The Industrialization of Music

Introduction

When I was a child I lived in dread of having to sing in public. This was a common forfeit in party games, but I would do anything else humiliating in preference. Singing was too personal, too exposed an activity.

Singing still seems to me the rawest form of personal expression (which is why I love soul music) and music-making, more generally, still seems the most spontaneously human activity. Without thinking much about it, people sing in the bath and the playground, beat out a rhythm on the dancefloor and whistle while they work. It is because of our experience of the immediacy of music-making that its industrial production has always been somehow suspect. In fact, of course, people today work with piped music and skip to the beat of a ghetto-blower; they are more likely to listen to the radio than to sing in the bath. Most of the music we hear now, in public or private, has been mechanically produced and reproduced. It reaches us via an elaborate industrial process and is tied into a complex system of money-making. And we take these ‘artificial’ sounds for granted. A couple of years ago I went to see Al Green in concert at the Royal Albert Hall in London. At one point he left the stage (and his microphone) and walked through the audience, still singing. As he passed me I realized that this was the first time, in 30 years as a pop fan, that I had ever heard a star’s ‘natural’ voice.

The contrast between music-as-expression and music-as-commodity defines twentieth-century pop experience. It means that however much we may use and enjoy its products, we retain a sense that the music industry is a bad thing – bad for music, bad for us. Read any pop history and you will find in outline the same sorry tale. However the story starts, and whatever the author’s politics, the industrialization of music means a shift from active musical production to passive pop consumption, the decline of folk or community or subcultural traditions, and a general loss of musical skill. The only instruments people like me can play today are their record players and tape-decks. The rise of the multi-national leisure corporation means, inevitably, the efficient manipulation
Money Changes Everything

of a new, global pop taste as Dire Straits, for example, reach into every First, Second and Third World household, like Coca-Cola (and with the same irrelevance to real needs).

What such arguments assume (and they are part of the common sense of every rock fan) is that there is some essential human activity, music-making, which has been colonized by commerce. Pop is a classic case of a commodity. Songs and singers are fetishized, made magical, and we can only reclaim them through possession, via a cash transaction in the truth of music — truth to the people who created it, truth to our experience. What is bad about the music industry is the layer of deceit and hype and exploitation it places between us and our creativity.

The flaw in this argument is the suggestion that music is the starting point of the industrial process — the raw material over which everyone fights — when it is, in fact, the final product. The industrialization of music cannot be understood as something which happens to music, since it describes a process in which music itself is made — a process, that is, which fuses and confuses capital, technical and musical arguments. Twentieth-century popular music means the twentieth-century popular record; not the record of something (a song? a singer? a performance?) which exists independently of the music industry, but a form of communication which determines what songs, singers and performances are and can be.

We are coming to the end of the record era now (and so, perhaps, to the end of pop music as we know it) and so what I want to stress here is that, from a historical perspective, rock and roll was not a revolutionary form or moment, but an evolutionary one, the climax of (or possibly footnote to) a story that began with Edison’s phonograph. To explain the music industry we have, then, to adopt a much wider perspective of time than rock scholars usually allow. The pop business itself, by the nature of its sales activities, is in a constant state of ‘crisis’; business analysts should, by contrast, keep cool. To be examining always the entails of the ‘latest thing’ is to mistake the wood for the trees, and, as I hope to show, there is more to be learnt from the continuities in pop history than from the constantly publicized changes. ‘New things’ are rarely as novel as suggested. In 1892, for example, ‘song slides’ became a promotional craze for sheet-music publishers: pictures telling the story were, for years, a necessary sales aid for a new song sheet — they survived the coming of radio and talkies and had a measurable effect on the types of song marketed and sold. 1 Video promotion does not just go back to 1930s jazz shorts!

To analyse the music industry through its history means focussing on three issues:

1 The effects of technological change. The origins of recording and the recording industry lie in the nineteenth century, but the emergence of the gramophone record as the predominant musical commodity took place after the 1914–18 war. The history of the record industry is an aspect of the history of the electrical goods industry, related to the development of radio, the cinema and television.

2 The economics of pop. The early history of the record industry is marked by cycles of boom (1920s), slump (1930s) and boom (1940s). Record company practices reflected first the competition for new technologies and then the even more intense competition for a shrinking market. By the 1950s the record business was clearly divided into the ‘major’ companies and the ‘independents’. Rock analysts have always taken the oligopolistic control of the industry for granted, without paying much attention to how the majors reached their position. What were the business practices that enabled them to survive the slumps? What is their role in boom times?

3 A new musical culture. The development of a large-scale record industry marked a profound transformation in musical experience, a decline in established ways of amateur music-making, the rise of new sorts of musical consumption and use. Records and radio made possible new national (and international) musical tastes and set up new social divisions between ‘classical’ and ‘pop’ audiences. The 1920s and 1930s marked the appearance of new music professionals — pop singers, session musicians, record company A&R people, record producers, disc jockeys, studio engineers, record critics, etc. These were the personnel who both resisted and absorbed the ‘threat’ of rock and roll in the 1950s and of rock in the 1960s.

The making of a record industry

The origins of the record industry are worth describing in some detail because of the light they cast on recent developments. The story really begins with the North American Phonograph Company which, in 1888, was licensed to market both Edison’s phonograph and the ‘graphophone’, a version of the phonograph developed by the Bell Telephone Company. When Edison had predicted, 10 years earlier, how his invention would benefit mankind, he had cited the reproduction of music as one of its capacities, but this was not the sales pitch of the North American Phonograph Company. They sought to rent machines, as telephones were rented, via regional franchises to offices: the phonograph was offered as a dictating device.

The resulting marketing campaign was a flop. The only regional company to have any success was the Columbia Phonograph Co (Washington had more offices than anywhere else!). But even it soon found that the phonograph was more successful as a coin-operated ‘entertainment’ machine, a novelty attraction (like the early cinema) at
fairs and medicine shows and on the vaudeville circuit. And for this purpose ‘entertaining’ cylinders were needed. Columbia took the lead in providing a choice of ‘Sentimental’, ‘Topical’, ‘Comic’, ‘Irish’ and ‘Negro’ songs.

Meanwhile, Emile Berliner, who in 1887–8 was developing the gramophone, a means of reproducing sounds using discs not cylinders, was equally concerned to make recordings – he needed to demonstrate the superiority of his machine over Edison’s. He formed the United States Graphophone Company in 1893, and the following year Fred Gaisberg, who had started at Columbia as a piano accompanist and thus taken charge of recording, was poached by Berliner to be recording director and talent scout. Berliner, unlike Edison, regarded the gramophone as primarily a machine for home entertainment and the mass-production of music discs, such that prominent singers, speakers or performers may derive an income from royalties on the sale of their phonograph". 2

2 In 1897 Gaisberg opened the first commercial recording studio.

For the next five years there was an intense legal struggle between disc and cylinder. But in 1902 the Victor Talking Machine Company (which controlled Berliner’s patents) and the Columbia Graphophone Company (which controlled Edison’s) pooled patents. They thus ‘controlled every patent bearing on the manufacture of disc machines and records’. This had immediate international effects. In Britain, for example, the Columbia Graphophone Company was started in 1898, as a branch of the American firm Columbia, and the Gramophone Company (with its HMV and Parlophone labels) was licensed by the American firm Victor. After 1902 they also worked together.

By 1914, however, the basic patents were expiring and a rush of new manufacturers appeared. In the US: Sonora, Aeolian (previously piano and player-piano manufacturers), Brunswick-Balke-Collender (makers of billiard tables and bowling balls), and others – by 1916 there were 46 phonograph companies. Between 1914 and 1919 production value rose from $2.7m to more than $1.58m. In Britain: Decca (which had begun as Barnett Samuel, nineteenth-century musical instrument makers, marketed in 1914 the first portable record player, the Decca Dulciphone, and boomed as soldiers took it with them to the trenches. By 1920 there were dozens of British record labels, some American licensees, some home-grown, all based in the manufacture of phonograph and phonograph parts. Their profits (and legality) depended on innovations in the techniques and qualities of sound reproduction, and their record-making activities were an aspect of their marketing of record players.

It is useful at this point to make the usual industry distinction between hardware and software: hardware is the equipment, the furniture, the ‘permanent’ capital of home entertainment; software is what the equipment plays – particular records and tapes. The invention, manufacturing and selling of hardware must, obviously, precede the manufacture and selling of software. What normally happens, then, is that hardware companies get involved in software production simply in order to have something on which to demonstrate their equipment. We can compare the early history of the record industry with the recent history of video: video manufacturers were also confused about what video-buyers would use their machines for. Software was seen at first only as a means of advertising hardware (where the initial profits lay). Another example is the original marketing of stereo equipment, with records of train noises that could be heard to move from one speaker to the other.

At a certain moment in the development of a new electronic medium, though, the logic changes. If people begin by buying recordings, any records (train noises, the first compact disc releases), just to have something to play, as ownership of the new equipment becomes widespread, records are bought for their own sake, and people begin to buy new, improved players in order to listen to specific sounds. Records cease to be a novelty. In the record industry this switch began in the 1920s, the real boom time for companies making both phonographs and phonograph records. In the words of Edward Lewis, a stockbroker who helped Decca become a public company in 1928, ‘a company manufacturing phonographs but not records was rather like making razors but not the consumable blades’. 4 In the video industry the best returns no longer come from hardware manufacture (in Britain the home video market is pretty well exhausted; after its remarkable growth figures the manufacturers now expect a steady decline in sales), but from software rights ownership (hence the interest of media moguls like Rupert Murdoch in film companies: their back catalogues are the basic resource for both home video users and cable television stations).

By the 1920s there were, in both Britain and the USA, numerous phonograph manufacturers, competing for sales by reference to technical advances, design qualities, and a variety of gimmicks, and, of necessity, all issuing their own records. At this stage, record companies were simply part of the electrical goods industry, and quite separate in terms of financial control and ownership from previous musical entrepreneurs. They were owned and run by engineers, inventors and stock market speculators. They had little to do with song publishers, theatre owners, agents, promoters or performers. Their managers did not seem much interested in music. Gaisberg comments in his memoirs that ‘for many years Berliner was the only one of the many people I knew connected with the phonograph who was genuinely musical’. 5

It follows, paradoxically, that these companies’ musical decisions, their policies on who and what to record, depended on the judgements and tastes of the ‘live’ music entrepreneurs. Labels competed to issue material by the same successful stage and concert hall performers, to offer versions of the latest stage show hit or dancefloor craze (a practice that continued well into the 1950s and rock and roll with the ‘cover version’). Few companies were interested in promoting new numbers or new stars, and there was a widely held assumption in the industry that while pop records were a useful novelty in the initial publicizing of phonographs, in the long run the industry’s returns would depend on
people wanting to build up permanent libraries of ‘serious’ music. Fred Gaebler, for example, the first A&R man, whose work soon took him from America to Britain and then across Europe and Asia, was, essentially, a classical music impresario.

This argument has had a continuing resonance: while each new technological change in mass music-making is a further ‘threat’ to ‘authentic’ popular music, classical music always benefits from such changes, which from hi-fidelity recording to compact discs have been pioneered by record companies’ classical divisions. The record industry has always sold itself by what it could do for ‘serious’ music. As Cyril Ehrlich points out, the gramophone began as not quite respectable (because of its public novelty value), and so an emphasis on its use for playing classical music was necessary to sell it to middle-class families (the early cinema went respectable with similar tactics – using classical music as accompaniment to silent films). The important point here is that in the history of electric media, the initial ‘mass market’ (this was true for radio, TV and video as well) is the relatively affluent middle-class household. The organization of the record industry around the pop record (and the pop audience) was a later development – a consequence, indeed, of the slump.

**Slump**

For anyone writing the history of the record industry in 1932, there would have been as little doubt that the phonograph was a novelty machine that had come and gone as there was about the passing of the piano-roll. Sales of records in the USA had dropped from 104 million in 1927 to 6 million; the number of phonograph machines manufactured had fallen from 987,000 to 40,000. In Roland Gellatt’s words, ‘the talking machine in the parlor, an American institution of redolent memory, had passed from the scene. There was little reason to believe that it would ever come back.’ When the industry did begin to recover it was due not to domestic sales but to jukeboxes – there were 25,000 in 1934, 300,000 in 1939, accounting for the sales of 30 million records. Records had returned to their public starting point – as coin-box entertainment, and, for the first time, began to define (and be defined by) popular, working-class taste.

The 1930s slump was marked not just by an overall decline in leisure spending but also by a major reorganization of people’s leisure habits. The spread of radio and the arrival of talking pictures meant that a declining share of a declining income went on records (just as in the recession of the late 1970s and early 1980s, there was less money overall to spend on leisure and more products, such as video recorders and computer games, to spend it on). I will not go into the details of the slump here, but simply note its consequences. Firstly, it caused the collapse of all small recording companies and re-established the record business as an oligopoly, a form of production dominated by a small number of ‘major’ companies. This was not just a matter of rationalization in the recording business itself – failing companies going bankrupt or being taken over – it also meant that the surviving companies covered the collapse of record sales by putting together more wide-ranging music interests. In Britain, EMI bought into Chappell’s (piano makers and the UK’s largest song-publishing and concert-promotion company), a move which marked a subtle but important shift in how record companies regarded themselves – as part of the music industry rather than the electrical goods business. By the end of the 1930s, when EMI and Decca manufactured nearly all the records made in Britain and controlled the process by which they got into the shops, the contemporary meaning of a ‘major record company’ had been established.

In the USA the development of an oligopoly was equally apparent – by 1938 three-quarters of records sold were manufactured by RCA or Decca, and most of the rest by the American Record Company, which controlled Brunswick and Columbia. But the meaning of a ‘记录 company’ was more complicated: the music business was now part of film and radio corporations of a sort that did not yet exist in Britain (where radio was a state monopoly and the film industry feeble).

The development of American radio had parallels with the history of the record industry. Various companies planning how to exploit the new medium (through patent deals) had discovered that in order to persuade people to rent transmitters (and to make money from selling advertising time) they would also need to provide entertaining programmes. By 1926 RCA was networking shows via its National Broadcasting Company. There was, too, an early broadcasting emphasis on ‘potted palm music’ (to attract relatively affluent and respectable listeners) which meant that while radio did ‘kill’ record sales it also left pockets of taste unsatisfied. Early radio stations were not interested in black audiences, for example, and so the market for jazz and blues records became, relatively, much more significant.

As radios replaced record players in people’s homes, so the source of music profits shifted from record sales to performing rights and royalties. The basic technological achievement of this period – the development of electrical recording by Western Electric – marked a fusion of interests between the radio, cinema and record industries. Western Electric could claim a royalty on all electrical recordings, and was the principal manufacturer of theatre talkie installations; film studios like Warners had to start thinking about the costs (and returns) of publishers’ performing rights, and began the Hollywood entry into the music business by taking over the Tin Pan Alley publishers Witmark in 1928. As the head of RCA explained to a senate investigation of RCA’s publishing take-overs the same year:

> It is necessary for us to be in the music business to protect ourselves. . . .

The movies have bought most of the music houses. . . . We have got to
control the music situation. It is a simple business proposition with a little touch of sentiment in it.\(^8\)

In 1929 RCA (with money advanced by General Electric and Westinghouse) took over the Victor Talking Machine Company and, with General Motors, formed GM Radio Corporation, to exploit the possibilities of car radio. The subsequent making (and unmaking) of the USA’s electrical-entertainment corporations is too complicated to go into here, but in the short term, as in Britain, the competition for record sales intensified and quickly changed its terms. The initial response to falling sales was a price-war — records were sold for less and less on the assumption that buyers would favour the cheapest record on the market. But this policy eventually foundered on the ‘irrationality’ of pop taste — people’s musical choices are not just a matter of price. New sales tactics had to be developed. For the first time, record companies, led by Decca, ran aggressive advertising campaigns in newspapers and on billboards:

Here they are — your favourite records of radio, screen, and stage — in their greatest performances of instrument and voice! Not obsolete records, cut in price to meet a market, but the latest, newest smash hits — exclusively DECCA. Hear them when you want — as often as you want — right in your own home.\(^9\)

Decca was the first company to realize that an investment in advertisement and promotion was more than justified by the consequent increase in sales. The peculiarity of record-making is that once the break-even point is passed, the accumulation of profit is stunningly quick — the costs of reproduction are a small proportion of the costs of producing the original master disc or tape. It follows that huge sales of one title are much more profitable than tidy sales of lots of titles, and that money spent on ensuring those huge sales is thus a ‘necessary’ cost. Decca developed the marketing logic that was to become familiar to rock fans in the late 1960s: promotion budgets were fixed at whatever figure seemed necessary to produce big sales. Only major companies can afford such risks (and such sums of capital) and the strategy depends on a star system, on performers whose general popularity is guaranteed in advance.

In the 1930s the recording star system depended on a tie-up with film and radio (hence the arrival of Bing Crosby — Decca was, again, the first company to realize how valuable he was). In the 1980s recession, there has been a similar pattern — an emphasis on a few superstars at the expense of the mass of groups just getting by, those stars being marketed via films and film soundtracks, with video promotion on TV (the 4–5,000 new albums-per-year US average of the 1970s had become less than 2,000 per year in the 1980s).\(^10\)

In the 1930s aggressive selling and the star system meant a new recording strategy. Companies became less concerned to exploit big stage names, more interested in building stars from scratch, as recording stars.

They became less concerned to service an existing public taste than to create new tastes, to manipulate demand. Electrical recording helped here — crooning stars like Crosby could suggest an intimate, personal relationship with fans that worked best for domestic listeners. His live performances had to reproduce the recorded experience, rather than vice versa. And jukebox programmers offered a direct way to control national taste. But radio mattered most of all. By the end of the 1930s it was the most important musical medium: radio gave record companies a means of promoting their stars, while the record companies provided radio with its cheapest form of programming. Two media which had seemed to be in deadly competition, had become inseparable. Radio, after all, did not kill the record star.

The 1930s marked, in short, a shift in cultural and material musical power — from Tin Pan Alley to broadcasting networks and Hollywood studios, from the publisher/showman/song system to a record/radio/film star system — and the judgement of what was a good song or performance shifted accordingly — from suitability for a live audience to suitability for a radio show or a jukebox. It was in the 1930s that the ‘popularity’ of music came to be measured (and thus defined) by record sales figures and radio plays. Popular music now described a fixed performance, a recording with the right qualities of intimacy or personality, emotional intensity or ease. ‘Broad’ styles of singing taken from vaudeville or music hall began to sound crude and quaint; pop expression had to be limited to the two or three minutes of a 78 disc. While musicians still had much the same aims — to write a good tune, to develop a hook, to sum up a feeling in a lyric, to give people something to whistle or dance to — the people who now determined what music was recorded, broadcast and heard, were quite different from their predecessors in the music business. They were no longer directly connected to a public — trying to please it on the spot. Their concern was with a market, with popularity as revealed by sales figures, consumers delivered to advertisers. For the record industry (as for the film industry) the audience was essentially anonymous; popularity meant, by definition, something that crossed class and regional boundaries; the secret of success was to offend nobody.

The technological roots of rock

By 1945 the basic structure of the modern music industry was in place. Pop music meant pop records, commodities, a technological and commercial process under the control of a small number of large companies. Such control depended on the ownership of the means of record production and distribution, and was organized around the marketing of stars and star performances (just as the music publishing business had been organized around the manufacture and distribution of songs). Live music-making was still important but its organization and profits were increasingly dependent on the exigencies of record-making.
The most important way of publicizing pop now – the way most people heard most music – was on the radio, and records were made with radio formats and radio audiences in mind (one factor contributing to the replacement of band leaders by singers as pop's biggest 'names').

The resulting shifts in the distribution of musical power and wealth did not occur without a struggle. The declining significance of New York publishing houses and big city session musicians, the growing importance of radio programmers and record company A&R people, were marked by strikes, recording bans, disputes over broadcasting rights and studio fees, and, outside the USA, such disputes were inflected with the issue of 'Americanization' (and anti-Americanism). The USA's influence on international popular music, beginning with the world-wide showing of Hollywood talkies, was accelerated by America's entry into World War II – servicemen became the record industry's most effective exporters. By the end of the War the pop music heard on radio and records across Europe (and South East Asia) was either directly or indirectly (cover versions, copied styles) American. Hollywood's 1930's success in defining 'popular cinema' was reinforced in the 1940s and 1950s by the American record industry's success in defining 'popular music'.

Outside the USA the ending of the war and war-time austerity and restraint meant immediate expansion for record companies (in Britain, for example, Decca's turnover increased eight-fold between 1946 and 1956). In the USA post-war euphoria was short-lived. By the end of the 1940's TV seemed to carry the same threat to the pop industry as radio 20 years earlier. Resistance to this threat and the subsequent unprecedented profits were due to technological and social changes which, eventually, turned the record industry into the rock business.

The technological developments which began with CBS's experiments with microgroove recording in the late 1940s, and culminated with digital recording and the compact disc in the 1980s, had two objects: to improve recorded sound quality, and to ease record storage and preservation. For the electrical engineers who worked to give their companies a competitive edge in the playback market, the musical aspects of their experiments were straightforward. What they were trying to do was to make recorded sound a more accurate reproduction of 'real' sound – from the start the new processes were marketed in the name of 'high fidelity'. But this sales talk of records reaching nearer and nearer to the 'complete' experience of 'live' music is just that – sales talk. Each new advance – stereo discs in the 1960s, compact discs' elimination of surface noise and wear in the 1980s – changes our experience of music (and some changes, like quadrophonics, have been rejected by consumers despite their supposed superior truth-to-concert experience). Hi-fi opened our ears to a new appreciation of dynamic range and subtlety – by the end of the 1960s, records, not concerts, defined the 'best' sound. Nowadays both classical and popular musicians have to make sure that their live performances meet the sound standards of their records. The acoustic design of concert halls has changed accordingly, and rock groups take

sound checks, sound mixers and elaborate amplification systems for granted. The increasing 'purity' of recorded sound – no extraneous or accidental noises – is the mark of its artificiality. Pre-war records were always heard as a more or less crackly mediation between listeners and actual musical events; their musical qualities often depended on listeners' own imagination. To modern listeners these old discs (and particularly classical 78s) are 'unlistenable' – we are used to treating records as musical events in themselves.

A second point follows from this. All hi-fi inventions (and this includes the compact disc) have been marketed, at first, on the assumption that the consumers most concerned about sound quality and a permanent record library are 'serious' consumers, consuming 'serious' music. The late 1940s 'battle of the speeds' between CBS's 33⅓rpm LPs and RCA's 45rpm singles was resolved with a simple market division – LPs were for classical music collectors, 45s for pop. Pop thus continued to be organized in three-minute segments, as music of convenience and of the moment (a definition reinforced by the continuing significance of jukeboxes for pop sales).

Record companies' assumptions about 'true' reproduction, 'serious' consumption and the 'triviality' of pop were, in the end, undermined by the invention that made hi-fi records feasible – magnetic tape. In the long term, the importance of tape recording was to be its availability to domestic consumers:

In 1969 the industry produced small, self-contained tape cassettes that could run backward or forward, record or replay, skip to specific selections, and hold as much as an LP. These mass-produced cassettes had all the advantages of tape – high-quality sound, long wear and ease of storage – available, affordable, easy to use, and very popular. By 1970 cassettes accounted for nearly a third of recorded music sales, and in 1971 the value of tape players sold exceeded that of phonographs.³³

Hence the current problem of home taping which, in the 1950s, was certainly not foreseen. Tape recording, developed by German scientists for broadcasting purposes in the war, was first picked up not by the music business but by radio stations (as a relatively cheap way of pre-recording talk and jingles) and film studios (as an aid to making soundtracks). Record companies quickly realized tape's flexibility and cheapness, and by 1950 tape recording had replaced disc recording entirely. This was the technological change which allowed new, independent producers into the market – the costs of recording fell dramatically even if the problems of large-scale manufacture and distribution remained. Mid-1950s American indie labels like Sun were as dependent on falling studio costs as late-1970s punk labels in Britain (the latter benefitting from scientific break-throughs and falling prices in electronic recording).

But tape's importance was not just in reduced costs. Tape was an intermediary in the recording process: the performance was recorded on
tape; the tape was used to make the master disc. And it was what could be done during this intermediary stage, to the tape itself, that transformed pop music-making. Producers no longer had to take performances in their entirety. They could cut and splice, edit the best bits of performances together, cut out the mistakes, make records of ideal not real events. And, on tape, sounds could be added artificially. Instruments could be recorded separately. A singer could be taped, sing over the tape, and be taped again. Such techniques gave producers a new flexibility and enabled them to make records of performances, like a double-tracked vocal, that were impossible live (though musicians and equipment manufacturers were soon looking for ways to get the same effects on stage). By the mid-1960s the development of multi-track recording enabled sounds to be stored separately on the same tape and altered in relationship to each other at the final mixing stage, rather than through the continuous process of sound addition. Producers could now work on the tape itself to 'record' a performance that was actually put together from numerous, quite separate events, happening at different times and, increasingly, in different studios. The musical judgements, choices and skills of producers and engineers became as significant as those of the musicians and, indeed, the distinction between engineers and musicians has become meaningless. Studio-made music need no longer bear any relationship to anything that can be performed live; records use sounds, the effects of tape tricks and electronic equipment, that no-one has ever even heard before as musical.\(^{12}\)

It is, to conclude, a pleasing irony of pop history that while classical divisions of record companies led the way in studio technology, their pursuit of fidelity limited their studio imagination. It was pop producers, unashamedly using technology to 'cheat' audiences (double-tracking weak voices, filling out a fragile beat, faking strings) who, in the 1950s and 1960s, developed recording as an art form, thus enabling rock to develop as a 'serious' music in its own right. It was pop producers, straightforwardly employed to realise raw musicians' ideas as attention-grabbing commodities for the teen mass-market, who developed recording as a new form of communication, thus enabling rock to give its own account of 'authenticity'. This account, or, rather, its 1980s rewriting, is the subject of much of the rest of this book.

Notes
1 Isidore Witmark and Isaac Goldberg, _From Ragtime to Swingtime, the Story of the House of Witmark_ (Lee Furman, New York, 1939), pp. 116–8.