
Group 1 - Practice Portfolio

**A reimagining of Todd Browning's Dracula (1931),
using modern sound technology to translate the
filmmakers vision into the 21st century.**



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Abstract

Our aim was to enhance the original soundscape of the Universal 1931 horror-classic, *Dracula*, honouring Browning and the studio's original vision while translating the impact the film had on original audiences for 21st century viewers. Using Adobe Audition, and informed by research into the social and industrial contexts in which both the film and the character of 'Dracula' itself exist, we have created a new soundtrack that complements the original sound design, without overshadowing it.



Why this?

We chose Dracula due to both its historical resonance, and its technological limitations. Though described by film critic Mordaunt Hall as 'the best of the many mystery films' (1931), the soundscape of the film is inevitably limited by its era, and thus appears technologically antiquated and underwhelming to today's audiences. By using the sound editing technology available to us now, we have built upon Browning's original soundscape, and produced an enhanced soundtrack that better reflects the experience cinema goers had in 1931, when Dracula was released.



Renfield Meets Dracula
(<https://www.youtube.com/watch?v=KjDfOAhtWwo>)

We chose to use the scene in which Renfield arrives at Count Dracula's castle. Travelling in a driverless carriage, he reaches the castle alone, and enters the huge wooden doors into an enormous and seemingly abandoned interior, observed by three bats. Armadillos and other vermin scuttle within. As Renfield surveys his

surroundings, Dracula descends the staircase and announces himself. We chose this scene as it showcases key elements of Dracula's character, such as his isolation, heritage, affinity with animals and dominance over unsuspecting victims; the original footage and sound design offers great opportunities to explore these themes through sound.

On the spectrum of creative reimagining to purely technological restoration, our edit seeks to fall somewhere between the two. By developing a strong research basis to understand the historical, industrial, social, and literary contexts of the film, that in turn informed our creative decisions, we have recreated the original experience of *Dracula's* first audiences, and let modern audiences look past its technological limitations to appreciate what makes *Dracula* special. We aimed not to transform or alter entirely, but to 'recover some of [its] lost original power' (Spadoni, 2007, p. 45). When considering which version of *Dracula* to use as the basis for our edit, with support from unit tutors we decided to use Universal Pictures' 2012 restoration, which included a remastered soundtrack (*Dracula: The Restoration*, 2012). Since the aim of our edit was primarily focused on creatively enhancing the emotional effects of the soundtrack rather than restoring it, this allowed us to focus on those creative decisions without the burden of technological restoration. While a restoration is possible in Adobe Audition, without the correct tools, expertise and budget that were available to Universal Pictures, undertaking a comparable restoration of the optical soundtrack would have been beyond the scope of this project.

Additionally, it is worth noting that our edited version of the scene requires headphones, due to the use of 'binaural' stereo sound. The reasons for employing this technique are explained below. We don't consider this a limit to the potential of our remaster, as the techniques used can be adapted to a 5.1 surround sound version for the same effect. We have mixed our clip using stereo channels suitable for headphone listening due to the technology available to us in editing the clip, and to you in watching it.

Research

Historical/Technological Context

Dracula (Browning, 1931) introduced sound to the Horror Genre

Todd Browning's *Dracula* (Universal Pictures, 1931) was 'produced during the transition period between silent and sound film' (Mueller, 2015, iii), a pivotal time in cinematic history, in terms of both genre and sound technology. Released just a few years after *The Jazz Singer* (Alan Crosland, 1927), the film was one of the first 'talkies' (a film with synchronised sound) to be showcased in certain theatres. While films such as *Nosferatu* (F. W. Murnau, 1922), or those of Universal Pictures' Silent Era monster movies, had previously established particular horror aesthetics and practices, *Dracula* was the first horror film to include diegetic, synchronised sound. Thus, it played a part in establishing the soundscape of the horror genre, along with the string of thrillers characterised by the 'Golden Age' of monster movies, and the genesis of classic cinematic horror.

The film had an unprecedented effect on early audiences

The film was a critical and commercial success. It was the most lucrative Universal Pictures feature of 1931; many reviews emphasised the visceral impact it had on audiences (Spadoni, 2007, p. 46). One critic drew attention to the 'weird thrills', 'lurid plot' and 'suspense held for every foot of its unreeling'. One review asserted that Bela Lugosi's performance as the titular vampire would 'send chills down the spines of sensitive people'; similarly, a writer for the *Film Spectator* summarised the film as a

'creepy horror that should give an audience goose-flesh and make it shudder' (Spadoni, 2007, p. 48). Interestingly, this critic found that the film didn't offer 'any comic relief', being wholly 'horrible and impossible', with 'the sole purpose of making its audience gasp' (Spadoni, 2007, p. 47). As noted by Robert Spadoni, despite notably comical elements of the film such as the clumsy, Cockney sanatorium attendant, initial reviewers did not comment on such moments, many regarding the film as singularly terrifying.

It is clear that the introduction of sound had an effect on initial audiences. A prominent writer on sound in the horror genre, Spadoni comments on the 'uncanny' effects of diegetic sound, particularly those concerning 'the human figure' (2007, p. 6). He considers the definitions of 'uncanny' provided by Sigmund Freud and Ernst Jentsch; chiefly, 'perceiving an inanimate object to be alive and, conversely, momentarily perceiving a living thing to be inanimate' (2007, p. 6). Through this, he explores how early sound films distanced audiences, and produced disjointed, uncomfortable relationships with on-screen characters, just as the first moving pictures had done; 'the mechanical marvel that astonished and disturbed viewers at the start of cinema history astonished and disturbed them again thirty years later' (2007, p. 6). Spadoni believes *Dracula*, along with James Whale's *Frankenstein* (Universal Pictures, 1931), to be capitalising on this effect, with 'figures [that] could seem both alive and dead at the same time' (2007, p. 7).

Filmmakers exploited this ‘uncanny’ effect

‘When Universal began planning its film, then, sudden, off-screen, and ambient noises were among the near-at-hand options for using sounds to frighten a film audience’ (Spadoni, 2007, p. 56-57). Spadoni describes how Browning and the editors on *Dracula* drew horror from ‘the uncertain status of the relationship between the aural and visual components’ (2007, p. 59) to exaggerate the film’s disjointed nature. He refers to the scene in which Dracula’s ship arrives in England, and Renfield is discovered maniacally laughing in the ship’s hold. Renfield’s laugh plays over shots of the ship’s interior, and a shot of Renfield glaring towards the camera as he clings to the ship’s stair-railing. The effect of simultaneously hearing a character laugh and seeing said character gazing wide-eyed is undoubtedly eerie. Spadoni says;

“Viewers who a second earlier were comfortably ensconced in an unfolding narrative are suddenly put into contact with a cold and lifeless thing. There is no person there. The spirit of the person is elsewhere and does not inhabit this grey facsimile, this ghostly screen” (2007, p. 60).

The film’s initial impact dissipated as audiences grew accustomed to diegetic sound

Spadoni notes the timing of *Dracula*’s release as crucial to its initial impact, coinciding with both the transition period to sound cinema, and the beginning of the classic horror cycle. The film was released at a time when its soundscape would have a heightened impact before audiences became accustomed to synchronised sound in film; ‘*Dracula* took advantage of this fading perception to appall its first

audiences' (2007, p. 7). There was a swift adaptation to sound, and the novelty soon wore off; Carl Laemmle Jr., head of production at Universal Pictures from 1928 to 1936, remarked in 1932 that "the fact that the screen now has a voice is no longer a novelty" (Spadoni, 2007, p. 31). Thus, *Dracula* was produced and released at a critical time in film history, with an impact that was quickly lost to the public's acclimation to sound technology.

Dracula's use of sound was still highly influential

Moreover, *Dracula's* sound editing roped precedents not only for classic horror but influenced much subsequent cinema (Petrikis, 2015). As noted by Titas Petrikis, the feature 'contains examples of advanced sound editing features that became and archetypical form in future film productions' (2015, p. 28), with editor Milton Carruth making creative choices that would become commonplace editing practice. This can be seen with the film's use of acousmatic sound, 'heard without its cause or source being seen' (Petrikis, 2015, p. 28), as with Renfield's laughter heard over shots of the ship's interior, or howling wolves heard throughout the film; the effect of this is to manipulate the audience and 'build dramatic tension' (Petrikis, 2015). Another innovation was the use of reaction shots, similarly used in *Frankenstein's* editing, which gave a 'deeper dramatic impact' to a character's actions to forge 'stronger emotional links with audiences' (Petrikis, 2015, p. 28). As such, *Dracula's* sound design was incredibly effective and would prove to influence future cinematic

editing, but being so ahead of its time inevitably meant that future audiences, being accustomed to the standard that *Dracula* set, would be left unaffected.

Dracula was limited by the technological ability of the era

Nonetheless, the film's soundscape was undoubtedly limited by its technology, as noted by many subsequent critics. Petrikis states that due to the relatively minimal resources in post-production, engineers would most likely have had to record all sound effects while the scene was being filmed and that up until 1932, only dialogue or music could be recorded at any one time (2015, p. 29). As a result, modern audiences are often underwhelmed by the film; Spadoni notes that though 'the film casts a long shadow over the history of its genre', many fans of the film would most likely describe it as "'creaky', 'stagy', 'funny', or possibly 'bad'" (Spadoni, 2007, p. 45). He attributes this to the film's age, and the differing expectations of modern audiences to the film's contemporaries; 'the capacity of *Dracula* to frighten and impress audiences remains resolutely fixed to the film's first screenings' (2007, p. 45). Consequently, Spadoni assesses that it is necessary to revisit and comprehend its context 'to recover some of the lost original power, and strangeness, of Browning's film' (2007, p. 45).

Technological restorations have been commonplace

From our research, it's become clear that the feature has been restored several times. In the words of Roger Ebert, '*Dracula* has been pushed and pulled in so many different directions by so many different artists [that new restorations are]... only following the tradition in adding [their] own contribution' (1999). Though this history means we are not the first group to hypothesise technical improvements, the lineage of *Dracula's* restoration exhibits a defiant impetus to improve upon the initial work, in many different ways.

Notably, Universal Pictures produced a technologically focused restoration in 2012, clarifying the sound and removing optical hiss, but without adding any additional effects. According to a visual editor, 'the whole point of this process, is not to let the viewer know that we were here' (*Dracula - The Restoration*, 2012). Petrikis additionally undertook his restoration in 2015; conversely, his had a creative agenda, even using pitch shifters to change the intonation of dialogue delivery.

Social Context

Prejudices surrounding the genesis of *Dracula*

‘Horror film has the ability to get to some topics that are some of the most awful topics that we ever have to consider in terms of the mortality and fragility of our own lives... and horror film gives us a chance to process some of that, to think about it- maybe the monster is some sort of embodiment of some fear... those films are pretty incredible the way they can work out some of these bigger cultural anxieties.’ (Lerner, 2019)

Much scholarship understands the narrative of Bram Stoker’s novel *Dracula* (1897) within the context of Victorian bigotry and Othering. While Browning’s depiction 34 years later undoubtedly made the vampire more humane, elements of the film such as sound brought these prejudices to the forefront, evoking Spadoni’s ‘uncanny’ (2007) and provoking a visceral impact on audiences.

Xenophobia

‘But a stranger in a strange land, he is no one; men know him not—and to know not is to care not for. I am content if I am like the rest, so that no man stops if he see me, or pause in his speaking if he hear my words, to say, “Ha, ha! a stranger!”’ - Count Dracula (Stoker, 1897, p.51)

Though the title *Dracula* originates from the 15th century Romanian leader Vlad III Dracula, and the character was somewhat inspired by Vlad ‘the impaler’ from Romanian folklore, Bram Stoker had never visited the country, and thus had ‘very limited knowledge of the actual cult and lore’ (PBS 2020; Gammello, 2018, p. 11). According to Alyssa Gammello, this lack of understanding inevitably ‘proved

problematic, leading to the spread of misinformation and the perpetuation of stereotypes' (2018, p. 11), evident in the representations of antiquated villagers, Dracula's heritage and dangerously abnormal behaviours (Gammello, 2018).

Stoker appears influenced rather by contemporary anxieties and bigotry than any desire to represent Romanian culture. His novel contributed to a trend in invasion literature, a genre attributed to narrative about foreign entities attempting to occupy and overtake a sovereign state (Reiss, 2005). Indeed, many of Dracula's intentions and characteristics are understood by scholars as thinly veiled xenophobic and anti-immigration sentiments; 'he hungers for the blood of English people, masked by an interest in English culture... his nature as a vampire is to literally consume blood... traditionally a nationalistic marker of identity' (Squ, 2018).

It is also Dracula's apparent 'civility' and assimilation into British culture that frightened Stoker's readers;

'He... knows British law, speaks perfect English, wears class appropriate clothing, and seduces British women. While previous vampires lurked in the dark, Dracula does all of this in broad daylight, seemingly indistinct from other Englishmen. This ability to be in the light is the ultimate representation of his ability to integrate into Victorian society, and it made him particularly horrifying in the 1800s.' (Gammello 2018)

This anxiety undoubtedly bleeds into Browning's film, with Bela Lugosi's powerful body language and, most strikingly, his native Hungarian accent, commented on by

Jason Marzini; 'Lugosi's strong Hungarian accent and dark feature distinguish him from the English actors in the film. His eccentric behaviour and strange mannerisms serve as a reminder that he doesn't fit in with the aristocracy of London' (2014, p. 8). Here the film perhaps extended further than the novel, featuring 'the sound' of Dracula to audiences worldwide for the first time. While the novel evokes fear of the vampire's assimilation, his accent on screen reminds audiences of his obvious difference to the mid-Atlantic or Cockney voices of other characters, even the dutch slant of Van Helsing. As attested by Gamello, Dracula's distinct accent has since become a stereotype associated with the character throughout its cultural evolution, a xenophobic Othering made visceral by Browning's on-screen depiction.

Anti-Semitism

Confluent with the narrative's xenophobic themes is the subtextual anti-Semitism present in *Dracula*. Anti-Semitism and xenophobia are often mutually inclusive, perhaps because many Eastern European immigrants to Victorian England in the late 19th Century were Jewish (Squ, 2018). Many parallels can be drawn between Dracula's attributes and Jewish caricature, including his heritage and incredible wealth, his secrecy, or his 'intense aversion to Christianity', symbolised by his fatal fear of the crucifix (Squ, 2018). Indeed, Dracula's inherent being as a vampire has been linked by scholars to fears over 'miscegenation', fuelled by imperial anxieties surrounding purist notions of race and national identity (Berick, 2020)

Before Browning's film, German Expressionist feature *Nosferatu* (F. W. Murnau, 1922), capitalised on growing anti-Semitic sentiment in the aftermath of the First World War, with Count Orlok embodying many contemporary anti-Semitic caricatures (*The Power of the Vampire Myth*, 2018). Though Browning's *Dracula* perhaps diluted this image somewhat, with a human, speaking vampire, arguably his representation could instil prejudiced fears of cultural assimilation and Jewish anonymity in the West. This evokes Spadoni's ideas of the 'uncanny', Dracula being human and undead; at once culturally normative and secretly threatening.

Homophobia and Gay Panic

The uncanny and duplicitous nature of Dracula reflects the narrative's subtextual queerness. Scholars such as Christopher Craft have highlighted Brooker's apparent fascination with penetration, not only by Dracula unto male victims such as Renfield, but by Van Helsing's wooden stake; according to Craft, such elements 'do not bespeak merely Stoker's personal or idiosyncratic anxiety but suggest as well a whole culture's uncertainty about the fluidity of gender roles' (1984, p. 123).

Dracula's possession of Renfield after biting him appears equally coded, both in the novel and the 1931 film; Dracula exclaims 'how'd are you touch him, any of you? How dare you cast eyes on him when I had forbidden it?' (Stoker, 1897). Interestingly, Universal Pictures heads were against filming Dracula biting Renfield, and sent Browning a memo stipulating that "Dracula is only to attack women'. Similarly, in re-

releases after the Production Code had been enforced in 1934, both Renfield's scream when he is bitten and Dracula's moan when he is staked were censored, which suggests a perceived sexuality in both acts. Censoring of the film's sound in particular highlights its visceral impact on audiences; the soundscape appears to overtly showcase the social anxieties of the novel, beyond the comfort of contemporary executives.

The Character of Dracula

The origin of vampires

Since its inception in 1897, Bram Stoker's original character Count Dracula has become synonymous with the term 'vampire', and remains a prominent figure in horror pop culture. The concept of vampires, however, predates Stoker's novel. The first written mention of 'vampires' is found in Slavic folklore of the 11th Century.

The mythical creature was born from superstitions surrounding symptoms of diseases such as rabies, pellagra, and in some cases, posthumous decomposition.

Nails and teeth of the deceased would grow slightly, and occasionally blood would leak from their mouths, giving the impression of feeding and changing. Locals would follow specific burial rituals, designed to 'prevent the dead from rising', such as driving stakes through the bodies and burying them with garlic. When Austrian soldiers witnessed these rituals in 18th Century Serbia, rumours of 'vampires' began to spread. (Stepanic, 2017).

Historical origins of Dracula

Vlad III Dracula, or 'Vlad the Impaler', was Voivode (ruler/warlord) of Wallachia, a region of Romania, three times between 1448 and his assassination in 1476. The title 'Dracula', meaning 'dragon', was first bestowed upon his father, Vlad II, who was part of an order called 'The Order of the Dragon'. He earned the name 'Vlad the Impaler' for the brutal ways in which he executed his enemies, and the violent slaughters his armies are known to have committed (Kaplan, 2011). Though the gruesome Vlad III Dracula and the classical 'Dracula' character may seem far removed, there are parallels to be drawn between the two. For example, the concept of hosting a grand banquet as a front for one's sinister intentions is a commonality of the two figures, and one that was adapted into Browning's *Dracula* (Georgakas, 2007).

Though the inspiration behind the name 'Dracula' is widely accepted to be drawn from 15th century Romanian Vlad III Dracula known as Vlad 'the impaler', Stoker also drew inspiration for the character from his own readings, and tales heard of diseases in the 18th century. In particular, Stoker is said to have drawn inspiration from folktales passed on from his mother, and Joseph Sheridan Le Fanu's 1872 novel *Carmilla*, which also depicts an earlier representation of vampires. Thus, Dracula was born (Maloney 2014).

Following Stoker's novel, numerous theatre adaptations were made by playwrights such as Hamilton Deane and John L. Balderston. These expanded on the character of

Dracula, and provided inspiration for Tod Browning's 1931 on-screen adaptation with Universal Pictures. The character was thus thrust even further into mainstream media, and Dracula's scary, vampiric image was bolstered the social fears of the time. (Hantke, 2004; Georgakas, 2007).

The contemporary vampire

Over time, the image of the 'vampire' became somewhat more alluring and appealing (Jeffrey 2019), perhaps drawing more closely from the charismatic, mysterious elements of Bela Lugosi's performance in Browning's *Dracula*. During the late Victorian era, the penetrative, pseudo sexual nature of Dracula's bite spawned an increase in romantic interest in the 'vampiric' (Garnett, 1990). As a result, 'vampires' are increasingly sexualised in pop culture. In films such as *Twilight* (Hardwicke, 2008), vampires have become the focus of romantic and sexual fantasies; depicted as 'perfect' or 'elevated' versions of human beings. The original uncanniness of the 'vampire' has been flipped to be impossibly perfect, rather than unnervingly foreign (Heldreth, 1999).

Many contemporary depictions of Dracula, such as Count Von Count of children's television show *Sesame Street* (PBS, 1969-present), have become icons of pop culture, and in turn made the character accessible to children. Media aimed at children and young adults that feature Dracula and other vampires, such as *Hotel Transylvania* (Genndy Tartakovsky, 2012), *Vampirina* (Disney, 2017-present), *Only*

Lovers Left Alive (Jim Jarmusch, 2013) and *Dark Shadows* (Tim Burton, 2021), have evolved the gothic icon into one that represents the oppressed, rather than the oppressor (Holte, 1997). Framed in a newly sympathetic light, audiences now resonate with the struggles of vampires, recognising their position on the fringes of society, and relating to their feelings of loneliness and isolation. This shift in representation is indicative of media's post-modernist turn to self-contemplation, in which the Western consumer can be considered as the real 'monster' (Hardt, 2014). Post-modern vampires are given nuanced character arcs and empathetic depiction, and are even used as fictitious political tools in addressing society's faults, particularly with regard to issues of sexuality and race. (Hardt, 2014). Films such as *Blacula* (William Crain, 1972) and *Interview with a Vampire* (Neil Jordan, 1994) are apt examples.

Sound in Horror

‘Discussion of sound in [cinema] has shown that at least in horror, audio is the dominant medium’ (Shehan, 2017, p. 6)

Fluidity of Sound

‘The constant remaking of films does not change the fact that there is an ingrained formula for horror, and most do not stray off the path. Despite a sense of sameness in the visual, horror film sound can often be very innovative.’ (Shehan, 2017, p. 1)

The malleable categorisation of sound in horror has been interrogated by many academics. Professor Neil Lerner notes that horror genre typically ‘allows for more dissonance’ between instrumentals and other sounds, blurring the established division between ‘music’ and ‘sound effects’, and in tandem ‘what would be otherwise thought of as noise or non-musical elements actually become important parts of the soundscapes in these films’ (2019). This fluidity became clear throughout our research into the history of sound in film.

Instrumental Iconism

Instrumental music undoubtedly has a historic place in the cinematic genre of horror. As interrogated by Arwa Haider, silent horror films in the early 20th century often used brooding orchestral score to frame the film’s emotion, as epitomised by

Nosferatu's full title 'A Symphony of Horror' (Haider, 2016). The continued ability of music to influence emotion has long been a subject of academic exploration, contributing to an offshoot of the 'Kuleshov Effect', noting the influence of editing in providing audiences with emotional context (Baranowski and Hecht, 2016).

The long term influence of music can be seen in the practice in many ways, such as the film soundtracks, and the continued use of the live orchestra in contemporary cinematic events. As Spencer Hickman, manager of the record label Death Waltz, attests,

'Music has always helped horror movies to establish a mood, build tension and atmosphere - but the demand for these soundtracks has been mind-boggling... there's a bunch of people that remember these films from their youth, as well as young people looking back to a 'golden age' of soundtracks' (Haider, 2016).

In this way, the effect of horror music and sound can be seen not only to affect the viewer while watching but additionally evoke a visceral palpable nostalgia, not only for the film but for its place in the viewer's personal history.

More recently in instrumental horror, Lerner pinpoints Bartok's 'Music for Strings, Percussion and Celesta' and its use in Stanley Kubrick's *The Shining* (1980), highlighting the impact of the piece's adagio alongside its narrative, stating that 'one interesting thing about Bartok's piece is [it has] several levels symmetrically [and] palindromically... and that's part of the film as well, visually and thematically' (2019).

Lerner explains how many of Kubrick's sequences in the film were built around this piece of music, thus emphasising the high status of music in horror films.

Contextual influences on *Dracula's* soundscape

Despite this consensus on the effectiveness of horror film sound, films scores were highly unpopular around the time of *Dracula's* production. As noted by Petrikis, at the time 'many American producers believed that music may disturb the audience when watching the film and sound effects should only be present to make certain dramatic points'. The early talkies like *Cimarron* (Ruggles, 1931) and *Arrowsmith* (Ford, 1931) 'have almost no score, with music inserted mainly during the opening and closing credits' (Petrikis, 2015, p. 27; MacDonald, 1998, p. 25). As Max Steiner, a prominent film composer during this period reflected, 'sound film producers before 1931 considered background music unacceptable, fearing the spectators would demand to know where the music was coming from'. 'No Music In This Picture' signs outside screenings were common, to attract audiences (Eyman, 1997, p. 349).

Conversely, Emma Shehan outlines the increased use of diegetic sound in this time, in particular the use of character's bodily sound on-screen to permeate 'over the body of an audience' (Shehan, 2017, p. 1). An example of this can be seen in 'Mamoulian's Sound Stew', composed of many elements but most strikingly the human heartbeat; the name originates from director Rouben Mamoulian, who used the sound of his own raise heartbeat for dramatic intensity in *Dr. Jekyll and Mr. Hyde*

(1931) (Lerner, 2019). Lerner regards the heartbeat as a 'vivid sonic symbol for life' (2019), justifying its frequent use in the genre ever since. Shehan meanwhile remarks on the human voice;

'... [it is] an integral aspect of the horror film, whether it be the distorted and frightening voice of the movie monster or the frantic, bloodcurdling screams of the victim. The voice helps to communicate fear to the audience.' (Shehan, 2017).

In the case of *Dracula*, the iconic 'I am Dracula' line spoken by Bela Lugosi and featured in our clip is a key example of this 'human' sound, though, as Spadoni remarks, Dracula's voice would perhaps fall into the realm of the 'uncanny', both human and not, particularly for early audiences. Shehan additionally emphasises the horror genres adoption of disjointed sound, used sporadically in *Dracula*, such as with Renfield's laughter. 'As humans are very visually oriented beings', mismatched audio can very effectively create 'a sense of unease and discombobulation' among viewers (Shehan, 2017).

The rise of the sound effect

Petrikis highlights *Dracula* as occurring in the nebulous interlude between instrumental music and sound, 'when producers were trying to establish a suitable film sound concept' (2015). While the feature had some anomalous advancements such as 'some musical underscore' composed by Bernard Kaun, 'no evidence [could be found by Petrikis] that *Dracula's* producers were looking for an original

soundtrack, except for the tradition of adding occasional sound effects such as winds, thunders, bangs etc.’ (Petrikis, 2015). This view is supported by Lerner who comments on the transition away from instrumentals, and towards recorded sounds, ‘instead of music and songs, horror films rely on sound effects, ambient noise, and atonal music’ (2010).

A 2010 study published by The Royal Society gives some biological explanation behind the jarring effect of non-linear analogues. According to the study, ‘a variety of vertebrates produce nonlinear vocalisations when they are under duress, often characterised by ‘noise and deterministic chaos, sidebands and subharmonics, and abrupt amplitude and frequency transitions’. Specifically, some ‘types of nonlinear analogues are used to elicit fearful responses’ (Blumstein et al, 2010). Similarly, Rowan Hooper, managing editor of New Scientist magazine, says:

‘nonlinear sounds like Psycho’s violin ‘stingers’ mimic the sound of animals in distress; they trigger our fear of being chased by dangerous predators. Things that feel harsh and unfamiliar manipulate us emotionally’ (Hooper, cited Haider, 2016)

Thus, there is an evolutionary aspect to nonlinear film sounds and their visceral effects on audience, justifying their frequent use throughout the history of horror cinema.

Summary

In conclusion, the social contexts of 1931, formal and technical effects on the viewing experience, and the very meaning of 'vampire' have changed significantly in the near 100 years since the film's release. This contextual knowledge allowed us to make guided choices about how to update the soundtrack of Browning's film to restore the striking impression that Dracula once made. These choices are detailed in the following sound script, which lays out in chronological order each intended change to the clip based on our research findings.

Pre-Production

- **Production Schedule**
- **Annotated Sound Script**

Production Schedule

Date	Task
Week 4 (26/10/20 - 01/11/20)	<ul style="list-style-type: none">• Discuss project ideas• Choose project focus• Develop production schedule
Week 5 - Week 7 (02/11/20 - 22/11/20)	Begin pre-production <ul style="list-style-type: none">• Watch <i>Dracula</i>• Choose scene to edit
Week 7 - Week 10 (22/11/20 - 13/12/20)	<ul style="list-style-type: none">• Research: Sound in Horror, The Character of Dracula, Social/ Historical context surrounding <i>Dracula</i>, Sound Practices Then and Now
Week 11 (14/12/20 - 20/12/20)	<ul style="list-style-type: none">• Develop annotated sound script based on research• Begin to formalise research notes
CV2 (28/12/20 - 03/01/21)	Production <ul style="list-style-type: none">• Complete edit• Maintain an edit log
CV3 - Week 12 (04/01/21 - 15/01/21)	- Compile portfolio materials

Annotated Sound Script

Timecode	Existing Audio	Planned Edit	Justification
00:00 - 00:39	<ul style="list-style-type: none"> - Horse and carriage 	<ul style="list-style-type: none"> - Optical hiss will be reduced but not removed. This will be done for the whole edit. - Add wild animal sounds e.g. wolves howling - Emphasise sounds of rickety carriage 	<ul style="list-style-type: none"> - Maintain original essence of film, and ensure our edit does not come across as trying to mask the films age - Supported by the original shooting script (Shot A-29), intended sound 'wolves howling'. - Supported by the original shooting script (Shot A-29), description of 'coach hurtling along through the night' - 'Nonlinearities... seem to be broadly evocative in vertebrates and their analogues can be used to influence human emotions ' (Blumstein, Davitian and Kaye, 2010, 753) - "Many noted that human figures in particular now seemed more excitingly present than before." (Spadoni, 2007, p.8) - Spatial use of sound, dynamic position of sound sources approaching Renfield to create fear
00:16 - 00:20	<ul style="list-style-type: none"> - Horse and carriage - Renfield dialogue 'Hi, Driver!' 	<ul style="list-style-type: none"> - Add sounds of wind rushing past Renfield's head as he leans out of the window 	<ul style="list-style-type: none"> - Make Renfield feel more 'excitedly present' (Spadoni, 2007, p. 8) - Localises the spectator space next to Renfield, as per Gardiés' theory of spectator space (L'Espace Au Cinema, 1993)

Timecode	Existing Audio	Planned Edit	Justification
00:44	- Optical hiss	<ul style="list-style-type: none"> - Create a wild track for outside the castle - Make the air sound still and silent 	<ul style="list-style-type: none"> - Emphasises the size and age of the castle - Supported by original shooting script (Shot A-31), castle is described as having 'no sign of life whatever, nothing to indicate that a human footstep has trod the grass-grown flagstones for centuries', and 'the walls of the castle cast deep shadows across [the courtyard] in the moonlight' - 'A faint mist hangs over all' (Shot-A31), implies the air is still
00:48 - 00:55	<ul style="list-style-type: none"> - Optical hiss - Creaking door as it opens 	- Leave the original sound of the door creaking open unedited	<ul style="list-style-type: none"> - Leave portions of the original soundtrack untouched to ensure that our edit does not render the clip unrecognisable from the original - The sound of the door opening is already perfect
00:57 - 01:17	- Optical hiss	- Add in quiet, echoing footsteps for Renfield as he enters the castle, increasing in volume as he draws closer to the doorway	<ul style="list-style-type: none"> - Make Renfield seems small to emphasise the size and age of the castle - Supported by original shooting script (Shot-A31-33) as above. 'One of the great doors open slowly... revealing darkness and silence beyond'. - Increasing volume implies that the sound is being heard from inside the castle, a voyeuristic, 'fly on the wall' perspective - Gives the impression of Renfield having a more physical presence in the space. "Many noted that human figures in particular now seemed more excitingly present than before." (Spadoni, 2007, p.8)
01:17 - 02:14	<ul style="list-style-type: none"> - Optical hiss - Dracula dialogue 'I am Dracula.' - Animal sounds 	<ul style="list-style-type: none"> - Ambient sound transition from outside to inside the castle - Create echoing wild track for inside the castle, perhaps including sounds of small rodent-like creatures 	- Supported by original shooting script (Shot A-34), hall described as 'absolutely bare'.

Timecode	Existing Audio	Planned Edit	Justification
01:17 - 01:33	- Optical hiss	- Add in quiet echoing footsteps for Renfield as he walks through the hall	<ul style="list-style-type: none"> - Make Renfield appear small in the large room, supported by the original shooting script as above (Shots A-31-33) - “Many noted that human figures in particular now seemed more excitingly present than before.” (Spadoni, 2007, p.8)
01:33 - 01:36	<ul style="list-style-type: none"> - Optical hiss - bat sounds 	- Replace existing bat sounds with ones that are more realistic and subtle	- Make the bat sounds more realistic
01:38 - 01:43	- Optical hiss	- No footsteps added as Dracula descends the stairs	<ul style="list-style-type: none"> - No added footsteps for Dracula as Renfield does not notice his presence until he turns around and sees him, so adding footsteps would confuse the idea that Renfield is unaware of him having entered the room - Supported by original shooting script. There is no mention of Dracula’s footfall making any noise as he enters.
01:43 - 01:48	<ul style="list-style-type: none"> - Optical hiss - Some loads scuffling sound as armadillos appear 	- Added sounds of armadillos sniffing through the dust	- More realistic sound in relation to the armadillos closeness to the camera
01:49 - 02:04	- Optical hiss	- Add footsteps for Renfield	<ul style="list-style-type: none"> - Make Renfield appear small in the large room, supported by the original shooting script as above (Shots A-31-33) - “Many noted that human figures in particular now seemed more excitingly present than before.” (Spadoni, 2007, p.8)
02:05 - 02:15	- Optical hiss	- Increase volume of rodent-like creatures in the wild track	<ul style="list-style-type: none"> - Populates the soundscape, as though the animals are reacting to Dracula’s presence - “Dracula’s creators exploited acousmatic sounds, which Chion refers to as ‘sound that is heard without its cause or source being seen’ (Chion 1999, p.18). The source for such sound is never revealed and, if it is disclosed, it manipulates and builds dramatic tension in the scene before it is shown on screen.” (Petrikas, 2014. p. 28)

Timecode	Existing Audio	Planned Edit	Justification
02:05 - 02:06	- Optical hiss	<ul style="list-style-type: none"> - Add footsteps for Renfield - Add a small gasp to the moment Renfield sees Dracula 	<ul style="list-style-type: none"> - As above. - Emphasises Renfield's shock at seeing Dracula, since he was previously unaware of his presence. - Supported by original shooting script (Shot A-35), Renfield is 'staring up at Dracula, open-mouthed and startled'.
02:06 - 02:15	<ul style="list-style-type: none"> - Optical hiss - Dracula dialogue 'I am Dracula.' 	<ul style="list-style-type: none"> - Fade out the animal before Dracula speaks - Retain original dialogue - Subtle stereo delay on Dracula's dialogue - Pan Dracula's dialogue from mono to stereo 'around the viewer's head' 	<ul style="list-style-type: none"> - Gives the impression that Dracula has some control over the animals, as though he is hushing them to let him speak - Recreate the uncanny sensation of original audiences hearing Dracula's voice by using a modern technology that viewer's are not yet wholly accustomed to: binaural audio, to create an uncanny '3D sound' effect.

Production

- **Editing log**

Editing Log

(In order of edits made)

TIMECODE	CHANGES MADE	JUSTIFICATION
00:0 - 00:12	<ul style="list-style-type: none">- Spatialised original sound of carriage moving in opening wide shot.- Added reverb effect with 'ethereal' preset. Lowered decay time to 730ms and adjusted the "perception" slider.	<ul style="list-style-type: none">- Make the level of reverb for the carriage appropriate to the size of the location.
00:05	<ul style="list-style-type: none">- Took a wolf bark from later in the film and repurposed here.- Removed sound effect from original soundtrack and moved to desired place in new timeline- Added 'LP Restoration - Light' effect.- Added reverb effect with "ethereal" preset. Lowered decay time and adjusted the 'perception' slider.	<ul style="list-style-type: none">- Allows layering of samples from the original optical soundtrack without increasing noise.- Spatialise the wolf within the scene at a perceptibly different distance from the camera to Renfield's carriage. This gives the scene an immersive sense of physical space.
00:07 - 00:09	<ul style="list-style-type: none">- Added modern recordings of dogs barking. Customised volume level, reverb decay and reverb perception values on each sound.	<ul style="list-style-type: none">- Gives a unique sense of space. Specifically each new bark is more distant, giving a sense of trajectory towards Dracula's castle, seen in the background of the shot.
00:13	<ul style="list-style-type: none">- Added a 3rd modern dog bark after the cut to the medium shot on Renfield inside the carriage.	<ul style="list-style-type: none">- Ties the exterior and interior shots of the carriage together in the same diegetic space. This makes the threat of the howling wolves and the ominous environment feel closer to Renfield.
00:12	<ul style="list-style-type: none">- Took the original carriage sounds from later shots outside of the carriage and placed these sounds on a separate track alongside the sounds of Renfield inside the carriage.- Added 'LP Restoration - Light' effect.	<ul style="list-style-type: none">- The original sounds were a little too quiet, and adding the louder carriage sounds makes the journey sound/feel much more bump. It's a sensory way of keeping the viewer uncomfortable and on their toes.- Adding 'LP Restoration - Light' Removes compounded optical hiss problems. Allowed the two sounds to combine without competing.

TIMECODE	CHANGES MADE	JUSTIFICATION
00:12	<ul style="list-style-type: none"> - Added wind sound. Used 'distant source' effect while inside carriage, and cross-faded to the same wind sound but with a much higher volume and no distant source alteration. <p>PROBLEM: Unable to find a way to make the modern wind recordings blend with the old carriage and dialogue recordings. Tried generating noise, but it sounded too digital, like white noise. Also, the presence of the wind raises questions as to why Renfield's hat isn't blown off his head. Decided to delete wind sound.</p>	<ul style="list-style-type: none"> - Give the impression that the wind is rushing past Renfield as he sticks his head outside the carriage.
00:15	<ul style="list-style-type: none"> - Raised volume level on the duplicated original carriage sound. - Cross-faded the carriage sound between the carriage interior shot volume and the carriage exterior shot volume, in time with Renfield's head leaving the window. 	<ul style="list-style-type: none"> - Localises spectator space to be aligned with Renfield's physical and emotional space.
00:16	<ul style="list-style-type: none"> - Edited the currently muted wind sound effect to test an approach to ageing modern sound recording. <ul style="list-style-type: none"> - Followed Computer Music's tutorial <i>How to age sound by 100 years with extreme retroisation. (2015)</i> <ul style="list-style-type: none"> - Used parametric equaliser to apply high pass and low pass filters. - Set HP to 120 Hz and LP to 4 kHz, both with gain set to 48dB/Oct, limiting frequencies to no more than 5 kHz and no less than just under 100 Hz. - Added distortion and mastering effects above the parametric EQ in the effects chain to prevent these effects from re-adding frequencies that the EQ removed. - The positive distribution curve has been flattened relative to the default line, with adjustments being made by ear to create the strongest match in distortions between the modern recording and Dracula's. - The mastering effect was used to increase the loudness of the sound, while lowering the output gain to avoid clipping, adjusted by ear to find the strongest match with the recordings heard in Dracula's soundtrack. - Made these changes into a custom "Retroisation" effect preset. 	<ul style="list-style-type: none"> - It's important to note that the tutorial is aiming to recreate turn-of-the-century wax and vinyl recordings, not the optical recordings used for Dracula and other films of the early film sound era. Deviation from the tutorial was necessary partly because of a different desired era of 'retroisation', but also due to the fact that the tutorial used a different editing software with different tools. - Reason for chosen HP and LP kHz values: <ul style="list-style-type: none"> - Titas Petrikis' analysis of Dracula's soundtrack notes a 'significant absence of audio signal over 5 kHz. According to Eyman (1997), this is a typical frequency quality for optical soundtracks, because they could not recreate higher than 7 kHz, and most often averaging between 4-5 kHz' (2014, pg. 107). - Overall, the retroisation effect created an 'imperfect' sound that mirrors the louder, indelicate quality of older sound recordings.
00:28	<ul style="list-style-type: none"> - Added a 'still night air' sound effect and applied custom 'retroisation' effect. 	

TIMECODE	CHANGES MADE	JUSTIFICATION
00:55 - 01:16	<ul style="list-style-type: none"> - Placed footsteps individually, cutting individual impacts out of footstep recordings to match scuffs and impacts with Renfield's movements. <ul style="list-style-type: none"> - For the final two footsteps of this shot, multiple sounds were combined on two tracks to achieve the best match with Renfield's steps. - Applied 'retroisation' custom effect to both tracks, but the preset distortion levels assigned to previous sounds were too much with the footstep recordings used. Lowered the positive distortion curve to reduce the distortion until the footsteps blended with the optical hiss on Dracula's soundtrack. 	<ul style="list-style-type: none"> - Retroisation ages the sound, to blend it with the original 1931 soundtrack
01:07	<ul style="list-style-type: none"> - Added a rat scuttling sound. <ul style="list-style-type: none"> - Lowered the gain to -40dB and added the 'retroisation' effect. - Added reverb with custom parameters. 	<ul style="list-style-type: none"> - Reverb places the sound source behind the door, inside the castle, to convey a sense of the size and space of the echoey, empty castle Renfield is about to enter. - Retroisation ages the sound, to blend it with the original 1931 soundtrack
01:17 - 02:05	<ul style="list-style-type: none"> - Sourced and placed footsteps individually. - Added custom reverb parameters, shown in Figure 1. - Lowered castle interior footstep track volume to -20dB 	<ul style="list-style-type: none"> - Reverb more realistically matches the footstep sounds with the size of the room, and serves to make Renfield's feel even smaller in the large hall.
01:43 - 01:49	<ul style="list-style-type: none"> - Added two new sounds to the existing sound for the armadillo shot. - Selected two sound effects and cut out component parts to place in 8 individual areas on the multitrack. These sounds were then mixed for appropriate volume to blend with existing sound and balance with the rest of the scene. - 'Retroisation' will be added later. 	
01:43 - 01:49	<ul style="list-style-type: none"> - Amplified volume of existing armadillo sound. Raised the volume of the original soundtrack by 5dB. To avoid optical noise also rising by 5dB, cut out the armadillo sound and placed it on a separate track for duplicated sections of the original optical track (created earlier for the sounds of the rocking carriage), where the 'LP Restoration - Light' effect (added to eliminate the optical noise from the track with the raised volume) had already been applied as a track effect. - Selected a section of the original optical track with no sound recordings or effects presents, and copied that to the area of the original optical track that had been removed. 	<ul style="list-style-type: none"> - Replacement of the cut out part of the track with an empty section of the original soundtrack maintains a constant level of optical hiss.

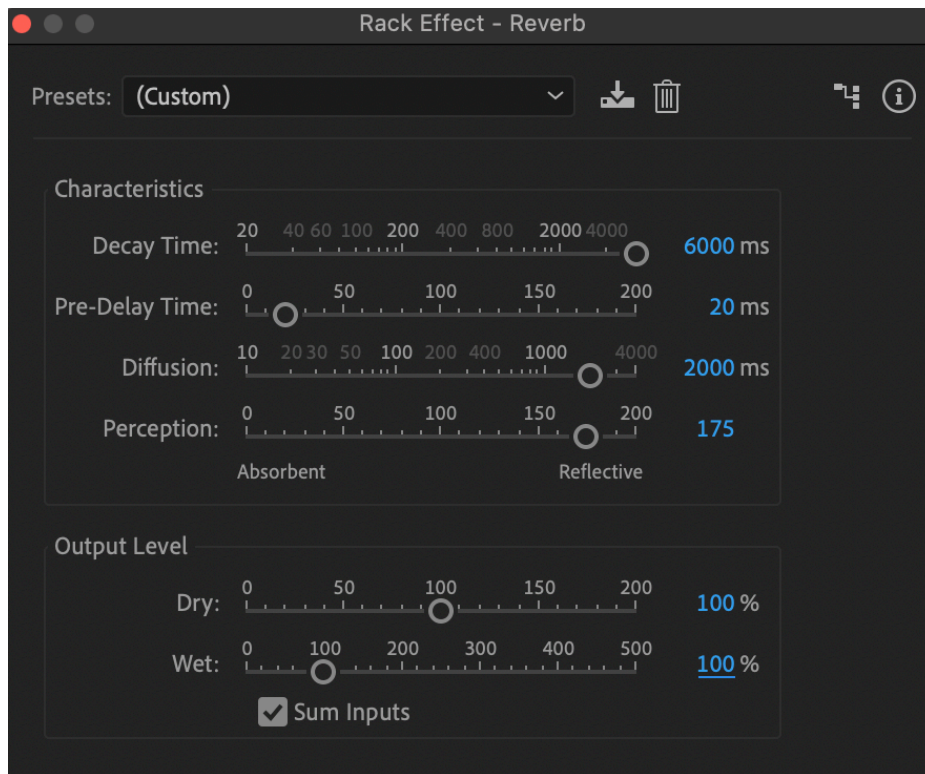


Figure 1. Custom reverb parameters for Renfield's footsteps

TIMECODE	CHANGES MADE	JUSTIFICATION
02:05	<ul style="list-style-type: none"> - Added a gasp when Renfield sees Dracula. - Sourced appropriate gasp sound from a sound library, and applied the 'stretch and pitch (process)' effect to the sound. Retimed speed to 55%, and raised pitch 9 semitones, allowing precise control over the 'performance' of the gasp. - Placed the modified gasp sound on a stereo track and panned the sound across to give a stronger weighting to the volume in the right channel 	<ul style="list-style-type: none"> - The gasp complements Renfield's reaction to seeing Dracula for the first time. - Mixing to the right channel on a stereo track is the first use of stereo in the clip. Suddenly introducing stereo space to the mix for Renfield's expression of fear strongly aligns the viewer space with Renfield's physical position in the scene. The unexpected introduction of immersive stereo sound seeks to create an uncanny feeling while making the viewer feel very personally aligned with Renfield's situation, due to the elevated immersion of stereo sound. - This use of stereo to create the uncanny will be built on seconds later, when Dracula's line is panned in a much more dizzying way. This stereo pan for Renfield is more of subtle introduction to the stereo channel, so that the viewer doesn't notice when the stronger pans are introduced moments later for Dracula's introductory line.

TIMECODE	CHANGES MADE	JUSTIFICATION
00:07 - 00:09	<ul style="list-style-type: none"> - Added custom 'retroisation' effect preset to the previously added modern wolf sound effects. 	<ul style="list-style-type: none"> - Ages the sound, to blend it with the original 1931 soundtrack
00:12	<ul style="list-style-type: none"> - Lowered the pitch of the wolf sound, and changed reverb parameters. <ul style="list-style-type: none"> - Lowered decay to 658ms. 	<ul style="list-style-type: none"> - Increases feeling of distance and simulates the sound from Renfield's perspective, as though hearing through the thick, wooden carriage walls. - Lowering reverb decay gives the impression and the wolf is drawing nearer to carriage relative to the previous barks.
01:33 - 01:37	<ul style="list-style-type: none"> - Removed the distortion of the 'retroisation' from the sounds of the bats in the window. <ul style="list-style-type: none"> - Experimented with several different approaches to manipulating the positive and negative distortion curves, but ultimately decided to remove the distortion altogether. 	<ul style="list-style-type: none"> - The bat sounds are made up of so many short, high pitch sounds that any level of distortion added turns this sound into a static mess, and the bats become inaudible, sounding only like white noise.
01:43 - 01:48	<ul style="list-style-type: none"> - Added additional small mammal movement sound to further supplement the armadillo noises. <ul style="list-style-type: none"> - Added 'retroisation' preset and adjusted volume to blend with the original sound. 	<ul style="list-style-type: none"> - Retroisation ages the sound, to blend it with the original 1931 soundtrack
01:27 - 01:31	<ul style="list-style-type: none"> - Added bat flying sound <ul style="list-style-type: none"> - Lowered volume to be appropriate to the size of a bat relative to the hall, and blend with volumes used for other sounds. - Added 'retroisation' preset and created a custom reverb effect for all sounds in the main hall of Dracula's castle. Varied the parameters of the reverb slightly for this bat flying sound to localise the sound closer the camera. Lowered perception slider to 100 (closer to 'absorbent' than 'reflective') and lowered the dry output to 80% and the wet output to 20%. - Keyframed volume to rise over the course of the recording, plateauing when the peak volume of the original recording is reached. 	<ul style="list-style-type: none"> - Volume keyframes give the effect of a bat flying towards the camera, and into the spectator space. - Retroisation ages the sound, to blend it with the original 1931 soundtrack
00:55 - 01:16	<ul style="list-style-type: none"> - Adjusted volumes for each footstep, gradually increasing as Renfield draws closer to the door. 	<ul style="list-style-type: none"> - Gives a sense of physical space, as well the impression that the sound was recorded from a microphone placed just inside the door. Introduces the auditory perspective of someone listening to Renfield approaching from a hidden vantage point. Creates a 'fly on the wall' effect, and gives the impression that Renfield is being observed from within the castle.

TIMECODE	CHANGES MADE	JUSTIFICATION
01:17 - 02:05	<ul style="list-style-type: none"> - Adjusted volumes of each footstep individually, to be consistently localised at an appropriate distance from the camera in each shot. - Reverb parameters were also adjusted to be appropriate for each shot. <ul style="list-style-type: none"> - Parameters varied were the perception slider (moved closer to 'absorbent' for shots where Renfield is closer to the camera) and the wet output (lowered for the shots where Renfield is closer to the camera). 	<ul style="list-style-type: none"> - Localises Renfield in a way custom to each shot.
01:27 - 01:31	<ul style="list-style-type: none"> - Refined volume keyframes for the bat flying close to the camera. <ul style="list-style-type: none"> - Added a 3rd keyframe to create a smooth curve as the bat flies past. 	<ul style="list-style-type: none"> - Makes it sound as though the bat is flying closer to the camera (and by extension the spectator space), and to make it sound as though the bat is coming to land, rather than disappearing into the distance.
02:05	<ul style="list-style-type: none"> - Adjusted volume of gasp sound effect, and matched the reverb parameters with the new ones created for the footsteps that play over the same shot as the gasp. 	<ul style="list-style-type: none"> - Gives Renfield the most realistic impression of physical presence within the space, and of his proximity to the camera.

TIMECODE	CHANGES MADE	JUSTIFICATION
02:12 - 02:15	<ul style="list-style-type: none"> - Made a number of changes to Bela Lugosi's opening line 'I am Dracula'. <ul style="list-style-type: none"> - Extracted the dialogue onto a new track and lowered volume to -4dB. Simultaneously duplicated a section of the original audio track with unchanged volume to maintain a consistent level of optical hiss. - Added a duplicate of the dialogue to a new stereo track, edited with the 'Doppler Shifter (process)'. <ul style="list-style-type: none"> - Set the 'coming from' angle to 196° - Set 'starting distance away' to 6m - Set 'velocity' to 0.65m/s, - Set 'passes in front by' to 0m - Set 'passes on right by' to 1m. - Enabled both 'distance' and 'direction' under the 'adjust volume based on' setting. - Quality was placed on the highest possible setting. - Added a third duplication of 'I am Dracula' line and added the 'delay' effect. <ul style="list-style-type: none"> - Set 'delay time' on left channel to -160ms and adjusted wet/dry 'mix' to 12%. - Set 'delay time' on right channel to -100ms and adjusted wet/dry 'mix' to 10%. - Lowered volume to -10dB. 	<ul style="list-style-type: none"> - Gives the sense that Dracula's voice is creeping up behind and to the right of the viewers head. Uses binaural sound techniques to create an uncanny feeling that the presence of synchronised sound no longer elicits in viewers as it did in 1931. - This binaural sound is not often used in modern cinema or in many contexts, and the effect is very uncomfortable and disturbing. This application of digital technology allows a modern translation of the 'uncanny' feeling reported so often by critics and audiences viewing the film in 1931. Audiences at the time were not yet accustomed to synchronised sound images, and so their experience of the original film is incomparable to even those of viewers just a few years later, when synchronised sound in film had become common practice. By using binaural sound (often described also as '8D' audio), a sound technology that is not common practice, we are able to introduce 21st century viewers to stereo sound manipulated in an unfamiliar way, thus, to a certain degree, recreating the 'uncanny' effect of 1931's audiences experiencing synchronised sound images for the first time.
02:05 - 02:11	<ul style="list-style-type: none"> - Added volume keyframes to the squeaking bats, slowly decreasing their volume in the build-up to Dracula's dialogue, then fading out entirely just before Dracula speaks. 	<ul style="list-style-type: none"> - Makes it seem as though the bats are quietening down to allow Dracula to speak, illustrating his influence over animals.
00:17 - 00:27	<ul style="list-style-type: none"> - Reduced volume for two of the carriage bumps. <ul style="list-style-type: none"> - Keyframed volume around two loud points in the clip and lowered the volume only in areas where the spike in volume hit, matching the loud regions of the clip closer to the volume of the rest of the sound. 	<ul style="list-style-type: none"> - Viewer feedback noted that while the loudest parts of the carriage bumping around sound weren't clipping, the spike in volume was still too loud and uncomfortable. While varied volumes are necessary for emotional effects, spikes in volume that are painful to the ear are not.

TIMECODE	CHANGES MADE	JUSTIFICATION
01:16 - 01:33	<ul style="list-style-type: none"> - Raised the volume of the bats in the main hall to -15dB. 	<ul style="list-style-type: none"> - Ensures that the bats don't seem as though they appear out of nowhere. Viewer feedback indicated that the bats couldn't be heard in previous shots of the main hall, making their sudden appearance in the window jarring.
01:43 - 01:48	<ul style="list-style-type: none"> - Added sniffing sounds to the armadillo shot. <ul style="list-style-type: none"> - Sourced appropriate animal sniffing sounds, and raised the pitch by 3 semitones. Added 'retroisation' preset and lowered the volume to -10dB. - Dissected the original sound into components parts that could be individually matched to the movements of the armadillos on screen. 	<ul style="list-style-type: none"> - Armadillos can be seen sniffing in the shot, so the absence of any sniffing sounds was distracting. - Retroisation ages the sound, to blend it with the original 1931 soundtrack
02:08 - 02:16	<ul style="list-style-type: none"> - Added another copy of 'I am Dracula' to a new stereo track. - Added the 'Doppler Shifter (process)' effect. Set the custom parameters shown in Figure 2. 	<ul style="list-style-type: none"> - Gives the impression that the sound is moving clockwise around the viewer's head, reflecting how Dracula's voice and influence is circling Renfield, closing in on him.

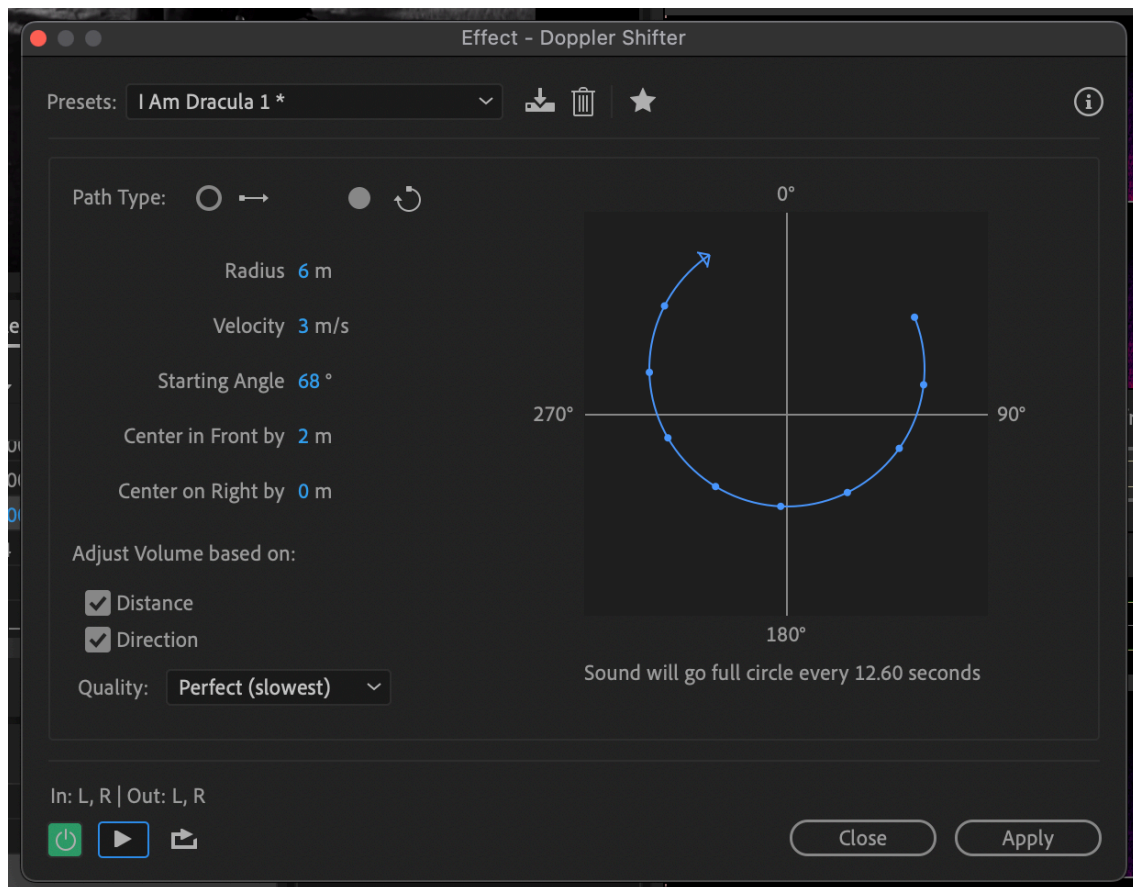


Figure 2. 'Doppler Shifter (process)' custom parameters

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Audiovisual Works

- *Arrowsmith* [feature film] Dir. John Ford. Samuel Goldwyn Productions, US, 1931.
108 mins.
- *Blacula* [feature film] Dir. William Crain. Power Productions, US, 1972. 92 mins.
- *Cimarron* [feature film] Dir. Wesley Ruggles. RKO Radio Pictures, US, 1931. 124 mins.
- *Dark Shadows* [feature film] Dir. Tim Burton. Village Roadshow Pictures, US, 2021.
113 mins.
- *Dracula: The Restoration* [short film] Dir. Vance Burberry. Milk Films, US, 2012. 10 mins.
- *Dr. Jekyll and Mr. Hyde* [feature film] Dir. Rouben Mamoulian. Paramount Pictures, US, 1931. 98 mins.
- *Hotel Transylvania* [feature film] Dir. Genndy Tartakovsky. Columbia Pictures, US, 2012. 91 mins.
- *Interview with a Vampire* [feature film] Dir. Neil Jordan. The Geffen Film Company, US 1994. 122 mins.
- *The Jazz Singer* [feature film] Dir. Alan Crosland. Warner Bros. Pictures, US, 1927. 89 mins.

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 - *Only Lovers Left Alive* [feature film] Dir. Jim Jarmusch. Recorded Picture Company, US, 2013. 123 mins.
 - *The Power of the Vampire Myth* [online video] Now You See it, 2018. Available at: https://www.youtube.com/watch?v=_ahqffbTc-g (Accessed 15 January 2021)
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 - *Under The Skin* [feature film] Dir. Johnathan Glazer. BFI, UK, 2013. 108 mins.
 - *Vampirina* [television programme] Disney Junior, US, 2017-present.