Between Now and Then: The Auto-Interview of a Lapsed Musician

Ranulph Glanville

ABSTRACT

The author reflects on his experiences in the English experimental music scene of the 1960s and early 1970s, describing the limitations and possibilities he and his colleagues encountered and the results that followed from them. He also discusses the connections and discontinuities between this musical work and his current career in cybernetics. This discussion takes the form of a dialogue between his past self, the experimental composer, and his present identity as a researcher in cybernetics.

BACKGROUND

This piece arises across a distance (a chasm) of 30 years. It has been that long since Ranulph Glanville ceased active involvement in the making of music, although music has remained close to his heart. The aim is to explain what he did, why he stopped and how what he did is present today, sometimes in a different medium and sometimes (through and in performance) in the same medium.

Then, Ranulph Glanville left making music to work in the now often-dismissed field of cybernetics. Cybernetics, though not moribund, has become obscured. We will find that it now deals with many of the sorts of difficulties that he was dealing with in and through music—one reason for the move away from music, even if that was not at all clear at the time.

The distance of 30 years constitutes an absolute break. In the years since, the author has scarcely listened to what he did back then. Occasionally he thought of it and reminisced. On occasion he was surprised to hear how others were working with material, ideas and some of the difficulties he had approached years before. Recently, he got out one of his old reel-to-reel Revoxes, dug through tape boxes and found some of his pieces and played them. They were brave and they have character, and the author is glad to have met them at this stage in his life. Just that makes it worth writing this piece. At the distance of 30 years, it appears they are not without value.

The work referred to here was carried out, often with a wonderful group of colleagues, during the decade between roughly 1962 and 1972. There is some danger that this account might become a historical and nostalgic piece on the 1960s. Furthermore, although some records exist in the form of programs and such like, they are not complete. What is presented might easily be contradicted in particular detail. So this piece concentrates on what he tried to do, in the context of that time, but without extensive efforts at connection, or looking outward. There is also an attempt to connect some of the musical work into other areas, especially architecture and cybernetics, with reflections on how music provided an initial developmental test bed for later work. Much of what he conceived in the 1960s is to be found in general use nowadays.

Then, Ranulph Glanville was a musician and architecture student. Now, he is a cybernetician and teacher of design. This is a story of Then and Now, told in the form of an "interview" between the two. It is a saga of musical thinking extending outwards from the material of sound. There follows a short description of his work in cybernetics at the end of this piece.

AN EARLY BIOGRAPHICAL NOTE

Ranulph Glanville began writing music one school vacation in 1962, at the suggestion of his music master stepfather, Rodie Peters, who thought it might keep him quiet. Since the only technique Glanville then knew (although this knowledge was admittedly slim) was serialism, that's where he started. He had always wondered why music stopped with Wagner and discovered there had been lovely (and awful) music written in the twentieth century. He came rapidly to the foolish view commonly held at the time—*if it's not serial, it's not serious*—learning to ignore much of what he liked, choosing to listen only to what he approved of. It was strange and absurd that Messiaen was fully welcomed into the pantheon, while Stravinsky only just scraped in.

Through the Wardour Summer Schools [1] Glanville came into contact with many young musicians interested in what was called experimental music. As a new architecture student at London's Architectural Association School (AA), reaching the heights of its 1960s inventiveness and waywardness, he met other students interested in music—Dick Bunt and George Woolston, and later Camilla Bryant and Patricia Bull. Attending BBC concerts, he regularly met a group of musicians, eventually sharing a house with some of them. Amongst those attending these concerts were John Cassidy and John Pitchford. He started a concert series at the AA in the summer of 1965, where contemporary, experimental music was the major component. Several composers wrote pieces premiered at these concerts (or, more coyly, tried out before their official premieres), and there were talks by the likes of John Cage, Morton Feldman and Iannis Xenakis. Festivals such as the Edinburgh Festival gave an entree to continental composers and performers, including Messiaen and Boulez. Eventually, Glanville began performing at the AA series, especially pieces with improvisatory and theatrical aspects. His "group" was invited to perform elsewhere; he played with Cornelius Cardew and Peter Maxwell Davies's Fires of London; and his compositions for conventional instruments were

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Glanville's performance group (variously named, but eventually called Overcoat) was a semi-regular participant in happenings and events at a key central London experimental venue, the Electric Garden (an event center and arts lab in London's Covent Garden district). It is not entirely clear how he came to be involved in electronic music, or how that involvement spilled out into performance: Overcoat was one of the earliest groups using electronics in live performance and improvisation. At a time when electronic music was ascetic, expensive and tediously difficult to produce, usually needing the resources of a large company such as Philips, a broadcasting organization such as those in Tokyo or Cologne or even the BBC, or well-equipped university music departments such as at Illinois or Southern California, he put together his own impoverished studio and made tapes, some time before Robert Moog developed synthesizers.

The adventures recounted here happened against this background, and mostly involved work with electronic music and live electronic music in performance. Where appropriate, aspects of Glanville's instrumental music are also introduced, as are some of the issues and problems that faced those working in these fledgling media at the time.

INTERVIEW: BETWEEN NOW AND THEN

Now: How did you begin performing?

Then: I'm not entirely sure. I think it was as a result of the concerts I organized at the AA from May 1965. I felt it would be interesting to present an evening in which those of us interested performed. So we arranged a concert in which we performed a piece by John Pitchford and an arrangement I made for cello quartet of a spiky Vittoria motet; and Cornelius Cardew's *Octet '61*, which we played in a fairly novel way, mostly responding to that command in the piece to do something different: we kept trying to outdo each other. We took the unusual step of having one of our number, Dick Bunt, relayed from another room—where he couldn't hear the other performers, Pitchford and myself. In the end, the remarkable event (that "something different" in the score) came completely extraneously and as a total surprise to everyone. Bert Warren, the caretaker of the building, came in, asked us what we were doing and closed us down: this really was that something different—the uncontrollable making the event. Bert never knew what a great performance he gave.

Some consistent notions informed all our performances from the very beginnings: we wouldn't divide music from other activities; we'd consider doing anything that seemed worth doing. For instance, we performed the dadaist poem "L'Admiral cherche une maison à louer" and Beckett's "Frog's Chorus" from *Watt*; and Pat Bull created one of those feel-and-guess boxes, which made sounds; and we always had a new instrument to explore during performance. We were interested in performance that was dramatic, though I admit we assumed very straight-faced personae. Electronics were already present in that first concert, albeit only in relaying sound.

A key notion in our work was that anyone (including us) could make music (Do It Yourself—DIY—music). I eventually wrote a set of instructions for making your own music, *Modern Music Is a Paper Tiger* . . . [2] (naturally, Mozart beat me to this by 200 years). That was the ethos of the time: anyone could do more or less anything. We involved the audience in several of the pieces.

Now: So what did you actually do?

Then: Our performances gradually came to involve more active electronics, sometimes extending beyond our abilities. For instance, my piece *TWTKTW* (1967) for stereo tape (mixed from consonantal vocalizations) modulated by structured improvisation was never realized beyond a tape and score: in concert we played the tape, projecting the improvisation score via the latest audio-visual technology—the overhead projector, so that the audience could imagine their own improvisations.

We did things significantly ahead of their time at the Electric Garden, compressing whole evenings to 15 minutes of playback, for instance in a piece called *Confessional.* I think of music in a sculptural way, with many sound "views" of the "same" object. We overlaid various sound views of the evening in a quasi-cubist manner. We used pre-prepared material, tape recorders, mixers and modulators. We collected material from the happenings of the evening: microphones picked up both the ambient sound and the sounds that those we thrust the microphones at chose to give us. We sampled this material using tape loops: the first example I know of (sample) loops being used live to create music. Through overlaying and processing (mainly by ring modulation and delay/feedback) we mixed down and assembled something that was both a summary of the evening and a new piece. This was our compression. I consider this an early example of what has become known as sound design. Since I came from an architectural background it may not be surprising that I thought of music as a sculptural material, a sort of cubist layering in sound. Thinking of music in these terms gave rise to forms and a type of movement dynamic that were not necessarily discursive or argumentative, as was the Western tradition. I don't think I was alone in this: I once heard Harrison Birtwistle talk about his music in terms of musical sculpture around this time. I meant, and I think he meant, that a music could be constructed in which each part was, as it were, a (sound) view of the same object taken from different viewing points; and that it was possible to put together facets of these different views in different constructions that would reflect the totality of the (sound) object.

Later, around 1970 I think, I played LaMonte Young's *Studies in the Bowed Gong* with Cornelius Cardew. Through a misunderstanding, we played a piece of steel plate rather than a tamtam. Marian Zazeela reported that she remembered Cardew visiting the flat she and Young shared in New York, in the late 1960s, where they bowed the gong together, so I'm surprised we got the instrument wrong. I played several other of Cardew's pieces with the composer, including *Treatise* and *School Time Compositions.* In a different manner (and at more conventional venues) I played with Peter Maxwell Davies (who also gave my compositions constructive criticisms: I'm not sure he'd call them lessons) and the Pierrot Players/Fires of London. I was very lucky.

As a performing group, Overcoat was often involved in a type of democratization. It's strange that we used electronics, the most exact and controlled medium then known, in a contradictory manner—to gain freedom. We tried to facilitate non-musicians taking part in (avant-garde) music making. Acceptance of what had not traditionally been musical instruments and sounds made this a realistic aspiration. We were interested in bringing people into performance and, therefore, I was interested in making structures to support the in-

sertion of whatever acoustic content people might like. (Probably this was the nearest I came to an aspect of modern music I have never understood: the folk music connection.) I held that if you place a clear structure over almost any mess, you will find form and structure in that mess.

Now: How could you notate for this?

Then: It was a problem. We did involve sounds that it was impossible to notate. How do you write sounds not pitched on a pre-defined scale? How do you deal with durations not connected by simple ratios? How do you represent timbre when there's no regular instrument? (I hear harmony mainly as timbre.) The question was familiar and there were several solutions. Writing for instruments, I mainly used conventional notation. To sketch a tape I used words, conventional notation, graphics, all sorts of devices that made sense to me in capturing the spirit of what I was aiming for. But writing for others, using electronics and so on, I wrote procedurally. There was no way to notate the sounds: rather, I notated how to produce sounds (the making of the sound, not the sound itself—but somewhat as scoring an instrument notates the production of timbre).

Now: Thus, notating the process of production rather than the sound produced. Cyberneticians also moved to consider the production of systems rather than the systems themselves, i.e. the process. Did you organize the sounds you were making through this notation?

Then: Yes. That provided a solution. Instead of trying to organize the sounds ("Music is organized sound," as I think Varèse said), organizing the framework for the production of sounds gave individuals a DIY independence in making their own sounds while allowing some sort of less than purely arbitrary selection. I would notate, for instance, changes in sound production character (actions such as converge/diverge, fix/wobble), as well as how to select. In one piece (with an impossibly long name made of arbitrary numbers filling the whole of the cover page that I won't waste space repeating here), I constructed an overlay to be placed over the pages on which were notated numbers in squares (the selection of which pages in what order was up to the performers). These numbers indicated value along scales (of pitch, of position in room, of duration, of timbre, of instrumental selection—and of transitions). Thus, the notation, made of number patterns modified by overlays that showed transitions and paths (placed at the individual performer's whim), could be ordered so there was an underlying logic, which nevertheless gave enormous freedom to the performers. Looking at the score gives no aural impression: perhaps it's not really a score!

Now: And what problems did you face making music with electronics in the 1960s?

Then: One of the biggest difficulties was the cost of equipment. It may be hard to imagine nowadays, when reasonable resources cost so little, but then equipment was expensive, hard to obtain and very different. Nowadays we expect to use digital equipment, which has tremendous advantages: it's cheap, tidy, small and reliable; copying is effectively perfect and noiseless, and it's easy to work with and manipulate: just think of non-linear editing, which was virtually impossible before digital and hard-disc technology. In contrast, the analog equipment I used was clumsy, heavy and very expensive. It wasn't reliable. Copying reduced quality, and connecting equipment led to hums, crackles and so on. Making a tape loop was really tricky: it was awfully hard to avoid splicing clicks, etc.

So the business of trying to do anything at all was beset with difficulties. For me to try to do it privately—with the kit an architecture student could afford, beg or borrow—was daft. Electronic music was created in enormously expensive studios: the back room ethos that we worked with was not how things were supposed to be done! And, of course, these were pre-synthesizer days.

Now: When I look at the difference between digital and analog, I see a cybernetic principle at work: (digital) control is bought at the expense of the richness of (analog) variety. In an analog signal, each point on a wave can take any one of an infinitude of values, whereas a digital wave can only take a finite number. But digital can be copied perfectly. It's not that either is correct (we don't know which—analog or digital—the universe actually obeys, although, historically, the Western model has been analog), but there is that trade-off. Do you feel, using old analog technology, you lost out?

Then: At the time I didn't think in terms of a digital possibility. People like Herbert Brun, moving into the computer generation of music, may have. But for me it was a matter of adding and mixing sounds in analog form and processing them. The question of losing out could not exist when there was no alternative.

Actually, what was interesting, particularly about how I had to work, was precisely the limitations. The fact that I could only with great difficulty make sounds by sine-wave addition (the purist's electronic way of constructing sounds) meant I had to use other means. There was a crazy exclusion clause in operation—musique concrète and electronic music should not mix—which we ignored. The value of these new technologies was to enrich the range of usable sounds available for music making. I could not sustain the exclusion clause, no matter how much of a purist I might be: I simply did not have the resources. So I didn't. I was freed to access a wider range of sounds and enjoy the ready-made, which I otherwise might not have been willing to use.

But I did follow another form of purism: my version of what might now be thought of as musical political correctness was to listen only to music that was "correct." I distinguished music I approved of from music I liked. I only listened to music I approved of, so I listened to lots of complete rubbish—"correct music"—denying myself much that was wonderful.

Now: I faced a similar problem of restrictive practice, and I've only recently found a way round it. In cybernetics there's a Law of Requisite Variety, stating that a controlling system must have as many states as the system it should control. This can be difficult. Consider, for example, the total number of combined mental states of the students in a classroom compared to those of the teacher, and the consequent reduction of the students' freedom of action when the teacher controls what goes on. We can, however, consider this the other way round. If we (as the controlling system) accept that we are in an essentially unmanageable world (one with many more states than we have), we can see that we can access a multitude of possibilities we had not thought of. By turning the relationship around, we need not restrict; rather we may open our minds. The uncontrollable offers us unimagined riches.

Then: In other words, turn the construction around so that you're not trying to control the other, which, contrariwise, you can see as offering richnesses. Actually, that's how I worked with my limited equipment, seeing the restriction as an advantage giving me sounds I would not have conceived myself.

But it can also be helpful to apply some sort of restriction or structure. You talk of control, which seems important to me. Even the act of giving up control, à la John Cage, is a type of control. If one of the problems of the time was whether to do electronic or concrète music, another concerned how to do whichever of them one chose.

Adapting David Tudor from one of Cage's stories: If you can do literally anything, why bother at all? What do you choose, and how do you choose it, when you can do everything? This was an awesome question, and led to some terribly sterile music, because no one knew how to choose which of the infinitude of possibilities to pursue: there was no framework. Cage, for his own reasons, made choices using a variety of devices to choose on his behalf: star charts, random number tables and so on. Electronic composers tended to run through full ranges of mathematical permutations or be left foundering. That music was, it seems to me, lacking in imaginative content. For earlier composers, who had such a rich (and unquestioned) framework within which they worked, action was easier and generally more effective because these restrictions already existed.

Now: You saw the lack of limitations as a difficulty for composers. How did you deal with this?

Then: It was difficult, but pressed less on me since, as I've noted, I was severely restricted by the equipment I could access. I had to accept the limitations of my very simple, unsophisticated and unreliable kit. I used whatever sound sources I could access, rather than being able to create any sound I might have wanted. I remember, for instance, recording sessions of trains "singing" on rails—I always liked such ambiguously pitched sounds, like voices breaking and the instability of feedback. In practice, I simply could not generate just any sound. I used what I could get or make, tempered by what I liked (I wasn't entirely trapped in my "approved of" world).

Because the equipment was unreliable, I became opportunist, accepting imperfection as part of my material: it stopped being imperfection, became part of the piece. My interest in electronics in live performance, where I think we were among the pioneers, may have depended on accepting such imperfection—as well as on liking the sound of (for instance) ring modulation. I learnt to love the unexpected, the uncontrollable: serendipity. Apparently, practicing this most precise and controlled form of music, I could not attempt the precise or the controlled: accident coupled to opportunism became a creative tool, device, even strategy.

I'll list my equipment. I had a sine/square-wave generator, a pulse generator, an unpredictable sound box and two ring modulators (home-made from transformers and a rectifying bridge); Truvox, Grundig and Ferrograph tape recorders (I eventually bought a couple of Revoxes)—some were 2 track, others 4, and we would occasionally use this difference in the number of tracks as a mixer: resulting in 4 tracks being read as 2. We had microphones (including some extraordinarily poor-quality contact mics) and very cheap mixers. We used Leak and Quad amplifiers and very good Tannoy loudspeakers. This mixed batch was wired together with a jungle of leads that were always breaking down, creating earth loops and crackles. Occasionally, we could borrow extra bits of kit.

Now: You said this lack of sophisticated and reliable equipment gave you freedom and opportunity. Can you give an instance?

Then: I was commissioned to provide background sound for a Futurist exhibition at the AA. I could find no material to use: scores of Brutist (Futurist) music, which few had even heard of, existed (if at all) in archives and museums. I could find no recordings. Brutist music was reported to have glorified noise, especially industrial noise, so I made something based on strident industrial sounds. This was to be played at the inaugural ball of the new AA President in 1968. I piped the piece around the building using 20 low-grade speaker-amplifiers, each with quite distinct frequency response profiles, wired so each speaker seemed almost to be playing a different track: limitations in the equipment created, in effect, a multi-track output from a stereo original. I had little control over which frequencies of the original material were broadcast from each speaker, but that was fine. Having only poor equipment gave me the opportunity to create 20 tracks, the freedom to work with multitrack broadcasting and also to discover unanticipated aspects within the piece.

The piece was intentionally "unpleasant." I reconnected speakers as fast as the acoustically assaulted unfortunates at the inauguration disconnected them, asking how they dared interfere with art. This was theatrical and dadaist (and infantile). I liked the drama that turned the playing of a tape into a "happening"—i.e. performance art. Overcoat did concerts, but they were also happenings. Having not slept for days producing the tape, I went home at 5 A.M. and slept for what I eventually discovered had been 38 hours. Waking at 7 I had the extra and unexpected experience of not knowing whether it was morning or evening. I will always remember the alienation and lostness I felt.

Now: Did these projects tie in with your instrumental, scored music?

Then: Conventional instrumental composition came first. I think I wrote my first piece in the spring of 1962. I'd begun trying to find out about the vanished music of the twentieth century (music since Wagner and Mahler seemed largely inaudible). I discovered Schoenberg, Berg and Webern, and the rudiments of serial composition. I invented my own rules, based on the basic manipulations of a tone row (inversion, retrograde, retrograde-inversion) and innocence. I learned to make rhythms and sounds that were less traditional, to enjoy working in a soundworld of my imagining. Electronics helped me extend that world. Part of that learning was finding Messiaen's rhythmic structures—the cells and added values—and his modes of limited transpositions, which I also saw as cellular. In using electronics in my music, I think this serialism/cellularism was important. Not that serialism/cellularism could often be applied literally or mechanically (think of the sterility of total serialism), but besides providing an organizing technique they also provided the insight that organization was necessary.

The last piece of music of any sort that I wrote until I very recently started fiddling around a little again, *Tune into Memories of You* (1972), was a round. It is made up of a long, circular tune, composed using those serial and cellular devices I have just mentioned. The performers are invited to choose one of several starting points and to play the accompaniment that they believe should

go with the tune. Thus, the tune is never heard, only the accompaniments, which may start from various points, thus using a variant of the "cubist" notion of overlay and multiple facets. I don't think this piece has ever been performed. You used it later as a cybernetic illustration in your 1975 Ph.D. thesis.

Now: So it was: it acts as a sort of bridge between us. However, before we go on to explore those similarities, I'd like to ask the really difficult question. You've explained the gamut of what you did. But was the music any good? What did it sound like?

Then: It's amazing how often—and how easily—we avoid that crucial question.

Certainly, my instrumental music sounds quite good and seems to me to have substance, although it's less blatantly experimental than my electronic music (assuming it makes sense to divide the music this way). The sounds are a mixture; rather lyrical and gentle, with extended pitch ranges and a certain thinness of sound occasionally turning sour; an ambiguity and lostness that I think I found in Messiaen, which I referred to in talking about the train sounds I recorded; and some very violent and aggressive interludes. I also carried out some formal experiments, writing pieces in which not only could parts be moved but, in at least one case (*The Spume of Prod* [1966], for clarinet and piano), there were alternative versions written for each section, so the musicians could, at any time, choose between different, alternative material. I think this took the musical notion of the "mobile" to a new extreme. Writing with alternates more or less has to mean using a block structure, and almost everything I wrote was in blocks. But I also wrote "simpler" stuff: Christmas carols for my family, small pieces for friends, and so on.

The electronic music I made myself was similar in range, though perhaps a bit more obsessive. I like this stuff: the sound is richer than in most electronic pieces from that time. Perhaps that explains why I so like Varèse and Stockhausen: they have made wonderfully rich sounds, exquisitely dissonant, full of both energy and a strange peace. The same is true of the performance music I made for Overcoat (such as the 1969 one-player opera *Memories of You).*

The CD (accompanying this issue) contains a short electronic piece, *Nona Meyeah Teay* (the name's a sort of anagram) composed and made in the spring of 1967 at the request of the Society for the Promotion of New Music, which shows what I mean. It is obsessive, in three clear sections that are, I guess, rather straightforwardly classical in form. It's a little difficult to exactly remember—or reconstruct—precisely how I made the sounds, after this amount of time. The first section is constructed from several loops (isorhythms, apparently first used by the thirteenth-century English composer John Dunstable, a fortuitous fact since my collaborator John Pitchford lived in Dunstable), played with the volume at different levels on the various repeats. It has a sort of syncopated upbeat and is very fragmented. The second is a slow movement, quieter and more lyrical. You can hear the trains I mentioned singing. There's a lot of environmental sound in this section, overlaid with the yodelling of feedback at that point where the sound breaks, like a boy's breaking voice. This is an example of those ambiguous, difficult, uncontrollable, transient sounds I am fascinated by, and want (paradoxically) to keep forever! The third section is a vast crescendo of one block of sound. It was meant to be white noise, but I couldn't get anything that was quite right, so I overlaid several loops of pink noise (i.e. noise from parts of the spectrum), which had the advantage of giving the sound form and rhythm. I would be interested to substitute white noise using new technology to see what difference it would make. I think the approximations I used actually produced a better result than what I had in mind (as is so often the case). The piece seems to me now to make sounds that one gets lost in: the first section is full of energy and one gets lost in that energy, as with more recent rock music or the *Rite of Spring;* the second is hypnotic and therefore loses the listener in reverie; and the third so unfamiliar and without form that you have no signposts, no familiarity, and are therefore lost, by definition.

It's always hard to write about things instead of experiencing them. I am glad it's possible to listen to this piece on the *LMJ* CD. This is far more informative about musical qualities than anything I might write here.

Now: It sounds surprisingly contemporary, even after all this time. It has real character and shows up so much of the "plink plonk" music that electronic composers were then producing.

Then: I like it too. It's full of energy and excitement, showing sound worlds and possibilities rather than showing how much can be controlled. You can certainly hear some of the difficulties and limitation of the technology: hums, crackles, etc. Some of the mixing was by recording 4 tracks on a 4-track recorder and playing them back on a 2-track machine. There's a lot of clipping: and that was used to help make the sounds, giving them a harmonic richness that was otherwise quite hard to obtain. At one point, the master tape accidentally got stretched, so the pitch drops for a moment!

My DIY music that was intended for improvisation and participation is, I think, more problematic than the instrumental and taped electronic music (the music that was fully composed), partly because it is more obviously unconventional. It inhabits a rather Cageian world, where the value of a sound is that it is present and, therefore, taken to be worthy of consideration. I think my DIY music should be considered music of the instant of performance (it might alternatively be called moment or occasional music) and, in principle, should not be listened to after the event. The point was not to make music for posterity, but to create a way in which the music of others (intermingled with mine) and the music of an occasion can be realized as both summary and novelty. It's a self-effacing undertaking on the composer's part. Yet I find in the tapes I have a certain rhythm and pace, a gentle magic, a touch of the transportation that I believe, at its center, is music's (and all art's) great gift to us.

Now: You did this musical work at an architecture school. What are your thoughts about architecture and its relationship to music?

Then: I'm not sure about the connection between architecture and music. I know the old Schiller adage, "Architecture is frozen music," and I once persuaded Iannis Xenakis to speak at the AA about translating information between media: how a section of *Metastasis* was transformed to make the Philips Pavilion at the 1957 Brussels World Fair supposedly designed by Le Corbusier, but actually designed by Xenakis through this translation process [3]. I always liked the self-referential (and cybernetic) idea that Xenakis also wrote an electronic piece to go inside this built realization of another of his pieces of music.

Now: Translation between media is a venerable and intriguing concept. It's also relatively easy now that computers are readily available. Did music enter architecture in this way, as far as you were concerned?

Then: I don't think music and architecture were ever connected in that way, in my mind, although I think there may perhaps be some shared abstract center behind all art forms and media. But there were two things about music that appealed to me, apart from fun and delight in sound and the pleasure of producing something. Firstly, I found a freedom and openness in music I couldn't find in architecture. Avant-garde musicians seemed better informed, more imaginative and open than even the most exciting architectural thinkers. I found certain risks could be taken, certain experiments carried out. This is where the second point comes in. Sound is a much more flexible medium, and a much cheaper one, than either light or concrete. Even in the 1960s we could generate sound that seemed to come from a point in space and we could create space between arrays of loudspeakers. We could experiment in performance, drama, form, participation, whatever, using sound, which we could not do with light or concrete. It was much cheaper to set up virtual environments using sound than light (although "virtual" was not then a current term). I also wrote pieces with components that could be moved in relation to each other (i.e. mobiles): architects talked of making buildings in which this happened, but it's much harder to move walls, floors and ceilings than to move sections of music! Music, I discovered, was a world in which concepts could be explored and played with, though I'm not sure that I understood this very clearly at the time. Hindsight is a great clarifier.

You asked how I managed to do music while an architecture student. The AA is a remarkable place, always prepared to go out on a limb, and it did so for me. I have what I believe is the world's only architecture qualification majoring in electronic music! In those "Swinging Sixties," the AA was right at the center of the extraordinary culture and optimism that gripped us. It's worth remembering how involved architecture and art schools were in music (if not always of the most avant-garde variety). In the U.K., Pink Floyd was the most successful band to come from architecture. Brian Eno (and Bryan Ferry) came from art schools; Portsmouth College of Art (for instance, where I later taught) was a veritable hothouse, with amongst others Gavin Bryars and the Portsmouth Sinfonia, a DIY orchestra that in the early 1970s made a top-10 splash with its amazing and spirited rendition of Rossini's *William Tell* Overture.

Ludicrous as it may now sound, and as inappropriate as the idea is in the current world, we were convinced we were the chosen in a brave and exciting new world; there was nothing we couldn't do. Architects, in particular, could solve any problem (we described the world in terms of problems to be solved, such was the blind faith in the power of science and technology). Arrogant as this now looks, we were not alone in these beliefs. Richard Buckminster (Bucky) Fuller, although already an old man, tried to harness our energy and belief through his World Design Science Decade movement. It was not so strange, at that time, that I should do music, especially experimental music. And, working in a primarily visual environment, I did write a beautiful musical script!

Now: The World Design Science Decade remains a positive force, as Bucky's recent centenary exhibition demonstrates [4].

Then: So the AA was actually very supportive. The Head of School decided early on that I would never be an architect, but insisted the AA was good for me. It was. It was also good to me.

I put on the concerts I mentioned, which were daring and had a reputation for excellence. I invited musical friends to perform, which they did, very generously. Composers composed. Steinway leased us pianos cheaply. We had composers visiting to speak about their music: probably the most memorable were Cage, wonderful and gentle, who spoke in a ruminative conversation (mainly about Bucky), and, of course, Iannis Xenakis. Eventually (in summer 1971) I gained my diploma, scaring the examiners away from the examination by demonstrating sound processing as the first part of my presentation. Harsh sounds, and very loud: they left before looking at the drawings of the schemes I had designed.

Now: Do you connect together any other of the ideas you were using in your architecture and your music, and, if so, do these connect to some of the concepts we've been talking about?

Then: The schemes from my diploma work—although I had earlier designed a satirical "plug-in" monastery and a supermarket (through which I first came across cybernetics)—working much as do today's Internet supermarkets. Three schemes in particular come to mind, most since realized in some form by others. The difficulty I faced was the same as in making electronic music: at the time, the technology wasn't there (though it was clear it would be) so I faced a technology gap. I designed in the assumption that the technology I imagined would come about.

The projects included the suitcase secretary, the listening wall, and voyeur TV. The suitcase secretary has since been realized as the laptop computer. It had a diary, notepad, Dictaphone and suchlike, all in a small attaché case. As a dadaist outrage, it also had a pair of (grossly non-politically correct) inflatable legs for when it was on your (male) lap! I saw a small version of the listening wall realized by a student half-a-dozen years ago. My idea was that the walls of a row of terrace houses would be wired and the signals received banked, random selections being made and mixed together to be played back some time later through various other walls in the terrace. Apart from making an interesting sound environment, I believed this would discourage bad behavior, such as the violence that society was then coming to accept existed. I understood the wall as a potential behavioral modifier working through fear and shame-in-exposure. Technically, it's a variant on (and derives from) the Electric Garden evening compression performances I've already mentioned, but "carved in stone."

The third, voyeur TV, involved three main ideas. The first was that a very cheap (and tiny) TV camera could be made using pinhole camera principles, with an engraved light-sensitive chip registering the image. A wearable version of such a camera would be given to everyone in the world (I recently bought one such by mail order from a United Airlines in-flight catalog in the U.S.). The second was that we could set up a cellular network to pick up signals transmitted by these cameras, which would be switchable all around the world. The third was that, by allowing the cameras three states (off, private, public), we could hitchhike on the cameras of others set to "public" and see directly what was happening anywhere in the world. I imagined we would see what was actually

happening in, for instance, Vietnam instead of trying to look behind the spin of TV news, with its official military reports. I saw this as a liberating technology. Cellular networks are now common; TV cameras are produced using a variation on my concept; and webcams have realized the third component.

But how does this strike you? Do you see any connections and patterns between my music (and architecture) and your more recent interests?

Now: What I find in common is dreams of facilitation: both of us share an interest in providing frameworks within which others are free to act. I find these projects mainly concern the use of technology to bring us delight, though that delight is modified by a dadaist streak. In these architectural projects and in the musical practices you described I see a trace of generosity and trust. This is certainly a similarity: recently, I've come to greatly value generosity and trust, developing counter-arguments to undermine those such as that of the selfish gene that so demean what it is to be human (and are so firmly based in misrepresentation of how we act).

Then: Then tell me how you think your current work relates to what we've discussed.

Now: One common thread I have discovered is public presentation. I have always thought of lectures as theatre: a one-person show where absolutely everything is done by the same one person. Failure to understand this is part of the current misunderstanding of education. Instead of being seen as provoking in students the opportunity and responsibility to learn, lectures are assumed to transmit and transfer information, which I don't believe is possible. I see lectures, especially when I present work at conferences, as performance. I try to find a form in which to present that matches and marries the content, and to convey the experience of the thinking involved. When I'm "performing" cybernetics, I have the experience of being so intensely in the moment that, afterwards, I can't remember what I did or said, only that I did it (getting a post-performance high). Audiences confirm that these lectures are a type of theatre: they go with me and are lost in the moment and remember the experience that they were there. In that it's like music. Music takes me where I can't normally go, where there is no separate being—no distinction that makes me, no ego. It's a wonderful experience and, insofar as I can bring this to others, it's a wonderful gift. I don't try to perform this way every time I speak and I only do it nowadays in cybernetics. It involves a clarity, purity and intensity of thinking, very rare and very special. I've little idea what brings it on or where it comes from. Videos of these events are frequently incomprehensible and a disappointment. The lectures are performances (as when I played music) and have the same transcending quality. They are of the moment.

I believe this experience is quite familiar to performing artists. People often tell me I bring the insights and ways of looking of the artist to cybernetics: that I am a poet of the cybernetic.

Something else is clear to me now. I see concerns in my work matching concerns in yours. There are two aspects. In the first, I explore and express whatever is in me. The second is that I try to make room for others to express and explore what is in them. I see both these concerns in your music.

The first aspect is passion. That's straightforward, it's what artists do, it's self-expression. The second appears to be self-effacement: I do it "backstage" so others can express their passion, rather than I express mine. Yet I am passionate that they can express their passion. So it is hardly self-effacing. It's just another side of me, the side that wants space for others, the side that likes to hide, anonymous, backstage. In explaining my work in cybernetics, I have developed this metaphor: some people play games (or are referees); others watch; still others design the games and fields. Behind them are those who design the grounds on which the fields can be placed. I see myself designing the ground so others can devise games and still others play, referee and watch the games. I have been designing and developing a system of conceptualization that first appeared as the "Theory of Objects" in my cybernetics doctoral dissertation [5], which allows each of us to think as we need, to express what we want, without exclusion. It gives us permission!

As to sound-the-medium, that took a back seat (although I have recently begun informally toying with it again and have been working on a couple of new pieces as well as doing workshops and performances with sound). Architecture students are also amazed, when we go into a cathedral together, that I sing. Brought up on the half-truth that a picture is worth a thousand words, they have no awareness of the sound of their environment. A word is, contrarily, worth a thousand pictures.

Then: I can see a similar dichotomy in my music. I haven't seen it as a contradiction, though I didn't know how to account for it. Recently I found a newspaper clipping previewing the one-person opera *Memories of You* that I mentioned earlier. The article quoted me saying I was calling all my pieces by the same title, so that people would go to hear afresh rather than going to hear with familiar expectation: and that I deplored the cult of the person making the art. So I looked for anonymity. (It's odd, because I also liked being noticed and treated as someone worth listening to!)

In that opera, a man dressed in white, with flying helmet and aviator gear, sat absolutely still on a chair in a white box on stage, with every light in the house on him (I seem to have been obsessed by Beckett-like fixed heads). The light in the box was supposed to be blindingly uncomfortable to the audience. He uttered the same nonsense text, carefully notated, as a round, getting both slower in tempo and higher in pitch. The hypnotic effect on him as he lost concentration meant the text disintegrated further. His voice was processed though various tape delays, feedback loops, ring modulations, etc., so that it became progressively less intelligible: a wall of pure, distressing sound: a process of disintegration, of a return to non-distinction.

Now: I had a phase in which I called all my research papers either "Generosity" or (after a memorable Laurie Anderson verse) "Mechanical Trees." (I see myself working through ideas, endlessly chopping them down as I try to make do with less.) This is how I attempt to accommodate more: the simpler I keep it, the more richness others can add and the more of themselves can be admitted. Some, attempting to be inclusive, grab everything they can and claim it for their sphere of interest, theory, whatever. But I prefer this other tactic: to gradually and constantly reduce what I say so there are fewer and fewer restrictions, as if reducing body to skeleton and then on. I don't know how far I've gone in the process of reduction, of moving towards an essence (which may not be there). I just keep trying to make it simpler, involve less, say less. The ultimate result will be when I say nothing at all about nothing

at all and end up endlessly (as you did in that unnameable and gestural 1963 piece for wind player invited to play one note, without taking breath, until he expired) in the Zen space of non-differentiation that I talked about in reference to the performance art of my conference presentations. I'm not there yet [6].

Then: So why do you not do music? Why is there this difference between us, Now?

Now: I don't think there is really so much difference. My medium is not currently the medium in which you worked. Music I loved when I was you, and I still do. At the moment, I'm working more with sound than at any time during the intervening years and have, as I said, begun working towards music pieces once again. But the questions I was interested in asking developed. The themes have, largely, been with me—as you—for as long as I can remember. The music I was involved in—writing, organizing, making, enabling, processing—was very special to me, and the worlds I have lived in since have been enormously enriched and facilitated by what I did in music and the experiences I had both in and through my involvement. But I needed a more abstract arena to work in to extend some of the ideas that had first arisen in and through my music.

Not that music should be a carrier for other things, or a servant to illustrate or develop other fields. Music is what it is. What I lost in stopping working in it is the magical presence of music: its actual substance, sound. I still work today engulfed in an overwhelming environment of sound, as I did when I was composing: I remove the world outside and charge myself up through sound. Thus, I gain my silence and my intensity. The transcendence I so value I manage now in other ways.

So thank you, music, and thanks to you, Then, who was my involvement with music.

AFTERWORD: NOW'S CYBERNETICS

In his eponymous book introducing the subject, Norbert Wiener [7] refers to cybernetics as communication and control in the animal and the machine. In the early days, cybernetics was concerned with feedback and with the control of complex systems. It was a study of observed systems in the traditional scientific sense. Yet, contemporaneous with Wiener's work there appeared the idea of circular causality, which was the subtitle of the Macy Foundation–sponsored meetings in which cybernetics was developed. Many cyberneticians still practice in Wiener's vein.

However, as time went on, cyberneticians became aware that circular systems both are general and change the way we consider the world. They suggest that the controller is contained in the system and is affected by what is being controlled. Control exists between what we have thought of as the controller and the controlled, when we consider the form and the information of the system instead of its energetics. This was generalized to the understanding that there is no observation without an observer: that the observer must be within the system.

Thus, second-order cybernetics (in which observing systems are studied) was born. It is in the study of these recognizably circular systems and this nonlinear way of thinking that I have been involved. My work has been in examining the basis for these systems and in exploring how understanding them can lead to a change in how we understand our place in our world and how we can act in that world.

In particular, I have been interested to consider the design of a system that permits that we all observe it differently (being different) but that we can communicate about as if we observe the same things, and the questions of how and what we might distinguish in that observing. These are truly participatory systems. I have also been interested in the arguments that concern, for instance, our freedom and responsibilities in such systems [8].

Acknowledgments

There are many who should be acknowledged here but will not be. Yet I could not allow this account without acknowledging and recognizing that much, perhaps most, of what has been recorded here was not done alone, but with a number of friends and collaborators, who contributed in different ways to different aspects. This then is also my thanks and my recognition that without them, if any of this had happened, it would have happened very differently. I want to thank them for the good times we had, and the great excitement of exploration; as well as for the gifts each brought to our search and our enjoyment. Thank you, Camilla Bryant, Patricia Bull, Dick Bunt, John Cassidy, John Pitchford and George Woolston, old friends.

References and Notes

1. The Wardour Summer Schools were organized by Harrison Birtwistle, Peter Maxwell Davies, Alexander Goehr and John Ogden (known as the Manchester New Music Group, all having been at the Royal Manchester School of Music), with the Melos Ensemble, Bethany Beardsley and other virtuosi under Michael Tippett's patronage. The two summer schools took place at Cranbourne Chase School in Wardour Castle, Wiltshire, U.K. (where Birtwistle was music master).

2. R. Glanville, *Modern Music is a Paper Tiger . . . Expose Yourselves . . . It's Legal* (Saga, 1968).

3. As an 11-year-old, I stood next to that pavilion but was discouraged from visiting it by those I was with. That's a matter of deep regret for me.

4. The exhibition material and Fuller's position are well recorded in the catalogue/accompanying source book: R. Buckminster Fuller, *Your Private Sky*, J. Crausse and C. Lichtenstein, eds. (Baden, Germany: Lars Müller, 1999).

5. R. Glanville, "A Cybernetic Development of Theories of Epistemology and Observation, with Reference to Space and Time, as seen in Architecture," unpublished Ph.D. thesis, Brunel University, 1975.

6. The interested reader is referred to a recent position paper, R. Glanville, "A (Cybernetic) Musing: Constructing my Cybernetic World," *Cybernetics and Human Knowing* **8**, Nos. 1–2 (2001) and to the publications list at the website: <http://www.univie.ac.at/constructivism/people/glanville/cv.html>. Several of the papers cited there are linked.

7. N. Wiener, *Cybernetics, or Communication and Control in the Animal and the Machine* (Cambridge, MA: MIT Press, 1948).

8. See the author's website [6], and, for a collection of papers (in German), R. Glanville, *Objekte* (selected papers), D. Baecker, trans. (Berlin: Merve Verlag, 1988).

Manuscript received 4 January 2001.