



Pitches Treated as Noise

Interview with
Robin Hayward

Arie Altena

Tuba player and composer Robin Hayward has redefined the tuba's potential in the areas of noise and microtonality, and has developed a fully microtonal tuba in co-operation with the firm B&S. His compositions for other instruments reflect an experimental, medium-specific approach as that taken towards the tuba. Composers such as Alvin Lucier and Christian Wolff have written compositions for him and his approach to the tuba has been documented on the solo CDs *Valve Division* (2006) and *States of Rushing* (2009), along with various collaborative releases. He is active in many contemporary music ensembles including Phosphor and Kammerensemble Neue Musik Berlin. In 2005 he founded Zinc & Copper Works for continued research into brass instruments. This interview focused specifically on his tuba playing and tuba research, and was conducted by e-mail in early January 2012.

Arie Altena What initially inspired you to play (and develop) a microtonal tuba?

Robin Hayward In the years preceding the development of the microtonal tuba, I had been focusing almost exclusively on noise production when playing the tuba. Pitches were not banned but when they occurred I treated them in the same way as I did noise: the focus was on the intrinsic quality of the sound itself and not on relationships between sounds. By 2002 my focus had shifted to include relationships between sounds and it therefore made sense to concentrate on pitch, because of the precision with which relationships between pitches may be classified. Apart from this, my work with noise was beginning to feel less fresh than it had in the late 1990s and it felt like it was time for something else. By concentrating on pitch it seemed it might be possible to return to noise from a fresh perspective, just as focusing on noise had made it possible to decontextualise the traditional tuba sound and approach it from a different perspective through working with microtonality.

AA You have spent a lot of time researching the tuba as an instrument in all its aspects, yet I was wondering first of all how you became a

tuba player, and what are the characteristics of this instrument that most fascinate you.

RH I originally wanted to play the trumpet. The local school was forming a brass band, and as I was one of the larger children I was initially put on baritone horn and moved to tuba a year later. I liked the deep sounds and soft quality of the tone. I remember thinking that as the instrument was relatively unexplored, it would be open for exploration later, after I'd learnt to play it conventionally. Actually, I think conventional music education rather dulled this early desire for exploration, and it wasn't until my second year at music college, nine years later, that it re-emerged. It was at this point that it was becoming clear that I could play the tuba and go down the normal classical route, but I realised that it wasn't at all clear what I wanted to do with it artistically. It took quite a long time – nearly a decade in fact – before I discovered the technique of the rotating piston valve, which would open up the world of noise that preceded the development of the microtonal tuba. I'd actually had small glimpses of the rotating valve technique and the microtonal tuba when I was still at music college, but perhaps the environment was not conducive to me being able to appreciate their significance or develop them.

AA In your most recent pieces you combine the tuba with live electronics and a seven-channel sound system. What are you trying to achieve sound-wise in compositions like *Plateau Square* and *Tetrahedron*?

RH Both pieces use the sound systems to project harmonic space onto physical space. A common way of visually representing harmonic relationships is by means of a three-dimensional diagram in which intervals based on the prime number 3 are aligned horizontally, those based on the prime number 5 are aligned vertically, and those based on the prime number 7 are aligned diagonally. The space between prime numbers 3 and 7, lying between the horizontal and diagonal axes, is therefore depicted as an ascending series of plateaus, and it is the harmonic space implicit in one of these plateaus that is explored in *Plateau*

Square, with each of the four speakers of the quadrasonic sound system representing a corner of the plateau. The tuba pitches are routed to the corresponding speaker(s) by means of sensors attached to the valves, which enable the signal to be routed differently according to which valve combination is being depressed.

In the piece *Tetrahedron*, written for the tetrahedron-shaped space at the Logos Foundation in Ghent, prime numbers 3, 5 and 7 are used to represent the three-dimensional tetrahedron within the diagram of harmonic space. This in turn is projected back onto the physical performance space by placing a speaker at each of the three ascending surfaces and four corners of the tetrahedron. Having established the essentially static relationship between harmony and space for each piece, the compositions then focus on moving through this space over time (20 minutes in the case of *Plateau Square*, 40 minutes in the case of *Tetrahedron*).

AA Your composition *Nouveau Saxhorn Nouveau Basse* from 2010 also relates to the history of instrument design, as it refers to Adolphe Sax's invention of the saxhorn. What fascinates you about this history? What happens in the piece?

RH Adolphe Sax introduced the Saxhorn Nouveau Basse in 1852 after having developed his 'family' of saxhorns in the mid- to late 1830s. The instrument arose from an attempt to solve tuning problems caused by valve combinations on his earlier saxhorns, which were very similar in conception to the tuba. On instruments using valve combinations, each valve lowers the pitch by less when used in combination with other valves than it does when used in isolation, meaning that the more valves that are combined with each other the sharper the tuning becomes. The solution offered by the Saxhorn Nouveau Basse was a system of ascending valves in which each valve cut off an increasing amount of the overall length of tubing. As they could only be used in isolation, each individual valve could be tuned precisely to tempered tuning and the sharpness caused by valve combinations would no longer be an issue. The instruments were a failure, partly

because the tubing had to be fed through each of the six valves twice before reaching the bell, which led to a dull tone, and partly because of the additional effort it required of the players who had to learn a radically new system.

In the composition *Nouveau Saxhorn Nouveau Basse* the concept of using only individual valves is applied to the recently developed fully microtonal tuba. Because of the microtonal tuning this now leads to an undertone row of fundamental tones based on the prime numbers 3, 5, 11, 13 and 17. The structure of Sax's instrument is then projected onto the performance space, in that the six loudspeakers distributed around the audience assume the role of the valves of the Saxhorn Nouveau Basse, and a seventh speaker placed backstage acts as a metaphor for its bell. The tones played using each of the individual valves of the microtonal tuba are first passed from speaker to speaker to speaker and then sent to the seventh speaker, following the same route as they would within the air column of the Saxhorn Nouveau Basse. As the tones move between speakers a small amount of the signal is recorded live and mixed back into the electronic signal, a reference to the sound being altered in Sax's instrument as a result of passing through so many valves that makes a feature out of one of the aspects that had led to the failure of the original instrument. So the piece arises from a sort of dialogue between the two instruments, both invented to solve tuning problems, in which the microtonal tuba could be seen as singing an elegy to the earlier invention.

The undertone row of fundamental tones in *Nouveau Saxhorn Nouveau Basse* omits the prime number 7, which is the reason that *Plateau Square* focuses on septimal intervals. As *Plateau Square* was originally conceived as a prelude to *Nouveau Saxhorn Nouveau Basse*, it seemed appropriate that it should focus on harmonic relationships omitted from the longer piece.

AA You work a lot with the space of sound, and with the space where you perform. I have the impression that the way you are dealing with space is very close to Luigi Nono's ideas about spatialisation, and is much less concerned with the spatialisation of

sound as it is used in commercial cinema, or the acousmatic music that comes out of the GRM tradition.

^{RH} Having played Nono's *Post-Prae-Ludium per Donau* fairly frequently I have more first-hand experience of his use of space than that of the other traditions you mention. I love playing this piece but I wouldn't say that the pieces I've composed until now for tuba and live electronics are directly inspired by it, not consciously at any rate. The three compositions you asked about all have to do with spatial projection – of harmony in the case of *Plateau Square* and *Tetrahedron*, and of instrumental structure in the case of *Nouveau Saxhorn Nouveau Basse* – onto the physical performance area. The direction of the sound moves according to which aspect of the projection is being brought into focus at any given moment. This strikes me as being quite different from Nono's use of space, in which sound is moved through the performance space within certain passages of the compositions and acoustic spaces are evoked, for example, through the use of reverb. It may well be that his influence will be more pronounced in my future work with the microtonal tuba and live electronics. And one thing I have strived for in the pieces I have composed so far is the close integration between the acoustic instrument and the live electronics, which is a feature of the late Nono compositions that I have enormous admiration for.

^{AA} Can you explain why issues of consonance and just intonation are so important? Is your research into this also taking music in a new direction – compared to more traditional Western classical music?

^{RH} Arnold Schönberg's 12-tone method tacitly assumes equal temperament – it is after all the equally tempered chromatic scale that supplies the 12 tones upon which the system is based. This was due in part to the dominance of the piano at the time Schönberg was composing, and also to the fact that performance practice at the time regarded most other Western instruments as being limited to playing the 12 chromatic pitches without much concern for what lies between them. I'm not ideological about just intonation – I think different tuning

systems are suited to different tasks – but it's important to remember that equal temperament became dominant because of the pre-eminence of the piano. It is a compromise brought about by the fact that there are only 12 notes available per octave on a standard keyboard instrument. One of the advantages of being a composer and performer is that I am less dependent on current standard practice. Limiting tuba tuning to the 12 pitches of the piano is actually profoundly unidiomatic to the instrument, as valve combinations work directly against it. What valve combinations do is add successive lengths of tubing to the instrument, leading to the formation of undertone rows, and therefore to microtonal tuning in just intonation. It is precisely this phenomenon of increasing sharpness with reference to tempered tuning that Adolphe Sax aimed to correct' in his *Saxhorn Nouveau Basse*, but it is only a problem to be corrected if tempered tuning is taken as the reference. If, instead, tuba tuning is taken on its own terms, it leads automatically to microtonal tuning, although as the instrument I developed in 2009 is fully microtonal, it can also play equal tempered notes if this is what is required.

It was actually the beauty of the concept of both the undertone and overtone tuning being latent within the instrument that inspired me to explore microtonality on the tuba in depth, as much as the resulting possibility of playing truly consonant intervals. Almost all of my microtonal compositions to date have been based on the simultaneous exploration of undertone and overtone structures.

As to whether this is taking music in a different direction – music is going in all sorts of different directions at once in the current era, and the hardest thing in all of this is to carve some sort of path through the chaos. The revival of interest in microtonality and just intonation may be relatively recent in Europe, but it has quite a long tradition in America, largely due to the influence of Harry Partch. I don't see simply working in just intonation as being anything particularly new. In terms of the history of brass music the microtonal tuba might well have some long-term impact, but this will really depend on how many players latch onto the idea. I don't think there's going to be any shortage of composers who

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Roberto Fabbri & Robin Hayward.



Robin Hayward.



Robin Hayward playing the microtonal tuba, Berlin, 2011.



Robin Hayward playing English 'noise' tuba.

rather like I was fitting into an established way of playing. It may have been partly because I was considerably younger than most of the other players. When I listened to recordings of first-generation improvisers from the early 1970s I couldn't help thinking that much of what I was hearing live was still being produced within a similar paradigm. Whilst there is nothing necessarily wrong with this, it wasn't a paradigm that I felt very at home in, quite apart from the question of how well the tuba fits in to the instantaneous interactive playing that lies at the heart of so much of John Stevens's school of 'Search and Reflect' – the title of his music workshop handbook. In fact, John Stevens, the drummer in the Spontaneous Music Ensemble, was one of the reasons why I moved to London, but he died within weeks of my arriving. I never got to meet him, which is something I've always regretted. Over the course of my three-and-a-half years there I found myself playing less and less when I improvised and when I finally played with trombonist Radu Malfatti in 1997 it confirmed much of what I had been feeling. I moved to Berlin the following year, where I found a small group of people open to pursuing similar interests, and it was the style of music that arose from this that came to be labelled as Berlin Reductionism. I've never been comfortable being described as a Reductionist though, and found this whole approach to improvisation much more exciting before it became tagged with this label.

^{AA} At what stage do you think this scene is at now? It seems that both you and others are exploring other areas now – for instance drone-like microtonal approaches, going into contemporary composed music, performing Wandelweiser compositions. Is this as an outcome of the Reductionist scene, or not?

^{RH} What happened in the late 1990s opened up a space that is now being filled in a variety of different ways, so in this sense this could be seen as an outcome, as the space may not have been there to be filled without the previous phase. There are so many people doing so many different things now that I'm not really sure if it still deserves to be described as a scene.

^{AA} How do you regard the use of long silences in the compositions of Wandelweiser composers like Antoine Beuger as a way to sharpen the ears for 'all the sounds', or rather as a way to intensify a certain feeling for the passing of time? Or is it about what happens at the borders of perception?

^{RH} I'm afraid I'm not that up to date with the latest developments in the Wandelweiser group, and anyway I have the impression that there's considerable diversity among the Wandelweiser composers. But based on my earlier contact with the music, which mainly came about through the concert series at the Zionskirche in Berlin that Carlo Inderhees organised from 1997 to 2000, it seemed that silence was used partly as a way to structure time, and partly as an invitation to meditation, taking very literally Cage's aesthetic of music's purpose being to sober and quiet the mind. As far as the role of silence in structuring time is concerned, I came to the conclusion that the aesthetic might work rather better in visual art than in music, as the eye is capable of perceiving large empty spaces, even a series of empty spaces, at a glance, whereas the ear is necessarily dependent on the passage of time, which implies spending a lot of time waiting. Perhaps this was the point – defeating feelings of impatience and concentrating only on the present – but this then seemed to be closer to meditation than to music. But I was very impressed the last time I heard Radu Malfatti play, in the summer of 2011, and it was clear he was moving in fresh direction, so the impressions I have of Wandelweiser may be rather out of date.

^{AA} What happens in *Coda Variations* by Alvin Lucier, which you recorded?

^{RH} The piece is based on the last eight tuba tones of Morton Feldman's *Durations 3*, which was composed in 1961 for violin, piano and tuba. In 2005 I showed Alvin Lucier a tuning chart for the standard German F tuba, which, though it had not yet been modified for microtonal tuning, still had considerable microtonal possibilities. Alvin then asked me to send him all the possible microtonal tunings of the last eight tuba pitches in

will be interested in writing for it once the players are around. But such considerations can actually be distracting – I'm far more interested in concentrating on what I'm doing now than considering how it may be seen at some point in the future.

^{AA} Much of the playing techniques that you develop 'traditionally' fall in the realm of extended technique – which was quite fruitful in the second half of the twentieth century. In the beginning it was about pushing the boundaries of music, whereas now all these sounds have become part of the realm of music and can be treated as elements to be used. The sounds of extended techniques do not sound 'weird' or out of place any more – in the sense that multiphonics on a saxophone in the 1960s were perceived as strange. Do you have the feeling you are pushing boundaries, or rather working with available musical elements when you work with the noise sounds on the tuba and the rotating valve technique.

^{RH} I actually dislike the term 'extended technique' as it implies a 'central' technique to which things are then added, though I can see how it may have arisen within the context of classical music in the 1960s. My explorations of the tuba have much more to do with finding out what's implicit within the medium. The rotating valve technique and the microtonal tuba provide alternative answers to the question of what a tuba is, and once those answers have presented themselves, it's almost just a question of getting out of the way and letting the instrument speak for itself. Different conceptions lead to different materials and therefore different music. Some might even require different instruments, which is why I use the English tuba for the rotating valve technique and have adapted a German tuba for microtonality. Attempting to imitate the noises of the English tuba on the German tuba or trying to force the English tuba to become microtonal would be pushing each medium to be something it isn't. Though noise production is possible on the microtonal tuba, it is a very different kind of noise than that which is latent within the English tuba. So, maybe 'intrinsic' rather

than 'extended' technique would be a better description. As for pushing boundaries, well yes, in the sense that neither technique was around before, I am pushing boundaries. But I'm not into pushing boundaries merely for the sake of it. I was profoundly dissatisfied with playing the tuba in a conventional fashion, and at the time it was a question of either finding approaches I was happy with or giving it up. If I had been comfortable in the role of classical tuba player I probably wouldn't have noticed any boundaries that needed pushing.

^{AA} You founded Zinc & Copper Works and conduct research into brass instruments. How is this connected with your artistic and musical approaches?

^{RH} Zinc & Copper Works is a brass ensemble of flexible instrumentation that includes a microtonal horn and tuba, and consists of players who are actively researching the resources of their instruments. The main research of Zinc & Copper Works is finding out what is possible within the medium of brass chamber music in the twenty-first century. It is research by doing – perhaps exploration would better apply to the ensemble than research in the strict sense of the word. The doctoral research I am currently doing into the acoustics of the microtonal tuba might well later extend to acoustic research into other brass instruments too, but for the next few years at least I've got my work cut out researching the tuba acoustics.

^{AA} You were closely involved with the Reductionist type of improvisation when it started evolving in the 1990s. Where did the 'desire' to use long silences and extremely low volume come from?

^{RH} I remember that when I started improvising in the early 1990s I questioned why it should be a virtue for an improvisation to contain lots of energy. Containing lots of energy need not necessarily be a bad thing, but I did not see why it should be a criterion for assessing the quality of the improvisation. When I moved to London in 1994 I found a very active and open improvised music scene, but it felt

Durations 3, and he then permuted the tones with microtonal variations to make a piece that lasts over 40 minutes.

^{AA} In the press release to your 2009 CD *States of Rushing*, Arnold Dreyblatt states that the sounds you make 'force us to sense the air pressure in contact with the physical world without framing the sounds in the conventions of contemporary or traditional music. In this sense, Hayward's approach is refreshing and revolutionary.' That's a pretty far-reaching statement. How important is the physical effect of the sounds you make?

^{RH} The pieces arose from my physical interaction with the instrument, and because they are acoustic there is direct contact with the outside space without the intermediary of electronics. It's an interesting question whether the listener's focus is directed towards the sounds themselves, or towards the physical processes that produced them (air pressure, for example). When I composed the pieces I tended to concentrate on the phenomenal nature of the sounds, but then of course I'm inextricably connected to how they are produced in a more directly embodied way than if I were using field recordings or electronically synthesised sounds, for instance. So, to attempt a direct answer – yes, the physical impact of the sounds is important, but it maybe arises from the way in which they are produced and therefore it's not something I consciously think about when I'm making them.

Actually your question about my use of space finally made me look up the word 'acousmatic' and it occurred to me that Schaeffer's definition of 'referring to a sound that one hears without seeing the causes behind it' could to a certain extent apply to my approach to the English tuba, as the horizontally positioned bell prevents the audience from being able to see how I'm making the sounds. I was quite amused to discover that the word has its origins in Pythagoras lecturing behind a screen, as this would connect much better to the microtonal than the noise tuba, although it was supposedly the noise of blacksmiths hammering that led Pythagoras to investigate tuning systems.

^{AA} A second question that arises from Arnold Dreyblatt's remark: does your music fall outside the 'frame of reference' of contemporary music?

^{RH} My background was originally in classical and contemporary music, but it's not that important for me that the music on *States of Rushing* is regarded as continuing this tradition. In terms of performance practice it's quite far removed from the model that is still fairly dominant within contemporary music, of the head (composer) telling the body (players) what to do. In that sense it does fall outside the main frame of reference of contemporary music. It's not that easy to frame it within the context of improvised music either, as some of the pieces – for example, *Release* – are fully composed.