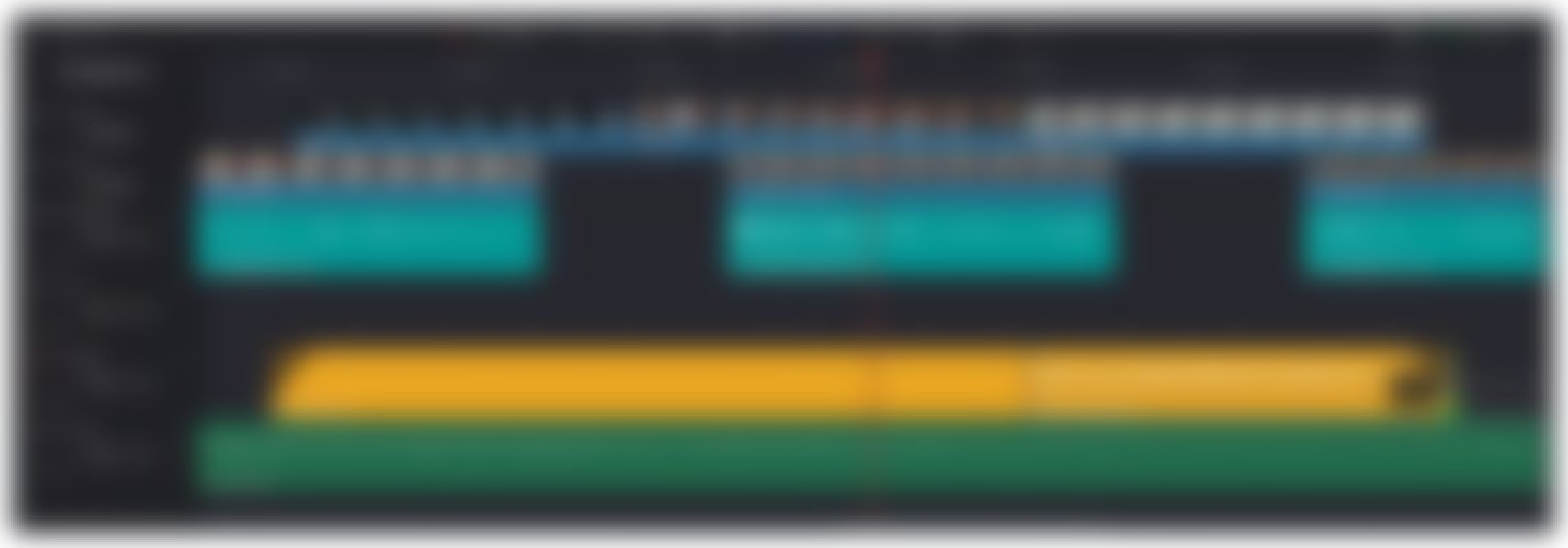
3. Ensure that Snapping is disabled for the timeline and trim the start of the clip back by six frames so the fade happens across the video edit, rather than starting when it's already cut to the shot of the smiling friends.



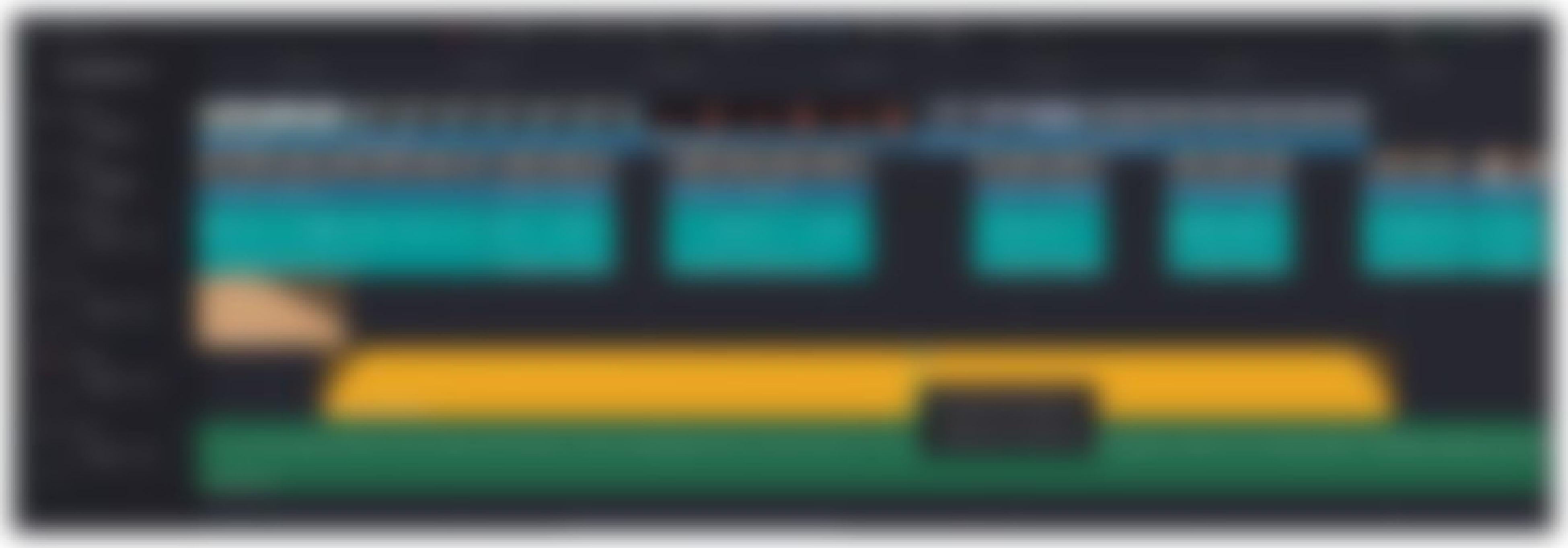
[illegible] Using the fade handle at the end of [illegible] add a [illegible] frame fade out and then trim the end of this clip [illegible] frames so the fade out happens across the video edit at the end of [illegible].



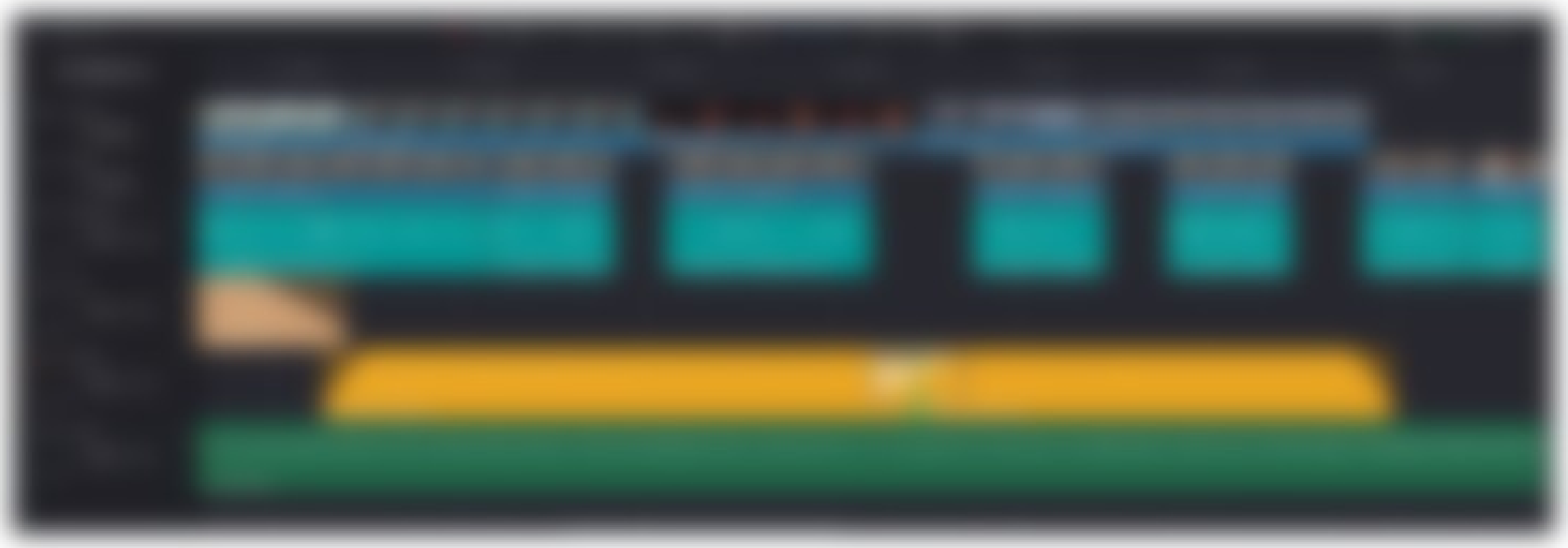
[illegible] Repeat this stage for the beginning of [illegible] and the end of [illegible].



[illegible] Right click the edit point between [illegible] and [illegible] and choose Add [illegible] Frame Cross Fade [illegible].



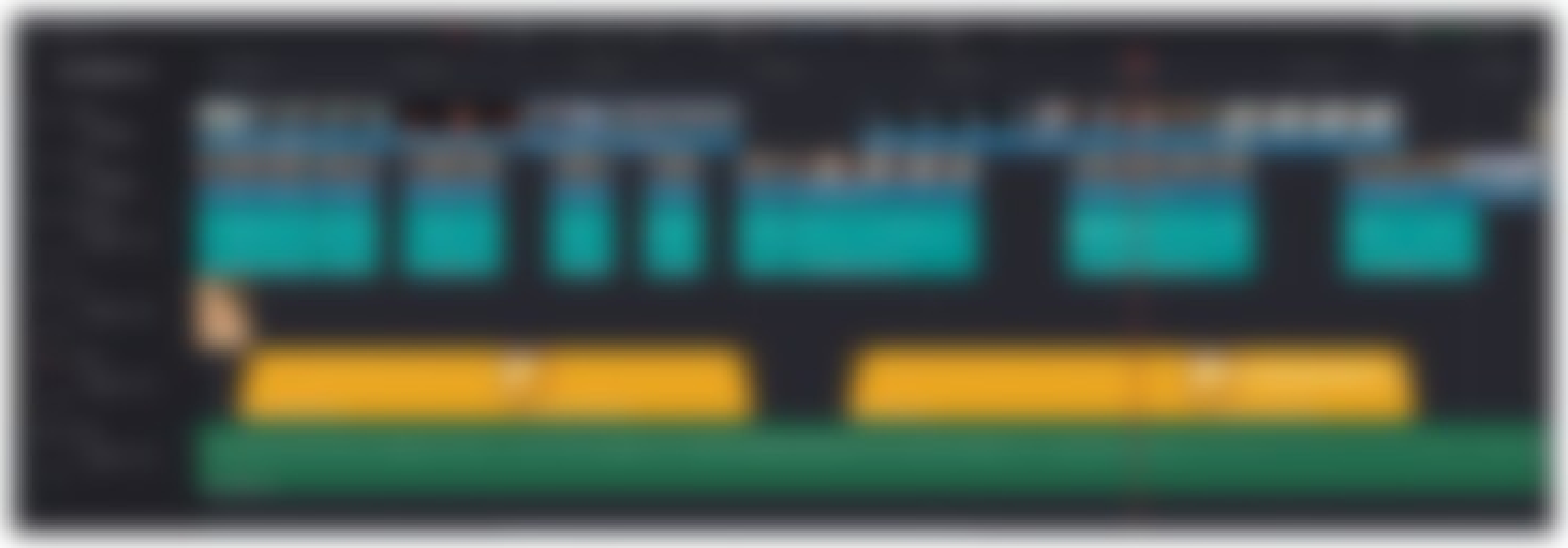
An audio crossfade is added to the edit point.



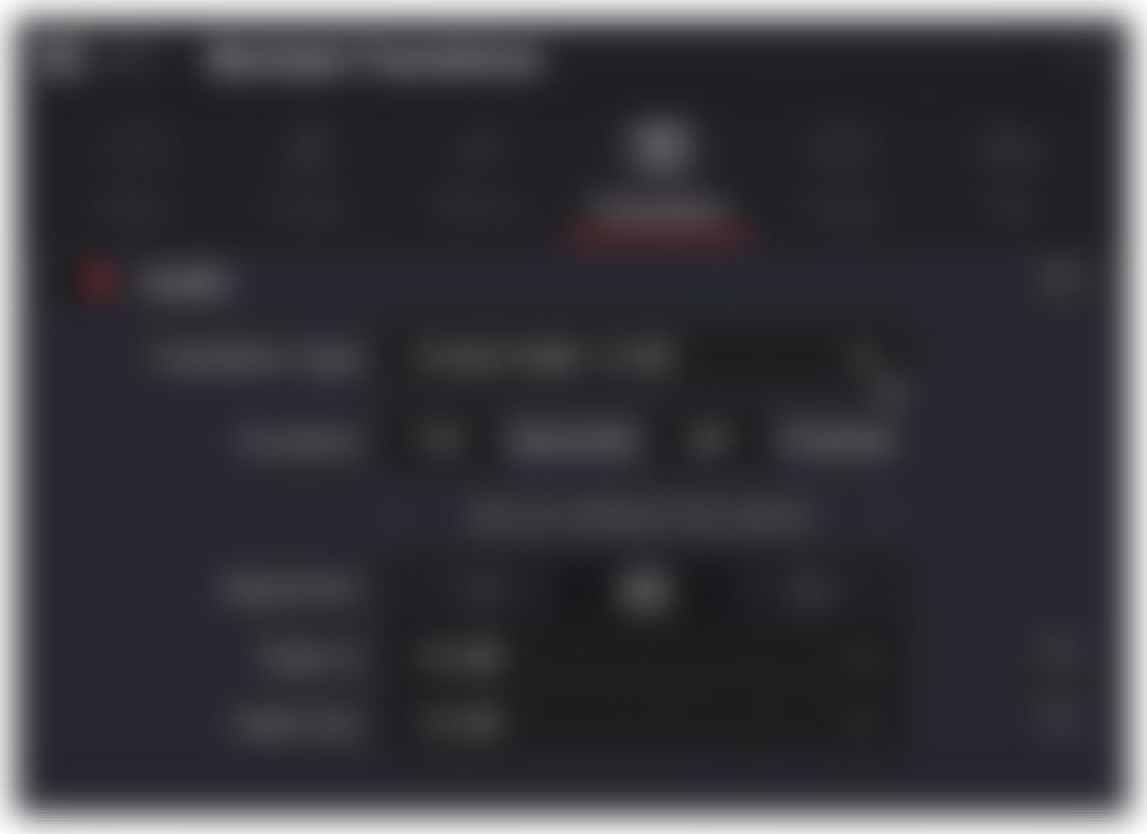
7 Repeat for the edit point between **[illegible]** and **[illegible]** adding another audio cross dissolve.

You can adjust the type of audio cross dissolve being used.

8 Command-click (macOS) or Ctrl-click (Windows) the two audio transitions you've just added.



9 Open the Inspector and change the Transition Type to Cross Fade +3 dB.



This gives a more natural feel to the cross fades.

- [illegible]

[illegible] [illegible]

Syncing Foley to Onscreen Action

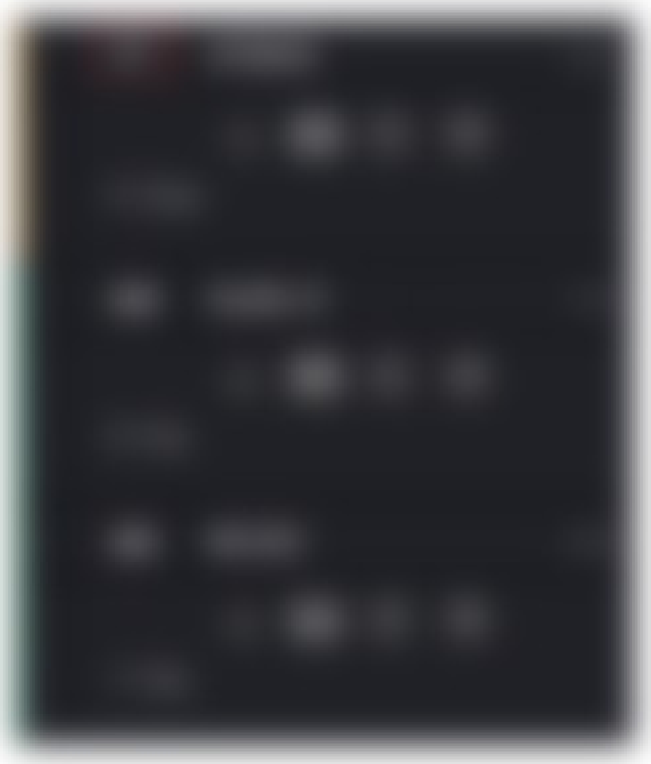
[illegible]

[illegible]

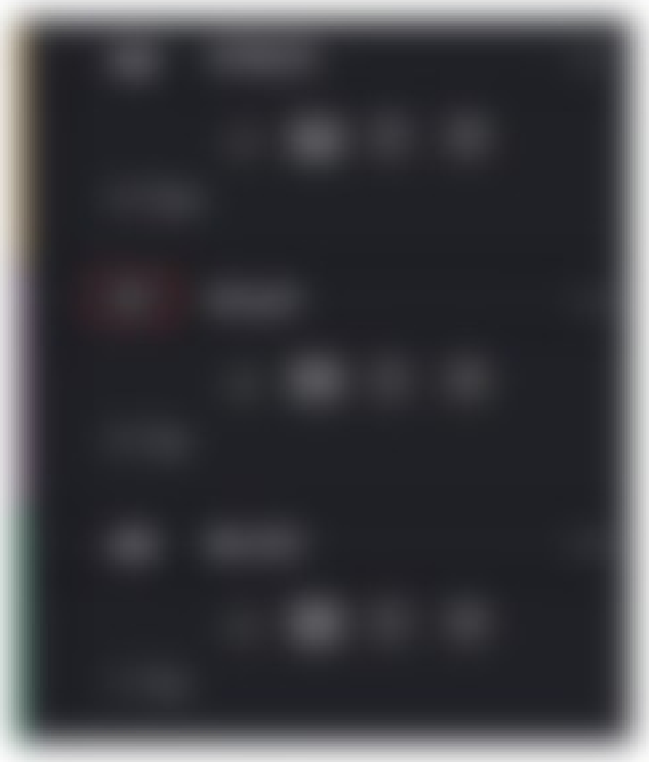
[illegible] [illegible]

- [illegible]

A new mono track (Audio 4) is added below the ATMOS track.



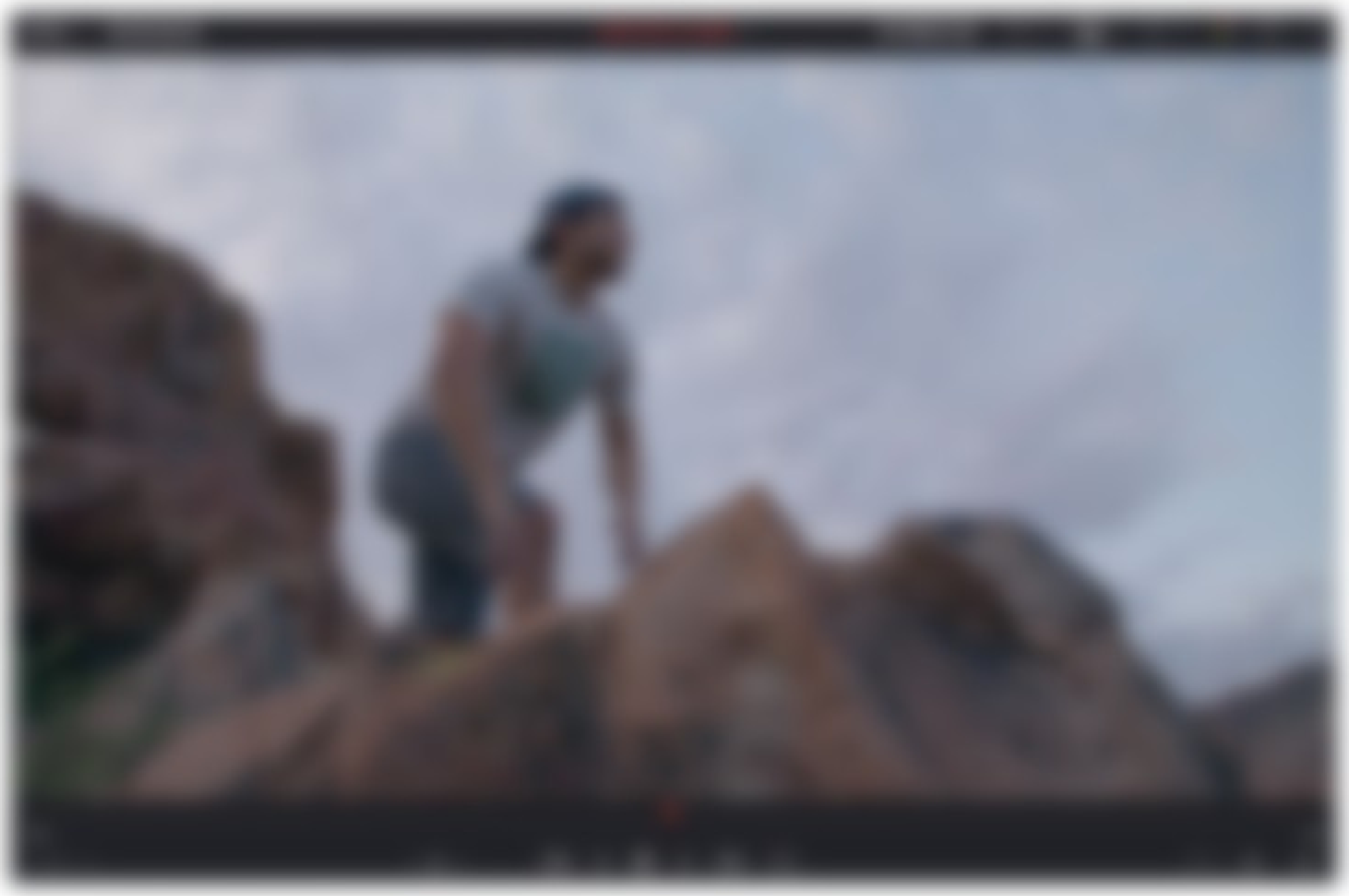
- Rename Audio 4 **FOLEY** and change the track color to Purple.
- Press [illegible] (macOS) or [illegible] (Windows) to change the A1 destination control to the FOLEY track (A4).



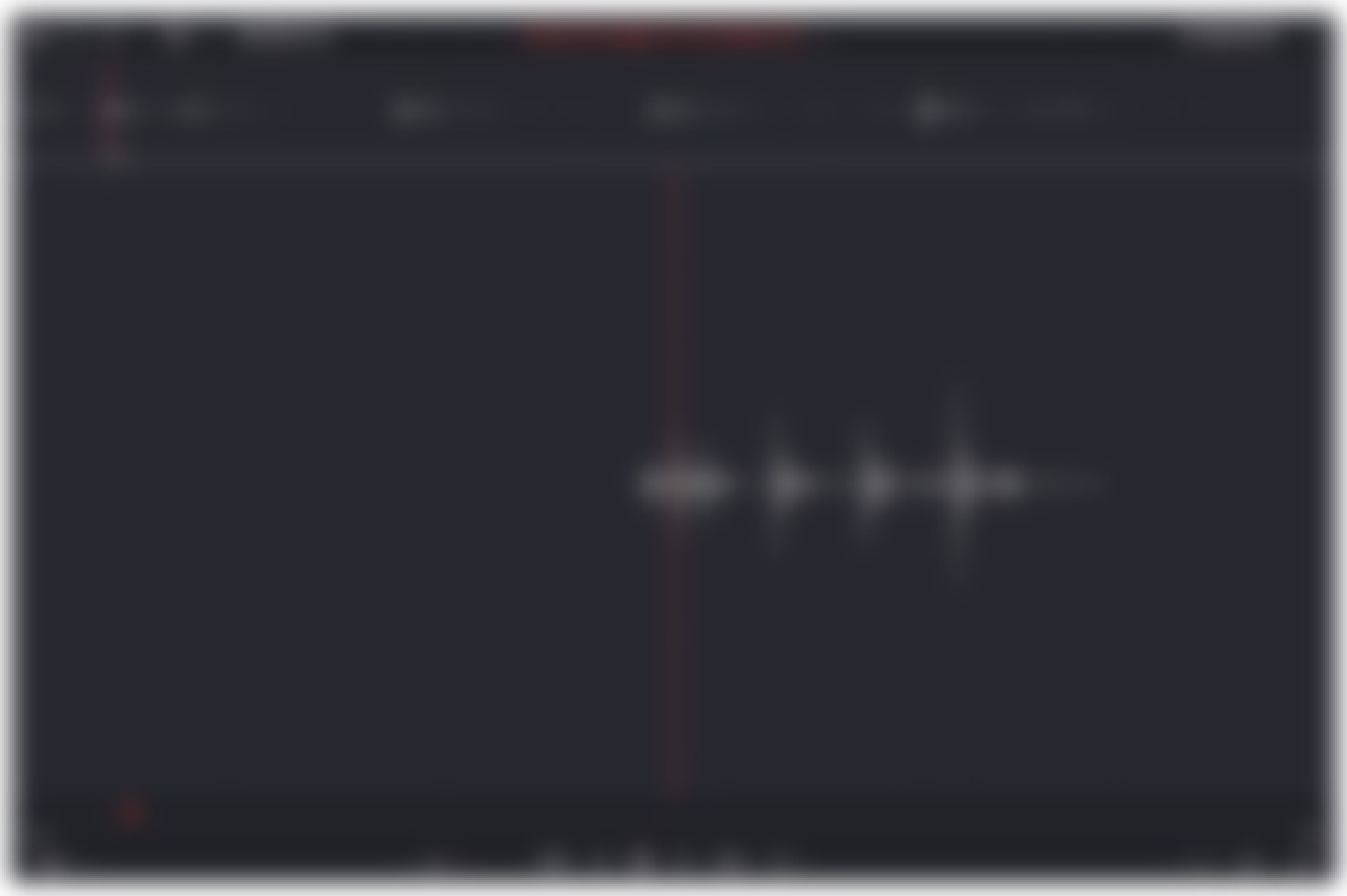
You were able to use just about any part of the previous ambience clips since nothing in the audio needed to be synchronized to the onscreen action. Foley is different because you'll need to ensure that it's synced as accurately as possible to the onscreen action.

- In the timeline, place your playhead over [illegible] where the guy makes his jump into the rocks, and click the Detail Zoom button.

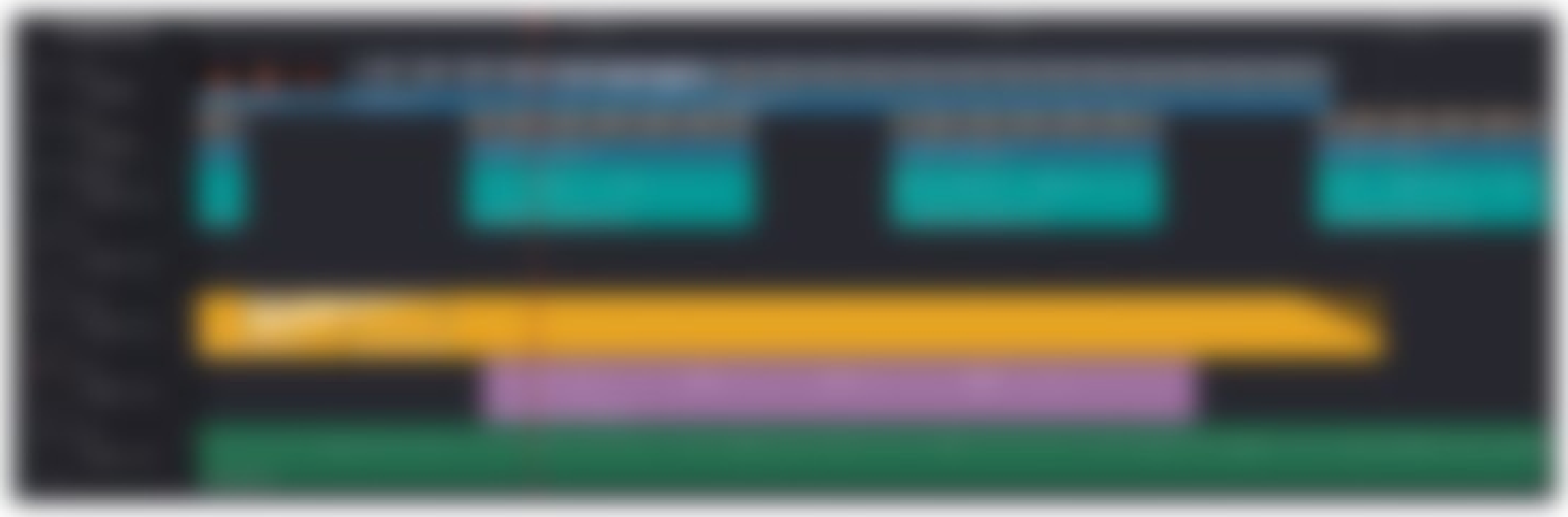
- Jog through the footage trying to identify where he places his right foot on the rock, although since you can't see his foot actually touching the rock, you'll need to use your best judgment.



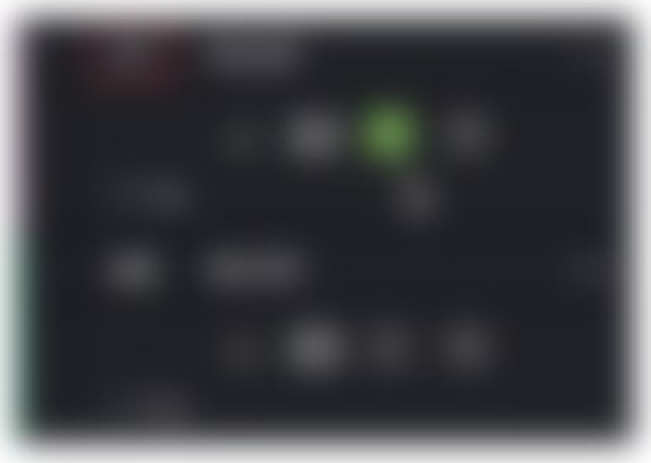
- From the SFX bin, open the **Boots on Rough Dirt Footsteps.wav** clip in the source viewer.
- Listen to the audio clip of the steps, and then place the source viewer playhead over the first step.



- Make a Replace edit.



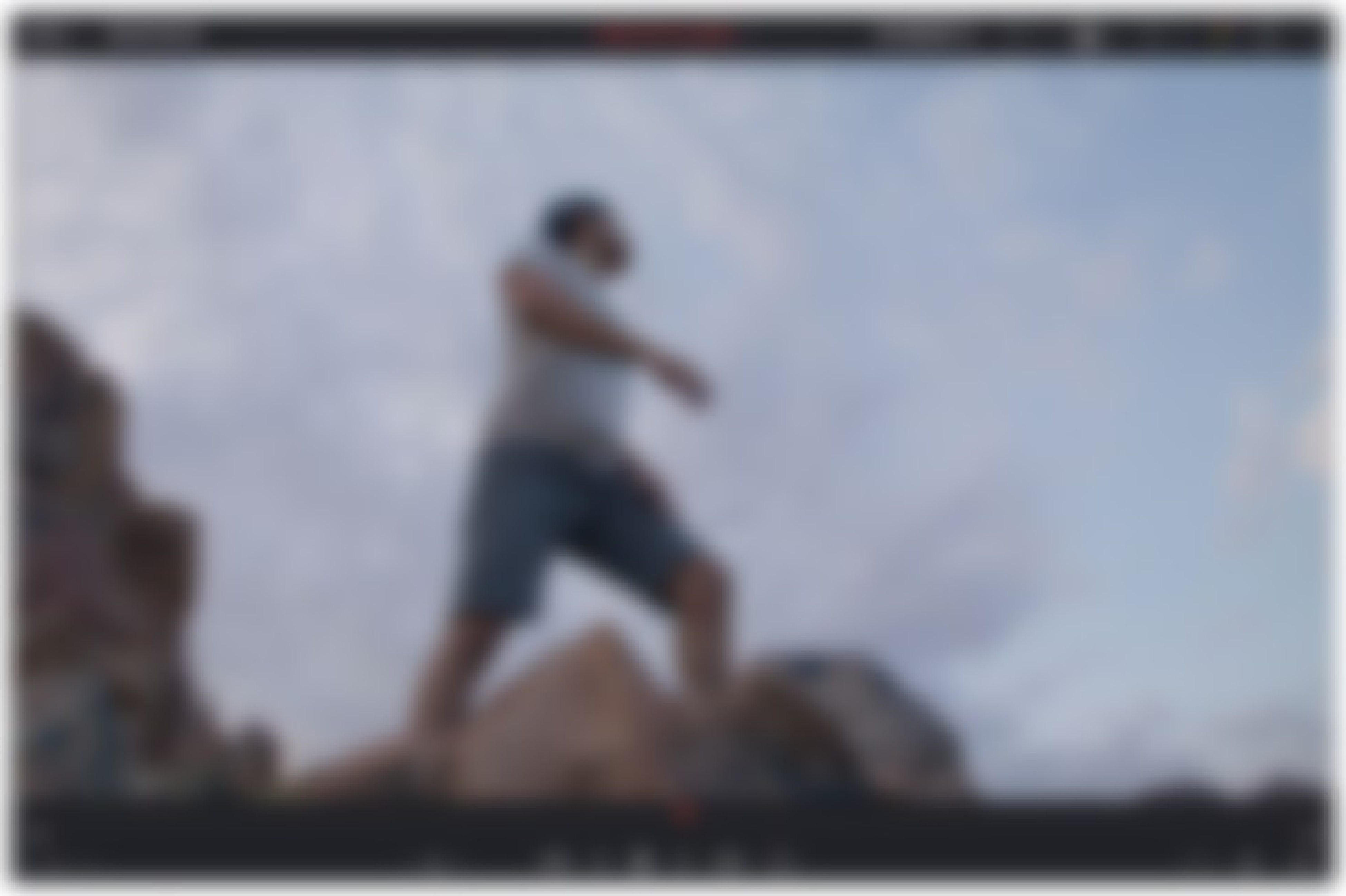
- Click the Solo button for the FOLEY track.



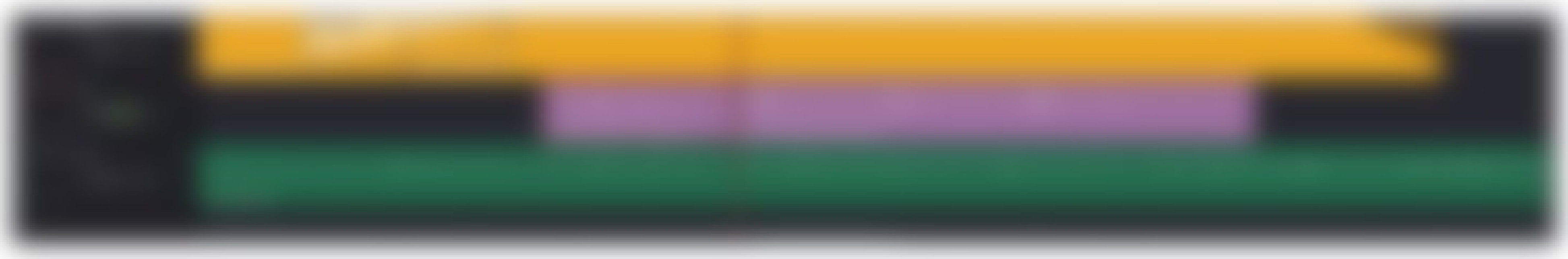
- Press / (forward slash) to preview the new audio in the timeline.

  Looks like the Editing Gods were smiling on you! The audio clip is almost a perfect match for the onscreen action! However, almost is not quite good enough.

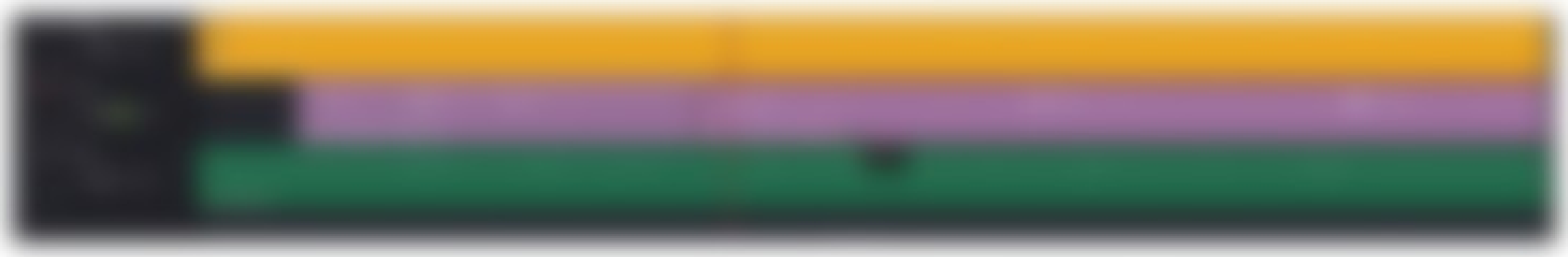
- Move the timeline playhead forward a few frames to where the guy places his left foot down in the same shot.



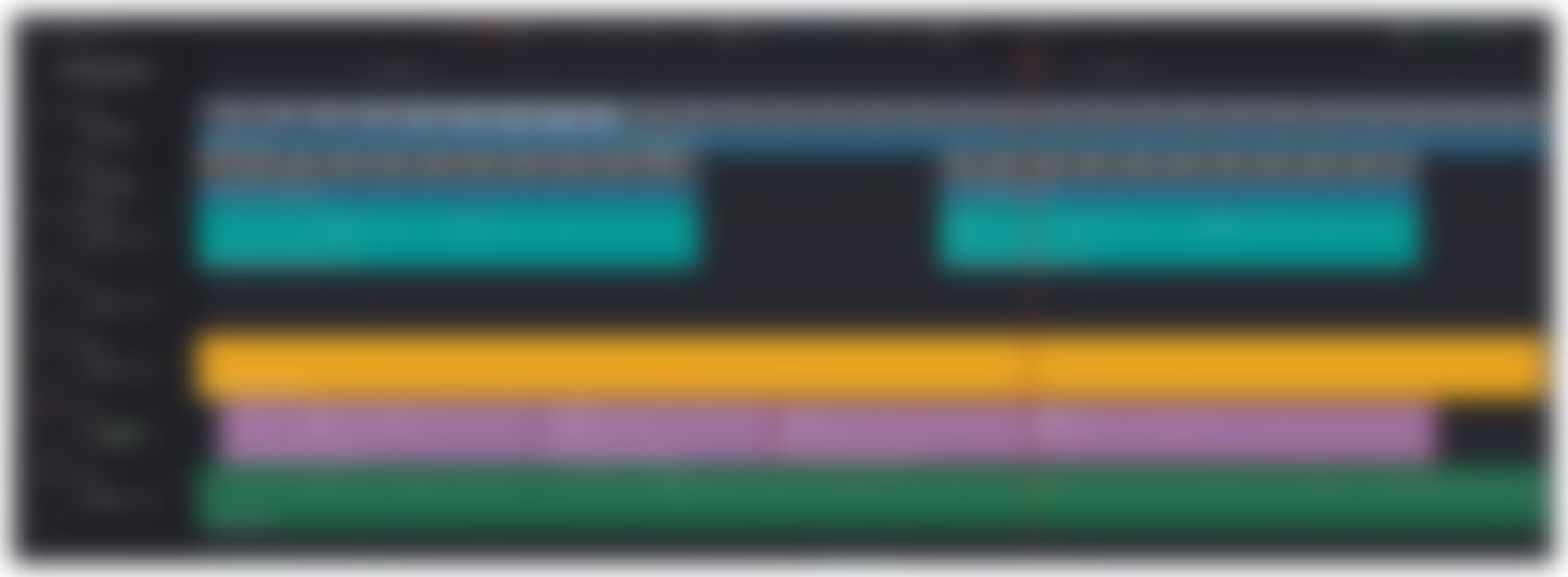
[illegible] Select the [illegible] clip in the timeline and choose Timeline > Razor or press Command-B (macOS) or Ctrl-B (Windows) to split the clip at the playhead position.



[illegible] Zoom in, press T to enable Trim Edit mode, and slide the second clip back slightly so the waveform of the step lines up with the playhead location.

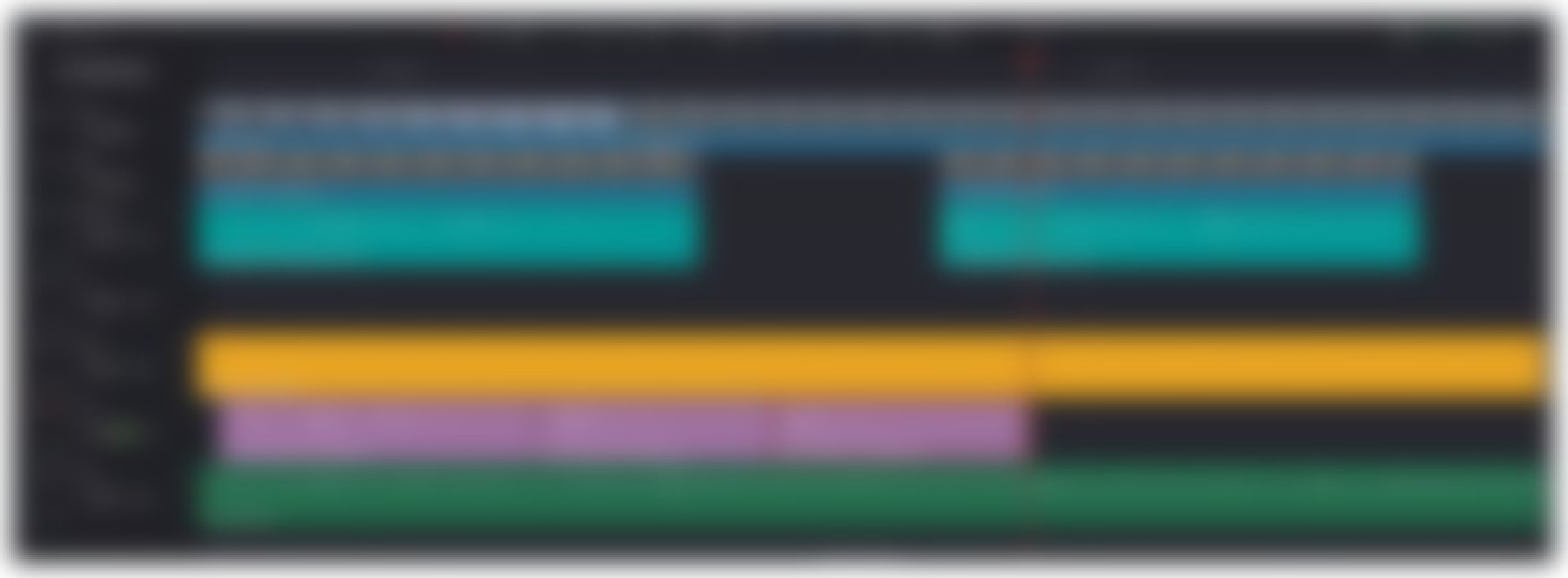


[illegible] Repeat the previous steps, ensuring that the sound of the next footstep is in sync with the on-screen action, and then place your playhead just before the final step in the audio clip.



[illegible] Press A to enable Selection mode.

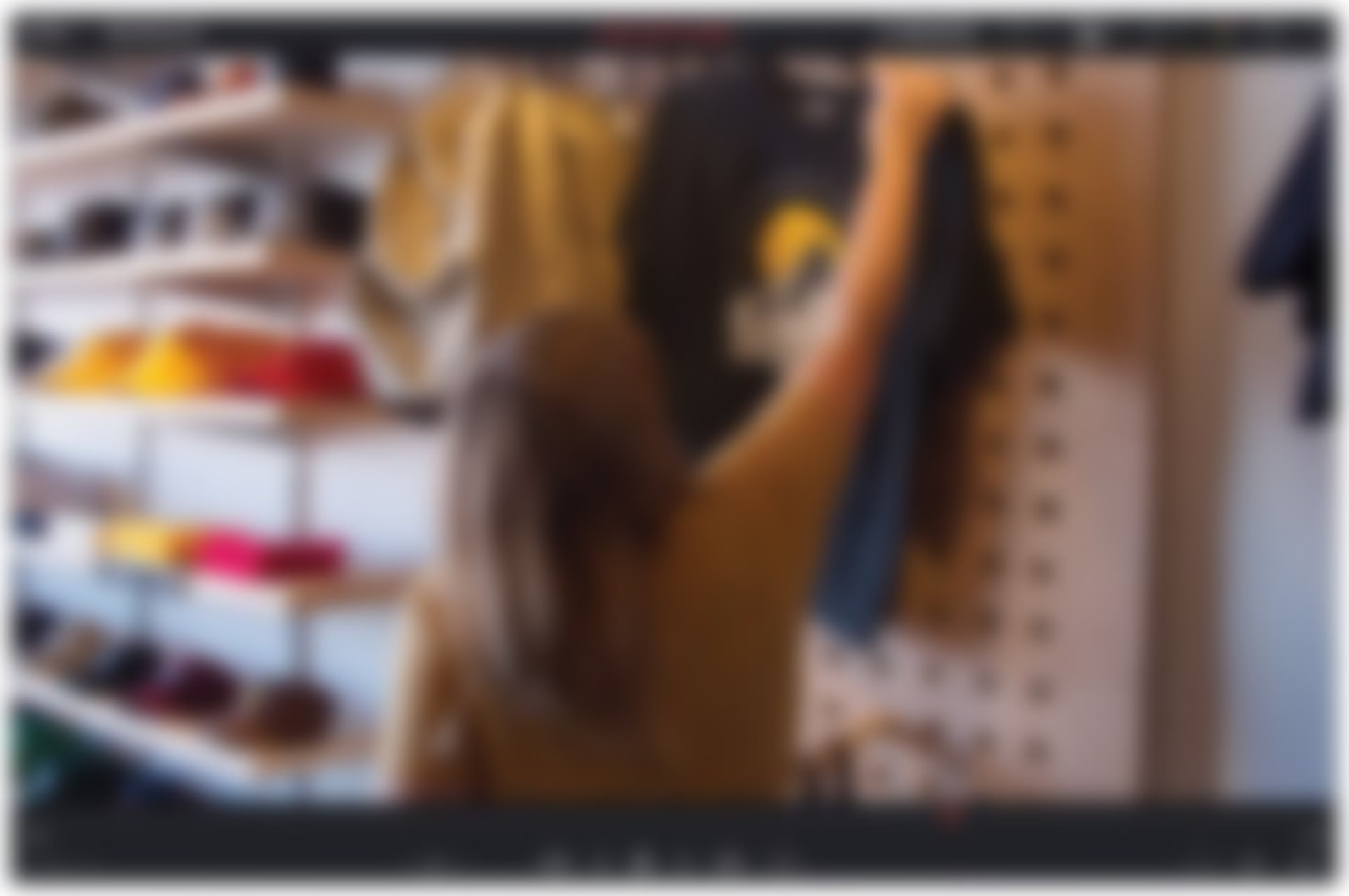
Select the second **Boots on Rough Dirt Footsteps.wav** and choose Trim > Trim End or press Shift-] (closing square bracket) to trim the end of this clip to the playhead position.



Sometimes, even the most innocuous piece of audio can enhance the footage.

Click the Full Extent Zoom button, and place the timeline playhead over **[illegible]**.

Click the Detail Zoom button and move the playhead to the frame where you think the shirt hanger would contact the display hanger. Again, since you can't see the action fully onscreen, your best guess is as good as anything—you can always adjust it later if necessary.



Subframe Audio Editing

While video trimming is limited to a timeline's frame rate, audio is captured using tens of thousands of samples each second. DaVinci Resolve lets you edit audio at the subframe level in the edit page, which enables a much more detailed trimming ability that means you can isolate subtle syllables or words that are slurred and make the edits sound cleaner and clearer.

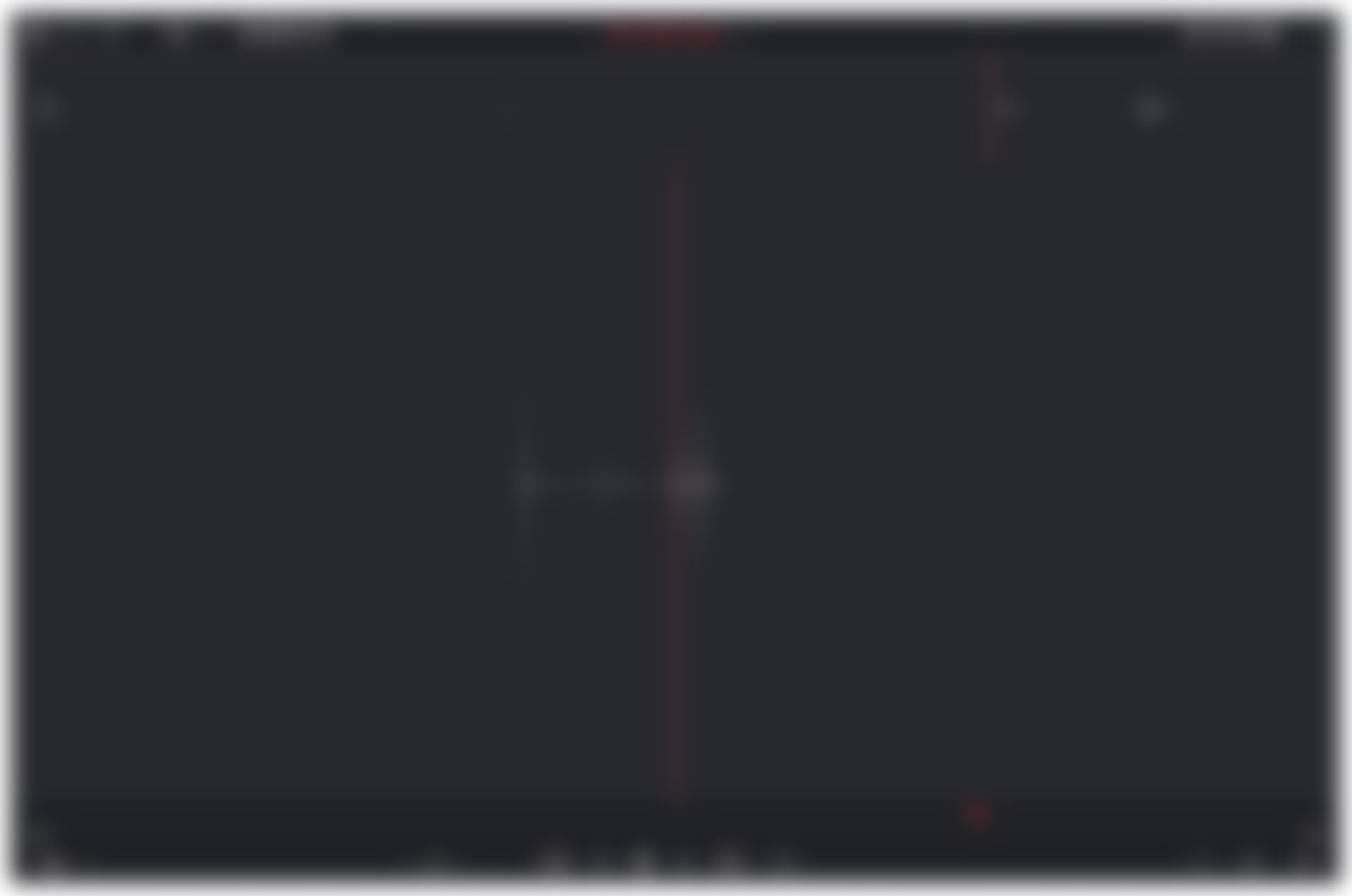
You don't need to do anything to activate this feature; it's how the edit page works automatically with audio. However, when trimming audio at the subframe level, it's best to have Snapping and Linked Selection turned off (if trimming audio clips linked to video clips) for the timeline. Also, zoom in as far as you can and do all your trimming with the mouse.

If you need greater precision than that offered by subframe audio editing, you'll need to use the editing functions on the Fairlight page, where audio can be trimmed with even more precision, right down to the individual sample level.

[illegible] From the SFX bin, open the **Pen Clicks.wav** clip in the source viewer and play the clip to hear the sound effect.

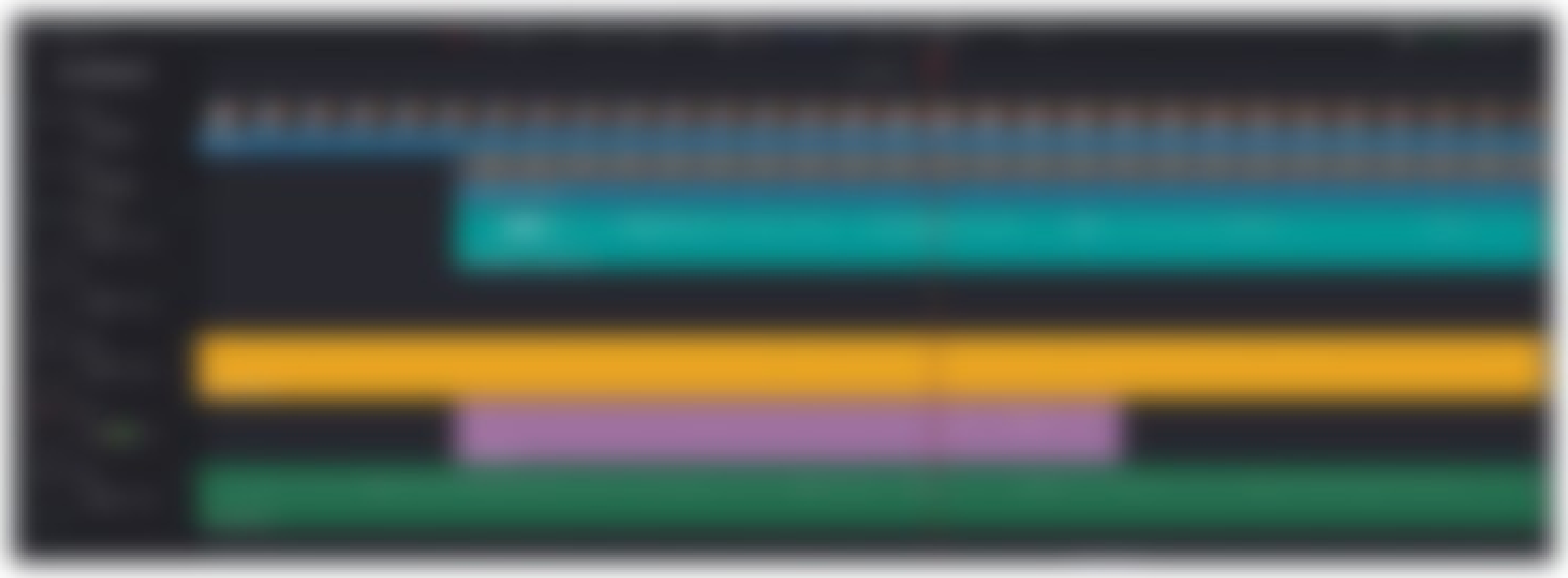
Yes, you're hearing this correctly. This is a recording of a plastic ballpoint pen being clicked. You'll use this in place of the sound of the T-shirt being put on display.

[illegible] In the source viewer, align the playhead with the penultimate click (pun intended).



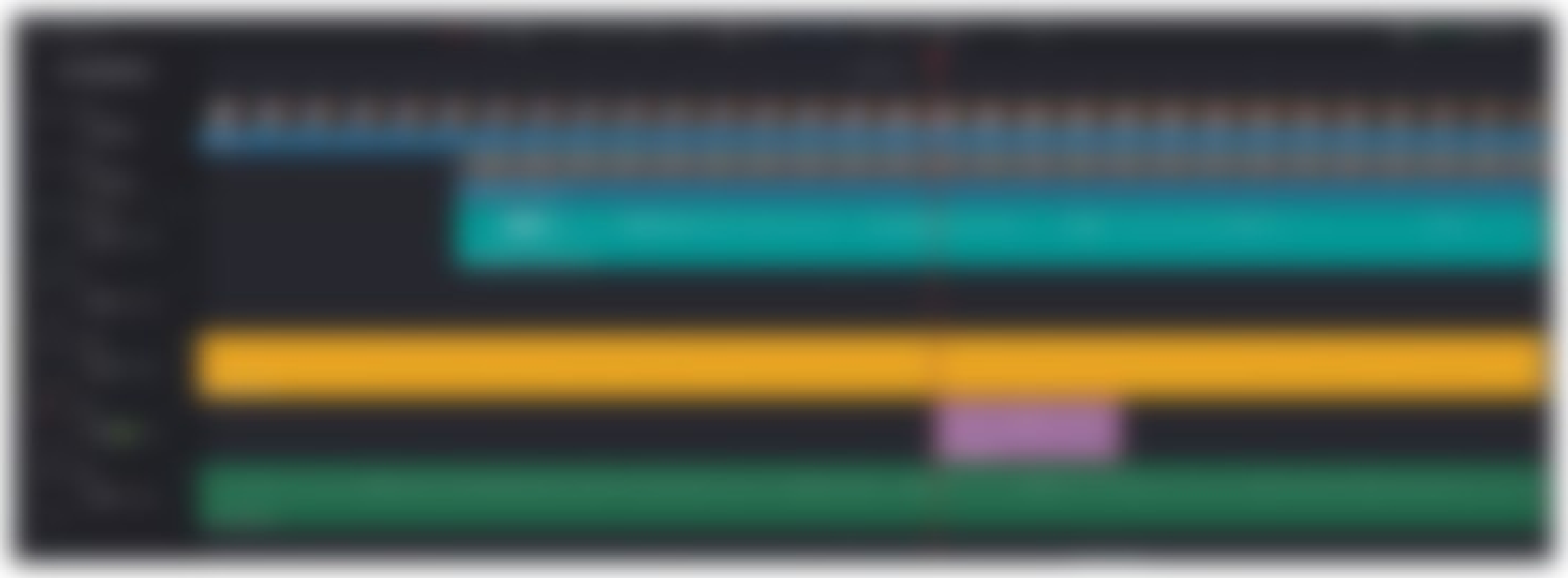
Don't worry if you can't precisely align the playhead with the waveform. You can always slide the clip at the subframe level once it's in the timeline. If in any doubt, place the playhead before the waveform.

[illegible] Make a Replace edit and press / (forward slash) to review the edit.

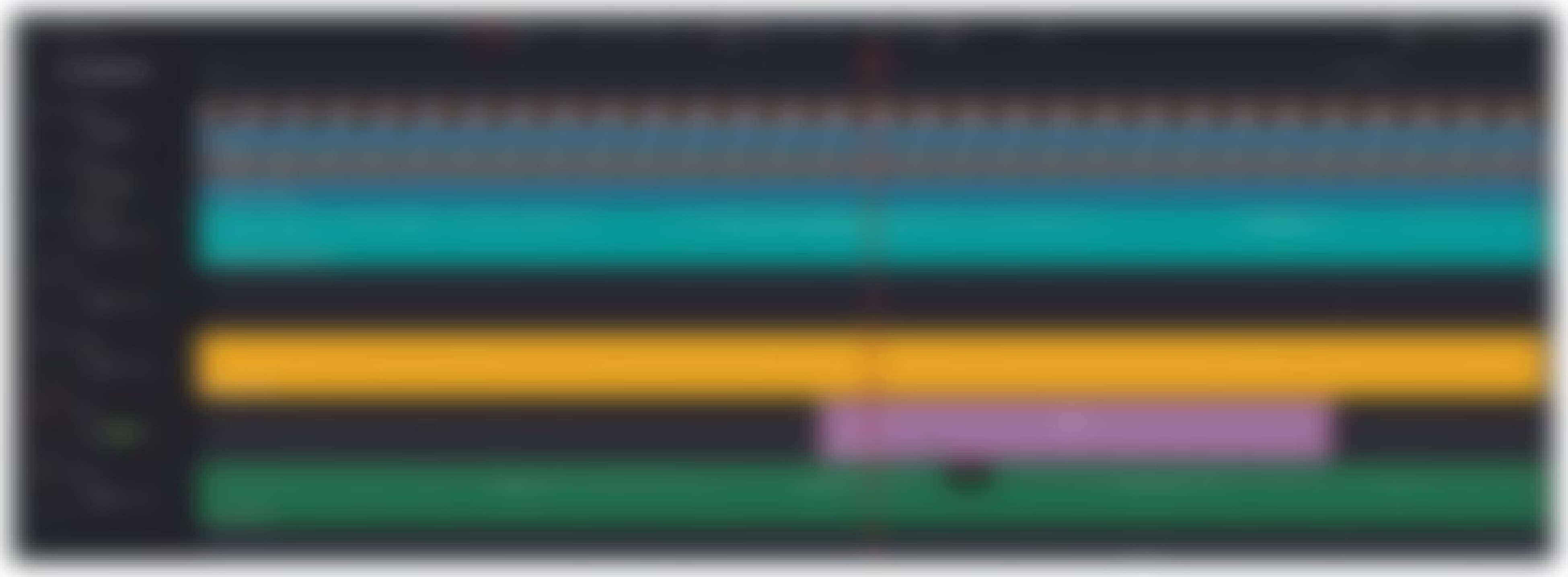


The clip obviously needs trimming to remove the clicks at the start.

[illegible] With the playhead still over the frame where she places the T-shirt on the peg, select **Pen Clicks.wav** and choose Trim > Trim Start or press Shift-[(open square bracket) to trim the start of the selected clip to the playhead.



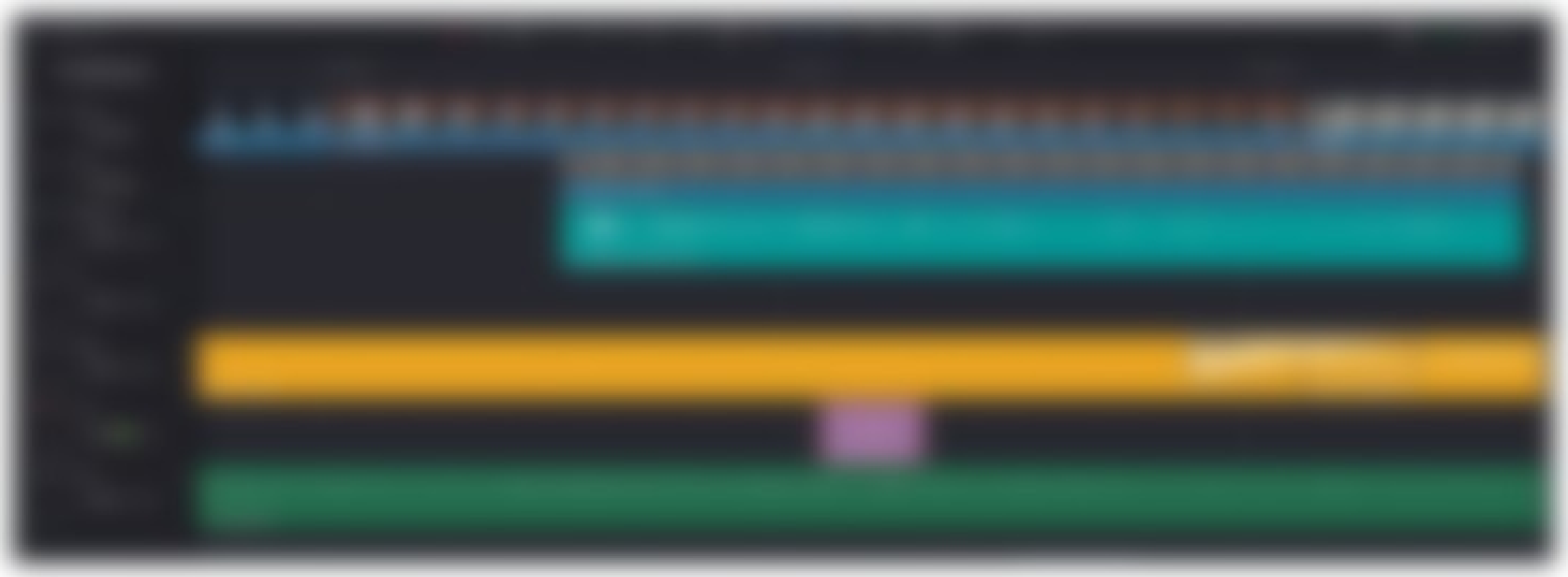
[illegible] If necessary, zoom in even further into the timeline and slide **Pen Clicks.wav** to precisely align it with the onscreen action.



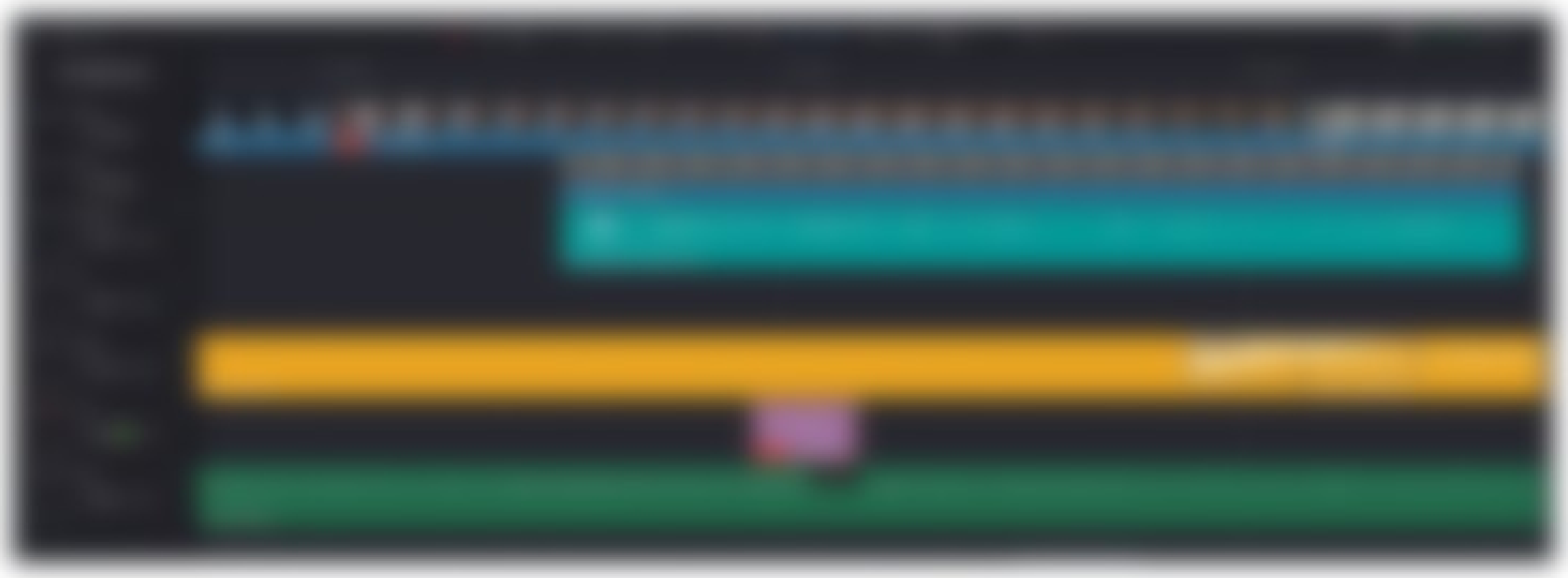
Linking Clips

Now that you have successfully synced the foley sounds with the onscreen action, you may want to consider linking these clips with the appropriate video clip. This will make it obvious if these clips subsequently move out of sync with each other.

1 In the timeline, Command-click (macOS) or Ctrl-click (Windows) [illegible] and [illegible] and then choose Clip > Link Clips or press Option-Command-L (macOS) or Alt-Ctrl-L (Windows).



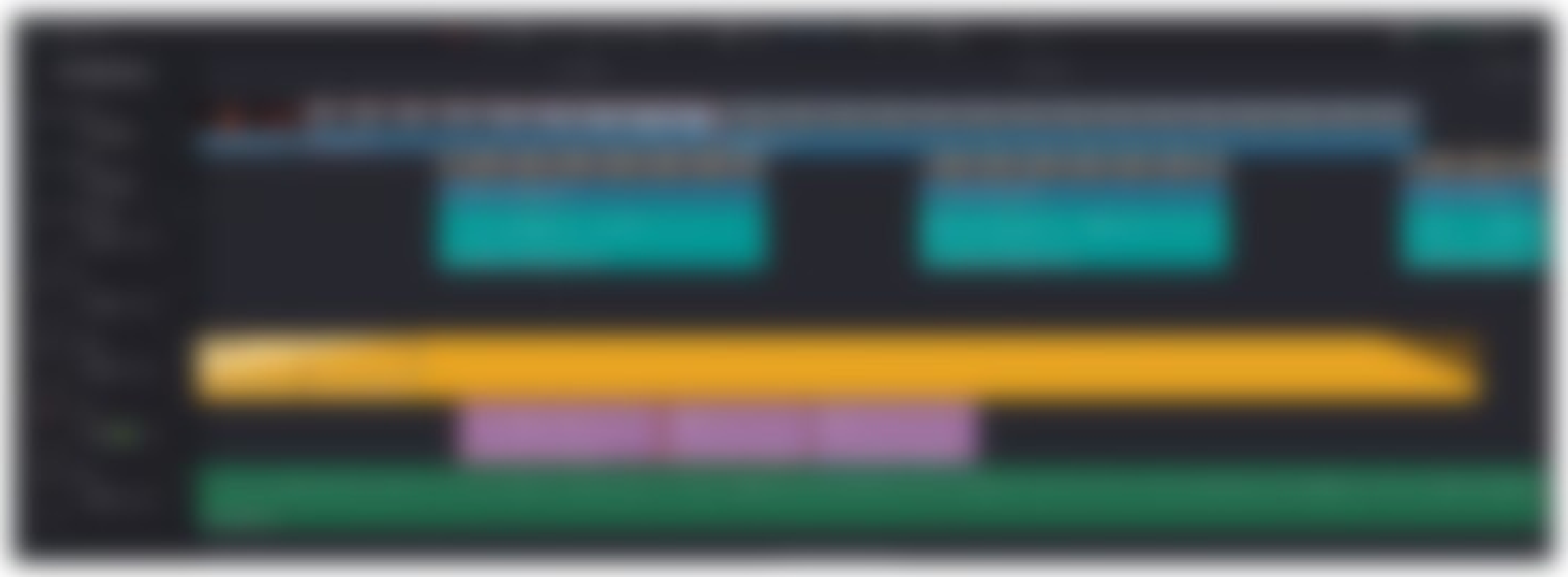
Both clips now display the Link Clips icon. If either of them moves without the other, red out-of-sync indicators will appear, telling you just how far out of sync the clips are from each other.



TIP You can right-click an active out-of-sync indicator and choose to either Slip or Move the clips back into sync.

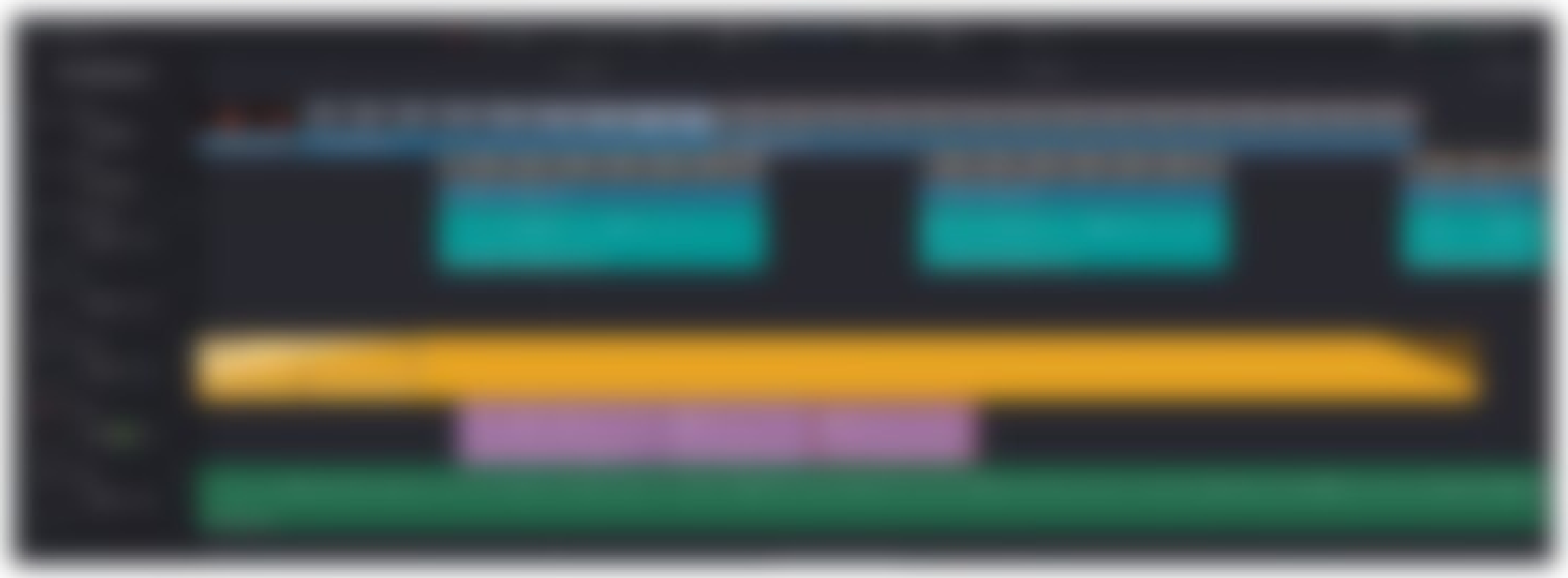
- Scroll back through the timeline until you see the **Boots on Rough Dirt Footsteps.wav** clips.

- Select **[illegible]** and the first two **Boots on Rough Dirt Footsteps.wav** clips.



- Choose Clip > Link Clips or press Option-Command-L (macOS) or Alt-Ctrl-L (Windows) to link these clips together.

- Repeat for **[illegible]** and the third **Boots on Rough Dirt Footsteps.wav** clip.

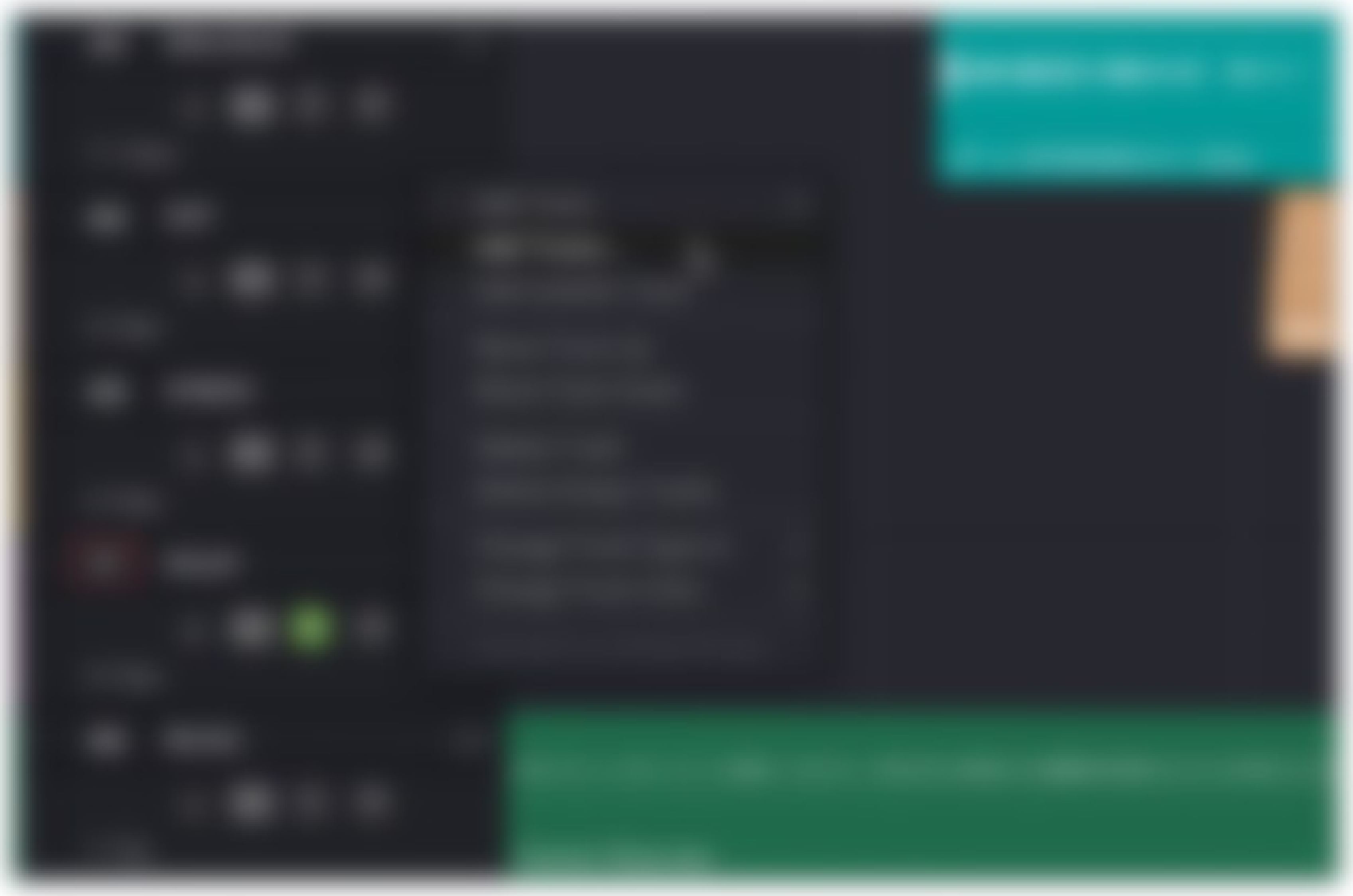


- Click Full Extent Zoom to see the entire timeline.

Using Compound Clips for Audio

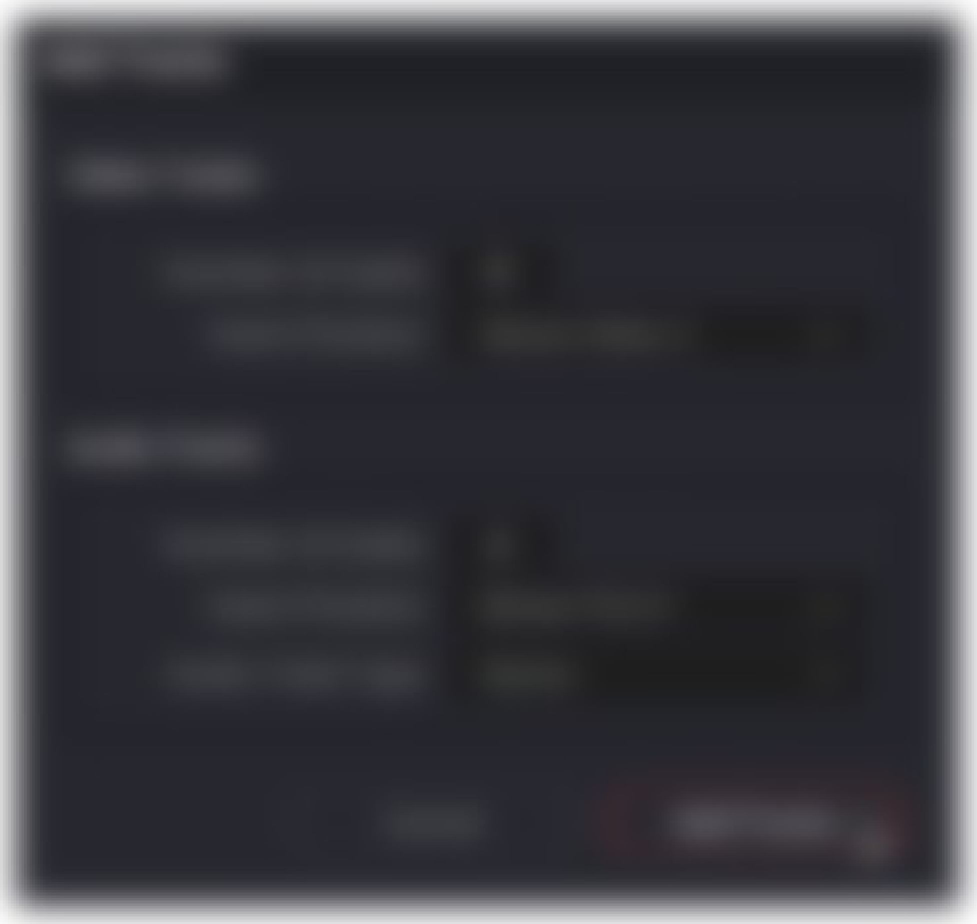
The final sound effects you will add to this timeline will enhance the shot of the fire dancer. However, as these sounds overlap, you will start by editing them onto different tracks before simplifying the timeline by combining them into a compound clip.

- Right-click any of the track controls and choose Add Tracks.

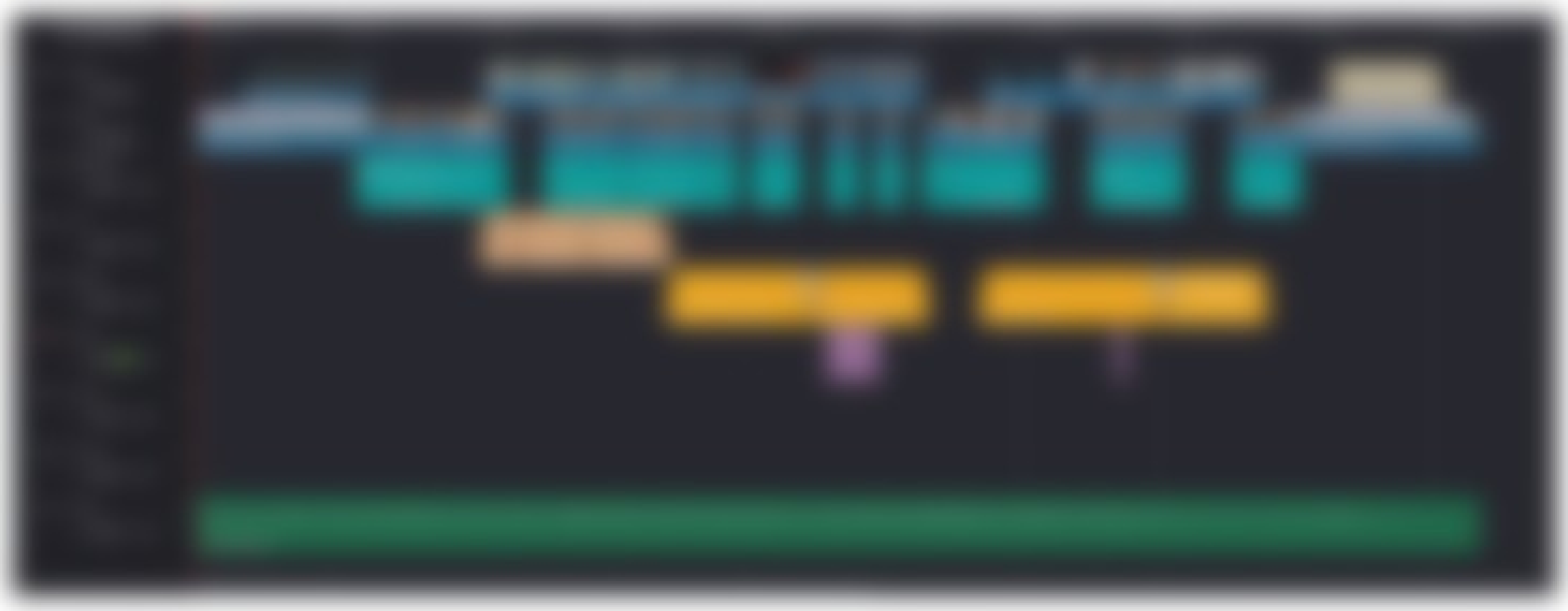


The Add Tracks window opens.

- In the Video Tracks section, change the Number of tracks to 0 since you don't need to add any additional video tracks.
- In the Audio Tracks section, change the Number of tracks to 2 and the Insert Position to Below FX(2) to specify the position of these new tracks, and leave the Audio Track Type as Stereo.

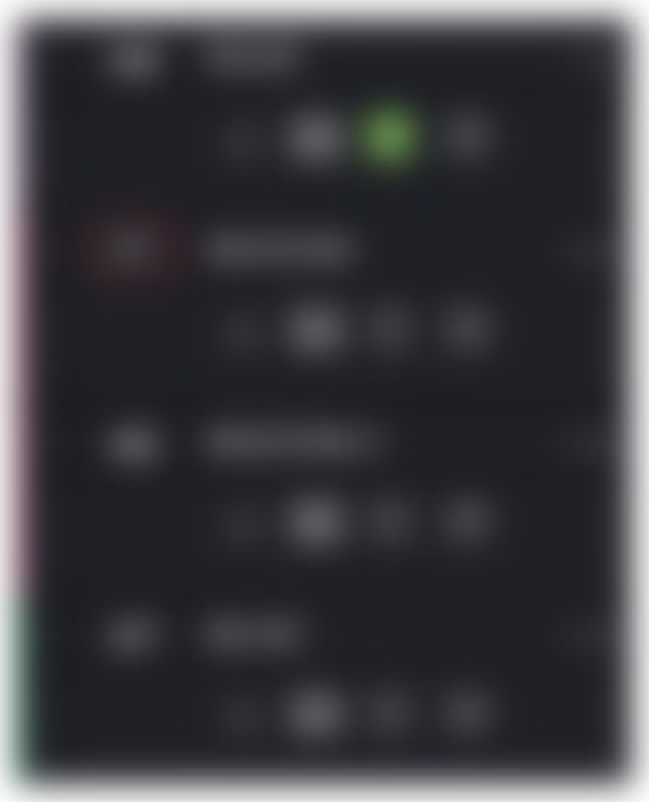


- Click Add Tracks to add the audio tracks (Audio 3 and Audio 4) to the timeline below the FOLEY track.

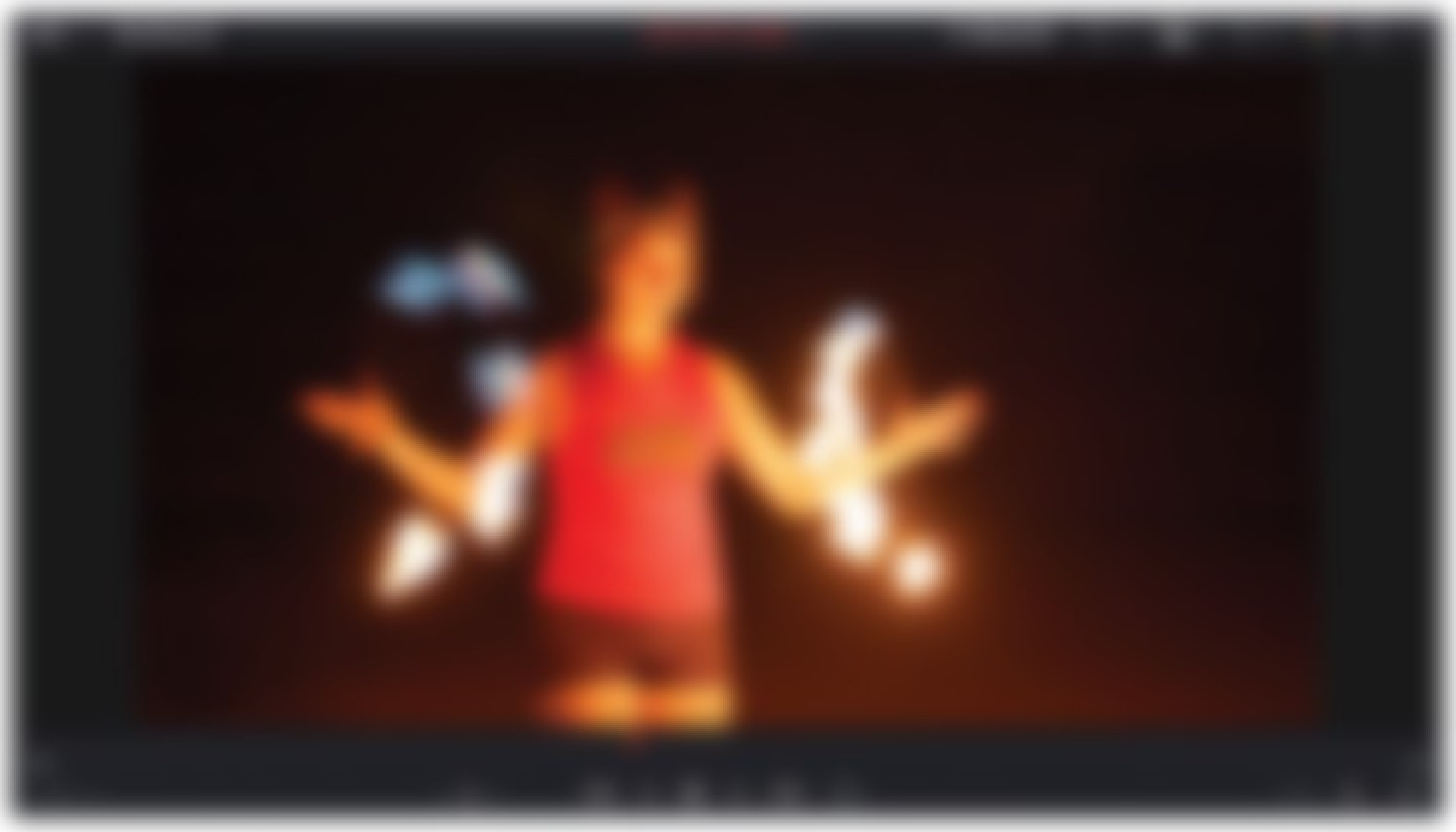


TIP Don't forget to keep adjusting the height of the timeline panel and the size of the tracks as it's easy to keep track of how your timeline looks.

- Change Audio 3's track name to **[illegible]** and Audio 4's track name to **[illegible]**, and change each track's color to Violet.
- Press Option-Command-5 (macOS) or Alt-Ctrl-5 (Windows) to change the A1 destination control to [illegible] (A5).



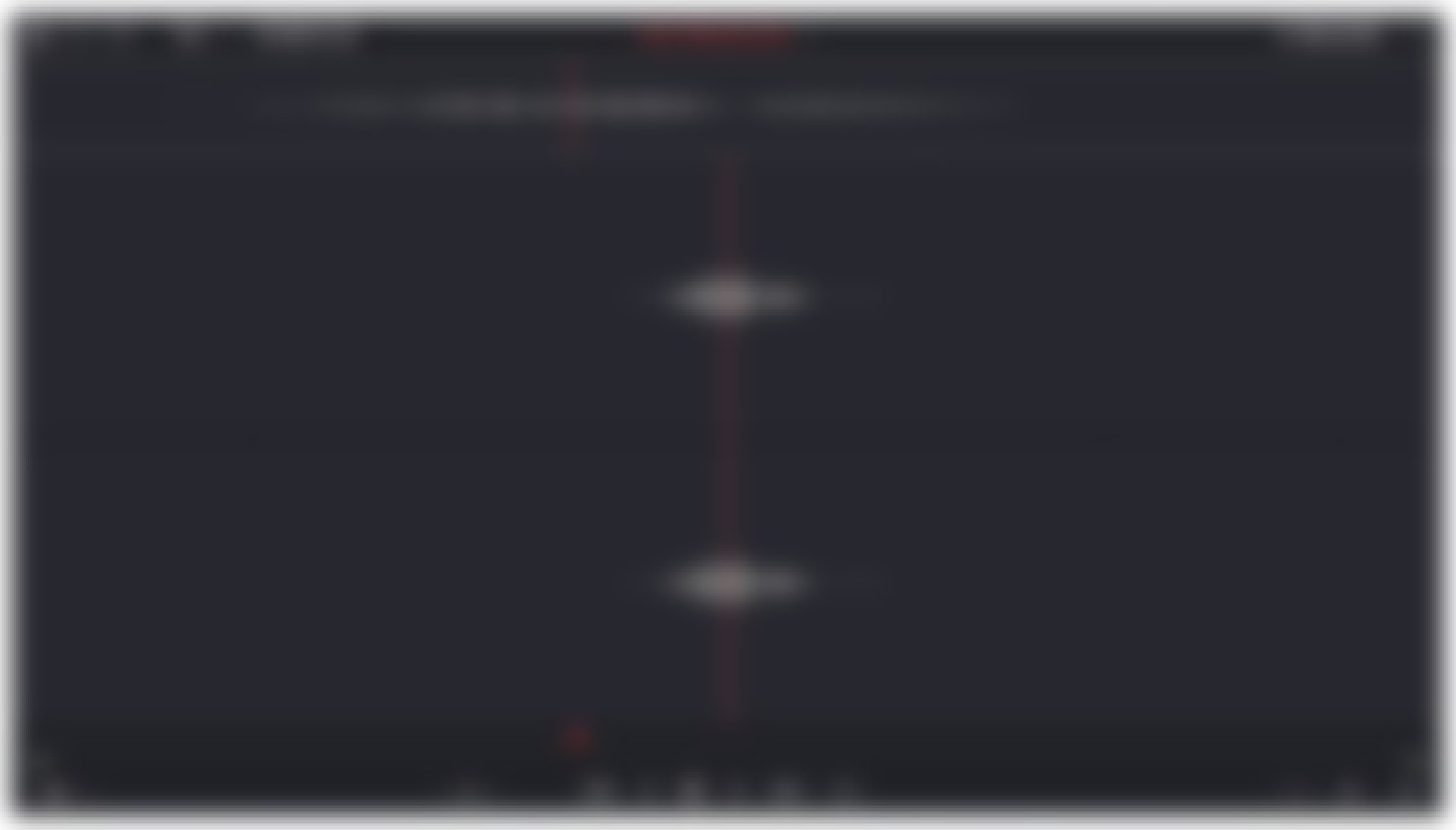
7 Move the timeline playhead to the start of **[illegible]** and move forward until the point where the flaming torches are closest to the camera.



8 From the SFX bin, open **[illegible]** in the source viewer.

This is the sort of sound effect that's been created rather than recorded, often as part of a sound effect library, and is a good substitute for the sound of flaming torches.

9 Place the source playhead over the middle of the waveform at the height of the sound.



10 Make a Replace edit.

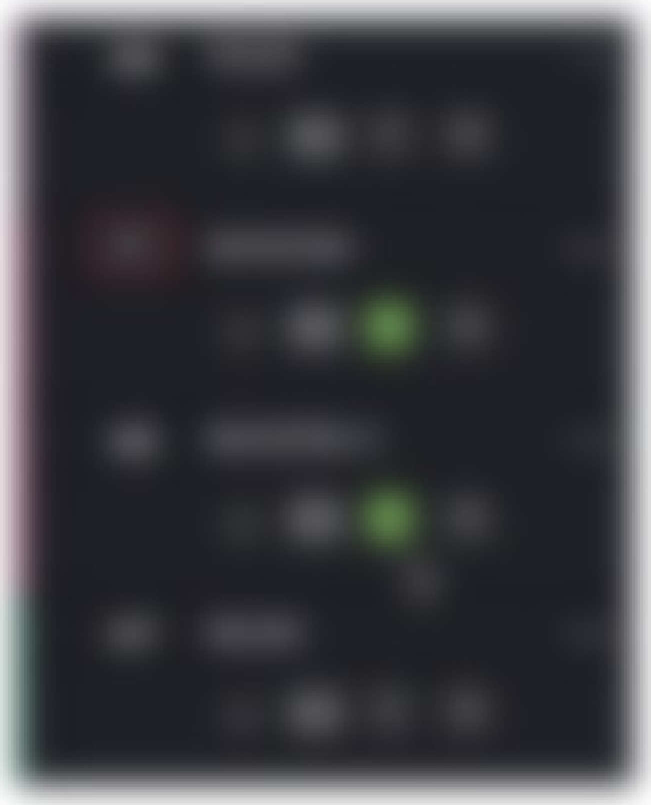
[illegible]

[illegible]

[illegible]

[illegible]

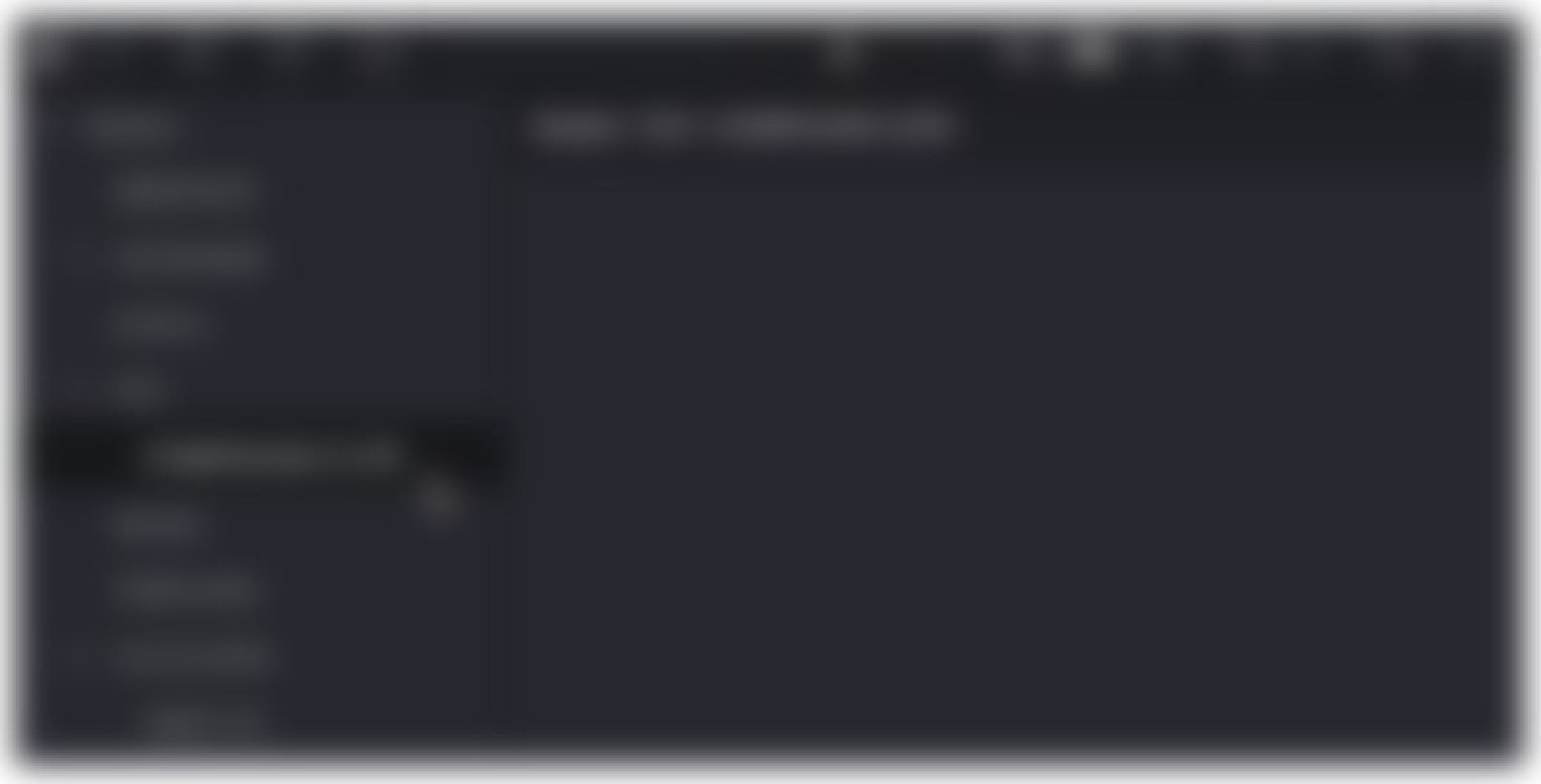
[illegible]



[illegible]

[illegible]

- [illegible]



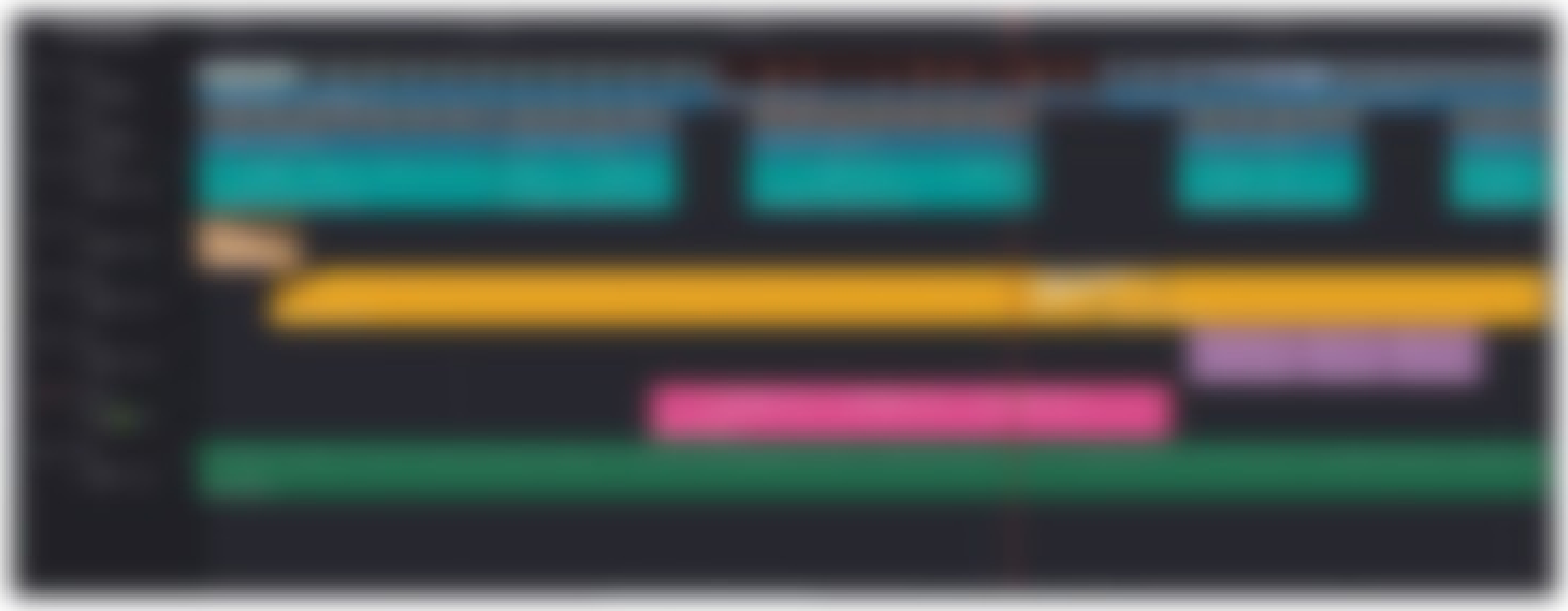
- [illegible]

[illegible]

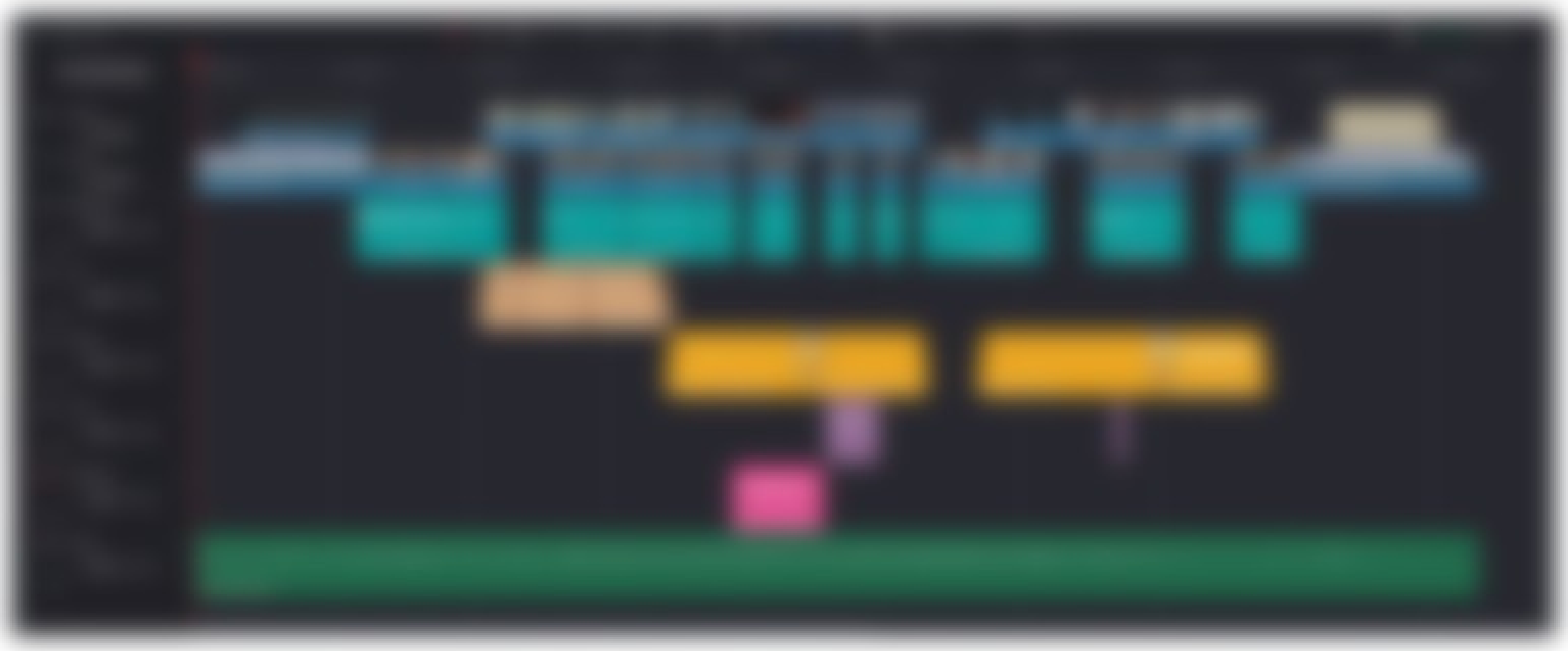
[illegible]

- [illegible]

[illegible] Select [illegible] and [illegible] and choose Clip > Link Clips or press Option-Command-L (macOS) or Alt-Ctrl-L (Windows) to link the two clips together in the timeline.



[illegible] Click the Solo button for the [illegible] track to turn off solo and click the Full Extent Zoom button.



NOTE If you need to catch up before moving to the next step, select the TIMELINES bin, choose File > Import > Timeline, navigate to [illegible] > Lesson [illegible] > TIMELINES, select [illegible] and click Open.

Recording a Voiceover

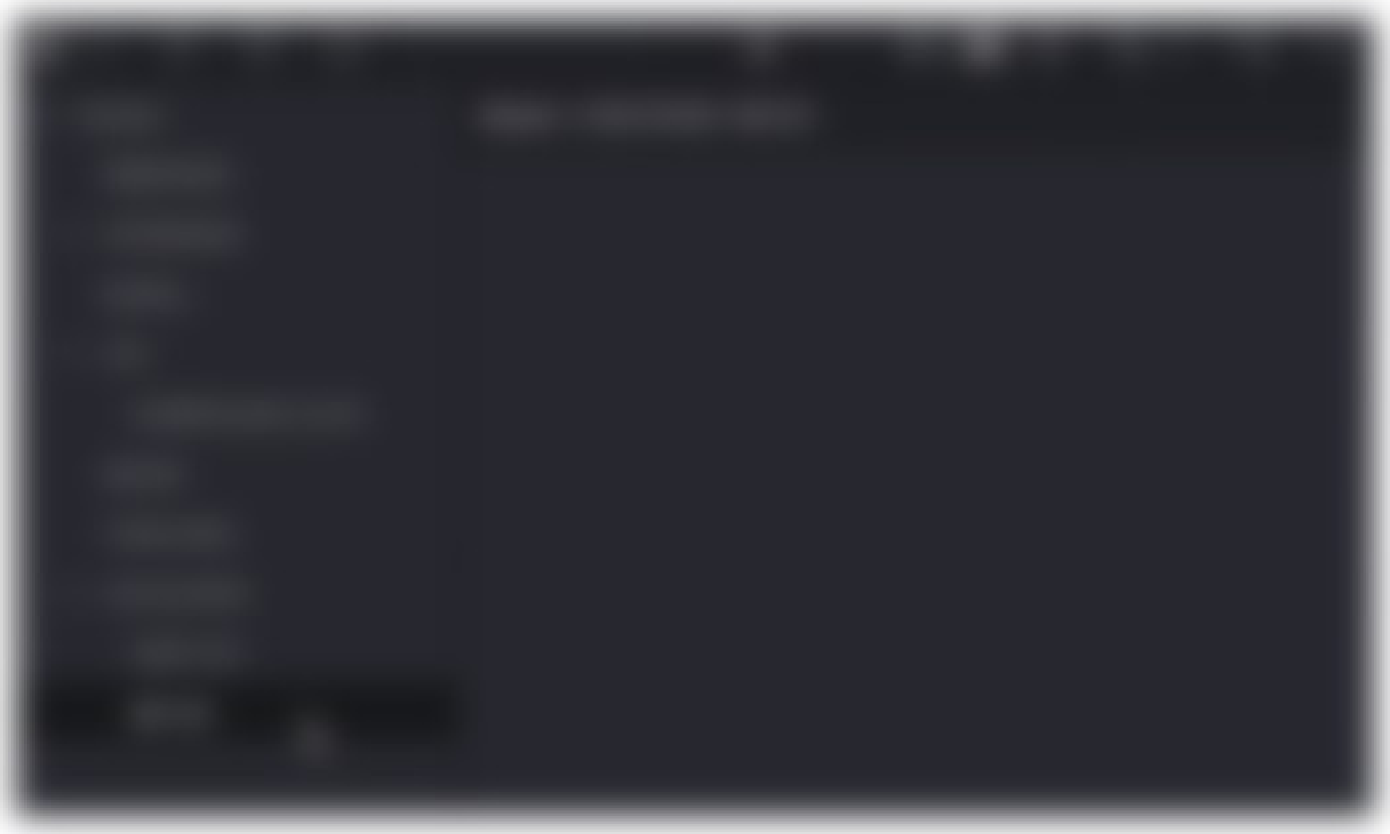
[illegible]

[illegible]

> **[illegible]** [illegible]

- [illegible]
- [illegible]
- [illegible]

- [illegible]

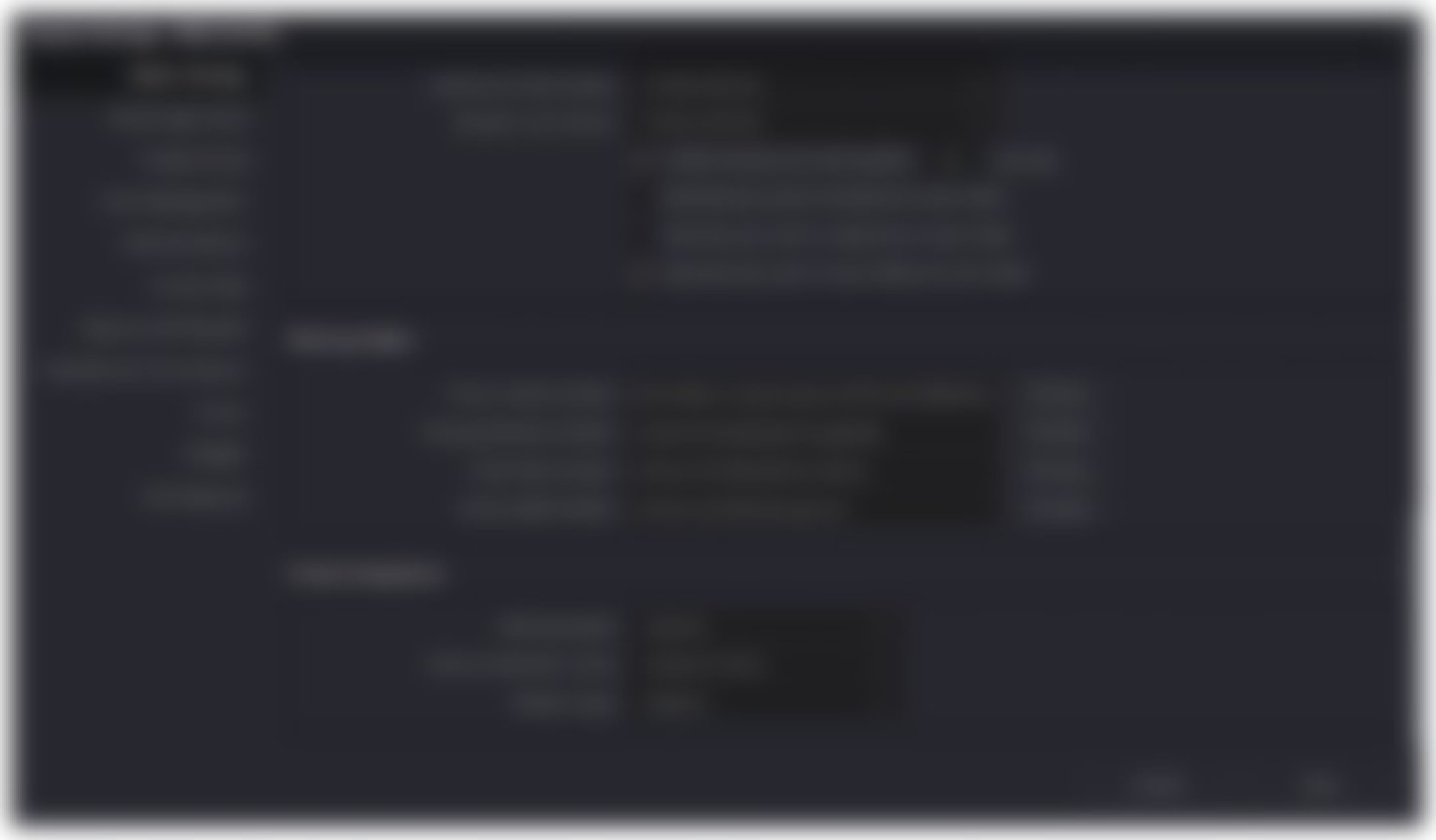


[illegible]

[illegible]

- [illegible]
- [illegible]

- Click the Browse button for the Project media location and choose R[illegible] Editor's Guide / Lesson [illegible] / VO RECORDINGS and click Open.

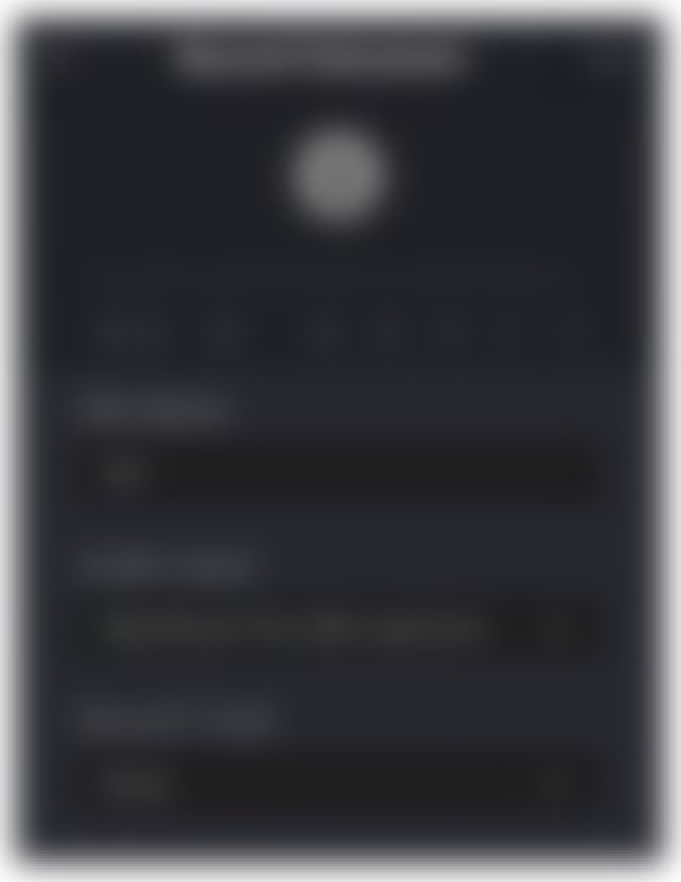


- Once the Project media location has been changed, click Save to save the changes and close the Project Settings.

  You are now ready to record the voiceover.

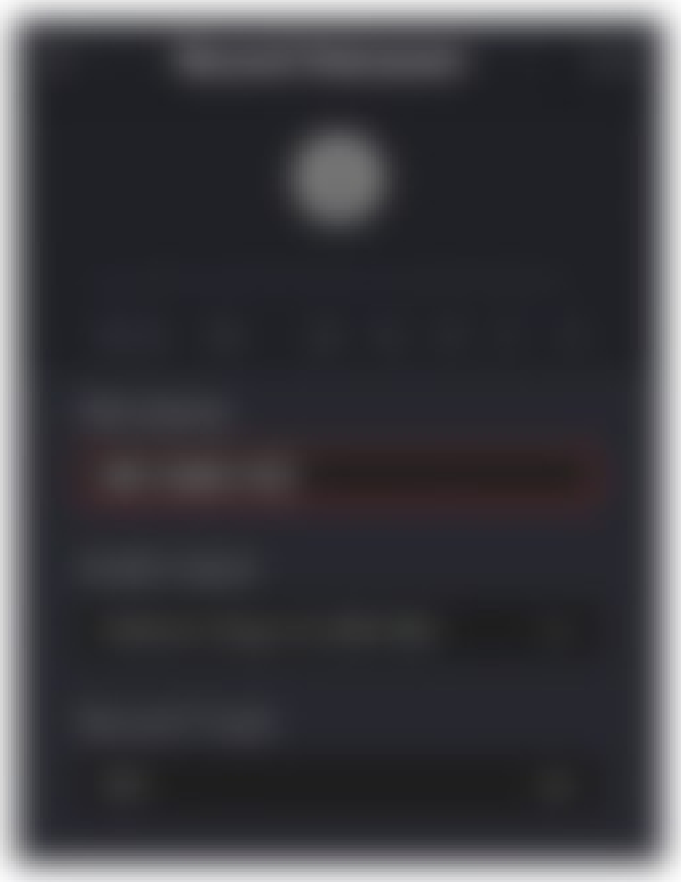
- In the timeline, click the Voiceover button or choose Timeline > Record Voiceover.

The Voiceover Tool opens.

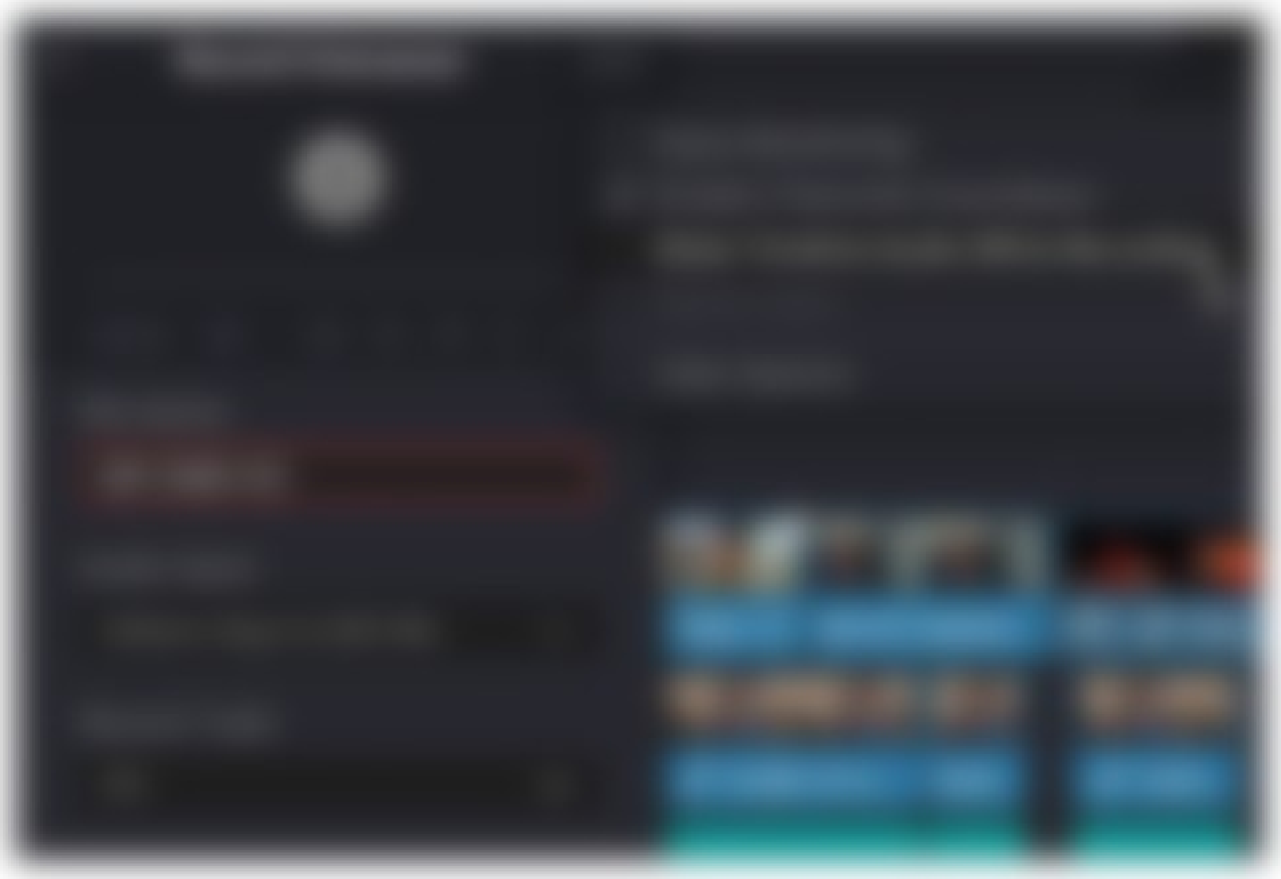


NOTE The Voiceover Tool automatically selects a timeline track for recording based on your current track layout, using that track name as the default name for your recording.

- In the File Name field, highlight the existing filename and type **[illegible]**.
- In the Audio Input menu, choose the microphone attached to your system that you want to use for this recording.
- In the Record Track menu, choose the VO track.



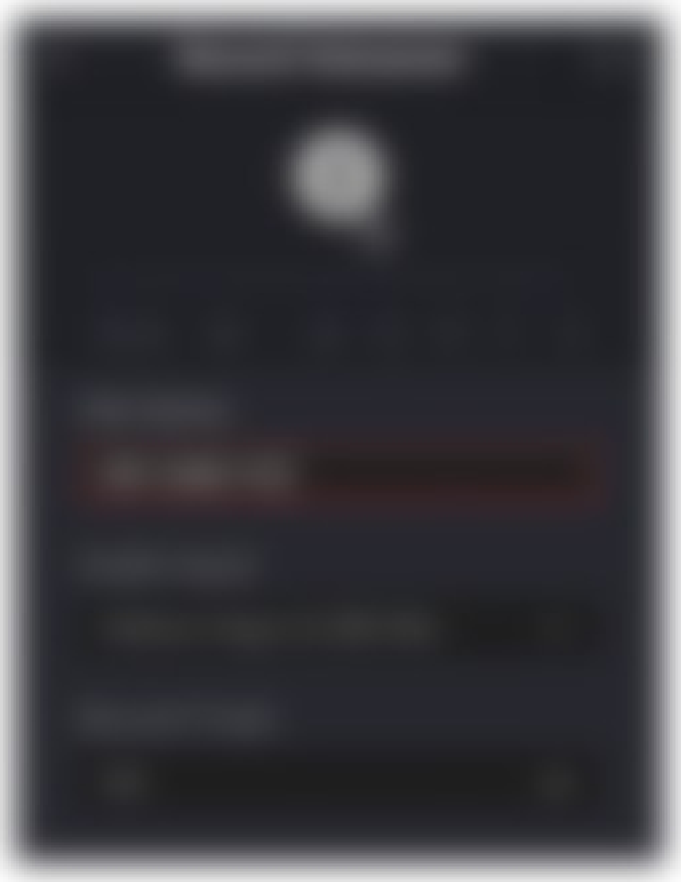
- Click the Options menu (…) and choose Mute Timeline Audio While Recording to prevent audio feedback during the recording process.



NOTE By default the audio recorded will be a mono recording. If you have a stereo microphone and want to record in stereo, you will be able to enable the Stereo Input option.

You are now ready to record your voiceover.

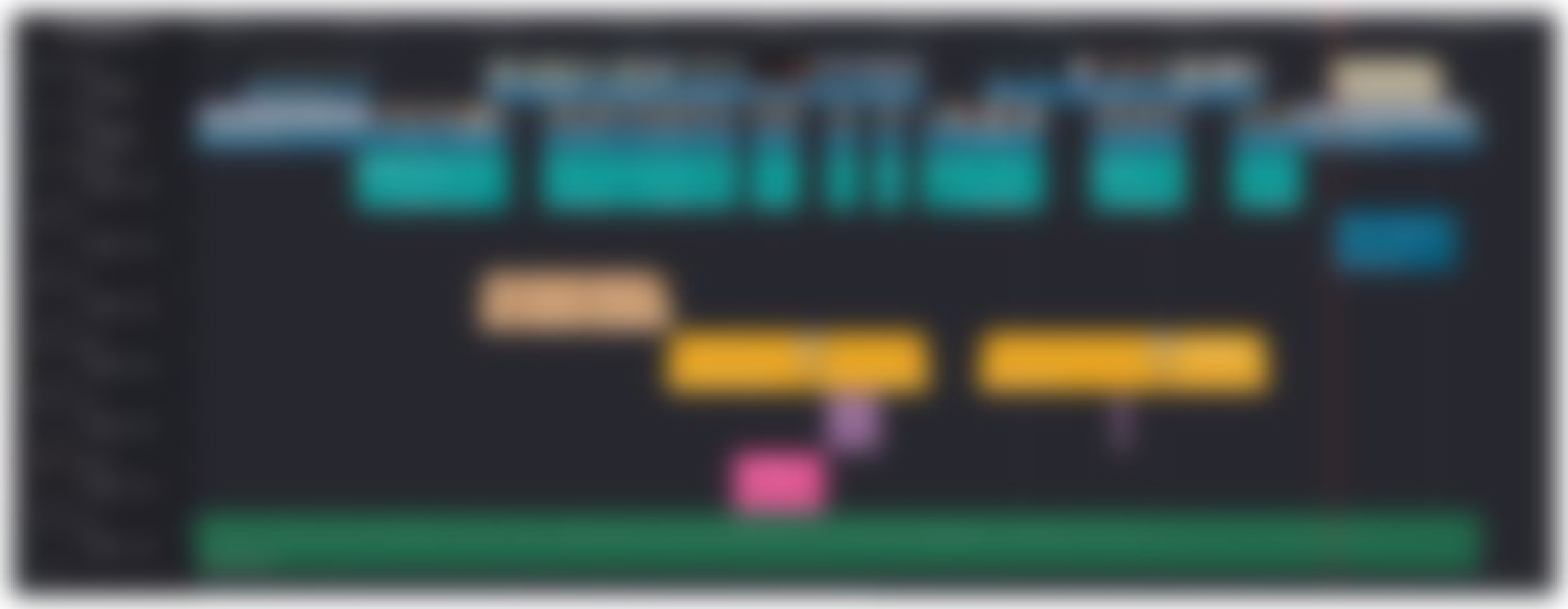
Click the record button to begin the countdown.



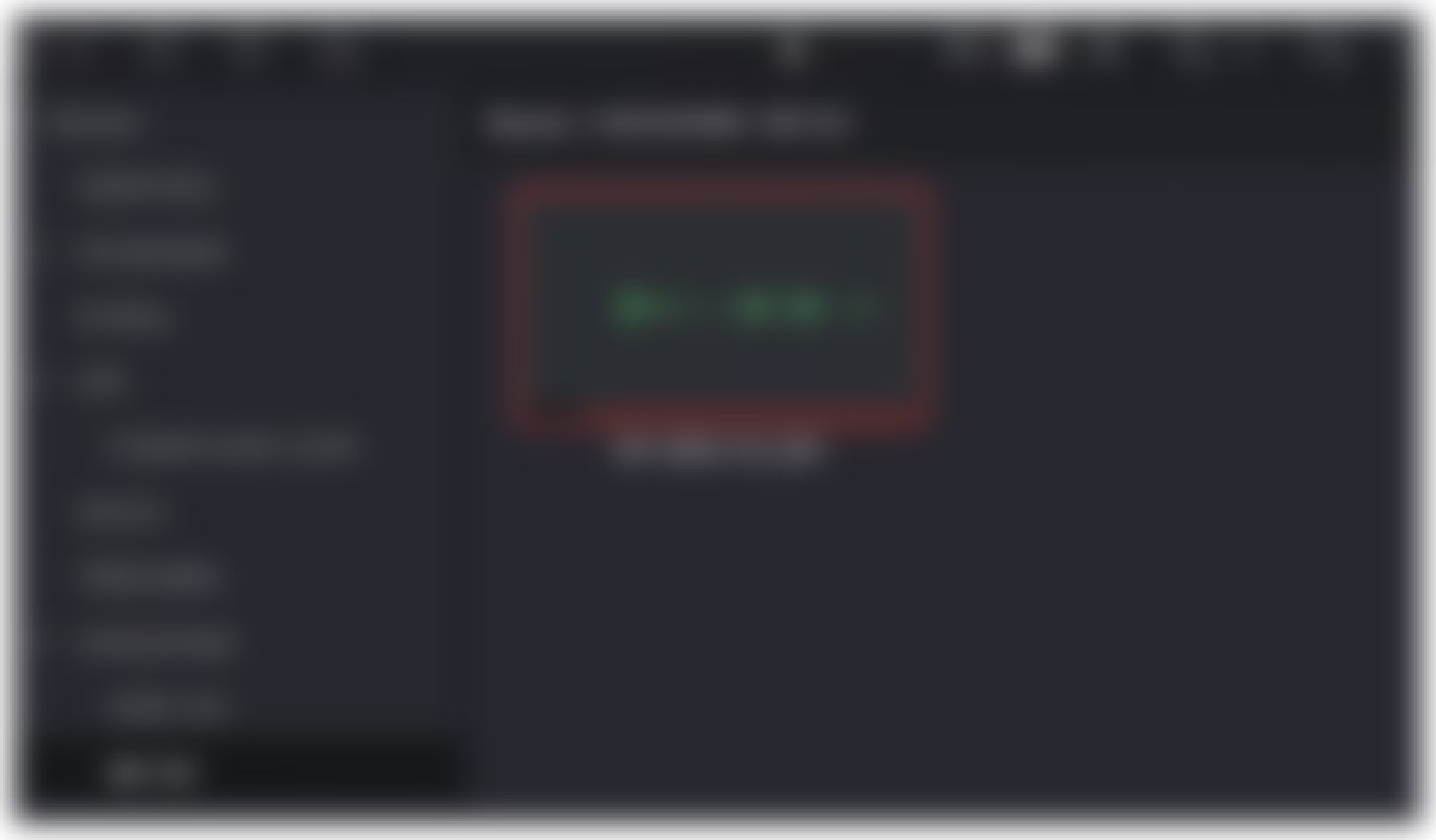
Once the countdown is complete, record the following line of dialogue: "Organ Mountain Outfitters. In store and online now."

Click the record button again or press ESC (Escape) to stop the recording.

The recording is added as a new clip to the VO track in the timeline.



And also to the MY VO bin you selected in the media pool.



NOTE If you wish to record additional takes, simply click the Record button again. Additional recordings will overwrite the existing clip in the timeline and be added to the selected bin in the media pool alongside all your previous takes.

- You can now trim the clip in the timeline as normal to refine its position and timing in the timeline.

NOTE You can reveal the source file that has been recorded on your system by right-clicking the [illegible] clip in the media pool and choosing Reveal in Finder (macOS) or Open File Location (Windows). This will open the location [Project Media Location] > [Project Name] > Audio Files > Recorded > [Timeline Name].

With all the audio editing completed, you can now turn your attention to setting levels and mixing the audio.

NOTE If you need to catch up before moving on to the next step, select the TIMELINES bin, choose File > Import > Timeline, navigate to [illegible] / Lesson [illegible] / TIMELINES, select [illegible] and click Open. This will import a timeline that uses the pre-recorded VO clips in the [illegible] bin.

Balancing the Audio Clips

Now that you have all the audio elements in place, it's time to balance the levels of each clip in the same track to achieve a consistent level for those audio elements. This is an important step since it will make mixing the audio so much easier.

Of the three general types of audio, probably the most important one is dialogue. If your audience cannot hear what's being said, they will not be able to follow the story, whether the story is told in a drama scene, interview, or voiceover. Think about how much information is communicated in what people say onscreen. The only time dialogue is not the most important element of the soundtrack is for a video cut entirely to music (such as the music video footage in Lesson [illegible], "Multicamera Editing") or when dialogue is purposefully meant to be inaudible.

With that in mind, it's not surprising to learn that a good place to start when balancing your clips is your dialogue tracks. The aim of this process is not to get the dialogue to precise levels but to get all the clips on the same track to be at a consistent level. Once this has been achieved, it's a simple step to achieving the final mix.

This is analogous to color correcting footage where the initial adjustments of a clip's contrast and white balance is to ensure that each shot looks the same, with the final "look" then applied consistently across all those balanced shots.

Therefore, you will start by balancing the audio from the soundbites used from Chris's interview.

1 Close the media pool and choose Workspace > Single Viewer mode.

- In the top right corner of the interface, click the Mixer button to open the Audio Mixer to the right side of the timeline and drag the left edge of the mixer to expand it out to display the controls for all the tracks.

- In the mixer, click the Solo buttons for the [illegible] track ([illegible]) and the [illegible] track ([illegible]) so you will hear only the audio for the [illegible].

- Play through the interview, looking at the audio levels for the track in the mixer.

As you can see (and no doubt hear), the levels throughout this interview fluctuate from around -5 dBFS to as low as -20 dBFS. The difference between these values is called the dynamic range. You'll generally want to reduce the dynamic range of certain audio clips, such as dialogue, for a more consistent level. This may mean making louder parts of the audio quieter, vice versa, or a combination of both.

As a rule of thumb, you generally want your dialogue audio to sit in the yellow area of the mixer (between -18 dBFS and -6 dBFS). Quiet, softly spoken lines might be toward the bottom end of this range and shouted lines will be toward the higher end, with normal dialogue levels being set around -12 dBFS. This might seem quite restrictive but remember that dialogue should be clearly understood.

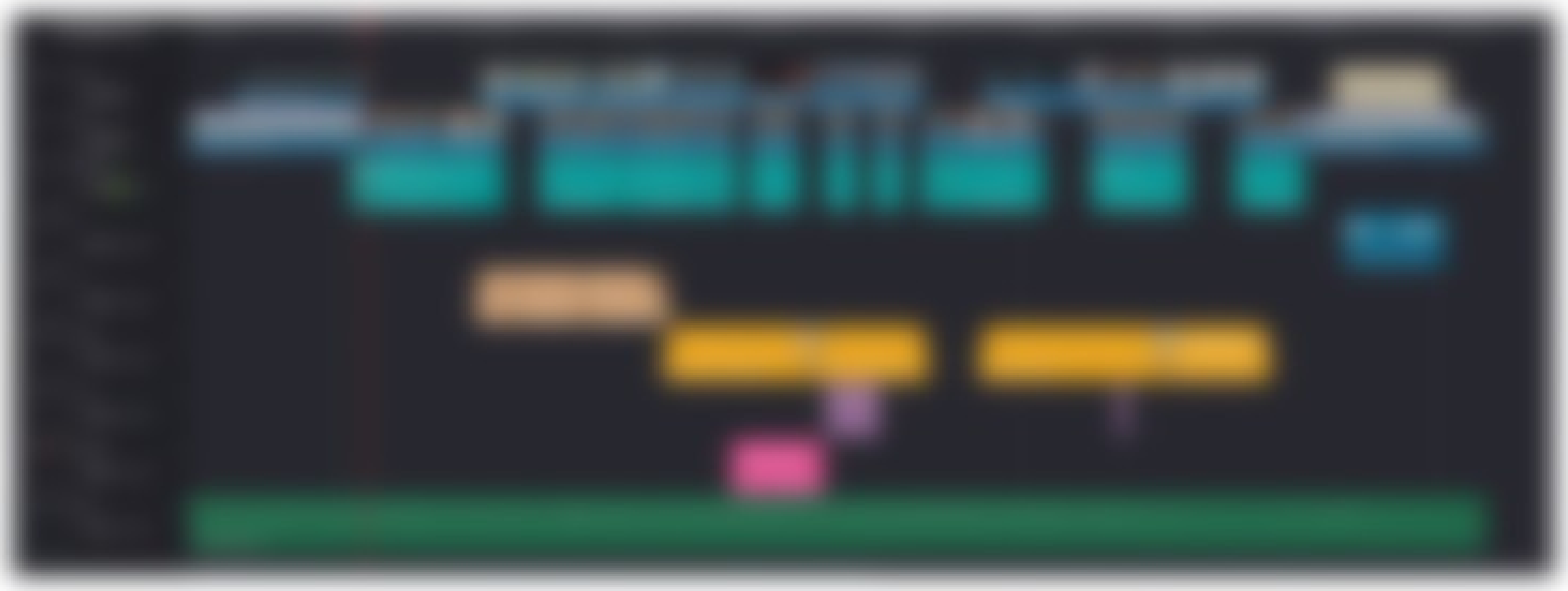
There are several ways of achieving this consistent level. For example, you might adjust each clip's levels individually, applying keyframes if necessary to "smooth out" the disparate levels.

Adding all these keyframes is a time-consuming job. However, you can also reduce your reliance on keyframes and improve the overall sound of the dialogue clips by applying various audio processes, which you will explore in the next steps.

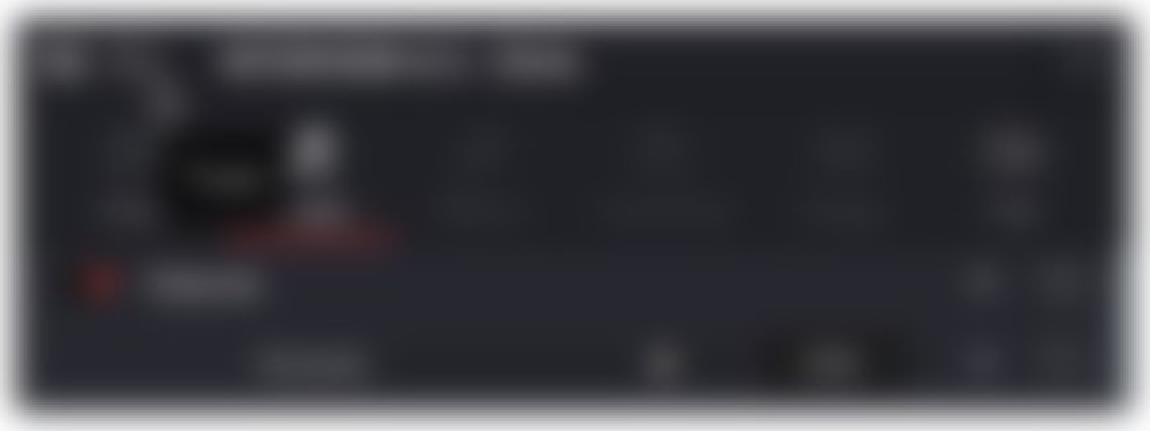
Using the AI Dialogue Leveler

The AI Dialogue Leveler is a track-based audio process (referred to as a Track FX) that automatically detects dialogue and then can reduce louder parts and raise quieter parts while also reducing "background sound" not identified as dialogue. In essence, it aims to produce results that are similar to detailed manual clip gain adjustments but without the need for keyframes.

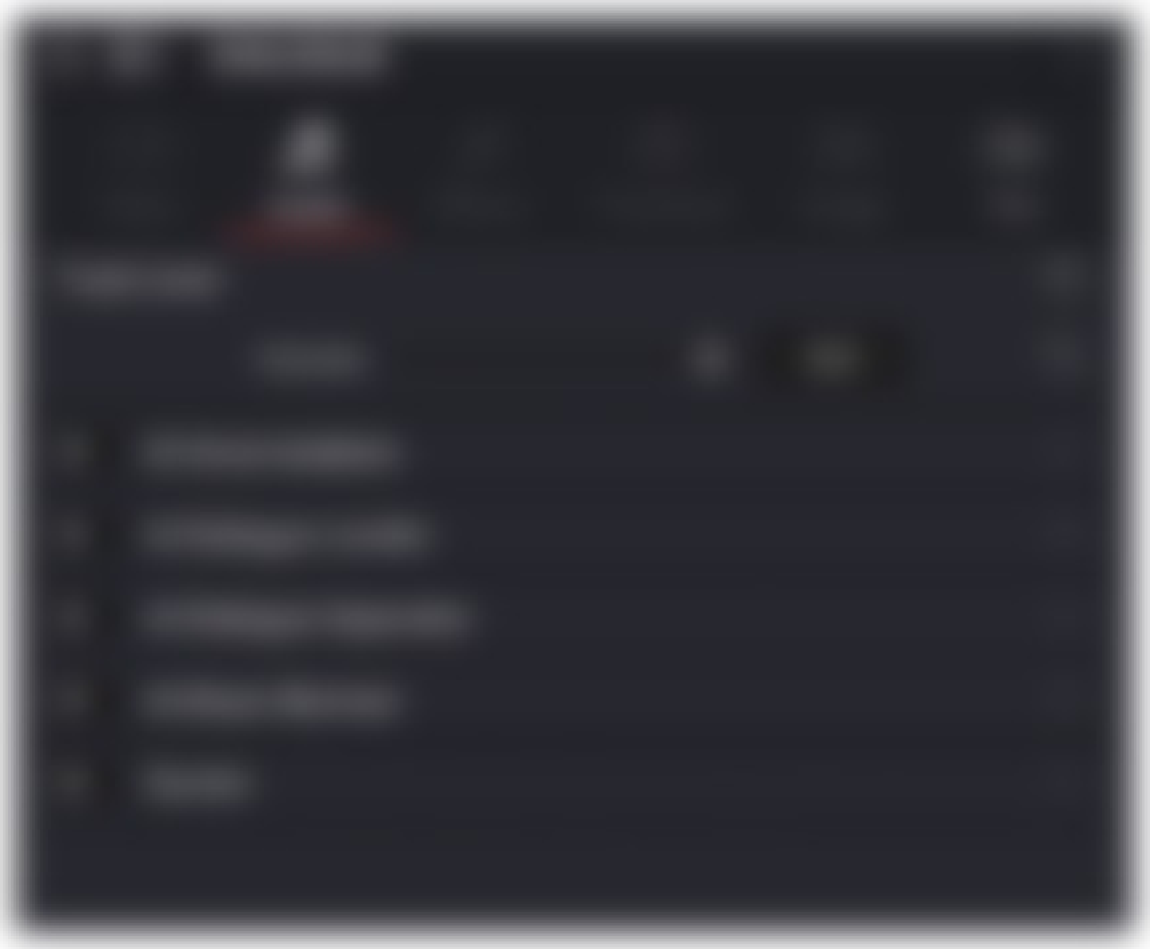
[illegible] Place the timeline playhead over any of Chris's interview clips.



[illegible] Open the Inspector and click the Track button at the top of the Audio tab.



This reveals the audio controls for the DIALOGUE track.



The AI Dialogue Leveler is one of several Track FX in DaVinci Resolve, which also includes AI Voice Isolation, AI Dialogue Separator, AI Music Remixer, and Ducker. Only AI Dialogue Leveler and Ducker are available in the free version of DaVinci Resolve.

NOTE If you don't see the DIALOGUE track controls, click the track controls header for the DIALOGUE track.

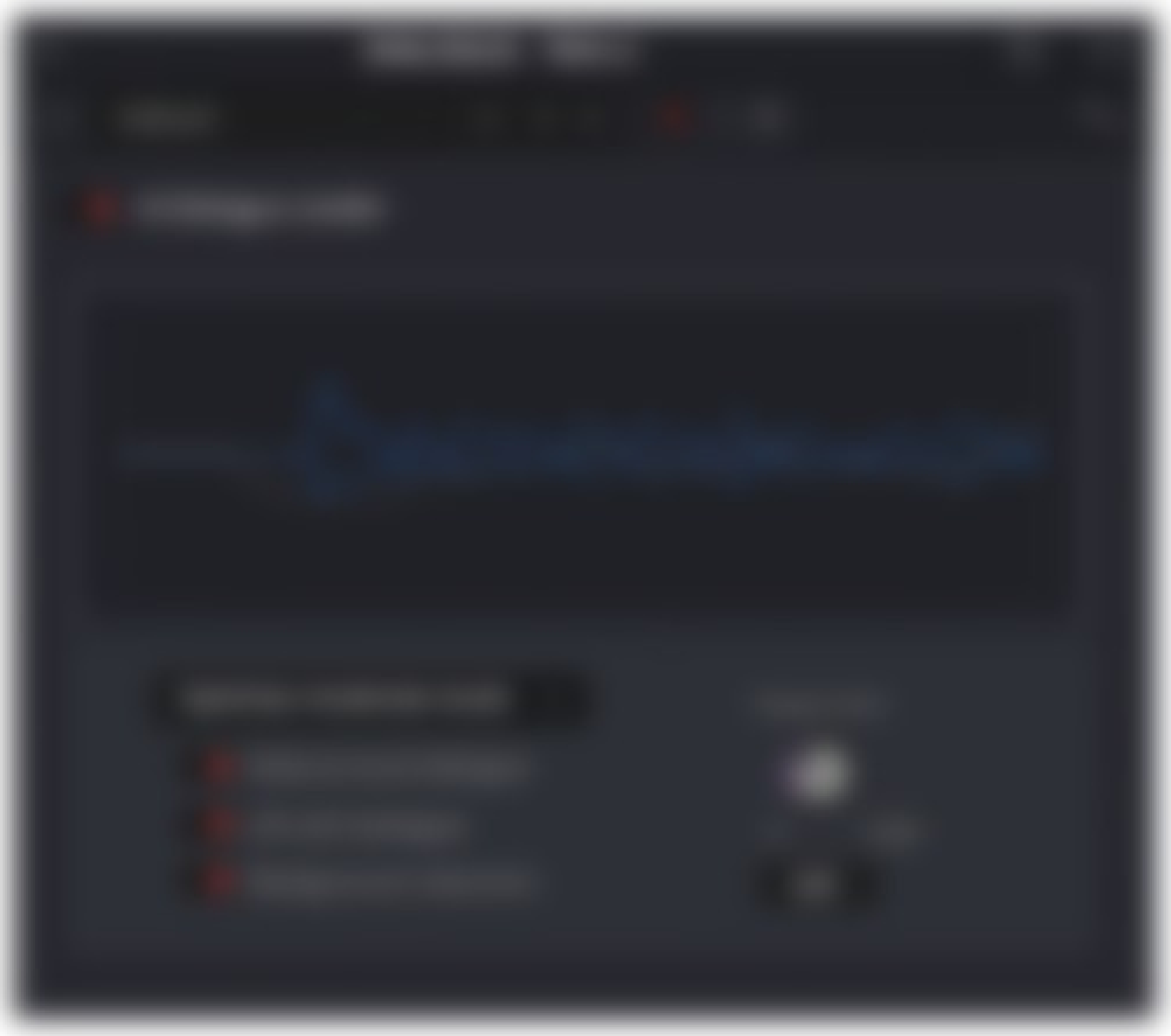
- Enable the AI Dialogue Leveler for the DIALOGUE track to reveal the controls and change the mode to "Optimize moderate levels."

- Play back Chris's soundbites in the timeline once again.

You will notice that the louder parts of Chris's audio have been markedly reduced, while the quieter parts have been raised, creating a more consistent, balanced level for each of these clips.

- Click the Custom controls for the AI Dialogue Leveler and play the soundbites again.

In the controls window, you will see a real-time graph detailing how the audio levels are being adjusted, with louder levels being reduced and quieter levels being raised.

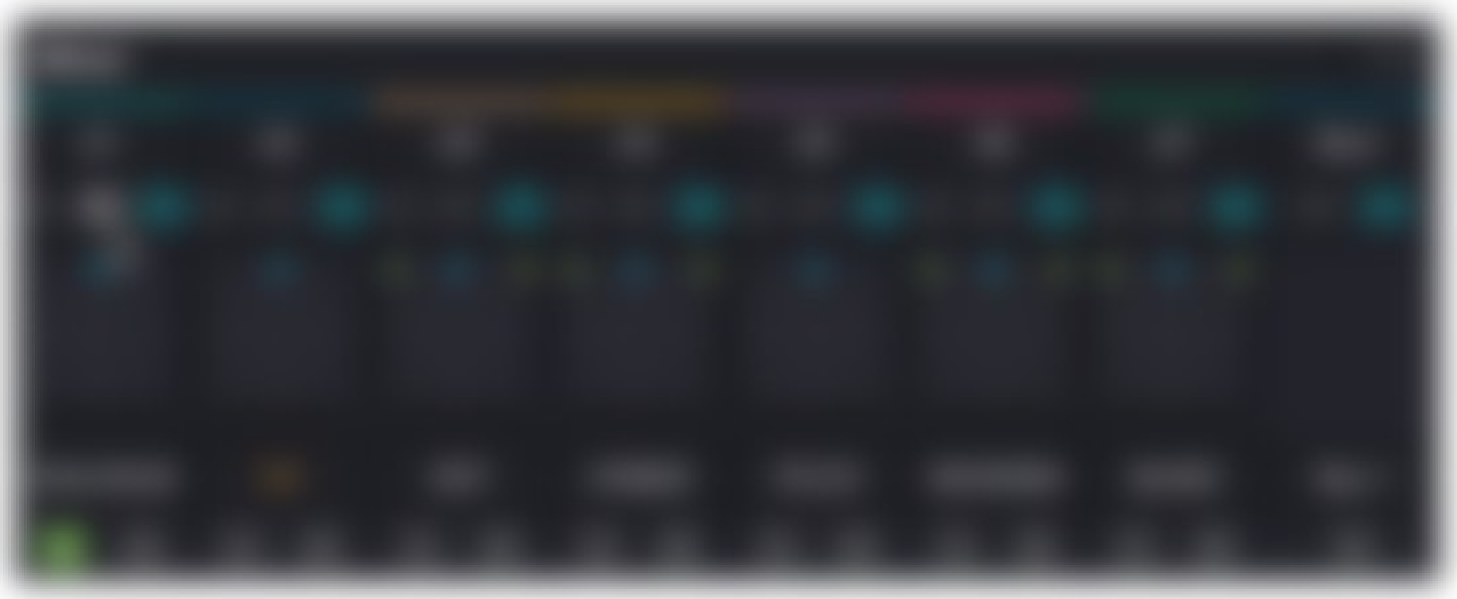


NOTE The AI Dialogue Leveler will not do all the work for you. You still may need to adjust the levels of some clips in order for the AI Dialogue Leveler to process them properly. However, you certainly wouldn't need to use as many adjustments as you would if you were just using only keyframed adjustments.

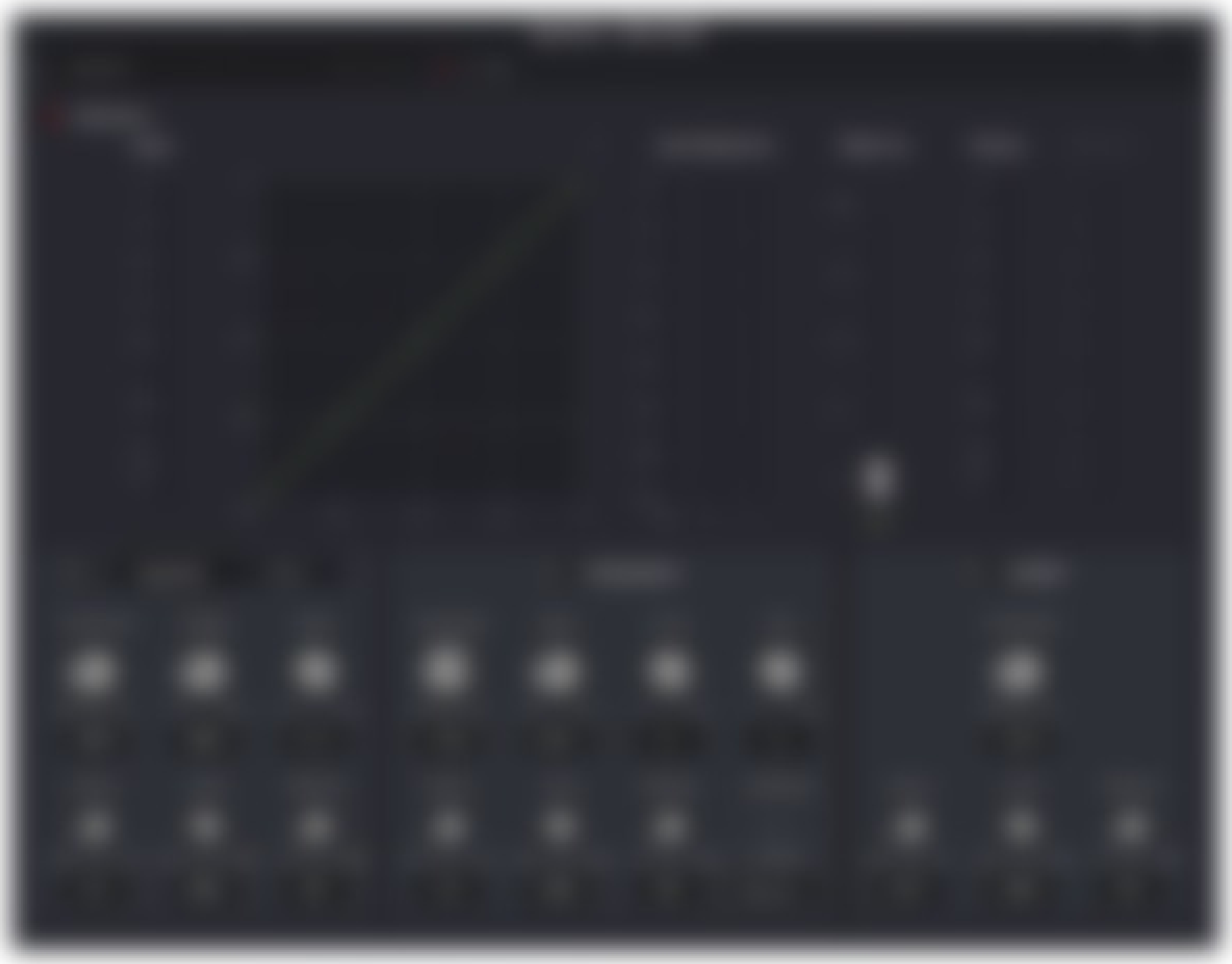
You can also use Dynamics to apply your own compression to an audio track.

6 In the Inspector, disable the AI Dialogue Leveler.

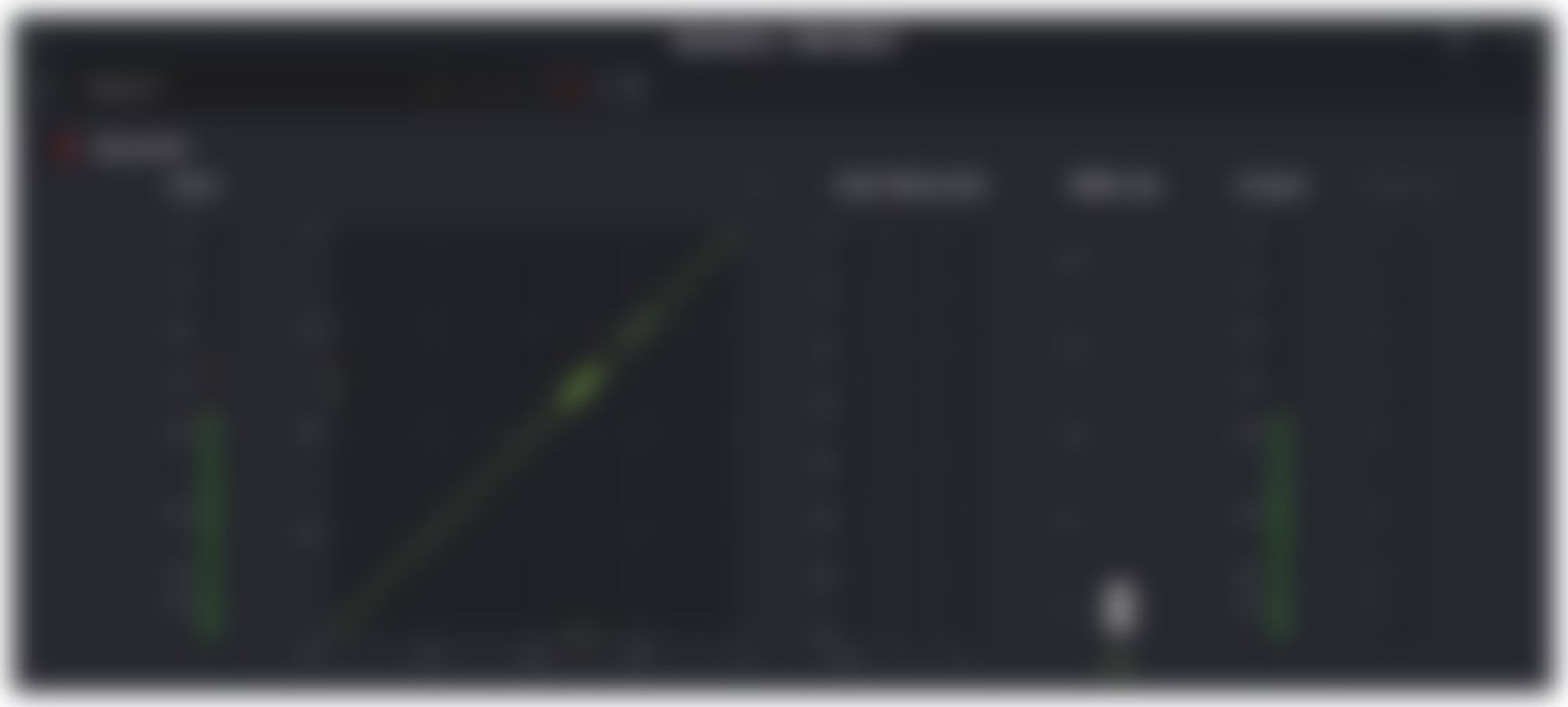
7 In the mixer, click the FX button for the DIALOGUE track (A1) to open up the Dynamics controls for this track.



The Dynamics controls for this track open in a separate window.



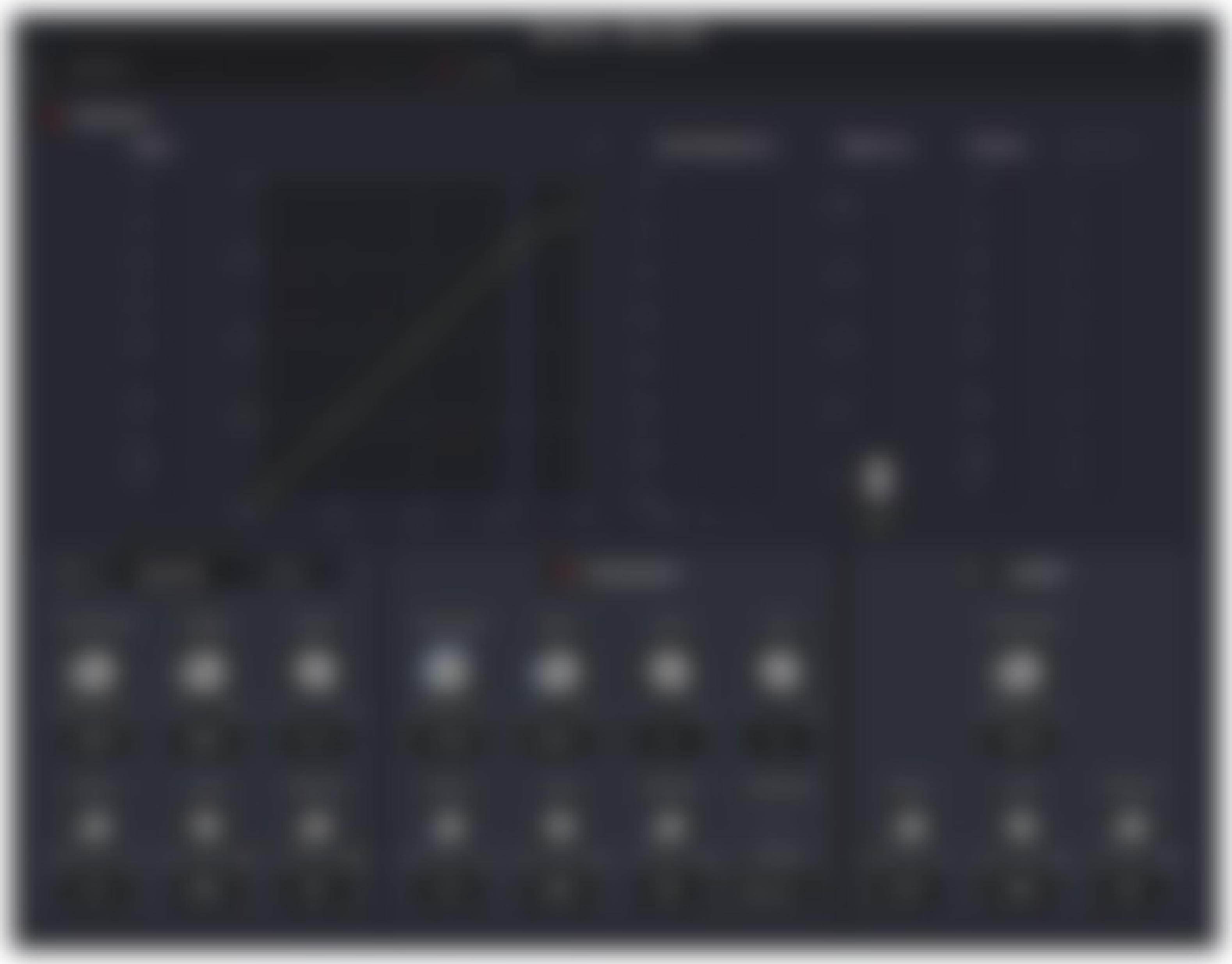
- Play the soundbite again, this time looking at the levels represented in the Dynamics.



The Input meter represents the audio signal coming into the Dynamics from the audio track in the timeline and the Output meter represents the output signal from the Dynamics. Currently, both are the same since no Dynamics processing has yet been applied.

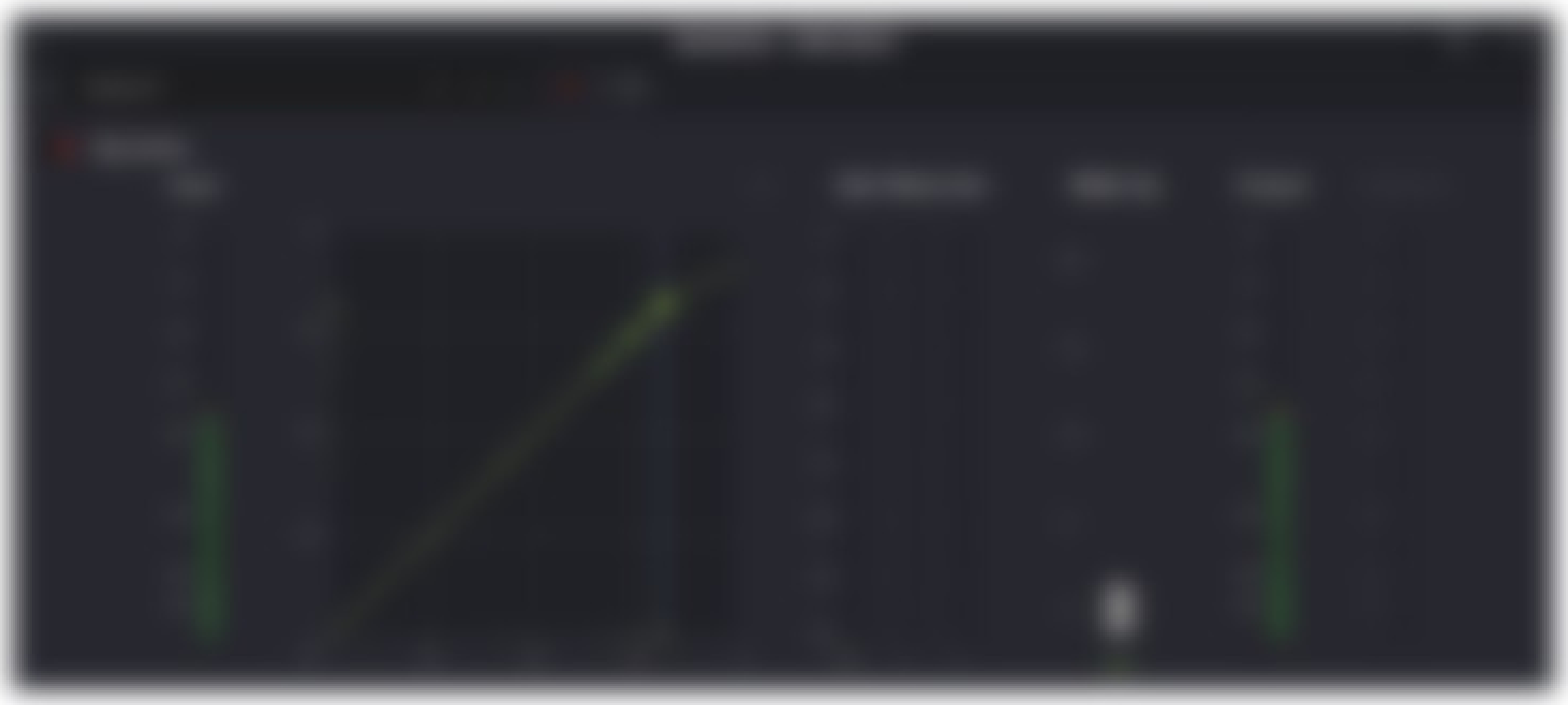
Also, take a look at the graph to the right of the Input meter, which represents the incoming signal on the vertical Y axis and the outgoing signal on the horizontal X axis. Again, both are currently the same since you have yet to adjust anything.

- In the Dynamics window, enable the Compressor.



You will see the top of the graph level off slightly, indicating how the process will affect the audio on this track.

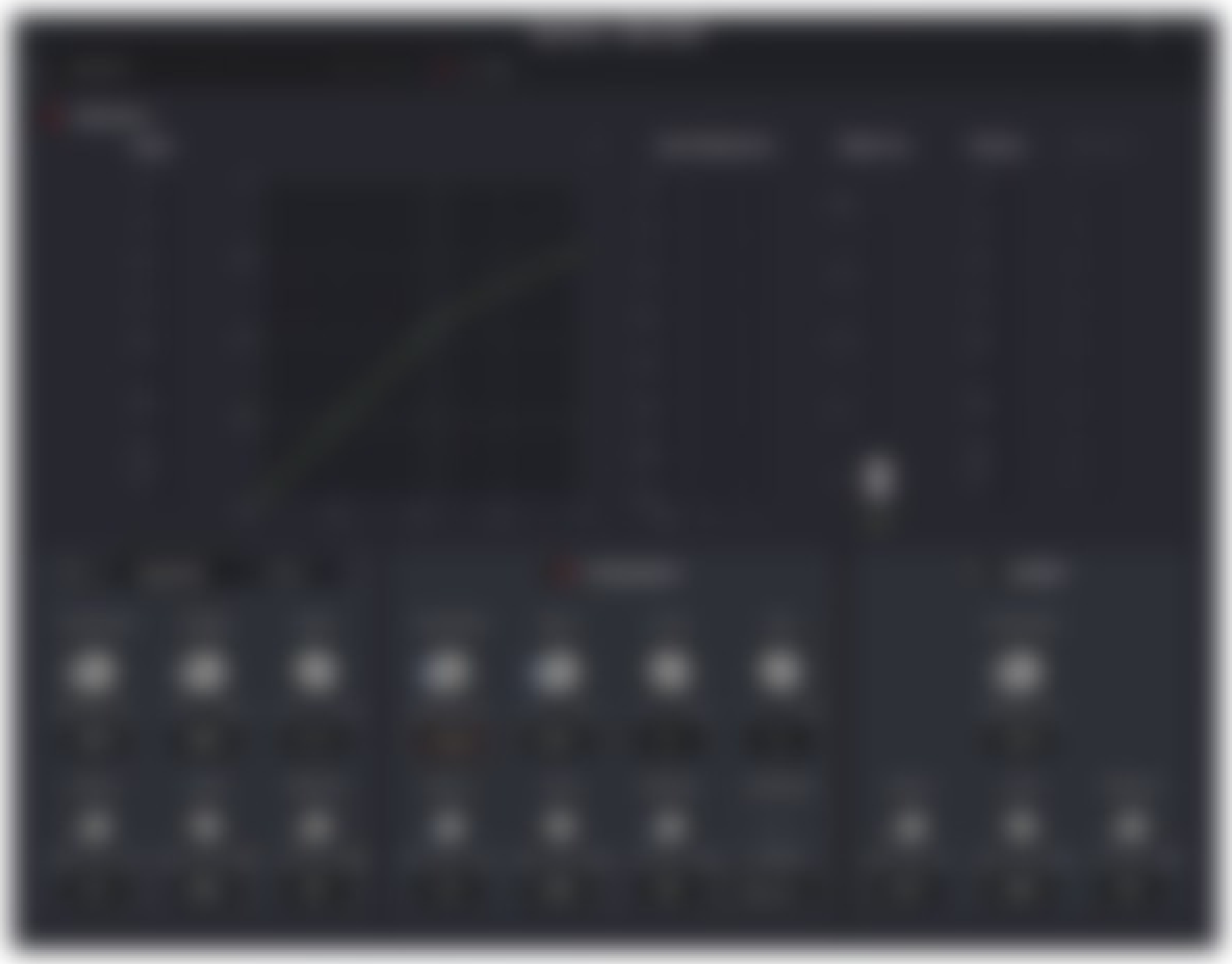
- Play a part of the interview again.



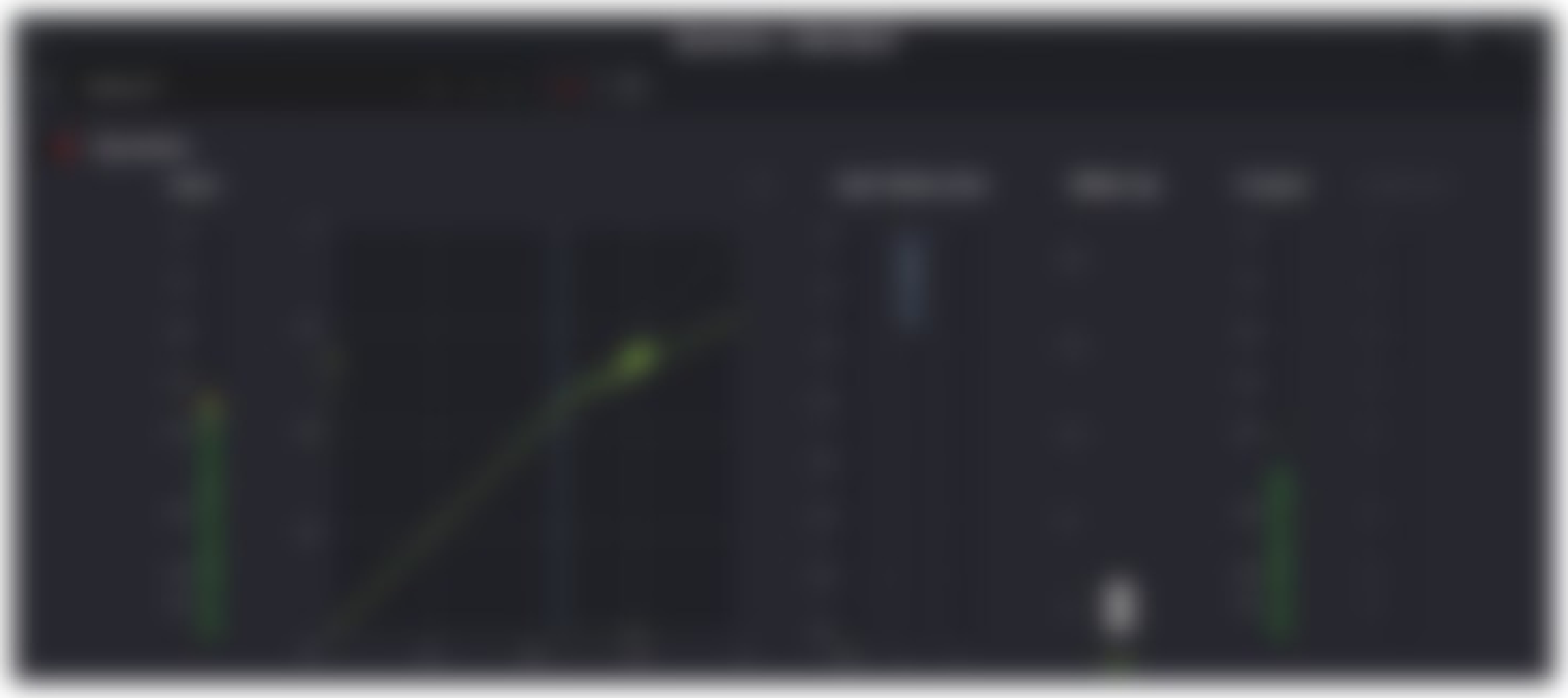
You should notice a very slight adjustment in the outgoing signal level, but it's very minor because Chris's dialogue does not quite reach the threshold at which the Compressor starts to influence – the point where the graph begins to flatten out at -15 dBFS by default.

In fact, you should be able to see from the graph where Chris's dialogue would be affected.

- Adjust the Compressor's Threshold level to around -35.



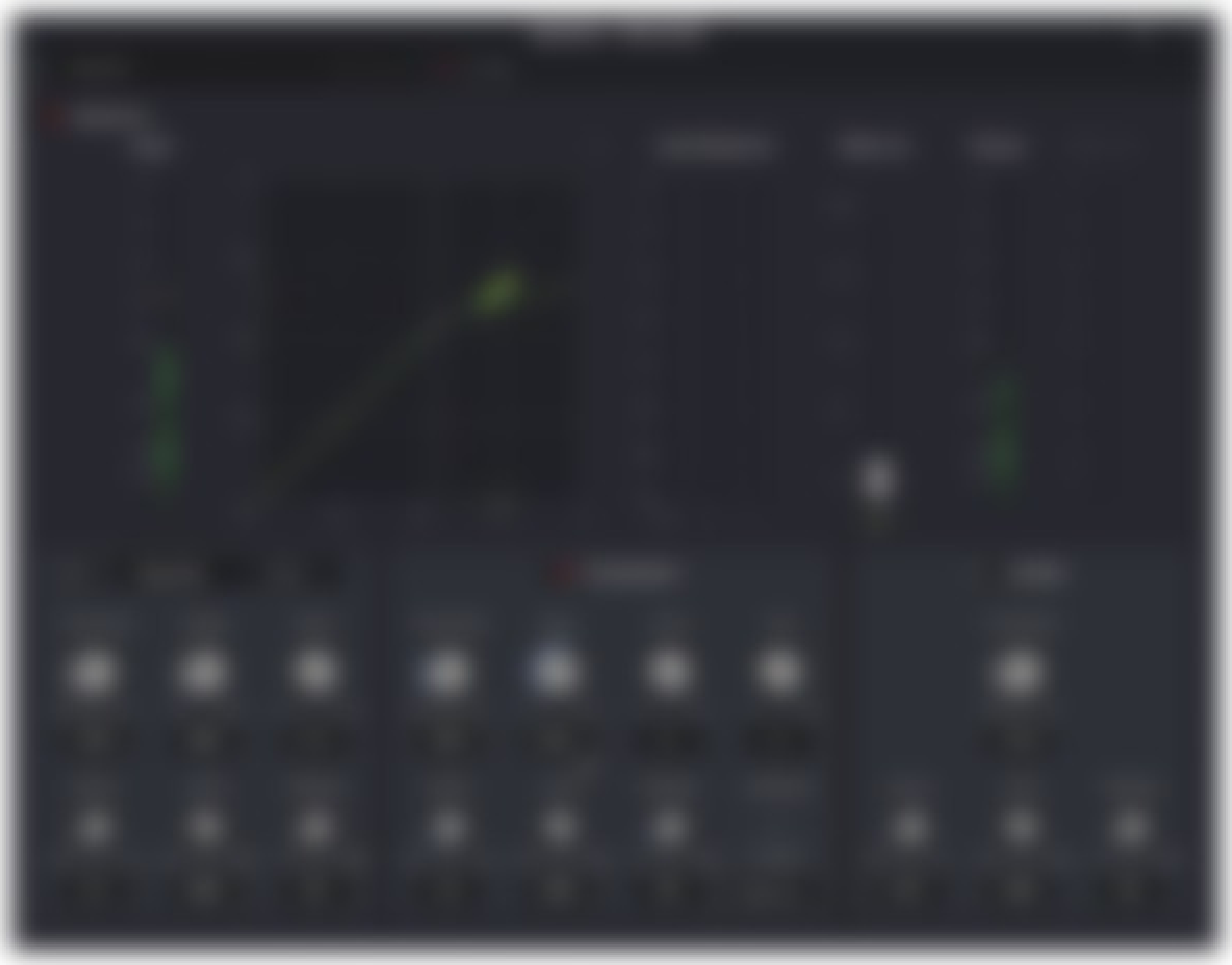
- Play the interview again.



Immediately, you should see and hear the Compressor's effect kicking in. The Output level is now noticeably lower than the incoming level because the audio level is compressed above the Threshold level.

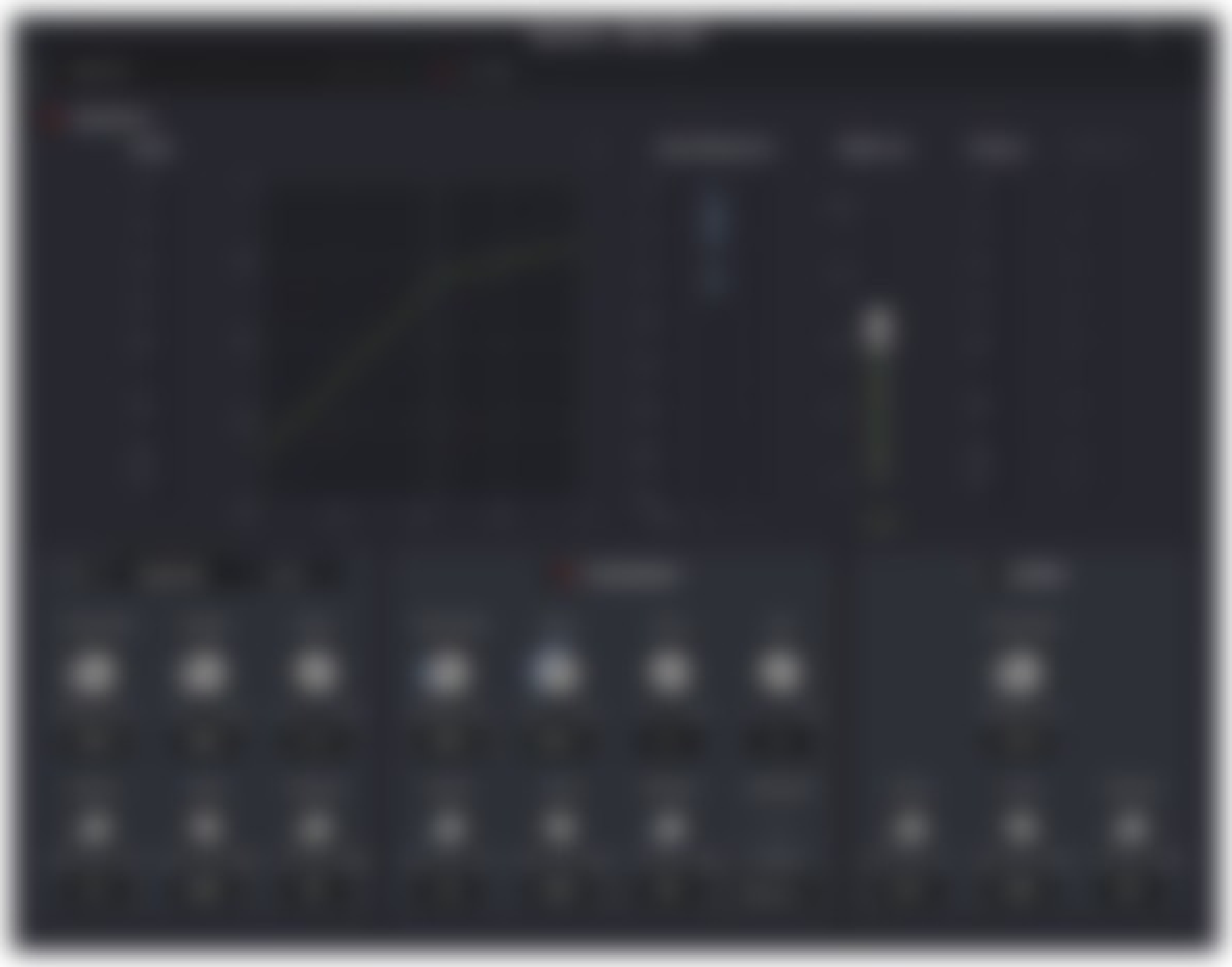
The amount of compression applied to levels above the specified Threshold is controlled by the Ratio. By default, this is "2.0:1" which means that for every 2 dB above the Threshold level, the Compressor will only allow a 1 dB increase.

- Adjust the Ratio to 4.0:1 so that for every 4 dB above the Threshold, the level will only be allowed to increase by 1 dB.



You should now see that the audio level across the DIALOGUE track is much more consistent but much lower than you'd ideally want it.

- Adjust the Make Up slider to 11.0 to add 11 dB gain to the overall levels.

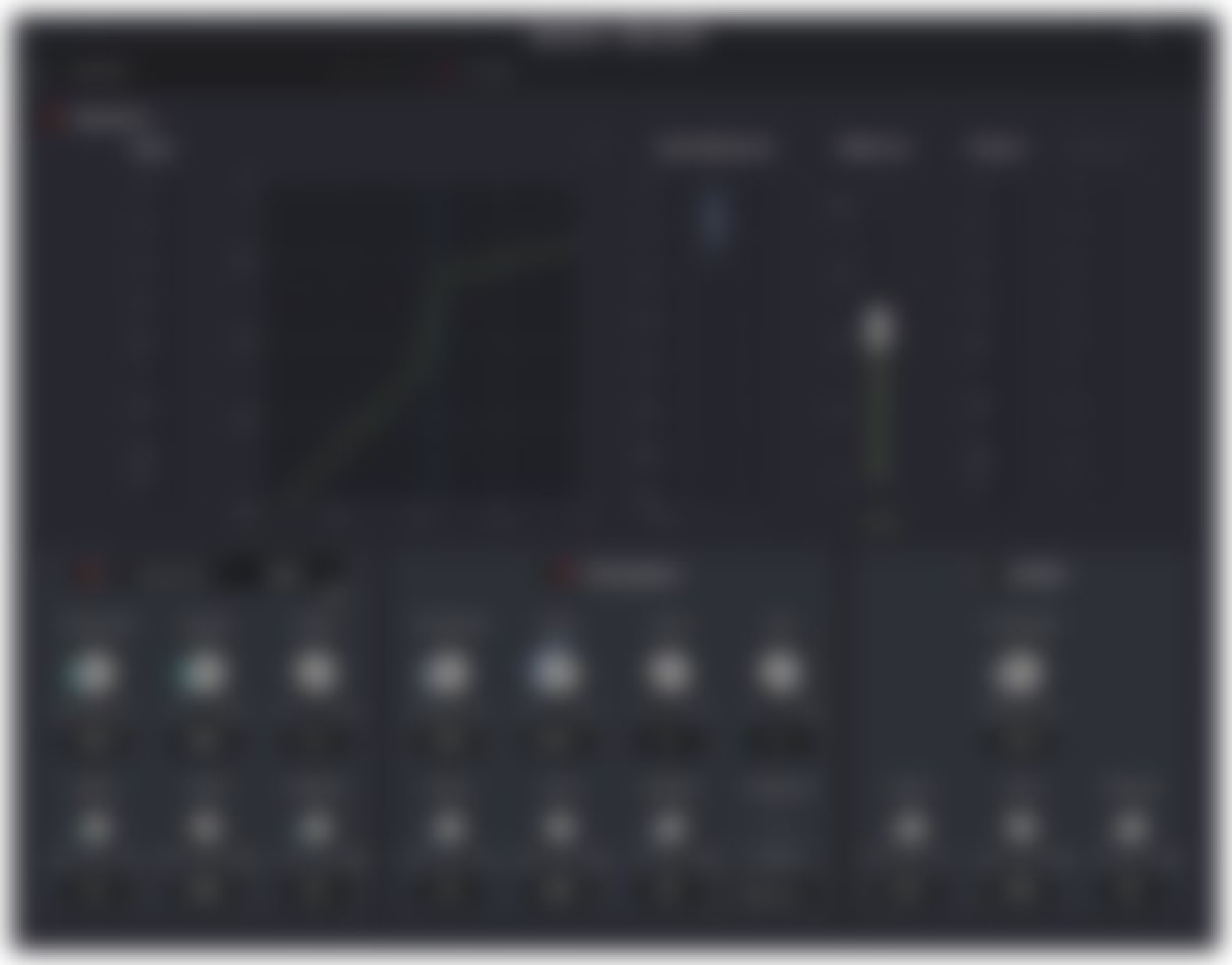


- Play back the soundbites to review the changes.

You should now distinctly hear the change to the DIALOGUE track's levels since they are now around –15 dBFS on the track's audio meters, but more importantly, the levels are still consistent across the different clips.

Unfortunately, the Compressor doesn't have the nuance of the Dialogue Leveler in determining the parts of the audio that are dialogue, so you'll hear a noisy background hiss that was part of the audio recording in the first place, along with some unwanted mouth noise and breaths from Chris.

- In the Dynamics window, click the Gate button and listen to the soundbites again.



[illegible]

- [illegible]

- [illegible]
- [illegible]

[illegible]

[illegible]

Adjusting Track EQ

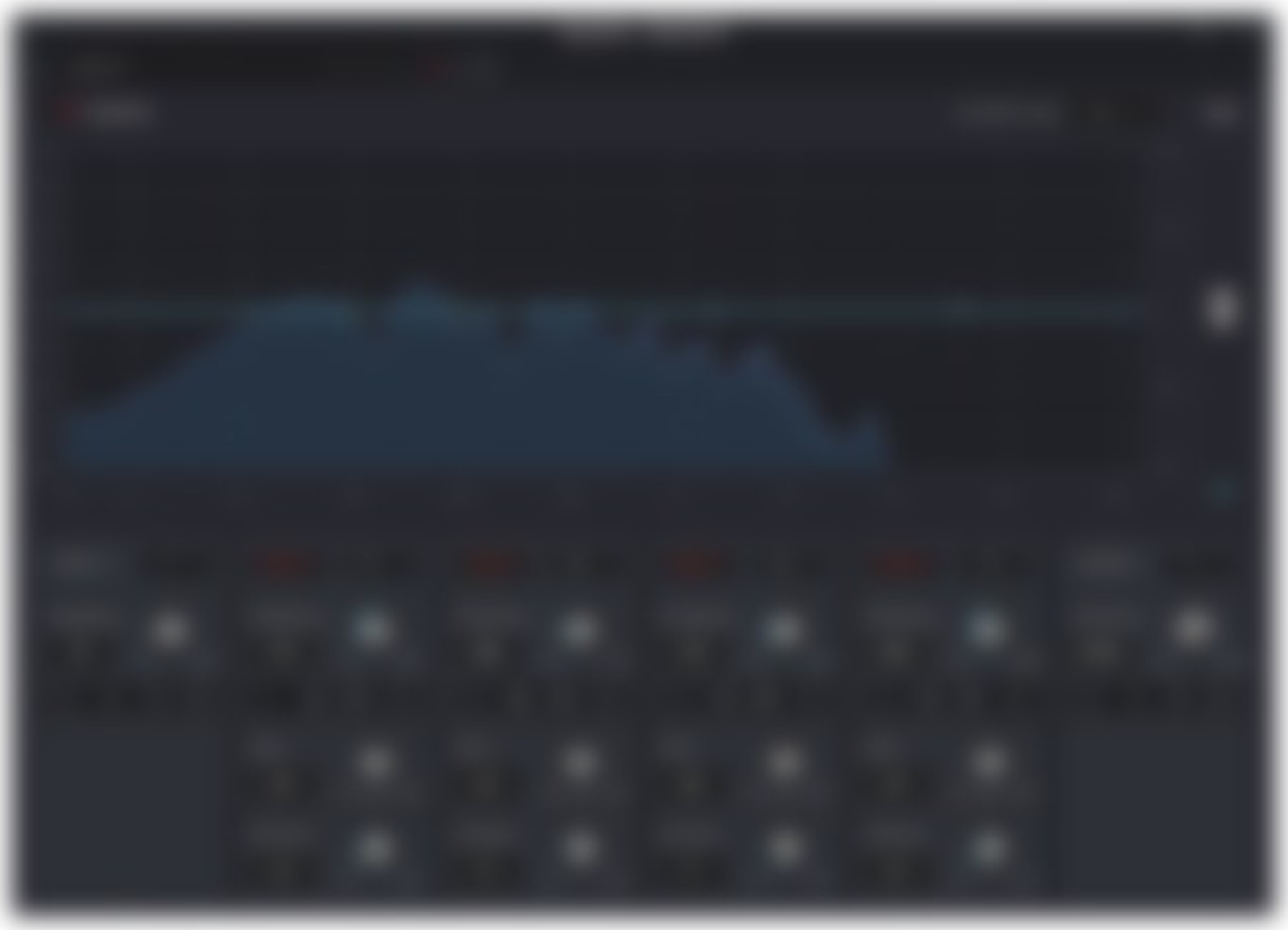
Another set of controls you can use to help sweeten your audio, especially regarding dialogue clips, is to adjust the Equalizer settings for the track. EQ is often used to control the "warmth" of the audio signal by increasing or decreasing certain frequencies. You will use the EQ controls to help "warm up" Chris's dialogue audio.

NOTE Each audio clip has its own Equalizer that can be enabled. However, as with the AI Dialogue Leveler and Dynamics, applying the equalizer at the track level ensures that each clip in the track will be affected similarly.

- In the Mixer, click the EQ button for the DIALOGUE track (A1).

The track's 6-band EQ controls open.

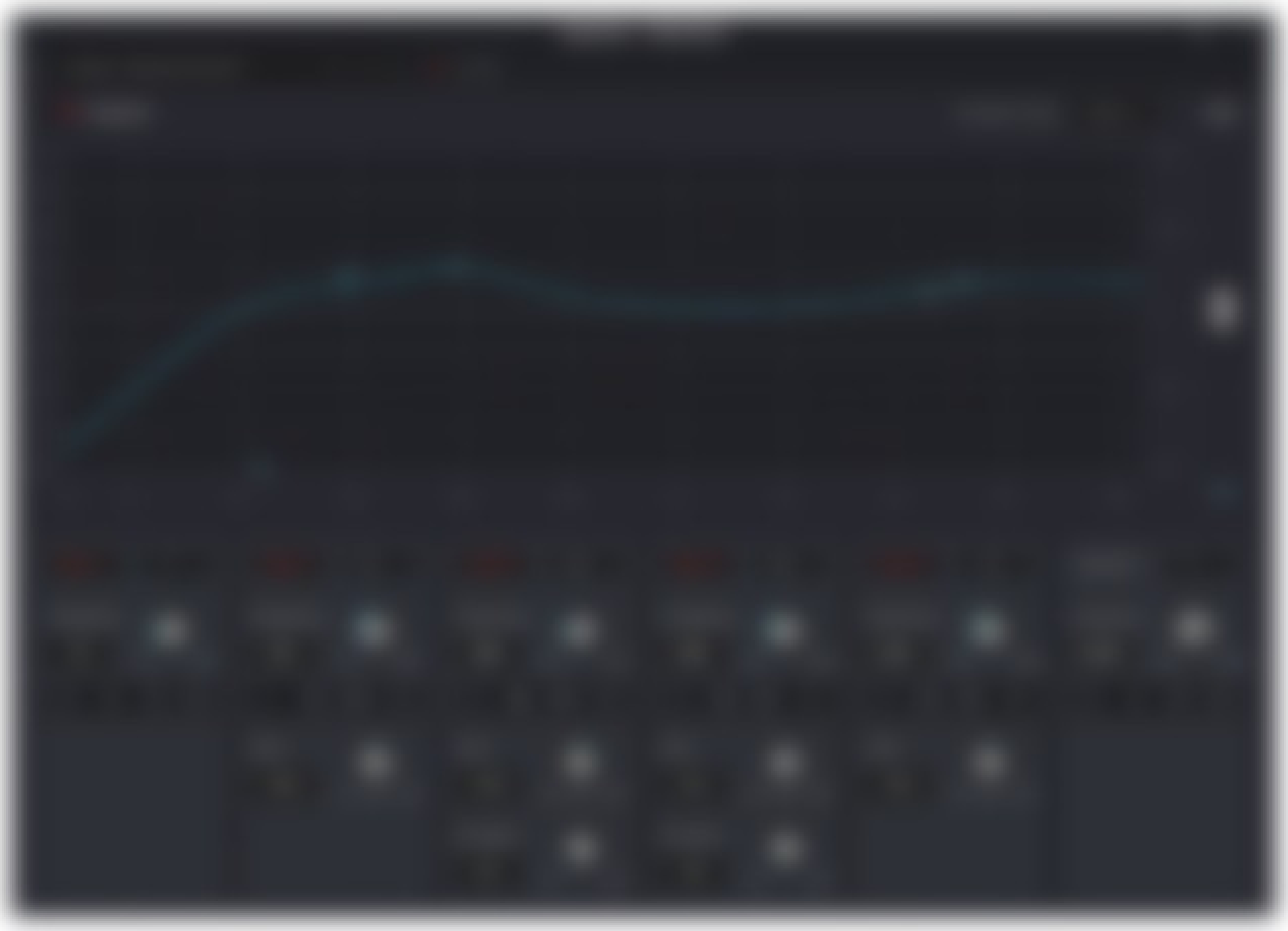
- Play back the first two soundbite clips in the timeline.



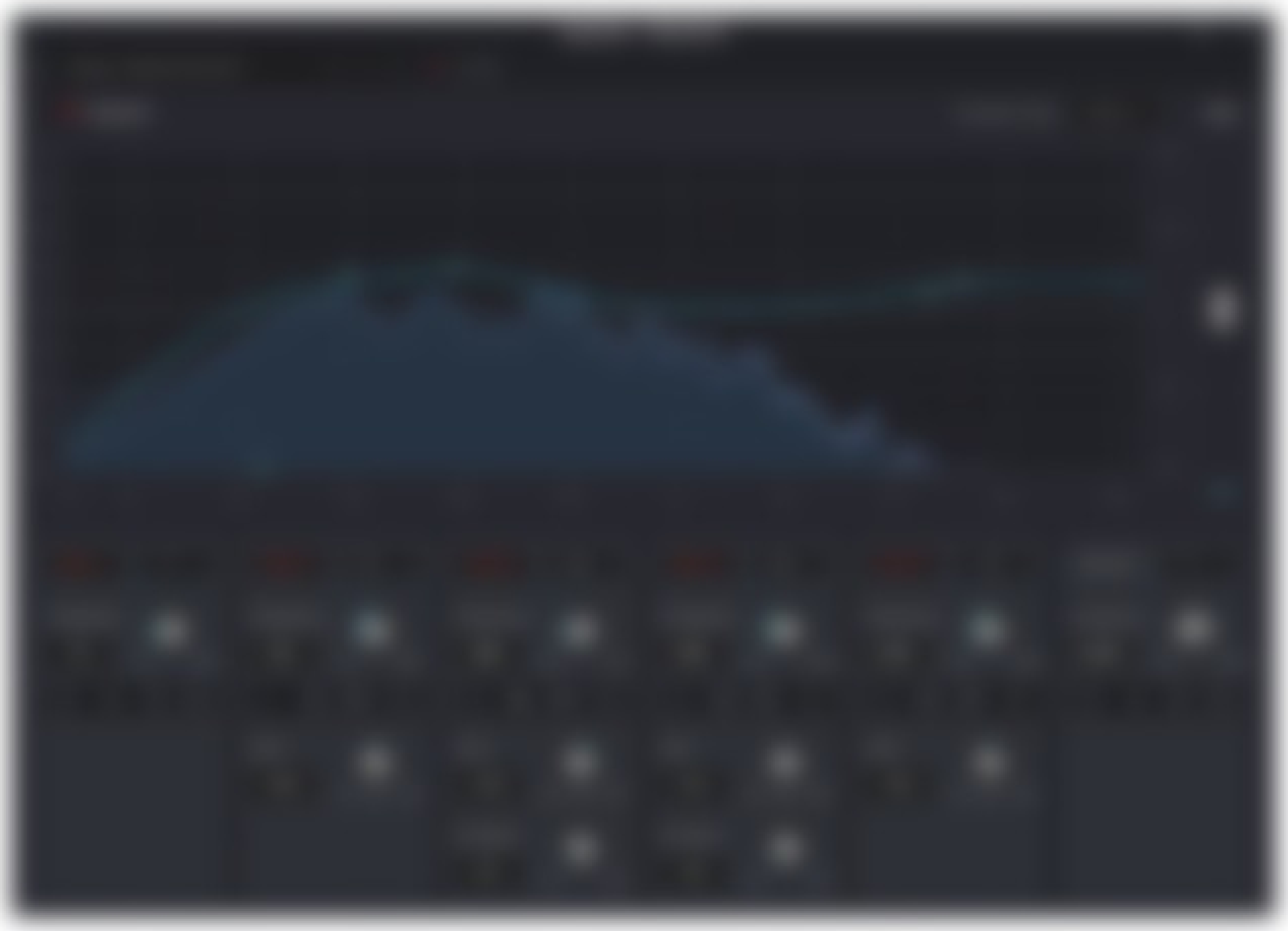
As the audio plays, you can see the graph representing the various frequencies of Chris's voice. Unsurprisingly, since Chris is a man with a reasonably deep voice, most of the frequencies in his voice are grouped in the lower frequency range, up to around the 500 Hz range. You can adjust the EQ by increasing or decreasing the levels around the various frequencies.

- In the presets list, select the "Dialog – Male vo Finisher" preset.

In the EQ window, you can see that the preset rolls off the frequencies at the lower end and increases the level of the frequencies around the [illegible] Hz range and again around the 4 kHz range.



- Play back the first two soundbites again to hear the changes.

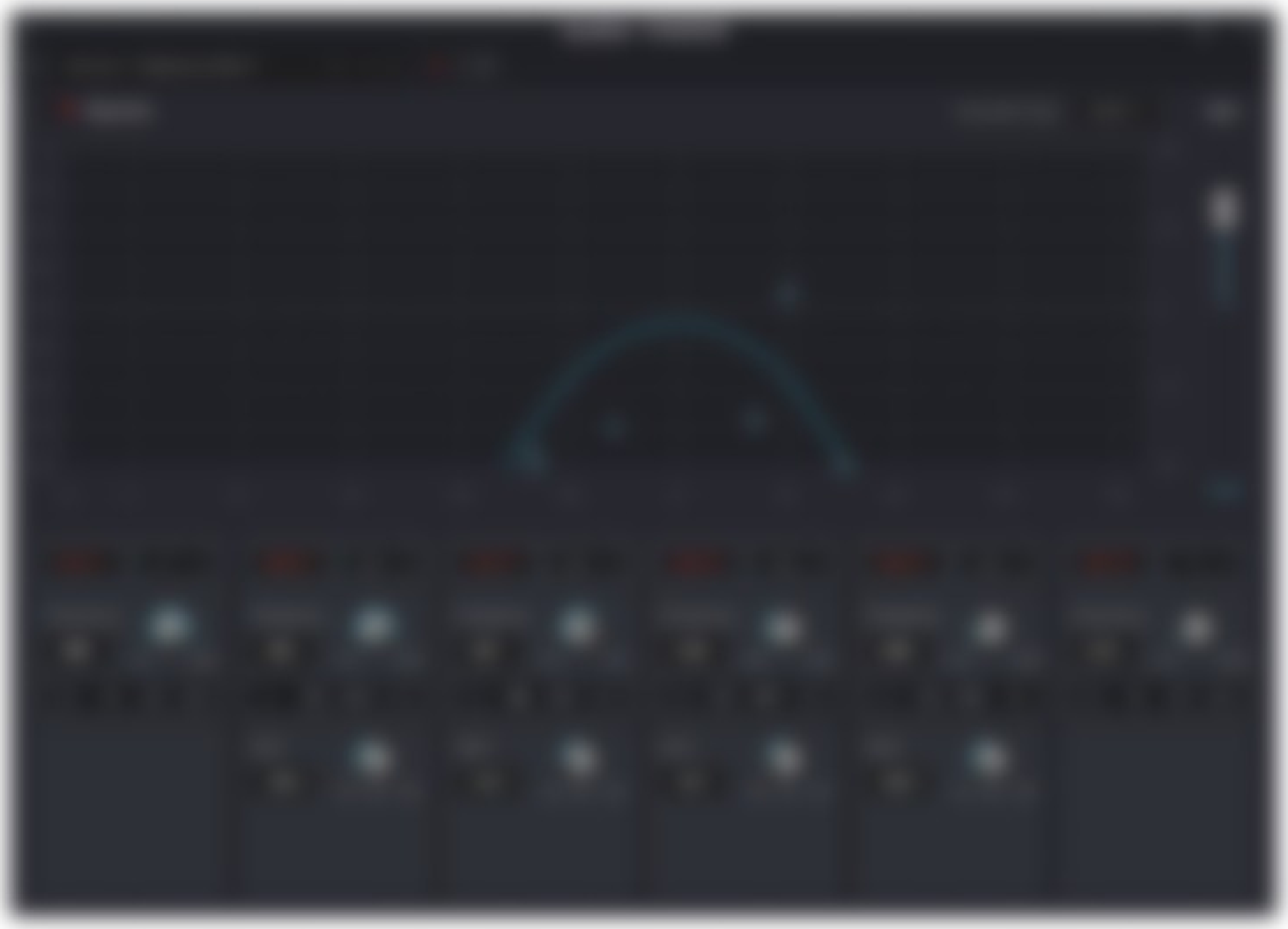


You should hear that Chris's audio sounds slightly warmer, thanks to the adjustment made to the lower frequencies, while the adjustments to the upper frequencies probably have less of an impact. The original frequencies are represented by the faint, white outlined indicators on the graph.

> **NOTE** If you find it difficult to discern between the adjusted EQ and the "flat" (non-EQ'd) version, you can enable and disable the EQ on the audio strips here.

Sometimes EQ adjustments can be quite dramatic.

- Select the "General: Telephone effect" preset.



You can tell immediately from the graph that this preset limits the frequencies to between 300 Hz and 3 kHz, while slightly reducing the level at around 1 kHz.

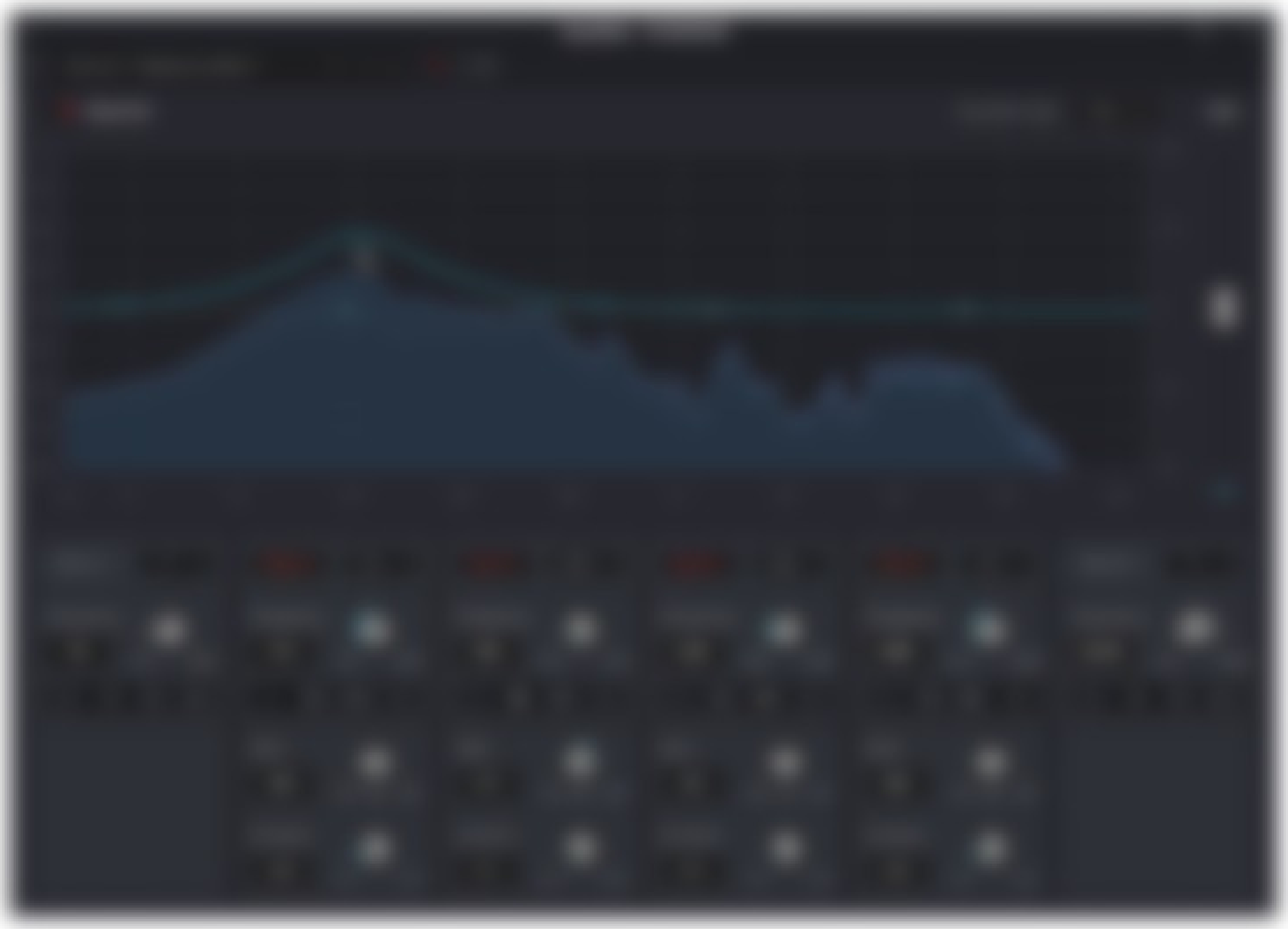
- Play back the first two clips again to hear Chris sounding like he's speaking on a telephone call.

Presets like this are useful starting points, but sometimes, you'll need to adjust the EQ to get the most out of your audio.

- Click the Reset button at the top right of the EQ controls window.

You will begin by identifying which frequency ranges you want to boost and which you may want to reduce.

- Once again, play back the first two soundbites in the timeline and, as the clips are playing, move the control for Band 2, raising it to around the +10 dB line and moving it left over the lower frequencies.

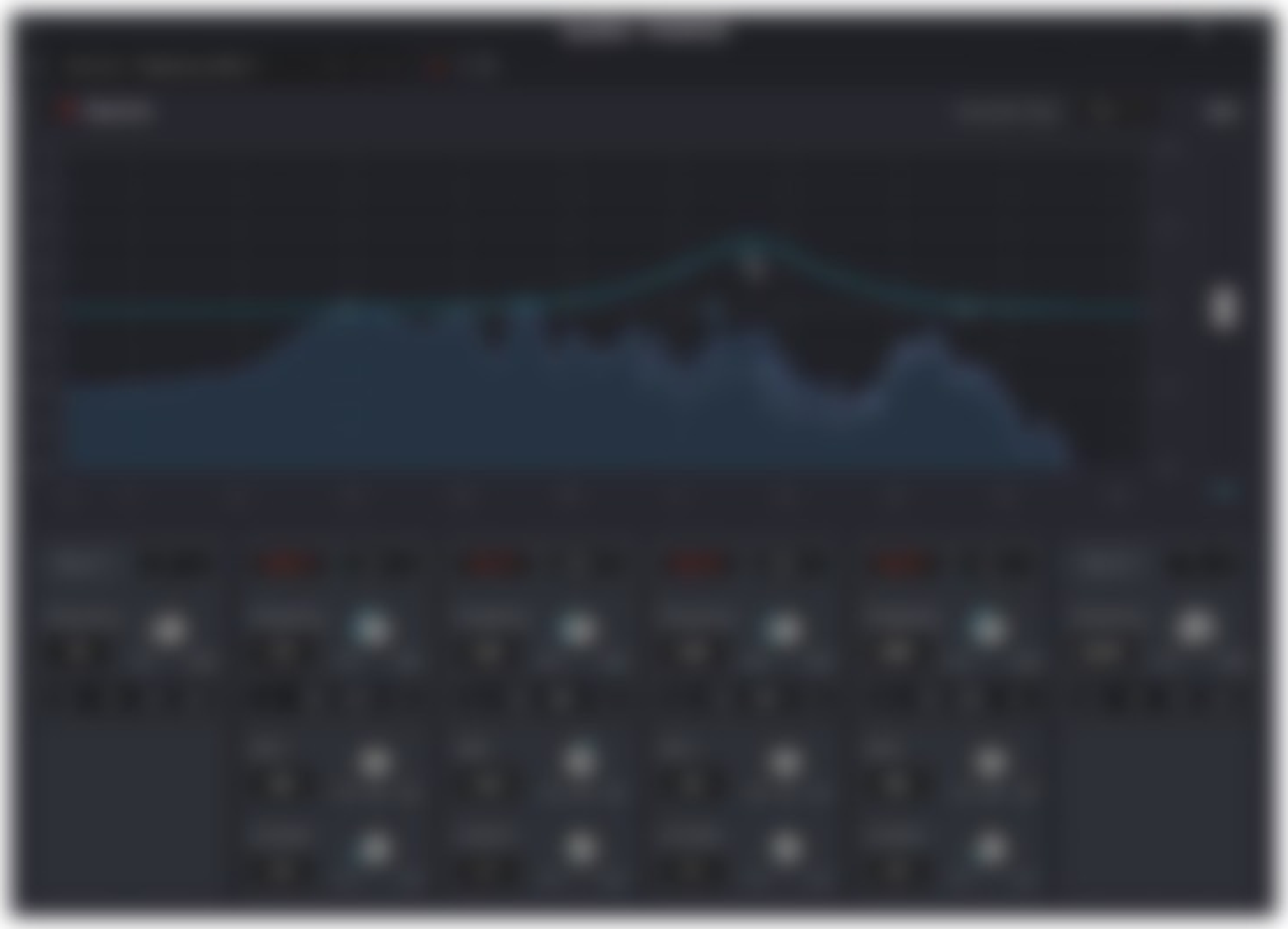


This technique is referred to as sweeping – that is, you are sweeping across the frequencies, boosting the range to hear that part of the voice better. You should notice that Chris's voice is much warmer around the 125 Hz range. These might be frequencies you'll want to emphasize.

Next, you will do the same, but at the upper end of the frequency range.

- Stop playback and reset the EQ controls.
- Return the playhead to the start of the dialogue clips and begin playing back.

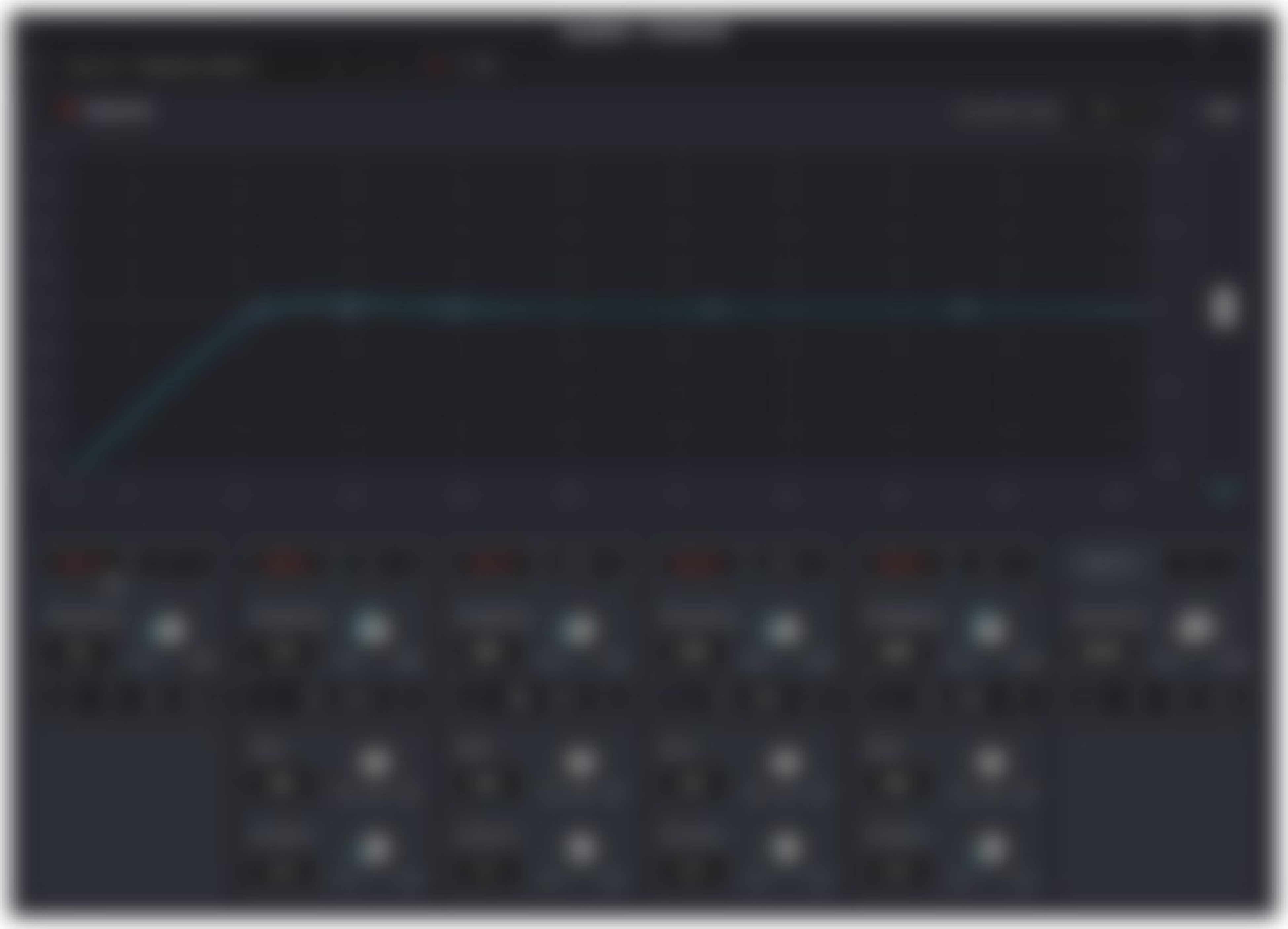
- This time, raise the Band 5 control to the 10 dB line and move it to the right to sweep the higher range frequencies.



You should hear that the frequencies around the 500 Hz mark don't sound as nice as those around the 2 to 4 kHz range. Therefore, using the sweeping technique, you have identified certain frequency ranges in Chris's voice that you want to boost or reduce. You can use this knowledge to adjust the audio of Chris's dialogue clips. You will start by rolling off the very lowest frequencies that don't tend to impact the human voice.

- Reset the EQ controls window again.

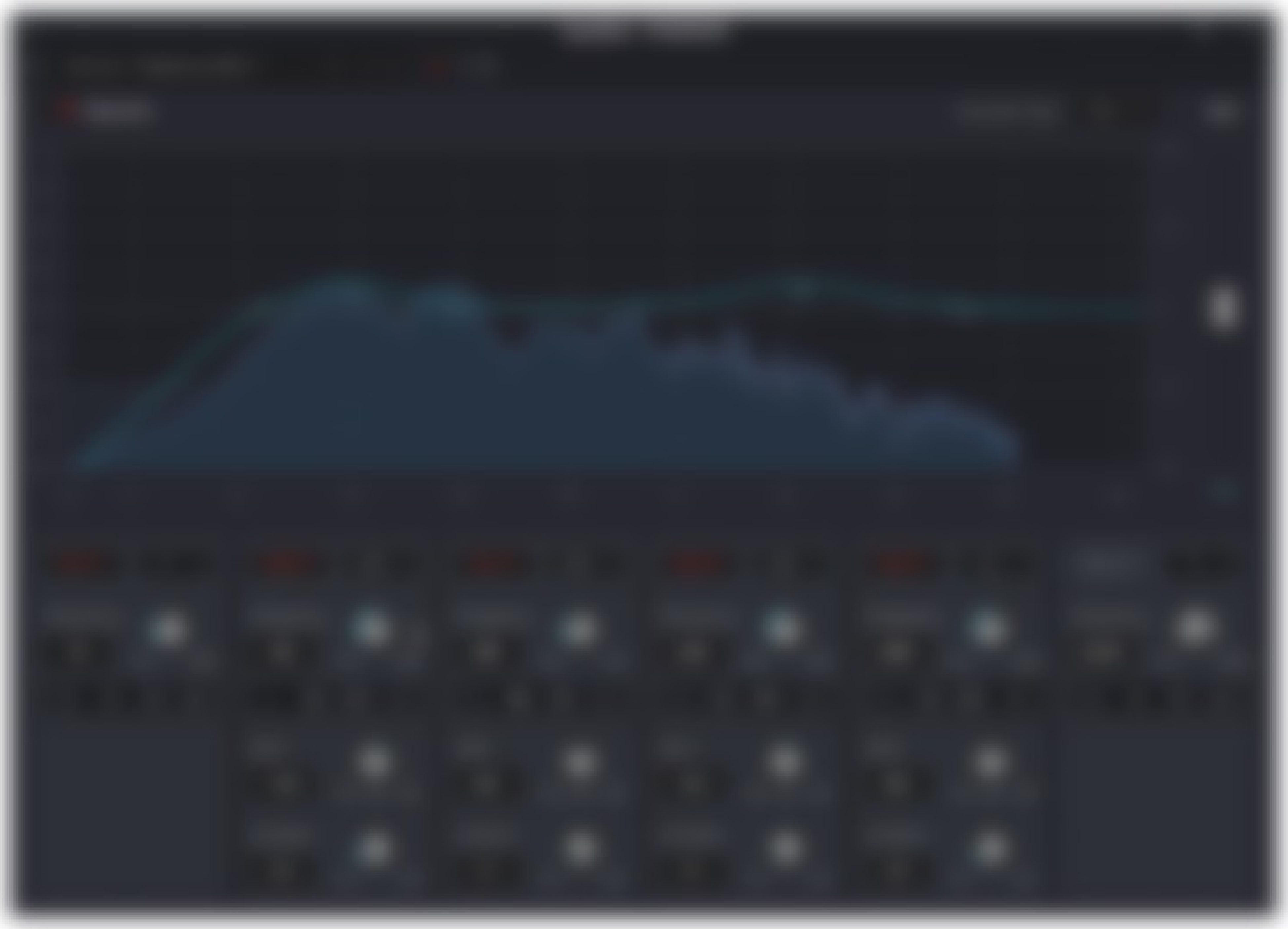
- Click the Band 1 button to enable Band 1, which by default is set to high pass.



- Change the Band 2 controls from Low Shelf to Bell.

- Select the control for Band 2, place it over the 125 Hz range, and increase the Gain to about 10 dB.
- Select the Band 5 controls, place it over the 2 kHz range, and increase the Gain to about 15 dB.

- Play back the first two soundbite clips to hear the adjustment to the EQ for Chris's dialogue.



Once you are happy with those adjustments, you can save them as your own preset to use in the future.

- At the top left of the EQ window, click the + to create a new preset.

You will be asked if you want to create a new preset.

- Click Create New and, in the Create New Equalizer Preset dialog, type **[illegible]** and click OK.

The EQ settings are now saved as a preset that can be quickly loaded when needed from the EQ Presets menu.

TIP If you adjust a preset and then choose to create a new preset, you will be prompted to either create a brand new preset or update the existing preset. Click Update to save the changes you've made.

To quickly apply EQ settings to a track or delete previously saved presets, move to the Fairlight page and choose Fairlight > Presets Library.

For more information, see The Fairlight Audio Guide to DaVinci Resolve [illegible] or the DaVinci Resolve Manual.

Extra Credit

Now that you've balanced and EQ'd the audio for Chris's soundbites on the DIALOGUE track, do you think that you can do the same for the VO track?

Solo the VO track so you can hear it against the DIALOGUE track clips, then try balancing the recording using the AI Dialogue Leveler or the Dynamics controls to see which you prefer, before sweetening the EQ using a preset (the "Dialog – Female lav mic flair" preset is a good start).

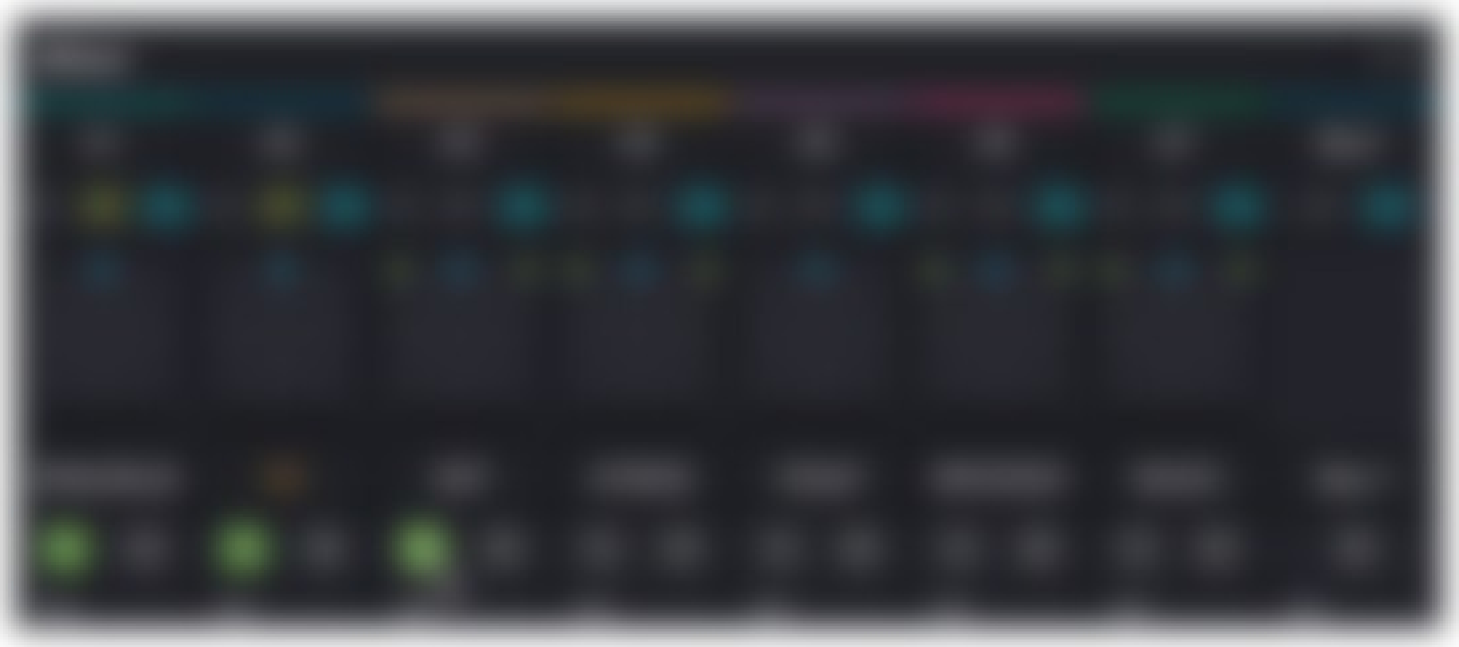
Once you've given this a try, you can move on to the next steps.

NOTE If you need to catch up before moving to the next step, select the TIMELINES bin, choose File > Import > Timeline, navigate to R20 Editors Guide > Lesson 8 > TIMELINES, select [illegible] and click Open.

Balancing the Sound Effects

Now that you have balanced the soundbite clips in the DIALOGUE track, you can turn your attention to the other audio elements, which you will address track by track, setting the levels against the dialogue.

1. In the mixer, click the Solo button for the SFX track (A3) and play back the clips on this track, along with the dialogue.



These clips seem to work well against the dialogue clips; however, you can quickly adjust the first two clips to make them a little more dominant in the mix.

2. Select the first two clips on the SFX track and choose Clip > Audio Operations > Trim Audio Levels > Increase Audio Level 1dB or press Option-Shift-= (equals) on macOS or Alt-Shift-= (equals) on Windows to raise the level of these clips by 1 dB.

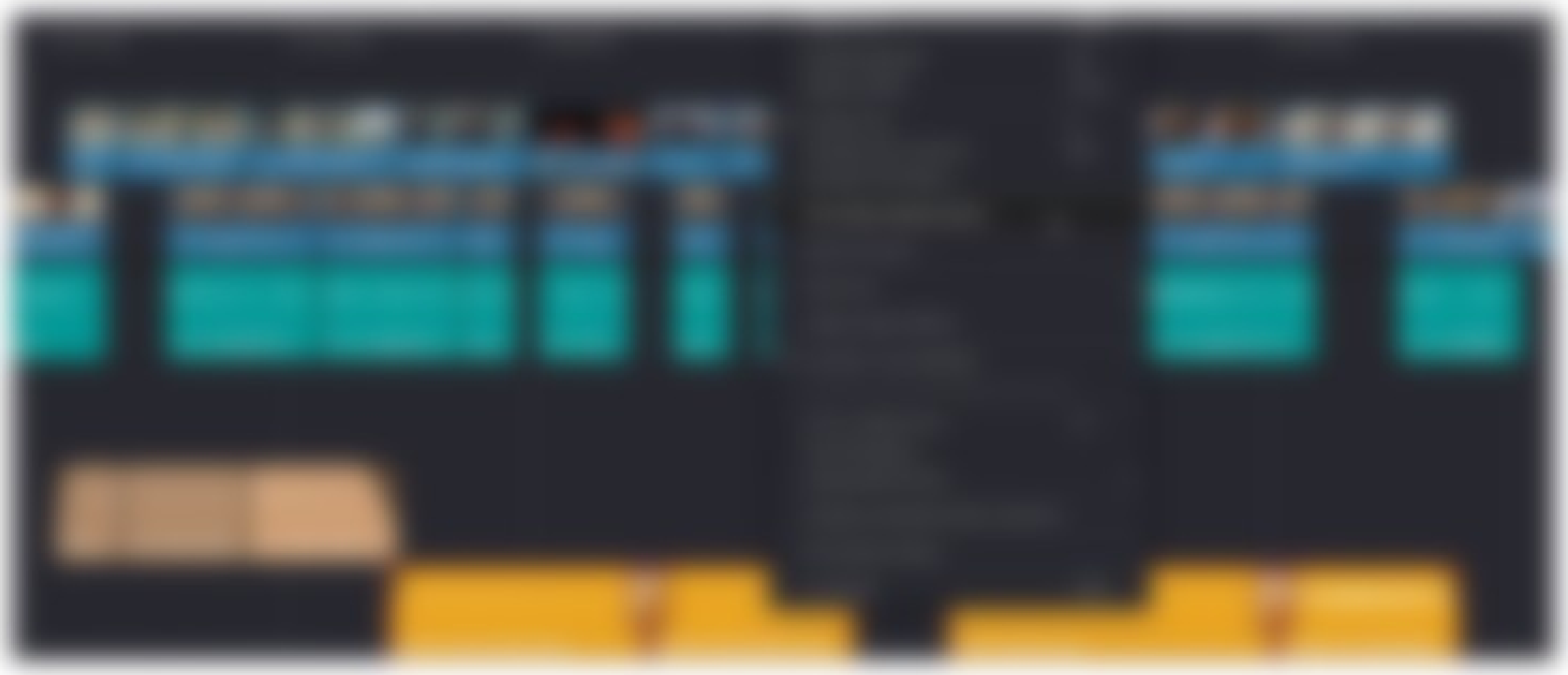
TIP You can also use Clip > Audio Operations > Trim Audio Levels > Increase/Decrease Audio Level by 1dB, or press Option-Command-+ (equals) on macOS or Alt-Ctrl-+ (equals) on Windows.

- In the mixer, click the Solo button for the ATMOS track (A4).
- Play these four clips on the ATMOS track, listening to them against Chris's dialogue.

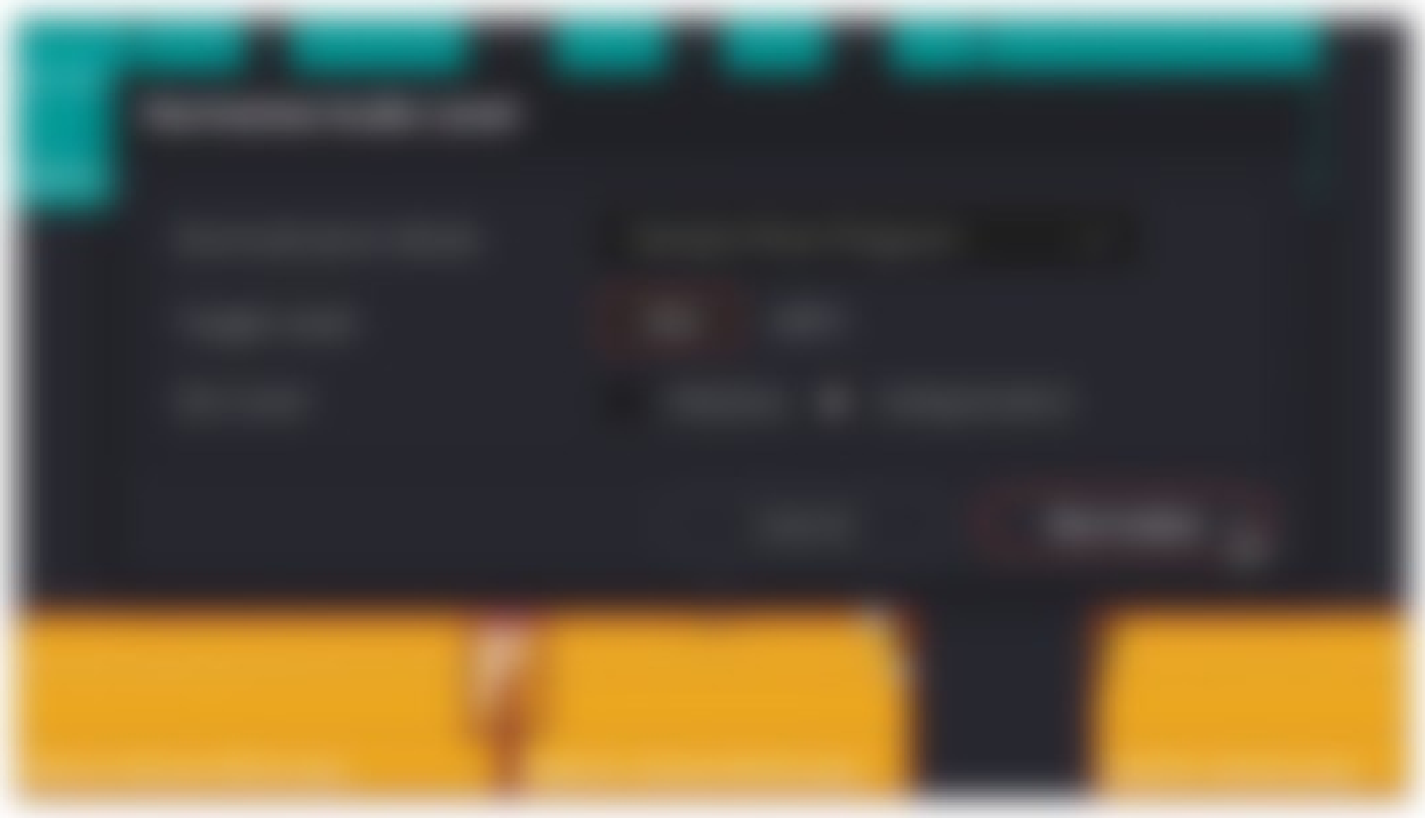
Obviously, some of these clips are a little too low, whereas Outdoor 3 Lapel Radio.wav is far too loud. These clips need balancing to a consistent level, even though they were recorded at different levels. You will achieve this by normalizing the clips' audio levels.

NOTE When you normalize a clip's audio levels, you need to specify a target level that the levels should be set to. Options include a variety of loudness normalization algorithms specific to various international standards, which are useful for balancing the perceived overall loudness of several clips to one another, regardless of transient levels throughout each clip. You can also perform peak normalization, with options for both Sample Peak and True Peak. The result is largely the same; whichever method you choose each clip's audio level is analyzed and then adjusted to the various peak and/or loudness levels specified.

- Select the four clips on the ATMOS track, right-click them, and choose Normalize Audio Levels.



- In the Normalize Audio Level window, leave the Normalization Mode set to Sample Peak Program, change the Target Level to –10 dBFS, and change Set Level to Independent.

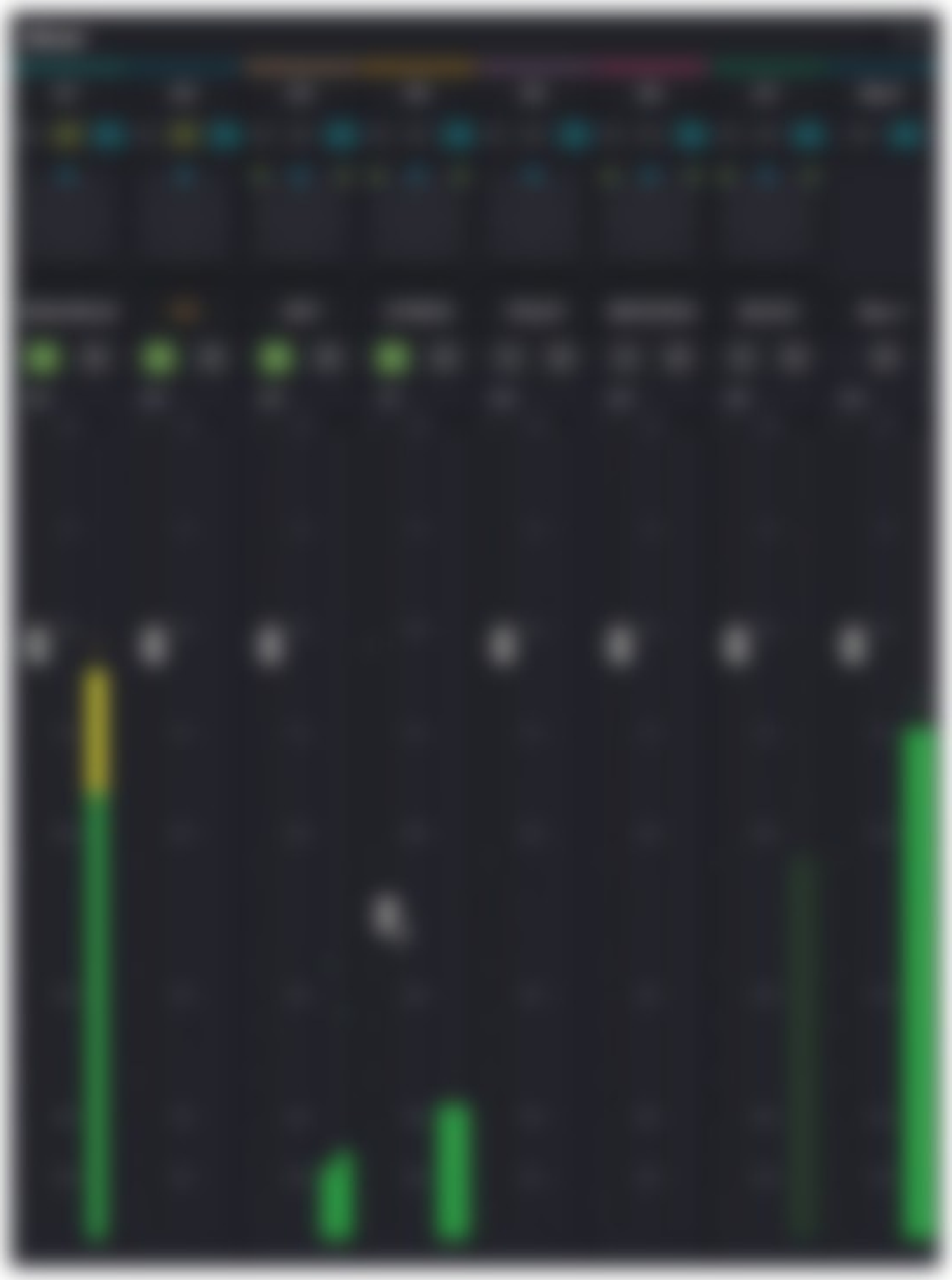


NOTE When Set Level is Relative, all selected clips are treated as one selection so that the highest peak and/or loudness level of all the selected clips is used to define the adjustment, and the volume of all selected clips is adjusted by the same amount. When Set Level is Independent, each clip's peak and/or loudness levels are used to define the adjustment to that specific clip. This is likely to result in different volume adjustments to each clip that make each audio clip's peak and/or loudness levels better match one another. Relative is useful if you're normalizing a series of clips that have a consistent recorded level, such as a controlled dialogue recording, whereas Independent is much more useful if you're trying to balance a series of clips that have different recorded levels (subtle or not), such as interviews or other location audio, which might have been recorded under less controlled conditions.

- Click Normalize and play back the clips to review the change.

  Although these clips are still too loud against Chris's dialogue, they are at least more consistent.

- Play the clips again and, in the mixer, reduce the level of the ATMOS track ([illegible]) by about [illegible] dB.



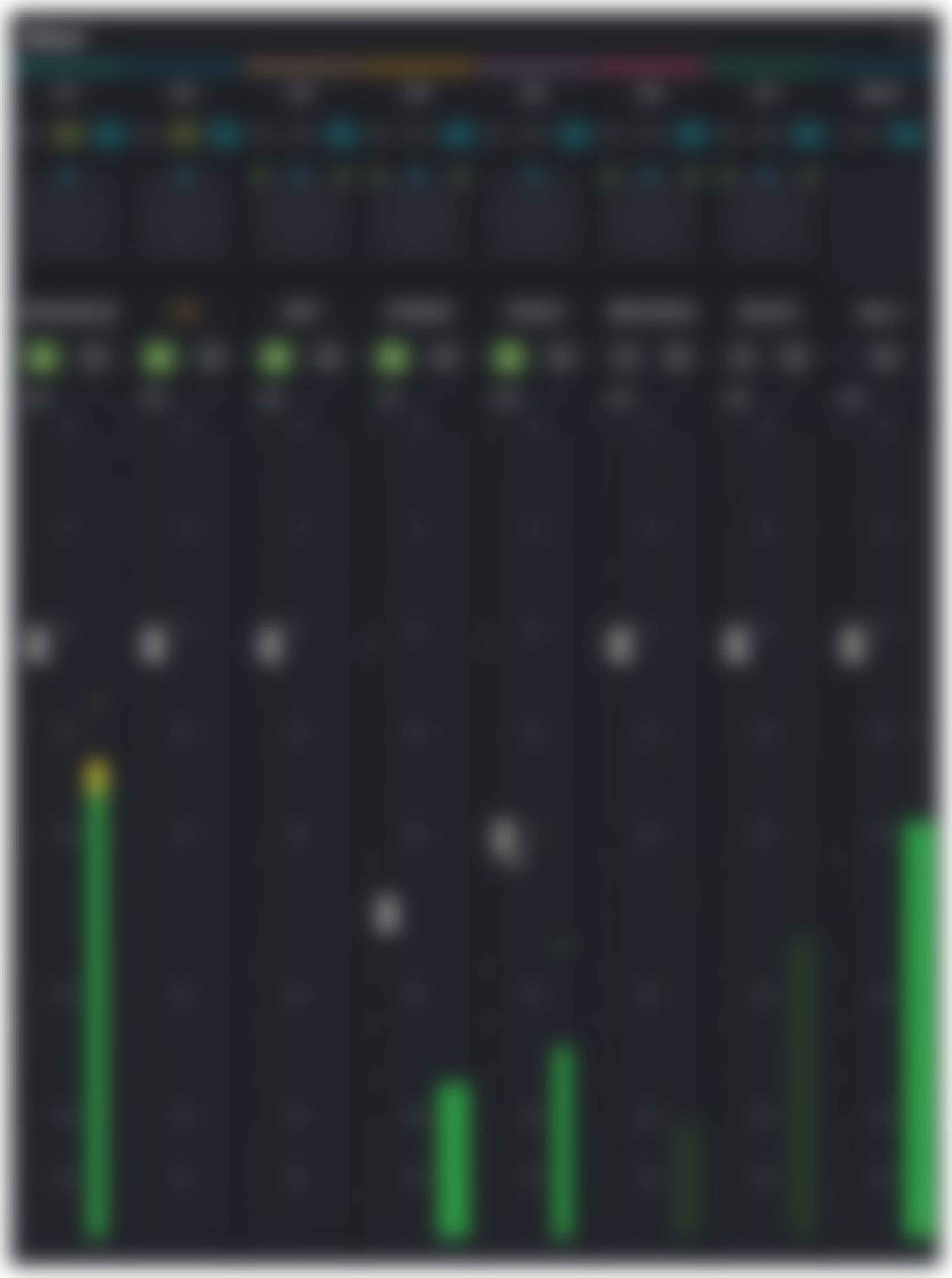
- Click the Solo button for the FOLEY track ([illegible]) to add the track to the mix you're listening to, and play the clips of the guy jumping on the rocks.

  The guy's footsteps sound like he's crushing rocks, not stepping on them!

- Select all the clips on the FOLEY track (including [illegible]), right-click them, and choose Normalize Audio Levels.

- Leave the Normalization settings as they are, which are the same settings you've just applied to the clips on the ATMOS track, and click Normalize.

- In the mixer, reduce the FOLEY track (A4) by about -3.5 dB.



- In the mixer, click the Solo button for the WHOOSH track (A6) to add this to the mix you're listening to.
- Reduce the level of the Whoosh component clip by -3 dB.

- Return the playhead to the beginning of the timeline and play back to listen to how the various sound elements are working together, making further adjustments to the clip and/or track levels as you deem necessary.

Mixing the Music

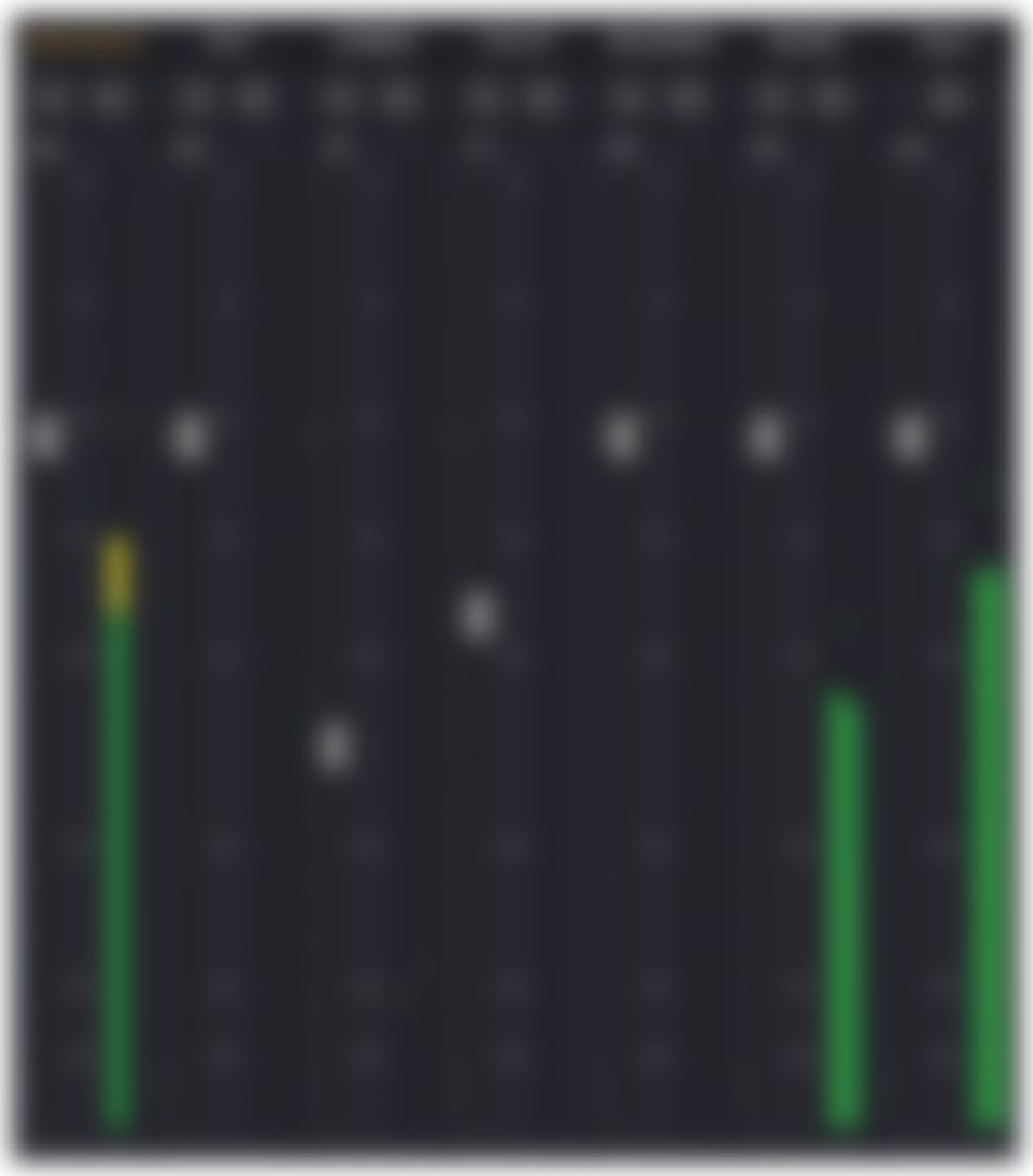
The final element you'll need to add to the mix is the MUSIC track. As you're already aware, your choice of music is critically important since it indicates how the viewer should feel about the scene or video they are watching. As such, you want the music to be quite dominant in the mix except where Chris is speaking, when you want it to fall away, allowing Chris's dialogue to be heard unimpeded.

To achieve this, you'll use the tried and tested approach of adding keyframes to the audio level.

NOTE Other ways of mixing the audio are also available, including automatic adjustments to the track level using the Ducker and sidechaining in the Dynamics using the Compressor. For more information on using the Ducker, see The Beginner's Guide to DaVinci Resolve 20 or the DaVinci Resolve Manual. More information on using sidechaining is available in The Fairlight Audio Guide to DaVinci Resolve 20 and the DaVinci Resolve Manual.

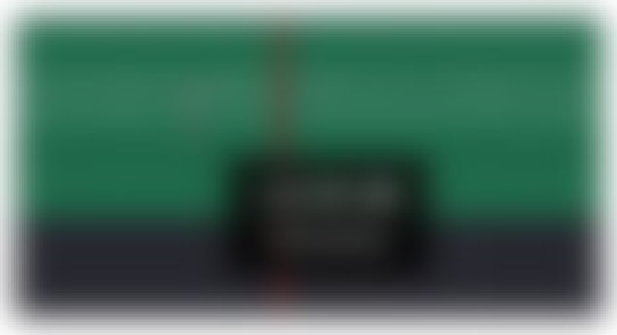
[illegible] Click and drag across the active Solo controls in either the mixer or the timeline track controls to un-solo all the tracks so you will hear the entire mix.

[illegible] At the moment, the music is peaking around the [illegible] dBFS mark.



This is probably a little too loud against Chris's interview, but not loud enough for the parts of the edit where he's not speaking.

[illegible] As the music continues to play, use the gain line on [illegible] to reduce the level of the music by another [illegible] dB or so to around [illegible] dB in the tooltip, or until you're happy with the balance of the music against Chris's soundbites.



TIP Hold Shift when dragging the gain line for more precise control.

[illegible] Place the timeline playhead near the start of the first soundbite clip and click the Detail Zoom button.

5. Option-click the gain line for the music clip on either side of the playhead, adding a keyframe each time.

TIP You can resize a single track by dragging the bottom of the track controls up or down to make the track height smaller or larger, respectively.

6. Select the gain line before the first keyframe and raise it by around 7 dB to around 11.00 dB on the tooltip.

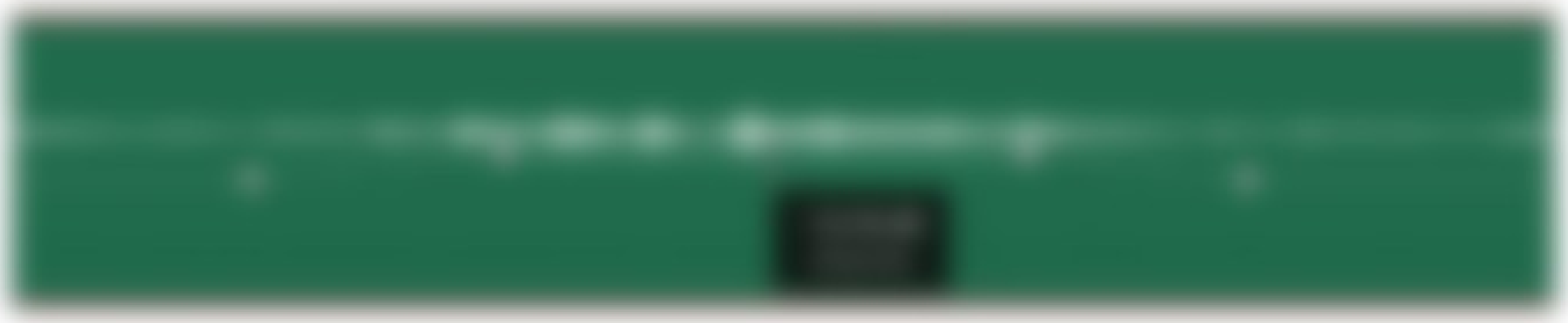
7. Press / (forward slash) to review the change in the mix.

   You should hear a nice, smooth transition as the music plays at one level before dropping away, allowing Chris's dialogue to take its place at about the same level.

8. Scroll the timeline to the end of the first soundbite clip.

9. Option-click (macOS) or Alt-click (Windows) the music clip's gain line four times: twice as Chris finishes the first soundbite and twice more just before the next soundbite.

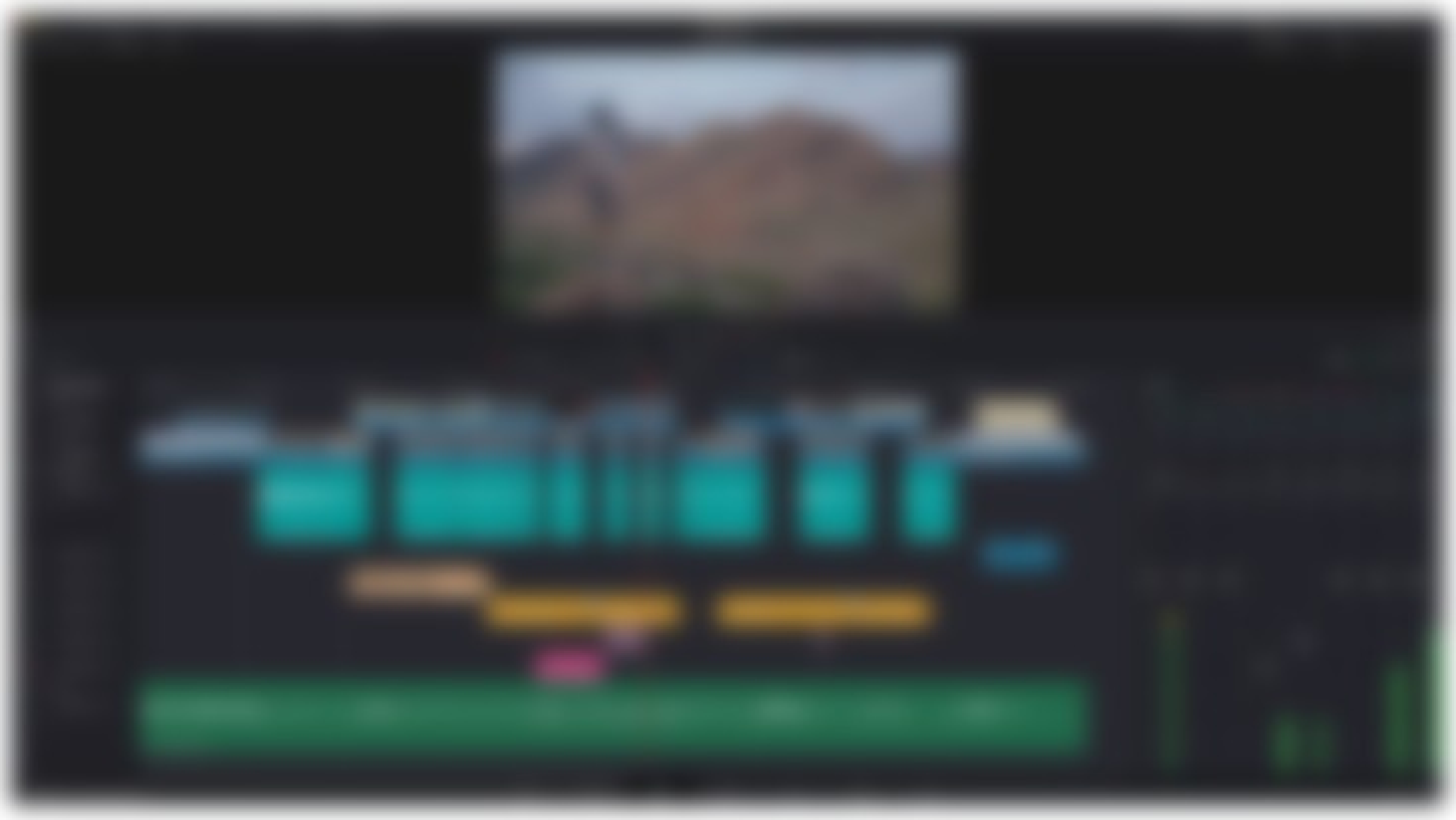
[illegible] Drag the gain line between the two middle keyframes and increase the level for the part of the clip by about 8 dB (around -14.00 dB on the tooltip) since you don't want the music to drown out the sound of the walkers' footsteps.



[illegible] Continue working through the timeline, adding keyframes around Chris's soundbites and reducing the music levels by a similar amount.

However, don't just blindly follow the numbers; you must listen to how all the elements of the mix are working together, as some level adjustments might need to be made more carefully than others. You want to make sure your audience has an opportunity to hear all the nuances of the soundtrack you have created!

[illegible] Once you have completed the level adjustments, click the Full Extent Zoom and play the entire edit, paying particular attention to the audio levels. Ensure that they are consistent right to the final bar of music, making any further adjustments as you feel fit along the way.



NOTE To import a finished version of the timeline for this lesson, select the TIMELINES bin, choose File > Import > Timeline, navigate to R18 Editors Guide / Lesson [illegible] / TIMELINES, select [illegible] and click Open.

Of course, not every editor is responsible for delivering finished audio since many productions have a separate audio mix. However, since not every production has that luxury, I hope this lesson has opened your eyes (and ears) to the wonderful, yet often underappreciated, world of audio post-production, as well as the sophisticated audio tools and configurations available as standard in DaVinci Resolve.

More information on working with audio in DaVinci Resolve is available in The Fairlight Audio Guide to DaVinci Resolve 18.

Lesson Review

1. True or false? Mono clips cannot be edited onto stereo audio tracks in the timeline.
2. Which editing function is the most useful when trying to sync audio edits with specific onscreen action?
    a. Insert
    b. Overwrite
    c. Replace
3. Which of the following processes allows you to reduce the dynamic range of audio clips on a track?
    a. AI Dialogue Leveler
    b. Ducker
    c. Dynamics
4. True or false? Normalizing audio levels is a quick way of ensuring that all your audio is at the correct level.
5. True or false? You can only mute or solo a track from the track header controls in the timeline.

Answers

1. False. Mono clips can be edited on stereo audio tracks in the timeline, although they will only play out of the left speaker of your system. Ideally, mono audio should be edited onto mono audio tracks.
2. c) Replace edits are the most useful when trying to sync audio edits with specific onscreen action.
3. a) and c). The AI Dialogue Leveler and the Compressor in the Dynamics controls allow you to reduce the dynamic range of the audio on a track.
4. False. Normalizing audio adjusts the level of a clip so that the peak is at the level specified.
5. False. You can also use the same controls in the mixer or the Tracks index.

Lesson 9

Delivering Projects

The Quick Export window is very useful for generating a file that you can use either as a final deliverable or simply as a way of showing the director or client your current progress on an edit with the fewest number of mouse clicks. However, if you want more control over your output files, as well as the ability to batch process multiple files, then the deliver page is the place to conduct your business.

However, the delivery process is not just about exporting the files in the right resolution, frame rate, and codecs. Often, it can involve delivering different kinds of files, depending on their ultimate destination, which necessitates a deeper understanding of your project. Furthermore, the editor's task is not necessarily completed once the files have been exported since several steps are usually required to ensure that the project and its associated media can be accessed in the future.

Time

This lesson takes approximately 60 minutes to complete.

Goals

Preparing the Project 546

Exporting AAF for Pro Tools 548

Reformatting a Timeline for Different Aspect Ratios 553

AI Smart Reframe (Studio Only) 565

Adding the Vertical Timeline to the Render Queue 570

Creating a Custom Render Preset 575

Creating an IMF File 581

Generating Subtitles 586

Customizing Deliver Page Presets 597

Changing and Rendering Jobs from Multiple Projects 602

Verifying the Exported Files 608

Timeline Media Management 614

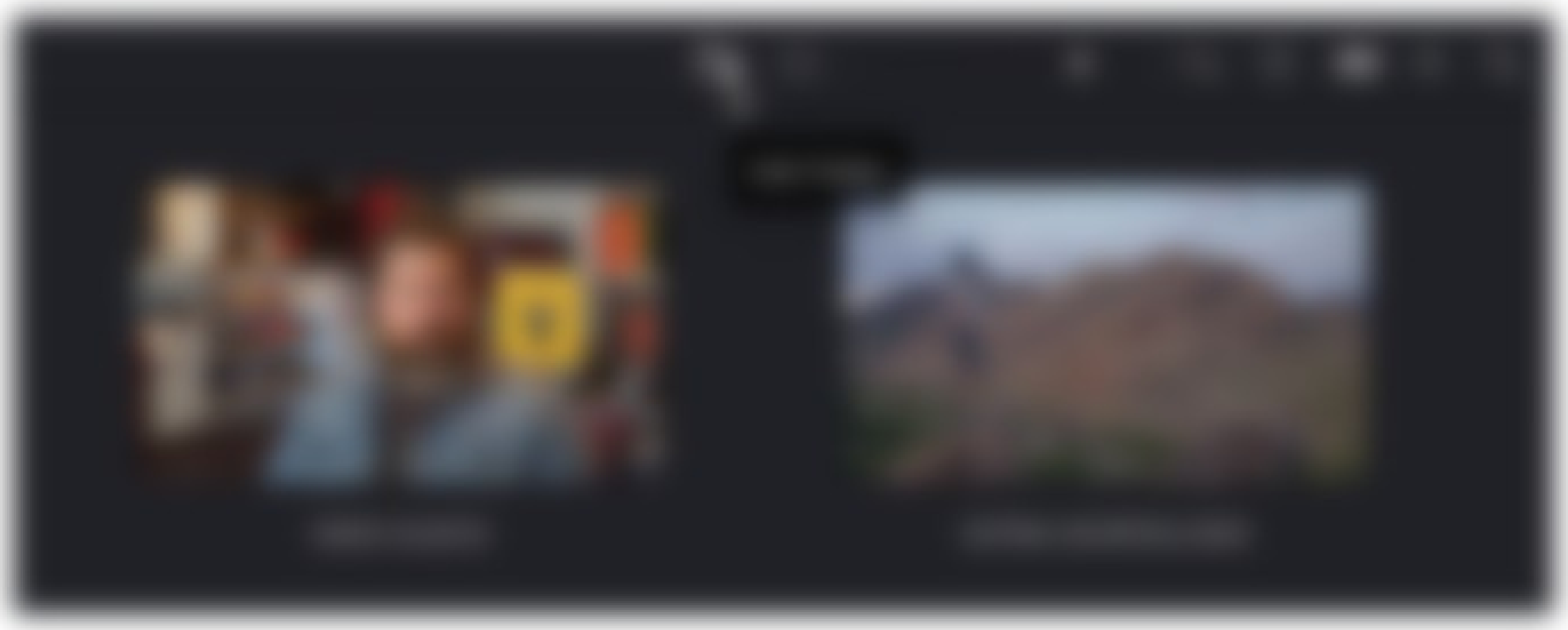
Lesson Review 617

Therefore, this lesson will shed some light on how to customize your export options, along with how to manage the media and timelines once your projects have been delivered. You will also learn how you can use Blackmagic Cloud to collaborate with other editors, colorists, VFX artists, and audio professionals around the world.

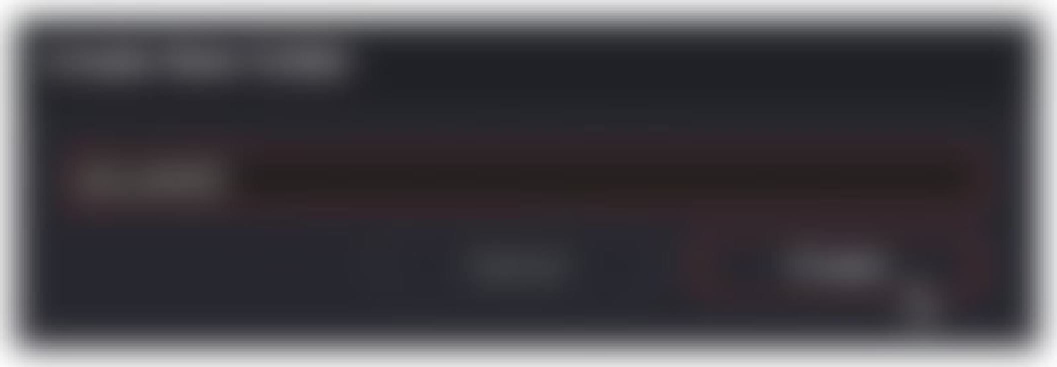
Preparing the Projects

For this lesson, you'll use two different projects that you have worked on previously to explore the various options that DaVinci Resolve provides for delivering projects in a variety of formats. You'll begin by importing both projects into a separate folder in the Project Manager.

1. Launch DaVinci Resolve and, in the Project Manager, click Add Folder.



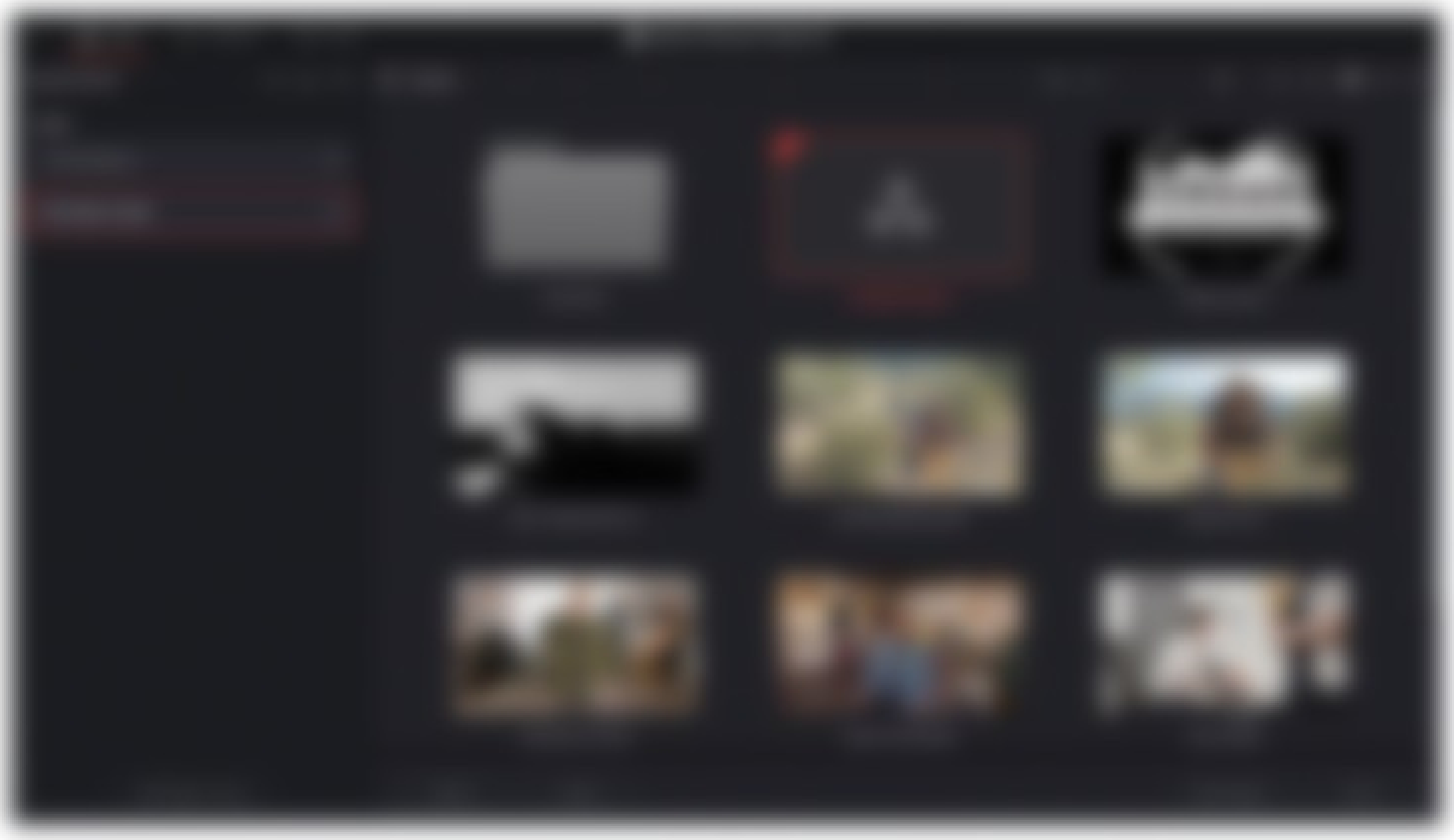
2. In the Create New Folder window, type **Delivery**, and then click Create.



Create New Folder

Delivery

A new folder called Delivery is created in the Project Manager.



- Double-click the Delivery folder to open it.

> **TIP** You can use the folder path in the top left of the Project Manager (Projects/DELIVERY) to navigate back out of this folder by clicking the word "Projects."

- Open a new Finder window (macOS) or Explorer window (Windows) and navigate to [illegible] Editor's Guide > Lesson [illegible].

  This folder contains several files that you will use throughout this lesson.

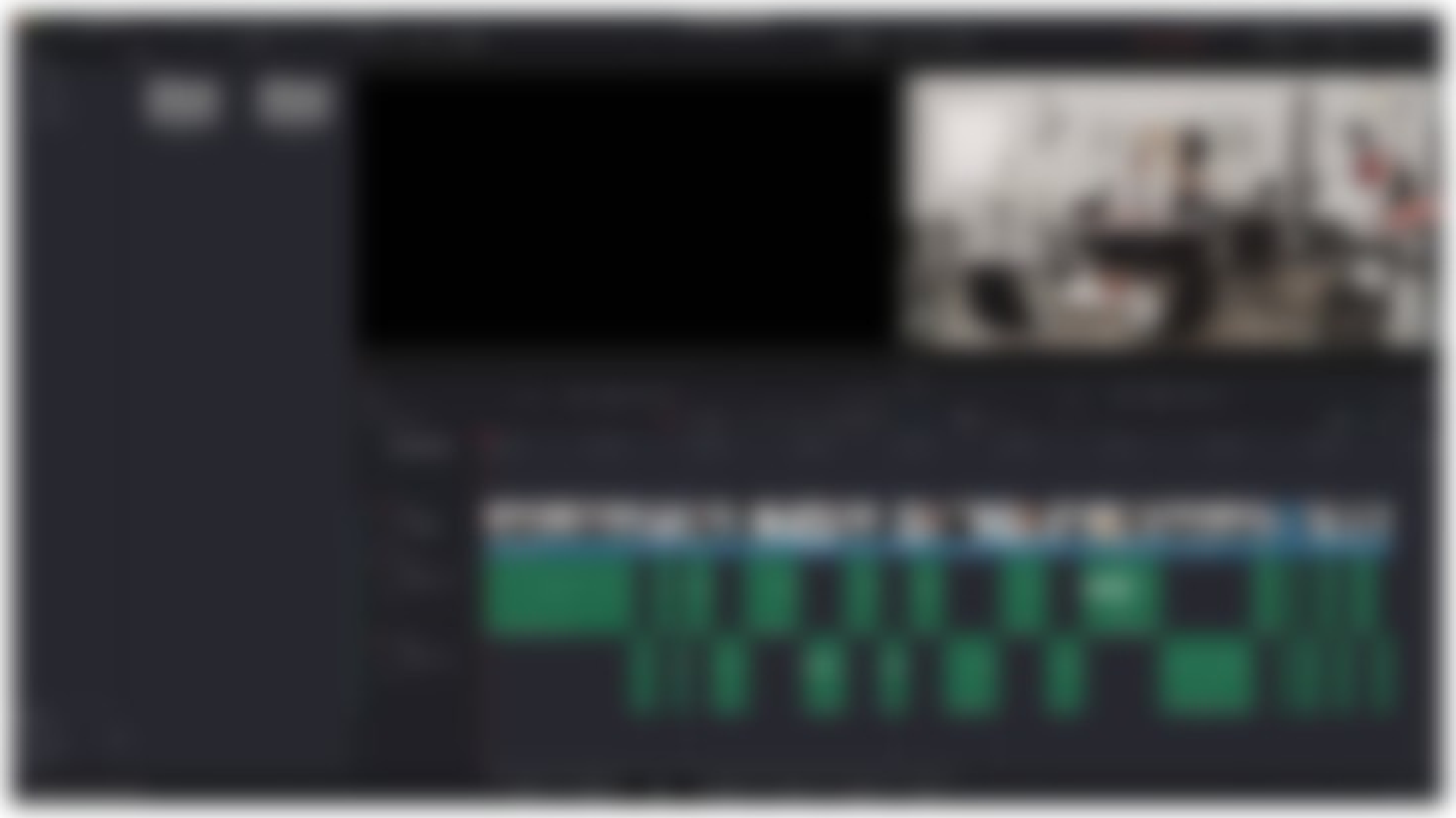
- Select the two DaVinci Resolve Project files, **[illegible] DELIVERY.drp** and **[illegible] DELIVERY.drp**, and drag them directly into the Project Manager window.

After each project is imported into the Project Manager, you're ready to continue with the lesson.

Exporting AAF for Pro Tools

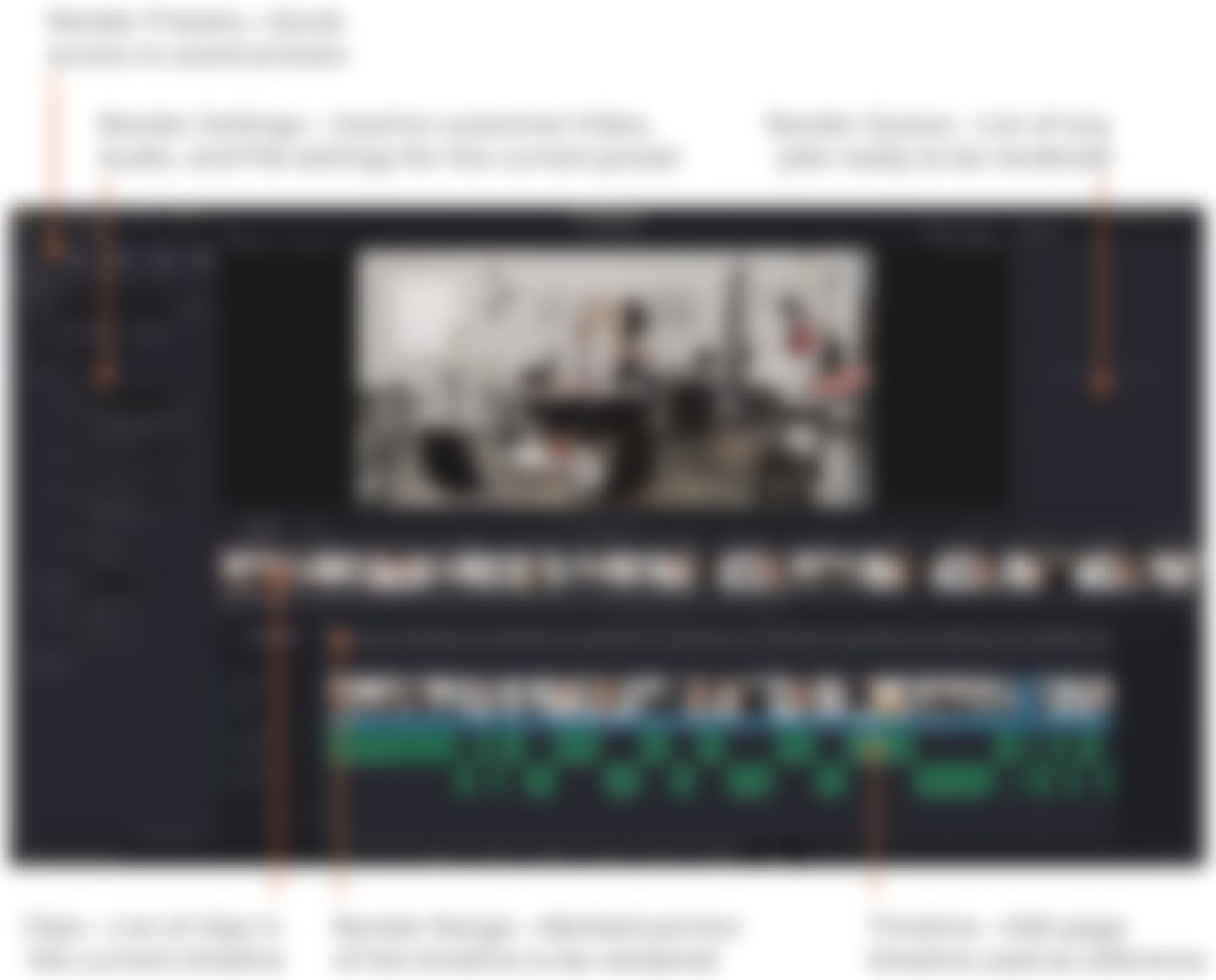
Despite the edit page having lots of audio tools, as well as the Fairlight page being a full DAW (digital audio workstation) to mix and master your audio, many editors are tasked with sending the audio to be mixed in an Avid Pro Tools system. In this exercise, you'll look at using the Pro Tools export preset to do just that.

1. In the Project Manager, double-click the R16 SCENE DELIVERY project.
2. If necessary, press Shift-4 to ensure that you are on the edit page, and use the Relink Media button to relink the files.
3. Choose Workspace > Reset UI Layout.



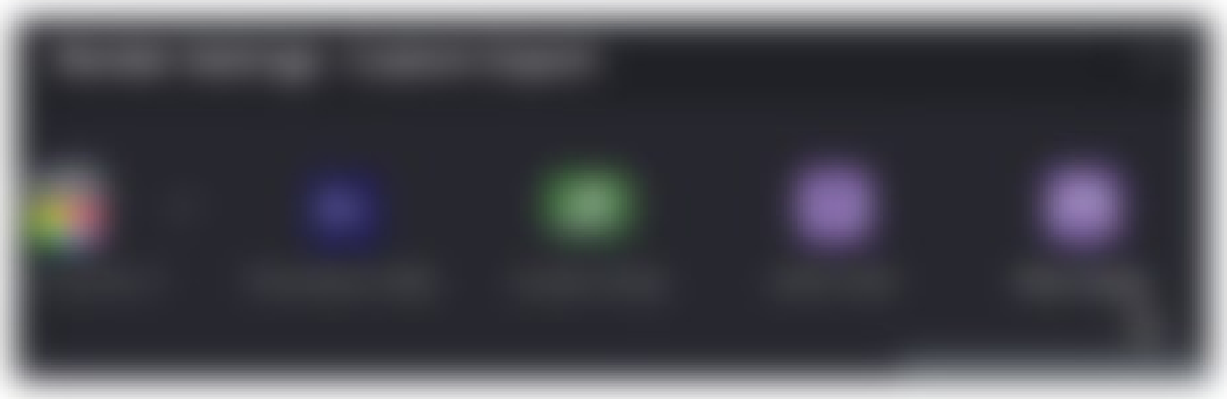
This project is a version of the Tea Much Lift scene you edited in Lesson 3. You might remember that you didn't spend too much time finessing the audio for this project. In cases like this edit, it may be necessary for the audio to be finished by dedicated dialogue editors and audio mixers, with the dialogue often being re-recorded in sync with your actors using a process called ADR (additional dialogue recording). While all this can be achieved using the Fairlight page, in many instances, it's still completed using systems other than DaVinci Resolve. So now you will export it in a format suitable for a Pro Tools system, where the audio will be mixed for you.

- Click the Deliver button or press Shift-8 to switch to the deliver page.


Render Presets – Quick access to saved presets
Render Settings – Used to customize Video, Audio, and File settings for the current preset
Render Queue – List of any jobs ready to be rendered
Clips – List of clips in the current timeline
Render Range – Marked portion of the timeline to be rendered
Timeline – Edit page timeline used as reference

NOTE The Render Settings window features a list of common delivery presets. Click the downward arrows for each preset (where available) for additional options, such as different resolutions.

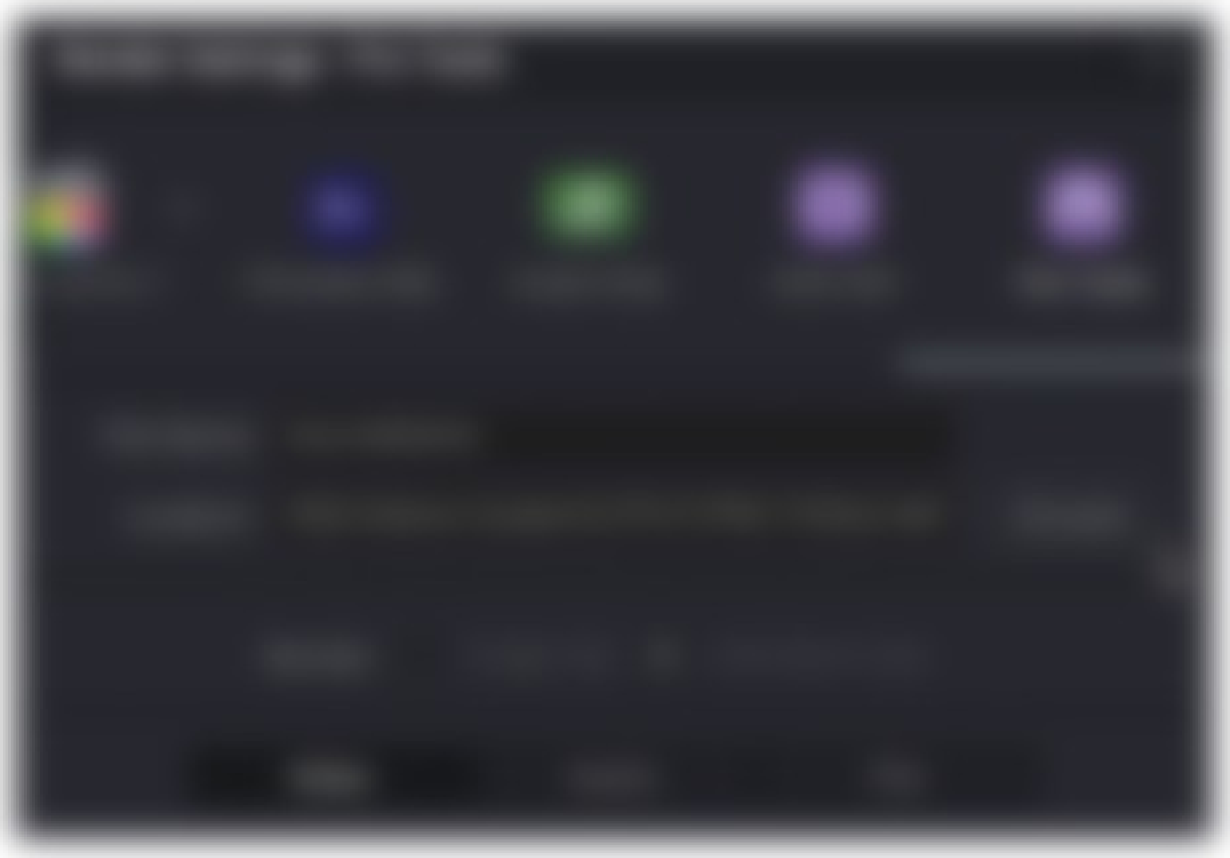
- In the Render Settings panel, scroll and select the Pro Tools preset.



NOTE Resolve uses AAF (Advanced Authoring Format) to output timeline information for Pro Tools systems.

Presets like Pro Tools don't allow you to set a filename because you're not rendering a single file. Instead, you're rendering multiple files for each audio clip in the timeline. You do, however, need to specify where the files will be exported.

- Click the Browse button next to the Location field, navigate to the R20 Editors Guide / OUTPUT / PRO TOOLS AAF folder, and click Open to set this as the location for the exported files.



Although the Pro Tools export preset is primarily concerned with audio, the Pro Tools user will usually require a reference video. This will ensure that everything is in sync correctly.

You'll need to provide a small reference video for the scene. It can also help to have the timeline timecode displayed on the video, a feature referred to as a BITC (pronounced 'bit-see' and standing for Burned-in Timecode).

- Choose Workspace > Data Burn-In.

- In the Data Burn-In window, select Record Timecode to display the timeline's timecode. Increase the size to about [illegible] and the background opacity to [illegible].

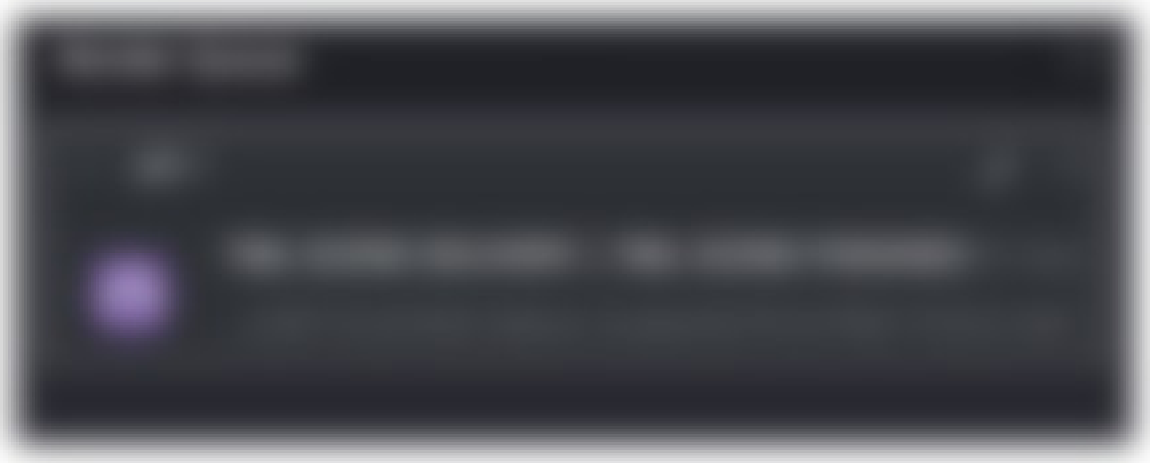
- Close the Data Burn-In window.

  The BITC is now visible in the viewer.

- In the Render Settings, ensure that Export Video is selected and change the format to QuickTime, the Codec to DNxHD, the Type to DNxHD, and the Resolution menu to 1280 x 720.

- In the Audio tab, ensure that the codec is set to Linear PCM. This will create a series of uncompressed wav files for the audio clips in your timeline, as many Pro Tools users prefer.
- Choose to add 24 frame handles to the media you will render, which will ensure that there's enough media for the dialogue editor specifically to work with.

- Click the Add to Render Queue button at the bottom of the Render Settings to add the job to the Render Queue window.



Reformatting a Timeline for Different Aspect Ratios

While most modern video cameras still shoot traditional 16:9 aspect video footage, that doesn't necessarily mean you are always required to deliver 16:9 footage. With many videos being watched on mobile devices, many social media content creators prefer an alternative aspect ratio, such as 1:1 (square) formats such as those favored by Instagram or 9:16 (vertical) formats that are common on TikTok and YouTube Shorts.

DaVinci Resolve allows you to customize your timeline settings for several different aspect ratios. In this exercise, you'll learn how easy it is to repurpose a timeline to fit a vertical aspect ratio.

- Choose File > Project Manager or press Shift-1 to open the Project Manager.
- From the Project Manager, double-click to open the [illegible] project.

> **NOTE** DaVinci Resolve doesn't allow you to open multiple projects simultaneously. You can, however, enable Dynamic Project Switching by right-clicking a project in the Project Manager. Once enabled, you can quickly switch between open projects using the Project menu at the top of the interface.

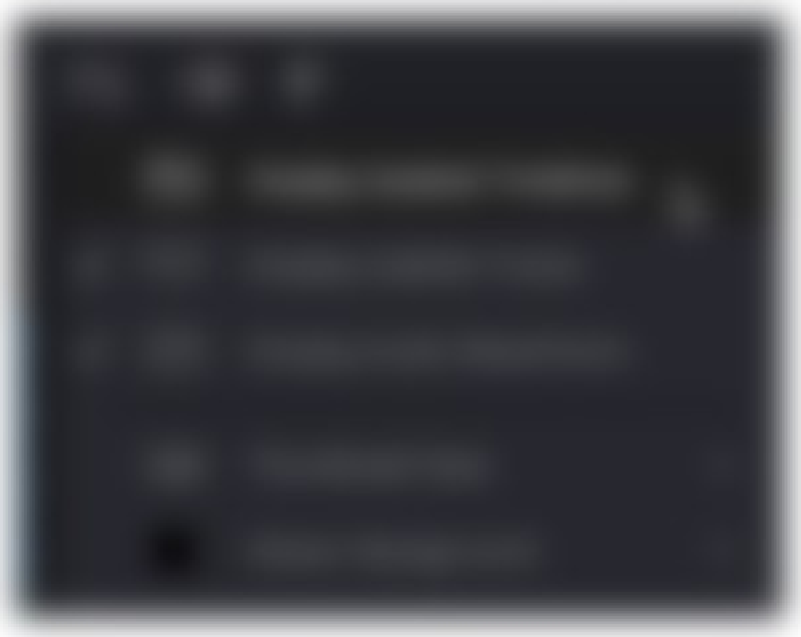
- Press Shift-2 to switch to the edit page and reveal the Media Pool.

- From the Select Timeline dropdown menu, open the OMO PROMO FINISHED timeline.

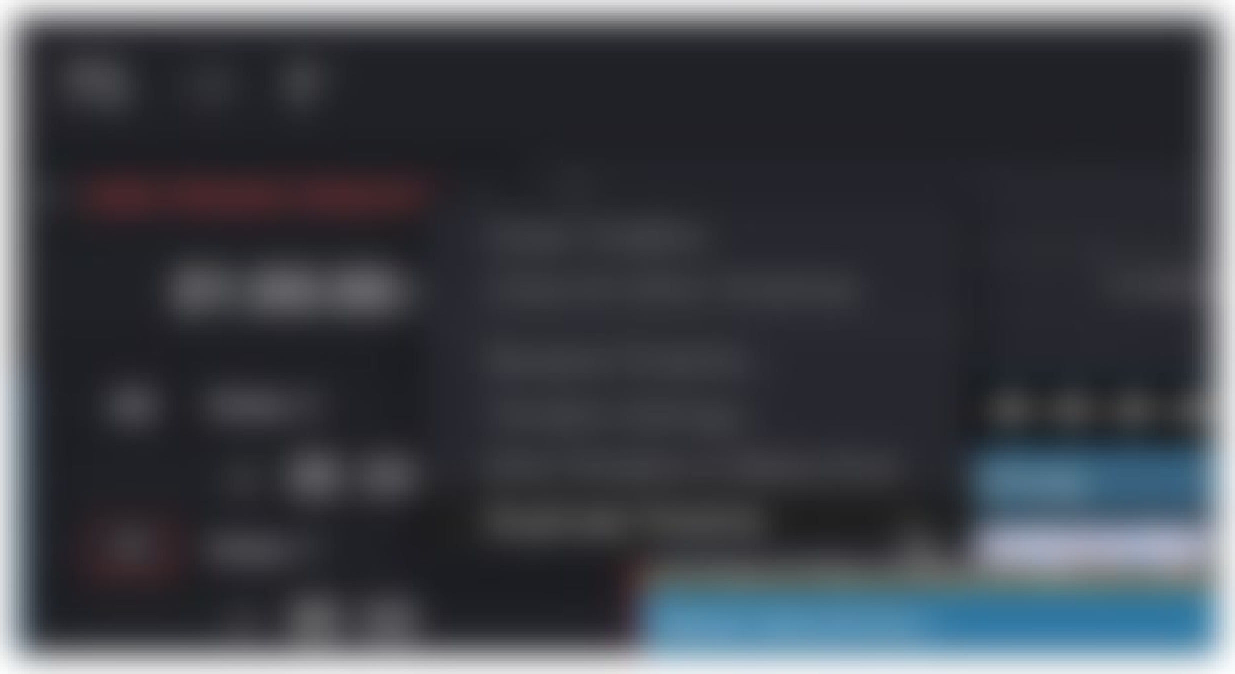
This is a finished version of the Organ Mountain Outfitters promo video. The client would like a version of this timeline to upload to their YouTube Shorts account, necessitating a vertical aspect ratio.

You'll begin by duplicating the current timeline.

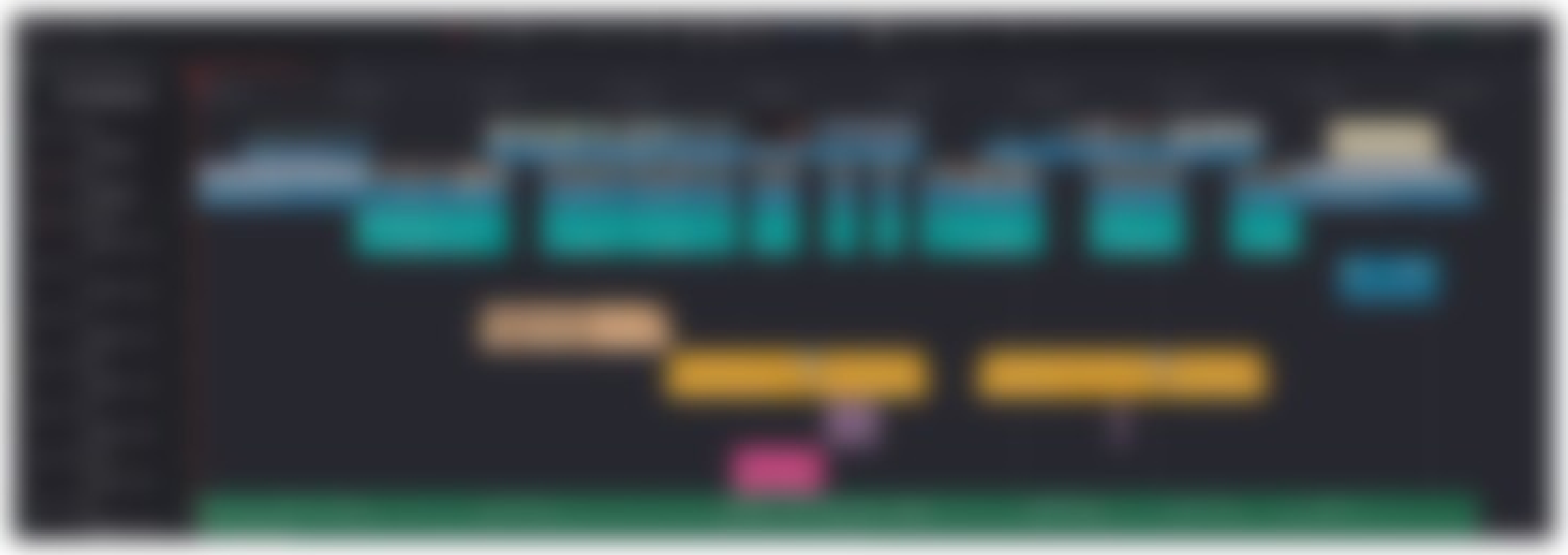
- From the Timeline View Options menu, choose Display Stacked Timelines.



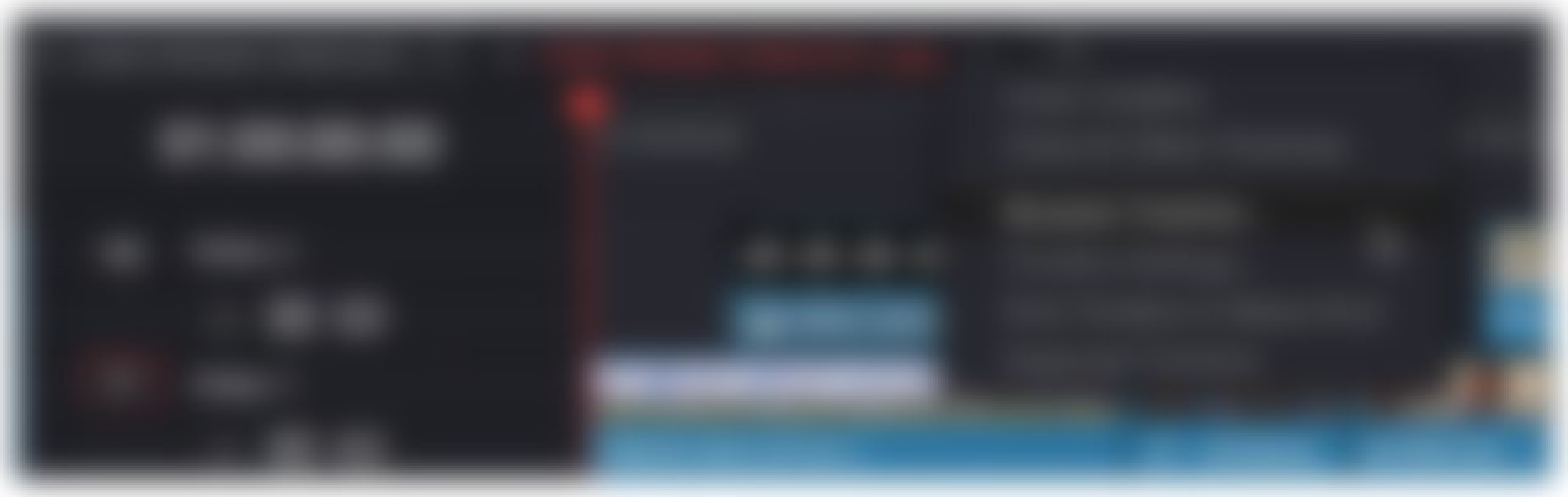
- Right-click the OMO PROMO FINISHED timeline tab and choose Duplicate Timeline.



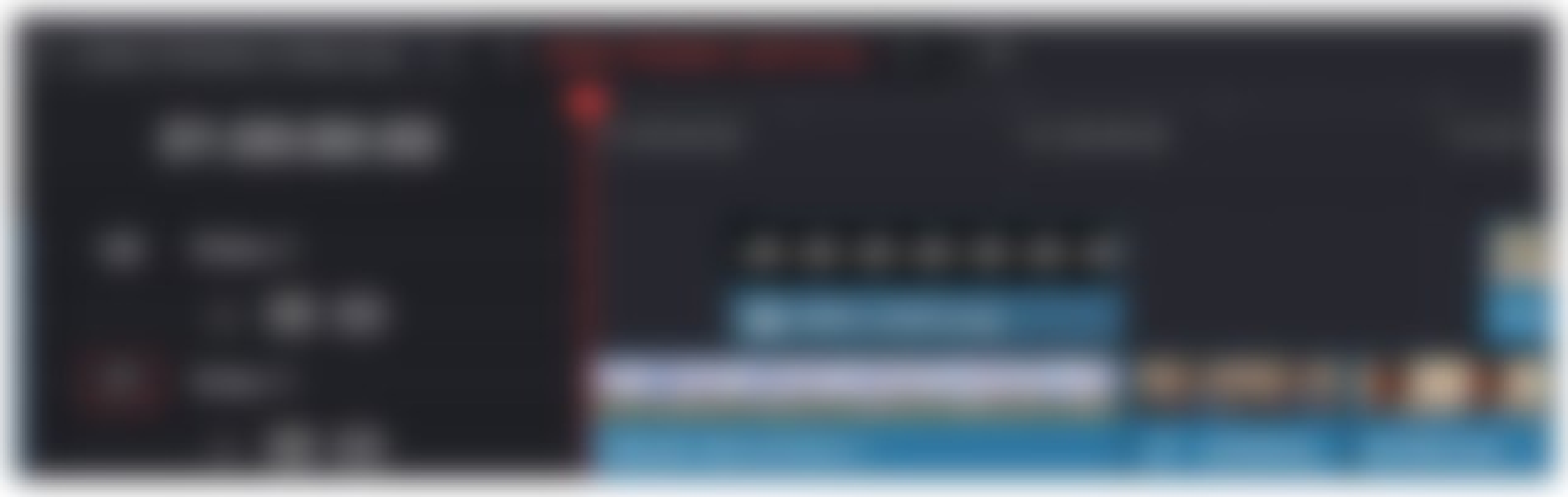
A duplicate of the current timeline, called **OMO PROMO FINISHED copy**, is added to the media pool and opened as a separate timeline tab.



7 Right-click the **OMO PROMO FINISHED copy** timeline and choose Rename Timeline.

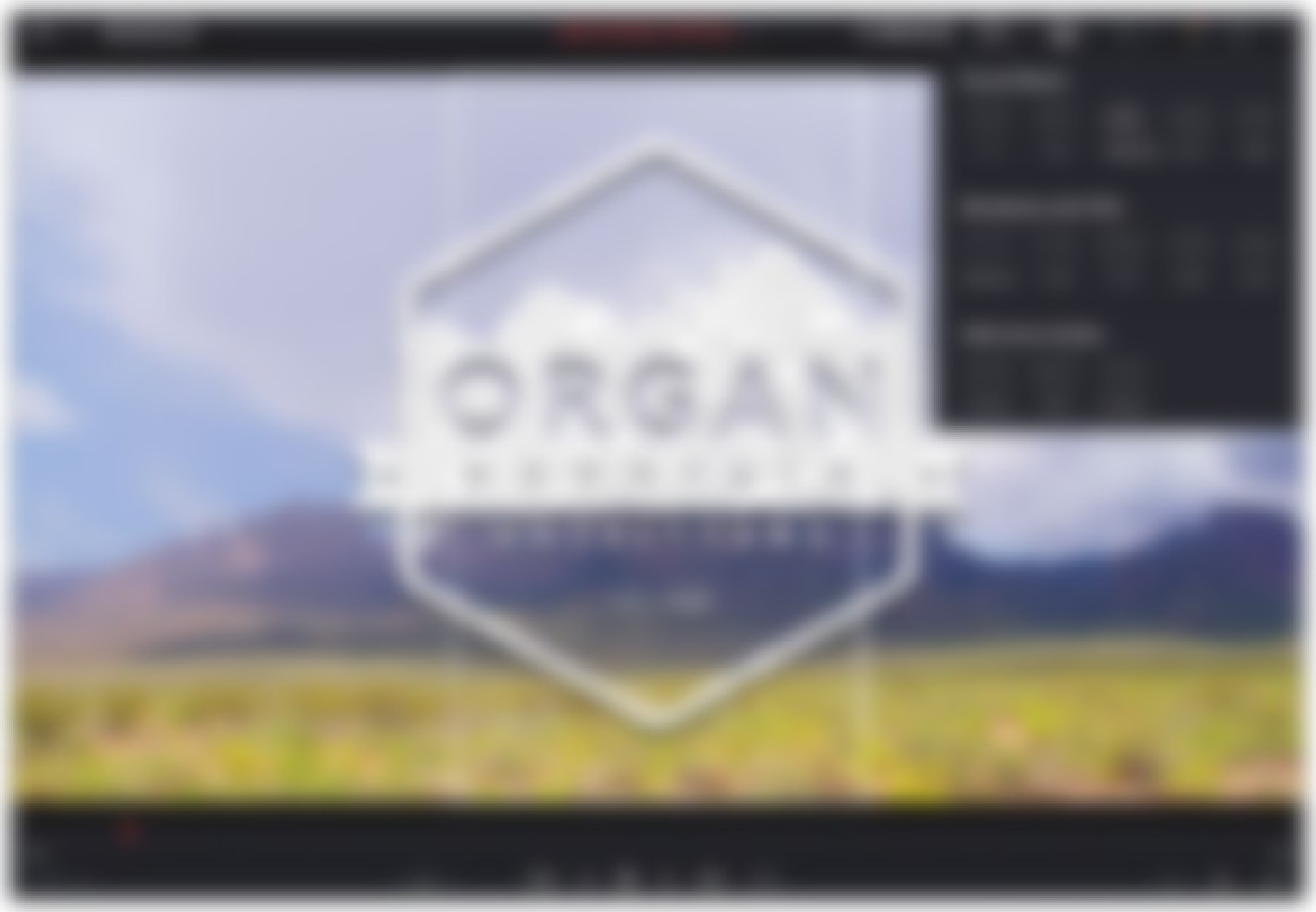


8 Change the timeline's name to **OMO PROMO VERTICAL** and press Return (Enter).

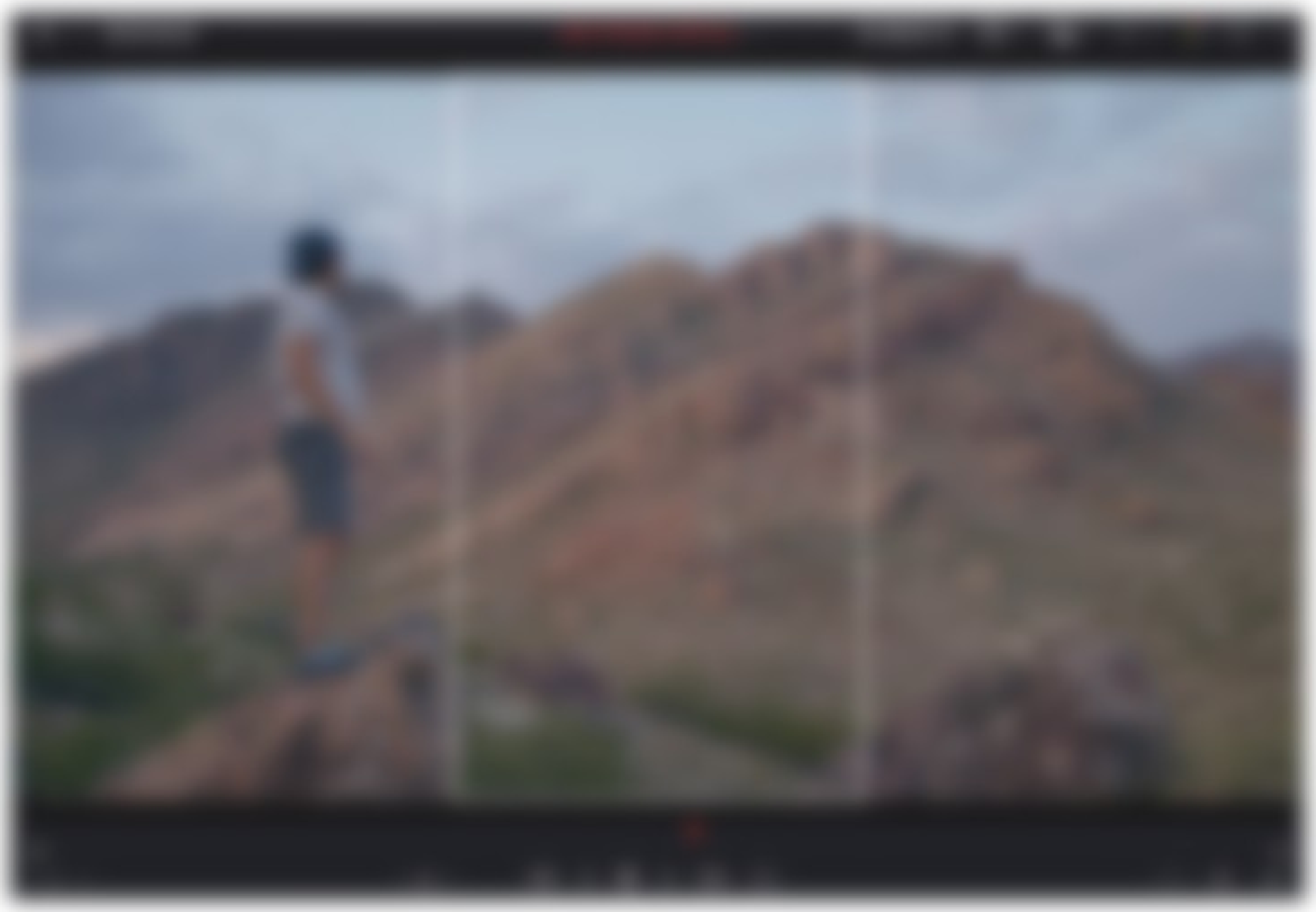


Next, before you change the settings of the timeline to a vertical resolution, you will use the safe areas to determine which clips will fit in the new aspect ratio and which clips you might have to reframe or even replace.

- In the Guides menu, disable the Default guide, and enable the 9:16 Social Media option.



- Scrub through the timeline to preview which shots work well in a vertical aspect ratio and which might need some attention.



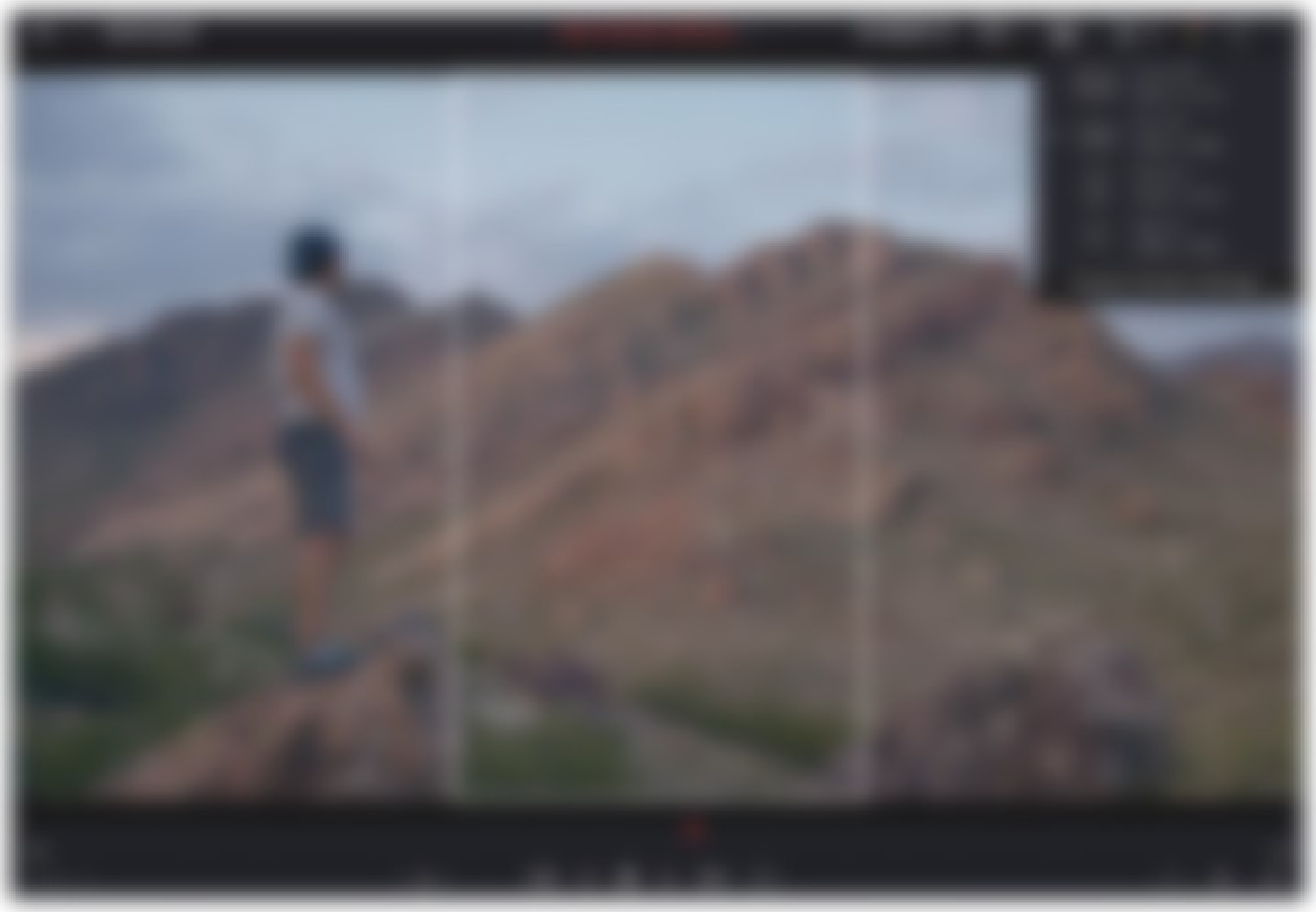
For example, you'll probably notice that the opening graphic doesn't fit, and some of the interview clips will need reframing, too, among many others.

> **TIP** To make it easier to locate these specific shots later, especially for a complicated timeline, it can be useful to add timeline markers or color tag the clips directly. To add a marker, deselect all clips and click the Markers button or press M to add a marker. Markers can be one of several colors, and you can navigate to each marker using the Markers tab in the Index panel. Alternatively, to color tag a clip, right-click it in the timeline and choose Clip Color. Remember, changes to an individual clip's color supplant any track colors.

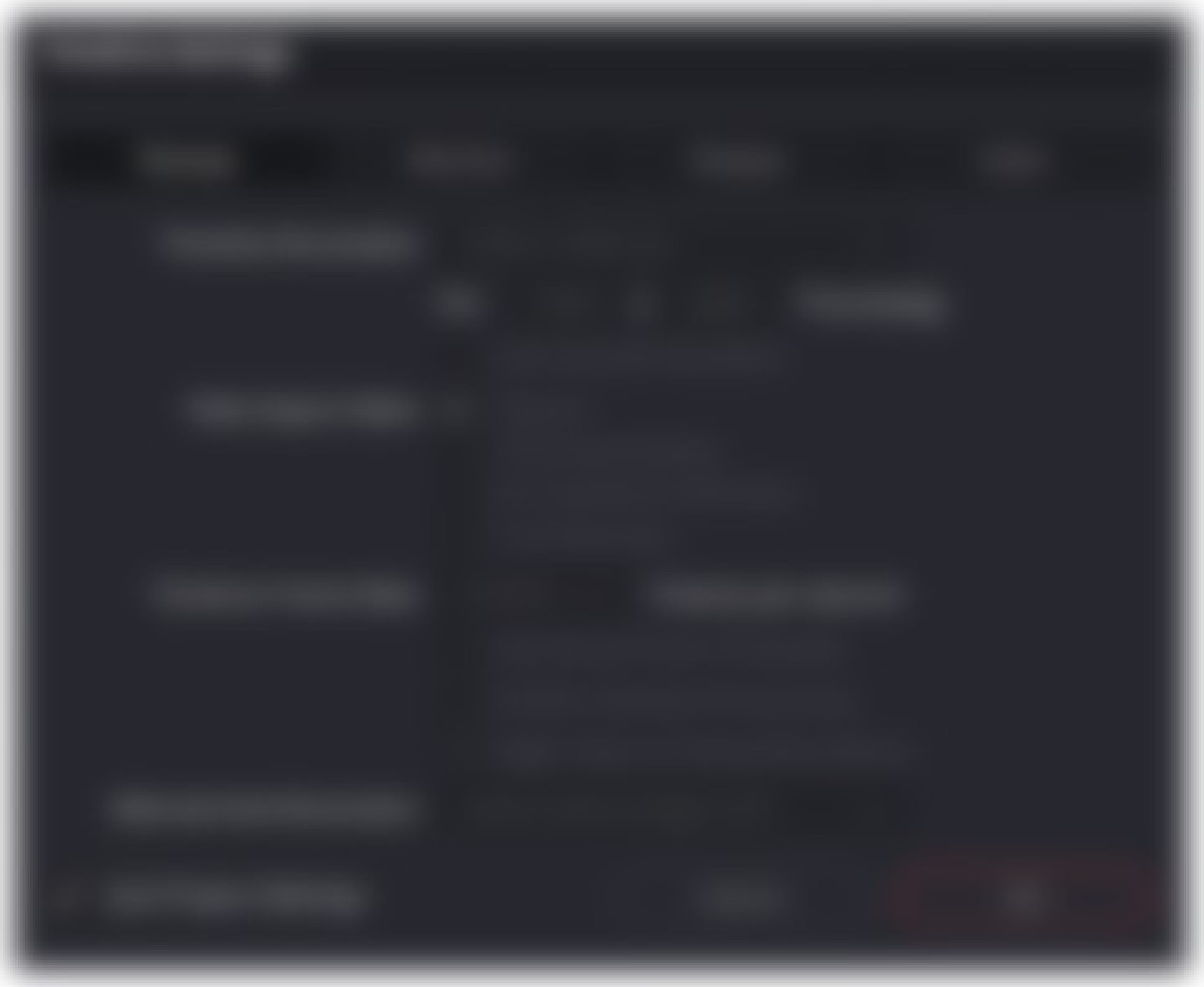
Changing the Timeline Settings

Now that you have your duplicate timeline, you can change the settings for the required aspect ratio.

1. In the timeline viewer, click the timeline settings menu and choose Custom Timeline Settings.

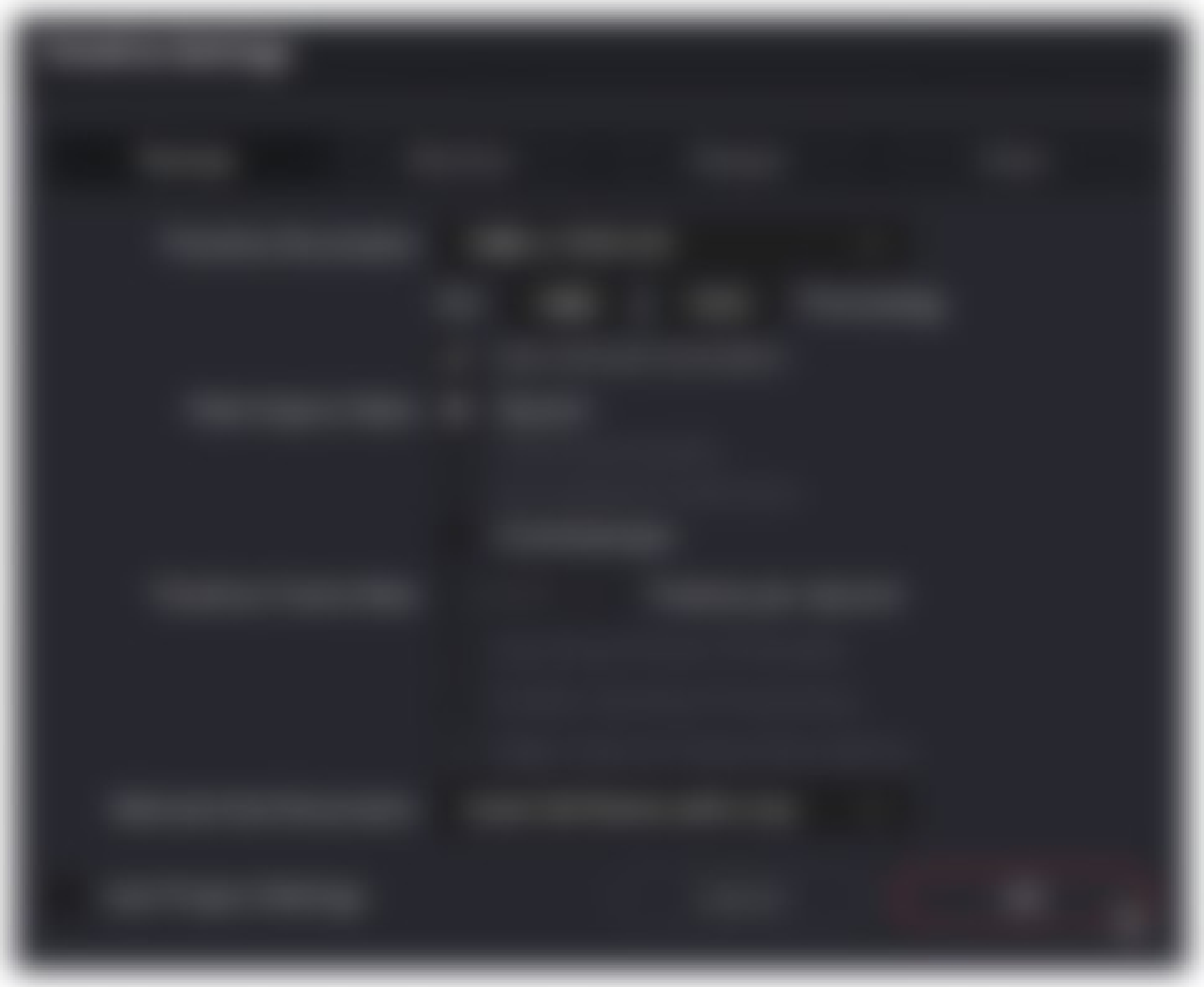


The Timeline Settings window opens.



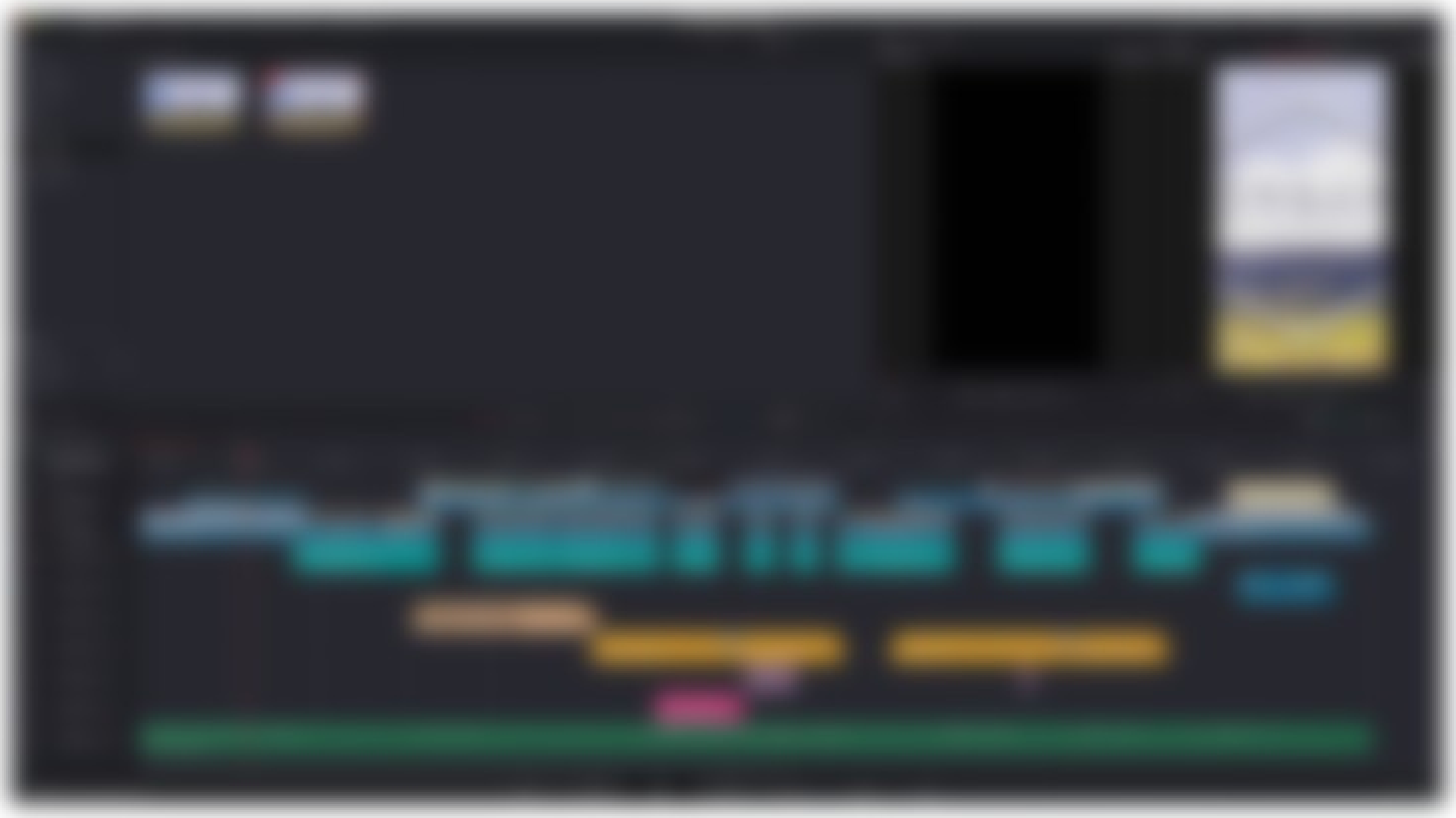
All the options in the Timeline Settings window are disabled since this timeline, like the original timeline in this project, is using the project's settings.

- Deselect the Use Project Settings checkbox to make all the settings for this timeline active and separate from the project's settings.
- Select the "Use vertical resolution" option.



This option adjusts the timeline resolution to 1080 x 1920 HD and changes the Mismatched Resolution option to "Scale full frame with crop." This is an important setting since it means the footage will fill the new aspect ratio rather than being letterboxed with black lines at the top and bottom of the image.

- Click OK to accept these changes to the timeline's settings.



The interface automatically changes to a layout that is optimized for vertical timeline.

TIP You can change this behavior in Preferences > User > UI Settings > Use optimized UI layouts for vertical video. Unchecking this box retains the normal horizontal layout, even for vertical video timelines.

The timeline viewer now displays the new aspect ratio of the timeline, with the footage cropped per the timeline settings.

In the media pool, the timeline's icon has changed too.

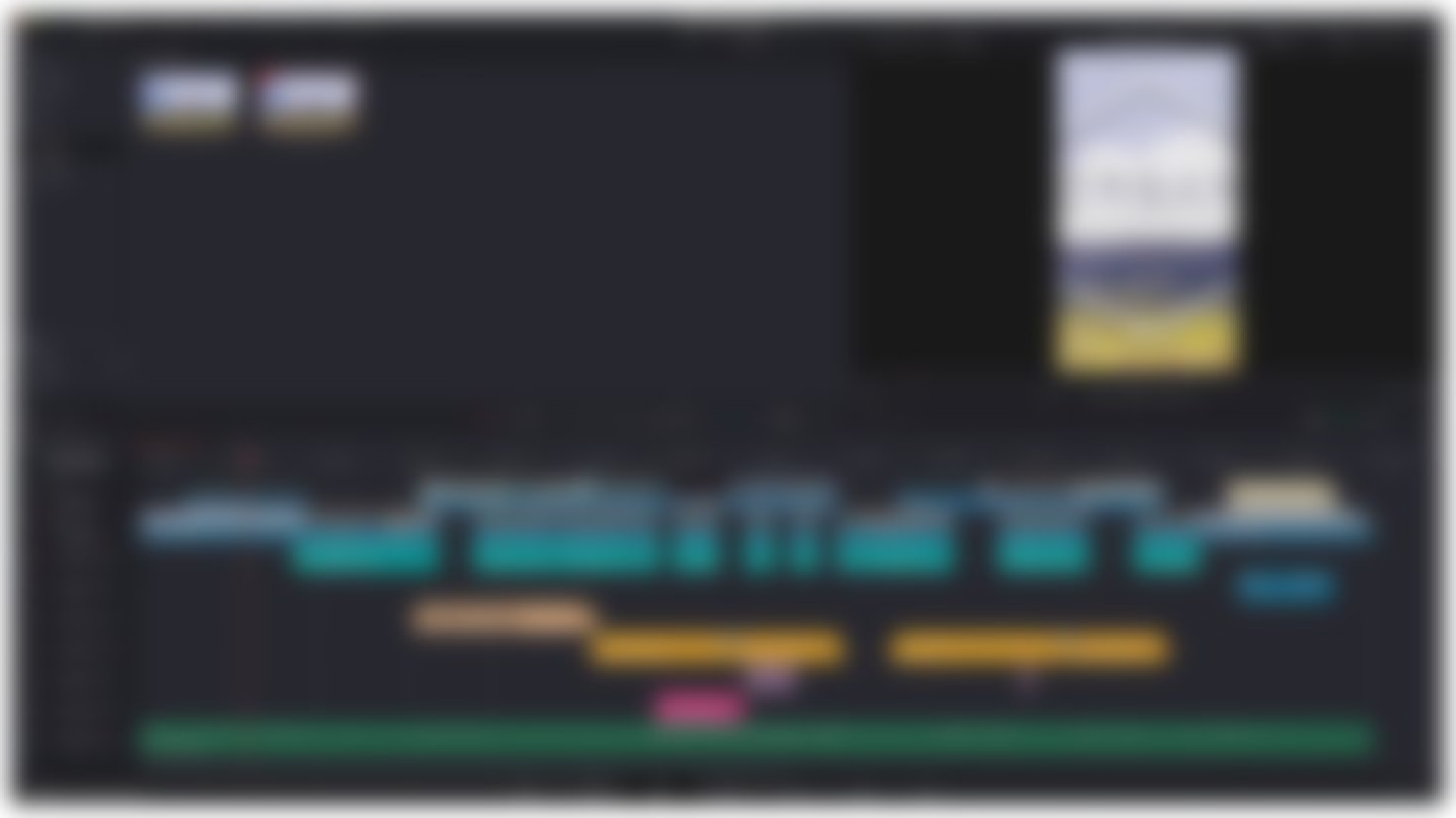
The new timeline icon in the bottom left corner of the thumbnail indicates that the timeline has its own customized settings, separate from the project settings.

- Press Shift-9 to open the project settings.

You will notice a prominent warning informing you that any changes you make in the project settings will not impact the currently loaded timeline since the timeline's own settings are overriding them. They will, however, affect any timelines in the project that are using the project's settings.

- Click Cancel or press ESC to close the project settings without saving any changes.

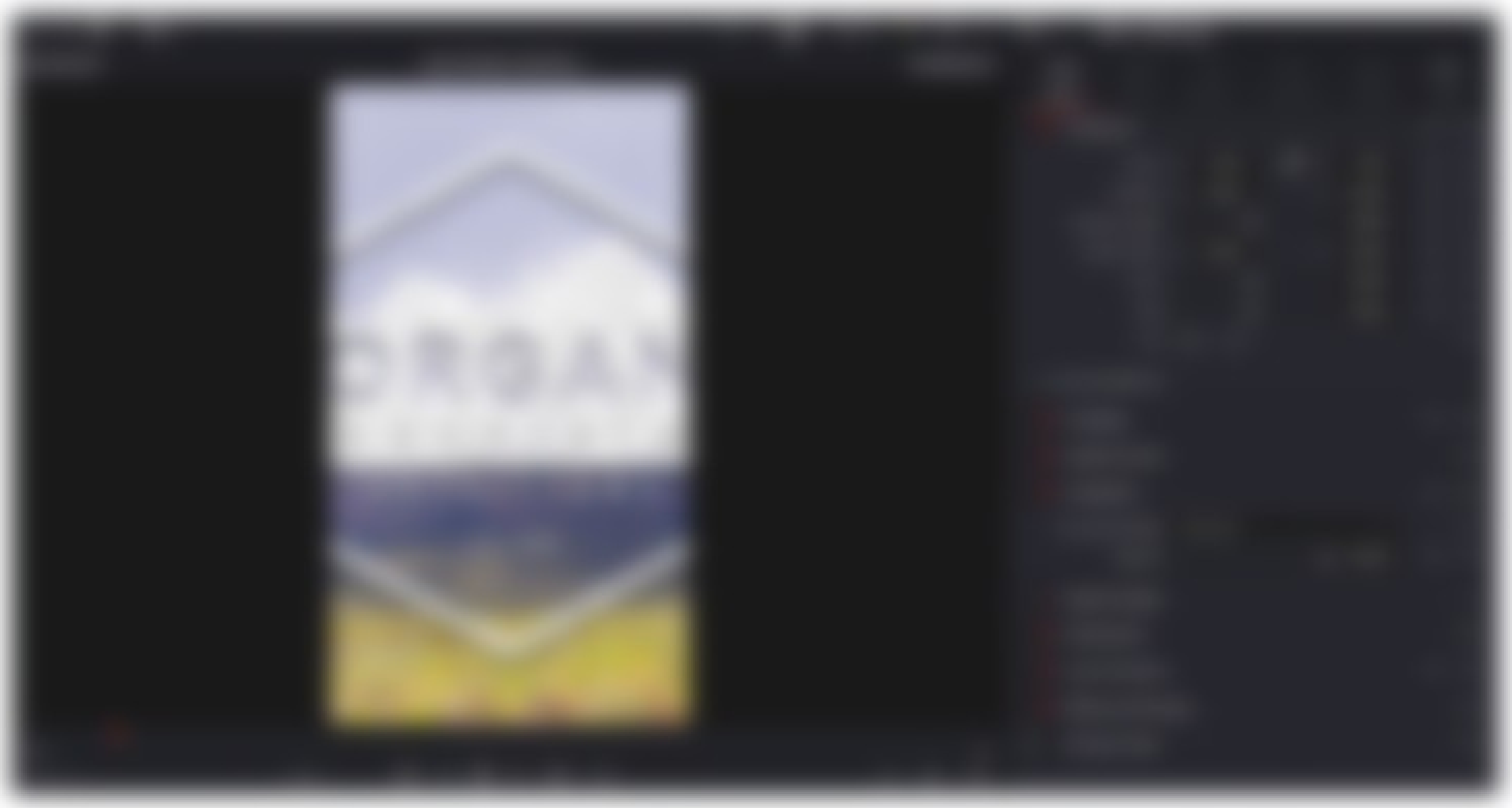
- Click the Safe Guides button to remove the safe areas and choose Workspace > Single Viewer Mode.



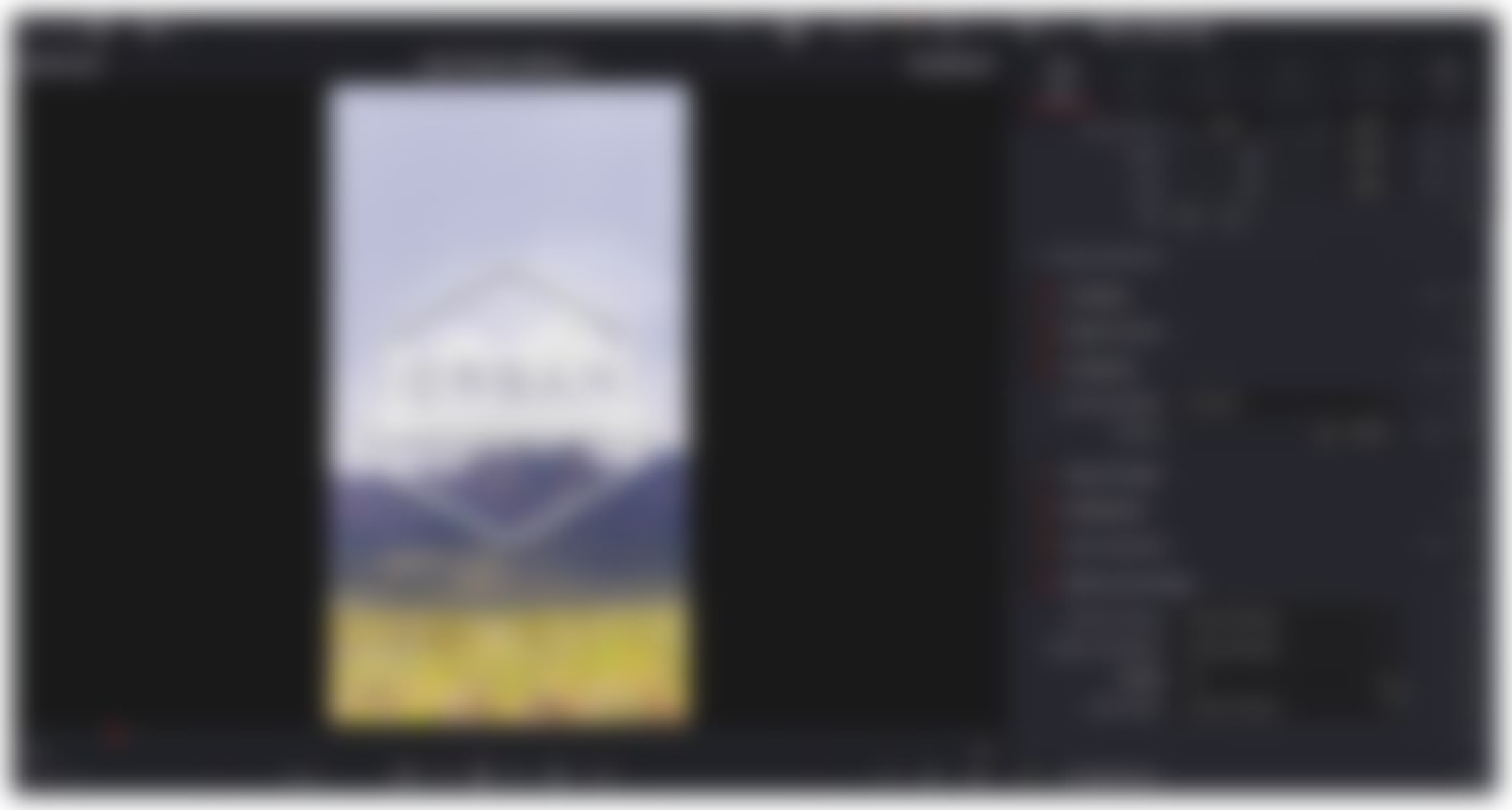
Reframing Shots

Of course, although the timeline has the correct aspect ratio, not all the footage will fit comfortably within it. This is not surprising since although vertical video is a much more commonly watched format than it was even just a few years ago, it's still unusual for footage to be shot vertically in the first place unless that's its only intended use. Thankfully, DaVinci Resolve has several ways for you to reframe content appropriately.

- In the timeline, place the playhead over [illegible] and open the Inspector.

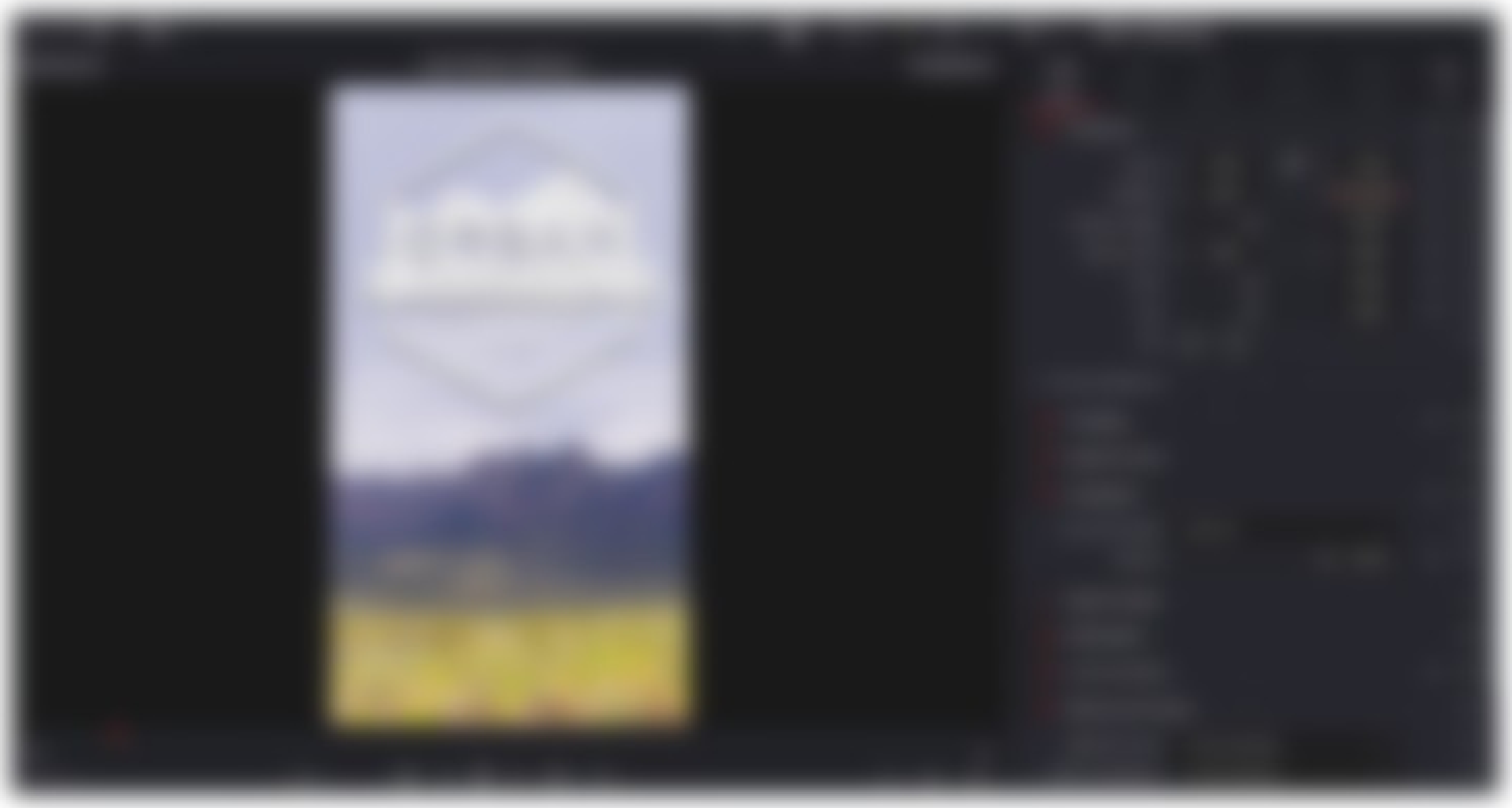


- Click the Retime and Scaling panel to reveal the controls and, in the Scaling menu, select Fit.

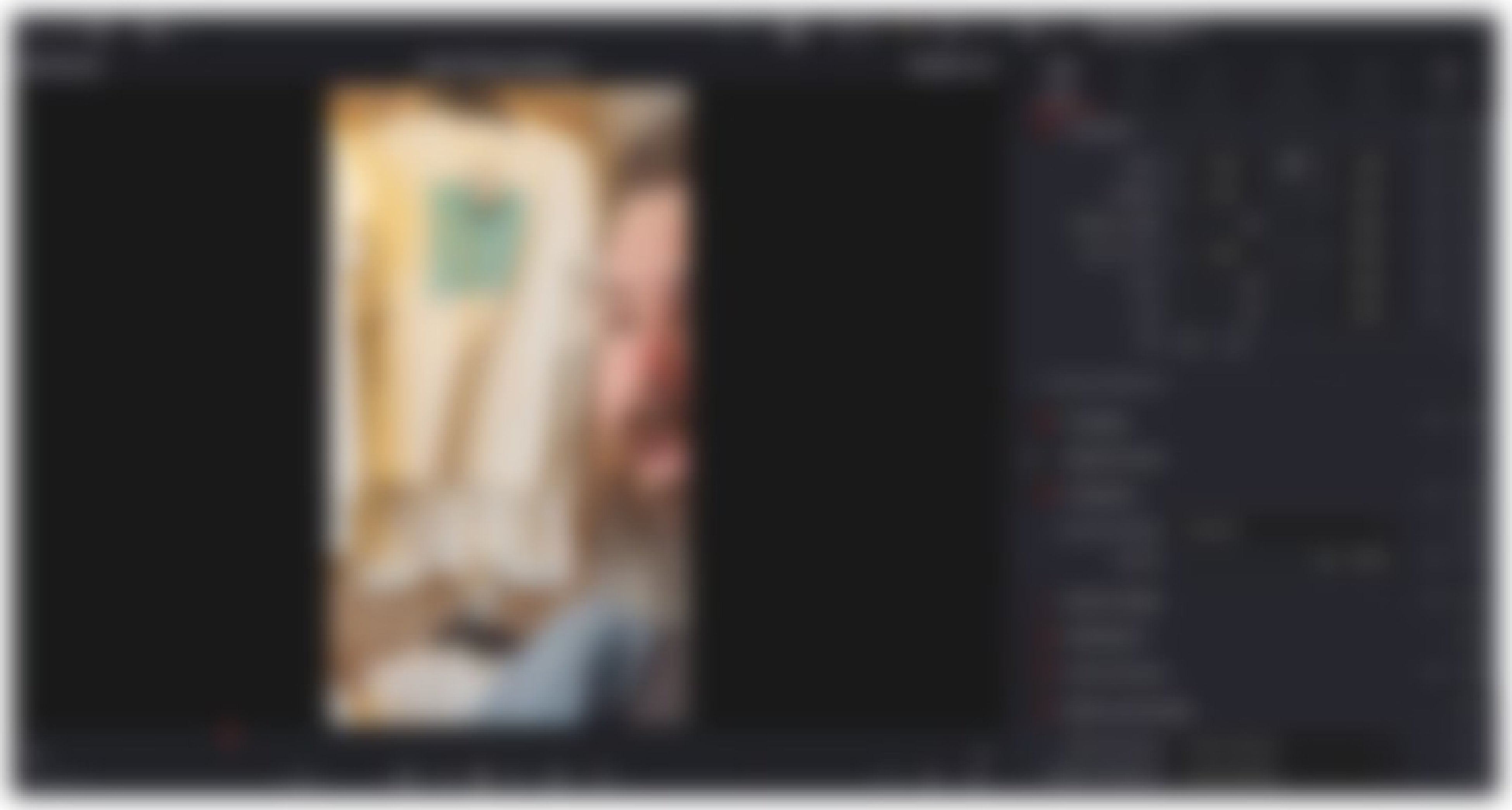


The graphic is now correctly scaled to fit the new aspect ratio while retaining all other settings accurately.

- In the Transform controls, adjust the Position Y parameter to around **[illegible]** to reposition the graphic above the mountain range.

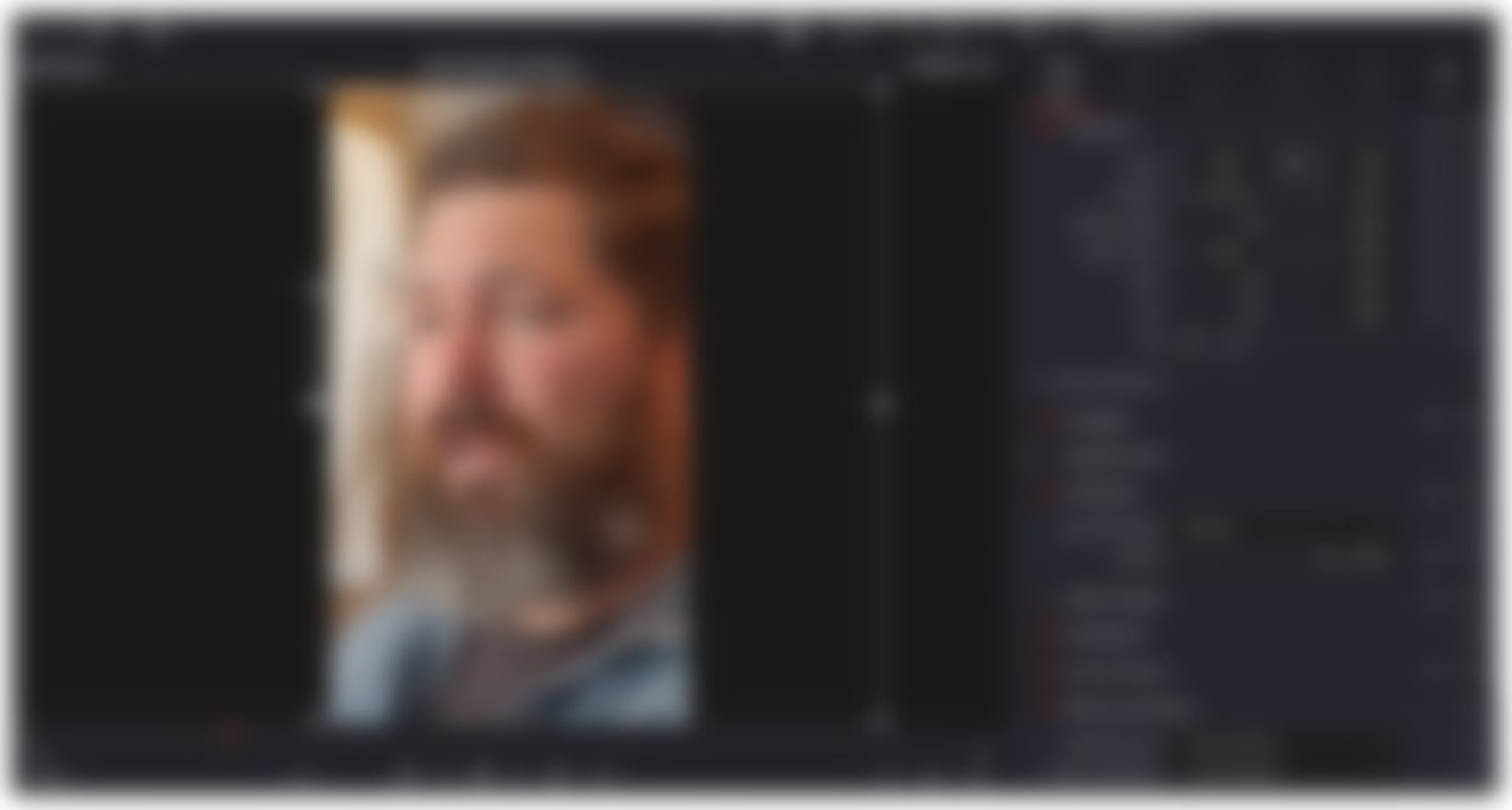


- Place the timeline playhead over the second shot of Chris's interview, [illegible]



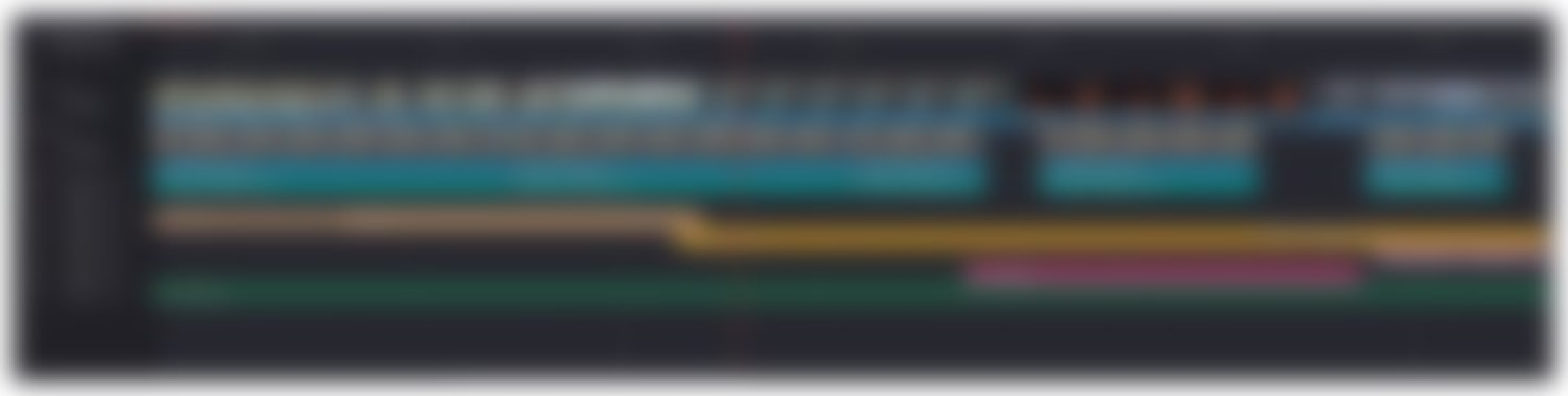
This clip could also benefit from being reframed.

- Choose View > Viewer Overlay > Transform, click the Transform viewer overlay button, or press Shift-` (grave accent) to enable the onscreen controls for Transform.
- In the timeline viewer, begin dragging the image of Chris to the left, and then press and hold Shift to constrain the movement to horizontal.

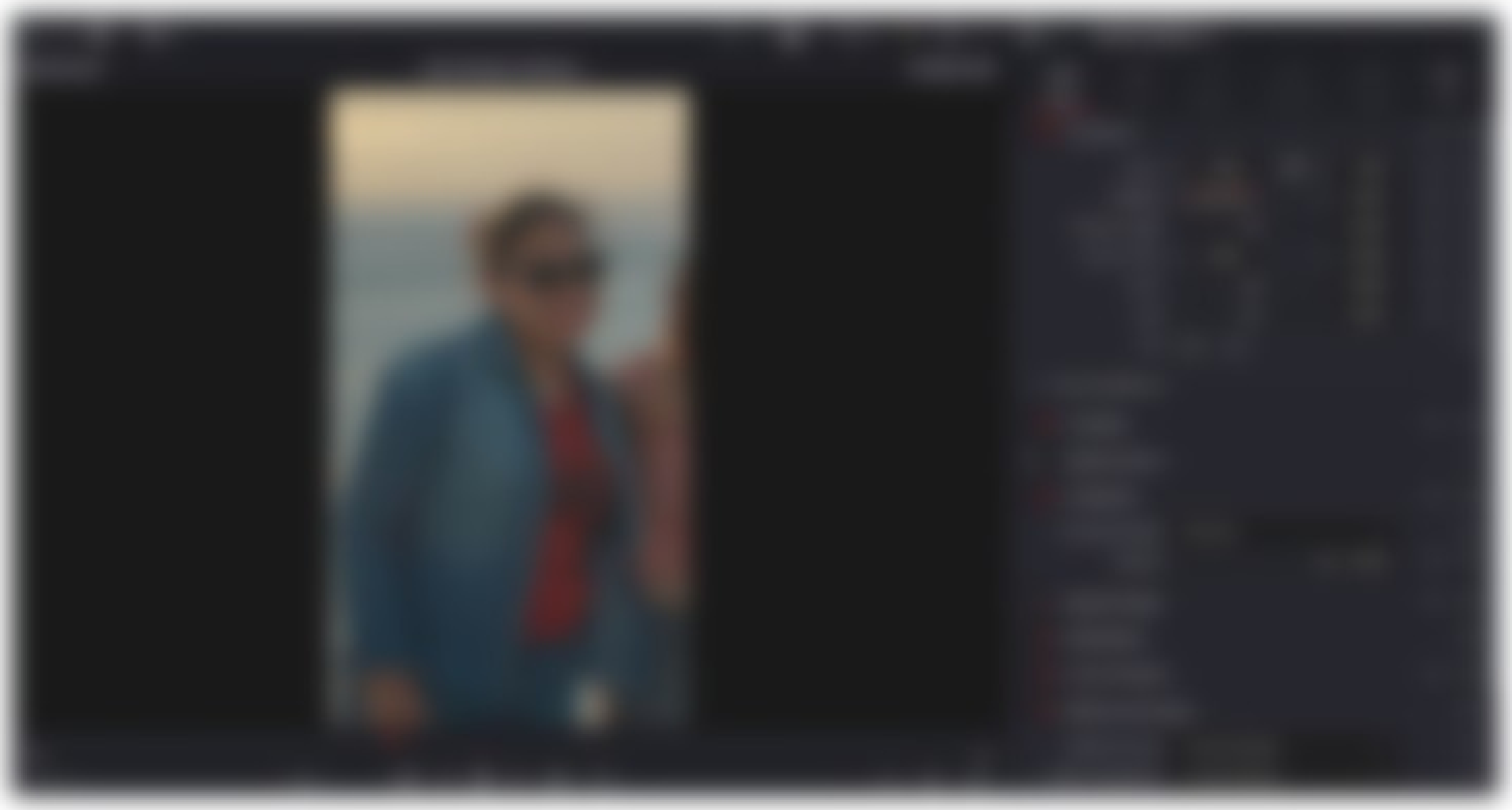


Sometimes you'll need to use keyframes to adjust the framing over time, especially for shots that will never fit the new aspect ratio properly.

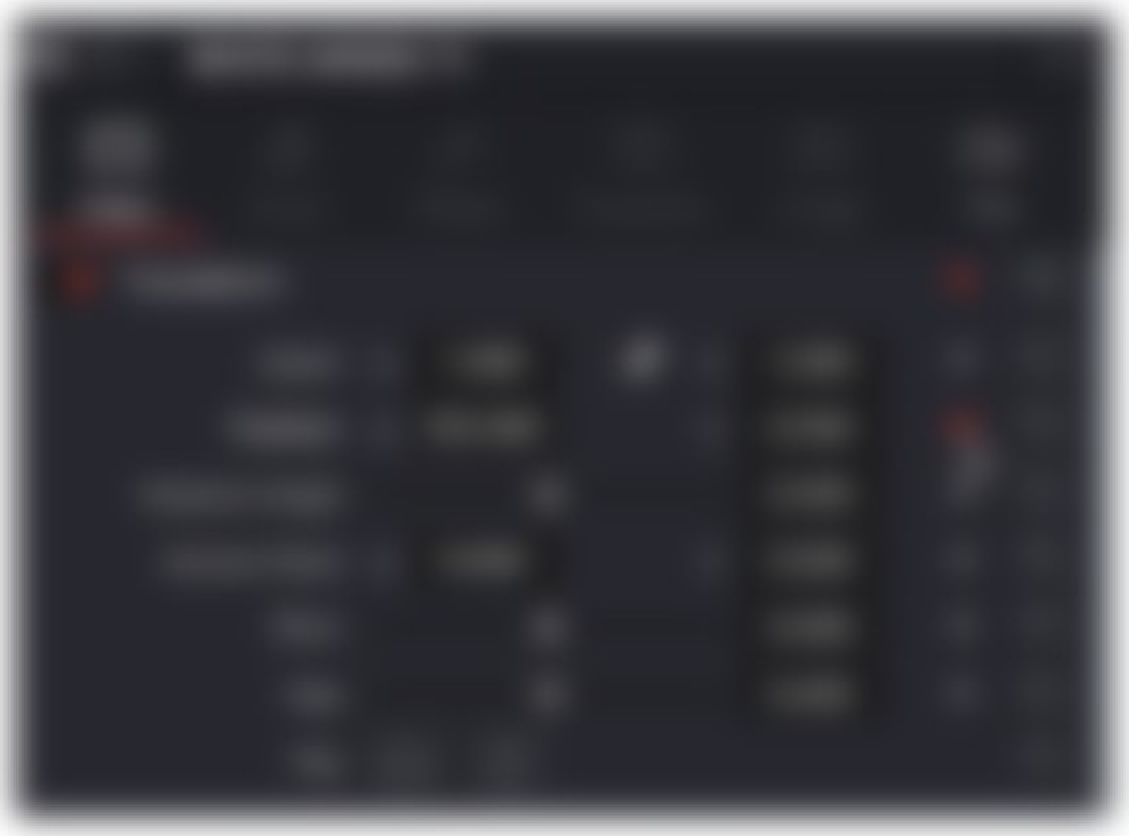
- In the timeline, place the playhead near the start of [illegible] and click the Detail Zoom button.



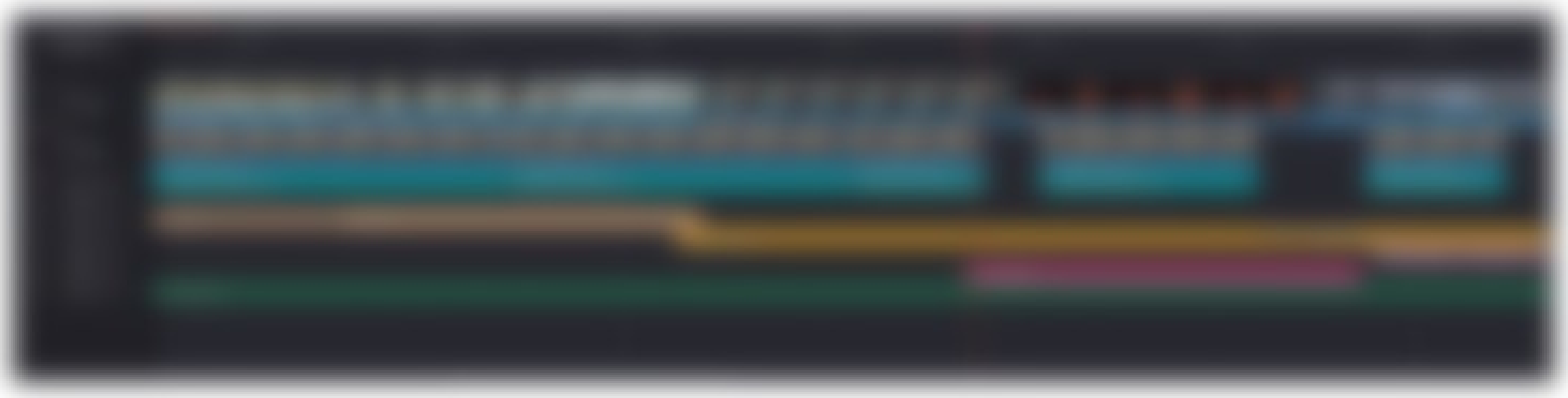
- Using the onscreen controls or the Position X parameter in the Inspector, reframe the shot so you can see the girl on the far left of the group.



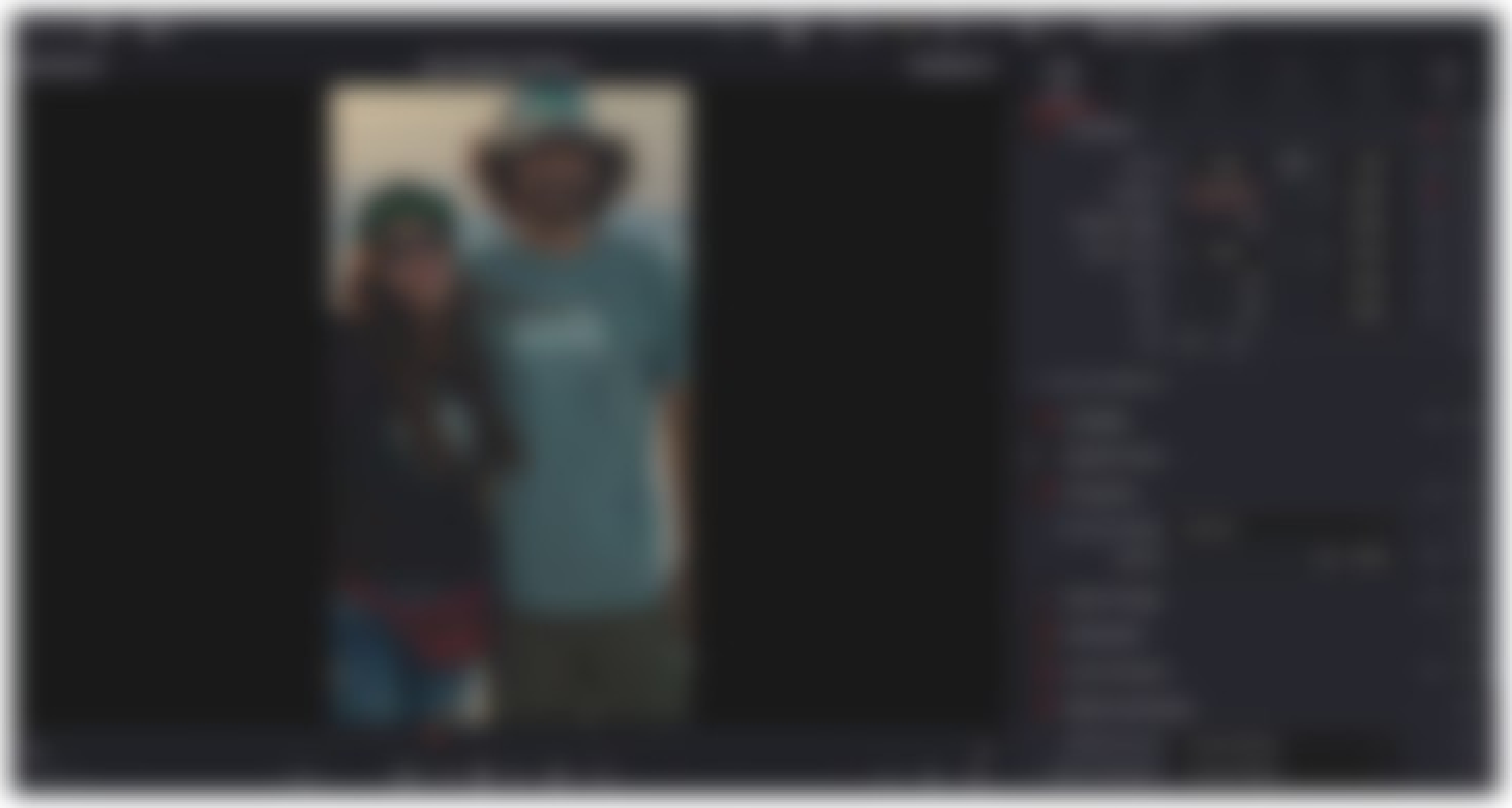
- In the Inspector, click the Position keyframe button to add a keyframe to this clip at the current playhead position.



[illegible] Move the timeline playhead toward the end of the [illegible] clip.



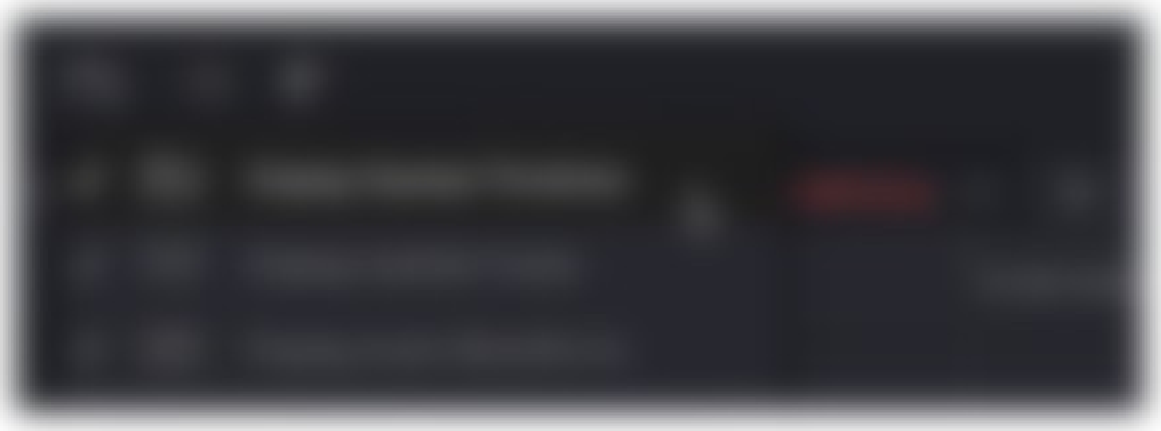
[illegible] With the playhead in the new position, adjust the onscreen controls to frame the couple on the right side of the group.



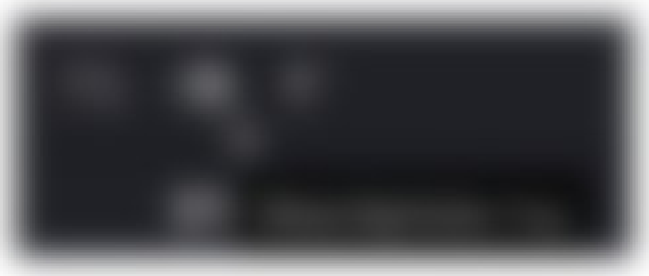
This adjustment adds a second keyframe to the clip at the current playhead position with the adjusted Position parameter.

[illegible] Play back the clip in the timeline to review the "pan" you have added to the shot.

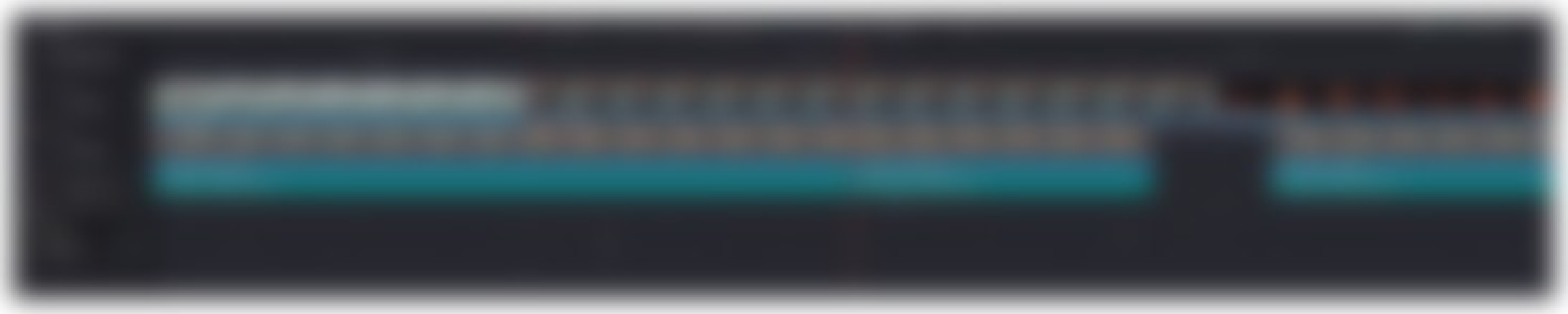
[illegible] In the Timeline View Options menu, disable Display Stacked Timelines.



Enable the Keyframe Tray.



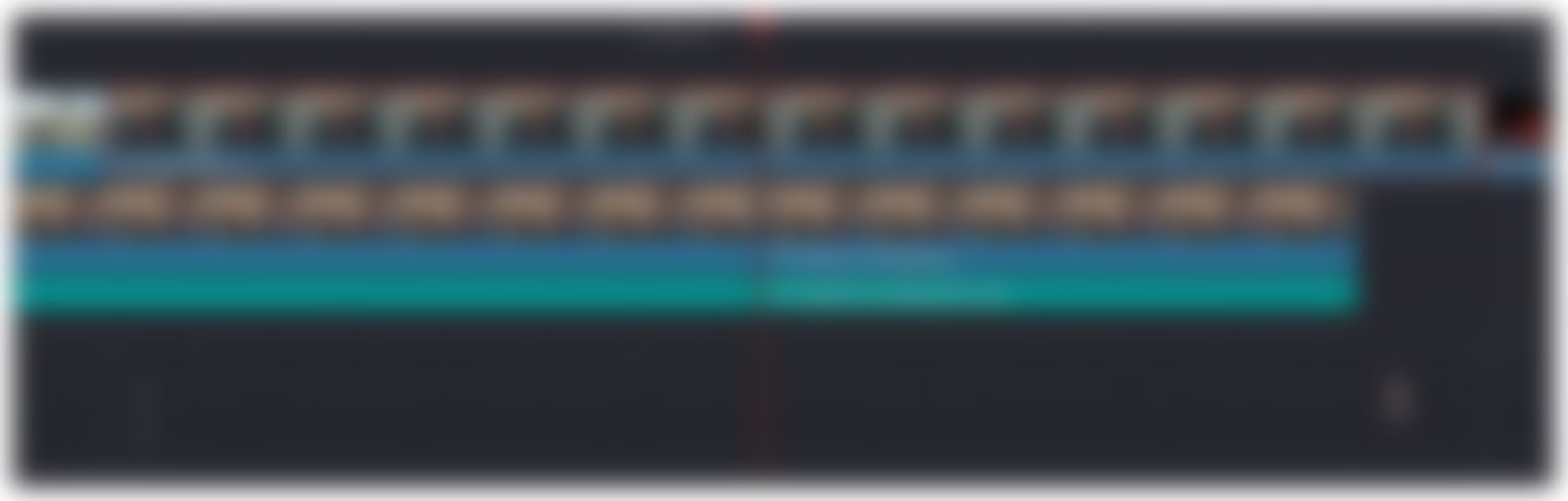
The Keyframe Tray displays the keyframes relative to the currently selected timeline clip.



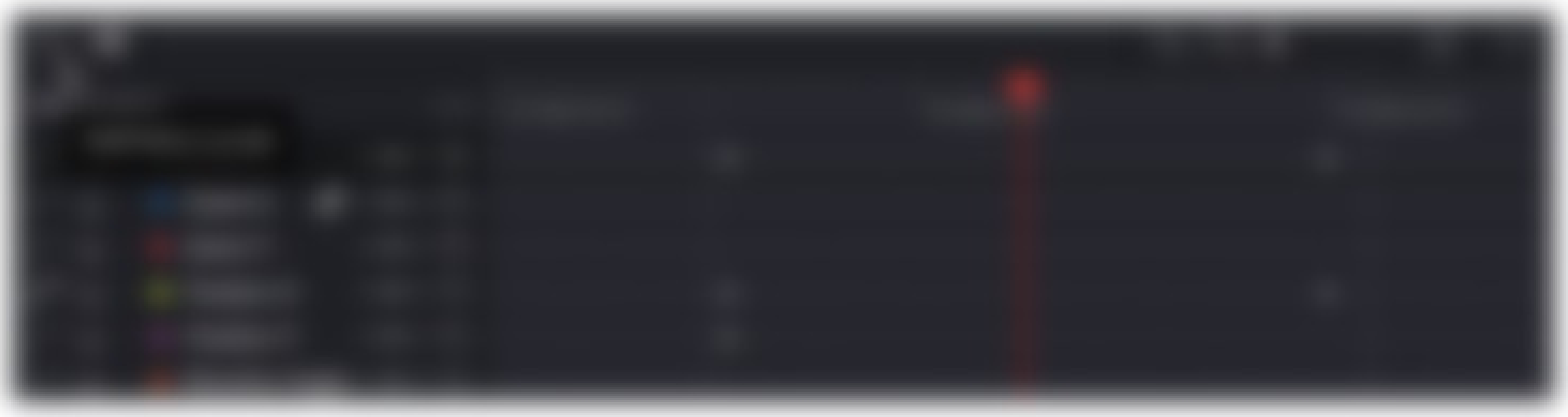
TIP Resize the Keyframes Tray to better see the keyframes in relation to the clip.

In the timeline, select [illegible] and choose Clip > Show Keyframe Editor, press Shift-Command-C (macOS) or Shift-Ctrl-C (Windows), or click the clip's Keyframes button.

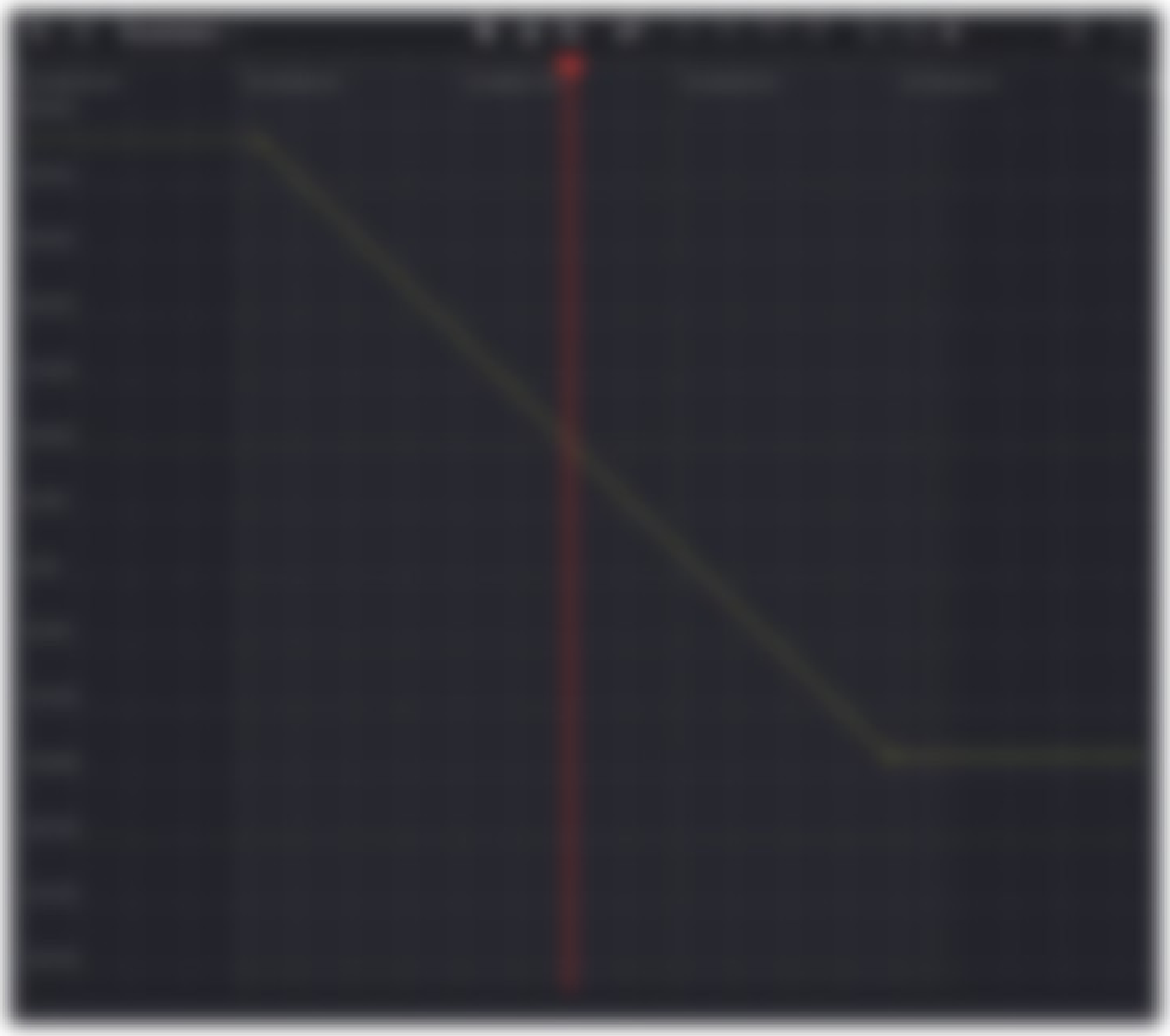
Adjust the timing of the keyframes to your liking.



- Open the Keyframes Panel and display the Keyframes Curve.

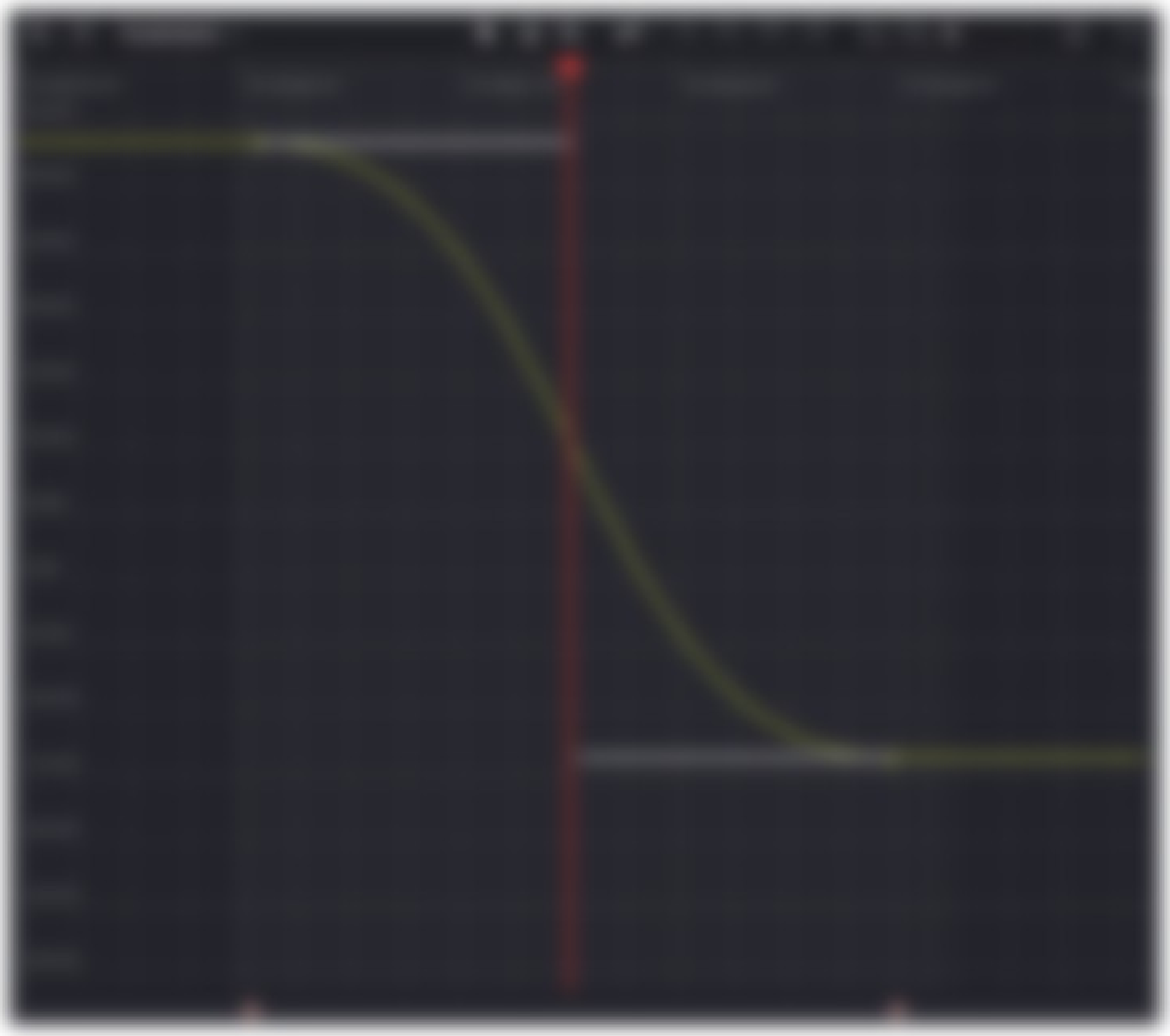


- From the Keyframe Curves Parameters menu, ensure that the Position X curve is displayed (you can disable any other active curves if you want).

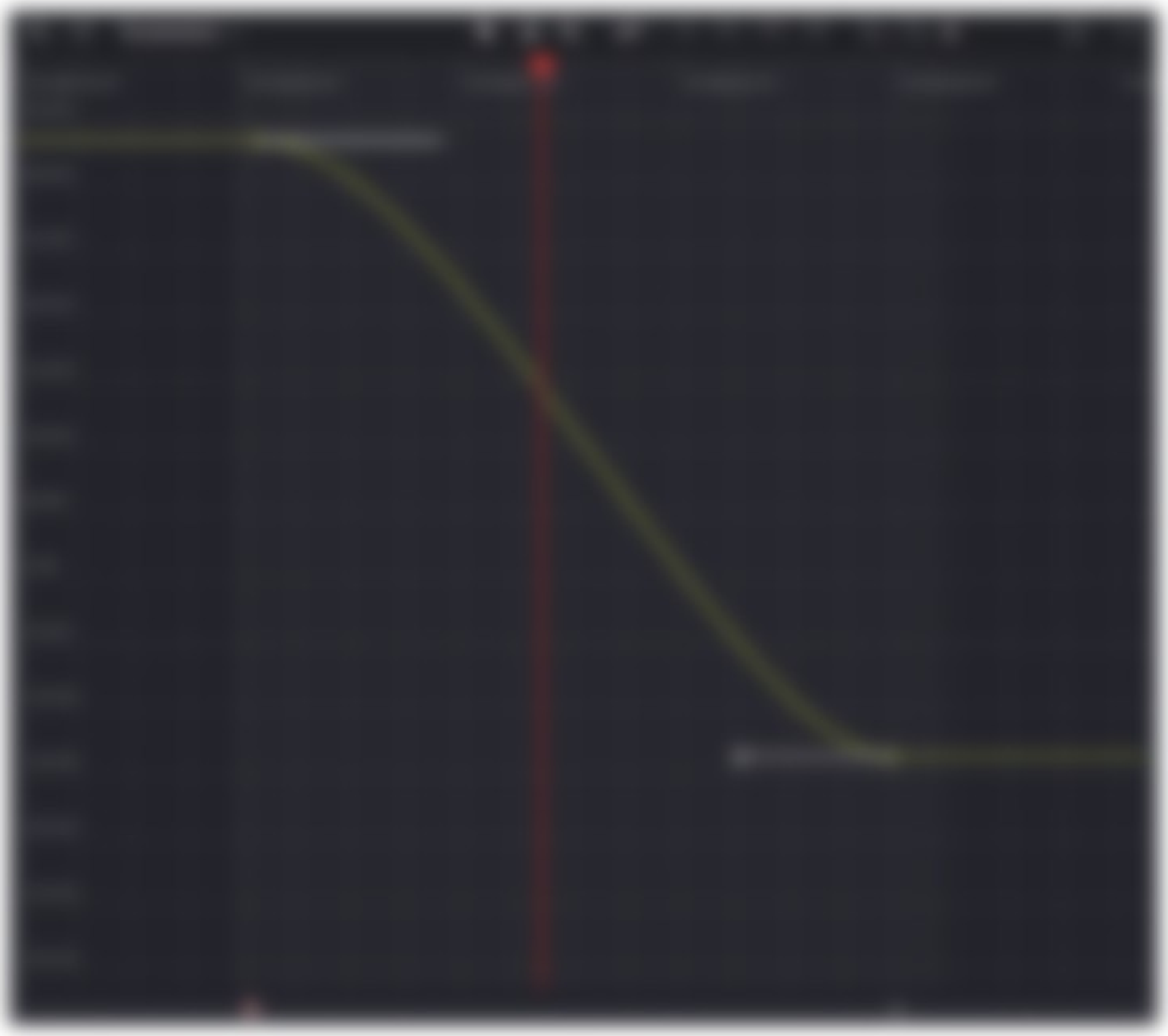


- Select both keyframes on the Position X curve and click the Ease In and Out button.

Handles appear for each keyframe.



Adjust the size of the handles to refine the keyframed animation to your taste.

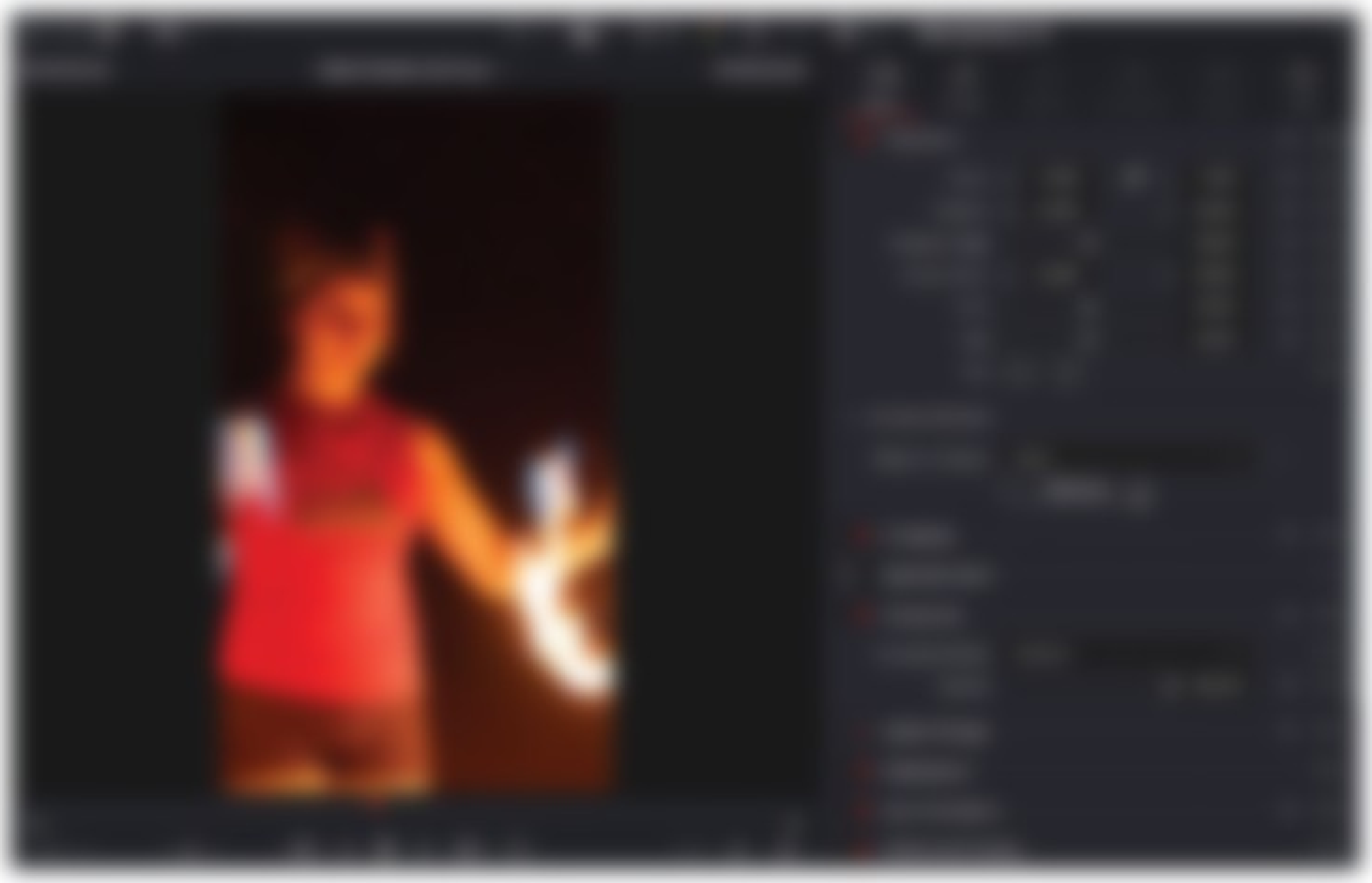


TIP Enable Timeline View Options > Viewer Background > Alert Red to display a red background in the viewer that easily shows you when you've reached the very edge of an image.

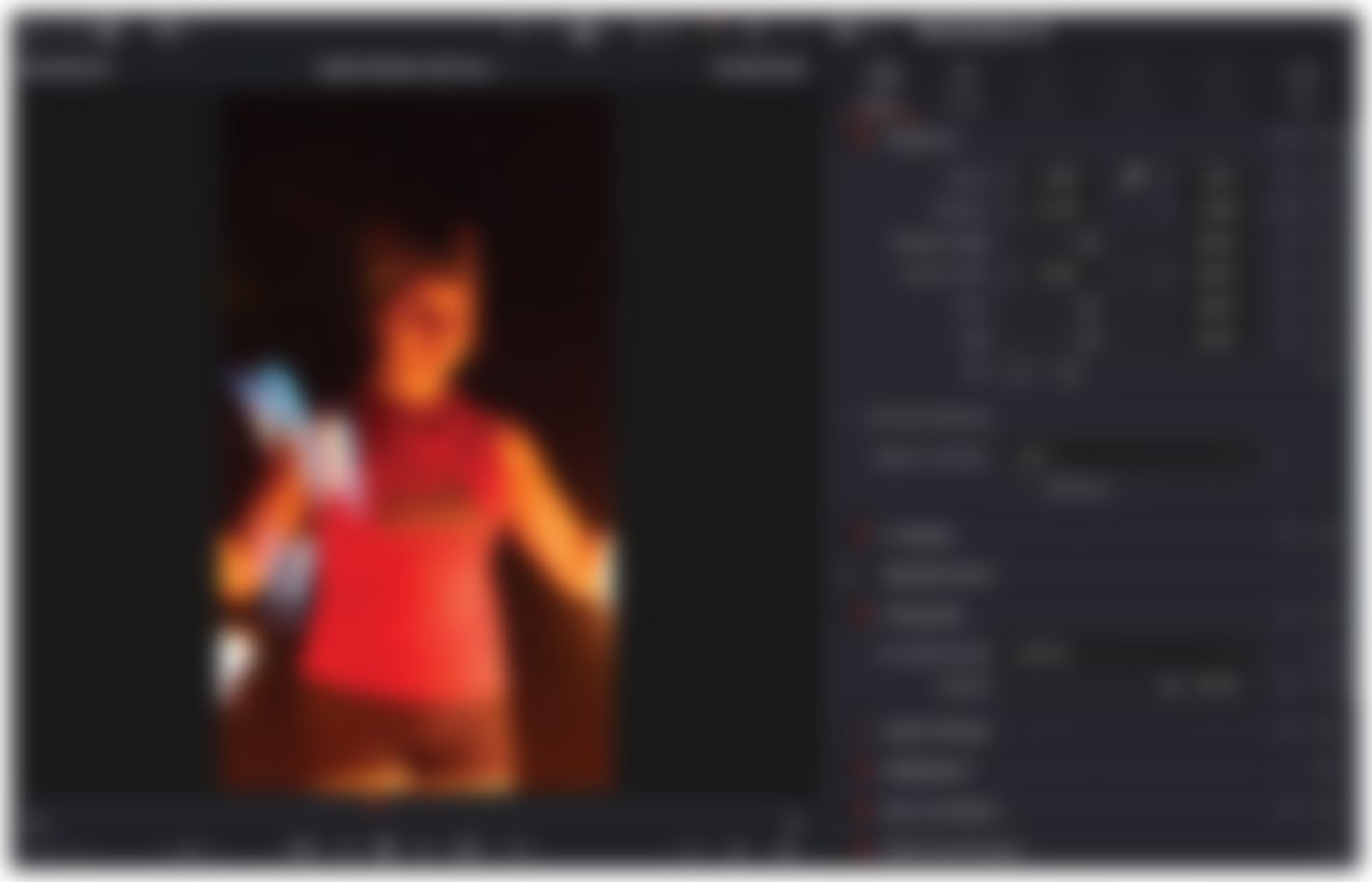
AI Smart Reframe (Studio Only)

While the ability to manually add keyframes and adjust the framing of a clip is undoubtedly useful, if you must do this for a large number of shots, it can quickly slow down the process of preparing the video for export. If you have several shots to reframe in this manner, using the Smart Reframe feature in DaVinci Resolve Studio can be a huge timesaver.

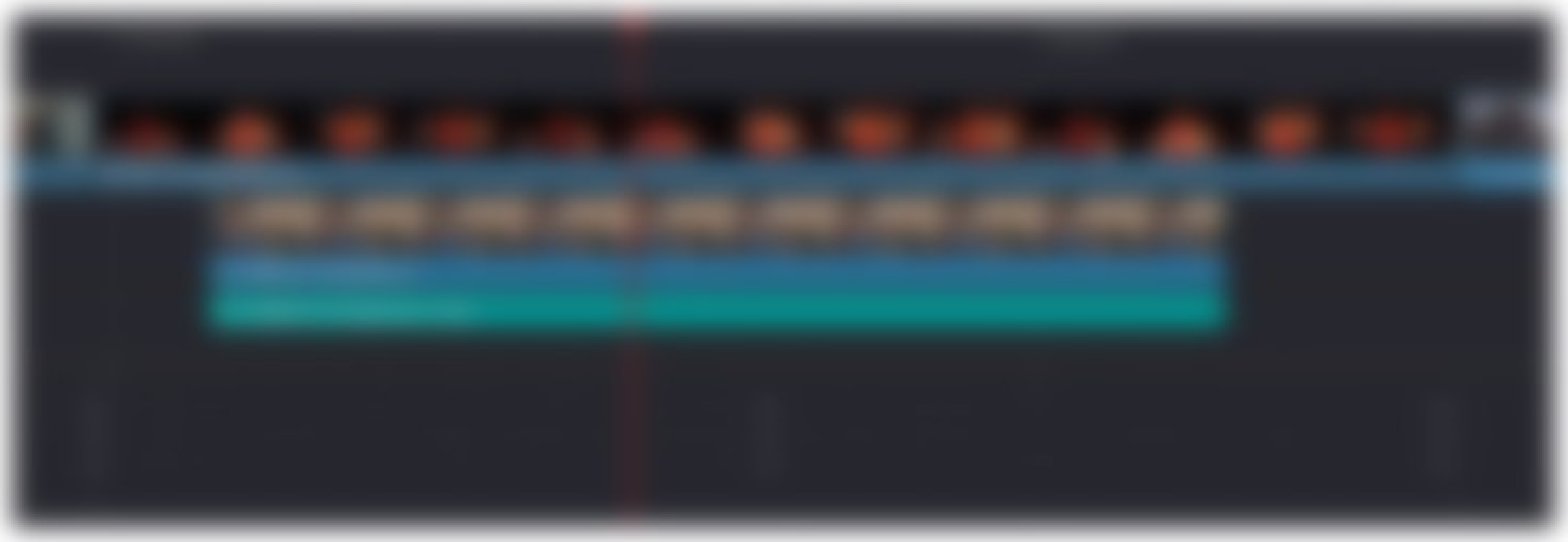
[illegible] Place the playhead over the **[illegible]** clip and, in the Inspector, click the disclosure arrow for the AI Smart Reframe controls and then click the Reframe button.



After a short analysis, the shot reframes itself, centering on the dancer.

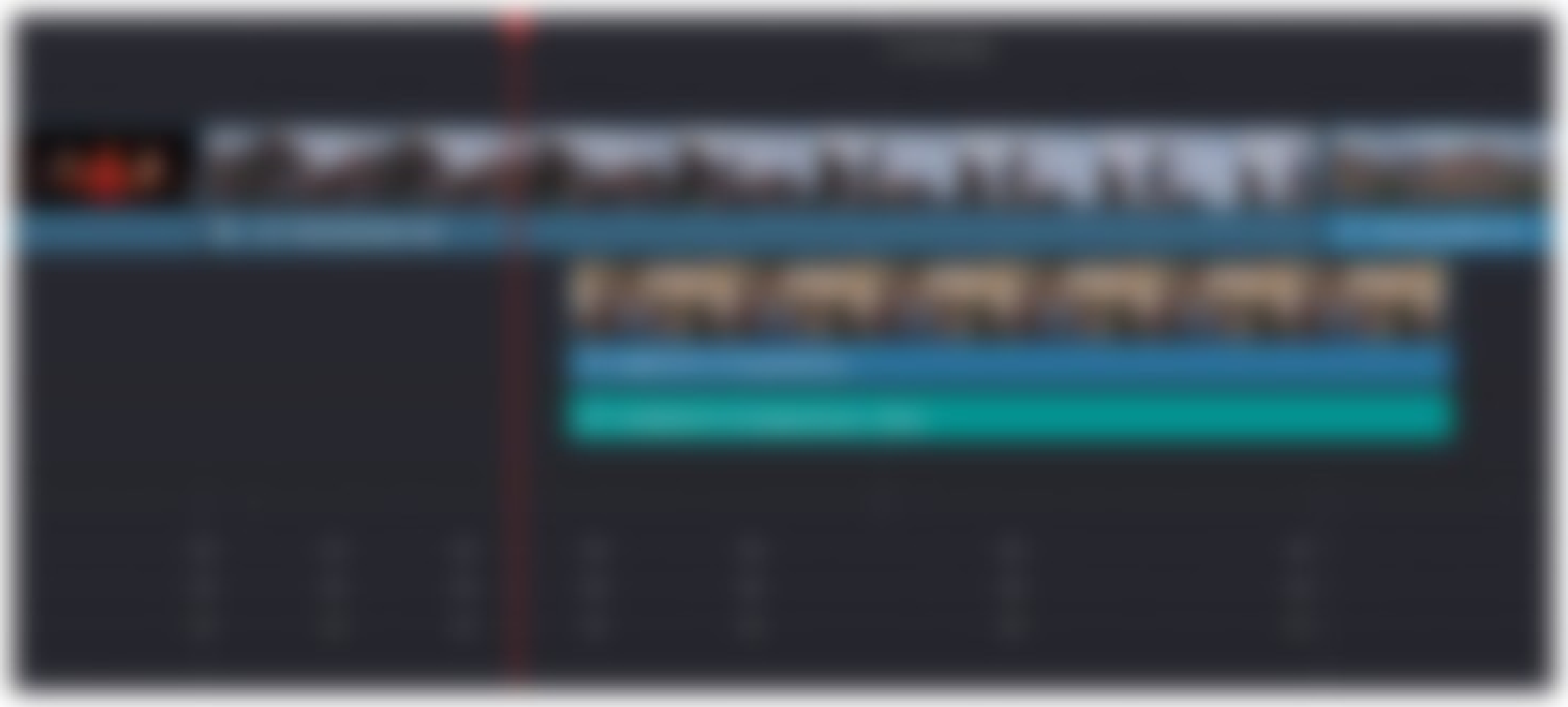


In the Keyframe Tray, you will see that the AI Smart Reframe function has automatically added keyframes to the Transform parameters in order to keep the clip framed on the subject.



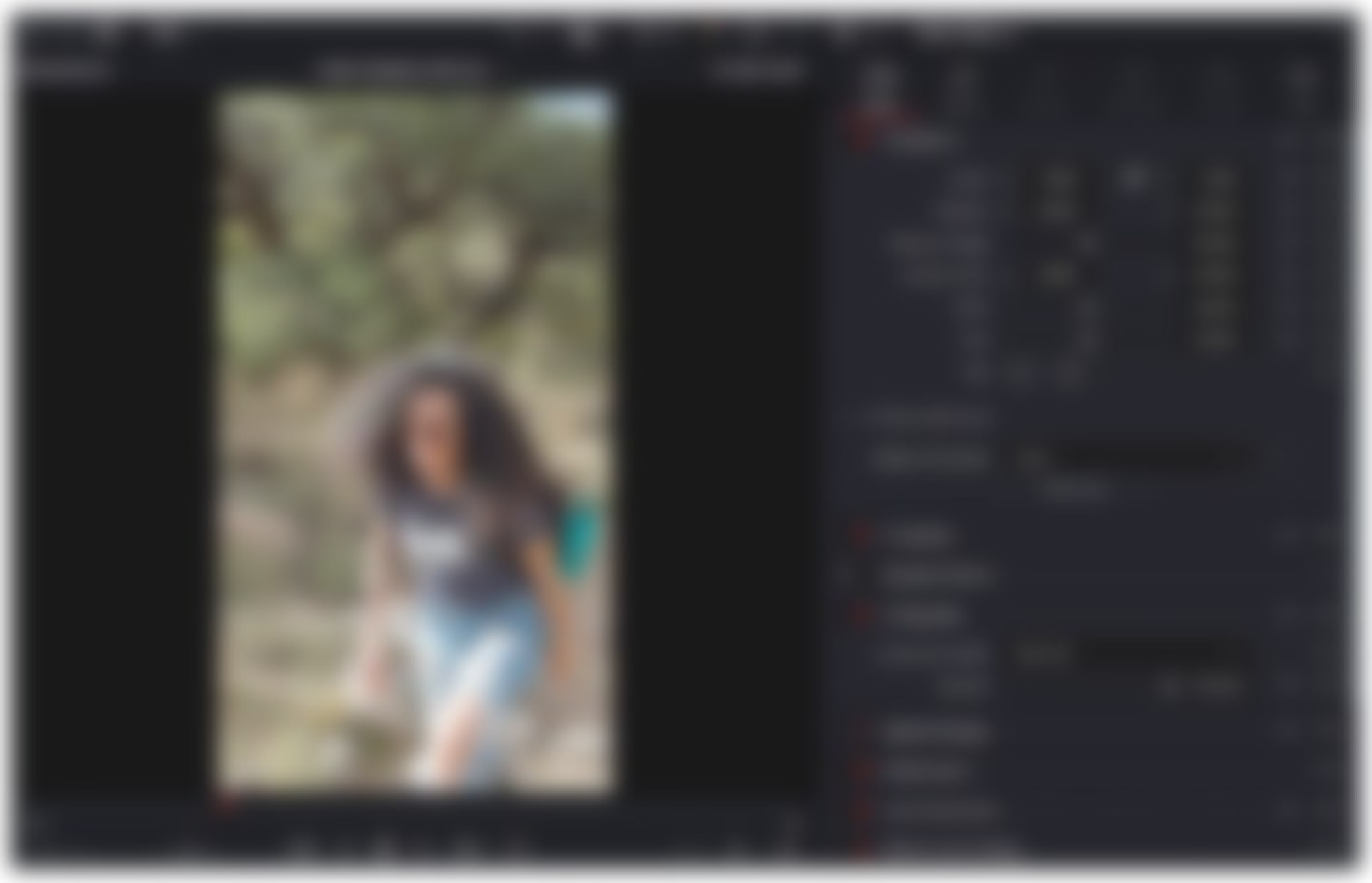
- Move the timeline playhead over the next clip, [illegible].
- In the Inspector, click the AI Smart Reframe controls Reframe button.
- Once the analysis is complete, play back the clip to review.

Smart Reframe has successfully identified the subject of this clip and keeps him in frame as he jumps onto the rock by adding a series of corresponding keyframes.



You can also choose an area of interest for the Smart Reframe function to focus on.

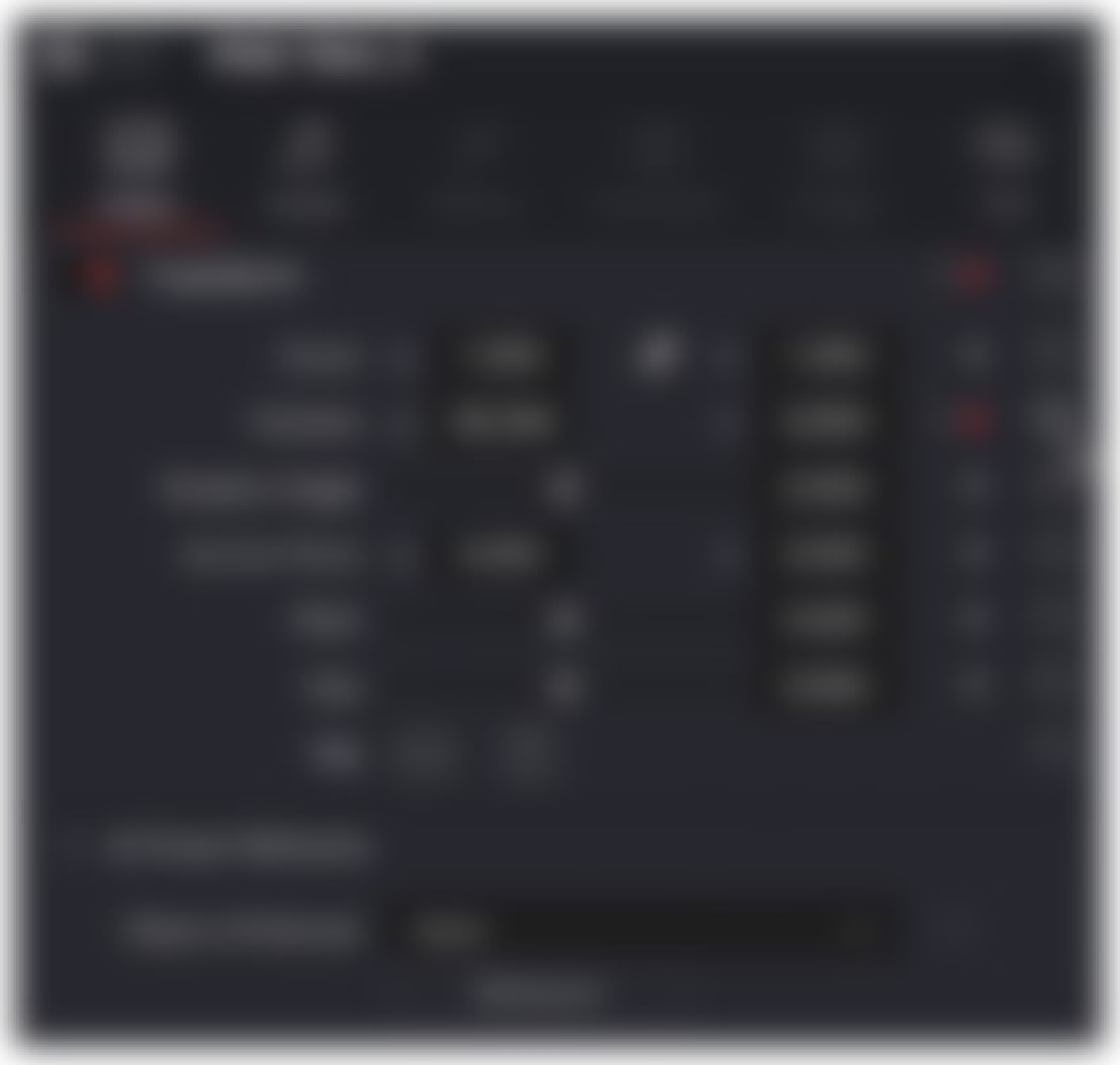
- In the timeline, scroll back to **PINK TRAIL 3**, which has people walking through the shot.



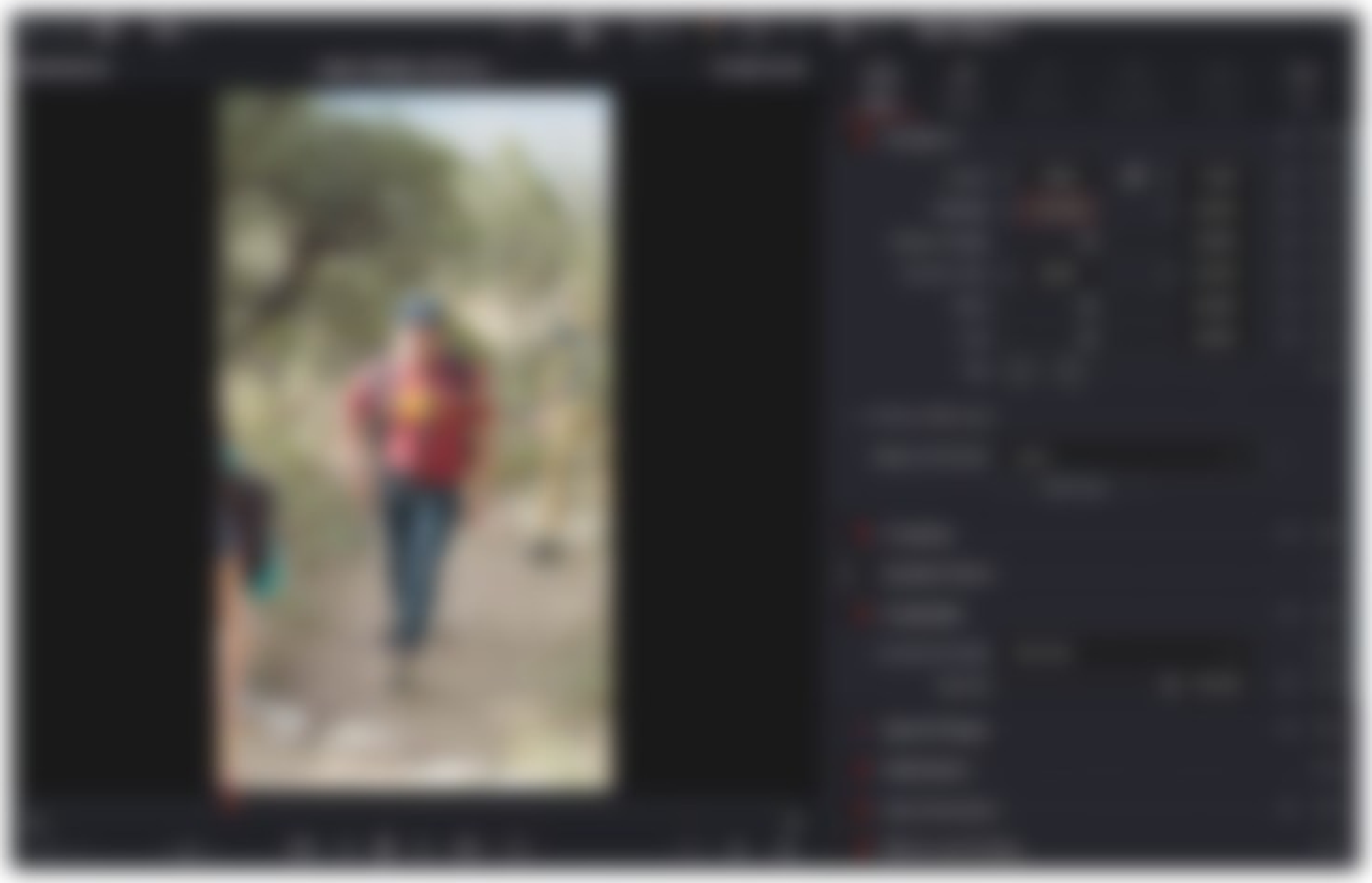
- Place the playhead over this clip and click Reframe.

This time, because the initial focus of the shot was on the girl in front, AI Smart Reframe attempts to follow her, but when she walks out of the shot, the reframing shifts back to the second guy.

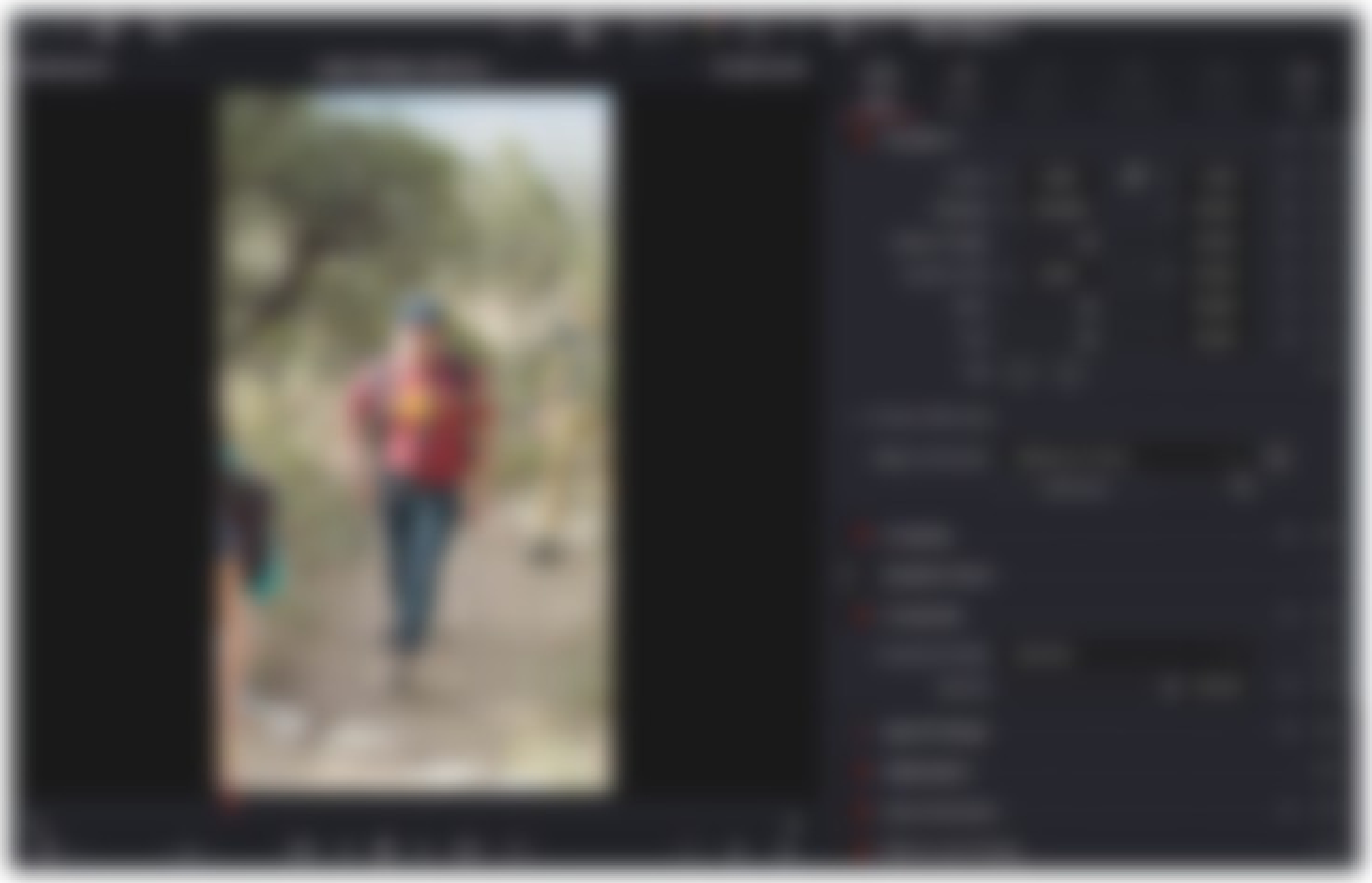
In the Inspector, click the Reset button for the Position parameter of [illegible] to remove all the position keyframes from this clip.



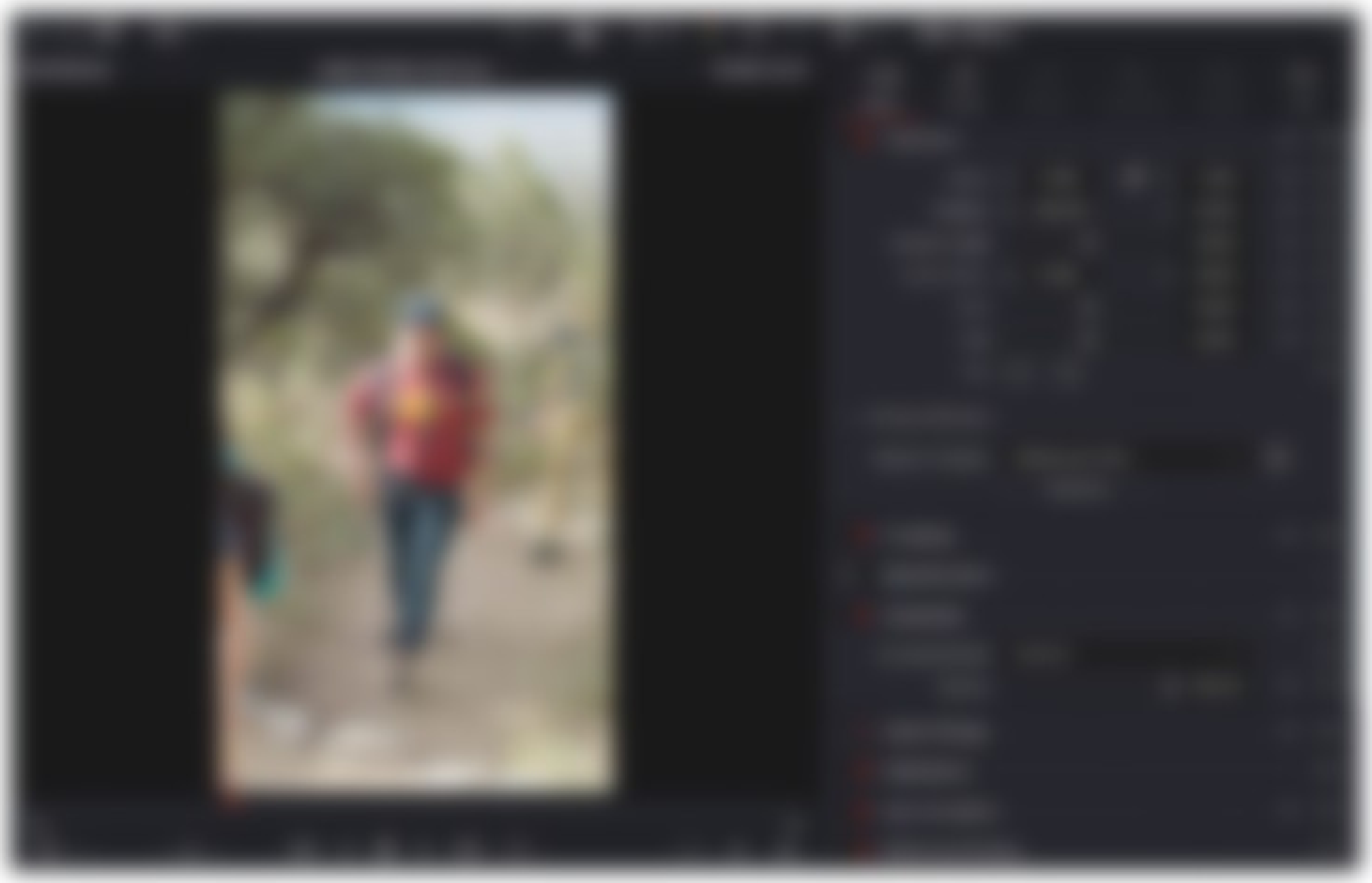
Place the playhead near the start of this clip and use the Position X control to reframe the clip on the second guy.



- In the AI Smart Reframe controls, change the Object of Interest menu to Reference Point and click the reference point button to display the reference point in the timeline viewer.

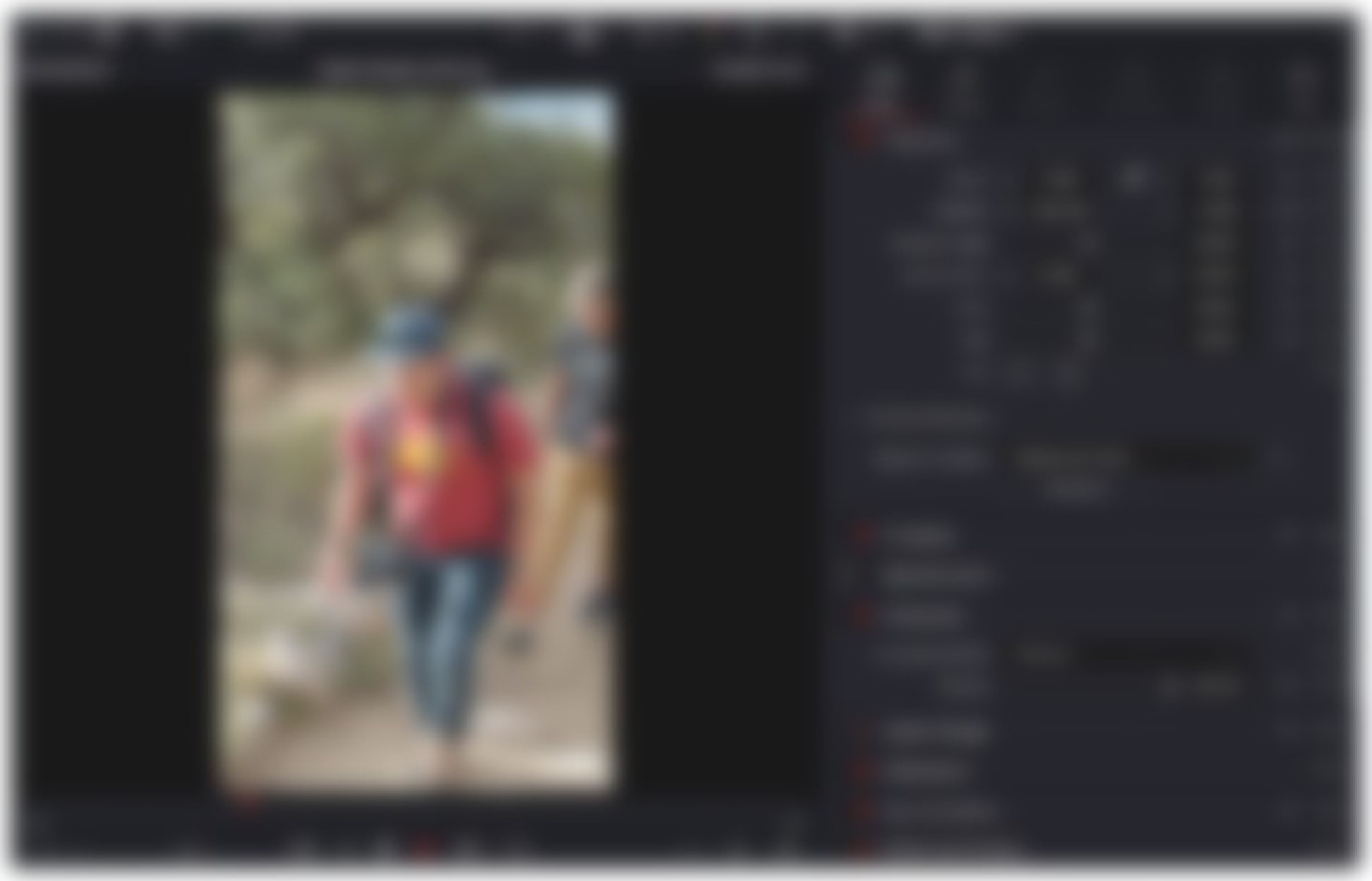


- Adjust the reference point box over the second guy.



- Click the Reframe button.

  This time, AI Smart Reframe keeps the guy framed all the way through the shot.



- Continue reframing the clips in the timeline either manually or by using AI Smart Reframe.

- When you have finished, click the Keyframe Tray button to close the Keyframe Tray.

Of course, all this is also possible by manually keyframing the clips, but it's hard to argue that the AI Smart Reframe function won't save you huge amounts of time by quickly reframing shots for you.

NOTE You can import a completed version of this vertical timeline (including an alternate ending graphic better suited to the new aspect ratio) by selecting the Timelines bin and choosing File > Import > Timeline, navigating to R19 Editors Guide > Lesson 09 > Timelines, selecting [illegible] and clicking Open.

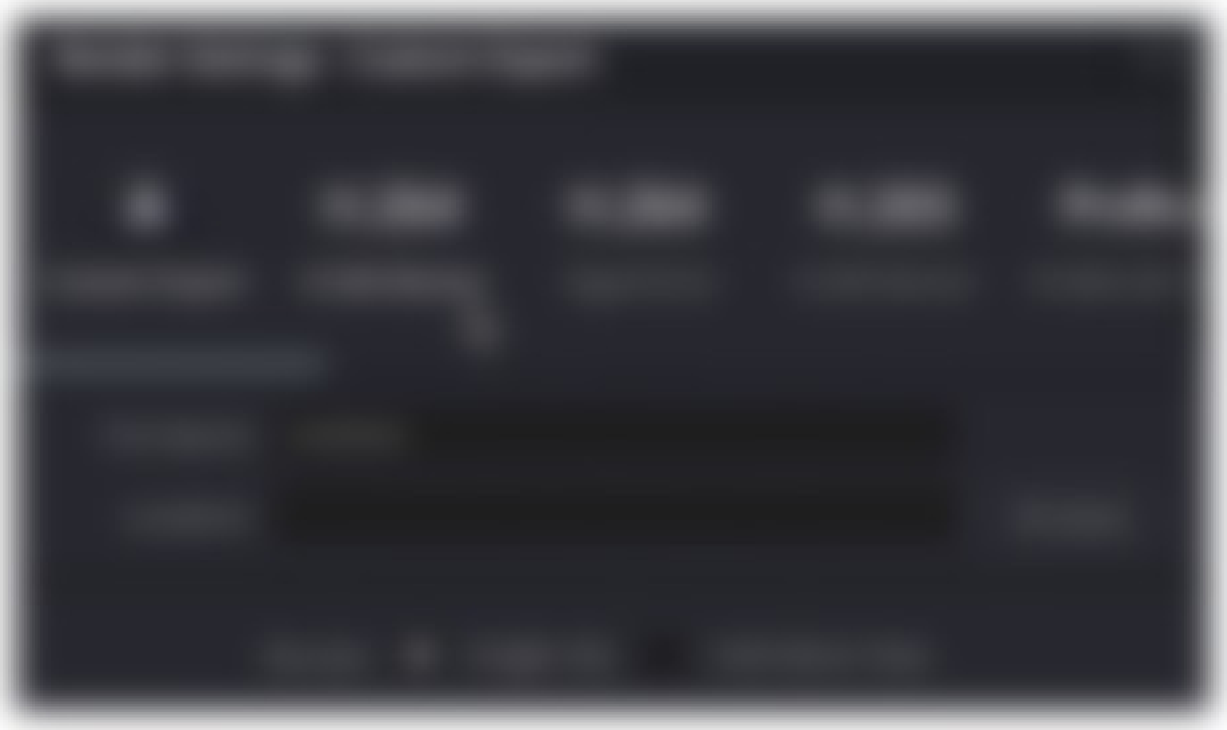
Adding the Vertical Timeline to the Render Queue

Now that you have successfully created a vertical version of the OMO Promo, you can choose an appropriate render preset in the deliver page.

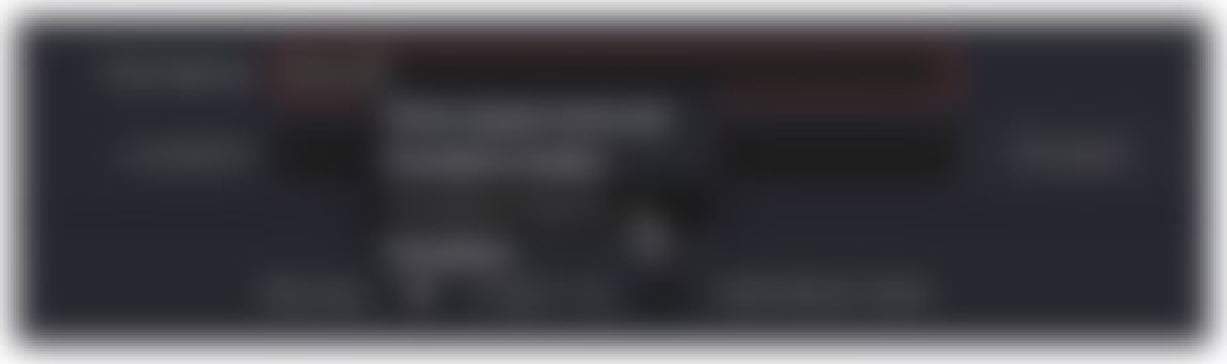
- Press Shift-8 or click the Deliver button at the bottom of the interface to switch to the deliver page.

  You could use the presets for TikTok or YouTube, but here, you'll create your own preset.

- In the Render Settings panel, select the H.264 Master preset.



- In the Name field, type **[illegible]** and choose the Timeline Name variable.



The exported file will have the same name as the timeline without you needing to type anything else.

- Click the Browse button next to the Location field, navigate to R20 Editor's Guide / OUTPUT / WEB, and click Save.

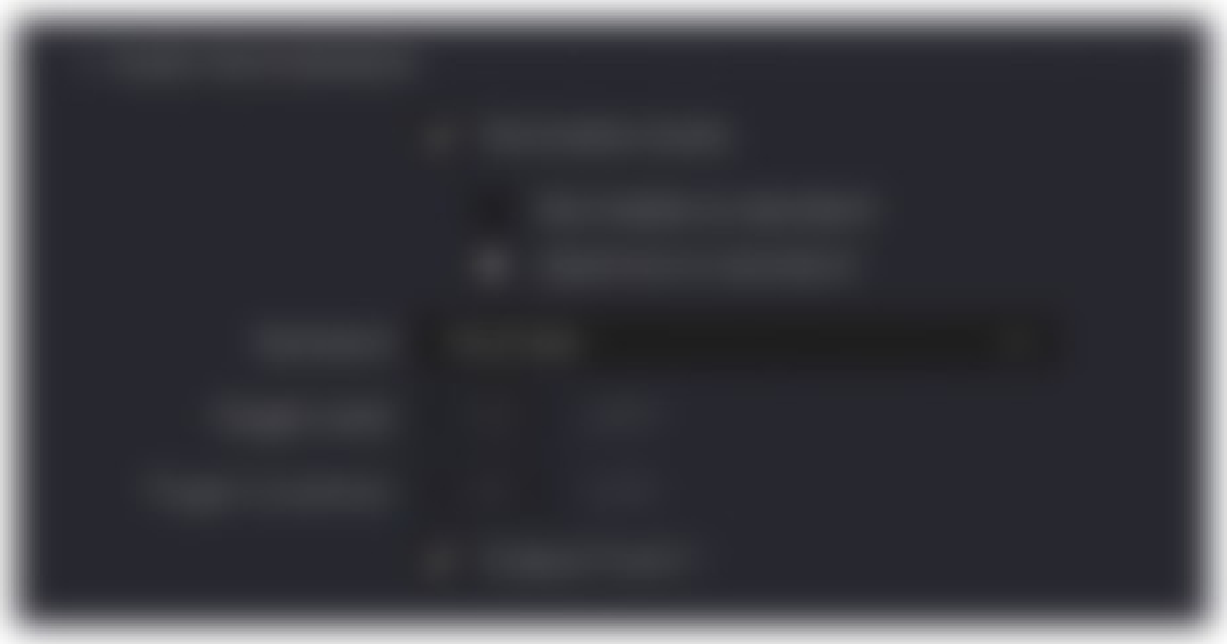
- In the Video tab in the Render Settings, leave all the settings set to the defaults, ensuring that Resolution is set to Timeline Resolution.
- Click the Audio tab and open the Audio Normalization controls.

Until now, there's been no discussion as to what overall level your audio should be. In the previous lesson, you mixed the audio in the timeline to a general level. However, in the deliver page, you can choose various standards for optimizing your audio, including different loudness requirements.

Loudness is a measurement of your audio across its total duration. The general idea behind loudness is making sure that levels are consistent across content so that one element isn't perceived as being significantly louder than any other – for example, advertisements don't deafen you compared to the drama you're watching or the next video you stream doesn't have you reaching for your volume control to turn it up or down

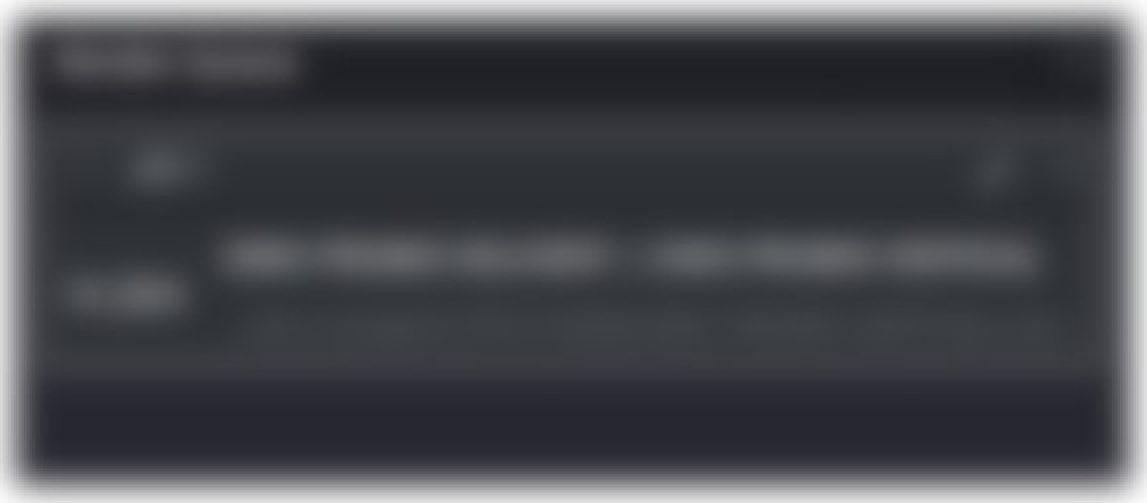
Thankfully, Resolve has a simple way of ensuring that your audio adheres to the various loudness standards, whether you're delivering your content to YouTube, Netflix, or broadcast TV, by optimizing it on export.

- Select the Normalize Audio option, choose "Optimize to standard," and from the Standard dropdown menu, choose the YouTube option.



The YouTube loudness standard is set, which specifies a Target Loudness of -14 LKFS or LUFS (loudness units full scale) and a Target Level of -1.0 dBTP (decibels true peak). This will ensure that the exported audio for this file will adhere to YouTube's recommended loudness standards.

- Click Add to Render Queue to add this to the Render Queue.

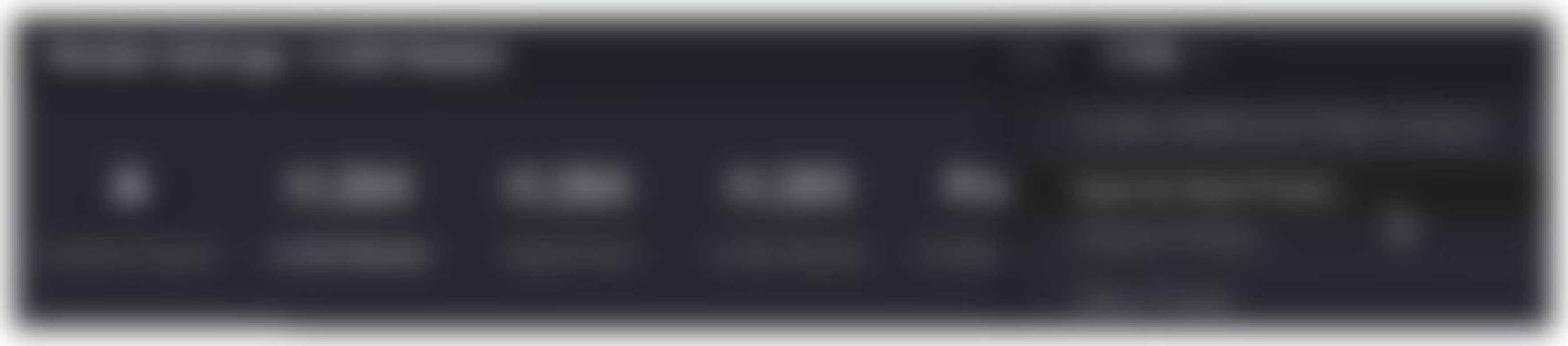


NOTE You can manually measure the loudness of your timeline using the loudness tools in the Fairlight page. For more information, see the Fairlight Audio Guide to DaVinci Resolve 20 and the DaVinci Resolve Manual.

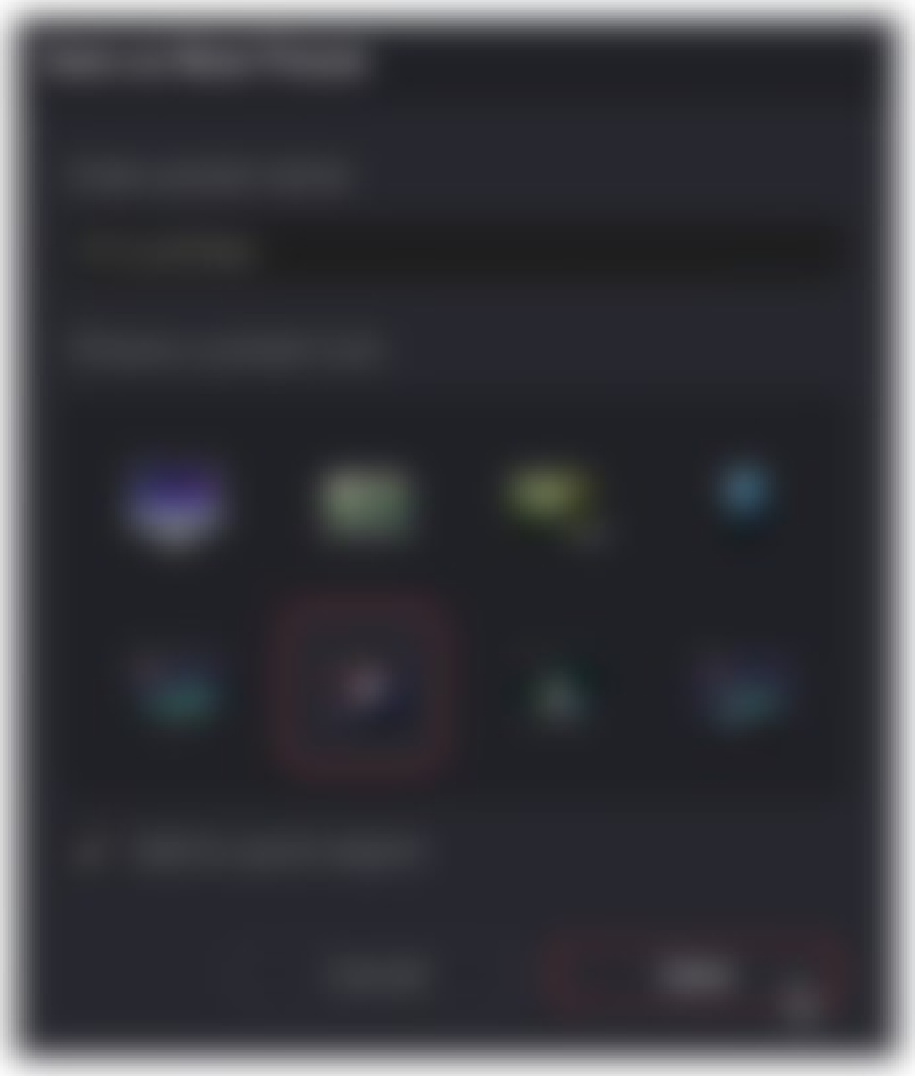
Creating a Custom Render Preset

You may want to save the current settings as a custom render preset so that you can quickly apply those settings to other timelines in the future.

- In the Render Settings panel, click the Options menu (...) and choose Save As New Preset.

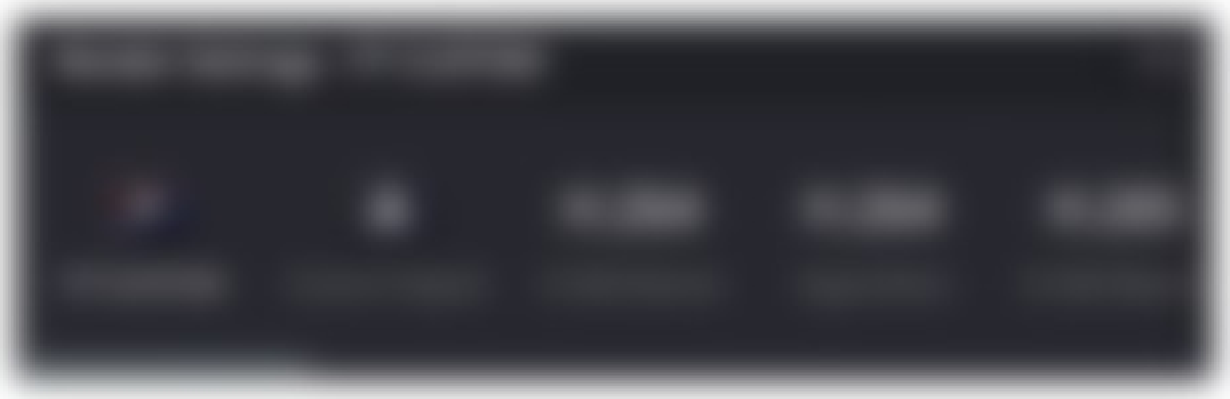


- In the Render Preset window, type **YT CUSTOM**, choose an icon for the preset, and select "Add to quick export."

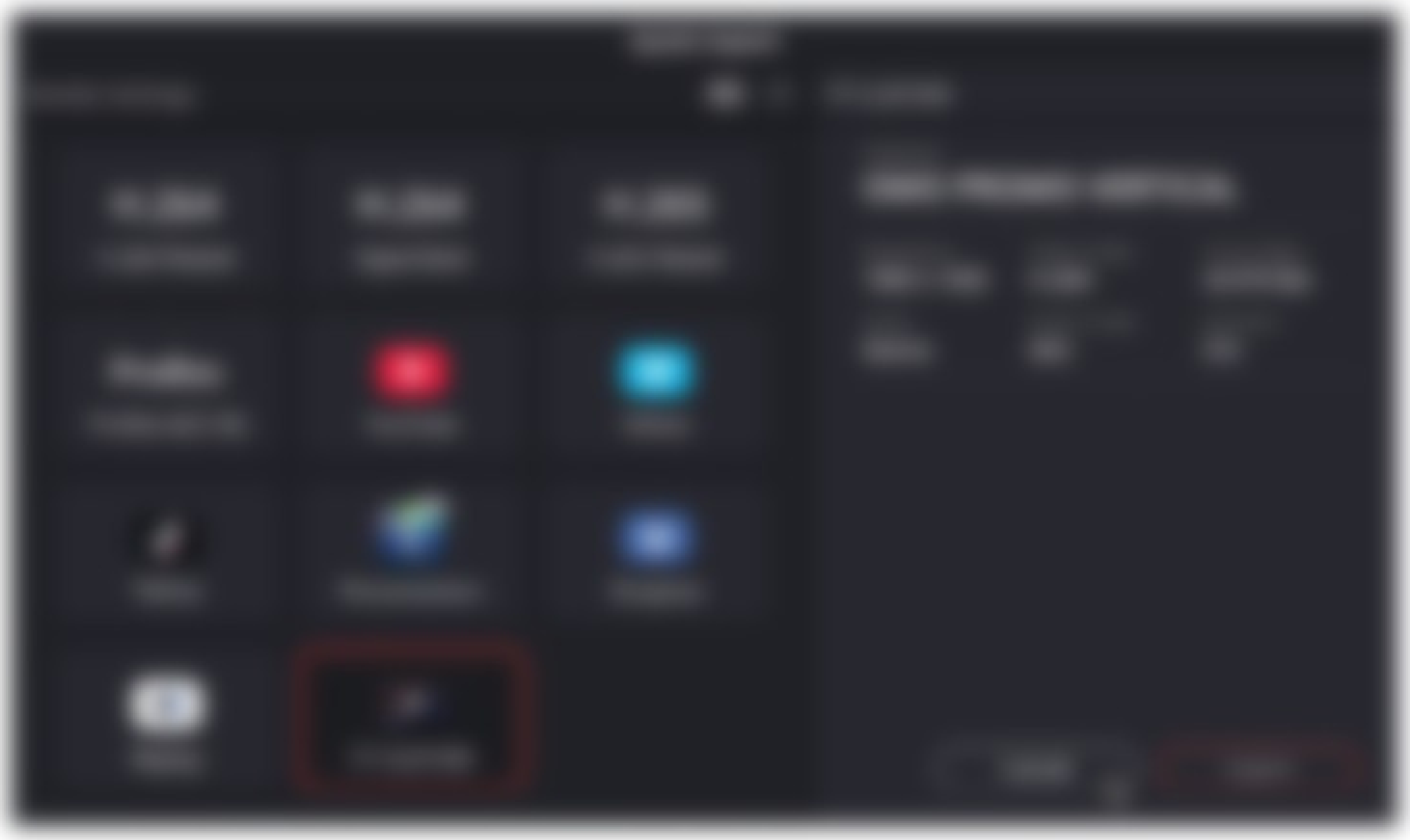


- Click Save.

  The new preset is added to the list of presets in the Render Settings.



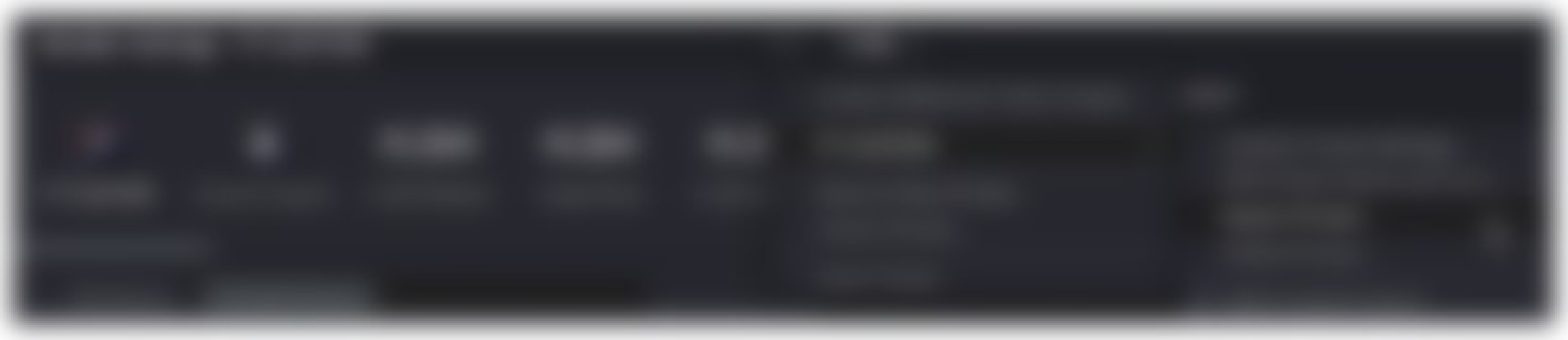
- Switch to the edit page and open the Quick Export window to verify the preset has also been added there.



- Close the Quick Export window and press Shift-8 to switch back to the deliver page.

  You can modify a render preset in the Render Settings.

- Click the Render Settings Options menu and choose the YT CUSTOM preset's options, which let you update the preset (if you've made any changes since it was saved), edit the preset's name and icon, export or delete the preset, or remove it from the Quick Export window.

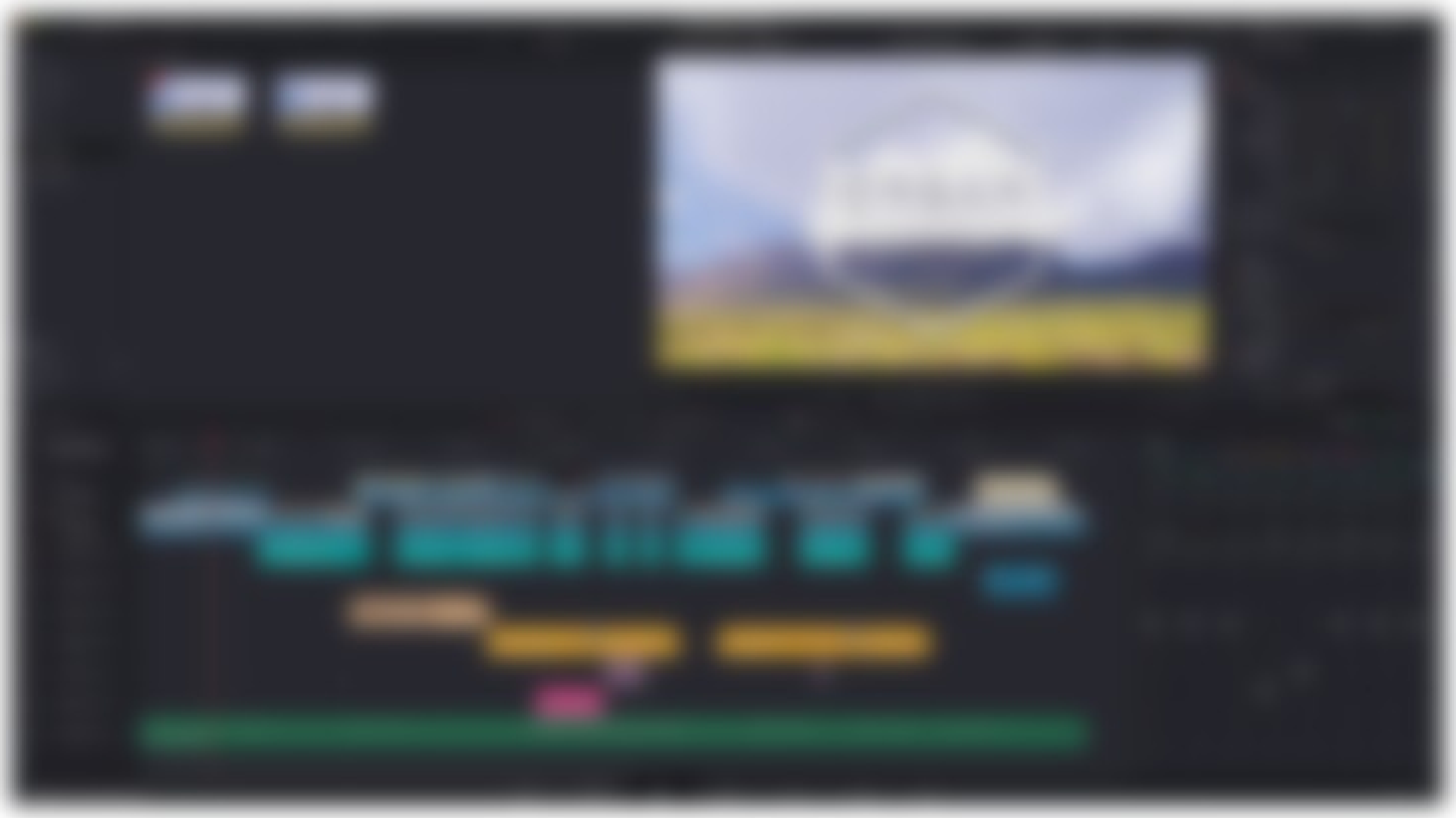


TIP Timelines can be quickly added to the Render Queue using a custom preset in the edit page by right-clicking the timeline and choosing Timelines > Add to Render Queue Using > (Your Preset).

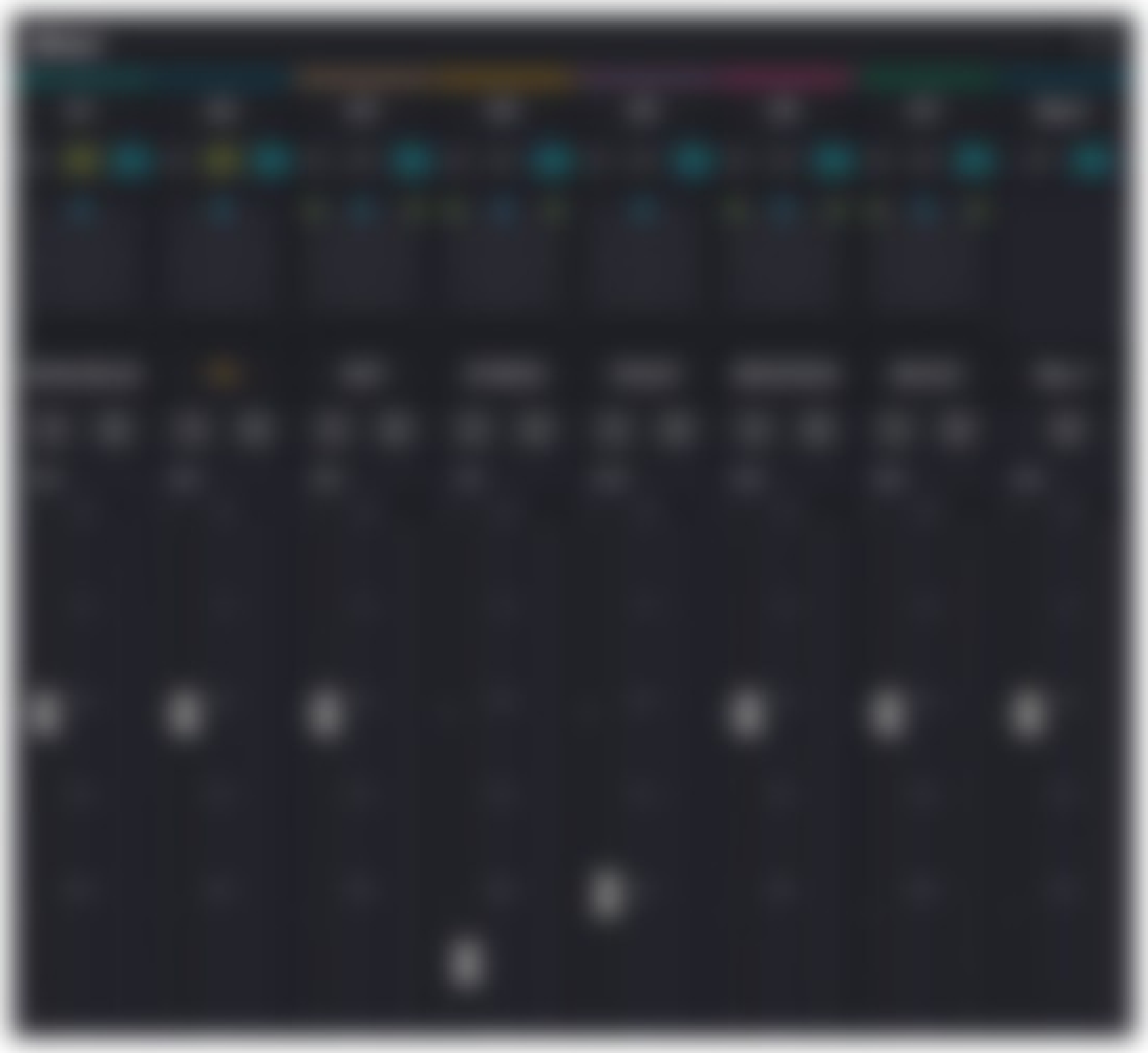
Creating an M&E Bus

A common requirement for many editors responsible for delivering audio is to set up a timeline for delivering different audio mixes. A film might have a stereo mix and a 5.1 mix, although a common requirement is a separate M&E (music and effects) soundtrack version. M&E tracks are a separate mix of the timeline audio but do not include the dialogue spoken by the actors or other onscreen talent. This enables other versions of the film to be created using other languages. You will create an M&E bus for the original Organ Mountain Outfitters promo.

1 Press Shift-4 to return to the edit page, re-open the OMO PROMO FINISHED timeline, and then open the mixer.



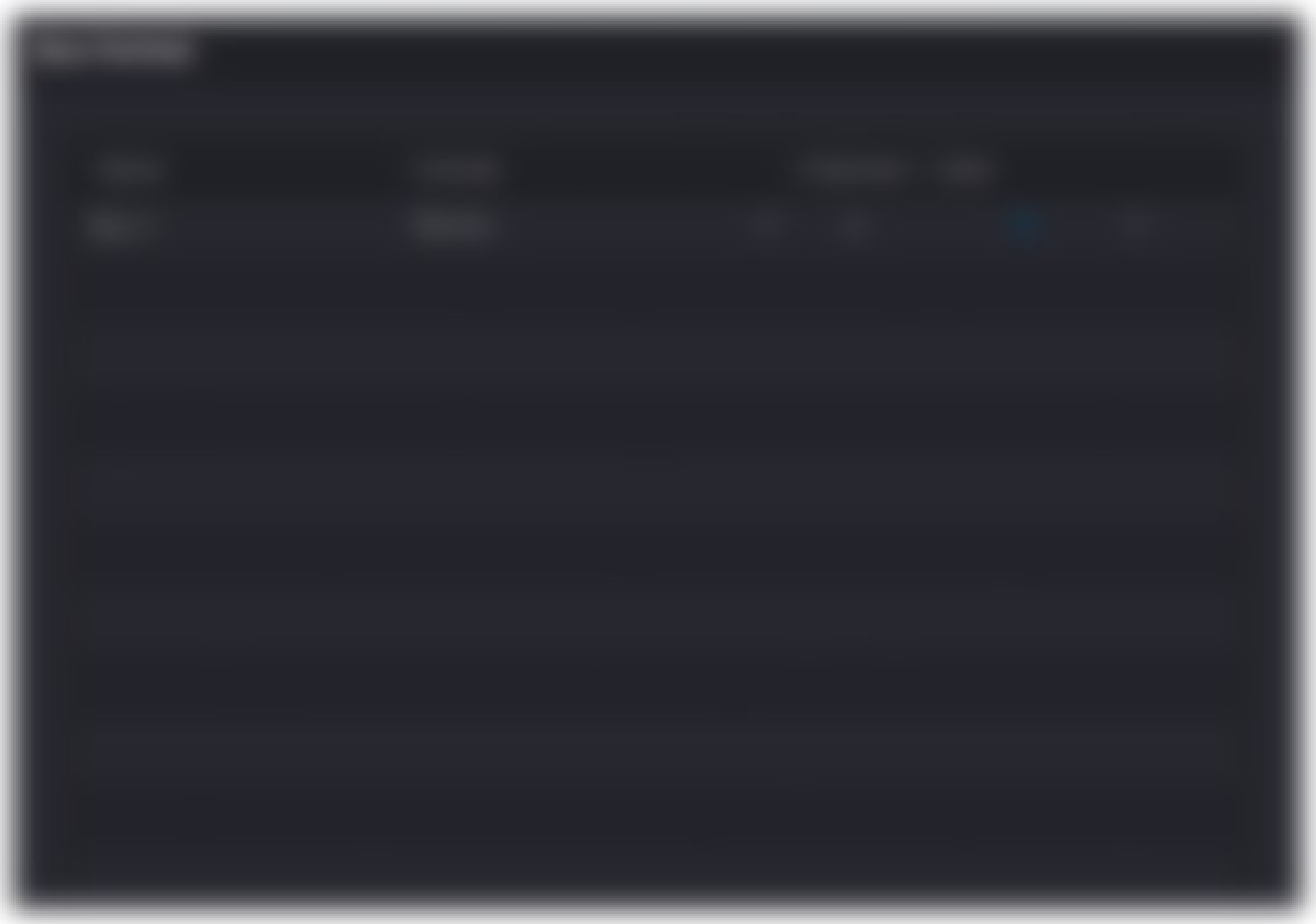
By default, all timelines created in DaVinci Resolve have a single stereo bus. All the audio tracks are routed to this bus and is ultimately what you listen to when playing the timeline. You will see this bus on the right of the mixer, called Bus 1.



You can add additional busses as required (up to a maximum of 512 channels total).

- Choose Fairlight > Bus Format.

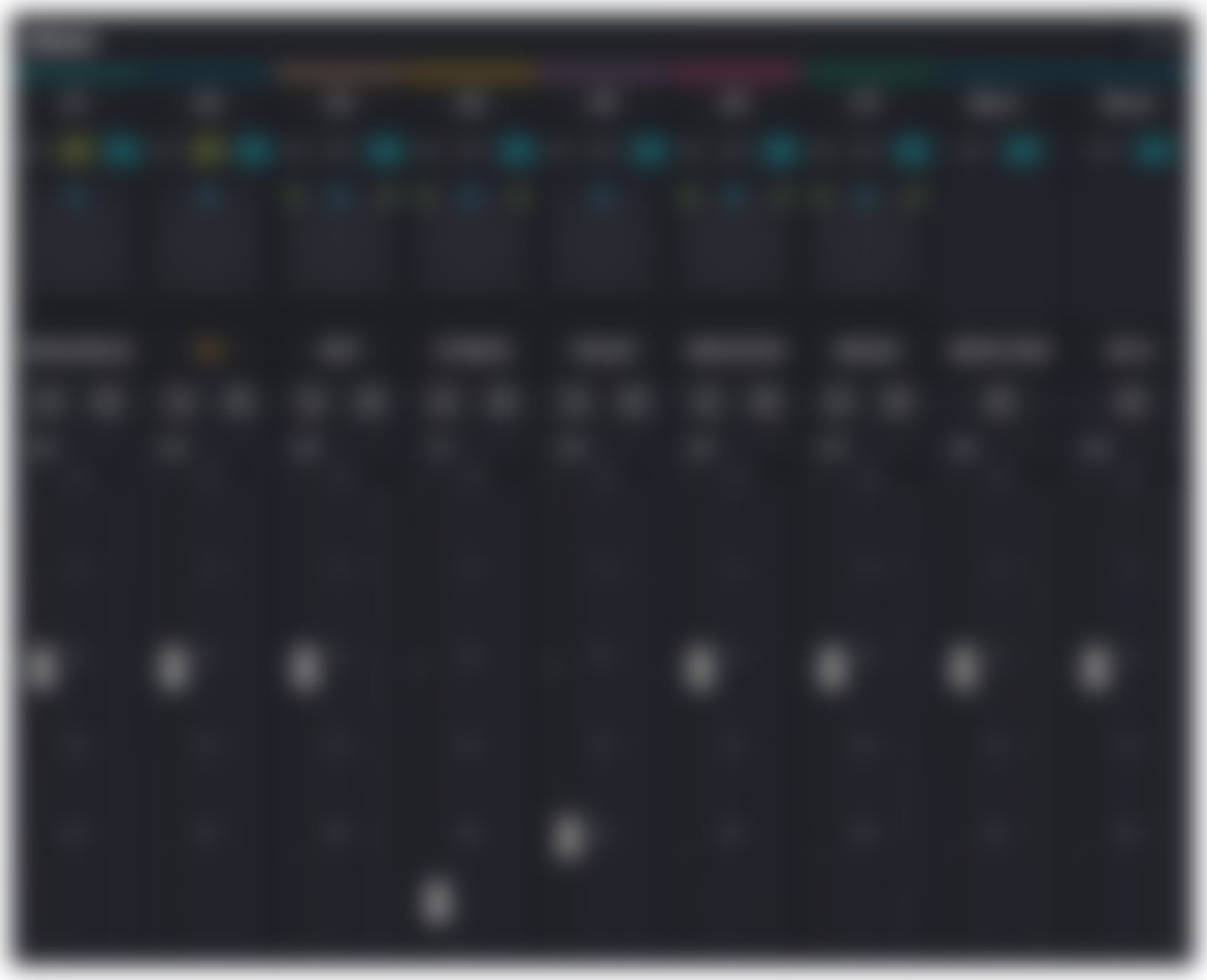
The Bus Format window opens, listing the default stereo bus.



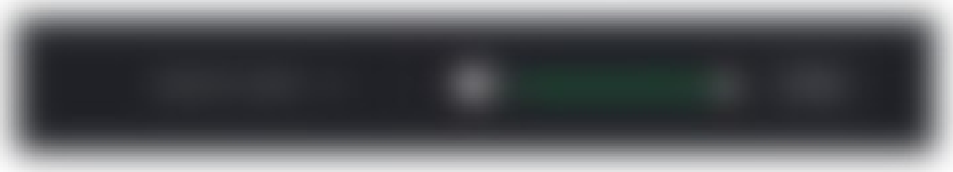
- Double-click Bus 1 and rename it **MAIN MIX**.
- Click the Add Bus button to add a second stereo bus, called Bus 2.
- Double-click Bus 2 and rename it **M+E**.

- Click OK.

- Expand the mixer to reveal the new Bus.



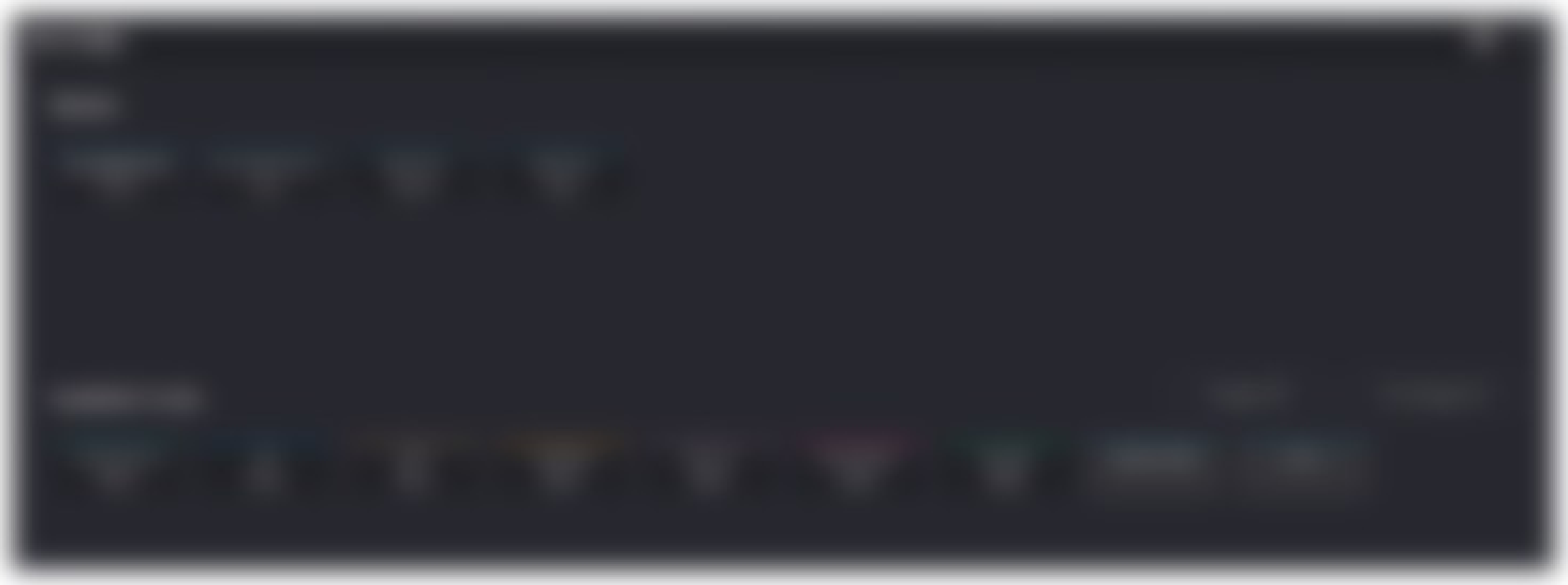
A new menu appears next to the audio output control in the timeline toolbar. The Control Room menu allows you to monitor the different busses for your timeline.



However, before you can hear anything from the M+E bus, you must tell Resolve which audio tracks should be routed to it.

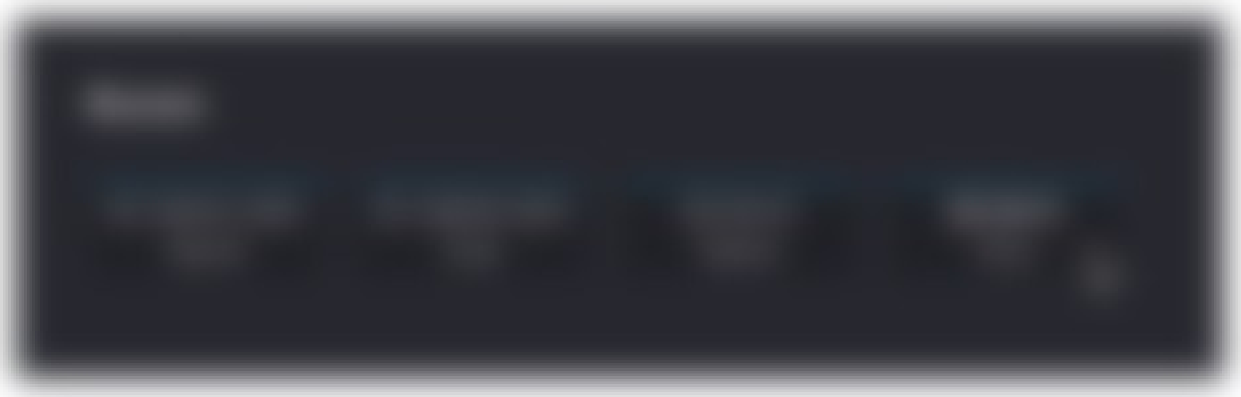
- Choose Fairlight > Bus Assign.

The Bus Assign window opens, detailing the various busses and the available tracks for the current timeline.

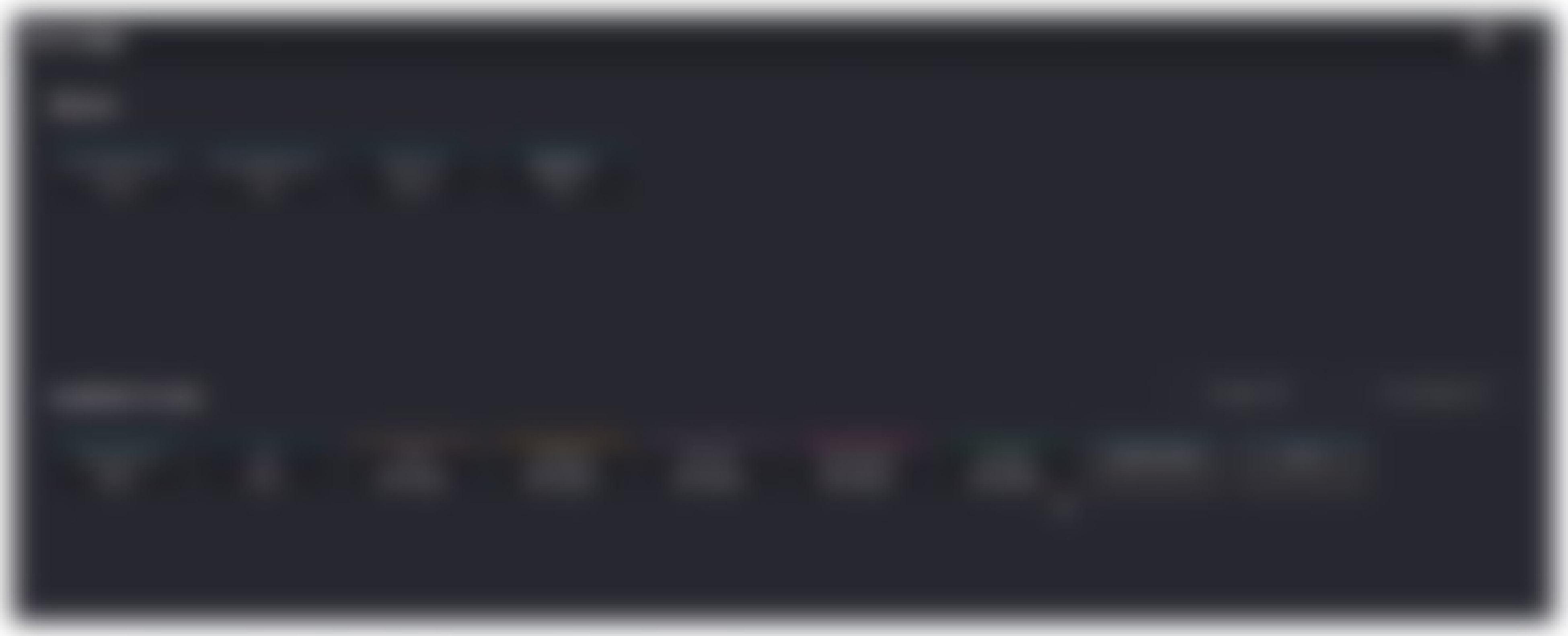


Currently, all the timeline tracks are being routed to Bus 1 Out, as represented by B1s for each track. You now need to route the audio for all the tracks, except the DIALOGUE track, to Bus 2 Out.

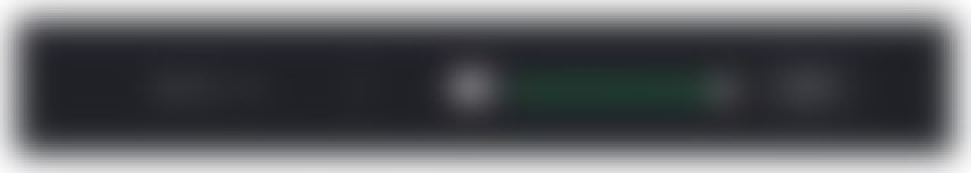
- [illegible] In the Busses section, click the button for B2/M+E Out to make it active.



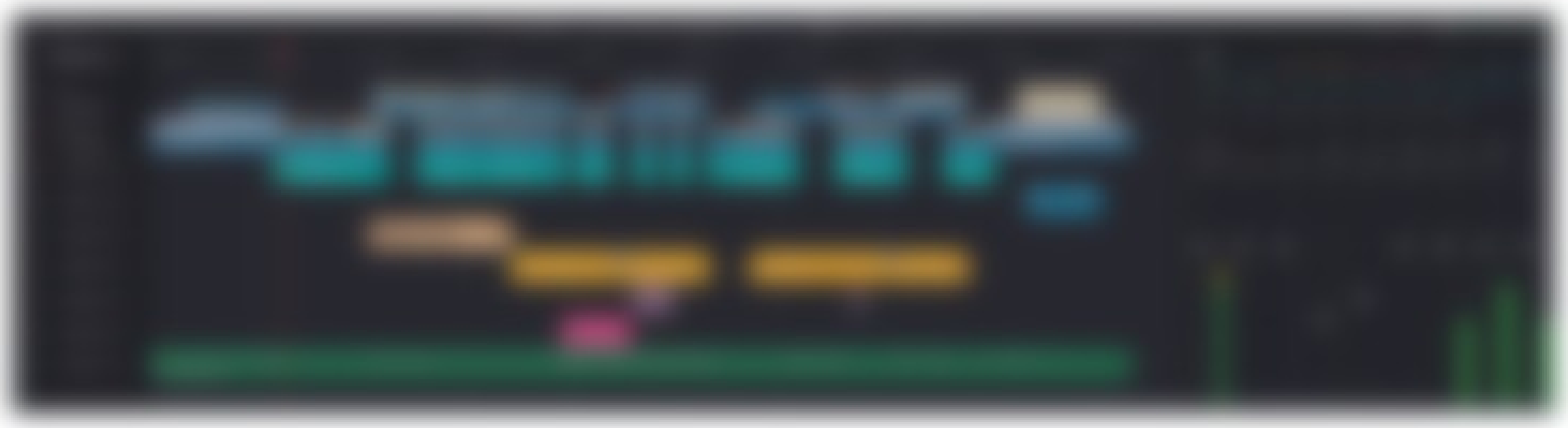
- [illegible] Click the SFX, ATMOS, FOLEY, WHOOSH, and MUSIC tracks to route them to the M+E bus.



- [illegible] Click Close to close the Bus Assign window.
- [illegible] Return your playhead to the start of the timeline and begin playing back.
- [illegible] From the Control Room menu, select the M+E bus.



You will now hear just the music and effects (M&E) tracks from the timeline and no Chris's dialogue on the VO.



- Change the Control Room menu back to MAIN MIX to monitor the full mix once more.
- Close the mixer.

Generating Subtitles

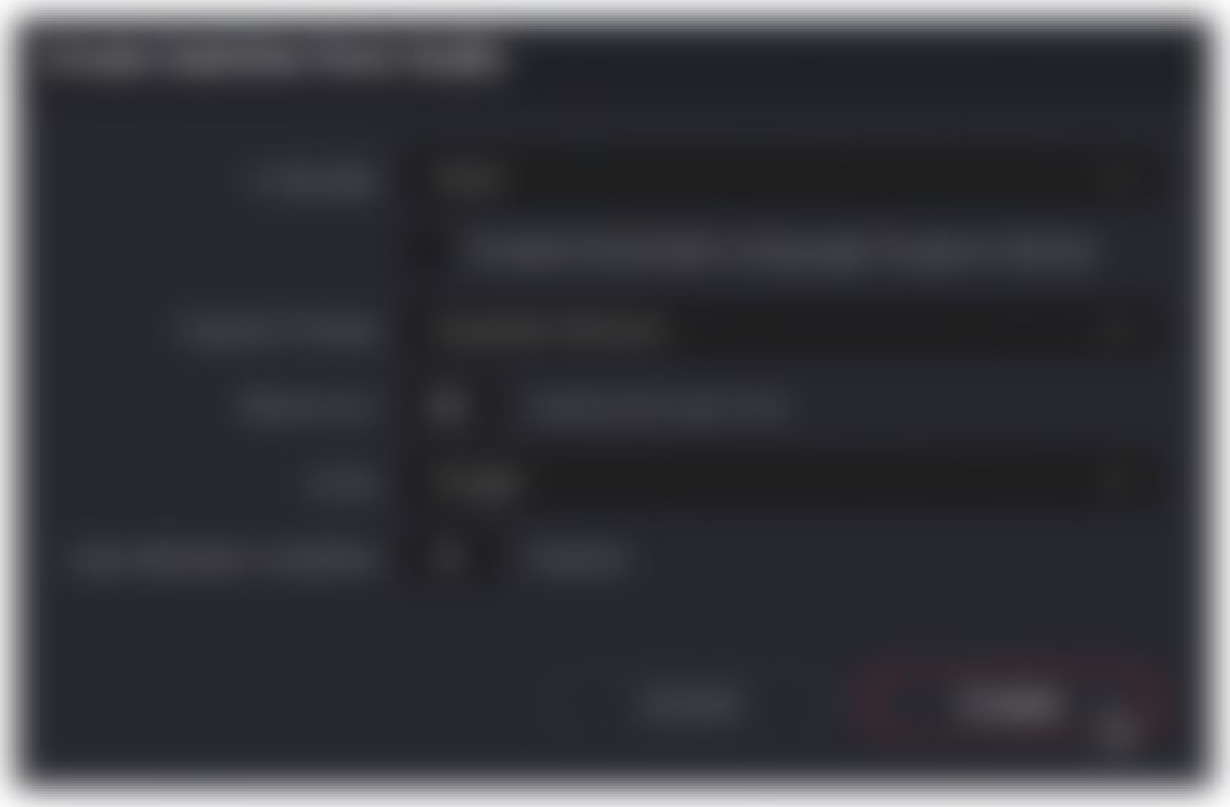
Providing subtitles to accompany your final exported video file is often an important consideration, especially if you want your video to be accessible across different platforms. While you could simply use standard text generators to create onscreen text, these types of titles (often referred to as open captions) cannot be turned off by the viewer. Subtitles, however (referred to as closed captions), can. Alternatively, they allow the user to choose from different language options.

While many video sharing sites can automatically generate subtitles for you, creating them yourself in DaVinci Resolve gives you greater control.

DaVinci Resolve allows you to add subtitles to your timelines in three main ways: you can manually create all your subtitles, import a supported subtitle file, or allow DaVinci Resolve to generate the subtitles for you using AI tools.

1 Choose Timeline > AI Tools > Create Subtitles from Audio.

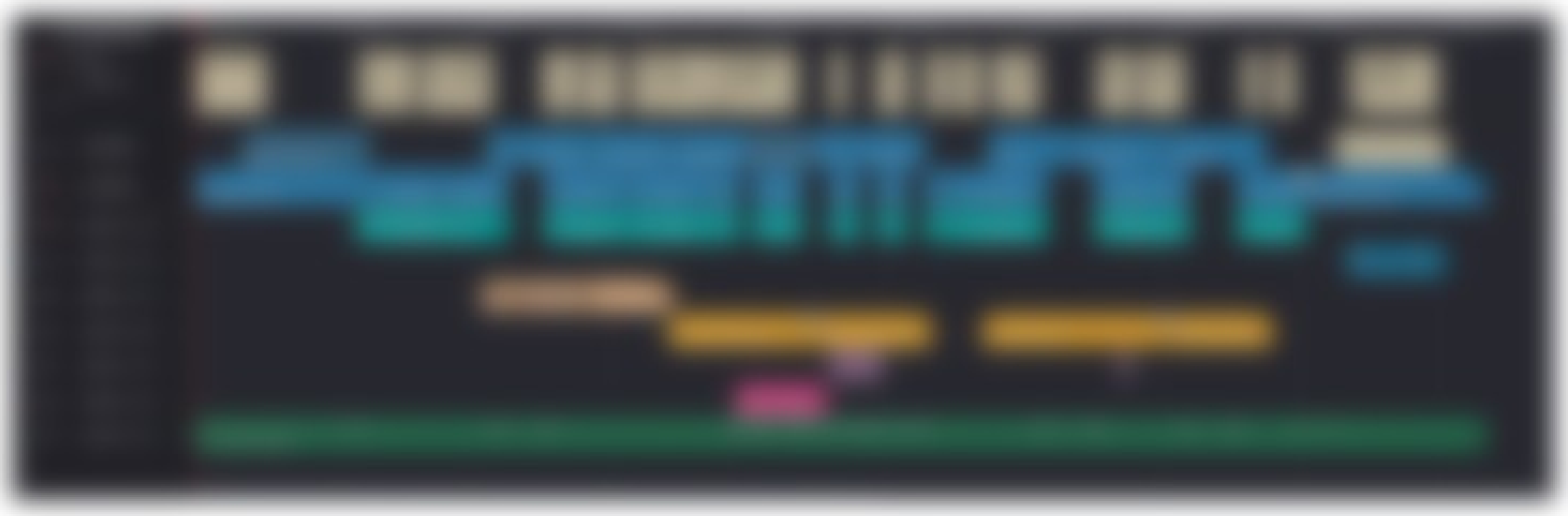
The Create Subtitles from Audio window opens.



NOTE DaVinci Resolve can create subtitles in several languages. If your desired language is not listed in the Language pop-up menu, you can choose to Enable Extended Language Support (in beta at the time of writing), which will download additional supported languages. For more information, including which languages are supported, see the DaVinci Resolve User Manual.

- Leave all the options set to the default and click Create.

  As when generating a transcription, DaVinci Resolve analyzes the audio in the current timeline and automatically generates a series of subtitles in a dedicated Subtitle track in the timeline.

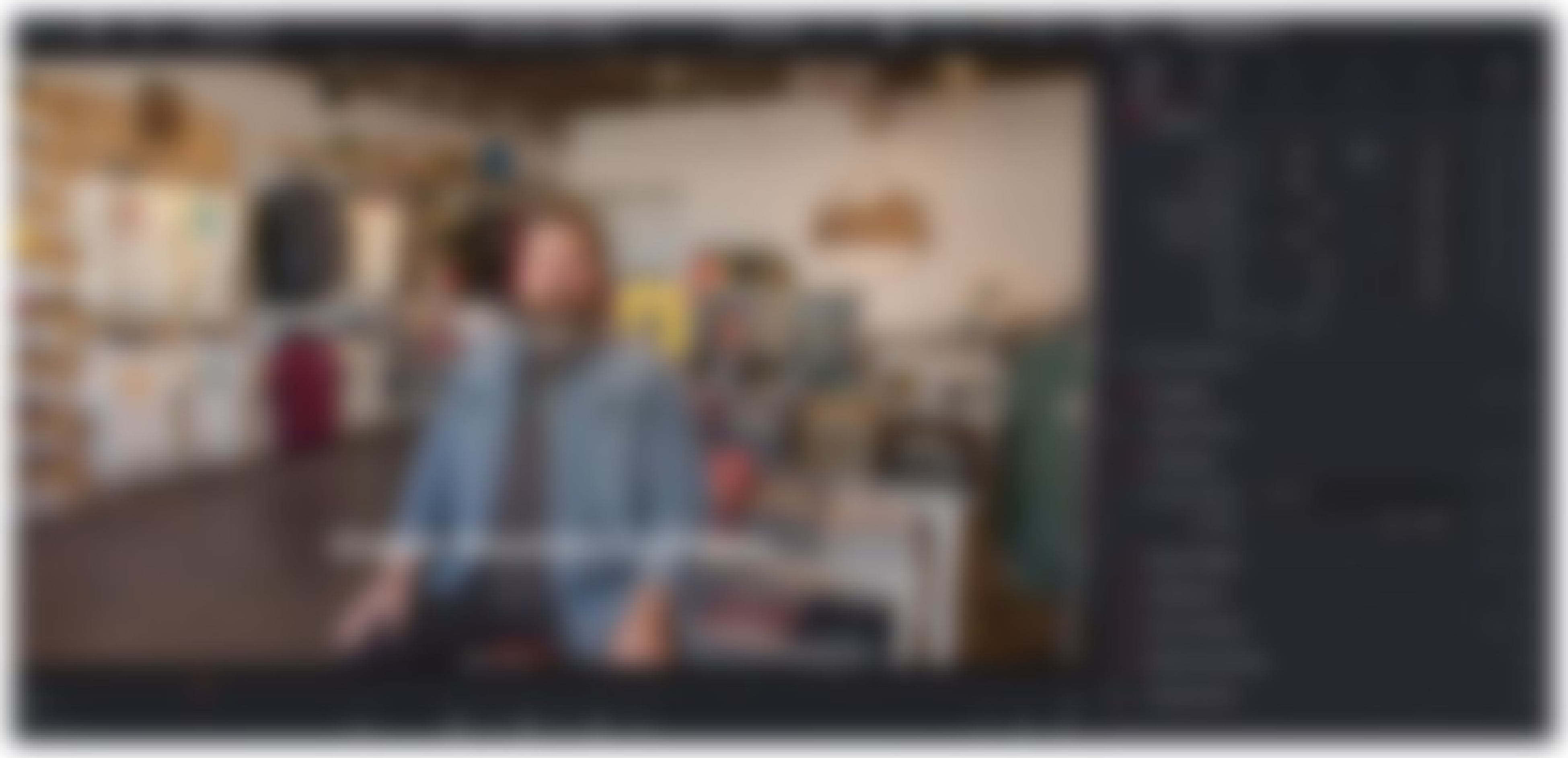


- Play back the timeline to review the generated subtitles.

> **NOTE** You can import a version of this timeline with the auto-generated subtitles by selecting the TIMELINES bin and choosing File > Import > Timeline, navigating to [illegible], selecting [illegible], and clicking Open.

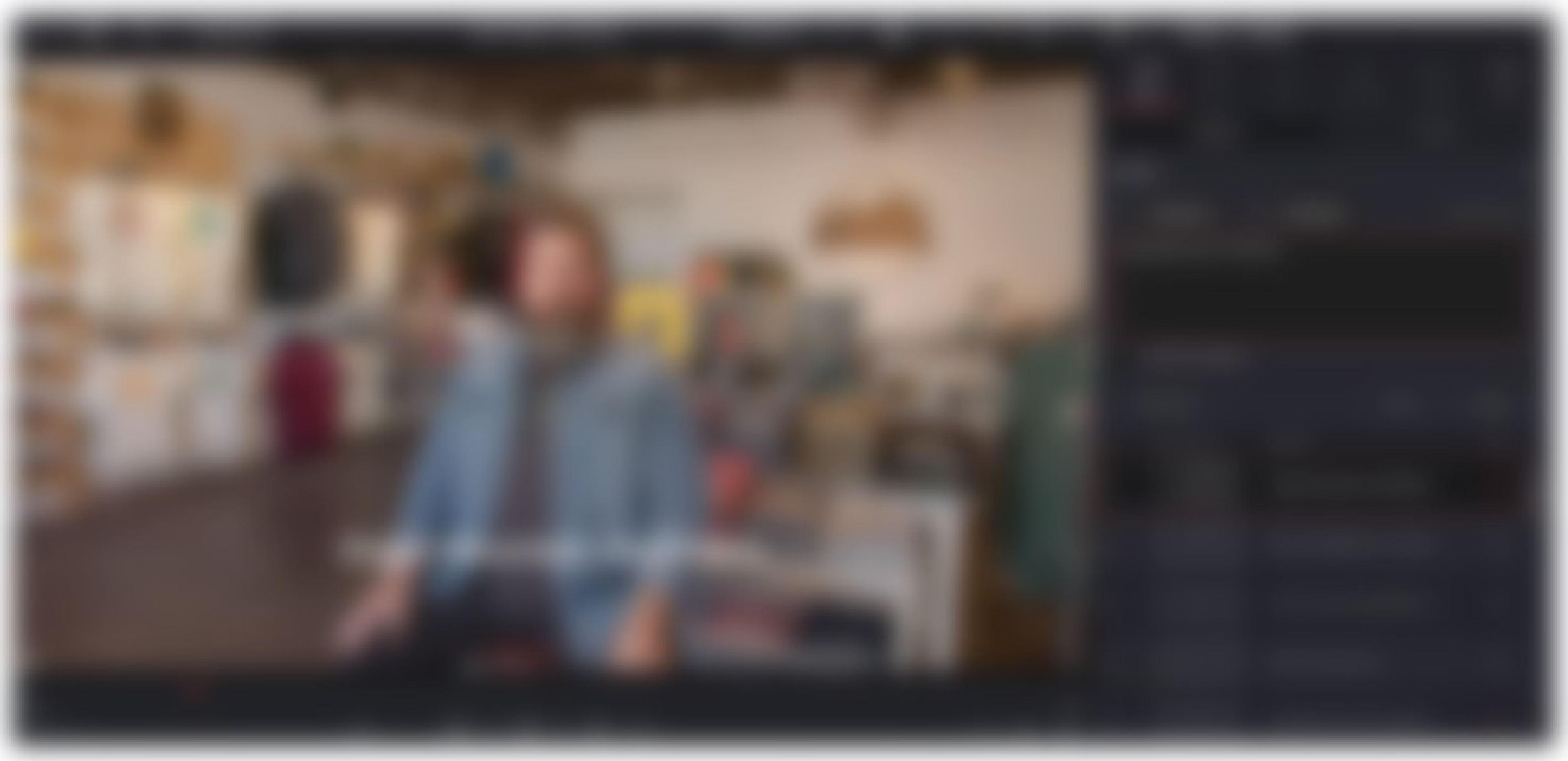
As with the Transcription feature you explored in Lesson [illegible], DaVinci Resolve has done a pretty good job of generating the subtitles. However, just as with the Transcription feature, it's not always perfect.

- In the timeline, place the playhead over the fourth subtitle clip.



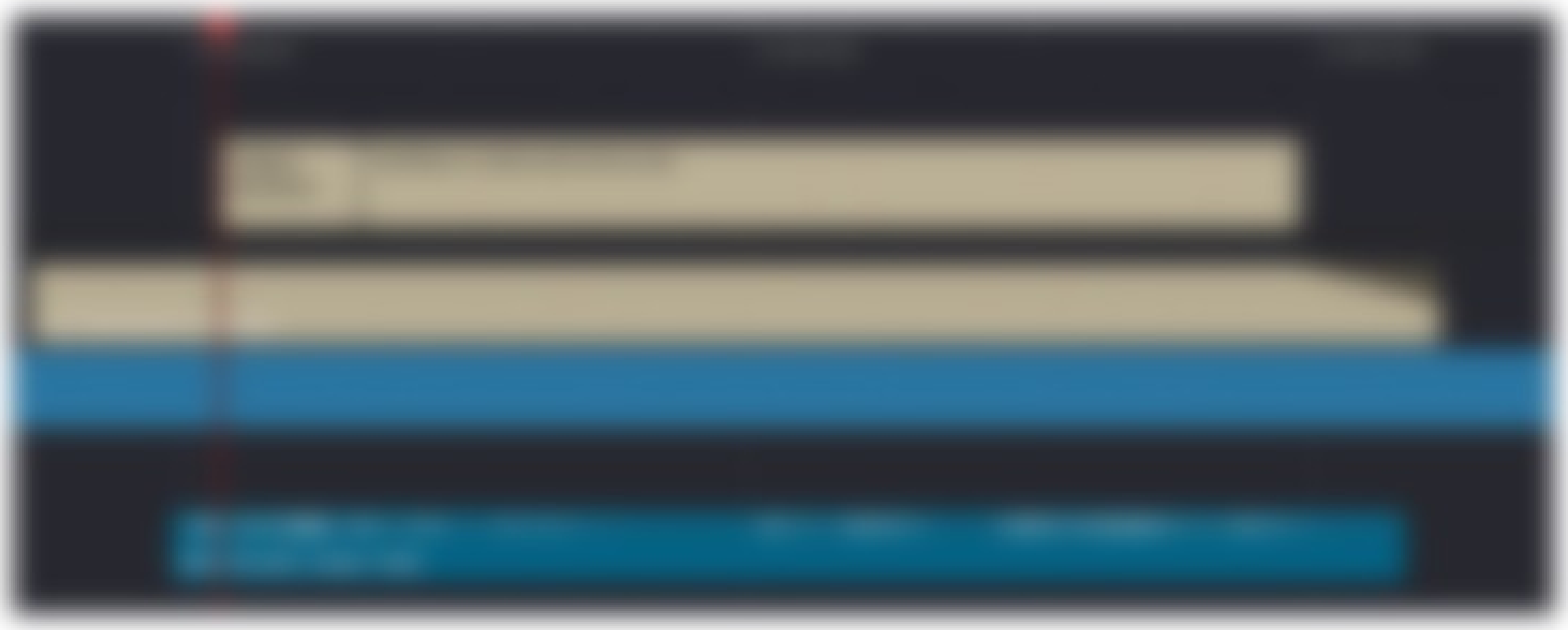
You can see that the subtitle reads "Oregon Mountain Outfitters."

- Select the subtitle clip in the timeline and, in the Inspector, change the text to **Organ Mountain Outfitters**.



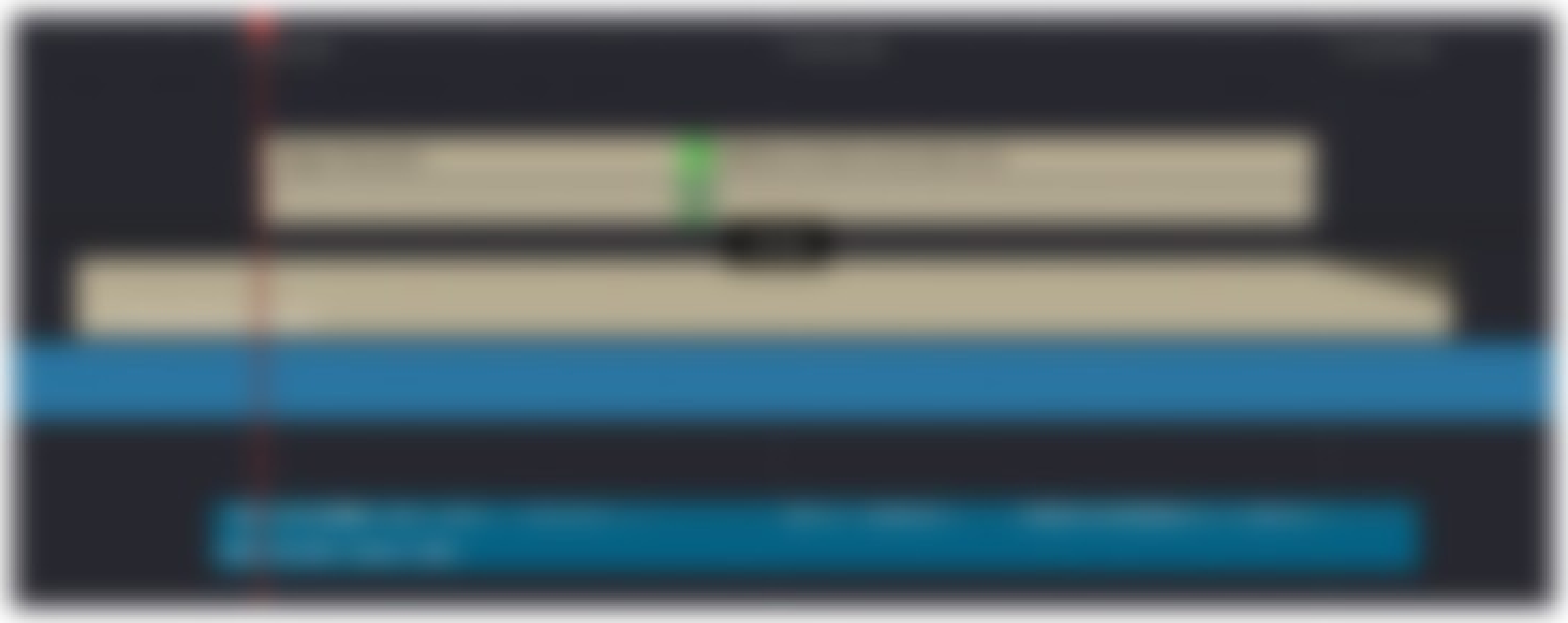
You can adjust the subtitle clips just like any other clips in the timeline.

- Move the playhead over the subtitles for the VO at the end of the timeline and click the Detail Zoom button.

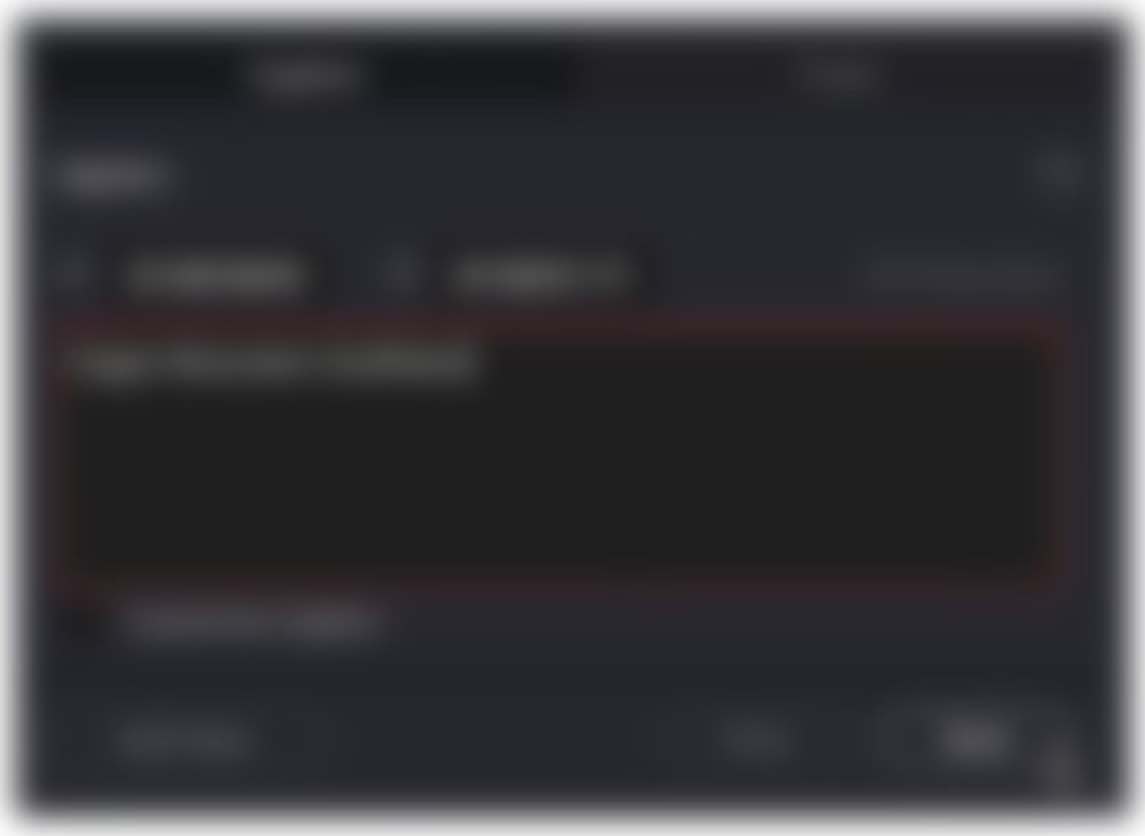


Note: the timing of the transcription could use a little adjustment.

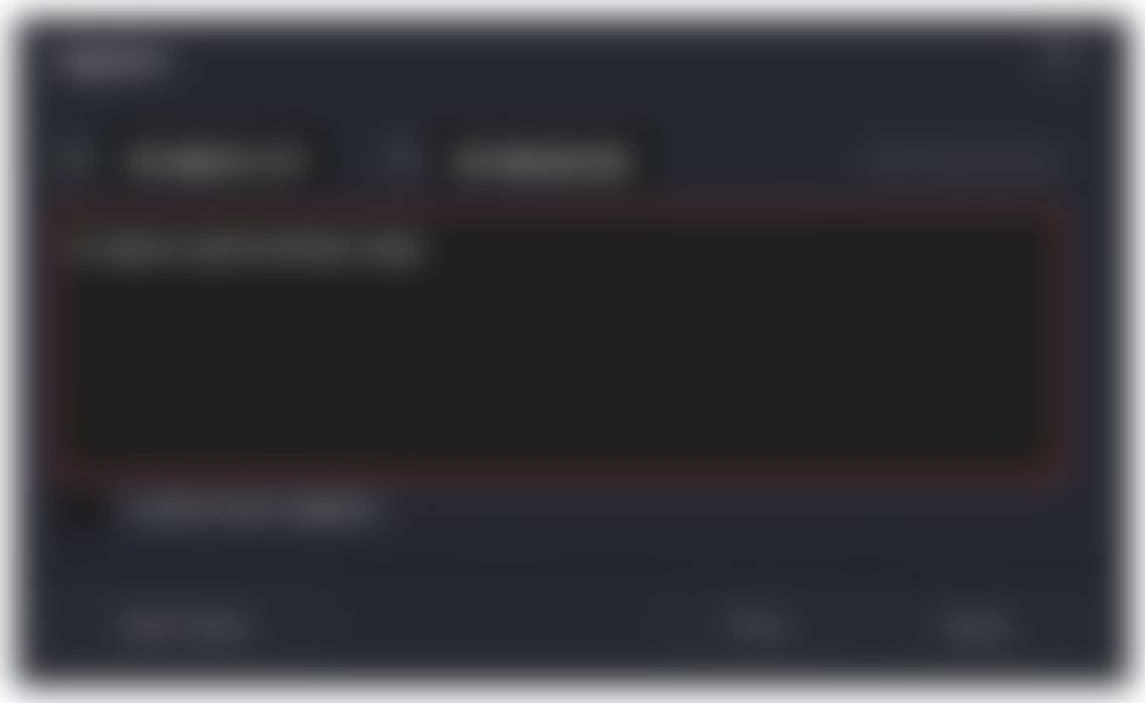
- Start by rolling the edit between the two subtitle clips forward by about a second (+01:00 on the overlay).



- Select the first of the two subtitles and, in the Inspector, change the text to **Organ Mountain Outfitters,** instead of just "Oregon Mountain."



- In the Inspector, click the Next button to automatically select the next subtitle and remove the now redundant "Outfitters" from the subtitle. (Don't forget to include the comma and the space after "Outfitters"!)



- This updates the timing of the subtitles in the timeline, although you should continue checking the subtitles for accuracy and timing before moving to the next steps.

TIP You can add your own subtitles manually by right-clicking in the Subtitle track and choosing Add Subtitle. New subtitles added this way will be added at the playhead position in the timeline. Alternatively, you can use the Subtitle title generator from the Effects Library. For more information on creating subtitles manually, see the DaVinci Resolve Manual.

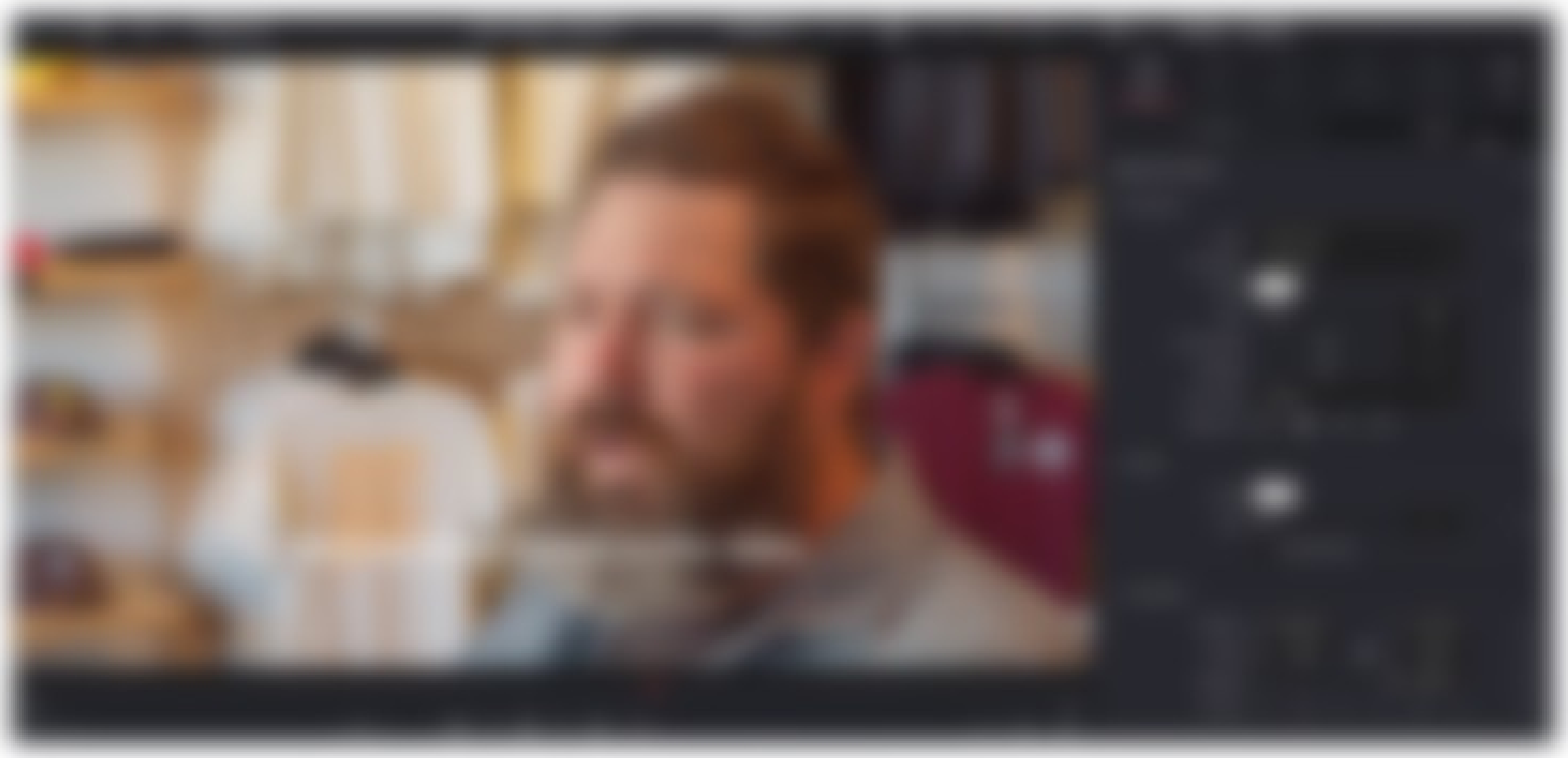
NOTE You can import a version of this timeline with the adjusted subtitles by selecting the TIMELINES bin and choosing File > Import > Timeline, navigating to [illegible] Editors Guide / Lesson [illegible] / Timelines, selecting [illegible] and clicking Open.

Styling Subtitles

Just as with any other title in Resolve, subtitles have many parameters that allow you to adjust the style and position of your captions. These can be made across the entire subtitle track for consistency or to individual subtitles.

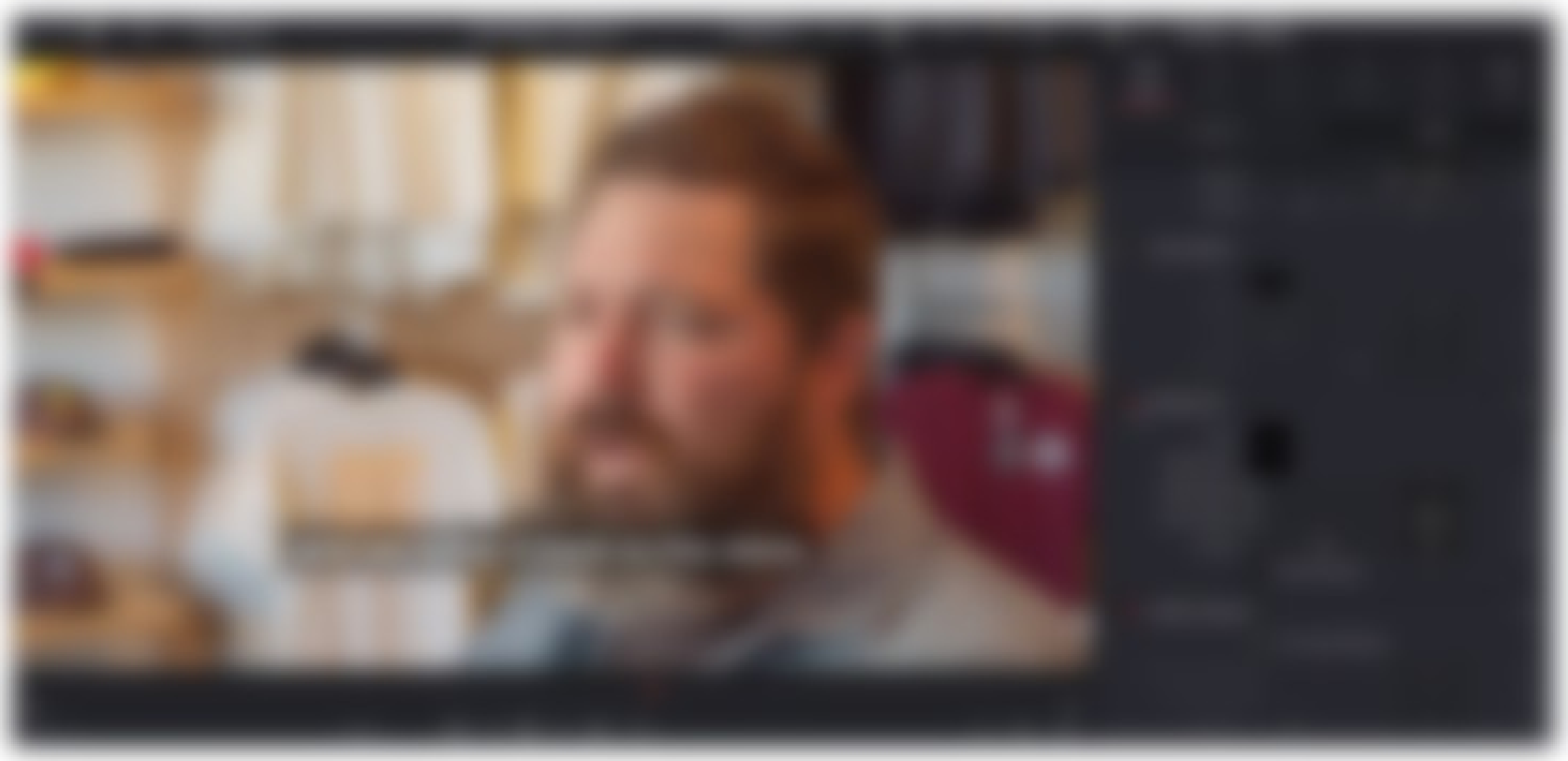
One common style applied to subtitles is a semitransparent box that helps the text stand out against the picture it's displayed over.

- In the timeline, select any of the subtitles and click the Track tab in the Inspector.



As it suggests, changes made in these controls affect all the subtitles along the same subtitle track in the timeline.

- Enable the Background controls for all the subtitles along the Subtitle track.

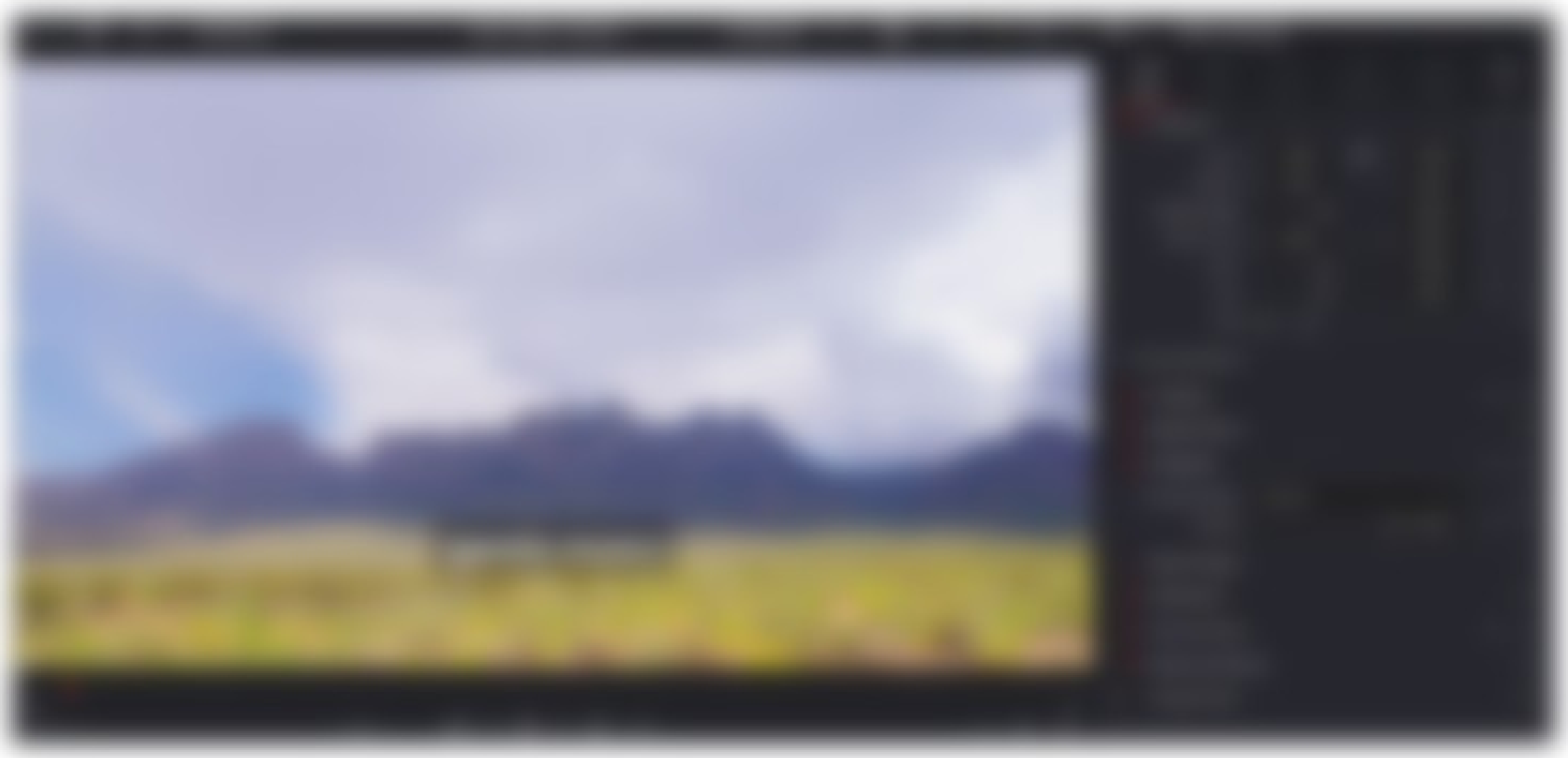


A semi-transparent box appears around the subtitle in the timeline viewer, helping to make the text easier to read.

Because you made this change in the Track tab, all the subtitles in the Subtitle track now have the same type of background applied. This means that you can adjust any of the track controls and know that the change will be applied to all the subtitles along the same track for consistency.

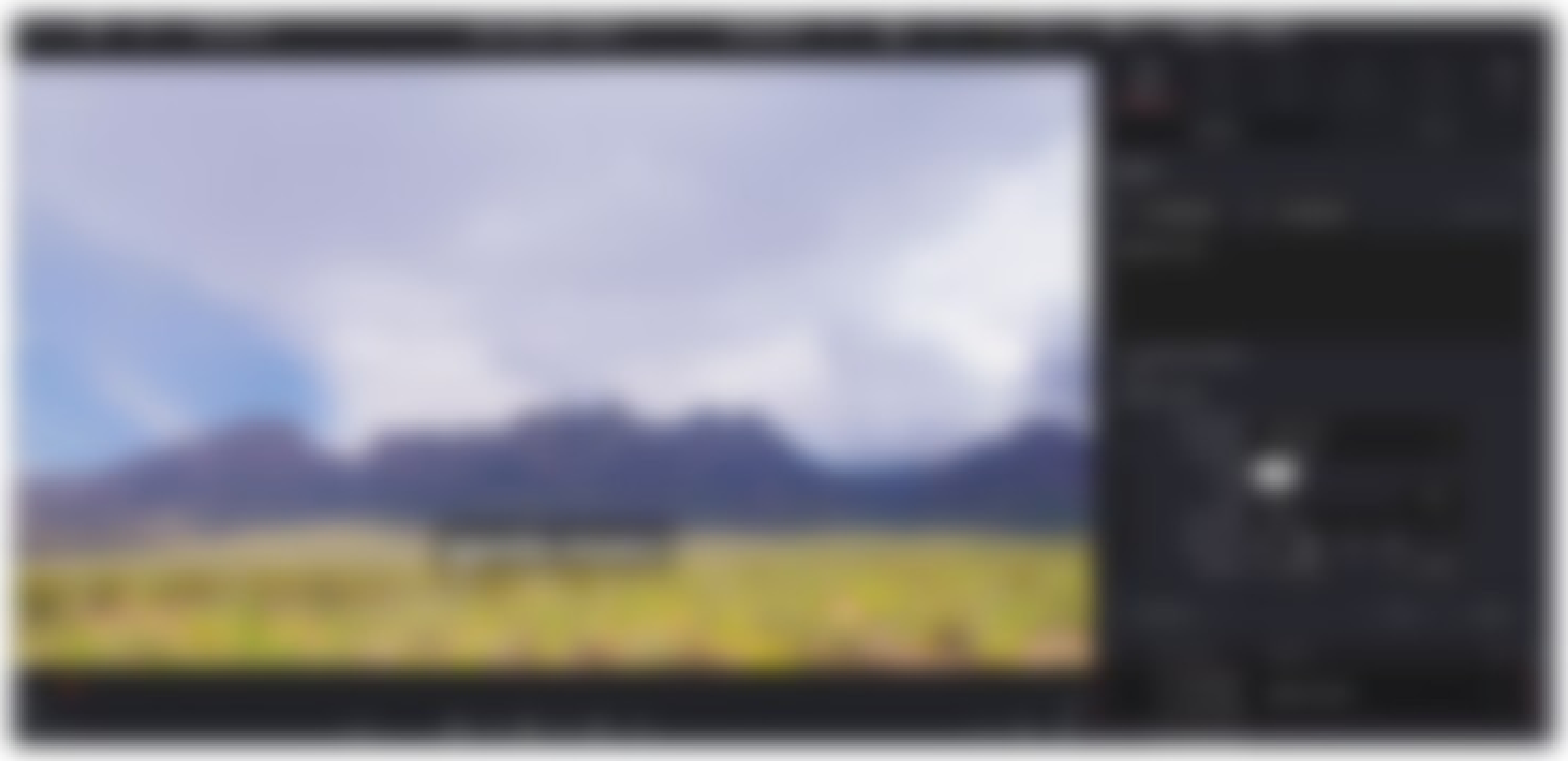
However, there are times when it may be necessary to adjust the controls of individual subtitles to adjust their font, color, or position, such as with the first subtitle in this track.

- Move the timeline playhead over the first subtitle.



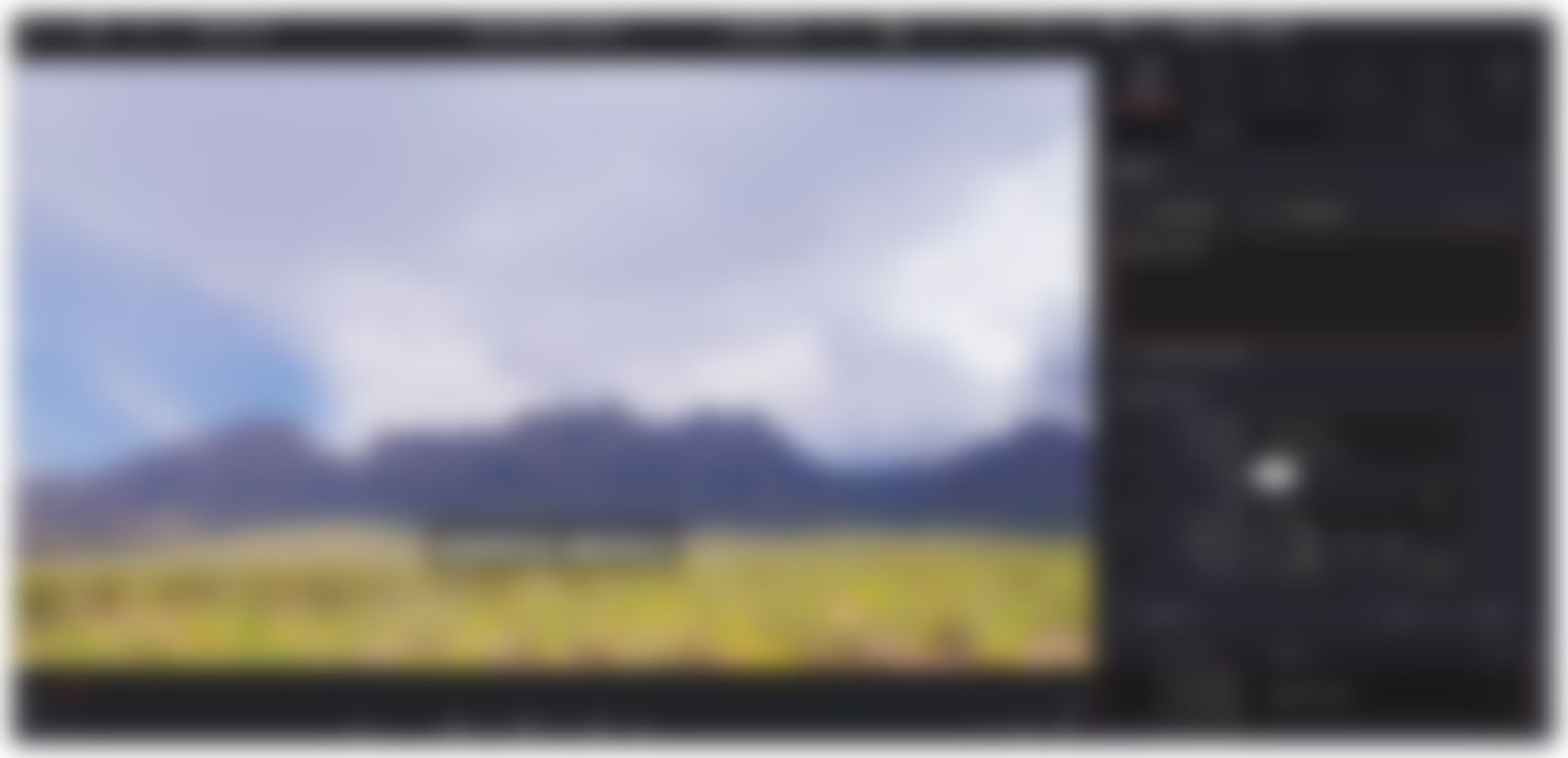
Since this subtitle indicates audio that's not spoken, you might want to apply a slightly different style to differentiate it from captions for dialogue.

- Select the first subtitle clip in the timeline.
- In the Inspector, select the Caption tab and enable the Customize Caption option in the caption controls.



A new set of Caption Style settings appears, which will be applied only to the selected caption.

- Change the Font Face to SemiBold Italic and the Font Case to All Caps to distinguish this caption from the other dialogue captions.



Since the Customize Caption option was enabled for this subtitle, the changes have not been applied to other subtitles in the Subtitle track.

Using Subtitle Regions

Instead of customizing individual subtitles, you can set subtitle regions. Each subtitle track can have up to four regions, with each region having its own style. Moving a subtitle from one region to another instantly updates the subtitle to that region's settings.

To create a new region, right-click anywhere along the subtitle track and choose Add Subtitle Region. Move subtitles into the region by dragging them up or down in the subtitle track.

Subtitle regions are supported only by .imsc and .dfxp subtitle files. Make sure those file types are supported by your destination of choice before submitting your video file with subtitles.

Importing Subtitles

Instead of generating your subtitles within DaVinci Resolve, you can import a supported subtitle file and add it directly to your timeline. DaVinci Resolve supports the importing and exporting of .srt, .vtt, .xml (IMSC1), and .dfxp subtitle files.

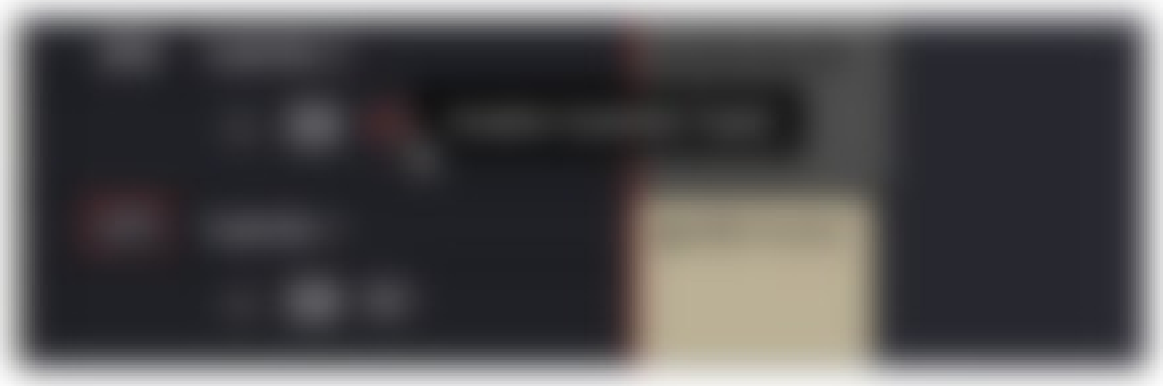
NOTE You can export subtitles from DaVinci Resolve by right-clicking the subtitle track header in the timeline and choosing Export Subtitle. You can also export the subtitles along with the timeline (see below).

1. In the media pool, select the SUBTITLES bin.
2. Choose File > Import > Subtitle.
3. Navigate to R20 Editor's Guide > Lesson 09 > SUBTITLES, select the [illegible] file, and click Open.

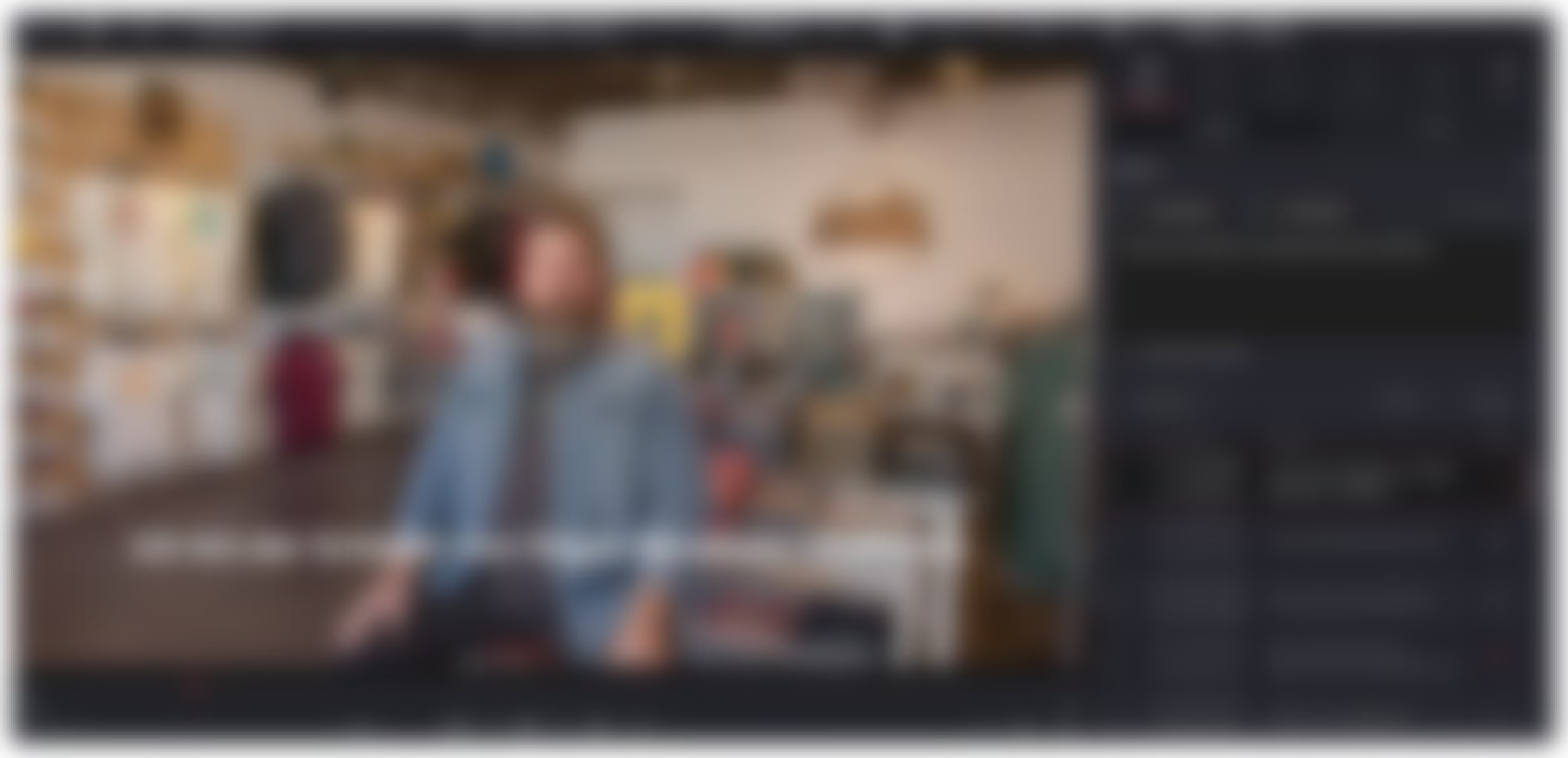
   The subtitle file is imported into the bin.

4. Drag the [illegible] subtitle into the timeline, aligning it with the start of the timeline and above the existing subtitle track, to add these subtitles to a new subtitle track called Subtitle 2.

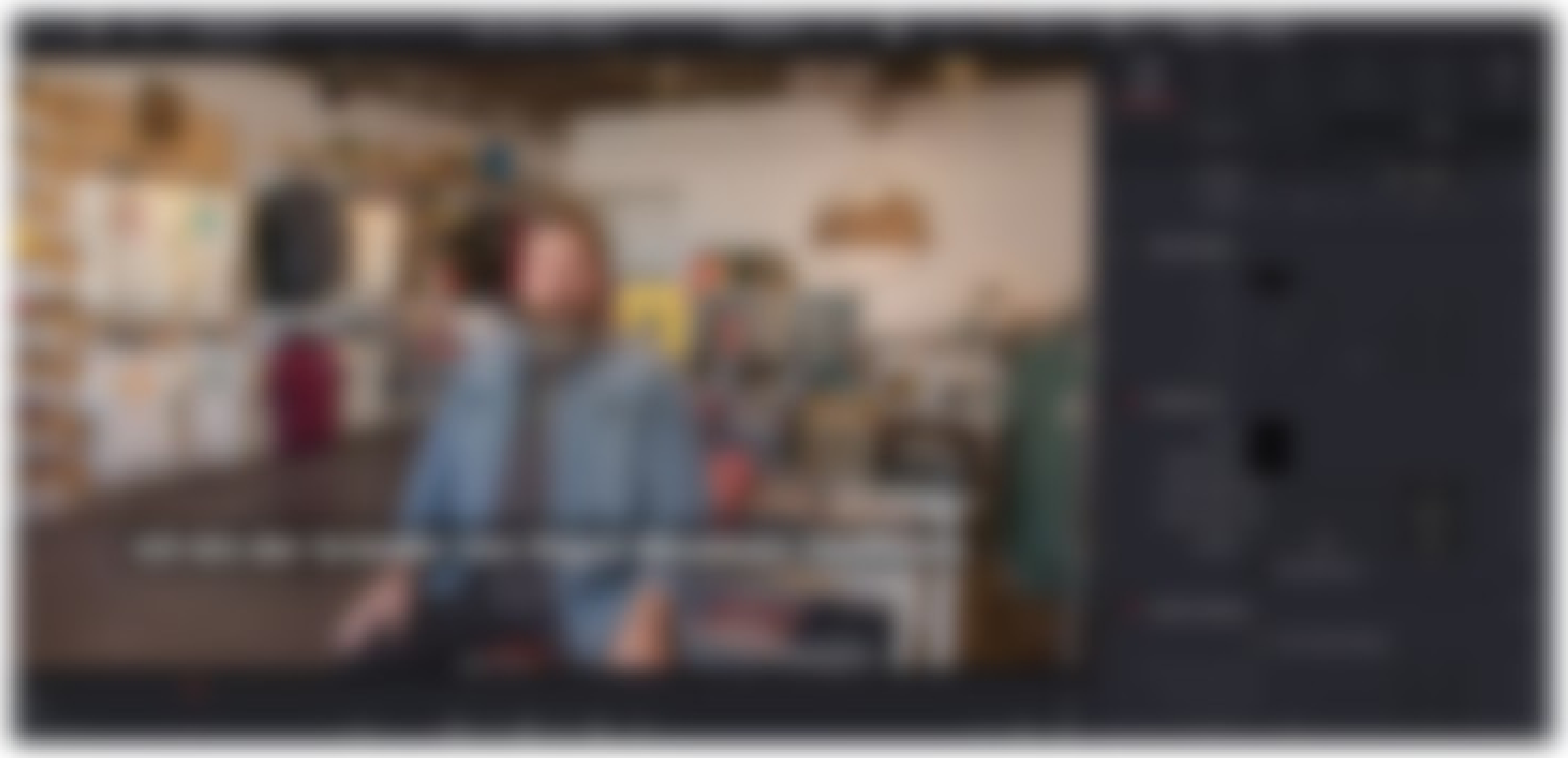
- Click the Enable Subtitle Track button for Subtitle 2.



These subtitles are in German.

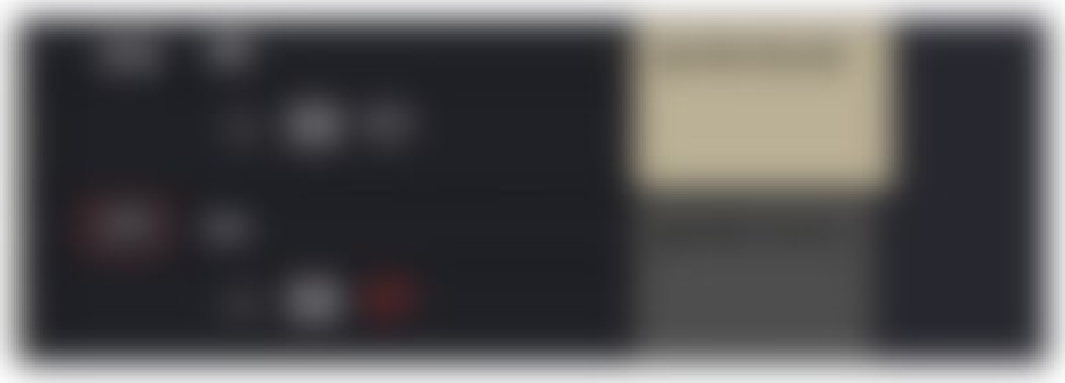


- Select any of the new subtitles and, in the Track tab in the Inspector, enable the Background option.



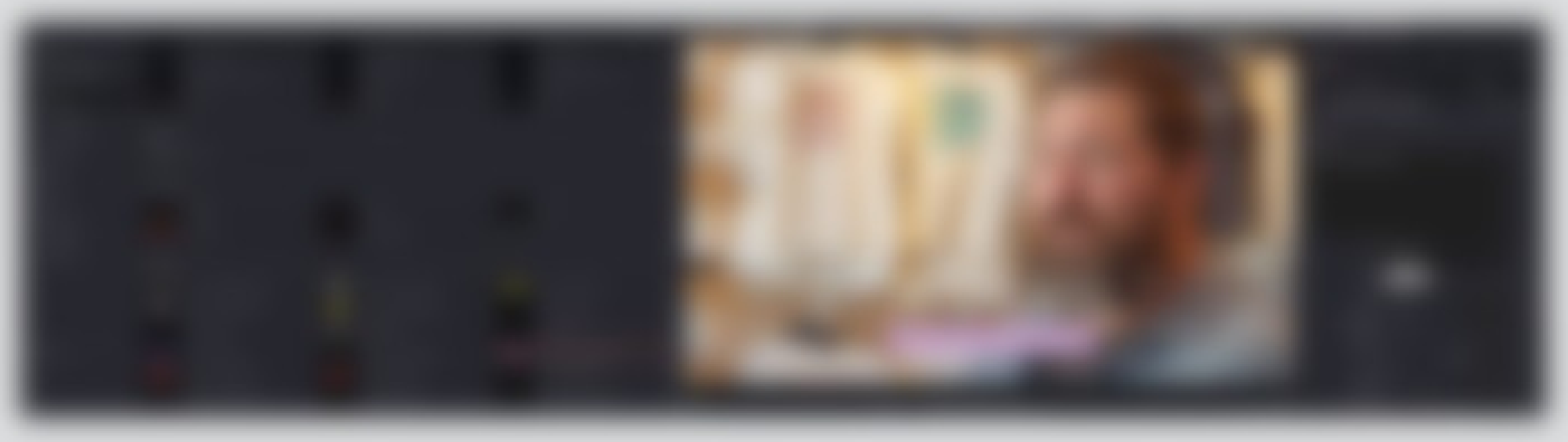
You can also rename the subtitle tracks to make it easier to identify which language the subtitles are in.

- Rename Subtitle 1 [illegible] and Subtitle 2 [illegible] to denote the different languages.

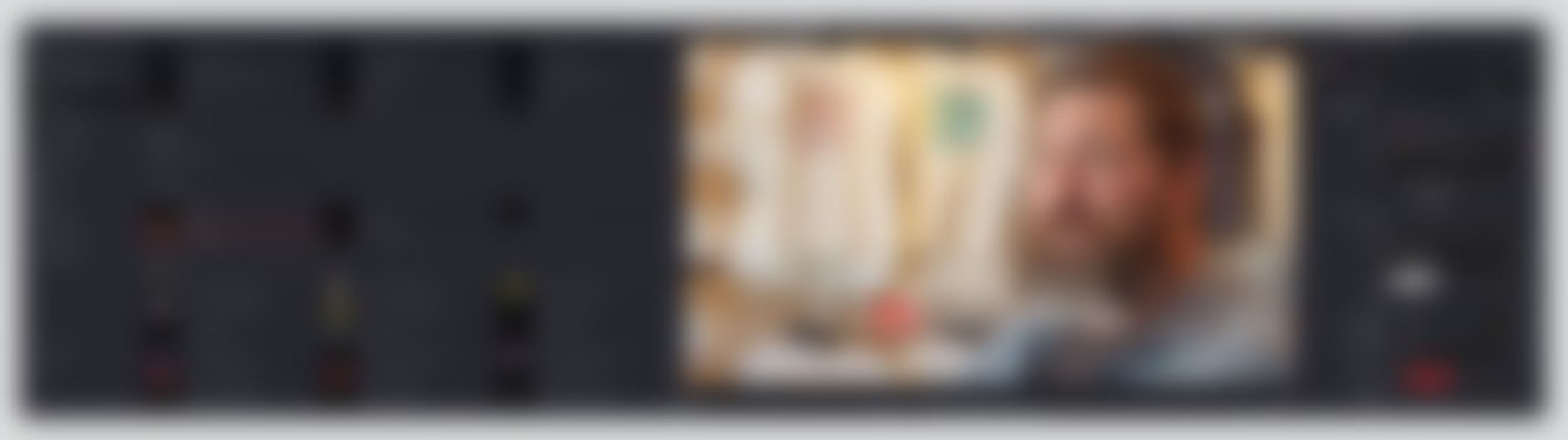


Fusion Templates for Subtitles and AI-Animated Subtitles (Studio Only)

If you prefer your subtitles to have more visual impact, you can style the subtitle track using a Fusion template instead. Simply drag your chosen Fusion title template to the subtitle track header to apply the style. Once the style is applied, select a subtitle and use the Fusion tab in the Inspector to adjust the settings. A set of specially designed subtitle styles is also available in the Subtitles section of the Titles category in the Effects Library.



There is also a set of Animated subtitle styles that, when used in conjunction with subtitles generated using DaVinci Resolve Studio's transcription features, allow you to easily create animated subtitles that closely match the spoken words.



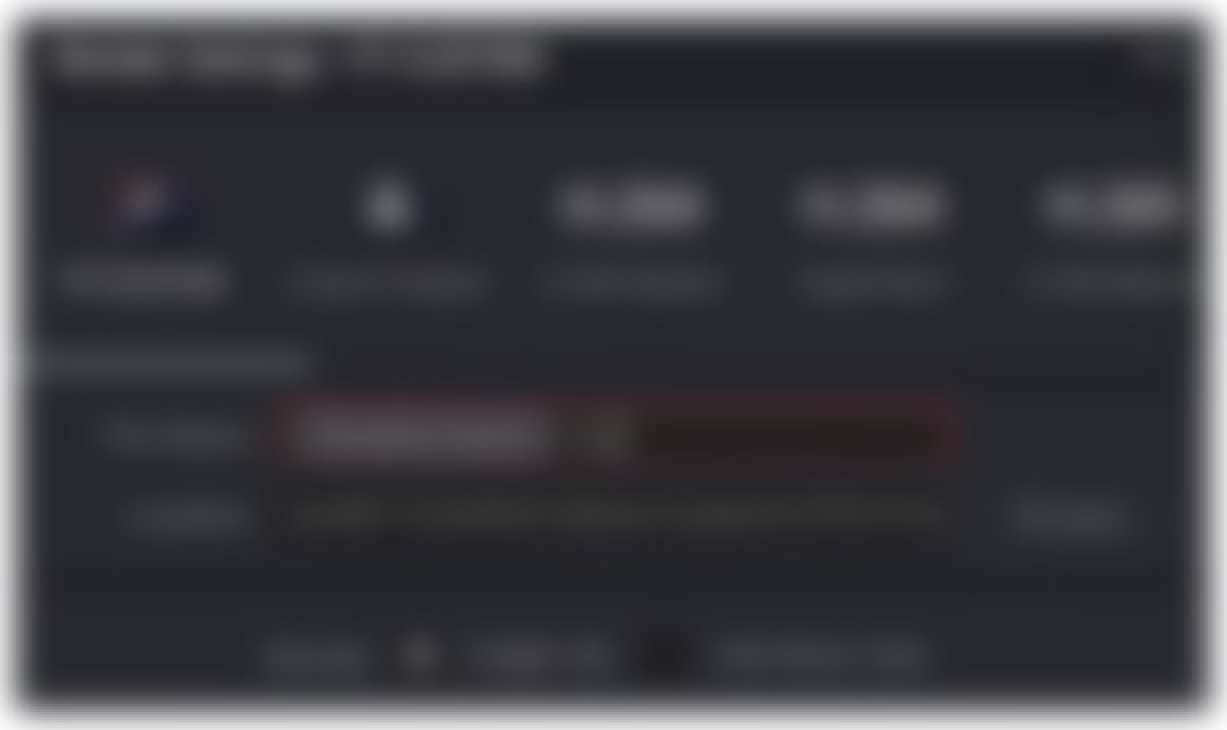
Subtitles styled in this way are useful for social media content. However, to retain the styling, they should be exported as burned in open captions (see below).

NOTE You can import a completed version of this timeline with multiple subtitle tracks by selecting the TIMELINES bin and choosing File > Import > Timeline, navigating to R20 Editors Guide / Lesson 05 / Timelines, selecting [illegible] and clicking Open.

Customizing Deliver Page Presets

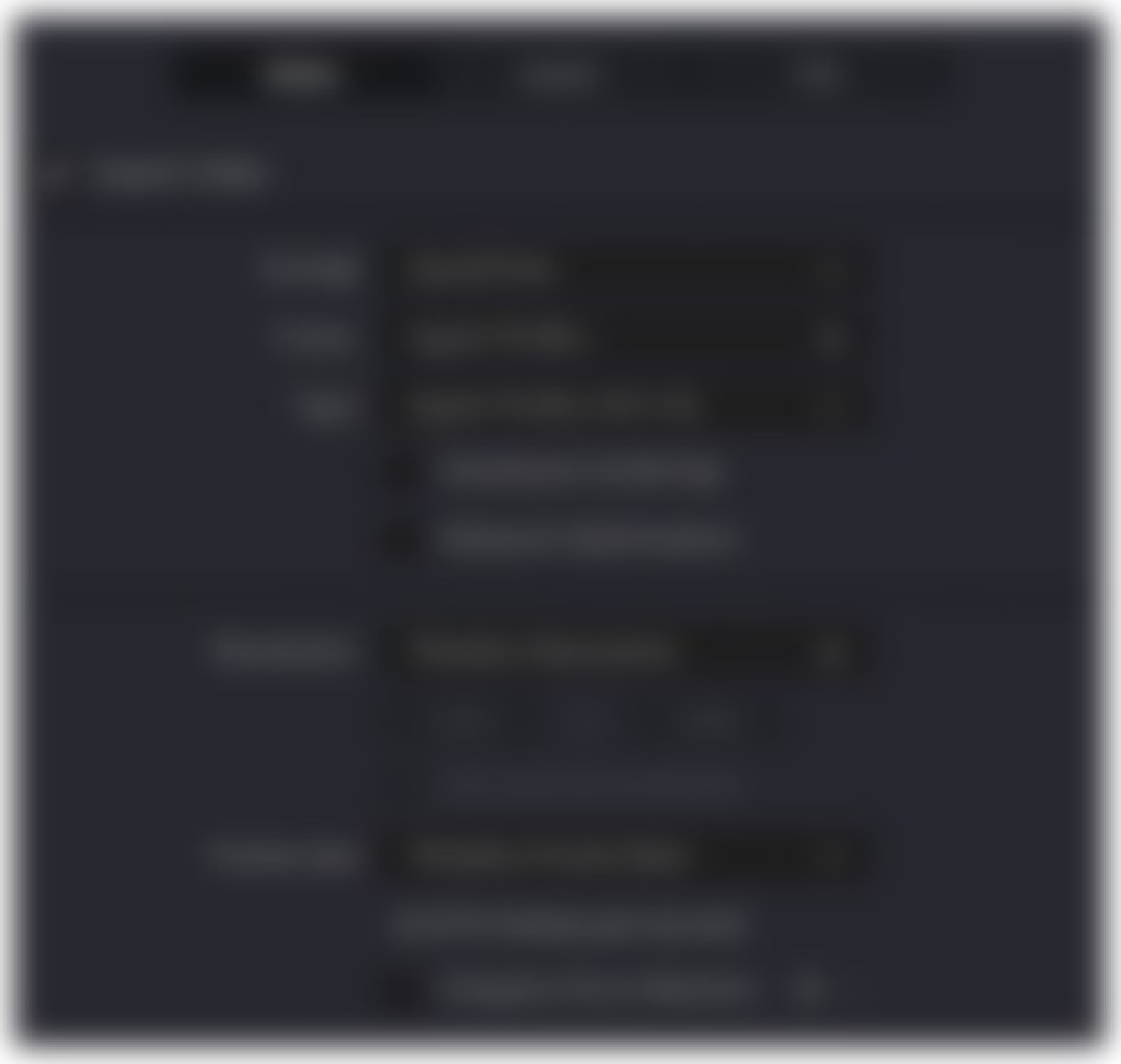
Now that you have created an IMF bus and created the appropriate subtitles, you can create the final master files for this timeline by further customizing the delivery presets.

- Press Shift-8 to switch to the deliver page.
- In the File Name field, add **HQ** to the end of the Timeline Name variable and change the location to R20 Editors Guide / OUTPUT / HQ.

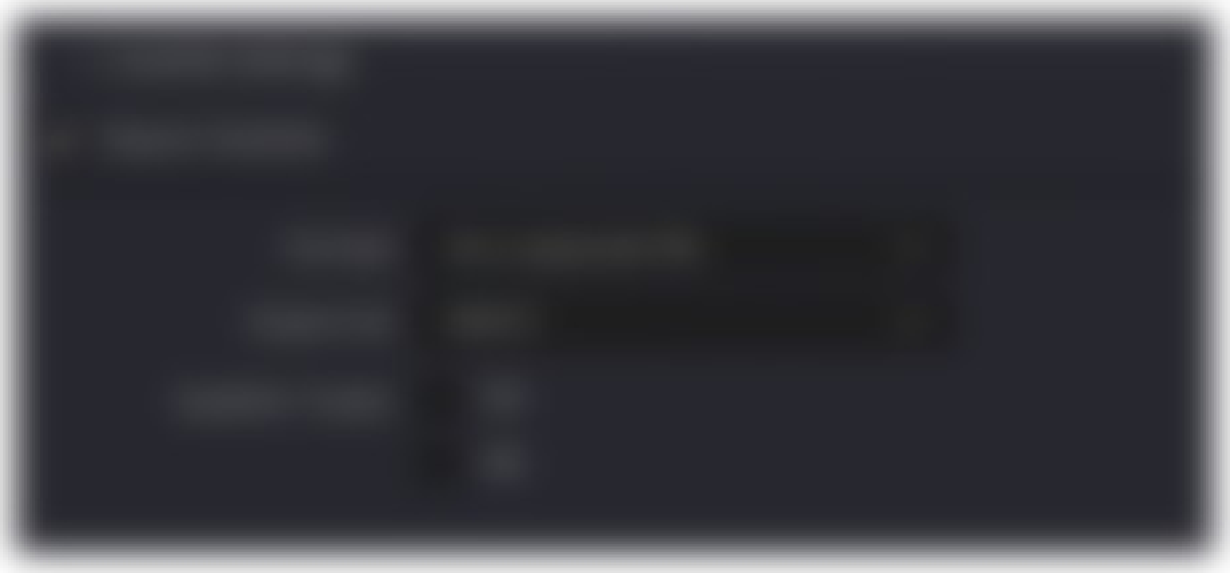


- In the Video settings, ensure the Format is set to QuickTime, the Codec to Apple ProRes, and the Type to Apple ProRes 422 HQ.

- Ensure the Resolution and Frame Rate options are set to Timeline Resolution and Timeline Frame Rate, respectively.



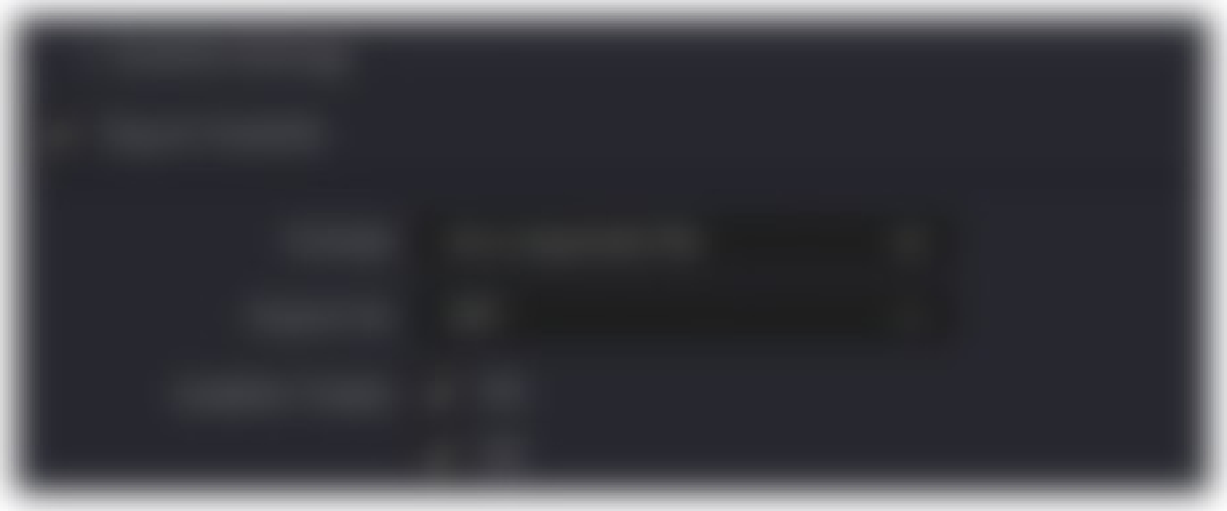
- Open the Subtitle Settings to reveal the controls, and select the Export Subtitle option.



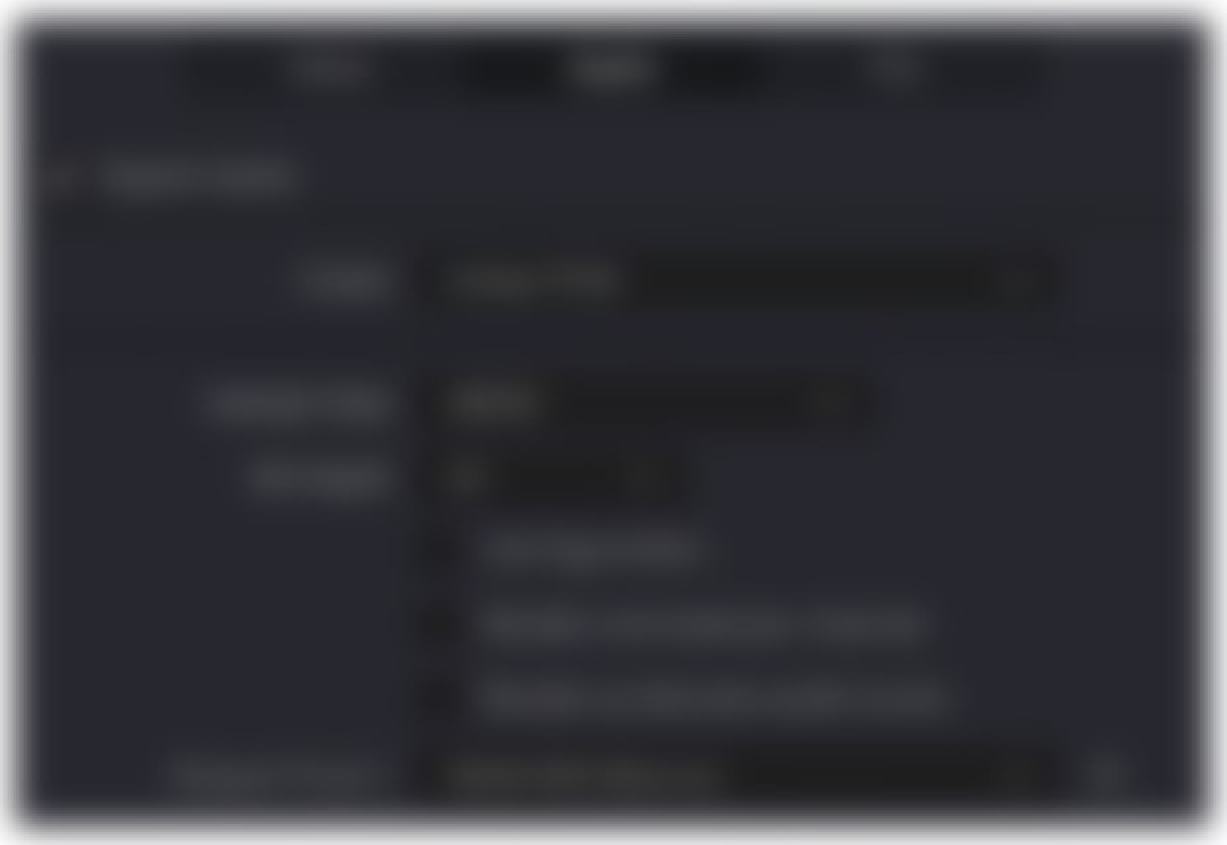
There are three options for exporting your subtitles:

- **As a separate file** will export each subtitle track you select as a separate file using the format specified by the Export As pop-up. A set of checkboxes lets you choose which subtitle tracks to output.
- **As embedded captions** will output the currently active subtitle track as an embedded metadata layer within those media formats that support it. Currently, DaVinci Resolve supports CEA608 and text captions within MXF OP1A and QuickTime containers.
- **Burn into video** will burn the currently active subtitles (with their styles) into the final rendered video file so the subtitles will be permanently included as part of the video content (open captions). You should choose this option if you want to export to burned-in subtitles or other caption options as part of your video clips directly.

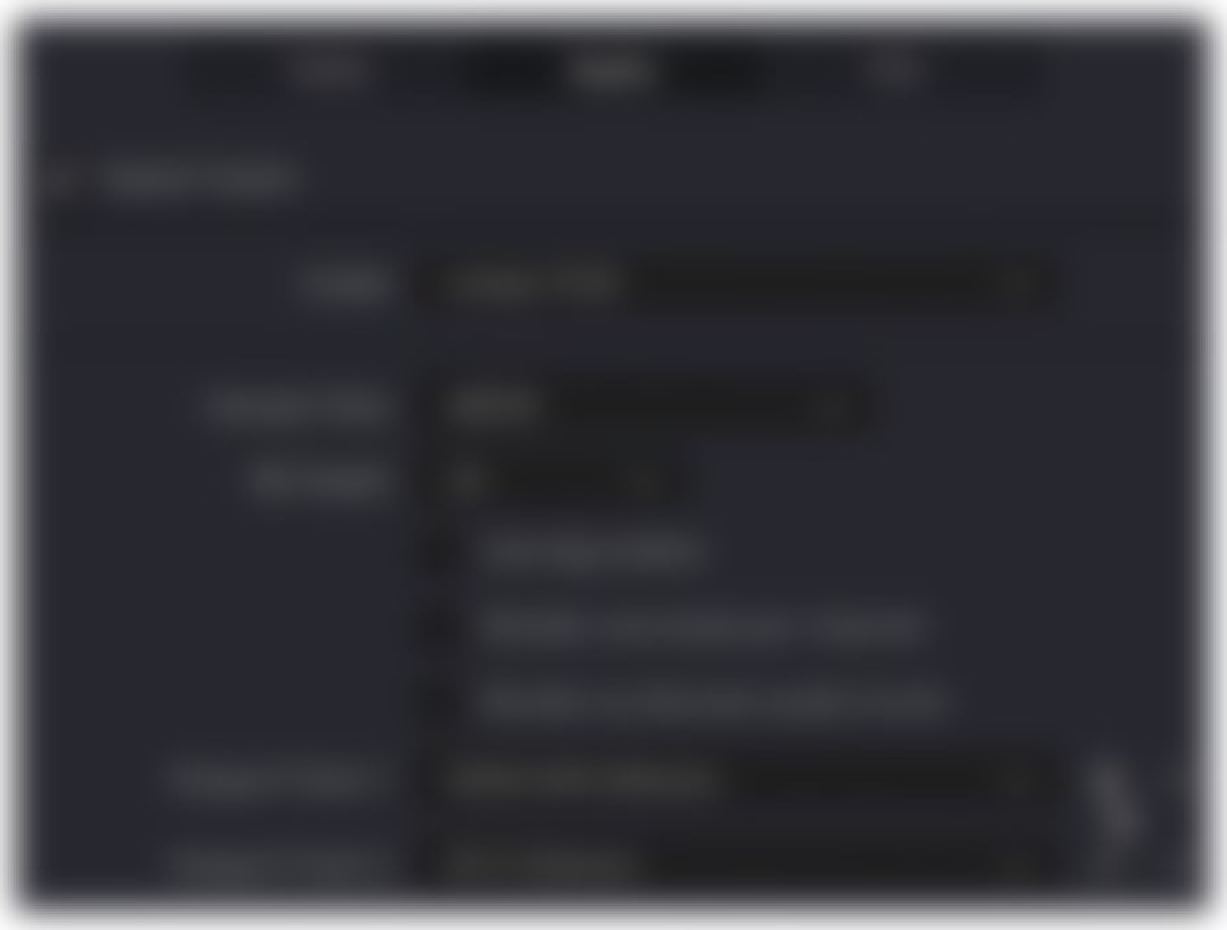
- Ensure that the Format menu is set to "As a separate file."
- In the Export As menu, choose SRT and select the options for the EN and DE subtitle tracks.



- Click the Audio settings tab.
- Set the Codec to Linear PCM, the Sample Rate to 48000 (48kHz), the Bit Depth to 24, and uncheck "Render one track per channel."

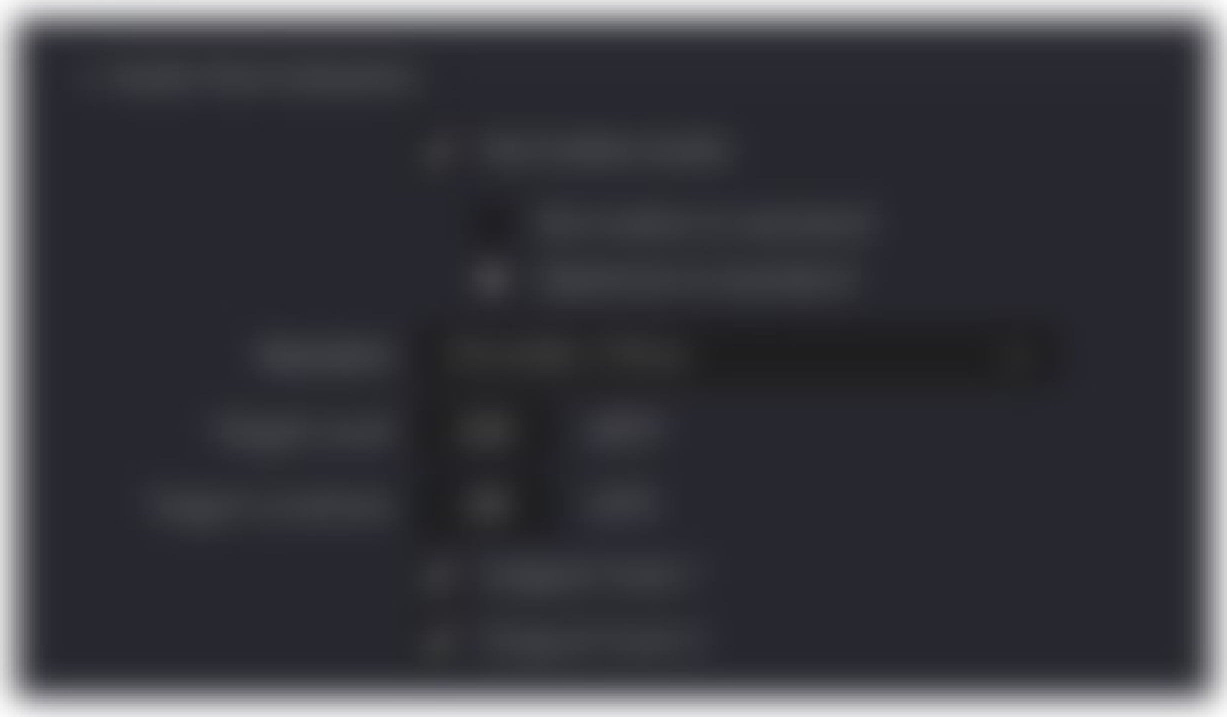


- Click the + button next to Output Track 1 to add an additional output track and ensure that Output Track 2 is set to the M+E bus.



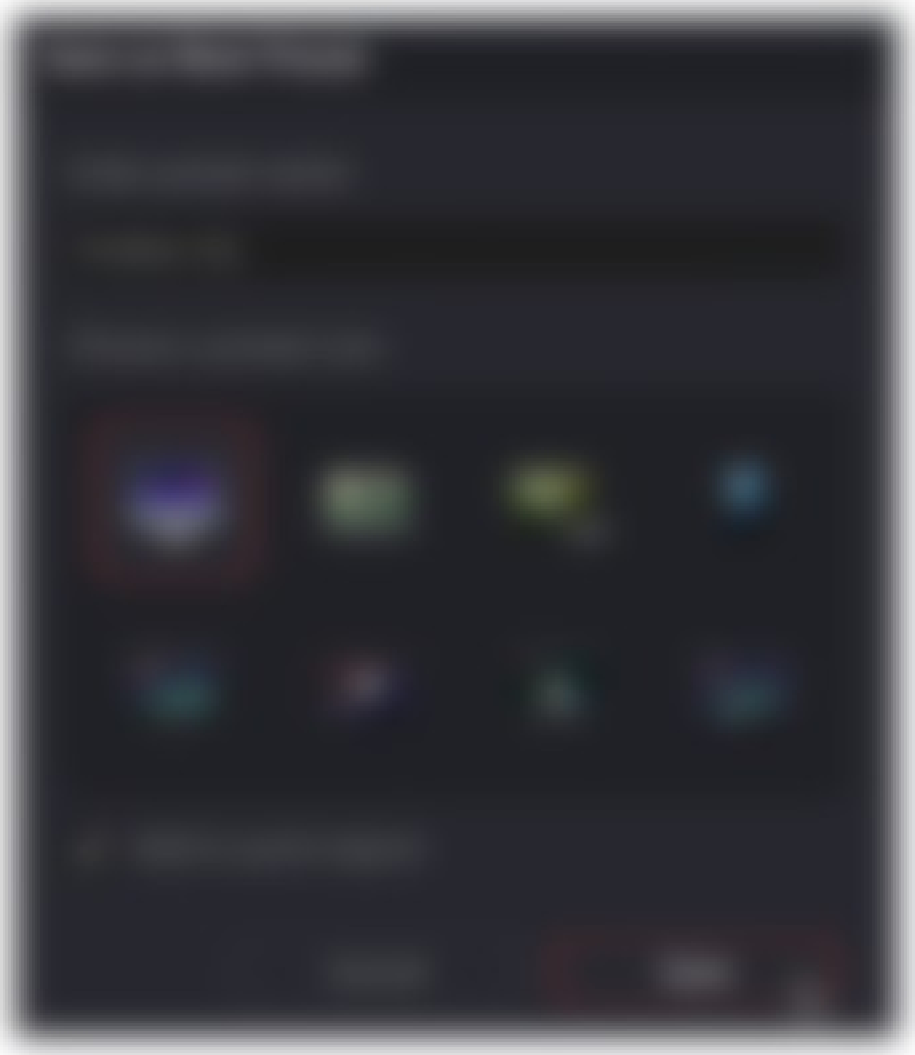
NOTE You can specify any bus or individual timeline track as an Output Track.

- In the Audio Normalization settings, ensure that Normalize Audio and Optimize Standard are still checked.
- Change the Standard to ITU-R BS. 1770-4.

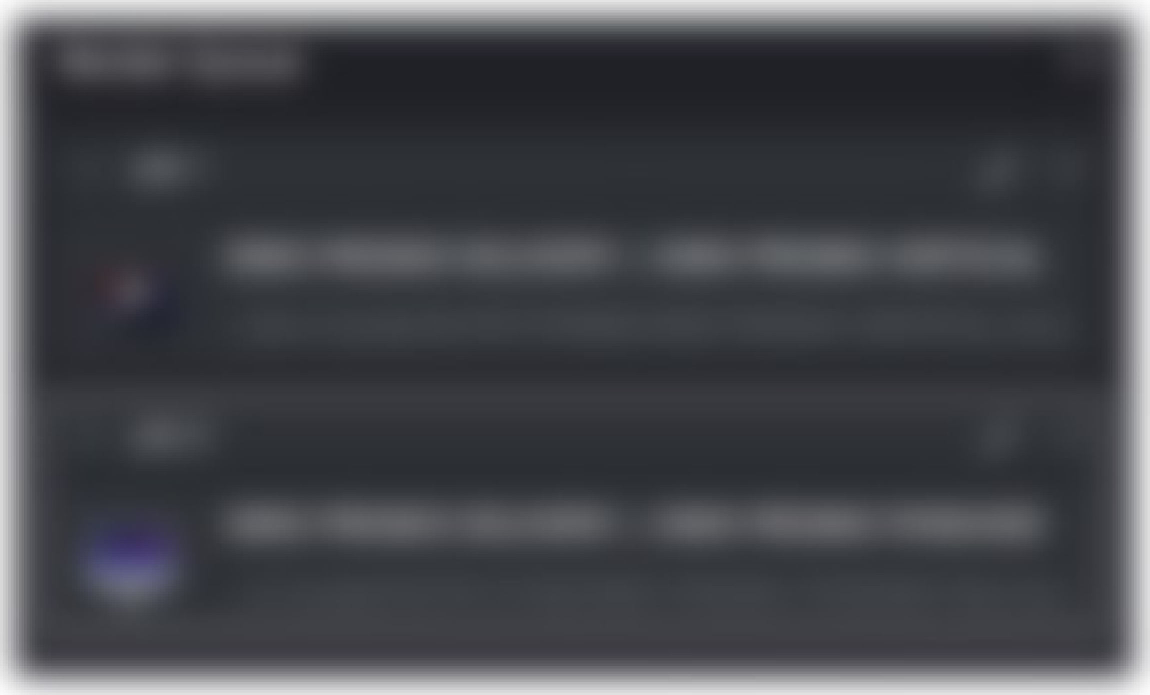


The ITU-R BS. 1770-4 standard will allow you to adjust the Target Level for peaks and overall Target Loudness from their defaults. Alternatively, you can select from the list of presets that adhere to various standards, including ATSC A/85 (for US broadcast), EBU R128 (for European broadcast), OP-59 (for New Zealand and Australian broadcast), TR-B32 (for Japanese broadcast), and AGCOM 219 (for Italian broadcast). Separate presets also exist for delivering audio for Netflix, YouTube, and Disney.

- Click the Render Settings Options (...) menu and choose Save As New Preset.
- Name the preset ProRes HQ, choose an icon, and select Add to Quick Export.



- Click Save to save this preset.
- Click Add to Render Queue.



Understanding Data Levels

In the Advanced Settings, Data Levels specifies the data range of an image based on its source. The default Auto setting renders media at a data level appropriate for the selected codec. Video refers to YCbCr formats that constrain pixel data values between 64–940 on a 10-bit system in formats using a Rec. 709 video standard. Full expands the range to the film standard of 4–1023 values, which is utilized in digital film formats such as DPX. In general, the best choice is to leave this setting unchanged and let DaVinci Resolve choose the data level automatically. However, if you find that your final video looks substantially darker or lighter than it appears on your calibrated monitor, it's possible that the data levels are being incorrectly distributed. In that rare case, you might want to manually set the Data Levels correctly for your intended distribution.

Delivering AS-11 and Other File Formats

The DaVinci Resolve IO Plug-in SDK enables third-party developers to create and distribute plug-in packs that extend the range of codec and format options that can be rendered directly from DaVinci Resolve Studio.

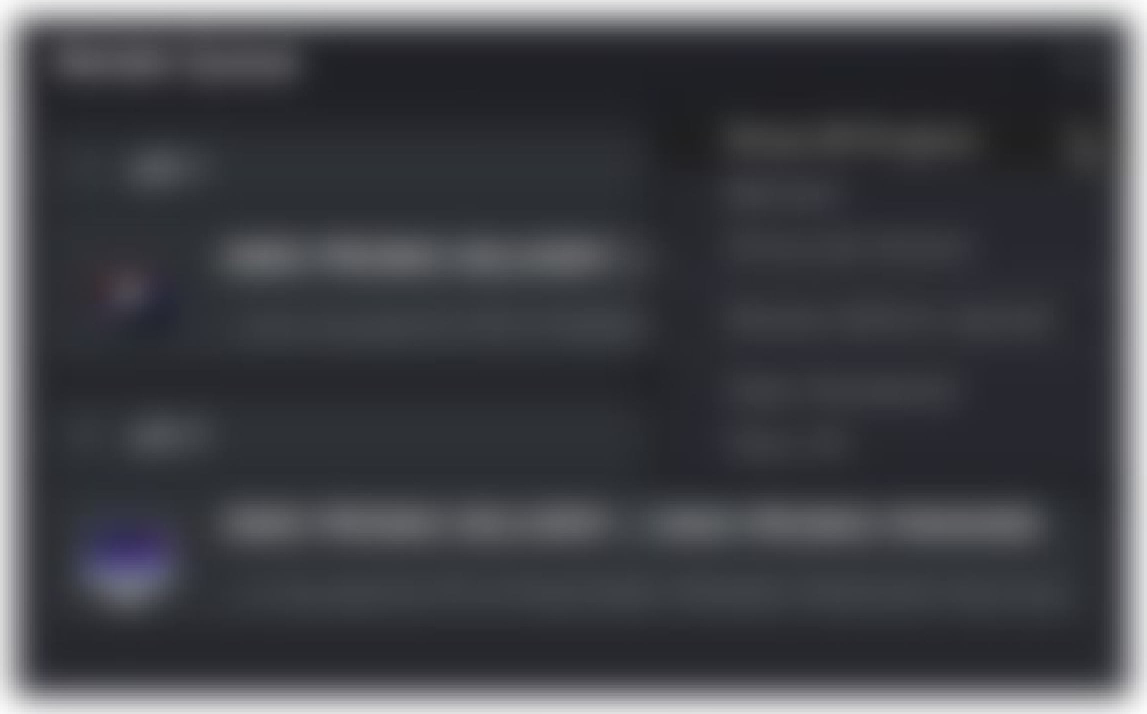
An example of this is the MainConcept Codec Plug-in for DaVinci Resolve Studio. Once installed, the plug-in adds additional MainConcept MXF and MP4 format options, including a specific option to deliver directly to AS-11 DPP.

More information on this plug-in is available at: https://www.mainconcept.com/blackmagic-plugins.

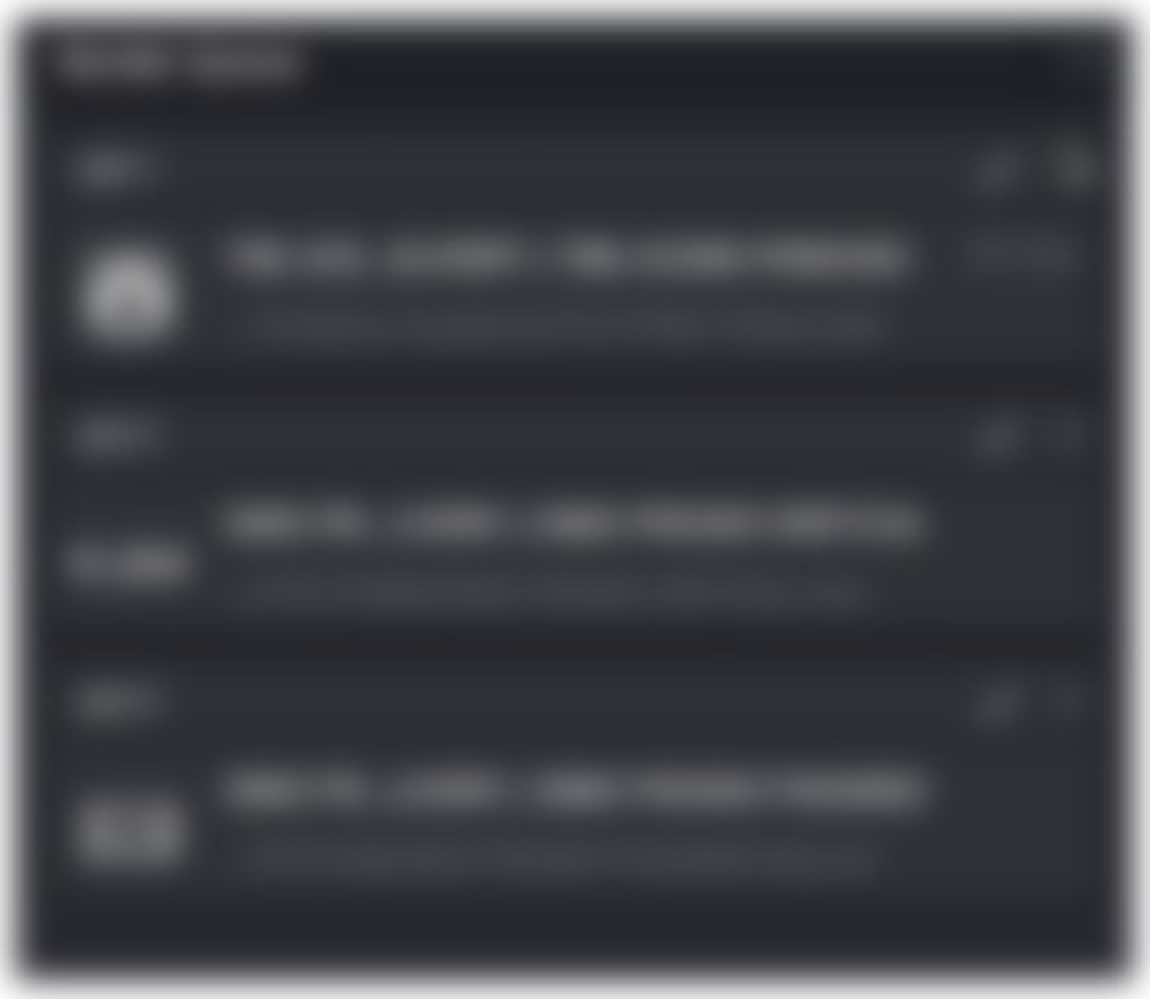
Changing and Rendering Jobs from Multiple Projects

The Render Queue can show jobs from the current project or from all projects in your current project library. If you split longer projects into reels or are working on different projects for the same client, you might need to access all the jobs in the queue instead of waiting for one batch to render before outputting other projects.

- In the Render Queue Options menu (...), choose Show All Projects.



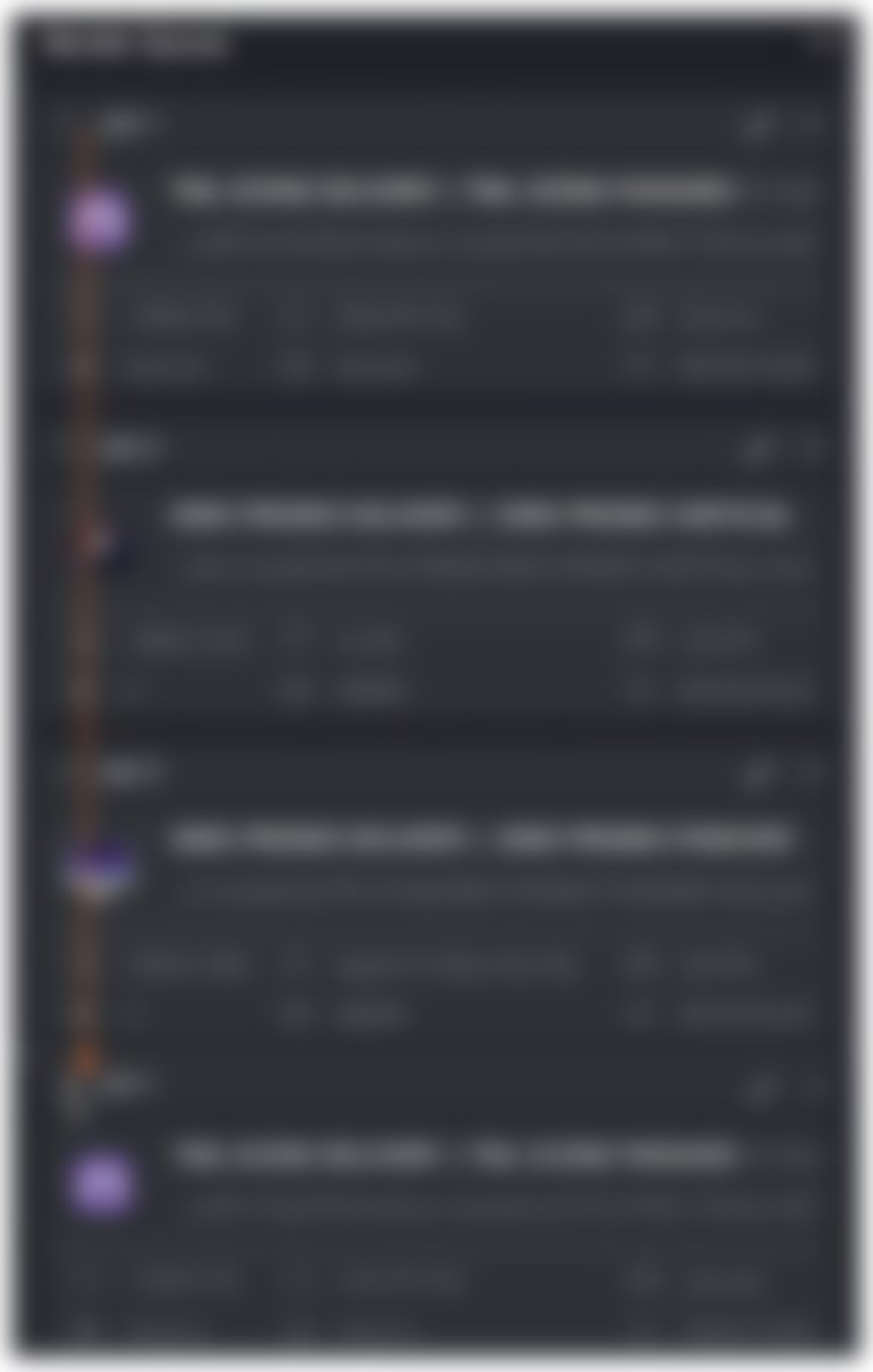
Any jobs added to the Render Queue in any project in the current project library are displayed for you to select and render.



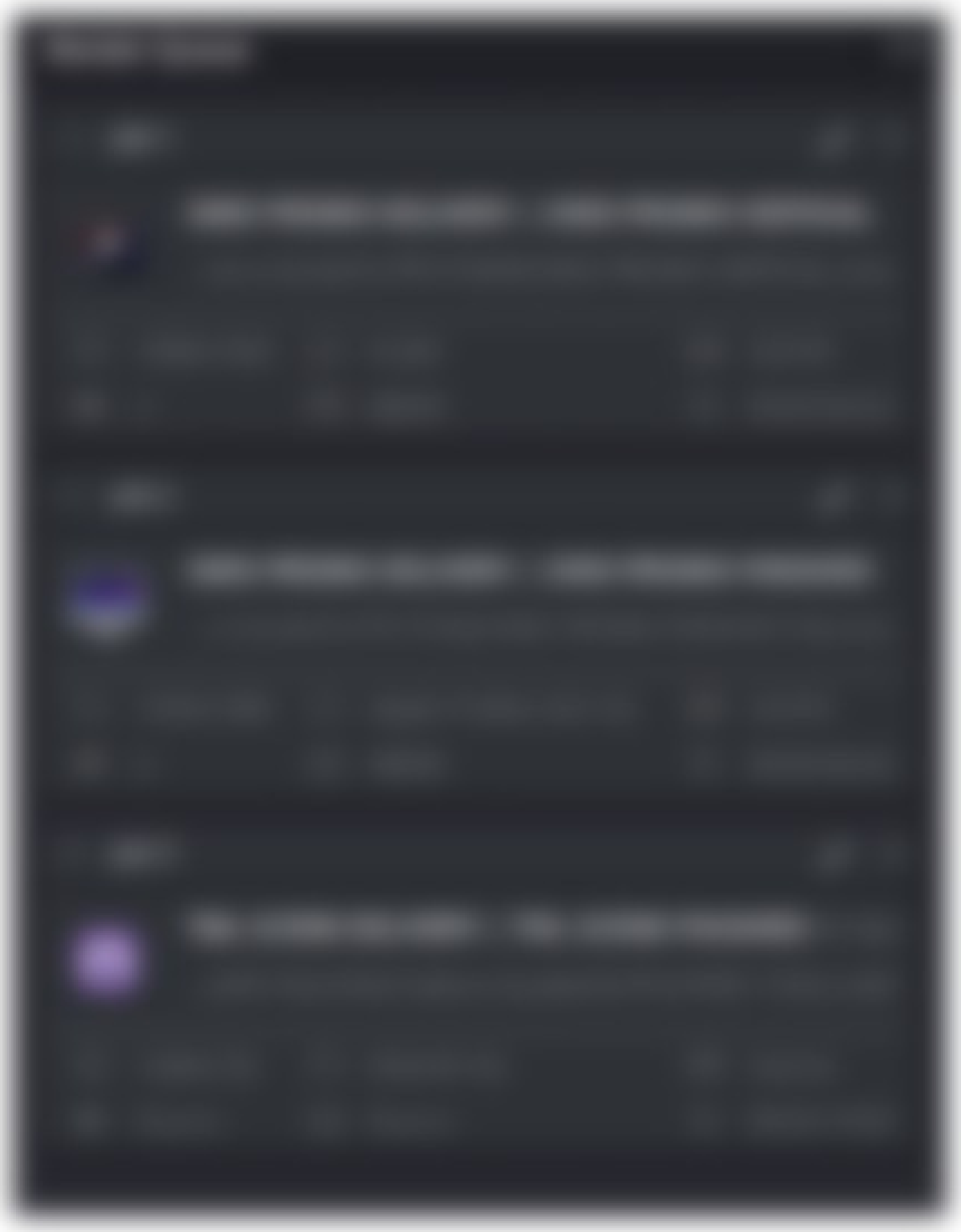
- In the Render Queue Options menu (...), choose Show Job Details to display the specific settings for each job, including resolutions, codec, and frame rate.

You can reorder the jobs in the Render Queue if you prefer one job to have priority over another.

- In the Render Queue, use the handle to the left of the job name to drag Job 1 to the bottom of the queue.



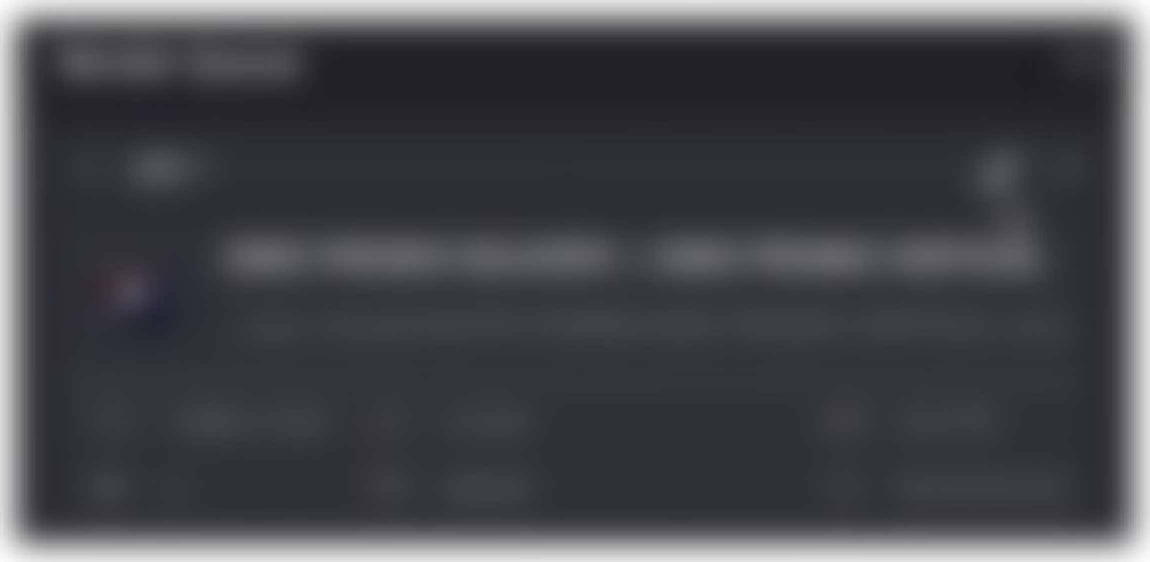
The job will now be rendered last.



TIP You can also rename jobs in the Render Queue to better identify them by clicking the job name (e.g., Job 1, Job 2, etc.) and adding your own name.

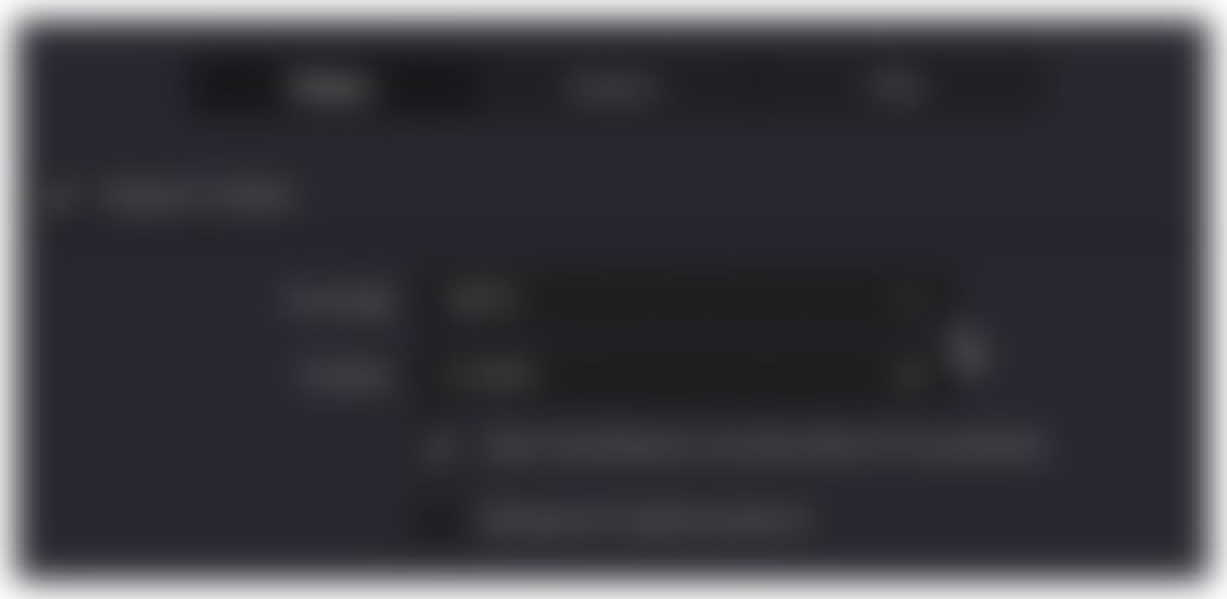
Even after you have submitted jobs to the Render Queue, you can update their settings or remove them from the queue entirely.

- In the Render Queue, click the pencil icon for the new Job 1.



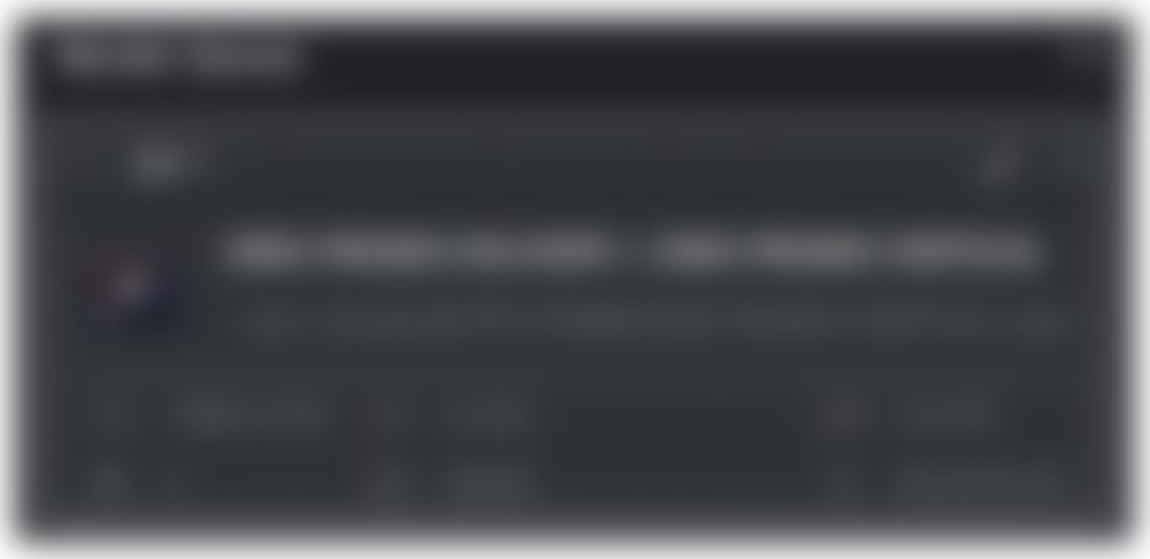
The **1080 PROMO VERTICAL** timeline reopens, and the settings for the selected job become available in the Render Settings panel, where you can make any changes to the job before rendering the final file.

[illegible] In the Video tab, change the Format to MP4 instead of QuickTime.



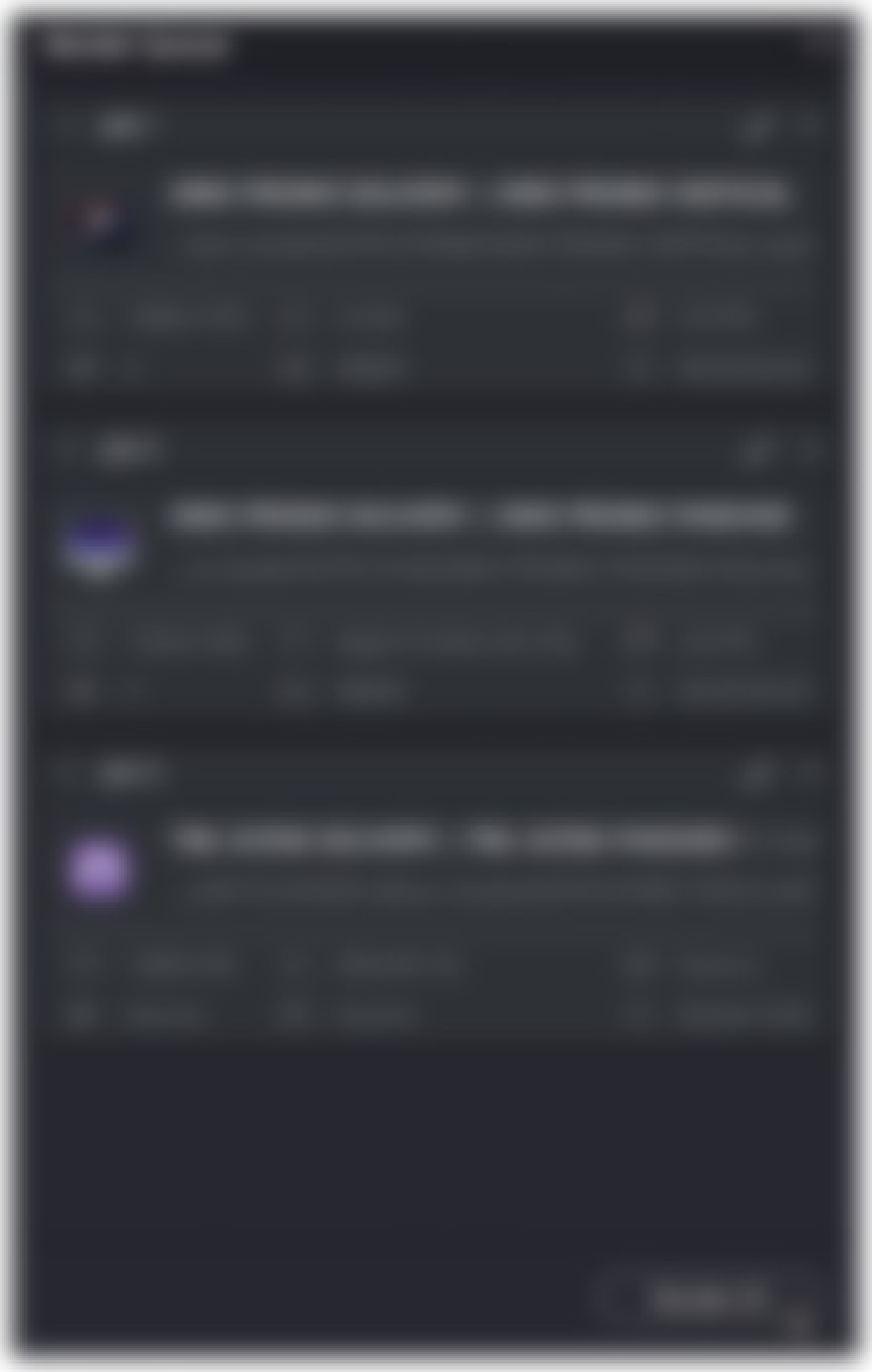
[illegible] Click Update Job at the bottom of the Render Settings panel.

The change updates the original job settings with the new setting, as reflected in the job details displayed in the Render Queue. In this case, you can see that the file extension has changed from .mov to .mp4.



TIP To remove a job from the Render Queue, click the "X" in the upper right corner of the job.

Finally, click in an empty area of the Render Queue panel to deselect Job 1, and then click the Render All button to create the output files.



DaVinci Resolve renders each of the jobs in the Render Queue sequentially.

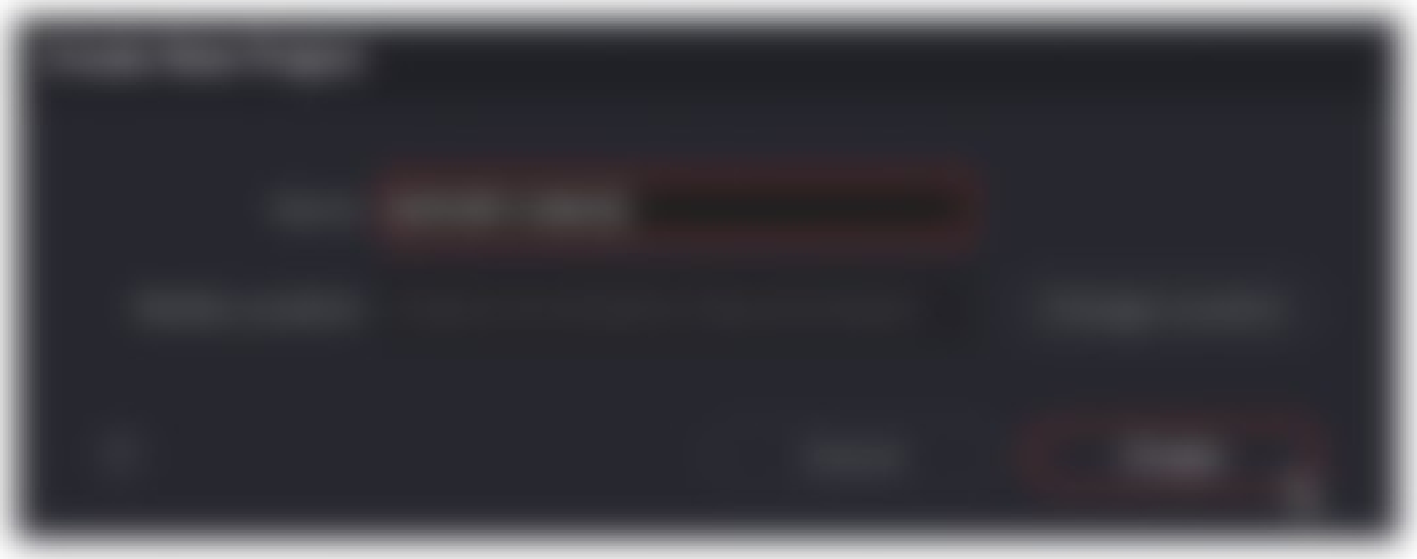
Verifying the Exported Files

Once all the files have been rendered, you can choose to open the Output Folder on your system and verify the files you've created.

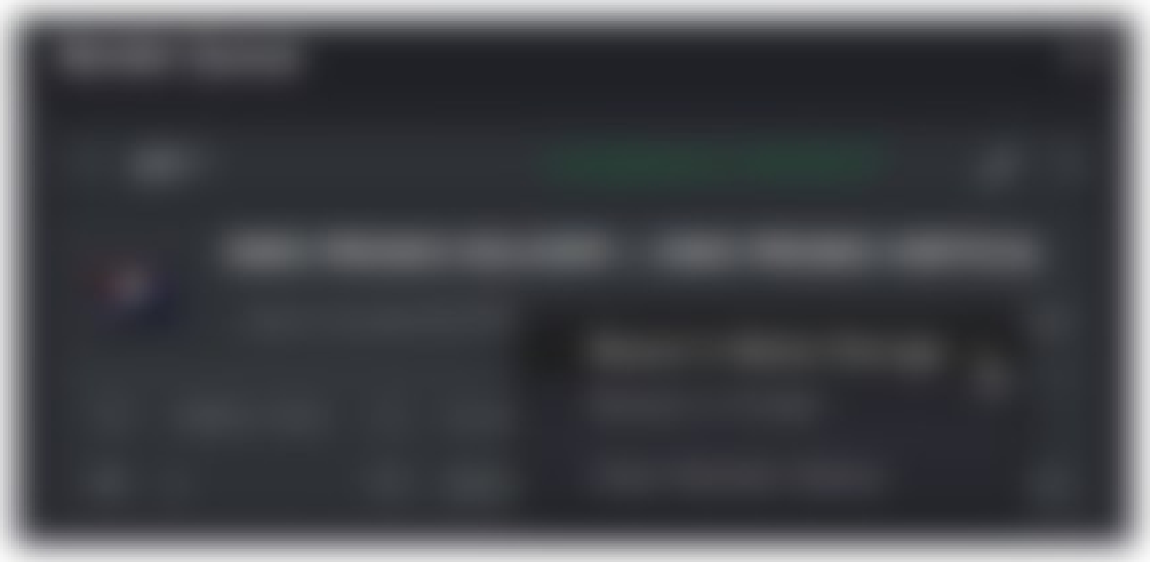
While you can often open and view many files to check their integrity (such as MP4 files, for example), the only true test of the success of creating the files (such as with the AAF for Pro Tools) is to open them again in Resolve.

TIP You can right-click a completed job in the Render Queue and choose Reveal in Finder (macOS) or Open File Location (Windows) to quickly locate the exported file.

- Press Shift-1 to open the Project Manager. Click New Project, name your new project **EXPORT CHECK**, and click Create.

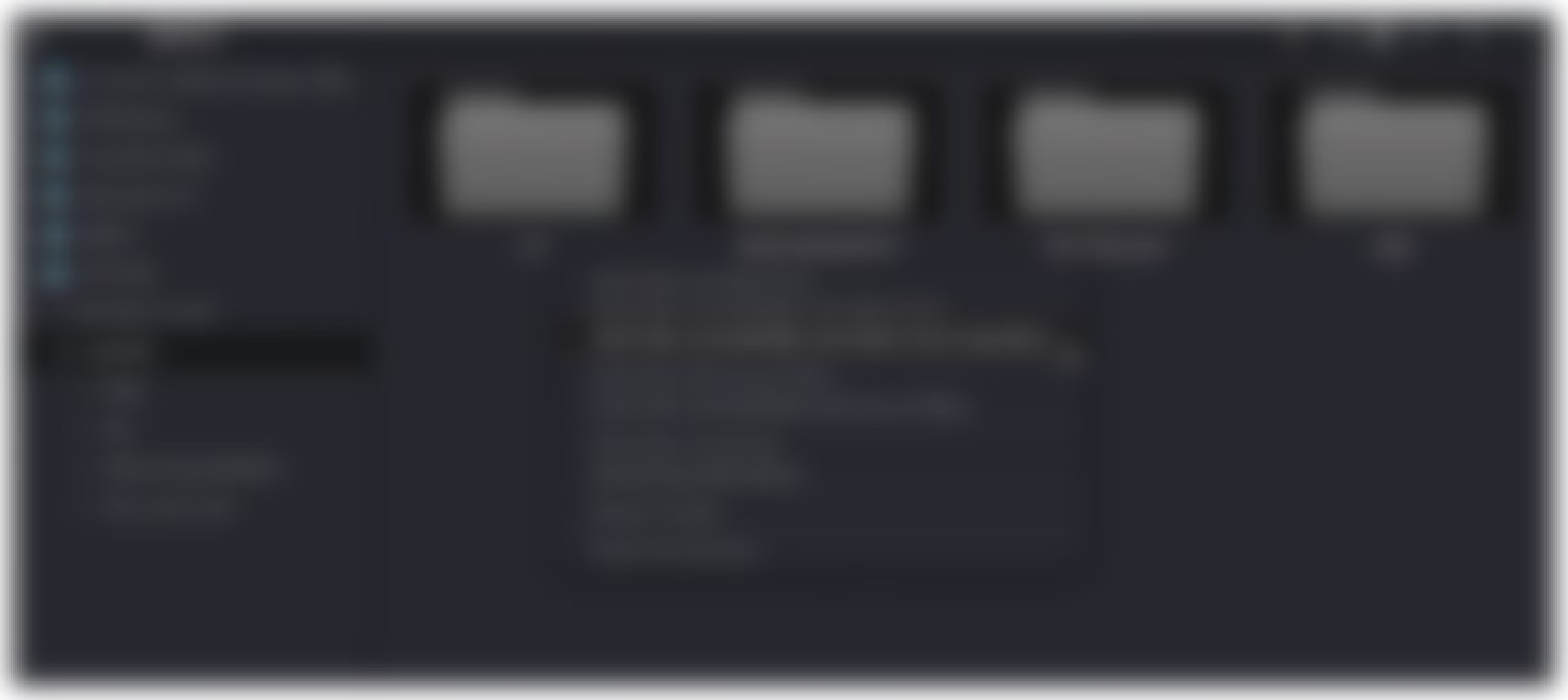


- In the Render Queue, right-click any of the jobs and choose Reveal in Media Storage.



The media page opens, and the select job's output is revealed in the media storage browser.

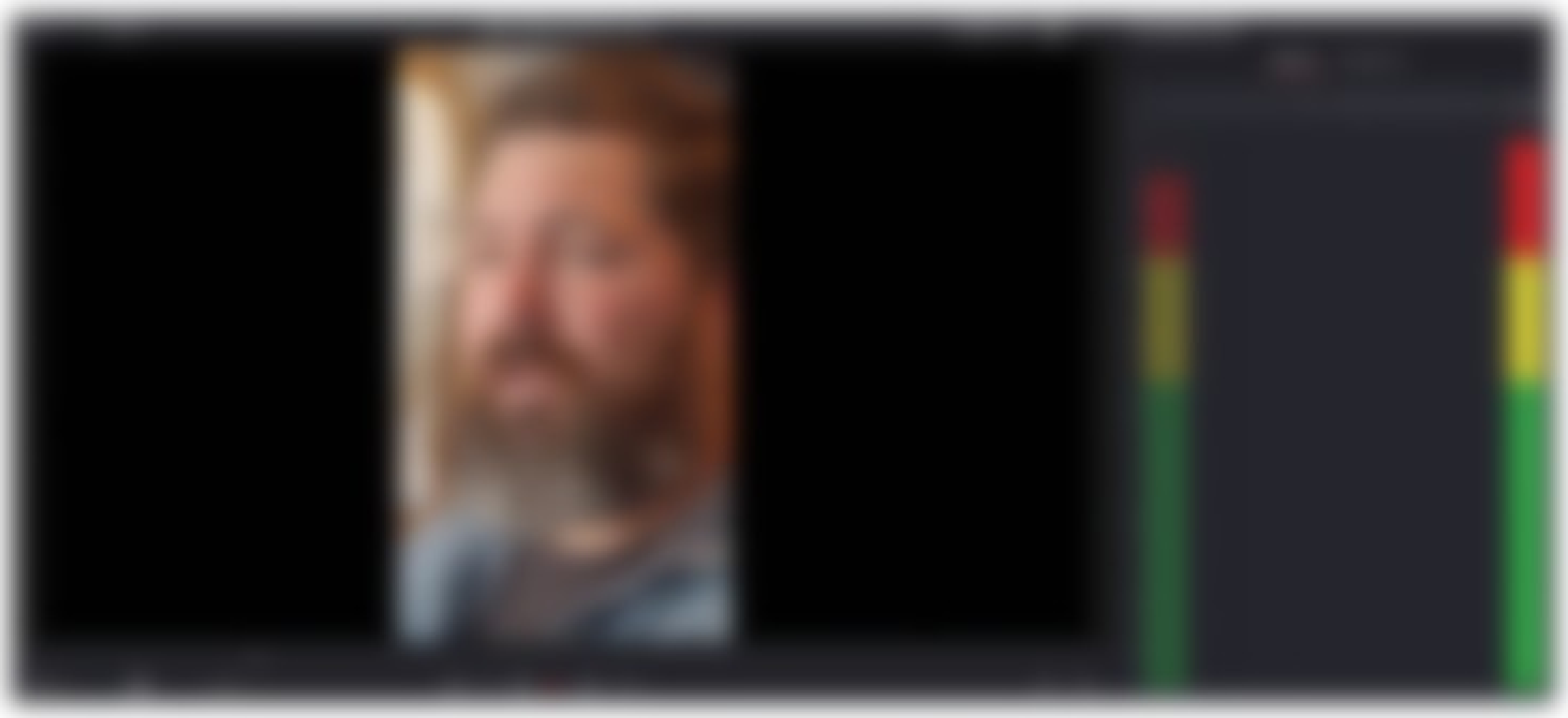
- In the media storage, open the OUTPUT folder, select the three folders (AAC, PRO TOOLS AAF, and WAV), right-click, and choose Add Folder and SubFolders into Media Pool (Create Bins).



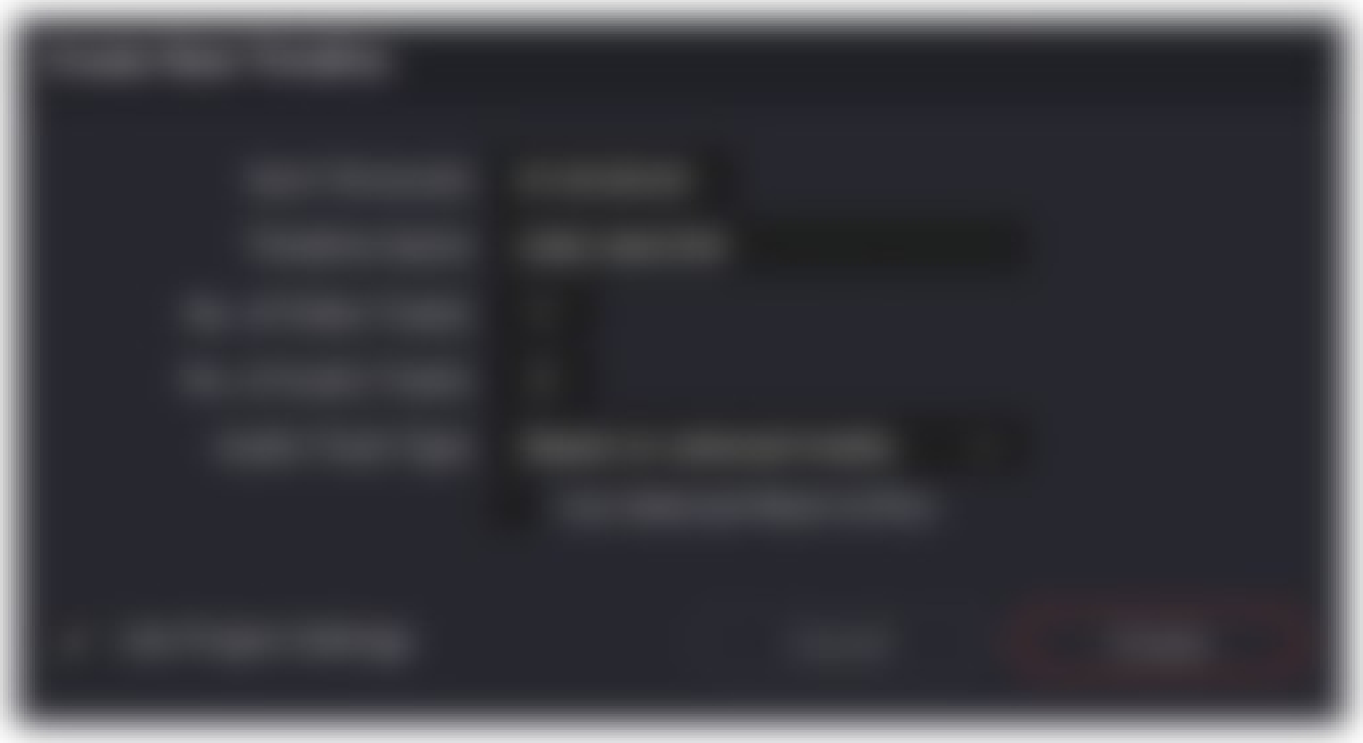
If a window appears asking if you want to change the project frame rate, click Don't Change.

You can now verify the individual files you exported from the previous project.

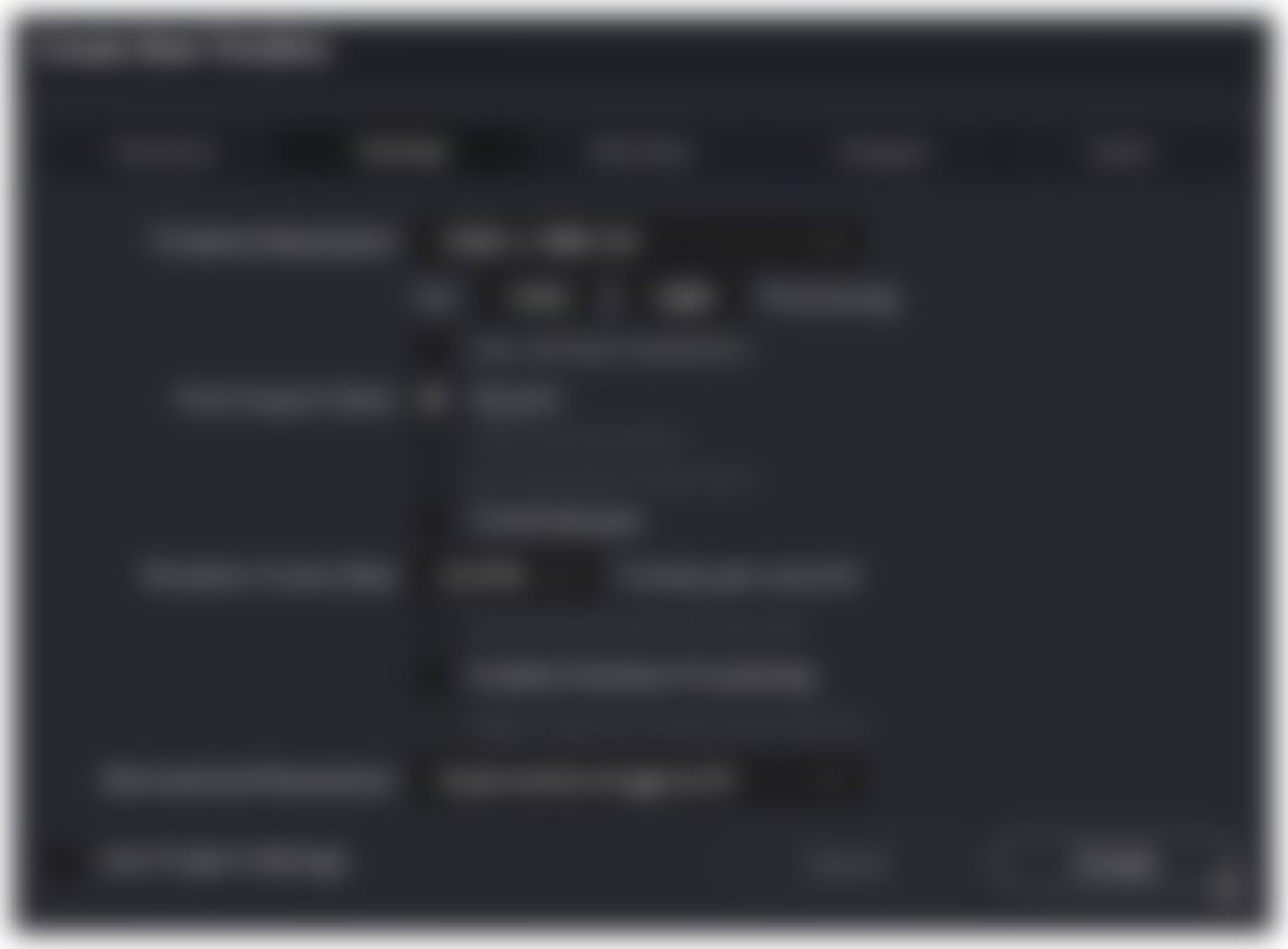
- In the Web bin, select **VIDEO PROMO VERTICAL.mp4** and play it to ensure that it looks and sounds correct (with the optimized audio).



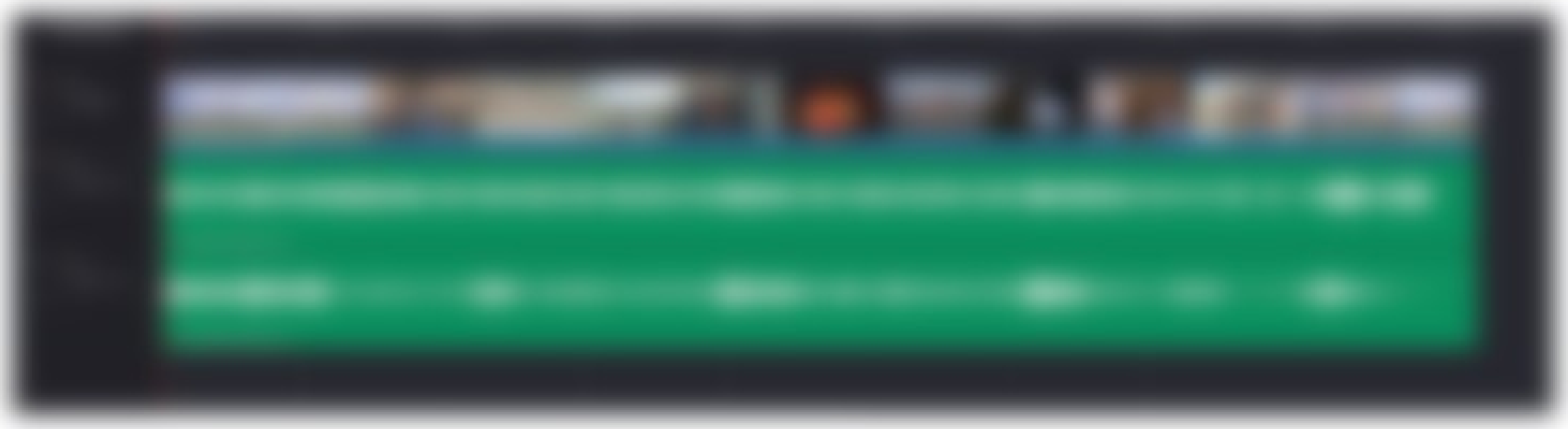
- In the HQ bin, right-click **VIDEO PROMO STANDARD HQ.mov** and choose Create New Timeline Using Selected Clips.
- In the New Timeline window, change the Name to **VIDEO MASTER**, the No. of Audio Tracks to 4, and uncheck the Use Selected Mark In/Out option.



- Deselect the Use Project Settings option and, in the Format tab, change the Timeline Frame Rate to 23.976 (if necessary) and click Create.

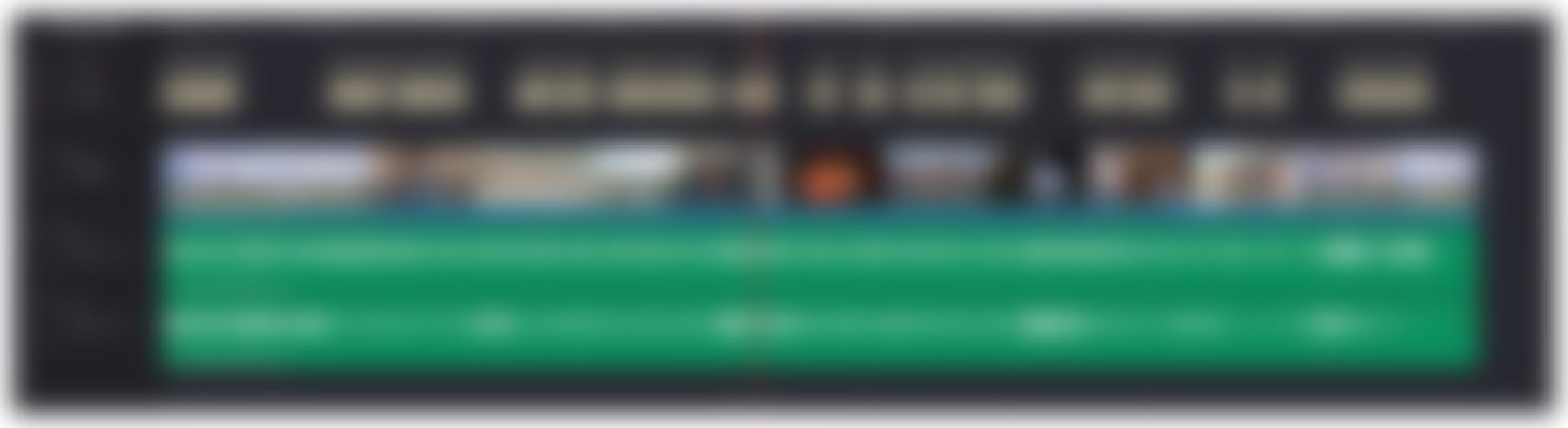


- Double-click the new timeline to open it in the edit page.



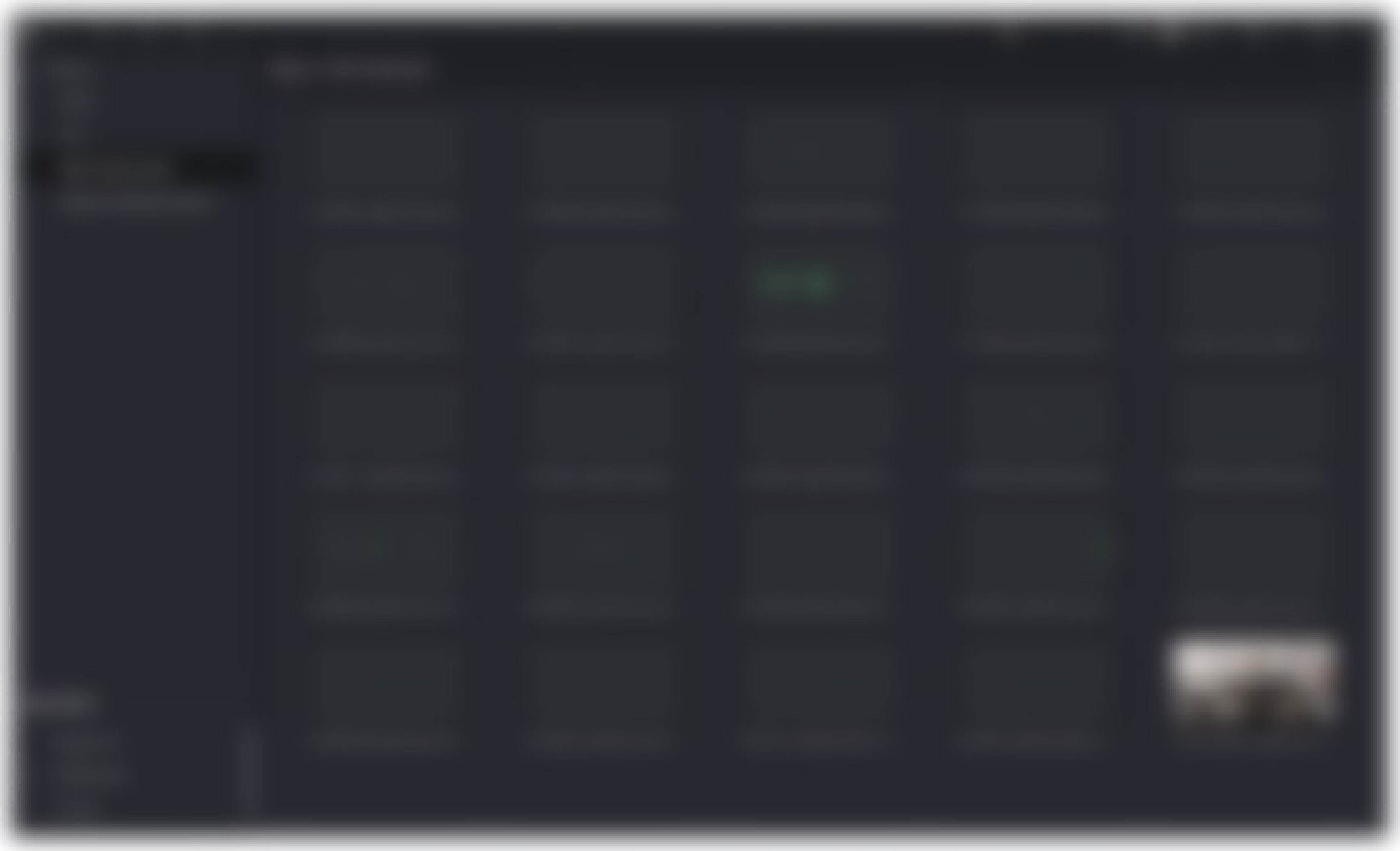
The timeline contains two stereo audio tracks.

- Click the Solo button for Audio 1 to listen to the full mix.
- Turn off Solo for Audio 1 and enable Solo for Audio 2 to listen to the M+E track.
- Add the subtitles into the subtitle tracks to preview the captions.



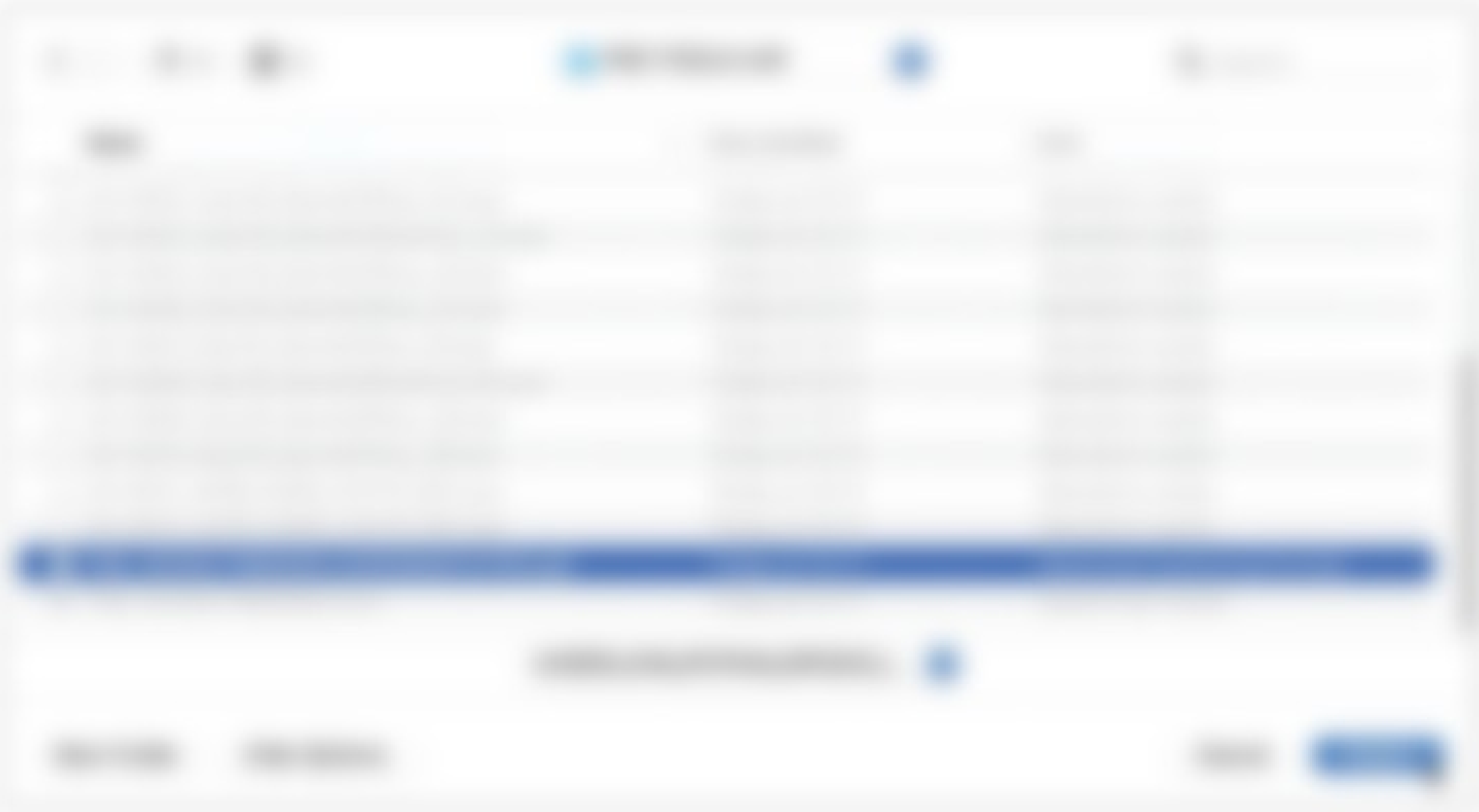
Finally, to preview the Pro Tools export, you'll need to import the .aaf file.

- In the media pool, select the PRO TOOLS AAF bin.

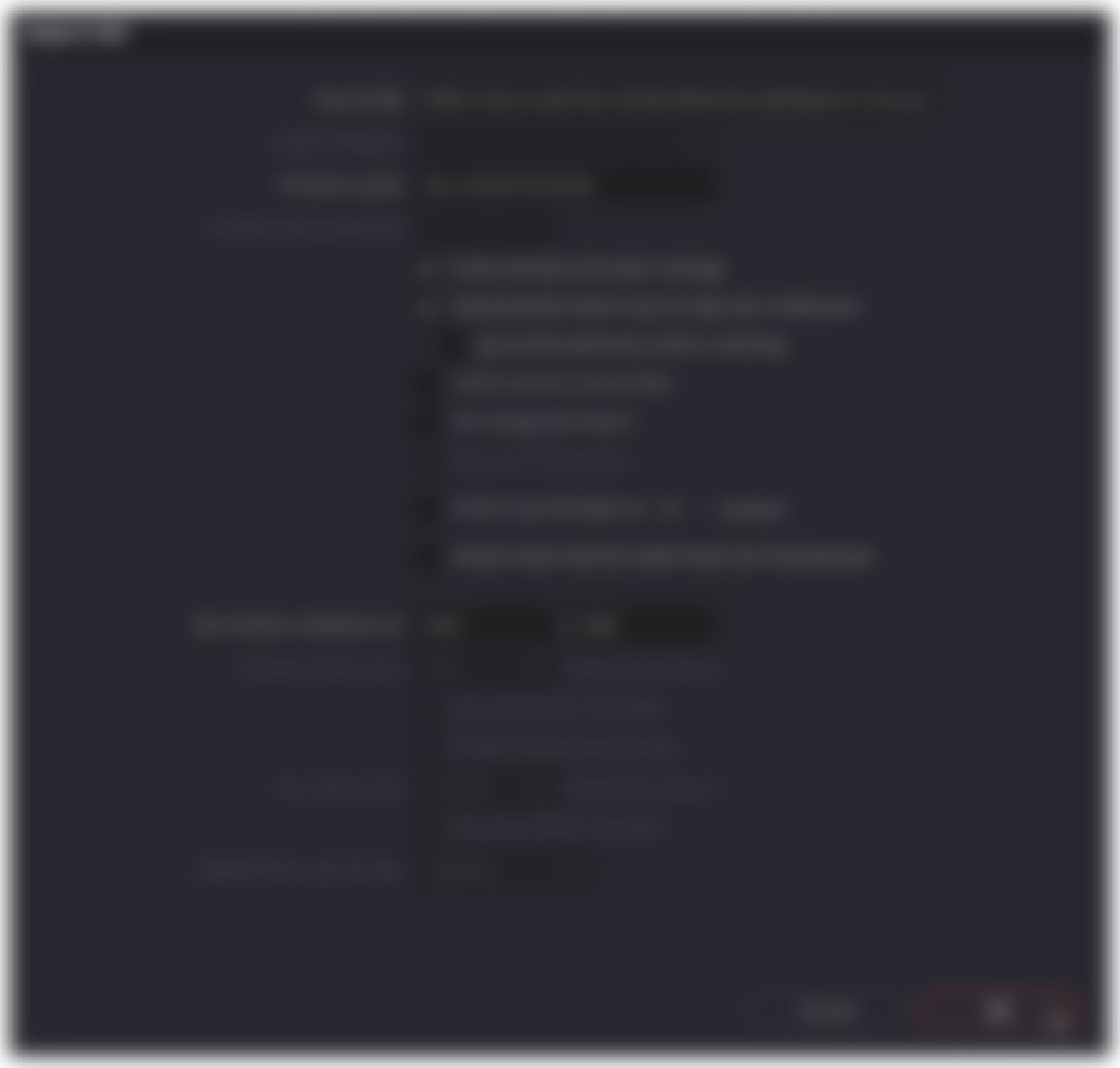


Currently, this bin contains the media files for the AAF, which are mainly individual audio clips but also a single video clip.

- Choose File > Import > Timeline and navigate to R20 Editors Guide / OUTPUT / PRO TOOLS AAF and select the .aaf file.

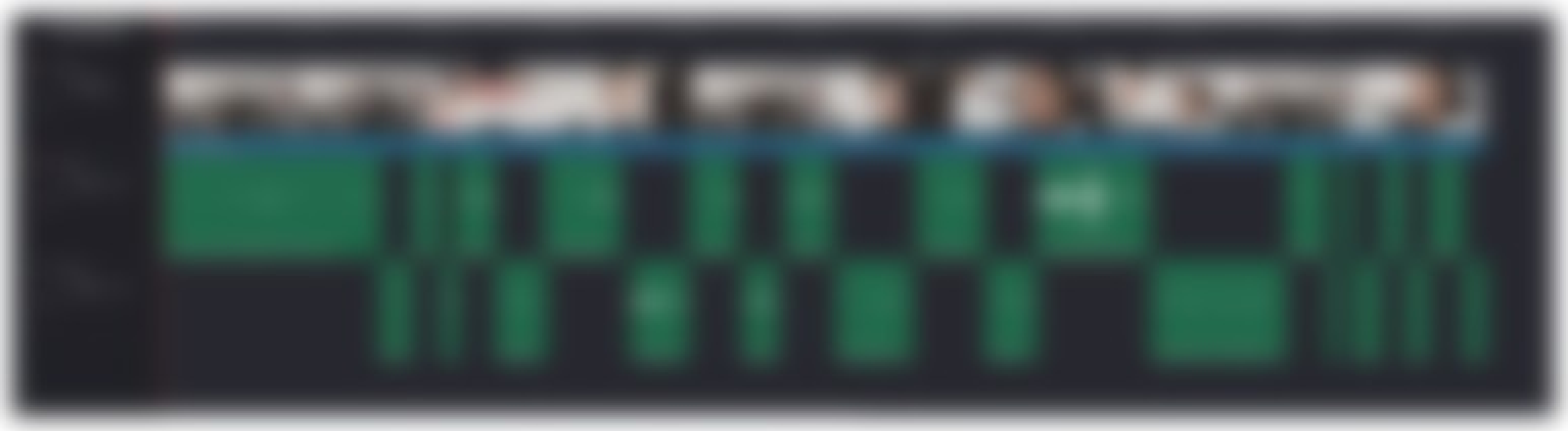


[illegible] Click Import. The Import AAF window opens.



[illegible] In the Import AAF window, click OK.

The imported timeline opens with the exported audio and the reference video (with BITC).



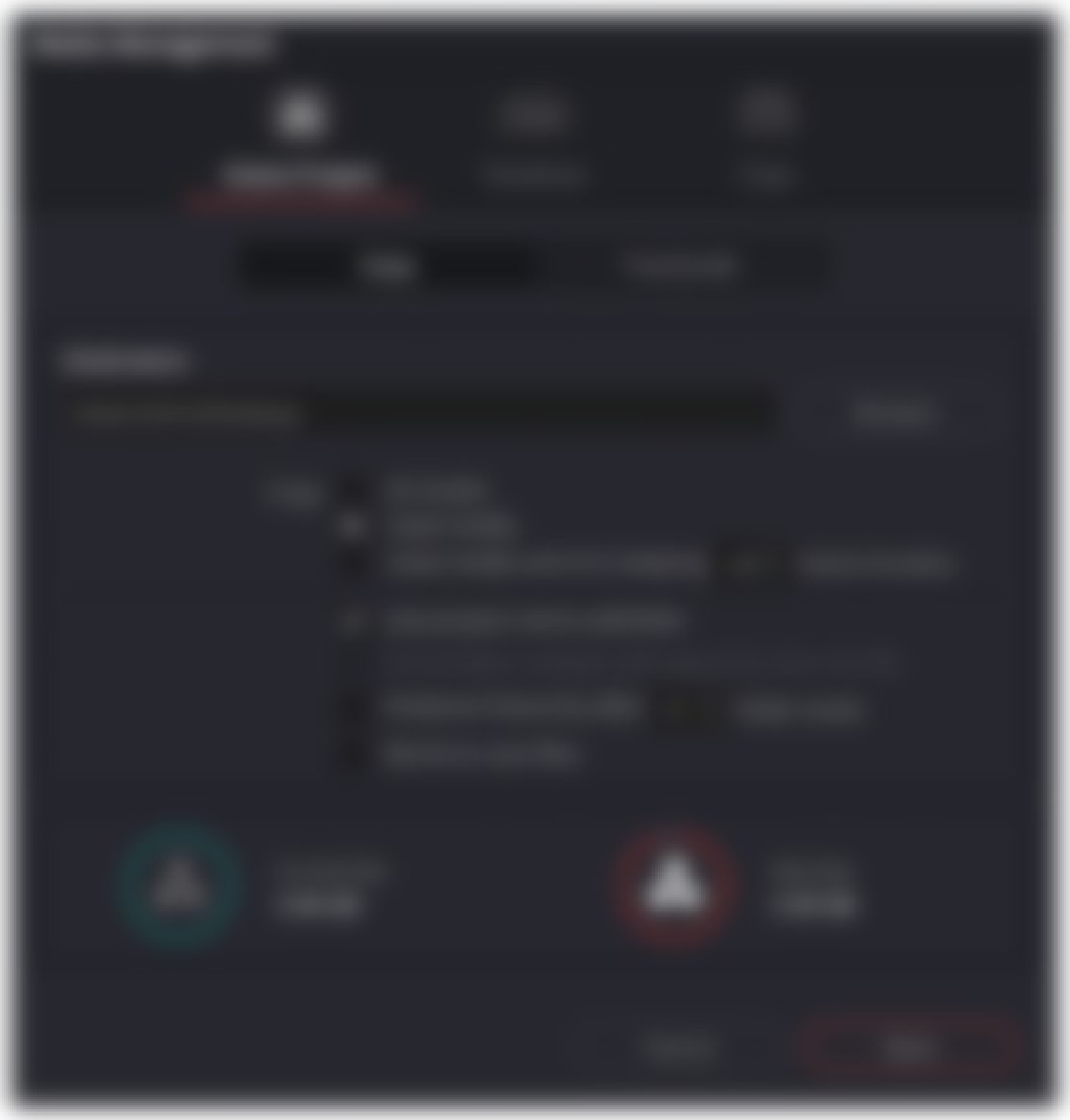
Utilizing the correct render settings is vital to delivering an aesthetically correct and technically functional video project. Understanding these settings has even greater benefits. It elevates your skill set as an editor and imbues confidence that your projects are delivered at their optimal quality as well as adhering to industry standards.

Timeline Media Management

A final step in the delivery options for your projects is to manage the source media files for your project for easy archiving.

1. Choose File > Open Recent Project > OMO PROMO DELIVERY to reopen the Organ Mountain Outfitters project.

2. Choose File > Media Management to open the Media Management window.



Media Management allows you to copy or transcode the media for the entire project, specific timelines, or specified clips.

3. Select the Timelines tab and ensure that the Copy option is selected.

4. Next to the Destination field, click Browse, navigate to R20 Editors Guide > OUTPUT > MEDIA MANAGEMENT, and click Open.

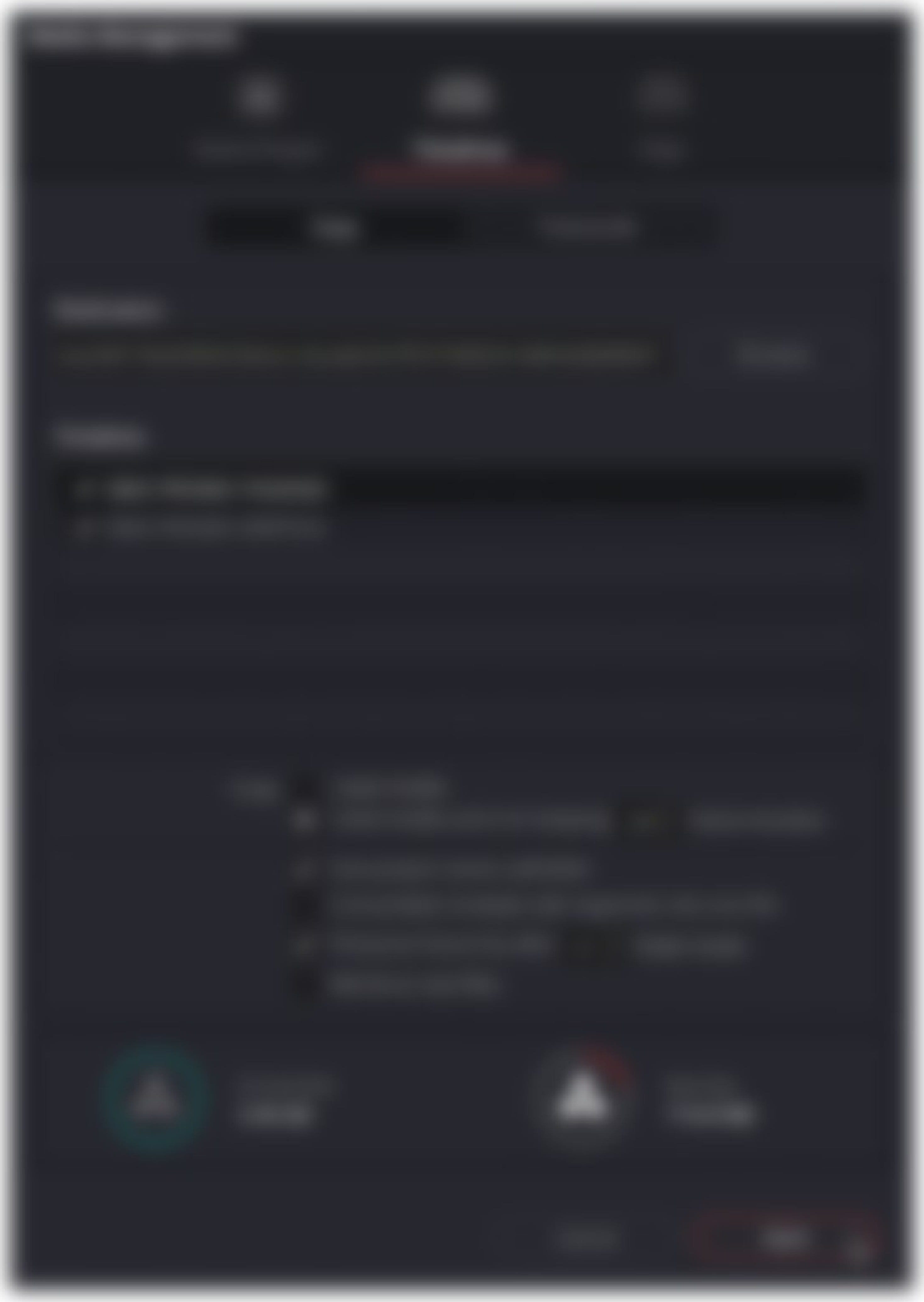
5. In the Media Management window, select the OMO PROMO FINISHED and OMO PROMO VERTICAL timelines.

- Make sure the "Used media and trim keeping 24 frame handles" option is selected.

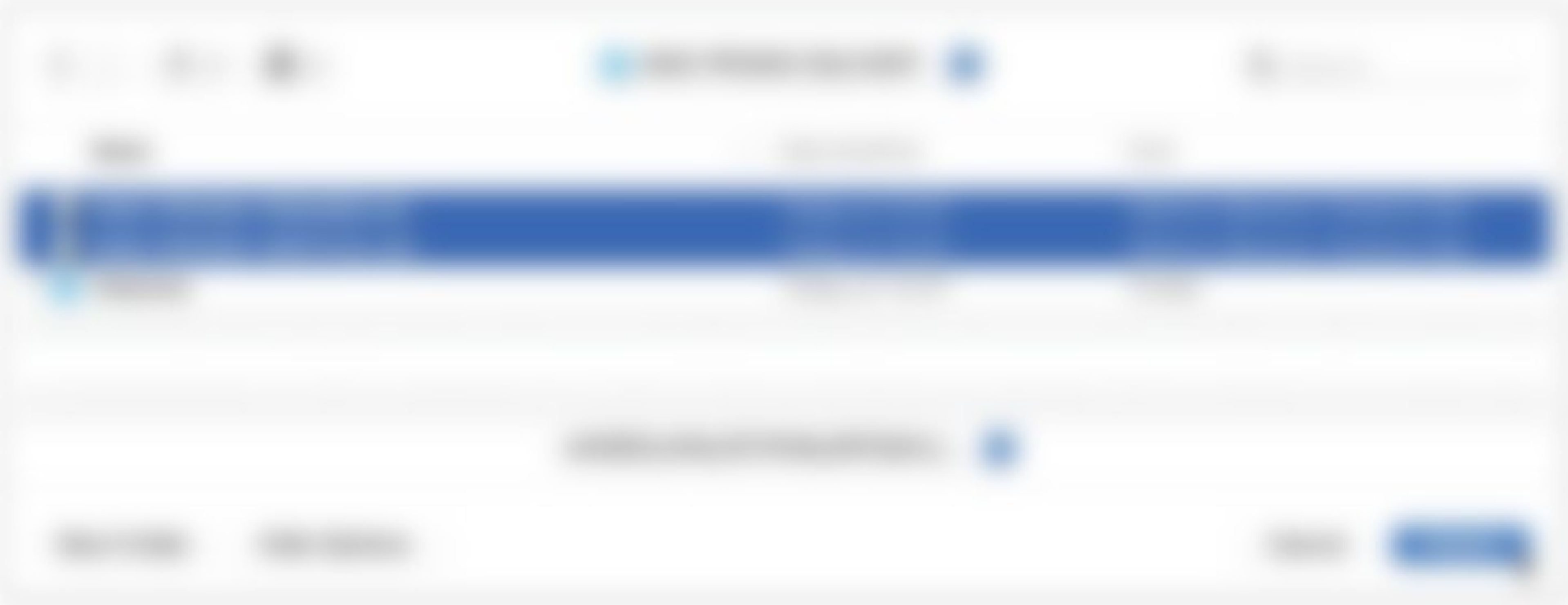
  This option means the media files being copied will only be the parts of those files actually used in the selected timeline, plus an additional 24 frames before the In point and after the Out point, just in case a small tweak is ever needed.

  At the bottom of the Media Management window, the current size indicator displays the total storage size of all the media currently in the project (including unused clips). The new size indicator shows the amount of storage the trimmed media will use. In this case, you can see that the copied media requires less than a third of the storage of the full project.

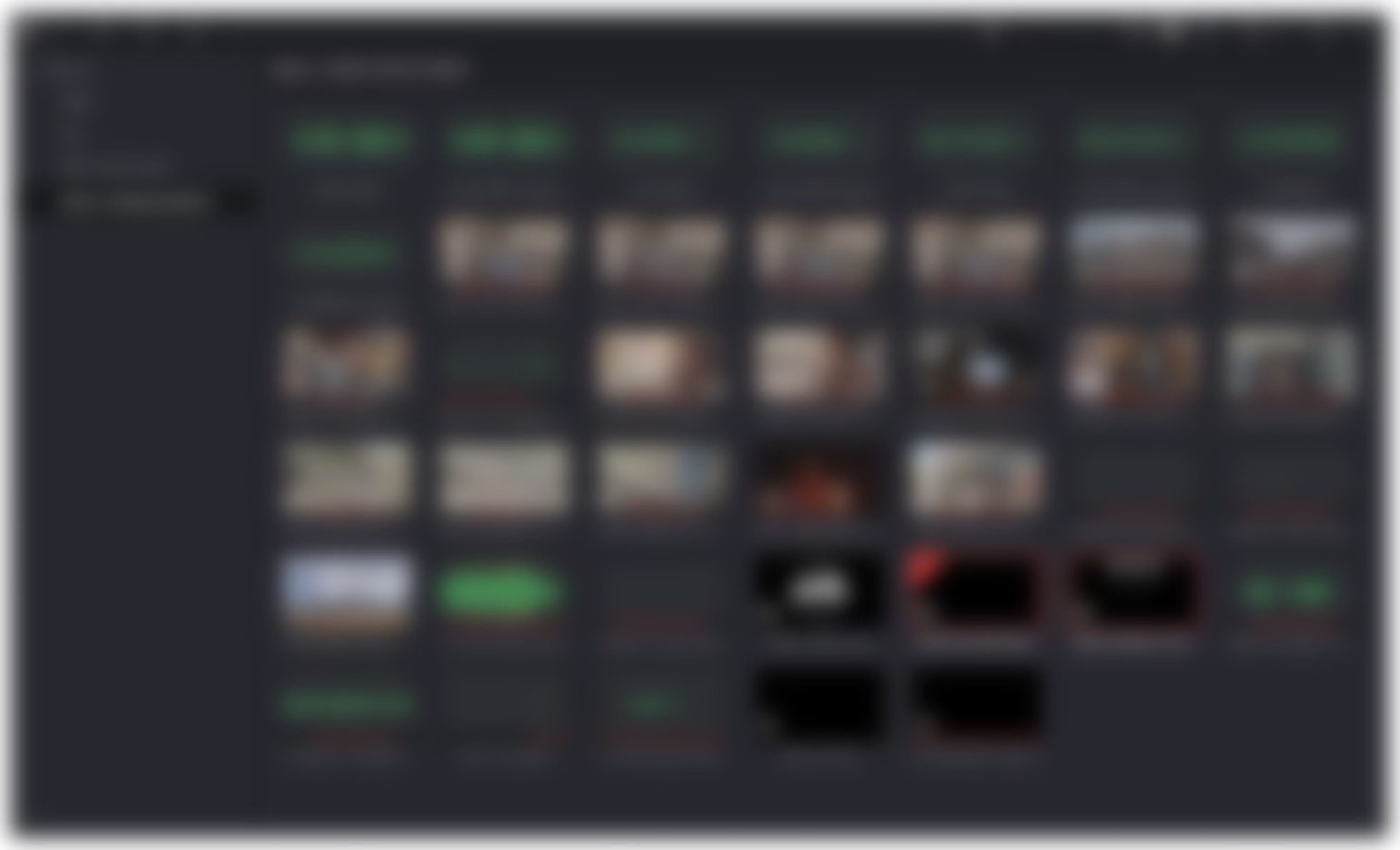
- Select the "Use project name subfolder" and "Preserve hierarchy after 3 folder levels" options.



- Click Start to begin the media management process.
- Once completed, choose File > Open Recent Project > EXPORT CHECK.
- In the media pool, select the MEDIA MANAGEMENT bin that was created previously when you imported the folders, and choose File > Import Timeline.
- Navigate to R20 Editor's Guide > OUTPUT > MEDIA MANAGEMENT > OMO PROMO DELIVERY, select the two .drt files, and click Import.



The two .drt files are imported, along with the trimmed media files.



This set of media is now ready to be archived in case you need access to this edit at a later date.

Lesson Review

1. True or false? You must use the deliver page to export a video file from your project.
2. Which function uses the DaVinci Resolve Neural Engine to automatically add keyframes to keep the subject of a clip in frame when reformatting a timeline to a different aspect ratio?
    a. AI Auto Conform
    b. AI Smart Reframe
    c. AI Smart Conform
3. What format is commonly used when sending audio to be mixed on a Pro Tools system?
    a. AAF
    b. XML
    c. EDL
4. Which window enables you to add a burned in timecode (BTC) to your exported video?
    a. Timecode Window
    b. Data Burn-In
    c. Text+
5. True or false? All subtitles must be imported from a supported .srt file.

Answers

1. False. You can use the Quick Export option where it is available.
2. b) AI Smart Reframe
3. a) AAF (Advanced Authoring Format)
4. b) Data Burn-In
5. False. Subtitles can be manually created inside DaVinci Resolve using the Subtitle title generator in the Effects Library, or they can be imported from a .srt, .vtt, .xml or .dfxp file.

Congratulations!

You have completed The Editor's Guide to DaVinci Resolve 20 and are ready to explore more editing, visual effects, color grading, and audio mixing functionality using the additional certified books in this series. Completing all the lessons in this book has prepared you to become a certified DaVinci Resolve user. You can take the online exam by following the link below to earn your certificate.

We also invite you to become part of the DaVinci Resolve community by joining the web forum on the Blackmagic Design website at https://forum.blackmagicdesign.com. There, you can ask further questions about the creative aspects of editing, color correction, motion graphics, visual effects, and audio mixing.

We hope that you have found DaVinci Resolve 20's professional nonlinear editing tools to be intuitive to learn and a perfect fit to become the hub of your entire creative workflow.

Test your skills by taking the online assessment located on the Blackmagic Design DaVinci Resolve Training page – The Editor's Guide to DaVinci Resolve 20 Online Exam: www.blackmagicdesign.com/products/davinciresolve/training

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The Editor's Guide to

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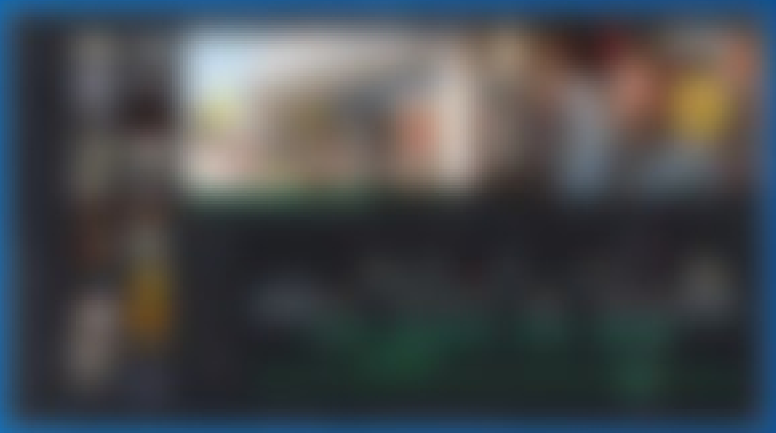

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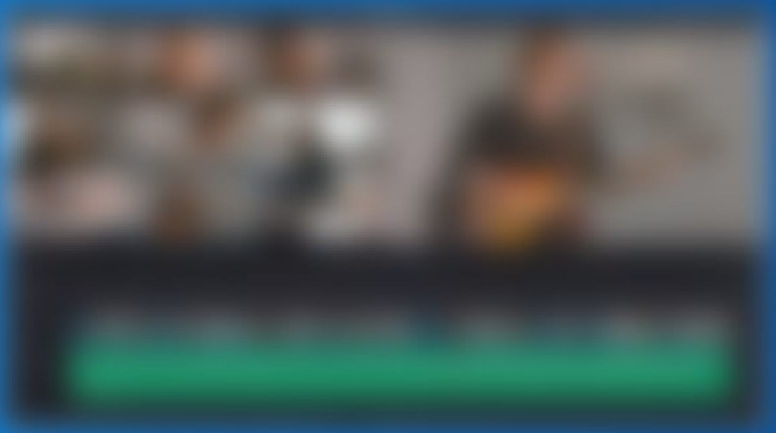

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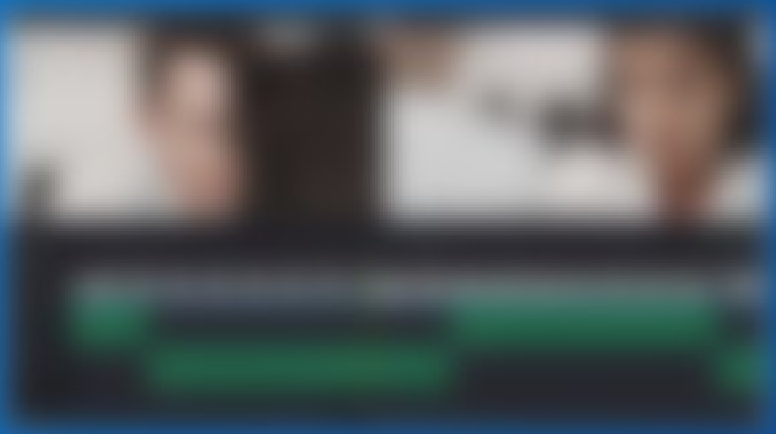

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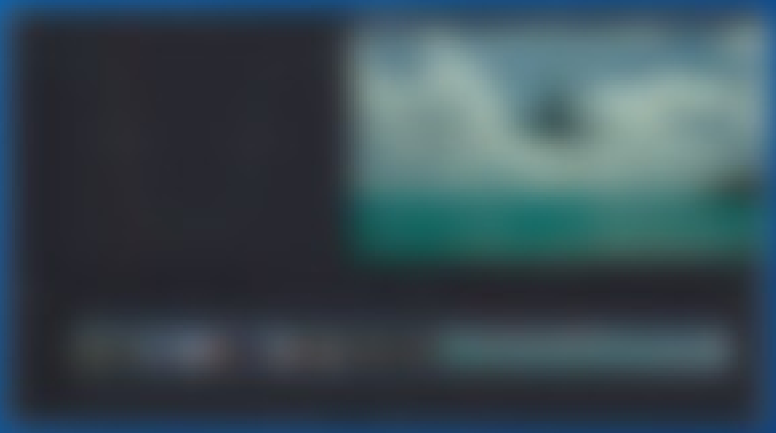

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