

Film The long read

Rain is sizzling bacon, cars are lions roaring: the art of sound in movies

Skip Lievsay is one of the most talented men in Hollywood. He has created audioscapes for Martin Scorsese and is the only sound man the Coen brothers go to. But the key to this work is more than clever effects, it is understanding the human mind



Javier Bardem in No Country for Old Men. The noise of the broken glass tinkling to the pavement was painstakingly created by Skip Lievsay, one of the top sound designers in cinema. Photograph: Imagenet

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Wednesday 22 July 2015 06.00 BST

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Skip Lievsay, an unassuming-looking guy in his mid-60s with highly trained ears, stood before the stacks of speakers and giant movie screen in his office, fussing quietly. Lievsay is one of the preeminent sound designers working in

film today, and whatever he does – whether it’s fussing or making jokes or padding down the hall of his New York offices to murmur instructions to employees – he does it quietly, as if his personal volume dial operates in inverse correlation to the often noisy task at hand.

On this midwinter afternoon, he was meeting with one of his effects editors, a similarly soft-spoken young man named Larry Zipf, about a film they had been hired to work on: *Miles Ahead*, a forthcoming Miles Davis biopic directed by and starring Don Cheadle.

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The two men stood with their arms crossed and heads cocked at the same angle, reviewing a scene in which a sound cue they had designed had gone awry. The sound, originally of vintage tape decks turning, had ended up evoking a sci-fi odyssey rather than a jazz biopic. One of the problems, it was agreed, is that to the untrained ear, 1970s tape decks sound a bit like lasers.

On screen, Cheadle entered an elevator and pushed the button for the lobby. The button emitted a soft, innocuous beep. “That’s a good beep, Lar,” Lievsay muttered. “Good beep.”

As he said so, Cheadle-as-Miles leaned against the wood-panelled elevator wall, eyes closed. Suddenly, the elevator swung open to reveal a dark room of Miles’s imagination, filled only with a piano, a horn, and a spotlight. The moment was intended to feel surreal, as though you were entering Miles’s mind, but as the door began to swing, a deep rumble erupted into a volley of zings and swishes – those troublesome tape decks – as if the scene had plunged into a battle in outer space.

Lievsay hit pause and turned to Larry, shaking his head. No good.

For research, Lievsay had spent a few months reading biographies and listening through all the recordings in the Miles Davis estate: Miles interviews, Miles in the studio, Miles in concert, Miles on the street. He briefly tried to compile a timeline of every recording Miles ever made, then gave up. The film is set in the 1970s, “which is Bitches Brew Miles”, Lievsay explained, a period when Miles favoured improvisational rhythms and electric instruments over traditional jazz. The research had led to the idea of experimenting with recording equipment of the sort that Miles would have used. Lievsay thought that they might fit moments that called for more abstract sound design, such as when Cheadle wanted to evoke Miles’s agitated mental state. “He was a creature of the studio,” Lievsay explained, taking off thin-rimmed glasses and rubbing one eye. “The sounds of his mental landscape would probably have been the sounds you’d hear in a recording studio, like tape decks or the click of instruments.”

They had got their hands on some vintage tape decks and spent an afternoon recording the sound of them playing forward and backward, clicking and scrubbing. But when Zipf edited the sounds and played them underneath scenes from the movie, the result sounded like *Battlestar Galactica*, not old-fashioned music equipment. Lievsay sighed. “Probably because sound editors used to use tape decks when they needed space sounds. Bet you *Battlestar Galactica* was tape decks.” He threw the noises out and started over.

It is a central principle of sound editing that people hear what they are conditioned to hear, not what they are actually hearing. The sound of rain in movies? Frying bacon. Car engines revving in a chase scene? It’s partly engines, but what gives it that visceral, gut-level grist is lion roars mixed in. To be excellent, a sound editor needs not just a sharp, trained ear, but also a gift for imagining what a sound *could* do, what someone else *might* hear.

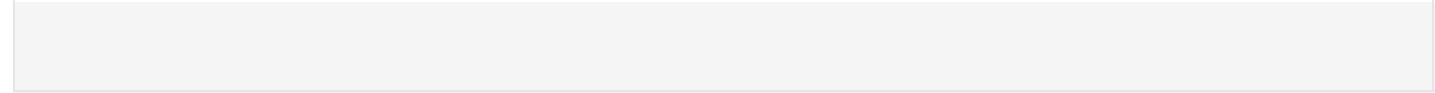
Lievsay is one of the best. He won an Academy award in 2014 for his work on *Gravity*. He was awarded the 2015 Career Achievement award from the Motion Picture Sound Editors society. *Goodfellas*, *Silence of the Lambs*, *Do The Right Thing* – his work. He is also the only sound editor the Coen Brothers work with, which means that he is the person responsible for that gnarly wood chipper noise in *Fargo*, the peel of wallpaper in *Barton Fink*, the resonance of The Dude’s bowling ball in *The Big Lebowski* and the absolutely chilling crinkle of Javier Bardem’s gum wrapper in *No Country for Old Men*.



Trying to sum up what makes Lievsay special, Glenn Kiser, the head of the [Dolby Institute](#) and the former head of [Skywalker Sounds](#), told me: “What separates tremendously gifted designers comes down to taste. Skip has an unfailing sense for the right sound, and how to be simple and precise. He’s not about sound by the pound.” Jonathan Demme, who first worked with Lievsay on *The Silence of the Lambs*, put it more concisely: “He’s a genius.”

Despite Lievsay’s influence, you have probably never heard of him, and this is no surprise: Lievsay and his team are only a few members of the legions of people involved in film production, who go about their painstaking, essential work far from the public eye. Lievsay is not a household name, but he is famous among people who are. His expertise, fittingly, is what can’t be seen – sound, yes, but also everything else that sound is to the human mind: the way we orient ourselves in relation to spaces, to time, to each other; the way we communicate when language fails; the way our ears know, precognitively, when the dark room has someone lurking in it or when a stranger will be kind. He orchestrates the levels of human perception that most people either fail to examine or lack the ability to notice at all. His job is to make you feel things without ever knowing he was there.





* * *

The monstrous complexity of Lievsay’s work – the quest to make films sound the way the world sounds – may not be immediately apparent. When a movie finishes shooting, it enters the labyrinthine world of post-production, in which the best takes are selected and spliced together into reels – roughly 20-minute segments of film that are worked on and then stitched together at the end of post-production. Each reel goes through picture editing (for such things as visual continuity or colour) before being handed off to the sound supervisor, who oversees all the various elements of sound design, editing and mixing.

The distinction between these three processes is subtle: design and editing have more to do with the creation and selection of the sounds that make up each scene, and the development of a cohesive aural aesthetic for a movie. Mixing involves taking sounds created by the designers and editors and integrating them in each scene so that everything sounds “natural” – in other words, making sure the sound of the butterfly landing on the hood of the car isn’t louder than the car backfiring. (Like some of his contemporaries, Lievsay does both sound editing and mixing.)

At the beginning of this process, editors remove the audio recordings taken during filming and break down each scene into four sonic elements: dialogue, effects, music and Foley, which is the term for everyday sounds such as squeaky shoes or cutlery jangling in a drawer. For every scene, each of these four elements needs to be built and then edited separately, and at WBNY, the New York production company Lievsay runs with fellow editor Paul Urmson, each gets its own dedicated editor. Then, Lievsay or Urmson take the team’s work and layers it to make scenes that sound like the world sounds.

Consider the scene at the end of [No Country For Old Men](#) when Javier Bardem’s character has a car accident. After the crunch of impact, there are a few moments of what might be mistaken for stillness. The two cars rest smoking and crumpled in the middle of a suburban intersection. Nothing moves – but the soundscape is deceptively layered. There is the sound of engines hissing and crackling, which have been mixed to seem as near to the ear as the camera was to the cars; there is a mostly unnoticeable rustle of leaves in the trees; periodically, so faintly that almost no one would register it consciously, there is the sound of a car rolling through an intersection a block or two over, off camera; a dog barks somewhere far away. The faint sound of a breeze was taken from ambient sounds on a street like the one depicted in the scene. When Javier Bardem shoves open the car door, you hear the door handle stick for a moment before it releases. There are three distinct sounds of broken glass tinkling to the pavement from the shattered window, a small handful of thunks as he falls sideways to the ground, his laboured breathing, the chug of his boot heel finally connecting with the asphalt – even the pads of his fingers as they scrabble along the top of the window. None of these sounds are there because some microphone picked them up. They’re there because Lievsay chose them and put them there, as he did for every other sound in the film. The moment lasts about 20 seconds. No Country For Old Men is 123 minutes long.



Skip Lievsay in his sound studio in Manhattan. Photograph: Tim Knox

All this requires a very particular – and somewhat strange – set of talents and fascinations. You need the ability not only to hear with an almost superhuman acuity but also the technical proficiency and Job-like patience to spend hours getting the sound of a kettle’s hiss exactly the right length as well as the right pitch – and not only the right pitch but the right pitch considering that the camera pans during the shot, which means that the viewer’s ear will subconsciously anticipate hearing a maddeningly subtle (but critical) Doppler effect, which means that the tone the kettle makes as it boils needs to shift downward at precisely the interval that a real kettle’s hiss would if you happened to walk by at that speed.

In other words, to do this work, you need to be a little unusual.

* * *

Skip Lievsay’s original plan was architecture. He grew up in New Jersey and dropped out of high school to take a job as a draughtsman when his parents divorced and money ran low. For a while, he thought he would apply to architecture school but a recession in the 1970s deterred him from university – no one was hiring architects. He moved to New York, where one day he saw the visual effects legend Douglas Trumbull give a lecture about his work on *Close Encounters of the Third Kind*. Lievsay was captivated by Trumbull’s description of the meticulous labour that went into the famous image of strange, fast-moving cloud formations. To get the shot, Trumbull and his team loaded a giant tank full of two kinds of water – fresh and salt – and waited for the layers to separate before injecting diluted white paint near the dividing line before a rolling camera. The paint whooshed down through the freshwater, but as soon as it hit the saltwater it was repelled, spreading out laterally as if the pigment had hit an invisible horizon. Lievsay was thunderstruck by the combination of ingenuity, artistry, and dogged persistence. “I thought, holy shit, that’s like science meets a sandbox. I wanna be in *that*.”

After an internship on one low-budget film, Lievsay was hired to edit United Artists movies, as well as the prerecorded skits for *Saturday Night Live*. When he was 29, he worked with Martin Scorsese on *After Hours*. “I got the job because I agreed to do it for the money they were offering and everyone else had passed on it,” Lievsay told me, grinning. First, he had an audition of sorts: Scorsese gave him a bit of film and said, “See what you can do with that.” It was a clip – later edited out of the movie – of Griffin Dunne crawling up out of a manhole, and they needed a sound for the scraping of the manhole cover as Dunne shoved it aside. “The easiest thing to do would have been to

get a manhole cover and record the real thing, but in those days location recording was considered to be too hard in New York City, so I had to do it in the studio,” said Lievsay. “I found a chunk of metal and realised that if we made some recordings with that and slowed it down that it would sound much bigger and heavier.” Scorsese was impressed. He called out the door to one of his production team. “Hey, come in here and see what the kid did! OK, kid. Good job.”

Collaboration with Scorsese produced some of Lievsay’s most notable early work – The Color of Money, The Last Temptation of Christ, Cape Fear – though the creative partnership that has defined his career is with Joel and Ethan Coen. The [Coen brothers](#) are treasured by Lievsay’s tribe, in part because they begin sound design unusually early in the process – often while still writing and shooting. “The way they work is the dream,” WBNY’s dialogue editor, Eliza Paley, told me. “They understand that sound is also storytelling.”

Collaboration with Scorsese produced some of Lievsay’s most notable early work – The Color of Money, Cape Fear The Coens also share Lievsay’s sense of humour. There’s a sound Lievsay loves, of a particular car driving on a Manhattan street. He recorded it early one morning many years ago when he stuck a microphone out of his apartment window to capture traffic noises. The recording tickled him because it sounds nothing like a car, but exactly like the sound of a cow mooing. He has made it a point to put the moo sound in every Coen brothers movie, for laughs. “So there’s a moment in True Grit, which is set before cars existed, when what you are hearing is Manhattan traffic.”

Lievsay wears his distinctions lightly – he seems naturally inclined towards cheerful self-effacement. When asked about his inclusion, in 1995, on New York Magazine’s 100 Smartest New Yorkers list, he snorted. “I mean, I think the person named after me was Madonna, so ...” He would rather talk about almost anything else: what he is reading (Infinite Jest), politics (once, he got in a prolonged argument about Donald Rumsfeld with Werner Herzog, a frequent collaborator), strange situations he has found himself in because of work (he has, on occasion, had to dodge the DIY meth labs that proliferate in the California desert while recording the sounds of car chases). He loves to tell stories but speaks so low that you often have to ask him to repeat himself.

Underlying Lievsay manner is his belief, firmly held, that his work is craft, not art. “It’s like making a piece of furniture, or building a house.” As such, he – and the team he leads – has a workmanlike quality. (After he dropped out of high school, Lievsay worked for a while as a field engineer, managing on-site operations for a long construction job.) The entire team is – with the exception of Paley, the lone female editor – a bunch of quietly spoken dudes in T-shirts, conspicuously easygoing, witty, and dogged in their work ethic. (Paley, for her part, possesses all of the aforementioned qualities, and at least a few T-shirts.) They work long hours and often weekends. At almost any time of any day, you can find Lievsay seated before a sound console that he designed himself. Every so often he rises to float around the office, murmuring instructions to his employees, or to go for a spin around the block with Big Dave, the chihuahua-dachshund crossbreed who presides over the couch in Lievsay’s office, snoozing in a tiny sweater.



Don Cheadle as Miles Davis in *Miles Ahead*. Photograph: Facebook

There is something very slightly unnerving about spending time around people whose powers of perception suggest the existence of an entirely different layer of reality that you are missing. The way Lievsay and his colleagues work requires an entirely different – and, in some senses, unnatural – way of experiencing sound. “Our process reflects that each sound is important enough to deserve its own consideration,” Lievsay told me. “Each gets edited separately and then we put them all together and see what happens.” This is radically unlike the way the human brain is designed to hear. We are predisposed to heed the rhythms and pitch of people talking and noises that might indicate threat. Other sounds – like white noise – are synaptically depressed so that the brain fires fewer responses and we automatically “tune out”. This is how the brain converts sound into information.

Consequently, the vast majority of people walk around not hearing most of what there is to hear. Not so, for most sound editors. After spending several days in the WBNY offices, even a layperson’s ears grow hypersensitive – the rush of boiling water into a mug, the faraway drone of planes overhead, even the barely perceptible squeal of the hinges on glasses becomes nerve-jangling. “You have to get really good at selective listening, at turning it on and off,” said Lievsay. It can be mildly excruciating to listen this hard, to hear so much. Manhattan becomes unbearable. When some of the team walk around the city, Skip’s partner Paul Urmson confesses, they wear earplugs: “Just to take it down 15db.”

* * *

On the first morning of the Miles mix, the power went out and all hell broke loose. While the editing had gone fairly smoothly – once they did away with the laser sounds – the first morning of mixing week was off to a rocky start: first a fuse had blown, knocking out power to all computers, movie screens, mixing consoles and coffee machines. Then, the internet went. It happened also to be the coldest day of the year. The team’s assistant editor, Caleb, was dashing around the office cursing under his breath. Jonathan Demme and his poodle were in the building. He was working upstairs on his next film while Lievsay and Zipf were downstairs, rushing to get ready for the imminent arrival of Don Cheadle.

Despite the relative chaos, the building retained an odd noiselessness, even once the power returned. There was little motion and no conversation on the mixing stage, a full cinema converted to accommodate a 20ft desk holding two enormous sound consoles, each outfitted with roughly five dozen knobs and switches. The four men – Lievsay and

Zipf, the picture editor John Axelrad and Todd Kasow, the music editor – crouched before their consoles without speaking, turning dials and making adjustments that, for the most part, only they could hear.

Lievsay pulled up a cue and played one three-second clip again and again. On screen, Cheadle lit a cigarette: the metal lighter zipped and rung; the skin of his fingers shifted on the cigarette; there was an intake of breath; paper and tobacco crackled as he inhaled, music played in the background. Lievsay rewound. Zip, ring, shift, breath, *slightly more* crackle, music. Lievsay rewound again. No one spoke. The real Cheadle had not yet arrived.

Sound mixes are notoriously stressful, in part because they come at the very end of a film’s production. “As a mixer you’re the midwife to the director who is at this moment giving final birth to the film,” says [Walter Murch](#), the groundbreaking editor and sound designer, known for his work on [Apocalypse Now](#), *The English Patient*, and [The Godfather: Parts II & III](#). “[Mixing] is the last inch of the diving board. After this there’s little that’s done to the film. You have to feel where the director is sensitive and what are the unresolved questions and how can I help through sound to moderate it? There’s a great deal of psychoanalytics.”

Directors are not the only stressed-out people who may need attending to: mixing rooms also contain picture editors under pressure to put the finishing touches on their work, producers arguing over logistics such as credit reels, actors floating through for last-minute dubbing and assistants trying hard not to get fired.

In this environment, Skip’s laid-back demeanour, his nearly inaudible jokes, his uniform of T-shirts and jeans, his consummate *just-a-nice-dudeness* – the Coens joke that Lievsay was part of the inspiration for Lebowsky’s *The Dude* – has a palliative effect. “To do this job,” Lievsay told me, leaning back in his swivel chair, “you need to be the kind of person that people aren’t going to mind being stuck in a room with for four to six weeks.” Like *The Dude*, Lievsay rarely gets visibly irate. His only tell, his employees advised, is his neck: when he’s really fed up, he bobs his neck once or twice like a bird, as if literally trying to swallow harsh words.

By 11am, the mixing stage exploded into a volley of gunfire. Even though the crashes were coming from the elaborate network of speakers lining the walls, everyone but Zipf and Lievsay jumped. The sound was so loud that it sent the pens and spectacles lying on top of desks abuzz. Larry stopped the tape to rewind. He added a little more tectonic rumble and played it again. Even with advance warning, everyone jumped again.

It becomes clear, in moments like these, exactly how unconscious the experience of sound is, how neatly it skirts our higher reasoning to make us feel. It does not matter if you know the violence is just pretend – make the gunshot noise loud and accurate enough and your body will believe it is real. For this reason, sound is one of the most visceral, subtle tools available to filmmakers. No need to wait to see the limp of the boy who has fallen off his bicycle to know that his ankle is broken – a small crunching noise added to his landing will make a viewer cringe in empathy.

For the gunfire cue in *Miles Ahead*, the rush of revving engines and bullets was intended to cue a 20-year jump back in time, an entrance into Miles’s memory. The burst of violence was brief – maybe 15 seconds – just long enough for an adrenaline spike before the storyline jumped back to the present day, where a cockroach was scuttling along a countertop in a quiet, sunlit room. Once he finished balancing the sounds of gunshots, Larry turned his attention to the cockroach. Each foot pattered softly, whispery but as precise as the bullets had been. The music editor heaved a great satisfied sigh over his console. “Fuck,” he said, admiringly. Lievsay nodded in approval.

* * *

To everyone’s relief, Don Cheadle proved upon arrival to be in favour of keeping the vibe calm. He arrived without entourage or announcement, unzipped his puffer jacket, shook Skip’s hand, and – after greeting everyone in the room – took a seat on the side of the room and asked to get to work. As the mix progressed, the days settled into a kind of numbing, noisy rhythm. The men took their places each morning at nine at the same desks. The hours passed predictably: breakfast, noises, lunch, noises, 4pm coffee, noises, noises noises. The mixing theatre is windowless and clockless, and seems therefore to exist outside of time. For two-and-a-half weeks, nothing changed except the noises and occasionally the arrangement of the belongings draped over the couches. One Monday I

arrived mid-morning and found it hard to discern whether the team had moved all weekend. After a few moments, comforting evidence to the contrary: Lievsay’s socks, which had been black on Friday, were striped.

Even without the interpersonal stress, mixes are hard on the senses. Imagine sitting in a dark room watching a movie in four-second intervals. Repeat this until the hours stretch into days, then weeks. Life becomes a series of stuttering noises stretching into eternity, punctuated only by interruptions for someone to complain about the “chunkiness” or “creaminess” or “washiness” or whatever-ness of a fly’s buzz.

Imagine sitting in a dark room watching a movie in four-second intervals. Repeat this until the hours stretch into weeks

As work continued on *Miles Ahead*, sounds were compared to a stack, a field, a room, a series of colours. Noises were described as “washy”, “pingy”, “chunky”, “spongy”, “roomy”, “blatty” and “futzy”. “It’s tough because most people aren’t articulate about sound,” Lievsay said in his office after one particularly long day. “So you’re in the mixing room and you’re trying to triangulate between what the director wants and the picture editor wants, and everyone’s trying hard to make themselves understood and there’s the desperation problem, because they’re running out of time – you’re just hanging on by the skin of your teeth.”

The impact a tiny aural cue can have on the brain’s understanding of narrative is astonishing. On the third day of the mix, Lievsay and Larry were breezing through a scene of Miles dropping in on one of his wife’s dance rehearsals when Cheadle, who had been doing t’ai-chi in one corner to pass the time, paused them. The scene sounded a little too dreamy. Cheadle wanted a more matter-of-fact sound. “The point is that [Miles and his wife Frances] are carving a special moment out of something that’s not special,” he said.

Lievsay nodded and fiddled for a moment. When he replayed the scene, something small but extraordinary happened. I had watched this scene somewhere between one and two dozen times but this time I noticed something I’d never seen before: a young woman passing behind Frances with a stack of papers in her hand. Lievsay had given her footsteps. Without the footsteps, I’d somehow never seen her; now, I saw her, and her presence – along with a few other tweaks by Lievsay – suggested bustling in the room, people at work, things happening outside the eye contact forged between Miles and Frances. I didn’t exactly hear the difference: I just saw the scene differently.

“Is it busy enough now?” Lievsay asked.

* * *

In order for that edit to be possible, Lievsay needed the footsteps of that young woman close at hand. He needed not just any footsteps, but ones that sounded like they were made by a low high heel of roughly the sort that women would wear in the mid-1970s crossing a wooden stage. This kind of noise – one that requires precision, but that is intended to blend in to the background – is called Foley. (The work is named after Jack Foley, who first came up with a process for adding quotidian noises, such as footsteps, to films in the 1920s.)

When Lievsay reached for that girl’s footsteps, he wasn’t going back into some old library – he was reaching into the library of Foley designed and created specifically for Cheadle’s film. The Foley house, also known informally at his studio as “the sound castle”, where these sounds are made, is in New Jersey, just 15 minutes past the place where the George Washington Bridge connects Manhattan with Fort Lee. It is not so much a castle as a warehouse crammed with more *stuff* than can be adequately described here. Marko Costanzo, the antic “Foley artist” who works there, takes evident joy in giving tours of the sound stage and the treasures he stores there: a bin full of Zippo lighters from different eras; a bunch of swords (“from when we did *Crouching Tiger Hidden Dragon*”); barrels; bicycles; baby carriages; one area devoted to different kinds of indoor flooring and another devoted to outdoor ground cover; a pool (“we built it to do the sounds for the raft in *Life of Pi*”); a child’s Easy-Bake oven. “I beg people not to take things to the dump, but to bring them to me instead,” said Costanzo, grinning and spreading his arms wide.



Marko Costanzo in the Foley studio in New Jersey. Photograph: Tim Knox

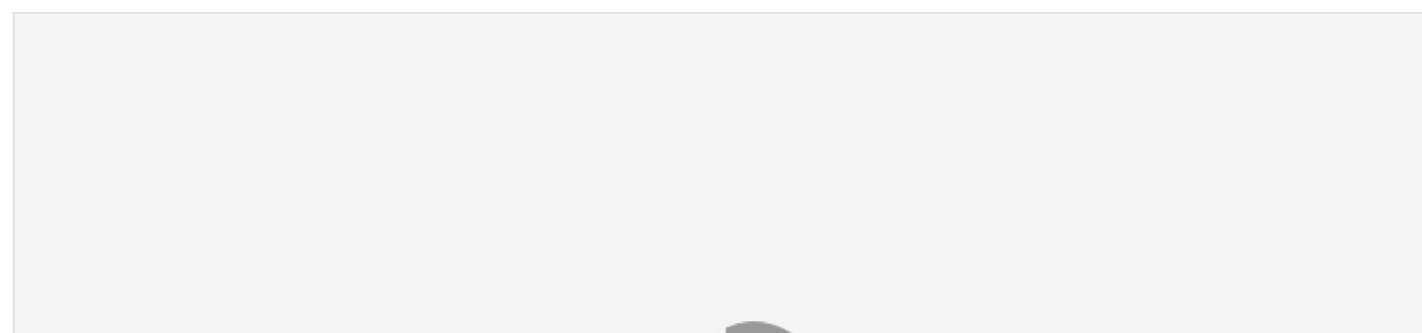
Costanzo's job is to replicate every sound that might reasonably be produced in a film while his colleague, engineer George Lara, directs and records. Lara, tucked at one end of the warehouse in a sound booth, announces the cue to Costanzo ("skin on cloth") and pulls up the clip for him. Costanzo watches once to rehearse, positions his two microphones to approximate the distance and reverb needed, and then does it for real, eyes locked on the screen. They work up from the easy things like "hand on hair" (for which Costanzo, bald as an egg, has a menagerie of wigs) to the harder cues: the sound of a tiger's feet scraping wood or the sickening thwap-clunk of a gallows releasing.

"You make every single sound?" I asked Costanzo.

"He performs it," Lara gently corrected me.

Costanzo changes into shorts before recordings to ensure that the microphones won't pick up the sound of a trouser hem rubbing against his shoes. On the morning I visited, he changed while watching his first cue: a woman knitting. He carefully selected two pieces of wood from his collection, tapping them once or twice to get the right sound, and then executed the taps again in time – with gusto – for the recording. The gesture had the studious flourish a minor orchestral instrumentalist – say, the triangle player – might devote to his one entrance. Lara, for his part, seemed reasonably satisfied with the result.

If sound editors are the secret backbone of movies, this is one of their secrets. That glorious slap Cher gives Nicolas Cage in *Moonstruck* before yelling "Snap out of it"? Not Cher at all. Likely as not, that was a moustachioed man standing in his socks in a warehouse in some suburb of New Jersey.





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In its resting moments, the sound console that sits in the middle of Lievsay's office displays a curious screensaver. It is a slideshow of rooms: wine cellars, cathedrals, living rooms, sheds. The photos come from a program called Altiverb, developed by people who record sounds in different spaces and then calculate the reverb acting on those sounds. The reverb pattern – what happens to noise as it moves through space to our ears – is known as the delta. Lievsay's central mission is to find the right one for every sound, no matter how small. He lives in search of the delta.

That he is one of the best in the industry at finding it he attributes mostly to what he calls "seat time", or experience. "The longer you work, the better you are at imagining what something should sound like." At heart, the pursuit of the delta is the pursuit of the viewer's consciousness. The sound editor's question is, at its most essential: how do you experience the world? How can I imagine what it will be like to be you listening to your wife call to you from across a field, or realising that the car approaching from behind on the dark road is coming too fast? In ways we mostly do not notice, hearing is not just sound – it is sound plus feeling, or sound plus physical sensation, thought, history, and choice of what to hear. To work on sound, then, is not simply about crafting noise – it is about anticipating what it is to be a peculiar, particular sentient creature in the world.

It is a dramatic enterprise, but it does not look like much. On the final day of the *Miles Ahead* mix, Lievsay was still and silent. During the weird philosophical arguments that went on throughout the afternoon – was the sound of that record spinning too loud? If a trumpet came in a half-second later, would it change the entire meaning of the scene? Where *was* this fucker supposed to be in the room when we hear him speaking off-camera? – Lievsay rarely responded. His head bobbed only twice. It appeared, oddly, as though he was doing mostly nothing that afternoon, just clicking in slow, methodical plunks.

Five thirty arrived, the final hour before Lievsay had to catch a plane to Los Angeles, where he would start working on a documentary about Malala Yousafzai early the next morning. Slowly, Cheadle and Axelrad and the team began gathering, one by one, to stand behind Skip's chair. They looked over his shoulder anxiously, as if watching a finish line approach.

What came next was uncharacteristically theatrical for Skip. He worked until there was only one cue left, a single trumpet bleat that would mark a kind of epiphany for Miles; the film's final turn. It was first too rough, then too bleaty, then too quiet. Lievsay made an alteration. After that, it sounded too far back in the room, too reverby.

Six-thirty arrived. Lievsay clicked quietly, dragging a soundwave down on the monitor in front of him, nudging another one up, and then played the cue back again. The trumpet was in the room suddenly, plaintive and ugly and insistent and right. It was the epiphany that the film needed it to be. Lievsay nodded. "That's it," he said.

He stood up, shook Cheadle's hand, clapped Zipf on the shoulder, and was gone. Everyone stood around in his wake for a while, dazed and din-drunk. Zipf shook his head, as if clearing his ears. Cheadle clapped Axelrad on the shoulder. People kept looking reflexively at the screen, where the horn player was frozen mid-stride, as if to see what it was Lievsay had done to that trumpet. After a few minutes this stopped, as if in acknowledgement. The delta is not

something you see, anyway.

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This piece was amended on 23 July to correct an error: Glenn Kiser is the head of the Dolby Institute, not Dolby Digital.

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cycling	boxing	racing
rugby league		
football		
live scores	tables	competitions
results	fixtures	clubs
opinion		
columnists		
culture		

film	tv & radio	music
games	books	art & design
stage	classical	
business		
economics	banking	retail
markets	eurozone	
lifestyle		
food	health & fitness	love & sex
family	women	home & garden
fashion		
environment		
climate change	wildlife	energy
pollution		
tech		
travel		
UK	europe	US
money		
property	savings	pensions
borrowing	careers	
science		
professional networks		
the observer		
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editorials and letters	obituaries	g2
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crosswords		
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cryptic	prize	quiptic
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