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Helping *Birdman* Soar to Incredible Heights

Technicolor serves Alejandro González Iñárritu and Emmanuel Lubezki's creative needs by adapting DI techniques to match a radically innovative filmmaking style.

Customer

Fox Searchlight

Challenges

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Solution

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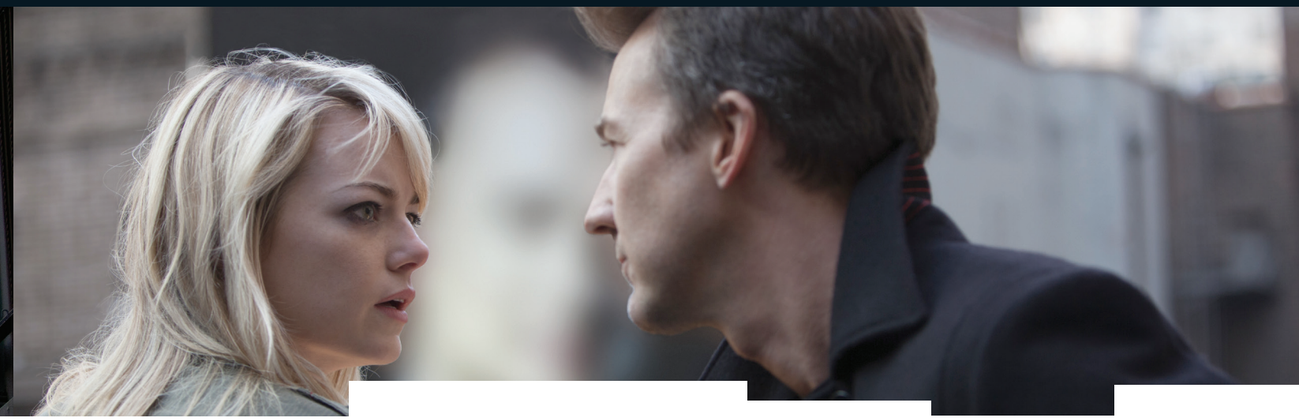
>
> Alejandro González Iñárritu
> Director



As Alejandro González Iñárritu's *Birdman* debuted on the 2014 festival circuit to rousing critical acclaim, most of the focus, quite understandably, centered on excruciatingly choreographed and stunningly well executed performances from Michael Keaton, Emma Stone, Ed Norton, and many others under Iñárritu's direction. Their work, captured by the lens of cinematographer Emmanuel Lubezki, ASC, AMC, was presented by Iñárritu via a totally original cinematic illusion that suggested virtually the entire movie was shot in a single, never-ending take by a constantly roving camera that accompanied the lead character everywhere as though he were performing in front of a live audience.

Birdman offers up the tale of a has-been superstar film actor, Riggan Thomson, played by Keaton, who used to play the biggest, baddest superhero on the bigscreen—*Birdman*—before fading into obscurity, and his ego-driven attempt to kick-start a bit of his past glory by mounting a Broadway play with himself at the center of … everything. As the raves started pouring in once the film hit the festival trail, a gratified Iñárritu, in numerous interviews, began attempting to explain the specific nature of what he was trying to do with the story. Indeed, at one point, he called the entire effort "a beautiful process of exploration of what storytelling is," and suggested his technique of following the Thomson character everywhere was about allowing the audience to intimately and entirely join the character's "uninterrupted, imperfect reality, with his dreams and objectives, and how he navigates that."

But this almost "Don Quixote de La Mancha" style approach to a character study, as the director calls it, meant literally inventing an entirely new methodology for telling the tale. That methodology required, among other things, for Iñárritu and Lubezki to painstakingly choreograph, block out, rehearse, debate, adjust, and film every single movement within every single take of every single shot in the movie, with no room for error or improvisation to the point of avoiding re-takes unless absolutely necessary. The goal was to use Chivo's cinematography to put forth the feeling of being in front of a live audience, with the characters having no ability to "hide" behind edits any more than a stage actor might. He elaborates that all of this required filmmakers to be "absolute with timing, with the precision of a clock." At the end of the day, of course, Lubezki's cinematic wizardry which, just a year earlier had won him an Academy Award for *Gravity*, assured Iñárritu would capture the image sections he needed, and his editing team's expertise and cutting methodology in fitting those pieces together achieved the vision he had for the piece. However, the director demanded still more—"nothing could look cheap or compromised in any way," he said. "So the technical requirements, the craft we needed, was very high."

And so, in these and other areas, Iñárritu turned to a series of key collaborators like Lubezki, lead visual effects vendor Rodeo FX, and Lubezki's own longtime collaborators at Technicolor, who were tasked with performing the digital intermediate and final conforming process for the movie under the watchful eye of Technicolor senior supervising digital colorist Steve Scott, in collaboration with digital colorist Charles Bunnag, senior DI editor Bob Schneider, color data assist manager Juan Flores, DI producer Michael Dillon, and associate producers Brandie Konopasek and Laura Holeman. However, Scott and his colleagues all suggest that, despite their long years of experience on major feature films of all types, *Birdman* required a DI process, that like the shooting and editing processes before it, was different in many ways from anything they had ever tried before for exactly the reasons Iñárritu stated—nothing could be compromised in the context of the illusion he had created. As Mr. Scott put it, "this was the most challenging DI project of my career."

As a result, "everyone was out of their comfort zone," as Iñárritu puts it, before coyly joking that the solutions found to put the illusion together consisted of "magic tricks and secrets." In reality, that "magic" consisted of a lot of creativity, hard work, and innovation. Indeed, his demand for "no compromise" ensured that color grading the movie would have to be an extremely complicated affair. So much so that Technicolor, at the end of the day, had no choice but to invent a new methodology for layering final color down on top of the final cut of the movie.

"In editorial, they had a particular way they had to cut the various pieces to make it seem like it was seemingly one take over the course of many reels," Steve Scott explains. "The problem was, that didn't really work from the point of view of color timing because, basically, there were no visible cuts.

There were, however, sections where a character was in one place and would walk to another room and meet new characters. Normally, we would color time each sequence so that it was seamless and matched everything else in that sequence. But here, it looks like the sequence never ends, even though the environment and people change."

Scott, Bunnag, and Schneider put their heads together and eventually came to the conclusion that, like Iñárritu and Lubezki, they would have to be bold and try something they had never tried before—totally disregard where the official editorial cuts were located, and instead, subtly insert cuts designed specifically to meet their own needs as it related to the color grading process exclusively. This was a process that the Technicolor team eventually came to refer to as subtly "stitching" color-corrected sections together. "We figured out a way to insert cuts wherever they had a stationary camera, and when we inserted those cuts, we called them 'sections.' Then, when the cameras starts to move or whip-pan around again, we thought, that would be a good place to put a dividing line. So we would do the cut in the middle of whatever camera move there was, and then, instead of just a cut, we made a form of a dissolve, so that when you go from cut-to-cut for every shot, and every section in the movie, we are dissolving from one section to the next section to the next. This technique enabled us to do our color correction for each section where the characters land, and not worry about what was happening in the next shot, because in that next shot, we would know that the color would organically and seamlessly dissolve from one section to the next. That let us do all these independent, crazy, complicated color corrections that would flow organically from one to another."

Bunnag adds that Technicolor eventually honed the process as the project went on, with Scott refining and testing the approach on the first reel of the movie, and once Lubezki and Iñárritu became satisfied, Bunnag launched into the rest of the movie and edited each timeline to create what he calls "more colorist-friendly timelines." Eventually, they got to the point where Lubezki and the Technicolor DI team could strategically identify relatively large camera moves, hone in on smaller and faster ones, such as whip-pans, and efficiently select those as locations to "hide" their cuts as strategically crafted dissolves.

The Technicolor team now had a basic methodology in place, but Scott still needed to rely extensively on his classic arts training in each section to enhance the sense of intimacy that Iñárritu required to make "the magic" work properly. Central to this agenda was making sure that actor faces were as readable, dimensional, and complex on the big screen as possible, and that in turn meant making sure that Lubezki's lighting on faces was properly highlighted, but also that environmental lighting was, as Bunnag puts it, "shaped to help the audience focus on the faces, while still keeping a realistic look. One of Chivo's [Lubezki's nickname] goals in the color grading of *Birdman*, therefore, was not just to simply brighten up a face, but to also bring out as much modeling and dimension as possible."

Using the Autodesk Lustre 2013 Spec 4 color-correction platform, Scott thus painstakingly drew complex power windows that followed the contours of the faces of each character to either highlight one side or darken the shadow side, while being careful to plot lighting on the actor's faces in a realistic manner. This same level of detail and complexity was also utilized with background and environments in the form of animated vignettes, articulated multi-point shapes, and god-rays for added atmosphere.

The workflow generally involved Scott setting such looks on single frames, and once he was happy with those looks, handing the shots over to Bunnag to carry out the animation of those shapes and creatively solve any problems that might arise later in the sequence. This kind of detailed "lighting" in the color grading, combined with the long nature of each shot, helped add an almost three-dimensional nature to the images, according to filmmakers.

Additionally, the nature of this kind of work required complex rotoscoping in order to insert the dissolves seamlessly between shots. While there are other ways to do it technically speaking without using the dissolve process, they would have involved painstakingly difficult and complex pixel-accurate adjustments to be made on every shape, spline-point, and animation keyframe to ensure that there would not be an obvious "bump" in the color corrected sequences whereby the shape of the power windows could possibly be revealed and pull audiences out of the story.

The Technicolor team knew this first-hand because they had already performed that type of complex work successfully on *Gravity* in collaboration with Lubezki for certain extremely long sequences, but with *Birdman* essentially being one single, exceptionally long sequence, it simply didn't make sense to go down that road again this time around. The dissolves between shots, by contrast, allowed the shapes and color to blend into each other in a way that was imperceptible to even the most discerning viewer. But, as noted, that required a skillful rotoscoping methodology.

Fortunately, one of the significant advantages of bringing the project to Technicolor was the fact that Technicolor has a longstanding enterprise agreement with Autodesk, manufacturer of Lustre. That agreement allows the company to "take issues, complications, or challenges we run into when we need help making the tool do something we never tried before directly to the people who make the software while working on the project and give them our immediate input," as Scott explains it. In the case of *Birdman* specifically, this relationship paid huge dividends, Scott and Bunnag insist, because of the need to build into their color-correction process ways to rotoscope these particularly long and complex dissolves as part of these "colorist friendly cuts" that no one but the filmmakers would ever know existed. Autodesk, with detailed input from Scott following his early tests on how to execute the process, produced just such a rotoscope tool at Technicolor's request early in the DI cycle of the project. The company's in-house VFX team, led by Doug Spilatro, used that proprietary tool to more efficiently speed up the rotoscoping process during the DI work.

"There were so many windows involved—many places where you would want to open up a left eye or bring down the right eye or take some red out of the skin or brighten the sky or darken the foreground or make the base brighter as it flies off," says Scott. "Plus, lots of animated, hand-tracked mattes for every shot. Every single moment in the movie, there is something going on like that, all directed for us by Chivo. He would give us notes on what he inevitably would like to be tracking, and what mattes he would like for what, and then we would, while he was gone, work on animating all of those mattes, so that by the time he came in, they were ready."

"Of course, you do your best, but there are always surprises. Chivo might come in, see something new and say I wanted a matte here, and then we would scramble and do a new matte for him. So we had lots of mattes, lots of bringing it up or bringing it down. But within every matte, something might be a tiny bit too milky or discolored, so this kind of work is always about the subtle, nuanced adjustments within the mattes that do not seem obvious. For instance, when someone walks across the frame and gets a highlight on their cheek, and Chivo wants to change it, we'll track a matte for that highlight and tone it down, just as the highlight comes into play. We will dissolve our adjustment off as it goes away. There is lots of that kind of work in this movie—edits geared for the DI tasks we had to complete, done in a way no one had ever done it before, dictated by the particular needs of this production."

At the end of the day, performing the digital intermediate work in this manner permitted Technicolor, in collaboration with Iñárritu's and Lubezski's other key partners, to play a role in "giving them their freedom to be creative," as Scott describes it. "This kind of solution fosters their creativity and limits the potential for the complexity of the technical needs of this kind of filmmaking to interfere with that process. After all, that is our job-to help the filmmakers be creative."

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