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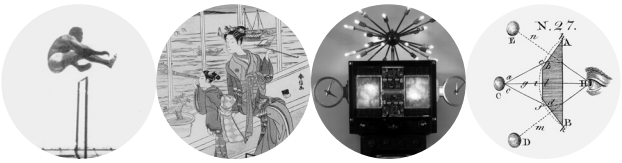

Acousmatic Fabrications: Les Paul and the 'Les Paulverizer'

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Abstract

Acousmatic sound – *a sound that one hears without seeing the causes behind it* – creates situations where visual contributions to auditory experience are diminished. The author theorizes that acousmatic separation unsettles the relationship of the source, cause and effect of sound. To draw out the consequences of this theory, Les Paul and Mary Ford's multi-tracked recordings and live performances are examined, and three central claims are posited. First, Paul's turn to multi-tracked recording was motivated by mimetic rivalry when his 'sound' was imitated on the radio. Second, Paul misdirected listeners of his radio program by creating scenarios that depended on false attributions of source and cause. Third, the problems that faced Paul in live performance of his multi-tracked hits resulted in Paul's creation of the 'Les Paulverizer'. This device afforded the maintenance of acousmatic spacing during live performance but also forced him into the unusual position of ventriloquizing his own voice.

Keywords

acousmatic • guitar • Les Paul • Mary Ford • mimetic rivalry • music technology • *musique concrète* • popular music • recording

Philosophy and literature have often characterized the senses as rival siblings. Encouraging dissention, casting aspersions and granting nobility, the Western imagination has played the perpetually fickle parent, finding entertainment in baiting the petty jealousies of its five unhappy children. Take, for instance, the Elizabethan playwright Thomas Tomkis, and his comic allegory entitled *Lingua, or, The Combat of the Tongue and the Five Senses for Superiority* (Tomkis, 1607). Jealous of the five senses and desirous to become a member of their

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rank, Lingua (or Language) tries to sow discord by offering a contest between the senses. The winner of the contest will receive a crown and mantle bearing this inscription: *'Hee of the fiue that proues himselfe the best shall haue his Temples with this Coronet blest.'* Tomkis's conceit is supported by a long literary and philosophical tradition, where the five senses vie for rank in diverse hierarchies (Vinge, 1975: 8-12). Typically, vision comes first, possessing a special nobility, followed by hearing and the others. Descartes' (1965[1637]: 65) claim that 'sight is the most comprehensive and the noblest [sense]' is often cited as evidence of this ocularcentric tradition. However, one could consult other authors for support, such as Tomkis's friend Phineas Fletcher (Boden, 2005: 99). In his poem, *The Purple Island*, Fletcher claims that vision is 'the palace of the noblest sense', while hearing, 'second of the Pentarchy, is next, not all so noble as his brother' (Fletcher, 1633).

Although never uncontested, ocularcentrism is remarkably resilient, persisting from sources in Ancient philosophy – in particular, Plato's *Timaeus* and Aristotle's *Metaphysics* – until the 'denigration' of vision beginning with Nietzsche and Bergson, and continuing into the major schools of 20th-century philosophy.[1] In 1954, philosopher Hans Jonas (1966) revisited this topos in an essay entitled 'The Nobility of Sight'. Jonas argued for the superiority of sight over hearing by classifying the two senses according to the degree to which they grant access to external entities. Unlike vision, which gives immediate presentation of worldly objects in all their static persistence, hearing is deficient because 'the immediate object of hearing is the sounds themselves, and then these indicate something else … and only in the third place does the experience of hearing reveal the agent as an entity whose existence is independent of the noise it makes' (p. 137). Jonas chides hearing for being twice removed from the sound's objective source: first, by its mediate attention to the 'state the object is in' (p. 137) at the moment of listening – the cause of the sound's production – and second, by the ear's immediate apprehension of the effect, the sound itself, which is distinct from all worldly ties. The argument recalls Plato's rejection of artistic *mimesis* on the grounds that it produces only copies of copies – twice removed from the reality of the Forms.[2]

If hearing is deficient because it lacks immediate access to the world of objective sources and dynamic causes, it has never been content to simply remain runner-up in the pageant of the senses. The second sense, hearing, is masterly at employing cunning strategies for turning its disadvantage to gain. Or, more cogently, one could say that hearing has never tired of *supplementing its supplementary status*.

Acousmatic Sound

Despite Plato's transformation of Pythagorean cosmology into an ocularcentric system that privileges *theoria* and *eide*, Pythagoras appeared to prefer hearing; indeed, in legendary accounts, Pythagoras often leveraged the power of hearing to produce an aura of mystery and esotericism that complemented the veiled content of his doctrines. Roman and Early Christian sources claim that the

master, when lecturing to his pupils, would place himself behind a curtain.[3] The advantages of this trick were manifold:

> The students, the followers, were confined to 'their Master's voice,' not distracted by his looks or quirks of behavior, by visual forms, the spectacle of presentation, the theatrical effects … they had to concentrate merely on the voice and the meaning emanating from it. (Dolar, 2006: 61)

By blotting out the visual aspects of the lecture, separating the speaker from the spoken, Pythagoras leveraged the immediate object of hearing for his own purposes. The ear's predisposition to fixate upon the sounds themselves was exploited to produce an effect whereby the voice became perceived as disembodied and otherworldly. The Pythagorean curtain, which veils the visual in order to unveil the supernatural, leverages the sensorium against itself and challenges the classical hierarchy of the senses.

The name for this kind of sound is 'acousmatic': 'a sound that is heard without its cause or source being seen' (Chion, 1999: 18). Etymologically, the term refers to a class of Pythagorean disciples known as the *akousmatikoi* – literally, the 'listeners' or 'auditors' – who listened to the Pythagorean doctrine, the *akousmata*, from behind the curtain. The term led an obscure life for the better part of two millennia. Its scattered appearances are confined to texts of French Enlightenment, the *Encyclopédie*, and a few unpublished poems of the young Apollinaire. In the mid 1950s, while describing a concert of *musique concrète*, poet Jérôme Peignot struck upon the term as the appropriate appellation for the strange effect of listening to this performerless music for magnetic tape and loudspeaker. Pierre Schaeffer, the inventor of *musique concrète*, soon appropriated the term, using it to describe his music and frame a field of inquiry for his theoretical investigations. Since its presentation in Schaeffer's *Traité des objets musicaux* (1966), acousmatic theory has been disseminated in a variety of discourses beyond electronic music, such as film theory, cultural studies, musical semiotics, writings on the voice, the philosophy of music, opera studies and feminist theory.[4]

One of the most cited authorities on acousmatic sound is composer and film theorist, Michel Chion. A student of Schaeffer and a composer of *musique concrète*, Chion contrasts the acousmatic situation, where sounds are heard without the source or cause being seen, with the 'trivial situation' in which a sound is both seen and heard – what he refers to as 'visualized listening' (Chion, 1999: 18). Films often exploit the dramatic potential of separating and uniting voices with bodies – think of the whistling murderer in Fritz Lang's *M* (1931). To describe the treatment of such figures, Chion introduced the neologism *acousmêtre*. 'When the acousmatic presence is a voice, and especially when this voice has not yet been visualized – that is, when we cannot yet connect it to a face – we get a special being, a kind of talking and acting shadow to which we attach the name *acousmêtre*' (p. 21). Chion astutely notes that the power of the *acousmêtre's* voice does not depend on any electronic manipulation, filtering, distorting or transformation of the sound. The *sound itself*, taken in the sense

of the physical signal, is not radically transformed in the acousmatic situation; rather, the sensorium is redistributed in new ratios between the eye and the ear, and this produces the unnerving power of the acousmatic voice. According to Chion, 'What changes is the relationship between what we see and what we hear' (p. 19).

When the ear is isolated from visual access to external entities, a separation (or *spacing*) of the sound's source, cause and effect emerges. This spacing is afforded by technologies like the Pythagorean curtain or the loudspeaker, which divide the eye from the ear and produce acousmatic effects. Furthermore, from any given sound it is always possible to infer multiple possible sources and causes – a feature of acousmatic sound that is often exploited by Foley artists (reproducers of everyday sounds for use in film-making) and sound designers. As a principle, the acousmatic effect necessarily underdetermines attributions of source and cause. Consequently, an acousmatic sound provokes a degree of unsettledness, anxiety, or insecurity about its source or cause.

Schaeffer would disagree with this characterization of acousmatic sound. In the pages of the *Traité,* the separation of source and cause from effect – i.e. the acousmatic reduction – is deployed so as to grant autonomy to the auditory effect. This autonomous effect, once separated, becomes a 'sound object', capable of analysis and description by means of Schaeffer's idiosyncratic phenomenology.[5] It suffers from no ontological insecurity. Yet, while arguing this position, Schaeffer acknowledges (if only momentarily) the unsettledness which disturbs acousmatic sound. He writes:

> For the traditional musician and for the acoustician, an important aspect of the recognition of sounds is the identification of the sonorous sources. When the latter are effectuated without the support of vision, *musical conditioning is unsettled*. Often surprised, often uncertain, we discover that much of what we thought we were hearing, was in reality only seen, and explained, by the context. (p. 93, emphasis added)

We both agree that there is something unsettled, or unsettling, about acousmatic sound. Schaeffer attributes this feeling to the challenge of overcoming our 'musical conditioning', of overturning longstanding habits of supplementing pure audition with visual and tactile accessories. But it may be that Schaeffer misrecognizes just what is unsettling about acousmatic sound. The uneasiness is not the discomfort of acquiring a new habit, of teaching the ear – that old dog! – a new trick.

For Schaeffer, this feeling of strangeness in the face of acousmatic sound would soon diminish with familiarity. I would argue, though, that this feeling of unsettledness or strangeness is not an inessential aspect of acousmatic sound. It is not the need to overcome musical conditioning that is unsettling. Rather a structural feature of acousmatic sound is evinced by its unsettling quality: namely, that the autonomous effect is never quite autonomous; that this *nearly-but-not-quite-autonomous* auditory effect is *necessarily* pursued by the shadow of source and cause, a shadow that it cannot escape because without this shadow

the acousmatic effect simply dissipates. The tension inherent in the acousmatic voice depends on the possibility that it may become *de-acousmatized* when synchronized with a body. If the voice were simply autonomous, it would possess none of its gripping mystery.[6] In other words, acousmatic sound is constituted by a gap.[7] The separation of eye and ear unsettles the relation of source, cause and effect. It is precisely this *spacing* of the auditory effect from the physical–causal context that grants acousmatic sound its strange power.[8] Where source, cause and effect are simultaneously present, acousmatic sound *is absent*. Only in the simultaneous proximity and distance of source, cause and effect – in their co-appearance and irreconcilability – does the property of acousmaticity emerge.

Mimesis and 'The New Sound'

The career of guitarist Les Paul presents an unusual case for exploring some implications of acousmatic sound. Paul and his wife, singer Mary Ford, were amongst the most commercially successful pop musicians of the early 1950s, with numerous chart-topping singles, radio programs and even a daily 5-minute television program. Paul built his reputation throughout the 1940s as a jazz guitarist, with a style influenced by Django Reinhardt. Backing singers such as Bing Crosby and the Andrews Sisters, Paul also released recordings with his own trio, performing frequently on local and national radio. In addition to his musical skills, Paul was an inventor of electronic audio equipment. He is often credited with a seminal role in the development of the solid-body electric guitar, magnetic pickups, multi-track recording technology, and various techniques for recording sound in the studio. The marriage of Paul's musical and technical skills led him to experiment with 'sound-on-sound' or 'multiple' recordings, which are more commonly referred to as overdubbed or multi-track recordings.[9] These early recordings, instrumental recordings of jazz standards such as 'Lover' and 'Brazil', were instant hits for the fledgling Capitol Records.

However, it was not simply a love of technology that motivated Paul to develop his 'new sound', but something else entirely. In the 1940s, Paul's unique style of virtuosic runs and tender descants was widely recognizable, the object of admiration, even imitation by other guitarists.

> My mother came backstage and she told me that she had heard me on the radio. 'Lester', she said, 'you were fine.' Only I knew it wasn't me; I hadn't been on the radio. Then I found out that it had been George Barnes [a guitarist living in Chicago]. No reflection on George, of course, but I figured that my own mother had a right to know when her son was playing … I decided that I wasn't gonna record or go on the radio or anything until I could work out something so much me, that my mother would know that was her Lester playing.[10]

Here, we have an unexpected consequence of acousmatic underdetermination, a case of stolen identity: am I hearing Les Paul or George Barnes, and how am I to tell the difference? Acousmatic sound provokes the questions: 'Who is

speaking? Whose sound is this?' Barnes, as a mimic, speaks in Les Paul's voice, momentarily appropriating his identity and expropriating Paul of what he assumed was uniquely his possession – his sound. Radio, an acousmatic medium par excellence, is parasitic upon such underdetermination, constituted by its excessive proffering of sonic effects while underdetermining the source and cause. Paul is the unwitting victim of acousmatic sound.

According to popular music scholar Steve Waksman (1999): 'Paul's wry comments about his mother's misidentification uncover a private, familial motivation behind the innovations that brought him mass acceptance' (p. 38). Rather than read Paul's reaction in familial terms, I would argue that it is a case of mimetic rivalry, where one's very identity is challenged by a rival or double that triggers a recoil from the threat of identification.[11] By working in secret in the studio, Paul would try to create a proprietary sound, one that would allow him to create something 'so much me' that his identity could not be expropriated again.[12] Paul's strategy would exploit another acousmatic medium – sound recording – and the technique of overdubbing that it afforded.

Making overdubbed recordings was a tedious process. The early disc cutting (and magnetic tape) technology that Paul used for most of the 1940s until the mid-1950s, did not allow for the possibility of correcting mistakes. Once something was recorded it could not be altered, but only added to. An article from the *Saturday Evening Post*, describes the process:

> To make a record, Les has to hold in his musical memory all the parts he wishes to record. Then he records the least important, or background part, first, knowing that some of this will be lost in the final version. He plays back the tape and accompanies it with a second part, which is recorded on a second tape. If the second round is satisfactory, he then transfers Part No. 2 on top of Part No. 1 on the first tape, and so on, recording the melody and very delicate sounds, such as the tinkle of a bell, at the very last. (Porter, 1953: 100)

In addition to layering part upon part, Paul also leveraged some of the affordances of recording to produce special effects – delay, echo, slapback. But one of Paul's most ingenious tricks was to alter the recording speed when layering parts. By slowing down a recording to half of its original speed, the entire recording is not only slower in tempo, but its pitch drops by one octave. Say, for example, you have a recording of rhythm guitar playing through the chord changes to some jazz standard. Call this Guitar A. If the recording of Guitar A is slowed to half its original speed, its tempo also slows in half and the pitch drops an octave. If a solo guitar part (Guitar B) is recorded over the half speed recording, an unusual effect occurs. When the recording is brought back up to its normal speed, Guitar A sounds like it did originally, but Guitar B is now one octave higher than before and twice as fast. But not only is the solo part faster and higher, but the whole frequency spectrum of the guitar has been shifted, making the guitar sound brighter and clearer.[13]

By altering the recording speed, Paul was able to create guitar lines that were faster and higher than humanly possible – but that still sounded, potentially, within the realm of attainability. The technique is used prominently on Paul's first single for Capitol, which featured covers of 'Lover' and 'Brazil'. Half-speed techniques required the affordances of recorded sound in a way that simply layering sound-on-sound in real time did not. Potentially, a talented arranger could create transcriptions of sound-on-sound recordings, giving each of the parts to a different guitarist, and perform them live – so long as no half-speed techniques were used. Simply put, there is no way to perform sounds with the heightened speed, transposition and spectral shift of half-speed recordings live on stage, other than via recording.

More significantly, these superhuman runs were unable to be duplicated by other guitarists. They helped to relieve the threat of mimetic doubling and expropriation that had so troubled Paul. More than relying on new technological affordances, Les Paul's 'new sound' was also *his* sound – one that was not vulnerable to being mimed or doubled by George Barnes or anyone else, because it was 'so much me'. It required an apparatus of homemade machines and secret techniques in order to function – a technological analogue to those inner, hidden secrets that most deeply constitute the self. The sound was new, strange and unsettling, yet thrilling. Part of its appeal was that it provoked the question: 'How did he do it?' This gave Paul great leeway over how to dissimulate the answer.

Misdirections

Like the 'new sound' itself, the answer was multiple. Paul, who had a weekly 15-minute radio show in the 1950s, used his program to offer various cheeky solutions to the puzzle. Little mention was made of the use of overdubbing, rather Paul preferred to misdirect the audience by falsely attributing the new sound to little, unusual guitars or to his ability to play multiple instruments at the same time. These two strategies differ in that the former is a false attribution of the source, while the latter a false attribution of the cause.

(i) Imaginary Sources: 'That Little Guitar with the Weird Sound'

In the first episode of the Les Paul Show (airing on NBC radio, 5 May 1950) the question 'how does he do it?' is lightly handled. There is little storyline, simply a few introductions that set up the Les Paul trio as they play through a variety of genres: novelty numbers, ballads, hillbilly tunes and jazz. The first song they 'perform' is 'Nola', but in actuality Paul inserted the recording that Capitol Records had released in 1949. In this arrangement of 'Nola', originally a novelty piano solo written by Felix Arndt in 1915, a lead guitar part produced by the use of a half-speed recording is prominently featured, along with other signature effects like echo, deadened-string pizzicato and mandolin-style tremolandi. The strangeness of the effect (which gives the impression of a futuristic,

mechanical carousel or souped-up theater organ) is left almost untouched, as Paul immediately jumps in to introduce the next number.

> *Paul*: Here's Mary Ford ready to sing …
>
> *Ford* (interrupting): Les, I think you ought to tell them about that little guitar you just played with the weird sound.
>
> *Paul*: Oh. Well, that guitar is about eighteen inches long and it's tuned about an octave higher than a big, standard guitar. And that's how we get that different sound.

Of course, nothing could be farther from the truth. The actual recording techniques are simply disguised and left unconsidered.

(ii) Imaginary Causes: 'Mary Sings Three Parts at Once'

After the initial episode, few attempts were made to explain the 'new sound' through deferrals to an imaginary source. A more common strategy was to claim that Les was playing multiple guitars at once and that Mary was singing multiple parts simultaneously – a false attribution of causality that would amount to something like a musical magic trick.

In an episode airing seven weeks later, on 23 June 1950, Les and Mary introduce themselves in this way:

> *Les*: That's Mary Ford … Mary sings three parts at once and does some very fantastic things with vocals on this program.
>
> *Mary*: And Les plays seven guitars and all the rhythm instruments on this program …

It is followed with a rendition of 'The World Is Waiting for the Sunrise'. Playing the opening bars *rubato*, Mary sings in one part, then two, then three – adding a voice at each pause in the melody, and Les counting each time a voice is layered. When all three parts are harmonized, Les yells:

> Oh that's great! Now just stay right like that and let me get over here by the guitars and we'll knock ourselves out. Wait a minute! Seven guitars and three voices … now let me get to the guitars. Here we go.

The false attribution that Les and Mary are simultaneously playing multiple instruments and singing multiple parts is easily afforded by radio, where the acousmatic veiling of the body encourages the imagination to concoct all sorts of correspondingly impossible physical situations. If seeing is believing, then hearing is imagining. However, the idea that Les and Mary possessed a special skill to play and sing multiple parts wasn't simply propagated on radio, but also in images, such as the cover to Les Paul's Columbia album, *The New Sound*,

where Paul, appearing as a cross between Ganesh and Giacomo Balla's dog, also plays seven guitars (see Figure 1).[14]

While the cover promotes a comic image of Paul playing multiple instruments, the liner notes on the back of the LP are ambiguous about the attribution, opting for feigned ignorance and advertising lingo:

> Les Paul now brings us a captivating demonstration of his theory that what is good on one guitar is eight times as good on eight guitars – and to prove it, he plays them all himself! How this can be done is Les' secret, and he steadfastly refuses to divulge it ... but we do know that the results are bright, gay and intriguing – and filled with good humor.

Similar to the radio pilot episode, the curiosity or unsettledness provoked by the music is as quickly acknowledged as it is dismissed.

Figure 1 Cover of Les Paul's *The New Sound* (Capitol Records, 1950).

Pythagoras Meets the Hit Maker

The creation of the 'new sound' also created another problem: it was impossible to produce it live on stage. It could only be *reproduced*, by playing along with pre-recorded tracks, but not *recreated*. The 'new sound' may have given Paul some proprietary control over his persona, but it could only fully exist when confined to media that afforded acousmatic effects, like radio and recordings. As long as things remained behind the veil of the loudspeaker, everything was in Paul's control, but an essential problem remained: how does one preserve the acousmaticity of radio and recordings in the visual space of live performance?

Due to the phenomenal success of the duo, there was a great demand – and financial incentives – for Paul and Ford to perform live. On the road, the duo was often augmented with a few additional musicians: Ford's sister Carol, who was also a singer, and her bassist husband Wally Kamin. Ford, who was an excellent guitarist, would play some of the rhythm parts. But augmenting the size of the group was not an adequate solution. In an interview with John Sievert from 1977, Paul described the situation:

> You walk out there with just one voice and one guitar, and you've got a problem. If they yell out, 'How High The Moon,' you've got to give them something as close as possible. So I came up with the bright idea of taking Mary's sister and hiding her offstage in a john or up in an attic – wherever – with a long microphone. Whatever Mary did onstage, she did offstage. If Mary sniffled, she sniffled. It just stopped everyone dead.

Here, Pythagoras, with his technical trick of veiling the body – the originary topos of acousmatic sound – joins forces with the hit makers of the 1950s. One might imagine the whole scenario inspired by the final scene of *Singin' in the Rain* (1952, dir. Gene Kelly), where Kathy Selden (played by Debbie Reynolds) is forced to sing behind a curtain to save the reputation of the talentless Lina Lamont – if only Paul's performances had not predated the film. Yet, unlike the victorious *de-acousmatization* of Lina Lamont's voice to the benefit of Kathy Selden, Paul did his best to keep Carol a secret.

Of course, there were moments when the secret was almost discovered. According to Paul's biographer, Mary Alice Shaughnessy (1993), one night,

> The stage manager playfully kissed Carol's neck, doing his best to make Mary's pretty backup singer giggle halfway through a song. Naturally the audience wondered where the disembodied voice was coming from. But Les went out of his way to conceal Carol's supporting role in the show. The way he figured it, the more mystery surrounding Les Paul and Mary Ford the better. Poor Carol never did get a chance to step out from behind the curtains to soak up some of the applause. (p. 197)

Paul, in order to maintain an air of mystery – a demand formed in reaction to the threat of mimetic rivalry – had no compunction about putting others in situations

where *their* identities would be mimetically doubled. When Mary came down with a case of nerves before their October 1951 performances at New York City's Paramount Theater, Paul put Carol, 'who closely resembled her sister in visage and voice', into Mary's strapless gown and placed her onstage (p. 197).

Paul, a great spinner of yarns, tells a tale about the degree to which the audience would go in an attempt to answer a question marked by acousmatic unsettledness, 'How did he do it?'

> People couldn't believe it or figure it out … One night I hear the mayor of Buffalo sitting in the front row tell his wife, 'Oh, it's simple. It's radar.' So a couple years after playing with the extra voice and an orchestra and everything, they began to think that they heard all kinds of things. They put things in there that weren't there … You know who figured out the trick with Mary's sister? Nobody could figure it out. *Life Magazine* couldn't. We wouldn't tell anybody; it was a secret for years. Then one night, a man came backstage with his little girl and says, 'If I tell you how you're getting that sound, will you give me a yes or no?' I said, 'Sure' and the little girl says, 'Where's the other lady?' It took a little kid who didn't have a complicated mind. Everybody saw machines, turntables, radar – everything but the simplest thing. (Sievert, 1977)

Despite the questionable veracity of this tale, it illuminates something central about how acousmatic sound underdetermines attributions of source and cause. By having Mary onstage, the audience is misdirected to believe that they have certainty about the source of the sound, but is left to wonder about the technical cause that produces the sounds. There must be some kind of mechanical supplement that makes one voice sound like two. But the trick doesn't involve any form of unusual causality, rather it relies on a deception at the source – in this case, two sources, not one. As Paul emphasizes, the effectiveness of the trick depends on its simplicity. With appetites stimulated to discover the cause, everyone overlooks the source. The wise child is the only one simple enough to figure out what is really going on, by instinctively and naively intuiting the most obvious of solutions.

Finally, in 1953, a long profile on the duo in the *Saturday Evening Post* unveiled the trick for all to see:

> On the stage, Les and Mary, with a guitar apiece, are backed up by one visible supporter, Wally Kamin, with a bass fiddle. In the wings, offstage – and this has been kept a secret till now – stands Carol, Mary's sister, with a mike. Carol's voice is so similar to Mary's that when she chimes in, a split second behind Mary, with a harmonic contribution, the double sound does seem to be issuing from Mary's gifted throat. (Porter, 1953: 98)

Part of the trick relies on the use of amplified sound. By close-miking the voice, amplifying it and diffusing it through a loudspeaker, it could be mixed with other voices and emitted from a single location. Truly, the 'double sound' does indeed issue from one place, the cone of the loudspeaker – not Mary's gifted throat.

The Les Paulverizer

By July 1950, an alternative strategy for explaining the 'new sound' had emerged on Paul's radio program. Les began to characterize himself as someone who liked to 'tinker' with electronics, and often described their house as full of electronic gear and gadgets (*The Les Paul Show*, 11 July 1950). One piece of gadgetry was supposedly capable of multiplying sounds – plug in 'one guitar and make it sound like six' or sing into it and sound like a whole choir. Eventually, the device was baptized 'The Les Paulverizer' (*The Les Paul Show*, 11 August 1950).

> When we did the radio show for NBC I had a problem. I was doing everything; I produced, I directed, I wrote the script, I acted and I played. In the script I tried to explain how I'd take Mary's voice and multiply it, but it was all so technical. Then I came up with the idea of my magic box, the Les Paulverizer, which did everything for me, and this worked and it became very popular among listeners. It became part of the show, with me saying things like, 'Mary, you sing this song and the Les Paulverizer will multiply you into 12.' (Buskin, 2007)

Paul wove the machine into the plot in a variety of ways, usually for the sake of a gag. In an episode entitled, 'The case of the missing Les Paulverizer', the machine is missing for the first few minutes – until Les discovers that Mary has accidentally broken it.

> *Les*: Mary, why did you ever go down in the basement with that gadget in the first place?
>
> *Mary*: Well, I thought if the thing could make one guitar sound like six, I could plug in my new Hoover vacuum cleaner and clean the house six times as fast. (Paul and Ford, 1991)[15]

In another episode, Les tries to exploit the Pythagorean character of the Paulverizer to advantage. Desperate to find a job, Les scours through the newspaper only to find an advertisement by a booking agent, a Mr Fairchild, looking to hire a string orchestra and a glee club. Deciding that this is the perfect job, Les tries to convince Mary that they need to audition but only over the phone.

> *Mary*: Oh no, Les! You're not a string orchestra and I'm not a glee club.
>
> *Les*: Yeah, but I can make you sound like one with my Les Paulverizer.
>
> *Mary*: What will the fella say who's going to hire us? It's just you and me. Kind of a small organization, isn't it?
>
> *Les*: But Mary, he won't see us. We're going to audition on the telephone. All you have to do now is stand over there now by the Les Paulverizer and

> mumble into the microphone and your one voice will sound like a whole room full of voices.
>
> *Mary*: OK, I sure hope it works. (*The Les Paul Show*, 11 August 1950)

After a variety of tactics that dissuade the booker from coming over to see the act, the duo finally auditions over the phone and gets the gig. But – the dishonest trick receives its come-uppance in a joke at the end of the program. Mr Fairchild is so delighted with the sound of the string orchestra and glee club that he decides to send a bus over to pick up the whole troupe and put them on his television show. Les hangs up.

Acousmatic Fabrications

The Les Paulverizer did not remain simply a radio gag. Sometime around 1956, Paul constructed a special black box that sat on the end of his guitar, which he dubbed the 'Les Paulverizer' – an acousmatic fabrication, if ever there was one (Shaughnessy, 1993: 231). He was motivated by the continual problem of live performance.

> Wherever we performed, people kept asking the same thing [i.e. why doesn't the duo sound like they did on the records?], so what I did was sit down and build a box that I called the Les Paulverizer. This sat on my guitar and it started and stopped the tape machines, rewound them, recorded, added the echo and did everything right there on the stage. (Buskin, 2007)

It is uncertain the degree to which the box was actually capable of doing all of these tasks. Elsewhere, Paul describes it as 'a remote control box for a tape recorder, and it's mounted right in the guitar' (Sievert, 1977). To be sure, the box allowed Paul to control a tape-recorder so that he could start and stop pre-recorded segments from his guitar, without the audience suspecting that there was any hidden machinery. It seemed as if the little black box was making the guitar sound like a dozen, rather than the *somewhat disappointing* realization that he was simply playing along with pre-recorded tracks. Or in Paul's words:

> When I told Mary we were going to use the Les Paulverizer, she said, 'I'm not going on the stage with this thing! It's never been tried.' I said, 'It'll work ...' The tape machine would be hidden behind a curtain, so everyone would still think the Paulverizer was this magic box. (Buskin, 2007)

According to Paul, the newly fabricated Les Paulverizer was first used in a command performance for President Eisenhower at the White House. The degree of deception involved in this performance was much higher than in the fictional phone call to the booker, Mr Fairchild, and this time the joke was on Eisenhower.

> Well, we went down to Washington, and there we were, performing for Eisenhower, Nixon and all the bigwigs, and through the first five songs everything went great. Then Nixon leapt up, put his arms around me and said, 'Maybe the President has a favorite song. Why don't you ask him?' I said, 'That's a great idea.' I could have killed Nixon. I said, 'Mr President, Vice President Nixon came up with an idea here — I'd like to ask if you have a favorite song that Mary and I can play for you.' I was thinking, 'Oh my God, what are we going to do?' because we really had to play the next number on the tape. Anyway, Eisenhower couldn't think of a favorite song, so he asked Mamie and she said, 'Well, when we were leaving Denver and you got pains in your chest, we pulled over to the side of the road and I turned the radio on and we heard "Vaya con Dios" ...' So help me God, that was the next number on the tape! I still have the letter that Richard Nixon sent me, describing how Eisenhower had stopped him down in the tunnels beneath the White House and said, 'You know, that Les Paul is bothering me. I still can't figure out the Les Paulverizer.' I've also got a letter that Eisenhower wrote to Pat Nixon, saying, 'I'll never figure out how that guy could do what he did. It was the most amazing thing I've ever seen.' And of course it was amazing. If it hadn't been for Mamie picking that song, we'd have been dead. It's just lucky that Nixon didn't suggest they ask for a second song. (Buskin, 2007)

Like his fellow politician, the Mayor of Buffalo, Eisenhower is the unwitting dupe of Paul's misdirection. But the nature of the misdirection is different. Unlike the case of Mary's sister hidden behind the curtain, where the audience overlooks the doubled source of the voice by trying to discern the technical cause behind it ('It's radar!'), here one piece of technology veils another. Paul can point to the Les Paulverizer as if it were the technical gadget that creates the effect, while keeping its real function at bay. Like a magician, Paul can maintain an aura of mystery by holding the actual workings of the box in reserve. The audience sees Les and Mary playing and singing, but hears a string orchestra and glee club. Isn't that the epitome of a *black box* – an input, an output, and a mechanism where one is never sure what happens inside?

Fundamentally, the Les Paulverizer presents something of a paradox: on the one hand, it acts as a proxy for the real causality of the sound, i.e. overdubbed recording; on the other hand, the gadget remains mysterious enough to leave the details about the sound's production unanswered. If the acousmaticity of sound is ultimately created from the altered relationship between the senses, then one could articulate the paradox as follows: the device simultaneously *de-acousmatizes* and *re-acousmatizes* sound. It visualizes a causal source while keeping the real causality invisibly veiled behind the Pythagorean curtain.

Beyond this paradox, the Les Paulverizer is involved in a bitter irony. If the motivation for developing the 'new sound' stemmed from the threat of a mimetic rival, Paul's solution for appropriating, and securing his identity – his sound – confined this security to the space of recording. Generating another

technological invention could not solve the problem of maintaining acousmaticity in live performance. And here is the rub: if the original threat involved George Barnes's ability to mime Les Paul, in the end, the Les Paulverizer makes Les Paul into something of a mimic. In order to secure his identity, the fabrication forces Paul to ventriloquize himself. Miming along with a recording, the duo pretends that the sound is being created spontaneously, but in actuality, Les and Mary lip-synch or, at most, add an additional part to a pre-recorded track. Acting as both ventriloquist and dummy, the duo gestures along to a voice thrown onto recordings and back onto their bodies.

This is a disappointing conclusion. But if we move from live settings back to the confines of the recordings, perhaps a different conclusion emerges. For within the preserve of acousmatic boundaries, Paul's attempt to appropriate a sound that was 'so much me', was far more successful. While other singers in the 1950s made overdubbed recordings, the most similar being Patti Page, there remains something uncanny and unsettling in Les Paul and Mary Ford's music.[16]

For all the overdubbing of Page's recordings, such as 'Confess', 'Tennessee Waltz' and 'Old Cape Cod', there is little sense of uncanniness. The recordings mimic real acoustical spaces through their mixing and panning. The lush orchestral arrangements that support Page's harmonies are balanced so that her voice stands out front and center – as in her recording of 'Tennessee Waltz'. Often, Page sings backup harmonies that contrast with a solo line, allowing the listener to imaginatively differentiate between distinct sounding bodies. The contrast of the solo voice against the chorus helps to diminish the potential uncanny effect of overdubbing. Yet, Paul's arrangements are radically different. Surrounding Ford's voice with an assortment of effects, such as half-speed recordings, echo, delay and slapback, Paul places the voice into a setting that does not reproduce the orthogonal axes of physical space. The voice is closely miked, with Ford singing quietly and directly into the microphone, producing an aural image that lacks the virtual distance of Page's recording.

In Paul and Ford's version of the 'Tennessee Waltz', the voice is recorded intimately, as if two Mary Fords croon softly into the listener's ears – so close in fact, as to lose all grasp of the direction from where the voice is emitted. Like an *acousmêtre*, Ford's voice comes simultaneously from everywhere and nowhere. Her nearly affectless presentation of the melody is similarly inhuman; it lacks all traces of what Roland Barthes (1985) identifies as 'the grain of the voice', the audible quality of the 'materiality of the body emerging from the throat' (p. 255). In this recording, the palpability of Ford's body is all but absent, yet the voice remains, lingering like a spectral vestige. Underneath the voice, a metallic guitar plays *tremolando*, miming an ominous shudder. In contrast to Ford's voice, Paul's tinny background strumming is artificially reverberated and echoed, giving it a distant and lonesome quality. The entire setting is constructed to present something other than habitable, ***heimlich*** physical space. Rather, Paul and Ford's recording of the 'Tennessee Waltz' presents a series of acoustical anomalies, designed to convey the loneliness and heartbreak of the lyrics through a sonic analog of broken and evacuated interiority.

Some of the strange, multiplicative power of the Les Paulverizer is conveyed by an unpublished publicity photograph from that era (see Figure 2). Through the trick of multiple exposures on the same photographic film, three Mary Fords are pictured singing in harmony, while one Les Paul strums along. (It should be noted that multiple exposure photography is a good analogy to the layering of 'sound-on-sound' that Paul and Ford pioneered.) The figures emerge from a black background that frustrates all sense of spatial orientation. In the center of the image, Mary lays her left hand gently on her husband's shoulder. Each Mary is differentiated by facial expression, head position, and posture. Yet, her multiple bodies are somewhat less than corporeal. Notice, in the bottom center-left of the photograph, the collision of arms that link a pair of clasped hands; or, to the left, the phosphorescent glow marking the intersection of one Mary's shoulder with another Mary's arm. Even the hand gently lying on Les's shoulder is ghostly, silhouetted against the absorptive black ground. The formal arrangement supports this sense of indistinctness. By overlaying multiple images in an ever-expanding pattern, Mary appears to be produced by Les, emanating from the sound holes of his guitar, radiating outward like a sound wave towards the edge of the frame.[17] Just as the ontological status of sound is difficult to determine – is it an event or an object? – Mary's image seems to inhabit a netherworld, the *intermundia*, insecurely fixed between the material and immaterial. These

Figure 2 A multiple exposure photograph of Les Paul and Mary Ford.
Photograph by Arthur Rothstein for Look Magazine, 1956. Previously unpublished.

radiating figures, one intersecting the next, construct a singular topography of inhuman spatiality.

Compare this image with the cover illustration of *The New Sound*. If the earlier image conveys a feat of physical mastery, the latter captures the technologically tinged affect of the Les Paulverizer's phantom multiplications. Where the first image, a childish cartoon, keeps the question of source, cause and effect in an abstract realm, 'full of good humor', the latter image exploits photography's indexicality to produce a troubling effect in its technological mediation of reality. Like those remarkable multiple recordings, where voices and guitars emit sounds from no particular location, where space is disoriented into an omni-directional near and far, the photographic space of the image is similarly dislocated – the unreal inversion of the lived space of the real world, while still claiming a hold upon that world. This silly little image is perhaps the best visualization we can have of acousmatic sound, one that truly preserves its acousmaticity. Despite everything, it manages to mimetically capture the ontological uncertainty that marks the effect of acousmatic sound – quasi-real, nearly-but-not-quite-autonomous, uncanny.

Notes

1. In the eponymous Platonic dialogue, Timaeus claims that, of all the senses, the gods 'first contrived the eyes' (Plato (1961a[c. 360 BC]: 45b). Later, 'Sight … is the source of the greatest benefit to us … and from this source we have derived philosophy, than which no greater good ever was or will be given by the gods to mortal man' (47a). Aristotle opens the *Metaphysics* (1941[c. 350 BC]) by claiming that man's desire to know is indicated by his delight in the senses, 'and above all others the sense of sight' (980a). On the 'denigration of vision', see Jay (1994).
2. In *The Republic*, Book X, Plato (1961b[c. 380 BC]) compares the cabinetmaker and the painter, both imitators, with God, the true creator of the Forms. The imitator 'does not make that which really is, he could not be said to make real being but something that resembles real being … [His work] is only a dim adumbration in comparison with reality' (597a–b).
3. The primary source for this account is Iamblichus (1987[c. 245–345 CE]). However, other authors contemporary with Iamblichus, such as Clement of Alexandria (2004[c.211 CE]) dispute this account, arguing that Pythagoras veils his discourse in allegory rather than literally placing himself behind a veil (Book 5, §9). For an examination of the sources and an assessment of these two traditions of 'acousmatic' sound, see Kane (2008).
4. In addition to Chion, see Abbate (2001), Cavarero (2005), Dolar (2006), Scruton (1999) and Silverman (1988).
5. For more on Schaeffer and the phenomenological meaning of the 'sound object', see Kane (2007).
6. The *Oxford English Dictionary* defines 'mystery' as 'a hidden or secret thing; something inexplicable or beyond human comprehension; a person or thing evoking awe or wonder but not well known or understood; an enigma'. The term derives from Greek, *mystes*, an initiate; and from *myein,* 'to close (the lips or eyes)'. Both sense of *mystes* and *myein* evoke the initiatory context of the Pythagorean setting.
7. A similar claim is argued in Dolar (2006). He defines the voices along the lines of Lacan's *objet petit a*, by arguing that 'the voice stands at a paradoxical and

ambiguous topological spot, at the intersection of language and the body, but this interection belongs to neither' (p. 73). Thus, the voice is constituted by 'a gap between the source and its auditory result' (p. 67). However, where I see the end of acousmatic sound at the moment that de-acousmatization begins, Dolar argues that there is *always* something incongruous between a voice and its body; as a consequence, 'there is no such thing as disacousmatization' (p. 70).

8. Regarding the use of "spacing" or *espacement* see "Differance," in Derrida (1973[1967]).
9. Of course he was not the first to use overdubbing. Before Paul, there had been a few other attempts. In 1931, baritone Lawrence Tibbett sang a duet with himself in the title song of the MGM film, *The Cuban Love Song*. The song was released on an RCA Victor recording with a label that read, 'Lawrence Tibbett – baritone, with orchestra. Mr. Tibbett also sings the tenor part.' In 1935, Elisabeth Schumann performed a similar feat, singing the duet 'Abendsegen' from Humperdinck's *Hänsel und Gretel,* for the HMV label. In the jazz world, multi-instrumentalist Sidney Bechet cut a famous 1941 recording of 'Sheik of Araby' where he played harmonized lead and rhythm parts. Others followed suit, like Nelson Eddy, whose voice could be heard singing with itself in the segment, 'The Whale Who Wanted to Sing at The Met', from the Disney Film, *Make Music Mine* (1946). According to the opening titles of the segment, Eddy 'does all the voices for the tragic story'. And, perhaps most significantly for Paul and Ford, in 1947, the singer Patti Page recorded 'Confess', where she sang with herself in call and response, and later 'With My Eyes Wide Open', where she overdubbed four-part vocal harmonies in a style that would often be compared with Paul and Ford.
10. 'Jazzorama', *Jazz Today* 3, April 1957: 5, quoted in Waksman (1999: 36).
11. For more on the theory of mimetic rivalry, see Girard (1965).
12. In Waksman's narrative, Paul seeks out greater and greater control over his sound through two strategies: increasing technological control and a blurring of professional and domestic spaces. Paul's desire to find a 'pure sound' that filters out all traces of noise is read both literally as a search for high-fidelity guitar pickup technology and as a metaphor for Paul's appropriation and homogenization of various kinds of racially coded music.
13. Incidentally, this is the same recording technique that was later popularized in recordings by The Chipmunks, where vocal harmonies, sung over slowed-down accompaniment tracks, are transposed and spectrally shifted, producing a novel effect.
14. This cover is from the 1950 release, Capitol H-226, a 10" LP. It is worth noting that the album was re-released in 1955 on 12" LP, with additional tracks and a new cover. That image, in bright orange, features a horizontal illustration of a guitar now superimposed by five white vertical iterations of a guitar's silhouette. The image no longer conveys a sense of multiple instruments being simultaneously played but, by 1955, Paul's strategies for maintaining an air of mystery around the 'new sound' had changed.
15. Note: this is an episode from the *Les Paul Show*, although I've been unable to discover its original airdate.
16. If George Barnes was the mimetic rival who set the 'New Sound' in motion, Patti Page was perhaps Mary Ford's sonic-mimetic rival. Often in a competition to score hits on the charts, Page and the duo recorded and released many of the same songs, even within days of each other. Page's version of 'Tennesee Waltz', which featured the singer overdubbing vocal harmonies, was covered by Paul and Ford; similarly, Paul and Ford's version of 'Mockin' Bird Hill' was covered by Page.
17. I thank Andrew Uroskie for his insightful editing, nuanced reading of this image, and especially for pointing out this feature.

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