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1 | The rise and rise of phonomusicology

STEPHEN COTTRELL

Introduction

To what extent does the study of musical recordings challenge musicology as a discipline? Should it be seen as intradisciplinary, existing as a subset of a broadly construed 'musicology'? Is it interdisciplinary, drawing together approaches taken from a variety of musical and non-musical disciplines in order to construct a hybridised approach to the study of musical sound? Or might it be conceived as a discipline in its own right, unburdened, perhaps, by theoretical approaches developed elsewhere and thus free to fashion its own methodology? In this chapter some of the disciplinary issues surrounding the study of recordings will be considered, together with the insights these provide into current trends in the field of music studies as a whole. Overlaps and linkages will be suggested between what are frequently taken as disparate and unrelated approaches to the study of recordings, offering the possibility that such overlaps will allow us to conceive of a potentially new subfield of music studies, one which I describe as 'phonomusicology'.

At its simplest level phonomusicology may be defined as 'the study of recorded music'. This puts recorded musical sound firmly at its centre, but it is equally intended to suggest that the artefacts through which such music is mediated – phonographs, LPs, CDs, broadcast media, MP3s and so on – also help to define those meanings we construe upon the music itself. Yet there is more to phonomusicology than the study of such artefacts and the musical patterns they contain. Recordings exist in and are products of particular contexts; thus the study of these contexts may also be reasonably subsumed under the definition of phonomusicology. Recordings are also subject to particular patterns of dissemination and consumption, as a consequence of which they may become endowed with new and/or different meanings by those who come to them; these too would seem worthy of the phonomusicologist's attention. Thus a working definition of phonomusicology adopted here is 'the study of recorded music, including its contexts of

production and patterns of consumption'. The organisation of the chapter follows this broadly tripartite division, considering first the particular environments in which recordings are produced, second, the studies of recordings themselves, and third, studies of dissemination and consumption, all preceded by a brief historical review. The overriding concern is not to provide an exhaustive treatment of these rather large areas, but to illuminate how they both reflect and affect developments within the field of music studies as a whole.

The roots of phonomusicology

The academic study of recorded sound is now an important component of a number of the subdisciplines of music studies. For example it is difficult now to conceive how either ethnomusicology or popular music studies could have evolved without access to recordings. Ethnomusicology, or comparative musicology as it was known before World War II, was largely founded upon the study of recordings, transcriptions of them, and their analysis.[1] The act of transcription in particular dominated the discipline until the mid-twentieth century. Bruno Nettl observes that:

Until well into the 1950s the ability to transcribe was viewed as the basic and perhaps even diagnostic skill of the ethnomusicologist, and many still regard this ability as essential … the ethnomusicologist for long was in the first instance a transcriber of music. The first task of the field was thought by some to be the transcription of all available recordings.[2]

Given the longevity of the interrelationship between ethnomusicology and the study of recorded sound, ethnomusicologists have arguably theorised more extensively than others about both the benefits and the dangers of such work, as will become clearer below. More recently, they have also considered some of the ethical issues arising both from their own use of recordings and the appropriation of musics by others.[3] In the early part of the twentieth century folk music studies were initially similarly dependent on recording technology. Percy Grainger's early paper 'Collecting with the Phonograph' demonstrates some of the advantages he believed accrued through the use of what was then still relatively new technology,[4] while the folk music collected by Béla Bartók, Zoltán Kodály and others was similarly dependent on using technology to capture the sounds for later study.

The area of popular music studies has an even deeper relationship with recordings. If recordings have traditionally provided for ethnomusicologists

convenient instantiations of performance traditions largely sustained through oral/aural tradition, for popular music scholars recordings are, to a significant degree, the very essence of the traditions with which they are concerned, regardless of style or genre. As Tom Caw observes, 'popular music scholars sometimes focus on the musical text, and sometimes on the music's position within a range of social contexts, but no matter what angle they take on the topic they all need sound recordings'.[5] The punning title of an early compilation of writings on popular music – *On Record*[6] – may similarly be read as indexical of the centrality of recorded music in popular music studies. Jazz studies are also heavily dependent upon the analysis of recorded sound: Scott DeVeaux notes that 'for better or for worse the history of jazz is the history of recordings'.[7] By extension, therefore, the study of that history is also the study of those recordings, again illustrating their central position within what might be described as jazz musicology.

Only in the realm of Western art musicology have recordings, until recently, played a marginal role. The importance attached to the musical score in this particular scholarly tradition has meant that the study of music as performance has to a very significant degree been overshadowed by the study of music as text.[8] As Daniel Leech-Wilkinson notes, 'the idea that a piece of music might be studied from a performance rather than from the notation, or that anything interesting might be learned about music from the way it is performed is a new, and for some even a dangerous notion'.[9] The situation is now slowly changing, however, and a number of studies have recently appeared which demonstrate a variety of approaches to studying recorded Western art music.[10]

Historically it was not only within the confines of academe that recording technology provided the means through which music might be actively studied, rather than passively consumed. Eric W. Rothenbuler and John Durham Peters point out that 'the phonograph allowed repeated listening for more people than the privileged scholar or aesthete. Anyone who wanted to, within reasonable means, could study music in performance and thus alter his or her own perceptions of it.'[11] While the early days of phonographic study provided certain auditory challenges – one contributor to the International Congress of Folklore in 1900 observed that 'the phonograph is not a very cheerful instrument to listen to'[12] – it enabled a wider range of people to engage with the detailed study of musical sound. This might loosely be thought of as 'folk phonomusicology', the study of recordings by those directly engaged with the tradition in which such recordings are embedded.

In some cases this folk phonomusicology influenced the way in which the musical traditions themselves evolved, since musicians were able to hear

both their own performances and those of others. Reflection upon past performances thus shaped future behaviour. The jazz tradition provides one of many possible examples of this. Since gramophones allowed users to change the speed of a record, slowing down a recording enabled aspiring improvisers to understand, and often transcribe, longer and more complex passages, which in turn allowed them to construct their own improvisational language in a similar fashion. This became particularly useful with the advent of bebop in the 1940s, a musical style which was characterised by fast tempos, swift harmonic changes and musically dense improvisations. The ability to slow down the challenging solos by leading players such as Charlie Parker and Dizzy Gillespie allowed others to assimilate and develop the style.[13] Similar practices by musicians in a range of other contexts might equally be observed.

All of the above demonstrate that there is now a significant historical depth to phonomusicology, and that the active study of recordings occurs within a variety of contexts. My primary interest here, however, is how the various subdisciplines of music studies – the 'ologies of music, as it were – have construed the study of recordings within the academic environment; and, particularly, to consider how approaches taken in one domain might be applied to another, why such overlaps challenge traditional conceptions of musicological study, and why they might thus be viewed as 'dangerous notions', as Leech-Wilkinson asserts.

The contexts of recordings

One way in which the study of musical recordings might be seen to broaden musicological endeavour is by considering such recordings as products of collective social interaction, not simply as reified texts.[14] Recordings can thus be seen as nodal points in the sociocultural matrices which inevitably shape them. If we fail to take into account the manner in which these matrices influence the recorded product, we risk making inappropriate assertions about the recordings themselves. Such approaches are, inevitably, difficult in the case of recordings made in the distant past. Here the phonomusicologist can do little more than attempt to piece together something of the contexts which produced the recording, in much the same way as the historian attempts to understand what gave rise to any other cultural artefact. But in contemporary musical life we have the opportunity for closer examination of recording contexts, so that we may understand how these shape the finished product.

Anthropologist Thomas Porcello has acknowledged something of this in his work on ethnographic representations of technology in music-making. Although his research took place in relation to popular music, much of what he writes would be applicable in other contexts:

In the recording studio … musical experience is shared simultaneously … as discourse about music and musical experience. Moments of individuation and sharedness emerge out of the interpenetration of talk, musical performance, and performative talk specifically about music … Jamming and singing and punning and joking often flow seamlessly into one another and build thickly-textured expressive texts, layer-upon-layer, performance-upon-performance, like the musical tracks being laid on tape … And often they produce specific inspirations that wind up on tape as part of the final recording. As such, they become portable and renewable experiences, rejuvenated in subsequent performances of the songs involved, or talked about long after the session is over.[15]

If this is true of the popular music scene, in which, typically, recordings evolve over weeks or months, with musicians often coming into the studio on different days or contributions being recorded in studios on different continents, it is surely just as true of the intense nature of the Western art music recording event, in which equally highly trained and discursive musicians are working simultaneously, under great pressure, in a limited time frame, often on music of great complexity. Under those kinds of pressures the cracks begin to show, cracks which may reveal to us meaningful discourse about music not easily captured in other circumstances. Much the same might be observed in a variety of 'non-Western' recording contexts.[16]

All of this suggests a variety of articulations between recording technology, musical performance and creativity in the recording context, which provide potentially rich sources of data for phonomusicologists in relation to the way in which technology affects the final product. One way in which these interrelationships between musical practice and technology may be conceived is offered in figure 1.1.

The vertical axis posits a continuum between fixed composition and more fluid forms of improvisation. At its top end are those recordings which serve as single instantiations of pre-composed musical works for which many other instantiations would be equally valid: for example, where a given recording represents only one particular interpretation of a composer's score, but might also include recordings of other extant repertory such as well-known popular songs. At the opposite end lie recordings which serve as representations of traditions which are heavily reliant on improvisation. Here there may be no
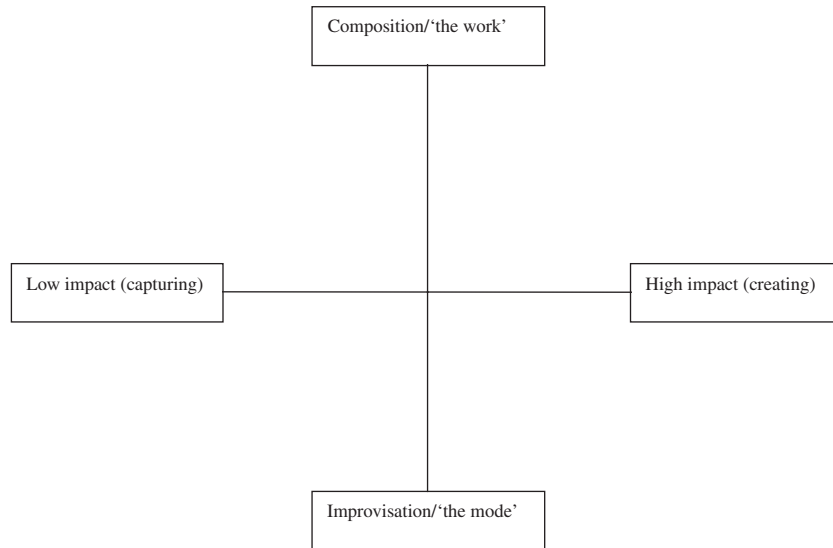
Figure 1.1 A possible schematic representation of the relationship between musical practice and recording technology.

formal works as such, only agreed conventions within which improvisation may take place. Many musics would lie between these two poles. The other axis represents a continuum between a technological approach which essentially seeks to capture the performance, with the minimum amount of technological intervention, and one where the recording technology is essential to the creation of the work itself.[17] Different recordings can be seen to occupy different positions on the grid, according to the particular relationship between musical practice and recording technology. Even different performances of the same piece, a Beethoven sonata, for example, might be conceptualised as being in varied positions depending on the degree of technological intervention involved – the difference, for example, between a live recording using no edits and a heavily edited studio version.

This rather reductionist view of the relationship between musical sound and recording technology is only of limited value, of course, and there are doubtless many significant issues which it does not adequately embrace, not least of which is the broader cultural context within which any recording takes place. However, there are two reasons for suggesting it here. First, because thinking about recorded music in this way subverts traditional distinctions between musicologies nominally focused on 'art', 'world' or 'popular' musics (to give three of the most obvious examples), and concentrates instead on the social practice of recorded music-making within

particular contexts and the role recording technology plays in such practice. Second, such a diagram demonstrates that the kinds of ethnographic method-ologies advocated by Porcello and others can be applied in all these different contexts – including recordings of Western art music – so that our under-standing of the resultant recording is informed by the shared experience of all those involved in its production. Indeed, at this point my notion of phono-musicology overlaps with Porcello's advocacy of 'techoustemology', which, he writes, 'demands an accountability for how music, technology, sound, and social practice are used and made meaningful locally'.[18]

Furthermore, considering recordings in this way allows relationships between them to be perceived as dispositional, not hierarchical. Thus what-ever values or meanings recordings may be deemed to have arise not because of their association with particular disciplinary taxonomies – taxonomies which may themselves be seen in some quarters to inscribe certain values – but because of their relationship to other recordings. There is no distinction here between art and popular, mass versus cult, or any other binary opposi-tion. Instead, at the level of production, recordings are viewed according to the relationship between technological intervention and socio-musical practice.

Such an approach challenges traditional musicology because it emphasises musical recordings as social practice – the collective enterprise of performers, creative practitioners, engineers and so on – rather than subscribing to the traditional reliance on the musical score, the canon of great works and the presumed genius of the great composer. By foregrounding discussions about musical sound, technology and socio-musical interaction it simultaneously de-emphasises – but does not obviate – the discourse about musical structure and formal content upon which musicology has been traditionally predicated (notwithstanding that similar discourses will naturally be part of the social practice of those involved in the recording itself).

Studying recordings

To study performance through recordings is not to study musical perform-ance *per se*, since recordings have an ambiguous relationship with musical performance. They cannot necessarily be taken to represent 'the performers' intentions', since the intervention of technology may well cause performers to behave differently in the studio from the way they might have behaved outside; and the technological intervention itself ensures that no recordings faithfully capture all aspects of live performance (to say nothing of the fact that recorded performance is perceived by the listener fundamentally

differently from live performance).[19] This is true regardless of musical style. To give some examples: the flawless performance standards now expected in Western art music recordings means that a finished recording may consist of large numbers of smaller extracts derived from different attempts ('takes'), and is thus something of a synthetic concoction which bears an ambiguous relationship to a concert performance of the same piece by the same artist;[20] a popular music track may utilise advanced studio technology in a way which is difficult to replicate in live performance, thus requiring a different approach to the performance of the music outside the studio. Recording technology itself may alter performance practice. The ethno-musicologist Gerry Farrell has shown how the limitations of early record-ings obliged Indian musicians to condense drastically their raga improvisations,[21] and, similarly, early Western art music recordings often provoked either significant alterations to the musical form, or a scaling down of performance forces, or both.[22]

Moreover, despite the potential benefits offered by studying the contexts in which recordings are made, it is clear that in most cases recordings are in fact studied out of context: the mediation of the musical performance through the act of recording almost guarantees that its study will take place away from its original recording environment. The study of a recording will inevitably take place some time – perhaps some considerable time – after it was made, and thus the recording itself may be said to exist as a world-out-of-time in relation to the real time of those who come to it later. There is frequently some dislocation therefore between scholars and their object of study, and this relationship requires a degree of reflexive consideration.

These dislocations manifest themselves in different ways. Popular music scholars, being usually located in Western centres of learning, may consider themselves to be cultural insiders with regard to the traditions with which they are usually concerned. However, accepting Simon Frith's argument that popular music is globally shared but locally adapted[23] suggests that a Scottish or Australian scholar may have a very different relationship with a recording by a Californian rock band than would a scholar from San Francisco. Furthermore, as the relatively young subdiscipline of popular music studies ages, so the esteemed scholars who have established the field will grow older. This generational dislocation may indeed become a factor, particularly in relation to musical styles produced by and for younger generations, with these scholars feeling, like others, that they are engaging with a musical culture which is less 'ours' than 'theirs'.

In other musical subdisciplines the dislocation between the object of study and its original context is more obvious. Consider, for example, the

phonomusicological implications of novelist L. P. Hartley's now celebrated observation that 'the past is another country. They do things differently there'[24] and the degree to which this suggests possible parallels between the study of historical art music recordings and the study of music from other cultures. Clearly there are some rather fundamental differences in this comparison, not least of which is that musicologists are likely to be (in general) more familiar with the repertory being performed in historical Western art recordings than ethnomusicologists might be in relation to a music culture other than their own. The parallels are nevertheless worth pursuing. In each instance such scholars engage with unfamiliar musical performance cultures; without due caution they risk making inappropriate assertions about the nature of those music cultures and the bases on which they believe musical performances within them might be predicated.

To underline this point compare these two passages:

The Flonzaley Quartet's performance is a highly refined example of a style in which subtle emphasis of detail, by lengthening, shortening, emphasising with portamento, hurrying and displacing, form a continuous and ever-changing characterisation of the music … But the hierarchies of emphasis are not at all what we are accustomed to in modern performance, and our ears hear their varied and subtle placing of detail as a slightly casual lack of control and clarity.[25]

The initial challenge, of course, is the development of an ability to hear. The tendency of Westerners to 'correct' unfamiliar intervals, usually without being aware of doing so, can itself be corrected only by repeated exposure to listening and by singing.[26]

The first quote is from the musicologist Robert Philip, discussing possible reactions to a recording by the Flonzaley Quartet; the second is from an influential paper by the ethnomusicologist Mantle Hood on bimusicality.[27] Both are suggesting that in order to appreciate the significance of particular performance cultures we must discard, or at least modify, those perceptual and conceptual approaches which feel most natural to us. Hood is of course concerned with the specific way in which the brain tends to correct pitch intervals, but both writers are advocating the development of new ways of hearing unfamiliar music cultures, laying aside any preconceptions.

In such cases we are engaging with music as aural tradition, both in those many 'non-Western' and popular music contexts where traditions are sustained without reference to any notation, but equally in those Western art contexts where it is the performance which is under scrutiny not the score on which it may be predicated. In essence the study of aural tradition is frequently the study of music as performance, in contradistinction to the

tradition of Western art musicology, which has focused upon those char-acteristics of music captured by notation and has thus conventionally construed such musicology as the study of music as literature.

Paradoxically, however, the close study of aural tradition frequently requires scholars to generate transcriptions of one sort or another, either to facilitate detailed analysis or to disseminate the results of such analysis, or both. Producing transcriptions is thus often a necessary skill required of those endeavouring to study music as performance (as illustrated by Nettl's obser-vation cited above on their importance in comparative musicology). While such transcriptions could use a variety of different notations, many employ modified forms of staff notation, since this is the notation with which most Western scholars are familiar. Yet the employment of staff notation is perhaps the most disciplining methodology available to the musicologist. This is not only because of its normative implications – it often suggests that music thus represented is subject to the same tempered intervals and metrical structures prevailing in the Western art music for which the notation was designed – but also, as musicologist Don Michael Randel points out, because of the emphasis it places on matters relating to pitch, at the expense of rhythm and partic-ularly timbre: 'for all its weakness at dealing with pitch, [staff notation] is downright crude with respect to duration and worse yet with respect to timbre. Not surprisingly our work on pitch organisation overwhelms our work on rhythm, to say nothing of timbre.'[28] Since staff notation is most effective when representing pitch relationships, it comes as little surprise that the majority of work done by music theorists concentrates on precisely those relationships. Phonomusicology thus challenges musicology as a discipline by placing at the centre of its study of musical sound those attributes which notation does not capture and which musicology has conventionally margin-alised. Staff notation, which largely underpins the discipline of musicology, becomes a frequently frustrating and inadequate tool for phonomusicologists, even when modified forms are employed.

Since transcriptions are always acts of interpretation based on subjective assessments of musical performance, scholars have embraced a variety of technologies in an effort to secure supposedly more objective transcrip-tions.[29] This recourse to technology to provide empirical data for the purpose of investigating performance is a characteristic of several strands of performance analysis. Harnessing technology in order to capture or represent sonic information has a longer history than is often realised, again suggesting a significant historical depth to phonomusicology. Perhaps the best known of these – at least, prior to the advent of computer technology – is the melograph developed by Charles Seeger in the 1950s.[30]
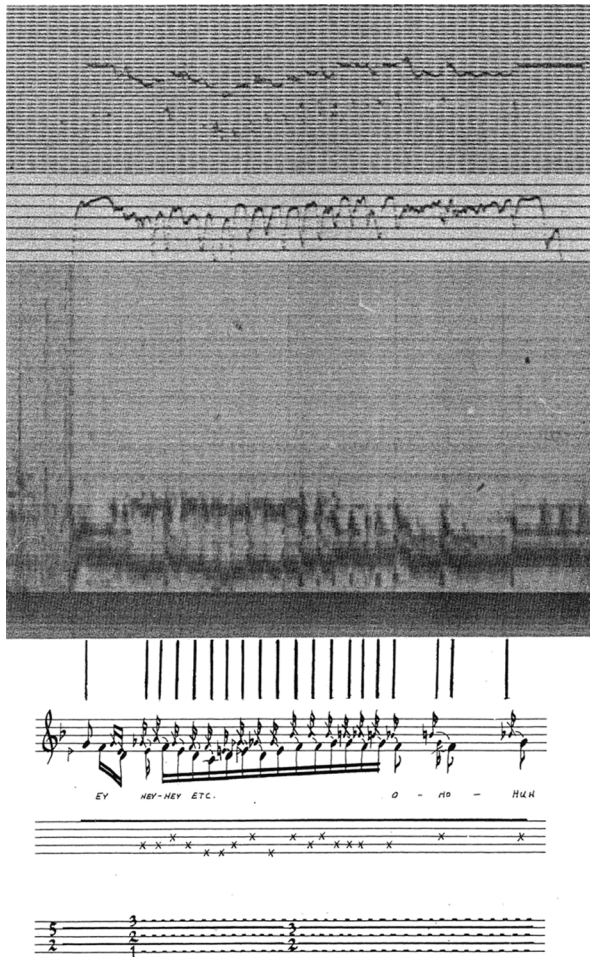
Figure 1.2 Melogram of Iranian vocal ornamentation.

This is of particular interest in the present context because, like most other automatic transcription devices, its usefulness was not limited to any particular musical style, and it is precisely this transcendence of musical genres that characterises phonomusicology and makes automatic transcription such a potentially useful tool.

The melograph produced printed read-outs (melograms) of pitch, amplitude and frequency spectrum, mapped concurrently against a time axis. Such results could be produced from a wide range of musical styles. Figure 1.2 reproduces a melogram from a paper by Margaret Caton on Iranian vocal ornamentation. It shows how the machine was used to decipher the particular details of the ornaments employed. The top line
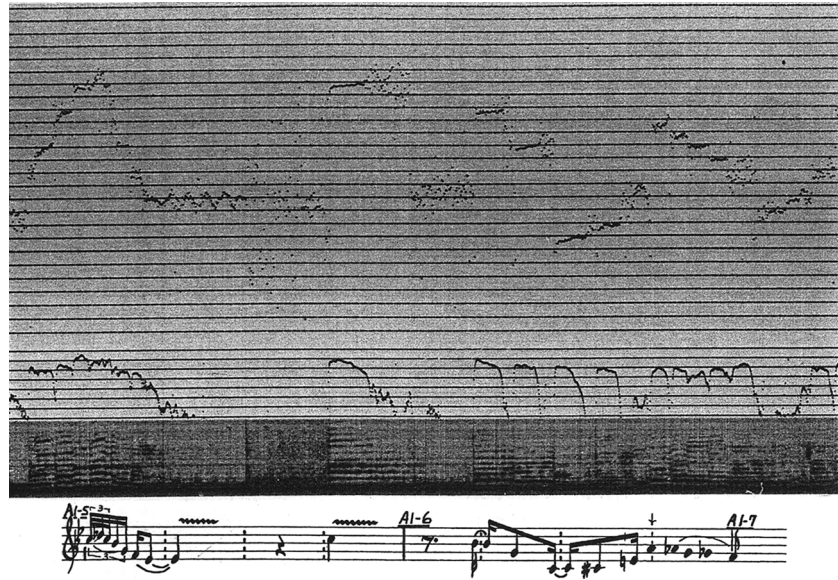
Stephen Cottrell

Figure 1.3 Melogram of an extract from a Charlie Parker solo.

indicates pitch, the middle line amplitude, and the lowest reading is the frequency spectrum.

As a demonstration of similar principles in a different context, consider Thomas Owens's analysis of the use of vibrato in Charlie Parker's saxophone playing (figure 1.3). Here the detail provided by the melogram enables the observation that Parker's vibrato is 'regular and varies on different notes from 4 to 6 times per second, with the average being about 4 times per second'.[31] This in itself may not appear particularly profound and, as Owens himself has pointed out elsewhere, vibrato is not an integral part of Parker's style.[32] Nevertheless, it is certainly an integral part of jazz saxophone playing in general, and more extensive studies of this kind by phonomusicologists would certainly allow inferences to be drawn as to how saxophone vibrato changes from one player to another, and from one jazz genre to the next.

Inevitably, the melograph has now, to a significant degree, been superseded by computers. The computerised analysis of recorded sound offers similar kinds of results (and more), and continues to provide detailed insights into performance practice, via spectrum or frequency analysis, and so forth. Figure 1.4 is an example of the application of these methodologies to Western art music by Leech-Wilkinson. Here spectrum analysis has been used to demonstrate the difference between the left-hand and right-hand placement in the idiosyncratic yet very popular style of the pianist Myra Hess
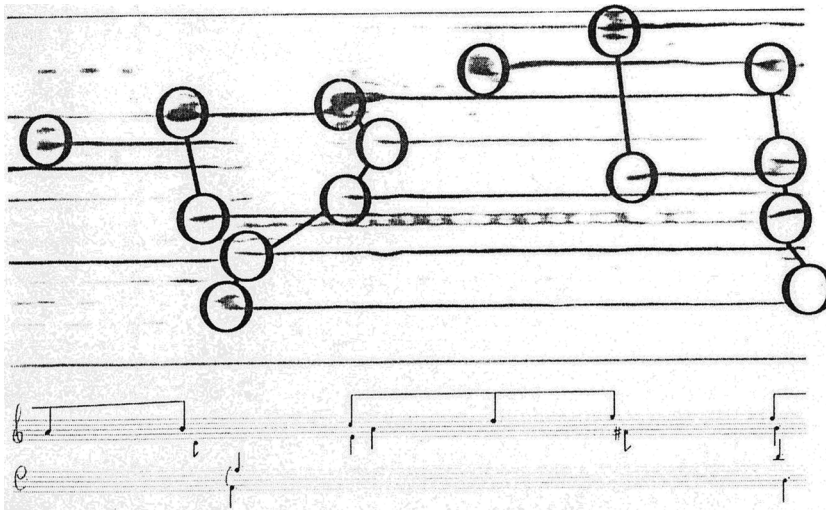
Figure 1.4 Spectral analysis of an extract from a piano performance by Myra Hess.

in the 1940s. Those circles joined together by lines represent chords which, according to the composer's score, should sound together. The vertical discrepancies revealed clearly demonstrate the lack of alignment between the two hands which was characteristic of Hess's very popular style.

These comparable methodologies, albeit applied to very different musics and emanating from scholars who would consider their roots to be in rather different areas of the music studies field, unite musicologies rather than divide them. Seeger himself, as prescient as ever, noted this possibility as early as 1958. Having advocated a method of automatic transcription in an article titled 'Toward a Universal Music Sound-Writing for Musicology' in 1957, he observed the following year that 'the automatic graph can serve as a bridge between musics – a common denominator, as it were'.[33] By extension, therefore, the automatic graph can serve as a bridge between musicologies also. At the time, Seeger was referring to an early form of the oscilloscope. Naturally he could not have foreseen how technological developments would unfold, and the advent of software which now allows this kind of work to be undertaken on a personal computer. Nevertheless, this is not to suggest that automatic transcription can function as a panacea for those biases that our subjectivity inevitably brings to the act of transcribing, since it too has its limitations. Nazir Jairazbhoy points out that 'automatic transcription should not be thought of as a replacement for aural transcription. They perform different but equally justifiable functions.'[34] But the advantages and disadvantages of such work are not limited by musical

genre, again suggesting commonalities of approach which lend more cre-
dence to the idea of phonomusicology as a distinct entity.

It is also notable that, in the examples shown above, in order to convey
the information meaningfully, all have found it necessary to refer back to
some kind of staff notation, notwithstanding that it is precisely the limi-
tations of such notation which require recourse to forms of graphic repre-
sentation in the first place. Again there are issues here relating to
prescriptive and descriptive notations,[35] what they do or do not convey,
how they are used and what may be inferred from them, which are salient to
a wide range of musical studies and thus part of the conceptual and
methodological core of phonomusicology. The various approaches taken
by these different scholars are not identical but there are clearly resonances
between them.

Recordings as artefacts

In keeping with the holistic view adopted here on the nature of phonomu-
sicology, the dissemination of recorded music and the ways in which it is
used by those who identify with it need also to be considered. This is a large
and complex area, underpinned by the global corporations through which
many recordings are dispersed, and enhanced by the myriad local channels
through which further meanings accrue to recorded artefacts. Popular-
music scholars are perhaps most familiar with the challenges here, having
in part taken their cue from the philosophical writings of Theodor
W. Adorno and Walter Benjamin on mass culture and reproduction in
the 1930s.[36] Because such scholars have until recently often worked in
sociology, media or other departments rather than more traditionally
focused music departments, they have been more keenly attuned to
approaches which view cultural artefacts as embedded in practices of
reception and consumption within particular social contexts. Thus they
have argued that any understanding of the different meanings with which a
given recording may be endowed is possible only through a consideration of
the cultural matrix within which it appears. In his study on the production
processes of popular-music recordings, for example, Keith Negus observes
that 'enough research has been done to show that the reception and con-
sumption of cultural items is not a passive process but is part of the way in
which these sounds and images are given meaning'.[37]

Such approaches have not been confined only to those who study
Western popular music. Ethnomusicologists have also considered how

recordings have been consumed or appropriated both within and outside the music cultures in which they have been produced. Given their traditional subdisciplinary emphasis on the 'emic' or insider's perspective, ethnomusicologists have been particularly interested in those relationships and meanings generated locally, among those who created the recording and their immediate circle. Such relationships are often qualitatively different from those mediated by the interests of profit-driven major record companies.[38] In north India, for example, Peter Manuel has shown how the widespread adoption in the 1970s and 1980s of one particular recording technology, the portable cassette, entirely transformed popular music culture throughout the region. In large part this was because the relative cheapness of this technology allowed cultural and economic power to be wrested from one over-arching multinational company and distributed instead among hundreds of competing local cassette producers.[39]

Only in the domain of Western art music recordings have issues of reception and consumption been too frequently overlooked. Again the traditional reliance on the concept of the work as being meaningful in itself, and the belief that such meaning resides within the score on which performances of the work are based, has diverted attention away from those processes of dissemination which have formed part of the consideration of other music traditions. Latterly, with musicology taking a broader and more interdisciplinary approach than previously, a small number of such studies have begun to appear. Nicholas Cook's paper, in which he considers how LP sleeve imagery contributes to musical meaning, is an isolated example;[40] Colin Symes provides a similar overview in his book, *Setting the Record Straight: a Material History of Classical Recording*.[41]

This inevitably raises the issue of the degree to which recordings can be seen as analogous to musical texts (scores), particularly in those many contexts where music-making is not underpinned by a tradition of musical literacy. Such an analogy is problematic but there are parallels between these different repositories of musical information. They both have ambiguous relationships to musical performance itself. Both may contain inscriptions and iconographic evidence of one sort or another which the phonomusicological detective can pore over in order to provide insights and interpretations for the wider world, interpretations which in all cases are subject to change over time. Both can be reconstructed in different ways: recordings can be cleaned up (thus fundamentally changing the auditory implications of the recording and the musical performance it contains), remastered, released on different formats or as parts of compilations, just as musical texts can be reproduced in various editions or arrangements. But to

presume that whatever meaning a recording may have lies entirely within either the musical sound or the conduit by which it is transmitted is to risk replicating formalist approaches taken in earlier musicological times. Our understanding of recorded music lies neither in the recording itself nor in the context in which it is received. Rather it inheres in the relationship we construe between the two.

Thus the manner in which recordings are disseminated – including radio, television and the internet, which are clearly important channels for mediating sound – provides the final stage of the tripartite division of phonomusicology. Few studies are likely to engage with all three areas in relation to one particular recording, although it cannot be denied that this would provide the most complete explication of what that recording might come to represent for a wide range of people.

Phonomusicology and disciplinarity

Within the academy the field of music studies is by nature interdisciplinary, bringing together those who perform and create music as well as those who study it intellectually (and those who combine these different approaches). Yet musicology, traditionally and narrowly construed, was for long predicated upon the study of only one small part of the world's music traditions: Western art music. The canon of great works by great masters, conceived as a museum of musical treasures,[42] provided the foundation for which certain kinds of questions came to be asked about certain kinds of things. These normative approaches became self-perpetuating as musicology developed over the twentieth century. Those seeking to enter the discipline were obliged to subscribe to and then inevitably replicate such approaches. As philosopher Michel Foucault points out, such disciplinary entrainment eventually mutates into strategies for social control and organisation, since it mitigates difference and prevents unorthodox approaches from becoming established.[43]

However, since the 1980s, musicology, now necessarily more broadly construed, has taken 'the interpretative turn', like the social sciences in the 1960s and 1970s, and has become both more critical and reflexive, a trend which Anahid Kassabian identifies as having started with Joseph Kerman's book *Contemplating Music*.[44] Musicology has itself become inherently more interdisciplinary, as the previous discrete boundaries between ethnomusicology, popular music studies, performance studies and other approaches to musical study have become blurred. Scholars in many quarters now feel less

constrained than their forebears, both in terms of their subject areas and their methodologies.[45]

Phonomusicology is both a product of and a contributor to these shifting boundaries of musicological endeavour. While it does not discard the traditional musicological skills of textual analysis and historical investigation, these are de-emphasised in order that other considerations – of the social practice of recording, of comparative performance practice, of the dissemination and consumption of recorded music and so forth – may be accorded equal significance. The various subdisciplines of the music studies field already encompass a range of diverse methodologies, and again it is the collation of these diverse approaches, and the interdisciplinarity that such collation necessarily provokes, which provide in part phonomusicology's challenge to traditional musicology. This inevitably leads to a certain remapping of academic discourse about music, one which does not necessarily comfortably align with disciplinary contours as presently constituted.

There is the danger that the establishment of phonomusicology might in time lead to its own disciplinary ambitions, together with the creation of its own canons – an almost inevitable consequence of the process of disciplining. Indeed, it might be argued that this process is already taking place, if one considers the importance attached to those recordings already deemed to be significant, whether by Enrico Caruso, Louis Armstrong, Madonna, the Bayaka people of the African rainforest or others. While this may be seen as undesirable – in that the formation of any canon necessarily implies the exclusion of other equally worthy candidates and ultimately represents a deployment of power by those undertaking the disciplining – it is equally difficult to see how, over time, the creation of such canons can be avoided. But again these canons, should they arise, are unlikely to align comfortably with those on which musicology has been traditionally predicated, and will have evolved for quite different reasons. It might also be argued that to focus a discipline around recording apparatus – an emphasis on technology which displays a rather Westernised bias – is itself to demonstrate a deployment of power, and one which leads to the exclusion of those musics which may lie beyond the reach of the microphone. Such observations would be difficult to rebut.

Some will of course assert that phonomusicology cannot exist, that the range of musics it seeks to encompass and the diverse approaches it must necessarily employ cannot be comfortably delimited within one overriding discipline, and that the homogeneity of approach implied by the notion of a discipline lies at cross-purposes with the transparent heterogeneity of those diverse musics and methodologies outlined previously. Perhaps, then,

phonomusicology is an anti-discipline, one which subverts the comfortable distinctions we make about what to study and how to study it, and which struggles to escape any comfortable definition by which we might aspire to contain it. In this it conceivably resembles the field of cultural studies, which, as Stuart Hall observes, 'refuses to be a master discourse or a meta-discourse of any kind' and yet 'registers the tension between a refusal to close the field, to police it and, at the same time … to stake out some positions within it and argue for them'.[46]

Notwithstanding these caveats, however, phonomusicology can be seen to contribute substantially to the present revitalisation of the intellectual study of music. Its emphasis on an interdisciplinary approach consciously accelerates musicology's move away from a reliance on the texts of the 'Great Composers' and towards a broader investigation of the production and consumption of recorded musical performance. It is an approach to the study of music, delimited not by style, canon or geographical context, but focused instead on the ways in which music-makers interact with recording technology, how they use this to support and sustain the musical traditions with which they identify, and what they reveal to us of their musical creativity and performance practice through the cultural artefacts they produce.

Notes

1. For more on the role of recording technology in the evolution of ethnomusicology see John Baily this volume, and also Kay Kaufman Shelemay, 'Recording Technology, the Record Industry, and Ethnomusicological Scholarship', in Bruno Nettl and Philip V. Bohlman (eds.), *Comparative Musicology and the Anthropology of Music* (Chicago: University of Chicago Press, 1991), pp. 277–92.
2. Bruno Nettl, *The Study of Ethnomusicology: 29 Issues and Concepts* (Urbana: University of Illinois Press, 1983), p. 67.
3. See for example Steven Feld, 'Pygmy POP: a Genealogy of Schizophonic Mimesis', *Yearbook for Traditional Music* 28 (1996), pp. 1–35; Hugo Zemp, 'The/An Ethnomusicologist and the Record Business', *Yearbook for Traditional Music* 28 (1996), pp. 36–56; or Caroline Bithell, 'Polyphonic Voices: National Identity, World Music and the Recording of Traditional Music in Corsica', *British Journal of Ethnomusicology* 5 (1996), pp. 39–65.
4. Percy Grainger, 'Collecting with the Phonograph', *Journal of the Folk Song Society* 3 (1909), p. 165.
5. Tom S. Caw, 'Popular Music Studies Information Needs: You Just Might Find …', *Popular Music and Society* 27/1 (2004), p. 50.
6. Simon Frith and Andrew Goodwin (eds.), *On Record: Rock, Pop and the Written Word* (London: Routledge, 1990).

7. Scott DeVeaux, 'Bebop and the Recording Industry: the 1942 AFM Recording Ban Reconsidered', *Journal of the American Musicological Society* 41/1 (1988), p. 126. See also the essays by Peter Elsdon and Catherine Tackley in this volume for more detailed consideration of jazz recordings and their role in defining the history of jazz.

8. For a concise overview of the arguments relating to the study of music as performance rather than text see Nicholas Cook, 'Music as Performance', in Martin Clayton, Trevor Herbert and Richard Middleton (eds.), *The Cultural Study of Music* (London: Routledge, 2003), pp. 204–14.

9. Daniel Leech-Wilkinson, 'Using Recordings to Study Musical Performance', in Andy Linehan (ed.), *Aural History* (London: The British Library, 2001), p. 1.

10. By way of examples, Robert Philip has shown how recordings can evidence general changes in performance practice in *Early Recordings and Musical Style: Changing Tastes in Instrumental Performance* (Cambridge: Cambridge University Press, 1992); Nicholas Cook has considered specific interpretative characteristics of an individual conductor: 'The Conductor and the Theorist: Furtwängler, Schenker, and the First Movement of Beethoven's Ninth Symphony', in John Rink (ed.), *The Practice of Performance: Studies in Musical Interpretation* (Cambridge: Cambridge University Press, 1995), pp. 105–25; and José A. Bowen has examined the relationship between studying recordings and individual interpretation: 'Finding the Music in Musicology: Performance History and Musical Works', in Nicholas Cook and Mark Everist (eds.), *Rethinking Music* (Oxford University Press, 1999), pp. 424–51.

11. Eric W. Rothenbuhler and John Durham Peters, 'Defining Phonography: an Experiment in Theory', *The Musical Quarterly* 81/2 (1997), p. 243.

12. John Abercromby, 'The International Congress of Folklore in Paris', *Folklore* 11/4 (1900), p. 428.

13. For more on the use of the phonograph by early jazz musicians see Mark Katz, *Capturing Sound: How Technology has Changed Music* (Berkeley: University of California Press, 2004), pp. 77–81.

14. Such a perspective is consonant with, for example, Howard Becker's idea of 'Art Worlds'. See Howard S. Becker, *Art Worlds* (Berkeley: University of California Press, 1982).

15. Thomas Porcello, '"Tails out": Social Phenomenology and the Ethnographic Representation of Technology in Music-making', *Ethnomusicology* 42/3 (1998), p. 496.

16. A variety of approaches in popular and 'non-Western' contexts are demonstrated by the contributors to Paul D. Greene and Thomas Porcello (eds.), *Wired for Sound: Engineering and Technologies in Sonic Cultures* (Middletown, CT: Wesleyan University Press, 2005). John Baily's contribution to the present volume provides further case studies.

17. There is of course no recording where the technology does not materially affect in some way our perception of the musical performance.

18. Thomas Porcello, 'Afterword', in *Wired for Sound*, p. 271.

19. For more on the distinction between performance and recordings see Eric Clarke, 'Listening to Performance', in John Rink (ed.), *Musical Performance: a Guide to Understanding* (Cambridge: Cambridge University Press, 2002), pp. 185–96.

20. For a discussion on the extensive use of editing in the production of Western art music recordings see Robert Philip, *Performing Music in the Age of Recording* (New Haven: Yale University Press, 2004), pp. 50–62.

21. Gerry Farrell, 'The Early Days of the Gramophone Industry in India: Historical, Social and Musical Perspectives', *British Journal of Ethnomusicology* 2 (1993), pp. 47–51.

22. See for example Philip, *Performing Music*, pp. 27–30. On a related point, Erika Brady notes her astonishment when a respected ethnomusicologist was pre-pared to conclude, on listening to archive wax cylinder recordings, that American Indian songs at the turn of the century averaged four to six minutes in length – precisely the available recording duration of most cylinders, in fact. See Erika Brady, *A Spiral Way: How the Phonograph Changed Ethnography* (Jackson: University Press of Mississippi, 1999), p. 6.

23. This argument runs through much of Frith's writings. See for example Simon Frith, *The Sociology of Rock* (London: Constable and Company, 1978), pp. 203–9; or Simon Frith, 'Critical Response', in Deanna Campbell Robinson, Elizabeth B. Buck and Marlene Cuthbert (eds.), *Music at the Margins: Popular Music and Global Cultural Diversity* (Newbury Park, CA: Sage Publications, 1991), pp. 280–7.

24. This is the opening line of Leslie P. Hartley's novel *The Go-Between* (London: H. Hamilton, 1953), p. 1.

25. Philip, *Performing Music*, p. 121.

26. Mantle Hood, 'The Challenge of Bi-Musicality', *Ethnomusicology* 4/2 (1960), p. 56.

27. Bimusicality was a term coined by Hood to describe the process of acquiring musical performance skills in a culture other than one's own. For more details, see *ibid*.

28. Don Michael Randel, 'The Canons in the Musicological Toolbox', in Katherine Bergeron and Philip V. Bohlman (eds.), *Disciplining Music: Musicology and its Canons* (Chicago: University of Chicago Press, 1992), p. 13.

29. Because transcriptions are inevitably subjective interpretations they are also fraught with difficulties. Martin Clayton has illustrated some of the dangers of transcribing music out of context in his article on transcriptions undertaken by the British scholar Fox Strangways, whose book *The Music of Hindostan* was highly regarded at the time of its publication in 1914. Clayton points out that Fox Strangways appears to have made mistakes in his notation of Indian music because of his lack of understanding of the principles by which the music is structured. See Martin Clayton, 'A. H. Fox Strangways and *The Music of*

Hindostan: Revisiting Historical Field Recordings', *Journal of the Royal Musical Association* 124/1 (1999), pp. 86–118.

30. A machine called the melograph – which appears to have been some kind of didactic transcription tool – was invented in Paris as early as 1850 (see Malou Haine, *Les Facteurs d'instruments de musique á Paris au xixe siècle* (Brussels: Éditions de l'université de Bruxelles, 1985), p. 89). The same term was used in 1880 for an invention which punched holes into paper strips; these could then be fed back into a specially adapted harmonium which would recreate the performance; later player pianos worked on similar principles, while other mechanical musical instruments utilised different technologies (see Alexander Buchner, *Mechanical Musical Instruments*, trans. Iris Unwin (Westport, CT: Greenwood Press, 1978), p. 34). While such machines may be regarded as peripheral to the main focus of phonomusicology, many do provide records of performance practice, albeit confined to the Western art tradition, and we can infer from them a great deal about how certain types of music were performed even prior to phonographic recording (see for example Philip, *Performing Music*, pp. 30–4). For more on the range of different audio and visual technologies that ethnomusicologists have employed to transcribe musical sound see Ter Ellingson, 'Transcription', in Helen Myers (ed.), *Ethnomusicology: an Introduction* (London: Macmillan, 1992), pp. 132–3.

31. *Ibid.*, p. 170.

32. Thomas Owens, *Bebop: the Music and its Players* (Oxford: Oxford University Press, 1995), p. 29.

33. Charles Seeger, 'Toward a Universal Music Sound-Writing for Musicology', *Journal of the International Folk Music Council* 9 (1957), pp. 63–6.

34. Nazir A. Jairazbhoy, 'The "Objective" and Subjective View in Music Transcription', *Ethnomusicology* 21 (1977), p. 270.

35. Charles Seeger argues for the distinction to be made between prescriptive notation – that from which a musical performance may be generated – and descriptive notation – that which describes how a performance was actually executed. See Charles Seeger, 'Prescriptive and Descriptive Music-Writing', *Musical Quarterly* 44/2 (1958), pp. 184–95.

36. See for example Theodor W. Adorno, 'The Culture Industry: Enlightenment as Mass Deception', in Theodor W. Adorno and Max Horkheimer, *Dialectic of Enlightenment* (London: Verso, 1997); or Walter Benjamin's well-known paper on 'The Work of Art in the Age of Mechanical Reproduction', in *Illuminations*, Hannah Arendt (ed.), Hamy Zohn (trans.), (London: Fontana, 1973 (1936)).

37. Keith Negus, *Producing Pop: Culture and Conflict in the Popular Music Industry* (London: Edward Arnold, 1992), p. 153.

38. For more on the relationship between musicians and the recordings they make, in a variety of contexts, see Stephen Cottrell, *Professional Music-Making in London: Ethnography and Experience* (Aldershot: Ashgate, 2004), p. 96; Kay Kaufman Shelemay, 'Toward an Ethnomusicology of the Early Music Movement:

Thoughts on Bridging Disciplines and Musical Worlds', *Ethnomusicology*, 45 (2001), pp. 17–18; and Caroline Bithell, 'Polyphonic Voices: National Identity, World Music and the Recording of Traditional Music in Corsica', *British Journal of Ethnomusicology* 5 (1996), pp. 39–65.

39. See Peter Manuel, *Cassette Culture: Popular Music and Technology in North India* (Chicago: University of Chicago Press, 1993).

40. Nicholas Cook, 'The Domestic Gesamtkunstwerk, or Record Sleeves and Reception', in Wyndham Thomas (ed.), *Composition, Performance, Reception: Studies in the Creative Process in Music* (Aldershot: Ashgate, 1998), pp. 105–17.

41. Colin Symes, *Setting the Record Straight: a Material History of Classical Recording* (Middletown, CT: Wesleyan University Press, 2004), pp. 88–123.

42. See for example Lydia Goehr, *The Imaginary Museum of Musical Works: an Essay in the Philosophy of Music* (Oxford: Clarendon Press, 1992).

43. Michel Foucault, *Discipline and Punish: the Birth of the Prison*, trans. Alan Sheridan (London: Allen Lane, 1977), p. 135.

44. See Anahid Kassabian, 'Introduction', in David Schwarz, Anahid Kassabian and Lawrence Siegel (eds.), *Keeping Score: Music, Disciplinarity, Culture* (Charlottesville: University Press of Virginia, 1997), p. 1, and Joseph Kerman, *Contemplating Music: Challenges to Musicology* (Cambridge, MA: Harvard University Press, 1985).

45. An essential overview of these new directions is provided by Nicholas Cook and Mark Everist (eds.), *Rethinking Music* (Oxford: Oxford University Press, 1999).

46. Stuart Hall, 'Cultural Studies and its Theoretical Legacies', in Lawrence Grossberg, Cary Nelson and Paula Treichler (eds.), *Cultural Studies* (New York and London: Routledge, 1992), p. 278.