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Emotional and musical responses to mutating sound quality in Vaughan Williams' recording of his Fourth Symphony

[SLIDE 1]

Abstract

Musicologists tackle historical recordings in a number of ways. Initially the emphasis was on timing information, which is both easily extractable and readily categorised. Even this avenue of exploration cannot be taken for granted. The conductor Herbert von Karajan frequently demonstrated to students that the same tempo, measured metronomically, could be made to sound livelier by changes of accentuation, emphasis, etc. without departing from the pulse. Similarly a passage might be made to sound duller by the same expedient. The information that the researcher might extract from recordings to illuminate a sense of liveliness in the tempo chosen by the performers (for example) is far more difficult to categorise and present to the reader of, for example, a learned article than the original timing information given in beats per minute. Even if the means may be found to do it — and the information stands on the edge of a vast array of similar strands of elusive information enshrined in recordings — the recording itself is not a single, immutable source of sound for dissection and analysis. Multiple factors make a recording variable as a sonic object. Playback conditions are significant; so too is the manner in which the transfer has been carried out.

In order to provide a theoretical basis on which to make relatively simple observations of the effect of sound and sound quality, I will use a set of simple, Kate Hevner-inspired adjectives to evoke responses to differences of texture, articulation, and so on. Taking recordings of Vaughan Williams conducting his Fourth Symphony (and other illustrations as appropriate) I will illustrate differences in sound of transfers and suggest that, subtle though these differences sometimes are, they may affect the manner in which we respond to the music. There are at least four commercially available transfers available for discussion, and I will also make up examples of my own from the original 78s. The presentation will be devised in such a way as to pose questions to the transfer engineers present and to musicologists, from whom I will be seeking the vocabulary to characterise differences of musical affect and emotional response. At the same time, aspects of sound quality that might encourage one to regard one transfer as perhaps livelier than another will be examined.

Paper

This presentation is in three parts: the first briefly discusses the symphony; the second considers the commercially available transfers; and the third investigates the implications of an experiment I conducted based on these transfers.

[SLIDE 2] Coming out of one of Europe's most troubled decades, Vaughan Williams' Fourth Symphony carries more baggage than most of its composer's symphonic works. Paradoxically, this violent and original work was largely conceived before Hitler came

to power and for the first time in Vaughan Williams' symphonic output bore the imprint of absolute music: it was just 'Symphony No. 4 in F minor', with no reference to the sea, London, or the pastoral landscapes of France. Audiences revelled in it from the start, in spite of its grating dissonances, and many critics praised the work. Some of these critics were keen to make up for Vaughan Williams' oversight in not providing a title by supplying one themselves, such as 'Fascist' and 'Romantic'. [SLIDE 3] The composer himself gave no encouragement to those who wished to associate it with the brutalism of the decade or some other extra-musical cause; in 1937, the year of the recording that is the subject of this presentation, he wrote in a letter to R.G. Longman: I wrote it not as a definite picture of anything external — e.g. the state of Europe — but simply because it occurred to me like this — I can't explain why — I don't think that sitting down and thinking about great things ever produces a great work of art.¹ Some of the earliest writers on the symphony tried to reinforce Vaughan Williams' detachment, including Frank Howes in 1954 who claimed that it had 'no programmatic basis' and that its 'subject is contained within it and is of a logical nature.'² In one way or another, Elliott Schwartz's view of 1964 that 'Emotionally, it conveys an impression of urgency, violence and great power, a power characteristic of the growing militancy and agonizing tension of the 1930's.'³ is closer to prevailing views of the work, which were first laid out in detail by Gerrard Long in 1947 in an illuminating article partly entitled 'A study in interpretation'. He writes of a 'story of inexorable brutality which the symphony tells.'⁴ and concludes that the 'work must be related to its period. . . . for its organization and orchestration combine efficiency and brutality to a frightening degree.' These approaches have been further explored by, among others, Michael Kennedy and Wilfrid Mellers, and it is Kennedy, perhaps agreeing with Simona Pakenham, who argues that it is not a tragic work and that it possesses humour in addition to its undeniable anger, violence, and dissonance.⁵ Pakenham recalled a performance by Boult with the composer in the audience; at the conclusion Boult's face was suffused with 'joy' and he exchanged a 'look of delight, complicity and, almost, schoolboy satisfaction' with the composer.⁶

Even with this other perspective, which perhaps counters the prevailing interpretation, there is broad agreement that the work is one of strong expression, even if it doesn't tell a story or have contemporary events explicitly in mind. In any case, to some extent reception history has overtaken the composer, for it is indeed hard to listen to this troubled music – or hard for me – without associations with storm troopers, burning synagogues, industrial unrest, and so on springing involuntarily to mind. Furthermore, just two years after the premiere conducted by Boult and the BBC Symphony Orchestra, the composer took the work to Abbey Road Studio No. 1 to make his only commercial recording of any of his symphonies. The result was a biting, incisive, disturbing recording that is generally faster than any since. It is hard not to hear in this set of 78s the influence of the dreadful spirit of the age. Taken together with the symphony's violence and restlessness, the sounds and gestures of this famous

¹ Kennedy, 247.

² 29.

³ 74–5.

⁴ *The Monthly Musical Record* (June 1947), 119.

⁵ 265.

⁶ 103.

recording add a second layer to its association with the period, further removing it from the composer's stated detachment.

Its powerful affective character and the existence of one of the true classics of the pre-war HMV catalogue make the symphony ideal for this study. Let us therefore turn to the transfers that have so far been presented to the public.

In the LP period just one transfer was made, in around 1969–70. It appeared on World Record Club and much later on the EMI label, albeit altered in tonal character. In the CD era we have so far been granted at least four transfers, which have appeared on Koch (1990), Dutton (1995), Avid (1998), and Pearl (1999). [SLIDE 4] A fifth will appear on Naxos soon. The LP transfer, by Anthony Griffith, used a razor blade, an analogue equaliser, a reel-to-reel tape recorder, and I assume no form of analogue noise suppression other than some fairly steep filtering at the edge of the musical signal. The *Gramophone* reviewer of 1970 was impressed; he wrote, 'The recording sounds extraordinarily good. Some things may seem fiddled (e.g. very forward woodwind at times) but it is full and still has plenty of quality.' This quality is perhaps partly explained by the source, which may have been a set of vinyls taken from the metal masters, though these masters no longer exist at EMI and may have been lost before the LP was undertaken, so I can't be sure. The sonic evidence suggests very good source material. From knowledge of EMI's extraordinary archiving practice of the time it is possible that the masters were destroyed once the LP transfer had been effected. Unlike other LP transfers from this source, which were of high quality, this one suffers from what sounds like dynamic filtering, which results in greater broadband noise levels in louder passages than quiet ones: one can see this quite clearly in the spectral view of the wave form. [SLIDE 5]

In comparing the Koch CD transfer with the LP in the 1994 edition of the long-running *Penguin Guide to Compact Discs* the authors opined that the Koch 'transfer is less full-bodied than the LP version . . . (the upper strings are lacking in timbre)'. The *Gramophone* reviewer in April 1991 had been no happier:

In 1970 World Records issued an Anthony Griffith LP transfer of the Fourth Symphony (6/70—nla), which reproduced pretty well the blunt unvarnished but full-bodied sound of the original 78s. This transfer was used for a fairly recent LP reissue on EMI (2/88—nla), but there the sound was rather smoothed out, so that body and impact were reduced. The new Koch International transfer, alas, is no better. Both ends of the sound spectrum have been compressed, and the performance again loses some of its weight and strength.

Whether one agrees with their qualified enthusiasm for the Koch release or not, it cannot be denied that the LP has a full-bodied sound that makes a strong impact even when stood alongside the other CD releases we now have for comparison. First the LP and then Koch: [SLIDE 6] The Koch release was presumably almost as analogue in technique as the LP. Analogue tape and equalisation without CEDAR for declipping were, I presume, behind this release. Comparing it with Mark Obert-Thorn's latest transfer for Naxos, it is clear that heavier filtering was needed to dampen the shellac noise, and there is a roughness to the treble that one doesn't hear in the Naxos version. Nevertheless, the analogue chain in this transfer is significant and links it with the LP version, a point I shall return to later.

Next comes Dutton's transfer (1995), which is markedly different. [SLIDE 7] Digital processing from CEDAR has been liberally applied, to the extent that the scratch and much of the broadband noise have been magically washed away. Some artificial reverberation has been provided, as one can hear if one puts a wholly unprocessed version beside his. (The first extract you hear is by me and went in a straight line from the record player to the computer without equalisation, CEDAR, and any other process other than conversion to digital form.) [SLIDE 8] Also notable in this transfer is a heavy reduction in the frequencies between around 3 and 4 kHz; I estimate that at least 12 dB has been trimmed from these frequencies. It has been suggested that this was due to a flaw in the playback system used. It might also have been due to a desire to ameliorate the old-sounding aspect of this recording and make it sound smoother, more modern in character. Here is Dutton as released followed by Dutton with some of this frequency cut reversed. [SLIDE 9] Finally, in this transfer left and right channels are slightly different, suggesting some form of spatial enhancement.

Like Dutton, Avid attempts to belie the age of the recording. The label makes no secret of its aspirations. [SLIDE 10] On the cover the stereo recreation and considerable intervention in the sound are trumpeted: 'Audiophile Quality Remastering' and 'In the Clarity of 3-Dimensional Sound'. [SLIDE 11] The authors in their notes acknowledge that processing is not to everybody's taste but do not disapprove of it themselves: their 'aim is to produce as natural and pure a sound character that lacks harshness and possesses a smooth response that falls gratefully on the ear, being comfortable and clear.' They also aim for spatial enhancement and absolute fidelity to instrumental timbres. No two recordings are treated in the same way. The transfer reflects these aspirations, but as with Dutton the remaining background noise varies in intensity and the quieter passages, where the noise reduction has had to cut most deeply, have a quality that I often characterise as 'underwater'; a recent correspondent with me used the words 'a distinct hint of ice-cream van tones' in discussing a release by the Halle label devoted to Harty's Bruch and Mendelssohn. Even with its processing the Avid transfer has a big, impressive tone at the start, but has less sureness of touch in later, quieter passages.

Next comes the Pearl issue, which reflects a less-interventionist philosophy than Dutton or Avid, but more than the Koch and forthcoming Naxos release. [SLIDE 12] It has the most generous bass of all the transfers, which suggests to me that the recommended setting for Blumlein recordings, which is notional anyway, was not followed. CEDAR or another process has removed the scratch almost completely, but as in the Naxos issue, no attempt is made to remove all the broadband noise; it is only attenuated by equalisation. It seems that some reverberation has been added to compensate for the rather lack-lustre acoustic of Abbey Road at this time. Here is a transfer with the recommended turnover curve. [SLIDE 13]

The Naxos transfer illustrates what I take to be a relatively purist approach to the process. I can detect no added reverberation; a fairly generous filter or equalisation has been applied to remove much of the broadband noise between around 8 and 10 kHz, but I can hear no evidence of digital hiss reduction. Compared with the Pearl transfer, sudden dynamic changes seem to have marginally less of a kick (I wonder if this is due to different amplification). [SLIDE 14]

For the experimental stage in this investigation I chose the published transfers and left Naxos to one side, because these five offer interesting contrasts of approach and sound. I now needed to ascertain how the listener might respond to the differences in the transfers. I might have been content with simply asserting my own responses, backed up to some extent by the reams of literature describing the 'prediction of musical affect using acoustic structural cues', to paraphrase an article title in the 2005 *Journal of New Music Research*. As a musicologist and analyst I have often felt dissatisfied with much of the published work from the scientific community, but rather than present you with assertions that you might instantly doubt or refute, I sought just such experimental evidence. While the angels may be seen fleeing in all directions, with elephantine tread I decided to use a first-year undergraduate group as my 'subjects' and, unhappy with the simply binary oppositions so often used in this type of research, I created a simple, and indeed rather arbitrary, circle of *affect-nouns*, rather than adjectives, which owes something to Kate Hevner and the plenitude of work done in this field since. [SLIDE 15] As you see, some of these words quantify Valence (joy), some quantify Activity (menace), others quantify Interest (nothing). With hindsight I can see many flaws in offering so many states, some of which may be too literary to get the relatively instinctual response sought, but there is a steep learning curve here and I'm not sure that I could have answered my questions at this stage in any other way.

The main question was: what do you feel or what do you think the music feels in these three extracts from six recordings? Students were asked to circle the most suitable word and assess the intensity of the experience on a scale of 1 to 5, with 5 the strongest. I told these possessors of very innocent ears nothing about the piece or about the nature of what they were hearing. [SLIDE 16] None of them knew the symphony and few, I suspect, had ever heard a historical recording before. In order the six recordings played were Avid, Dutton, Koch, the WRC LP, Mitropoulos, and Pearl. I put in the 1956 Mitropoulos mono recording as a sort of wild card, a test of how they were responding. [SLIDE 17] Before playing these extracts I summoned my postgraduates and explained the test in order to decide how best to play the material: should we play all versions of extract 1 followed by extract 2, and so on? In the end it was clear that by going through the extracts 1 to 3 from one performance before moving on to the next, the ear would have a chance to recover and be refreshed for the recurrence of each extract. This is how the first transfer, Avid, was presented to the two undergraduate groups. [SLIDE 18]

Following the test some of the students, who were asked for their feedback, said that they found it more difficult to respond as the test, which comprised ten minutes of music in total, progressed. By the time they came to the Pearl extracts, the last ones, they were most uncertain as to what to write. I wonder if in the future it would be worth flushing the ear by playing something completely different or giving them some other stimulus so that there is greater freshness when they hear the next recording. Whatever one does, there is bound to be a built-in problem with sequence, for one is certain, I think, to respond differently to transfer 2 in the light of transfer 1, and so on.

So to the results, which were interesting, if not revelatory. I had a plot that I hoped the students might confirm. I felt, for example, that the Pearl issue with its very strong bass and decisive dynamics might produce high-intensity scores and perhaps some

unanimity in the choice of affect-noun; I thought the Dutton, with its elimination of some of the features that make the recording sound old and therefore part of a murky past, might have led them to more positive descriptions; I wondered if the Mitropoulos, which has less intensity in its presentation of the affective character of the work than Vaughan Williams, might have led to a broad scattering of affect-nouns and perhaps weaker affect intensities; I thought the Koch, with its rougher, less full-bodied sound might not produce a distinctive set of reactions. There was also the possibility that students might not make any allowance for sound quality and simply make an abstract decision on affect in each extract and stick to it through all six versions, albeit with intensity differences.

These, at least, were some of the thoughts accompanying my experiment. Given that I gave the students *carte blanche* to use the same or different words, I had left the outcome as open as I possibly could.

So far as the students' choice of affect-nouns goes, there was greater unanimity in their response to the opening of the first movement than to the two quiet extracts. They were clearly undecided as to what to make of the other two extracts, so for the second movement we get responses as diverse as 'devastation', 'confusion', 'loss', 'intimacy', 'hope', and many more. Rereading the literature on the symphony I am less surprised by this now: once again Long is eloquent when he writes that 'in the *andante* the first theme suggests calm, and it is the clashing tonality of the single line of accompaniment, which gives it its restlessness', so he confirms an ambivalence of affect.⁷ In contrast the opening of the first movement produces a large number who heard 'menace', 'panic', and similar states.

There is without doubt a certain randomness in these results, but I also believe there is enough here to suggest a line of research into transfer techniques and the way they affect our perception of performances. In one clear aspect of the results, they demonstrate that a group of disinterested students tended to hear the same performance in different transfers differently: they freely and frequently placed different affect-nouns against their experience of the identical passage. My three tables show this: in the right column I show how many affects each subject heard in the same passage (these range from 2 to 5 in extract 1, and 2 to 6 in extracts 2 and 3). This is strong evidence for the view that different transfers present the same performance in quite a different light. [SLIDES 19-21]

Finding a pattern through the data in the hope that certain aspects of a transfer may yield some degree of predictability in the affective response is problematic. If, very crudely, we measure response strength by taking the two top-scoring affect-nouns in each extract (not intensity at this point, just choice of word) then the highest score is Avid with 10, followed by the LP with 9, and joint third are Pearl and Dutton with 8. Significantly, Mitropoulos is bottom with only 5, which confirms my view that the performance has a more abstract character than the composer's. As I suggested in my review of the transfers, the Avid has an impressively bright sound at the opening, so perhaps we may make a correlation between sound quality and student response here.

⁷ 121.

The intensity figures were averaged out for each extract to discover which yielded the strongest response, regardless of affect-noun choice. Here the results were fascinating. The highest scorer was the LP with 3.4/5, followed by Koch with 3.2/5 – the two with the strongest analogue component. A colleague had just told me that he played a group of sophisters, blind, a digital recording on CD through CD to active speakers followed by the same CD through the recording circuitry of a Revox reel-to-reel tape deck. He asked them which sound they preferred: the unanimous response was the 'filtered' sound of the Revox. Whether this very common response sheds any light on the fact that the LP and Koch produced, in a sense, the strongest response I find it hard to say, but it was a surprising result. I should add that the recording that came third was Mitropoulos. The 5th and 6th were the two transfers that had been made to sound more modern or more 'digital', namely Avid and Dutton.

I am still reading the results and still thinking about how the methodology should be refined in order to enable us to predict the effect of different approaches to transfers. I have copied the full findings for you to browse through if you wish. When I return to this I will reassess the affect-nouns used (should I use affect-adjectives instead, should there be fewer of them, etc.???) and what material is presented and how. So far as I can tell at present, the student group has not given me data that would help us to predict responses, beyond the general conclusion I have outlined above, which on this occasion favoured the least digitally enhanced transfers.

Thank you.