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C I C A N T

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THE “GRAVITATIONAL PULL” OF CUARÓN’S GRAVITY

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Acknowledgments

Abstract

Film scholar Miguel Mera (2016) argued that Alfonso Cuarón's *Gravity* (2013) was likely to generate a strong "gravitational pull" towards a broader exploitation of three-dimensional (3D) sound. In this article, the aesthetics of Cuarón's work are compared to those in a number of other films. Alejandro González Iñárritu's most recent films are presented as advocates of Cuarón's film style, referred to here as immersive continuity. This approach makes constant use of long takes that are complemented by the immersive action of 3D sound. Moreover, it is observed that many other motion pictures in a variety of genres have made use of similar aesthetics, creating impressive three-dimensional sound designs. Through the examination of several Dolby Atmos titles, the author suggests that the screen-centrality of the cinematic voice is not as great a concern as previously thought. Ultimately, it is argued that conventional editing is now the biggest obstacle to achieving the mythical total cinema described by André Bazin.

Keywords: Alfonso Cuarón, Alejandro González Iñárritu, 3D sound, long takes, immersion, Dolby Atmos.

Introduction

After experimenting with long takes and unconventional sound spatialisation techniques in *Children of Men* (2006), in his two most recent films, Alfonso Cuarón consolidated an audio-visual approach that offers a highly immersive cinematic experience.¹ In terms of the visuals, Cuarón’s film style, which has been referred to as “immersive continuity” (Idrovo, 2021), is aesthetically characterised by extensive use of long takes, a resource often complemented by deep-focus photography, wide shots, and slow camera movement. Regarding the aural realm, this style deploys a treatment of the soundtrack that spatialises music, sound effects and even voices in accordance with the position of their sources in the three-dimensional diegesis, an approach that film scholar Miguel Mera (2016) refers to as three-dimensional (3D) sound. Mera (2016) argues that 3D sound is an expansion of the “ultrafield” concept theorised by Mark Kerins (2011), who defines it as “the three-dimensional sonic environment of the diegetic world, continuously reoriented to match the camera’s visual perspective” (p. 92). One of the defining aspects of 3D sound is the treatment of the dialogue track, which as Liang (2016) observes, is constantly pushed “out of the screen (or rather, the front speakers)” (p. 7), an approach that challenges the established screen-centric codes of surround sound. In *Gravity* (2013), for instance, Cuarón notes that “sound is constantly travelling, is very dynamic, is geographically very literal, meaning if one character is talking behind you, the sound is going to come from behind” (Cuarón, 2013, Interview by Sound Works Collection).

The intention of such aesthetics is to enhance the illusion of spectatorial presence in the film’s diegetic space – or, as Cuarón puts it referring to his film *Gravity*, to make the spectator feel as if they were “floating in space” (Cuarón in IMax, 2013) – a desire that recalls André Bazin’s myth of “total cinema” (1967, pp. 17–22). Bazin argues that those who invented the cinema imagined it “as a total and complete representation of reality; (...) the reconstruction of a perfect illusion of the outside world in sound, color and relief” (1967, p. 20). That is, total cinema can be understood as a cinematic experience within which we become invisible spectators, phantasmagorical beings that are virtually present in the film’s alternative reality. For Bazin, cinema’s ultimate goal is precisely to achieve such a realistic experience; hence, he argues, it would be unreasonable to resist any new technical development that aims to fulfil such a mythical experience.

It is important to point out, however, that Cuarón’s films do not really seek to present a faithful recording of reality *per se*, something that Bazin observed, for example, in Italian neo-realism; his actual aim is to create the *impression of reality* through the exploitation of the latest cinematic technologies of image and sound. In other words, when I refer to realism in this article, I am not talking about an aesthetic that aims to recreate reality in a factual or documentary fashion; realism is understood here as a cinematic approach that intends to produce a sense of spectatorial presence in the depicted space by means of recreating the sensorial ways in which we experience reality, namely the audio-visual representation of human hearing and vision. In fact, although the theories

1. See Idrovo and Pauletto (2019) and Idrovo (2021) for an extensive analysis of the aesthetics of *Gravity* (2013) and *Roma* (2018).

of total cinema have been widely attributed to Bazin, Leotta and Ross (2018) note that Bazin's prophecies were previously written by René Barjavel (1944), who theorised the idealistic future of cinema not as a perfect representation of reality, but as a perfect representation of human perception, that is, as a medium "able to offer us characters in full relief, in full colour, and even perhaps whose perfume we can detect" (Barjavel in Leotta and Ross, 2018, p. 4).

Stephen Prince (2012) lists conventional cinema, stereoscopic 3D, and IMAX formats as some contemporary examples of viewing spaces that intend to minimise the spectator's "awareness of image borders and of being separated from the image" (p. 184), to which one could add the Dolby Cinema format and its well-equipped Dolby Atmos sound. Dolby's latest sonic innovation, Dolby Atmos, includes up to 64 individually-driven speakers, each one of them offering a full frequency response. These speakers are not only located horizontally, as Atmos adds a vertical dimension with two overhead speaker arrays. Moreover, Dolby Atmos adds more speakers around the auditorium, which provides better localisation capabilities, increased definition and improved audio-visual coherence. Certainly, as Scott Richmond observes, in the cinema, more than anywhere else, a film can materialise its illusory capabilities and hence create "the impression of a world unfolding before us" (Richmond, 2016, p. 126). That is, the cinema matters "as an architecture and a particular kind of screen" (ibid, p. 23), it matters as a medium where we can more easily be transported into alternative worlds, not only through the use of enormous curved screens, but also by means of powerful surround-soundscapes (Recuber, 2007, p. 317).

In the cinema, the experience of feeling present in the narrative world is commonly known as immersion, which, as Mera (2016) notes, "is achieved by replacing as many real-world sensations as possible with the sensations of a virtual environment" (p. 92). Jones (2018) observes that "[a]n immersive experience is one which places us within an image space, surrounding us with mediated content" (p. 37). That is to say, the cinematic experience of immersion can be interpreted as a synonym of what is commonly known as spatial presence, "in which mediated environments are perceived as nonmediated" (Lombard et al., 2017, p. 1). In today's cinema – within which she includes the category of cinematic virtual reality – Cortés-Selva (2016) explains that the experience of immersion can be divided into physical and cognitive. In physical immersion, she notes, the user is virtually present (embodying an avatar) in a three-dimensional space that can be virtually created or captured by means of 360-degree cameras. Cognitive immersion, on the other hand, transports the audience member in the sense that it creates the illusion of presence – as in reality, the spectator remains seated in the theatre – in a diegetic world, which is achieved as a result of a series of narrative, stylistic and technological strategies (ibid).

Among such strategies, Cortes-Selva includes the audio-visual techniques of depth-of-field, camera movement, and surround sound, which combined can enhance the experience of immersion. Hence, while physical immersion is only possible through virtual reality and other interactive technologies, cognitive immersion can in fact take place within the space of a movie theatre as long as the impression of reality is accurately manufactured with stimuli that simulate our real-world perceptions. In the cinema, the illusion of presence is thus

directly linked to the medium’s immersive capabilities, which, I argue, can be exploited through the use of long takes and 3D sound, two cinematic techniques that are the essence of Cuarón’s immersive continuity.

Certainly, by observing Cuarón’s most recent films, one can easily distinguish his appetite for achieving such a total cinematic experience, which is demonstrated in the particular way he combines technology and aesthetics. At the 86th Academy Awards, *Gravity* (2013) won seven Oscars (including Best Director, Best Cinematography, Best Film Editing, Best Sound Editing, Best Sound Mixing, and Best Original Score); while *Roma* (2018), another great example of the use of immersive continuity, obtained three awards (Best Director, Best Cinematography and Best International Feature Film) out of ten nominations at the 91st Oscars Ceremony. All these accolades confirm Hollywood’s appreciation of Cuarón’s audio-visual proposal. But could his unconventional aesthetics become the future of cinema? In Mera’s (2016) analysis, three-dimensional sound design is likely to be the next step in the evolution of sound technology and film aesthetics (p. 108), which indirectly suggests a stylistic turn towards a Bazinian long-take-driven aesthetics. Although, as Idrovo and Pauletto (2019) observe, “it is more likely that such treatment will continue to be the exception” (p. 53), Cuarón’s gravitational pull has proven to be strong, and as we shall see, his audio-visual traits are now found in a diversity of films and genres.

Cuarón’s Most Direct Influence: Alejandro González Iñárritu

Apart from Cuarón, Alejandro González Iñárritu is perhaps the director that has most clearly adopted the stylistic traits of immersive continuity. In fact, Iñárritu acknowledges Cuarón not only as a close friend but as a personal adviser (Chagollan, 2019). Throughout the whole creative process, they influence each other, “from the conception through the script and then through the editing” (Iñárritu in Chagollan, 2019). Although until *Biutiful* (2010), Iñárritu was not considered a long-take director, his two most recent (and successful) productions stand out for an extensive deployment of long continuous shots, a typical visual resource found in Cuarón’s films; and as we have seen, such a long take-driven aesthetic provides the perfect opportunity for the exploitation of Dolby’s surround sound technologies, allowing all types of sounds – including dialogue – to maintain greater spatial synchrony with the camera’s perspective, something that cannot occur when fast cutting is used.

Keating (2019) observes that since cinema’s early years, “Hollywood’s predominant method of scene construction relied on master-and-coverage technique” (p. 151); a filmmaking approach that consists of shooting a large amount of footage from different perspectives (e.g. master shot, medium shots, close-ups, etc.). Many years have passed since the introduction of such a language, and yet the master-and-coverage technique, together with the shot/reverse-shot structure, is still Hollywood’s (and cinema’s as a whole) predominant method of scene construction. Today, particularly with tools such as Dolby Atmos, there is no technical restriction that could

impede a dialogue line to be reproduced by a loudspeaker located at the back of the cinema. Yet, coverage-based editorial decisions can be a barrier to such an approach taking place. Certainly, as Hollywood's sound designer Richard King stresses, spatialising dialogue and other narrative sounds "just doesn't work when there is a lot of edits (...). It works when there are maybe long shots, like in *Gravity* or *Roma*, where the audience can feel that they are in space and the camera is simply moving around" (School of Sound Conference, 2019). Following Cuarón's film style, Iñárritu's latest films deviate from conventional editing and present an alternative visual approach, which, grounded on the long take, creates possibilities for expanding the filmic space through a truly immersive and three-dimensional sound design.

Although such an audio-visual style is still passing through an experimental phase, its application has been well received by the industry and its institutions. In addition to the prizes that Cuarón received for his two most recent films, Iñárritu's *Birdman* (2014) and *The Revenant* (2015) were nominated for Best Sound Editing, Best Sound Mixing and Best Picture at the Academy Awards of 2015 and 2016 respectively. The two movies won in the categories of Best Directing and Best Cinematography, and *Birdman* was selected as the best picture of the year. Emmanuel 'Chivo' Lubezki, director of photography of *Gravity* and Iñárritu's most recent films, became the first cinematographer to win three consecutive academy awards; and in part, it was thanks to his work on these three movies that he earned the reputation for being a "master of the long take" in the digital age (Fazio, 2016).

The visual experiment showcased in *Birdman* is the most extreme example of what I consider to be the look that facilitates the deployment of three-dimensional sound design. The film tells the story of Riggan Thomson (Michael Keaton), who after being a famous Hollywood superhero celebrity in the 1990s, tries to satisfy his obsession for recognition by writing, directing and starring in a Broadway play. Apart from the dream sequences shown at the beginning and before the hospital epilogue, this movie plays as one continuous, real-time shot. Long takes are also present in Iñárritu's epic Western, *The Revenant*. In this film, we follow the journey of a frontiersman who is attacked by a bear and seeks revenge after being abandoned by his hunting team. According to my own measurements, the film's average shot length is about fourteen seconds across a total of 599 shots. There are 27 shots that last more than one minute, the longest being the long take that covers almost the whole bear sequence, lasting 4 minutes and 58 seconds. Although *The Revenant* is cut much faster than *Gravity*, *Roma* and *Birdman*, it is still far from being within the standards in Hollywood's contemporary editing practices.²

Moreover, what differentiates these films from the majority of contemporary movies is their three-dimensional use of sound. To a great extent, *Birdman* and *The Revenant* present the unconventional audio-visual match initially found in *Gravity*, which helps the spectator experience the film's events in a more vivid manner. All these films' fictional settings are in a way transformed into 'lived spaces' with the intention of creating the sensation of presence in the world of the story. By

2. See Bordwell (2002, pp. 16–17); Salt (2009, pp. 376–378); Kerins (2011, pp. 102–103).

means of a highly realistic representation of the way we hear in real life, these films succeed in giving lifelike attributes to the three-dimensional diegesis, a virtual space that, as Doane (1980) notes, differs from the visible space of the screen and the acoustical space of the theatre in the sense that it “has no physical limits” (p. 39); it is an imaginary space that the spectator is meant to inhabit, and through it they are transported into the narrative world.

Following in Cuarón’s steps, Iñárritu’s latest films make use of 3D sound precisely to take advantage of the cinema’s ability to recreate the way we experience reality. In *Birdman*’s truth-or-dare scene, for example, a coherent three-dimensional synchronisation of image and sound helps to locate us between Sam and Mike as they go down the stairs. We see and hear Sam in front of us, while we hear Mike (who is offscreen) closing the back door and walking behind us. His reverberant voice and footsteps are heard mainly on the left surround speakers, suggesting his position within the diegesis. Even though we do not see him, we can feel his presence right behind us, as his voice and movements emanate from the rear speakers. Mike’s *voice-off*, which Doane (1980) defines as “the voice of a character who is not visible within the frame” (p. 37), is panned to the exact position where the character is located, represented in the theatre by a voice that emanates from a speaker (or group of speakers) in the back of the acoustical space. This relatively simple spatialisation technique enhances the process of transportation by locating us within a lived space, with sound elements being distributed in accordance with the position of their sources in the three-dimensional diegesis.

It is worth mentioning that the soundtrack of *Birdman* was mixed and delivered using the traditional 5.1 sound configuration (three front channels, plus two surround channels and a subwoofer), meaning that the representation of the diegetic space in this film was restrained by a limited number of audio channels. This is undoubtedly a major limitation in the sense that sounds cannot flow throughout each individual speaker, but they have to abruptly jump across large zones of speakers distributed across the auditorium. Moreover, traditional channel-based setups do not include overhead speakers, which means that in *Birdman* the three-dimensionality of the sonic space had to be represented only within the 360-degree horizontal plane.

This limitation was overcome in *The Revenant*, which included an object-based Dolby Atmos soundtrack for its theatrical release. With such a powerful tool, *The Revenant*’s sound designers were able to represent nature and our presence within it in a highly realistic way. The battle sequence at the beginning of the movie is an interesting example. After hunting an elk, Jim (Will Poulter) asks a group of trappers to help him haul the meat back. Suddenly, we all – the characters and the audience – hear a distant cry for help emanating from the right side of the auditorium. As a reaction, the camera rapidly pans towards that direction and we see a naked man approaching from a distance. The man falls to the ground and through a wide-shot we are able to see that he has got an arrow embedded in his back. The wind, the cracking of the trees, the fauna of the location, distant shouts, and a series of whispering voices are heard emanating from different directions in accordance with the position of the sources in



Fig. 1 Stills taken from *The Revenant* (2015). This illustrates the movement of the camera from stills 1 to 6. The sound design follows this movement of the long take by mixing sound levels and panning sounds according to the position of their sources in the diegesis.

the diegesis. This is especially noticeable when the camera shows some arrows passing through the treetops, and as the image rotates by 360 degrees, we hear the close whispering of an offscreen man moving around, matching our circling visual perspective. "I can't see'em ... I can't see'em", he says, and as part of the suspense, we cannot see them either (Fig. 1).

Once Glass (Leonardo DiCaprio) gets onto the battlefield, 3D sound immerses us in breath-taking combat between the American trappers and the Amerindian tribe. We experience, for instance, how a group of Arikaras arrive on their horses, and we feel them approaching from behind. As we see them appearing on the screen, we hear them passing rapidly through our position, from rear to front, not only as an effect

of the coherent localisation of sounds in space but by means of the powerful rumbling produced by the LFE channel, which simulates the heavy footsteps of the cavalry. Similarly, the first Arikara warrior that attacks Glass is heard initially offscreen, approaching from behind just before he appears visually; and the Arikara chief is heard approaching from the right seconds before he decapitates one of the white men onscreen. Such an “in-the-wings effect”, as Chion (1994) once referred to this kind of spatialisation technique, was experimented with and quickly dropped during the Dolby Stereo era (*ibid*); however, it is constantly employed throughout this and other recent films, which reopens the debate and challenges practitioners and academics to establish a framework under which such a treatment of sound could experience a broader renaissance. Certainly, as Chion (1994) stresses:

[T]he in-the-wings effect created a nagging problem by violating the conventions of continuity editing and making sound matching problematic. But maybe it could have gained more permanent admittance into film practice had it been systematized along with some partial adjustments in editing conventions (...) So perhaps it was a mistake to have given up so quickly. (p. 84)

Such practical editing adjustments were actually applied by Iñárritu in the form of longer shots, which facilitated the application of three-dimensional spatialisation techniques, something that is difficult to find in action sequences, as they are normally constructed out of many different shots. In relation to the long take and its benefits for the soundtrack, *The Revenant*’s sound designer Randy Thom comments:

I think the longer the take is, the more opportunity you have to do interesting things with sound. And probably the fewer cuts there are within a sequence, the more potential you have to do something with sound also, because you don’t have to adjust the sound to conform with the cuts or the perspective changes. (...) So, I hope that these kinds of movies and these kinds of sequences that involve long takes will persist. Obviously, every movie doesn’t need to be that way, but I hope those filmmakers like Cuarón and Iñárritu, who seem to specialise in those, will continue doing them. (Thom, personal interview, 2019)

Immersive Continuity: A Stylistic Turn?

Although the characteristics of stereoscopic 3D technology call for the use of immersive continuity, films like *Birdman*, *The Revenant* and *Roma* demonstrate that planar cinema can also benefit from this style’s capacity to immerse us in a fictional world. But Cuarón and Iñárritu are not the only directors who have started to use this film style. After its deployment in *Gravity*, other filmmakers have embraced some of the stylistic traits of immersive continuity in 2D productions, and it is such a *gravitational pull* that this article aims to uncover. From science fiction to dramas and action films, immersive continuity is now more commonly found in film and media. While long takes are not a new thing, their combination with 3D sound to create a more sophisticated impression of reality is a very recent innovation. Unlike the long takes deployed in previous eras – such as the Copacabana Steadicam shot in Martin Scorsese’s *Goodfellas* (1990), the opening sequences in Robert Altman’s *The Player* (1992) and Brian De Palma’s

Snake Eyes (1998), or all the long takes in Paul Thomas Anderson's *Boogie Nights* (1996) – long takes in present-day film are commonly complemented by the enveloping characteristics of 3D sound.

For example, in *Goodfellas*' famous Copacabana sequence, a Steadicam follows Henry (Ray Liotta) and his girlfriend Karen (Lorraine Bracco) as they walk towards the back corridors that lead to the club; and as this happens, the stereo soundtrack keeps all diegetic sounds in the front and all dialogue in the centre of the screen. Similarly, in the opening sequence of De Palma's *Snake Eyes*, dialogue is kept in the centre of the screen, and the multichannel soundtrack does not produce the sensation of movement that is found, for instance, in *Bird-man* every time the camera moves through the corridors of St. James Theatre, which is achieved by attaching all kind of sounds to their correspondent source (e.g., the footsteps of a person who passes by from front to rear), an effect somehow similar to what we experience as the camera moves inside *Gravity*'s International Space Station scenes.

Although intensified continuity is still Hollywood's predominant film style (Bordwell, 2002), there are interesting examples of the use of immersive continuity in a number of recent films, which present moments in which long takes and 3D sound are combined to enhance the illusion of a world that surrounds us. Apart from Cuarón and Iñárritu's most recent films, specific moments in blockbusters like Damien Chazelle's *La La Land* (2016), Edgar Wright's *Baby Driver* (2017), Bong Joon-ho's *Parasite* (2019), or Leigh Whannell's *The Invisible Man* (2020), are a demonstration of such a stylistic trend. In the opening sequence of *La La Land*, for instance, a

moving camera passes through a number of vehicles, and the three-dimensional soundtrack dynamically changes depending on where the camera is located (Fig. 2). With Dolby Atmos at their disposal, Chazelle and his sound team were thus able to achieve what Orson Welles intended for the opening sequence of *Touch of Evil* (1958), whose soundtrack was meant to realistically reconstruct the soundscape of a Mexican border town, as Welles describes:

As the camera moves through the streets of the Mexican border town, the plan was to feature a succession of different and contrasting Latin American musical numbers – the effect, that is, of our passing one cabaret orchestra after another. In honky-tonk districts on the border, loudspeakers are over the entrance of every joint, large or small, each blasting out its own tune by way of a «come-on» or «pitch» for the tourists. The fact that the streets are invariably loud with this music was planned as a basic device throughout the entire picture (Ondaatje, 2002, p.185)

Similarly, during the credits sequence at the beginning of *Baby Driver*, a moving camera follows Baby (Ansel Elgort) as he walks across the streets of downtown Atlanta; as this happens, not only sound effects, but also the voices, movements, and footsteps of background characters are positioned in accordance with where they are, thereby creating an "inhabitable" and illusory audio-visual representation of the city (Fig. 3). In terms of camera movement and composition, this sequence looks similar to, for example, the opening of Anderson's *Boogie Nights*. Yet, by comparing the highly spatialised Dolby Atmos soundtrack deployed in *Baby Driver* with the



Fig. 2 Stills taken from *La La Land* (2016). This illustrates the movement of the camera from stills 1 to 6. The sound design follows this movement of the long take by mixing sound levels and panning sounds according to the position of their sources in the diegesis.

screen-centric approach found in Anderson's film, it is easy to discern a radical evolution in sound design aesthetics towards the achievement of spatial presence.

The same can be said of Bong's latest film, *Parasite*, the first foreign-language film to win the Best Picture Academy Award in 2020. Bong, who with this movie also won the Academy Awards for Best Original Screenplay, Best International Feature Film, and Best Director, successfully employed 3D

sound to transport the spectator into the semi-basement where the Kim family resides, and into the mansion in the hills where they work for the wealthy Park family. The film's immersive soundtrack allows us to experience vividly the contrasting characteristics of the South Korean capital. An interesting scene is the one in which the Kims have to escape from the comfort of the Parks' mansion and run towards their humble semi-basement located in one of the poorest areas of the city. A big storm is going on as they

flee back in the middle of the night, producing a catastrophic flood in their neighbourhood leaving their apartment under water. Besides the immersive atmosphere of the rain falling upon us, the voices of the characters matching their geographical position in the diegesis adds a high dose of realism to the scene, which ultimately transports us into their tragedy. The film's soundtrack thereby helps to construct "the much-vaunted sense of place" that, as Lee and Stringer notice, is typical of a Bong film (2018, p. 150).

Another interesting example is found in the opening sequence of Leigh Whannell's science fiction horror film *The Invisible Man* (2020), featuring a one-minute static shot of a cliff seen from the ocean. Throughout the shot, the sound of waves hitting the rocks is heard all around us, an approach that the director deliberately used to create the illusion of presence in the space of the movie. Referencing this particular shot, Will Files, supervising sound editor and re-recording mixer of the film, comments:

One of my (...) favourite scenes from *The Invisible Man* was actually the very first shot in the film. A locked off shot, looking at a cliff side and a big rock in the ocean. And the camera is sort of out in the ocean. It was this interesting trick the director decided he wanted to do it that way because he wanted the audience to understand that this movie would be about point-of-view and that it wasn't just sort of a random shot, it was designed to make you feel like you were there. We were able to build the sounds in such a way, where they literally went through the entire theatre and up to the front and then back through the entire

theatre. It's so immersive, you feel like you're out there in the ocean and you feel the sense of the power of these waves moving through the room. (Files in Dolby, 2020b)

This shot is very reminiscent of the beach scene near the end of *Roma*, a highly realistic sequence shot that has been praised for its illusory and immersive qualities. Sound designer Will Files describes another interesting scene from *The Invisible Man* where immersive continuity is deployed to increase the sense of spectatorial presence:

When she's [Cecilia, the main character] alone in a bedroom and she thinks she hears something, she is kind of just playing with some stuff in the corner and then the camera starts moving around the room and it settles on what seems to be an empty window and then it slowly moves back to her. We did that using Dolby Atmos, so you can actually hear the room kind of spinning around. (Files in Dolby, 2020b)

Such a "spinning around" effect has its origins in the iconic car sequence in Cuarón's *Children of Men*, which was shot as a single take using a circling camera inside a vehicle (Fig. 4). As another proof of Cuarón's gravitational pull, today the interiors of cars have become interesting playgrounds for filmmakers in their quest to create the sensation of presence in the space of the diegesis. In *Widows'* (2018) opening sequence, Steve McQueen deploys a 'Cuarónian' strategy with the intention of locating us in the middle of the action as if we were one of the fugitives trying to escape from the police. Similarly, Jeremy Rush's *Wheelman* (2017) begins with a long shot that is



Fig. 3 Stills taken from *Baby Driver* (2017). This illustrates the movement of the camera from stills 1 to 6. The sound design follows this movement of the long take by mixing sound levels and panning sounds according to the position of their sources in the diegesis.

captured from the interior of the car that Wheelman (Frank Grillo) will use for his next job. Throughout the opening of this Netflix Originals film, we hear all the sounds from a single and three-dimensional perspective. When Wheelman surrounds the car, for instance, we hear his footsteps going around us, and as he checks the rear suspension, we hear him pushing the trunk behind us, just before entering the car through our left. This very simple panning strategy intends to create

the illusion of being inside the car; it aims to transform the movie into some sort of driving simulator and thereby grab our attention from the moment the film begins. Although it is true that the cinema offers the most appropriate infrastructure for 3D sound to be deployed and effectively experienced, *Wheelman* demonstrates that immersive continuity has also been deployed in the video-on-demand (VOD) realm, a film and media industry that today offers a variety of Dolby Atmos



Fig. 4 Stills taken from *Children of Men* (2006). This illustrates the movement of the camera from stills 1 to 6. The sound design follows this movement of the long take by mixing sound levels and panning sounds according to the position of their sources in the diegesis.

content. Of course, it is important to mention that, generally speaking, a VOD subscriber does not have the physical infrastructure that is needed to perceive a film’s soundtrack in a three-dimensional way, hence it is unlikely that the common Netflix subscriber was able to fully experience the soundtrack of a film like *Wheelman*.³

With the example of *Gravity* working as some kind of Dolby Atmos advertising piece,⁴ this sonic platform seems to be influencing filmmakers to better exploit the sonic space. Yet, it is worth noticing that Cuarón’s influence is also present in movies that were mixed and delivered in traditional channel-based formats, including *Birdman* and other American productions such as Ryan Coogler’s *Creed* (2015), Barry Jenkins’ *Moonlight* (2016), Cary Murnion and Jonathan Milott’s *Bushwick* (2017), among others. Although it is true that a state-of-the-art sound system such as Dolby Atmos facilitates and even calls for less “tethered” approaches to sound spatialisation, the use of other surround sound platforms does not impede the deployment of 3D sound. When the long take is used, a 5.1 film could potentially be more immersive than a Dolby Atmos fast-cut movie. Dolby’s latest sonic platform is indubitably a powerful tool, but its full capabilities are only usable when the image allows it; hence, a stylistic turn towards a long-take-driven style stands out as the only way for Dolby Atmos to produce the effects that its advertising slogan claims, that is, to transport us “into the story with moving audio that flows all around you with breathtaking realism” (Dolby, 2018). In other words, even though 3D sound is today technically feasible, it

can be argued that the screen-centrality of film sound will remain unchanged if editing conventions do not evolve in the direction of immersive continuity, a film style that as Cuarón and others have proven, can take us closer to the experience of the mythical total cinema.

Conclusions

Following in the wake of Cuarón’s *Gravity*, immersive continuity has been observed in a number of films. These findings suggest that *Gravity* can no longer be considered an experimental film and that its audio-visual aesthetic, far from being an isolated event, is becoming a growing trend across genres. Whereas Alejandro González Iñárritu has fully embraced immersive continuity in his two most recent films, other mainstream directors have deployed it in specific sequences to momentarily offer a more *presential* cinematic experience. The long take has grabbed the attention of a number of filmmakers around the world, and today it is a fairly common strategy often complemented by the immersive action of 3D sound.

Despite all this, nothing has really changed. Film sound designers are usually obligated to apply a screen-centric methodology, not because technology is not sufficient, nor because audiences do not accept the movement of sound effects and voices around the auditorium, but due to the fact that the conventional editing patterns used in the vast majority of films preclude sounds from moving in a coherent

3. A Dolby Atmos enabled ONKYO 5.1.2 sound system was used by the author to listen to and analyse VOD content.

4. See for example Alfonso Cuarón’s testimony on the official website of Dolby, in which he speaks about the importance of Dolby Atmos for designing the sound in *Gravity* (Dolby, 2020a).

three-dimensional manner. Whereas the treatment of visuals that Cuarón and Iñárritu have embraced is exceptional, most films are cut into many fragments as if that were the general filmmaking rule. Although it is true that cutting is a powerful creative tool, it is also true that conventional editing has played against cinema's nature of being, which, as suggested by Bazin (1967), was created to offer lifelike three-dimensional experiences. Montage, once referred to by Sergei Eisenstein as the essence of cinema, has in fact prevented the cinema from achieving its totality. Editing, as it is conventionally practised, is today the main obstacle to the fabrication of virtually inhabitable cinematic worlds.

Although creating a fully immersive soundtrack is not always necessary, and perhaps not appropriate for particular stories, scenes or genres, the fact that immersive continuity has been extensively applied in a variety of subsequent productions is evidence of Cuarón's gravitational pull. His experimental work has initiated a highly plausible stylistic turn towards a more immersive cinema, and his film style stands out as a way to really take advantage of powerful audio tools such as Dolby Atmos.

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