

The *New York Times* heartily congratulated the judge on his actions. Nobody whose nerves were comprised of a substance less than steel, it declared, would be able to tolerate a ragtime song on a phonograph. In its cynicism, the newspaper overlooked the significance of the phonograph and its rivals. These machines not only offered an instant solution to a debate about musical copyright, but ensured that both performers and their compositions would endure beyond their natural lifespans. More important still was their role in democratising the distribution of music, which was now available in the home of anyone – regardless of their musical ability – who could afford to purchase a phonograph record or cylinder.

You can study the great artistes. It is not mere mechanical music – it is the living voice of the singer.

Gramophone advertisement, 1904

In your own home, miles and miles away from London, during the long dark evenings that are with us now, for a small outlay, you can be seated comfortably round your fire listening to the best Songs, the Best Bands, and the best of the World's Musical Talents.

Anglophone advertisement, 1904

The birth of recorded sound, no matter how crude its early manifestations, represented a profound shift in the nature of human existence; as profound, it could be argued, as the representation of human speech and thought on papyrus, parchment, paper or, in due course, computer screen. Thomas Edison intended his invention as a means of documenting conversation or debate, or preserving the speeches and *bons mots* of great men, or as a vehicle for education of the young. He might have been amused to learn that his phonograph was used in 1903 by a suspicious wife to record conversations between her husband and another woman, which were introduced as evidence during their divorce proceedings.

Even before his device reached the public, an American scientist anticipated its ability to conjure up the past: 'How startling it will be to reproduce and hear at pleasure the voice of the dead!' Edison himself believed that 'The Phonograph will undoubtedly be liberally devoted to music. A song sung on the Phonograph is reproduced with marvellous

accuracy and power.' Yet he appears not to have considered a more philosophical consequence of his machine: that a musical performance would not only be captured and held, but would thereby be changed in essence and in form.

The composer Claude Debussy reflected upon the strangeness of this transformation in 1913: 'In a time like ours, when the genius of engineers has reached such undreamed of proportions, one can hear famous pieces of music as easily as one can buy a glass of beer. It only costs ten centimes, too, just like the automatic weighing scale! Should we not fear this domestication of sound, this magic preserved in a disc that anyone can awaken at will? Will it not mean a diminution of the secret forces of art, which until now have been considered indestructible?' Instead, it was performances that were now indestructible, as long as the artefact on which they were stored remained undamaged.

Those artefacts were often fragile, and assumed many forms. Edison's first phonograph, invented in 1877, was exhibited across the United States as 'The Miracle of the 19th Century ... The Talking Wonder'. At its heart was a metal cylinder, wrapped in a layer of tin foil, which was 'inscribed' as a recording was made. A stylus was then used to retrieve the sound from the cylinder as it was turned by hand. Audiences flocked to see it in action, but the novelty was soon exhausted, and Edison abandoned the device to concentrate on the electric light. Alexander Graham Bell and Charles Tainter contrived a rival machine, the graphophone, in 1887, substituting wax for the tin foil. Edison countered by adding an electric motor; and in 1888 a company was formed to market both models.

In a preview of the 'format wars' that would mark each stage of technological development ahead, Thomas Edison's phonograph and cylinder were soon pitched into battle with Emil Berliner's gramophone. Berliner's recording was captured on a disc – originally made of metal, although he soon created a cheaper alternative from hard rubber. The cylinder was, in its virgin form, unique: each example represented an individual performance, and the musician who wished to make commercial capital out of his or her skills would have to reprise their piece as often as the market required. Faced with Berliner's gramophone record, which allowed for multiple duplicates of an original performance, Edison's team were forced to concoct their own mass production, at some cost to the already dubious audio quality of their machine.



The gramophone record thereby seized a commercial advantage which would survive, through metamorphoses of recording technique, disc format and musical content, until the brief triumph of the cassette tape and then the more crushing dominance of the digital compact disc. Berliner's success imposed a crucial limitation on the preservation of music, however. Edison's cylinder method allowed anyone to play existing recordings, and also to make their own. Salesmen would carry their demonstration phonograph door to door, so that awestruck customers could hear the sound of their own voices, caught in one moment, replayed faithfully in the next. The gramophone of Herr Berliner, on the other hand, ensured that the making of records would remain a professional affair, imposing divisions between performer, distributor and consumer which seemed not only natural but inevitable to anyone born between 1900 and 1960.

In one field alone, Edison's technology remained triumphant. In the earliest days of the cylinder, many leading performers refused to waste their time on travelling to a distant studio to create something as ephemeral as a record. Instead, they insisted on being visited in their own homes, allowing the engineer to ensnare nature raw and in its own habitat: the earliest in a long tradition of what would become known as location recordings.

Without the cylinder, we would not have the earliest recording of a papal voice. Pope Leo XIII was captured at the age of 92, in 1903, chanting a frail 'Ave Maria' and 'Benediction'. These two recordings – neither longer than a minute – were issued in 1905 on cylinders, and later discs, at the cost of eight shillings apiece: the equivalent of a working-man's daily wage. The manufacturer conceded that 'The Pope was aged and feeble when the records were made', but insisted: 'To Collectors Their Value Is Almost Priceless.'

The religious impulse was channelled that same year into what are believed to be the earliest known musical recordings by African-Americans: recordings of 'Negro Shouts by Dinwiddie Colored Quartet: These are genuine Jubilee and Camp Meeting Shouts sung as only negroes can sing them.' What's striking, more than a century later, about these spirituals, with their unaffected balance between leader and harmonised support, is their sense of existing beyond time, as if, recording deficiencies aside, they might have been performed hundreds of years ago – or today.\*

\*The melody of one of these 1903 recordings, 'Poor Mourner', reappeared sixty years later in Bob Dylan's 'I Shall Be Free', a striking example of the folk process in action.

Those deficiencies convinced 'people of sensitivity [that] the Gramophone was merely an instrument which made objectionable noises'; while Edison's cylinder was 'not then capable of producing any music that was not blatant or vulgar'. Those more generous in spirit were prepared to concede that recordings could deliver a faithful reproduction of the shape and duration of a musical piece; but one journalist remarked that 'You will find that the effect of any song upon a record is immensely improved if you play over the accompaniment from the music upon the piano, while it is being played upon the machine.'

Aside from its novelty appeal, recorded sound needed to offer substance that would transcend the barbed-wire scratchiness and foggy hiss, the tin-can tone and horizon-distant volume, which afflicted a majority of early discs. In 1894, the Edison Kinetoscope Company augmented its jerky 'peep show' films with cylinder recordings, which required the consumer to peer through an eyepiece and insert stethoscope tubes in their ears. The combination of inadequate sound and indistinct vision was presumably more appealing than either without the other.

Another exploratory venture into the union of science and music involved the earliest experiments with wireless telephony, or 'radio'. In 1906, just five years after Marconi sent his first telephonic message across the Atlantic, a Massachusetts engineer named Reginald Fessenden was able to 'broadcast' his own rudimentary violin solos, and readings from the New Testament, to ships just offshore. Fessenden also anticipated the role of the disc jockey by beaming a gramophone record of Handel's 'Largo' aria to his handful of listeners. (Lee de Forest of New York subsequently claimed this achievement for himself, after he broadcast the *William Tell* overture from the city's Parker Building in 1907; his hubris was rewarded when the entire building burned to the ground a few weeks later.)

Almost a century before a broadband connection was assumed to be a key requirement of civilised life, telephone subscribers in Wilmington, Delaware were offered a 'dial up' phonograph service: 'Attached to the wall near the telephone is a box containing a special receiver, adapted to throw out a large volume of sound into the room . . . At the central office, the lines of musical subscribers are tapped to a manual board attended by an operator. A number of phonographs are available, and a representative assortment of records kept on hand . . . When it is desired to entertain a party of friends, the user calls the music department and requests that a



certain number be played. He releases and proceeds to fix the megaphone in position. At the same time the music operator plugs up a free phonograph to his line, slips on the record and starts the machine. At the conclusion of the piece the connection is pulled down, unless more performances have been requested.' Miraculous though this service must have appeared in 1909, any aesthetic value must have been trumped by its prestige as a status symbol.

One man can claim to have brought recorded music a lustre that none of these technological schemes could match. In a recording career that stretched almost twenty years, he became – to borrow a term from later decades – the first ‘superstar’ produced by the music industry, and the highest-paid entertainer in the world. His fame arose not from sentimental ballads or comic monologues, the staples of the era; but from unadulterated pieces of what we now call ‘classical’ music, arias from the world’s most famous operas.

Enrico Caruso was 29 years old in 1902 when he left his native Naples for America, preceded by his reputation as Europe’s finest operatic tenor. His first US recording for the Victor company – ‘Vesti la giubba’ (1904), from Leoncavallo’s opera *Pagliacci* – carried such unfeigned passion that it established the name of Caruso as a vocal superlative. Eight years later, he would surpass this epic performance with his portentous reading of Sir Arthur Sullivan’s lament for his late brother, ‘The Lost Chord’, staring down grief with a courage that still defies the listener to remain unmoved. By his death in 1921, Caruso was guaranteed an annual income of \$100,000, topped up by a generous royalty on record sales.

Victor could afford to reward the Neapolitan so handsomely because he had enabled them to transform the gramophone from a curiosity into a mark of sophistication and wealth. Caruso became the focal point of the company’s Red Seal records – mostly one-sided, and therefore featuring only one piece of less than four minutes’ duration. Whereas Victor’s standard, two-sided records of ephemeral popular songs retailed for 75c, the Red Seal offerings cost anything up to \$7 apiece – the differential justified not just by the musical content, but also by the social prestige conferred by ownership of these exclusive items. Opera buffs were not restricted to the wealthy elite, of course, and many less privileged families skimped on essentials for the life-affirming joy of owning a few precious minutes of Caruso in his prime.

Lucrative though Caruso’s career was, the infant recording industry could not survive on operatic arias and ballads by distinguished composers

alone. For every extract from Puccini or Verdi, there were several dozen songs that were not expected to live beyond the season. Indeed, for the first time in musical history, they were specifically designed to fade after an initial burst of enthusiasm. Thomas Edison himself had experienced the gulf between ephemera and enduring art. While testing his equipment, he selected a recording of a favourite tune in waltz-time. ‘We played that waltz all day long’, he recalled. ‘The second day it began to pall upon us a little. At the end of the fourth day the men began to get dreadfully irritated. At the end of the week they could not stand in the room. I firmly believe that it is this question of reiteration which makes it possible for you to hear Beethoven and Wagner over and over again without getting tired. The music of these great composers is so complicated that it does not weary the nerve centres, while the simple melody, however tuneful, at last induces dislike and disgust.’ His findings would inadvertently inspire a barbaric form of sonic torture a century later in the so-called ‘war on terror’.

Nobody involved in the production of self-consciously popular songs – designed to appeal instantaneously, and quickly be replaced by something equally addictive – anticipated that anyone would be foolhardy enough to punish themselves in the manner of Edison’s engineers. Nor were they so deluded as to imagine they were creating transcendent art worthy of Caruso. But around 1890, in New York, there arose a self-perpetuating business model, like consumer capitalism itself, to creating a desire that the public did not realise it felt, and then satisfying it with such efficiency that the want would multiply into an obsession. The result was the manufacturing of popular songs in a system akin to factory farming. It was the great fortune of this industry that it emerged just as scientific innovation produced a method for distributing products around the world: the two strands of music production and reproduction created a global industry which, over the course of the twentieth century, would colour and transform the everyday lives of generations of eager consumers.

The young men like the popular sentimental song. It helps them very much at the beginning of a courtship. They can sing a popular chorus which may imply much or little to the girl. But it is straight enough to be understood, and oblique enough to be easily and tactfully disregarded if the girl so wishes.

In the thousands of songs that we publish, there are hundreds of