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halving angels: technology's poem

Jools Gilson-Ellis and Richard Povall

[collected in *New Visions in Performance: The Impact of Digital Technologies* Gavin Carver & Colin Beardon (eds.) (Lisse, NL: Swets & Zeitlinger. 2004): 55–68]

> *Technology has made different kinds of poets out of us. Together we sing ghost songs. We have haunted mouths, and speaking flesh. Together we imagine impossible things that I can write, but not make. Together we make things that I can't imagine. We barter noisily like grandmothers. Because I am a writer, and trade in poetry, so I tempt technology to do the same.*
>
> (Jools Gilson-Ellis)

This article uses *half/angel*'s art and performance practice to analyse the ways in which digital technologies have altered processes of making work. It suggests that technology's impact might be in the poetic transformation of imagination. The article focuses in particular on *half/angel's* 2002 work, *Spinstren*.[i]

half/angel is a performance production company based in Ireland and England. The company was formed in 1995 by Jools Gilson-Ellis and Richard Povall. *half/angel* has developed a distinctive body of work through the long term interdisciplinary partnership of its co-directors. This is characterised by a poetic use of new and emerging technologies, with platforms including CD-Rom, installation and performance. Povall's work as a sound and video artist, includes the development of intelligent performance environments, closely tuned to the poetic gesture of Gilson-Ellis's writing. Gilson-Ellis is a choreographer and writer, with a strong sense of the poetic possibilities of emerging technologies. Their work is notable for its unsettling use of voice, movement and sound.

half/angel's CD-Rom *mouthplace* (1997) was exhibited at international festivals in five countries. The work developed the troubling connections between femininity and orality. The dance theatre production *The Secret Project* (1999) was co-produced by The Banff Centre for the Arts (Canada) and the Institute for Choreography & Dance (Ireland), and was performed in four countries. *The Secret Project* implemented several years of performance research at The Banff Centre, and focused on the idea of

the 'secret'. Our recent work *Spinstren* (2002) is an exploration of the metaphor of spinning. It combines new and old technologies – the spinning of thread as well as voices. *Spinstren* was premiered in Ireland and England in Spring 2002, and will toured during 2003.

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JGE: Why would you want to halve an angel? The name of our company comes from a trapeze move I once learnt from the trapeze artist and teacher Deborah Pope. A half-angel involves sitting on the trapeze and holding on to the bar with one hand, flexing the foot of the opposite leg, and falling backwards. If it works, you end up hanging beneath the trapeze from a grasped hand and a flexed foot, and you can extend the free arm and leg in an elegant diagonal. If it works, you are half an angel. I loved learning trapeze, and this move in particular, because it involved the breathless moment between falling and catching. One moment you are sitting prettily on a trapeze like a girl on a swing, the next moment you fall backwards, with at least one hand not holding on. It is a magic trick. Something of it caught me, just as I am caught by a sturdy flexed foot, and a grasped palm. In our work, I have been repeatedly drawn to the idea of falling as a moment when conscious control is lost, and other imaginative possibilities might approach. It makes sense, then, that our angel isn't whole. She's only half an angel, and she shifts oddly between flying and falling. For a long time we thought there would be angels in *The Secret Project*; glimpses of creatures with wings seen in the half-light, until one day of revelation in Banff, when all of the angels got pulled off the wall, and all that remained was the single spoken word that opened the piece; an understated breath saying 'angel'.

RP: Actually, this isn't true. Most of the angels got ripped off the wall, and there is the understated breath of 'angel' that begins the piece. But one of the angel cards[ii] remained; a duet between Cindy and Mary[iii] in which they trade off word and gesture. We made a list of words that might precede 'angel' (broken angel, weeping angel, giggling angel, sorry angel…) and a list of words that might come after 'angel' (angel cake, angel wings, angel fish, angel eyes…). In performance, Cindy and Mary stand beside each other, down and centre stage. Mary speaks the word 'angel', which causes our system to choose randomly a recorded word to accompany it (Mary: angel…cake); Cindy moves – a gesture in sympathy with angel cakes. Mary responds with 'angel' again, which in turn triggers the next word. These are half angels, and a

beginning of our tentative moves towards using generated text In our work (see below). How interesting that this should have been forgotten…

JGE: In the trapeze move of the half-angel, falling becomes flight. Or to put it more precisely, one can only fly if one is prepared to fall. In falling, there is always the possibility of flight. For me, femininity is entwined with these possibilities of flight and falling. Angels, of course, have the same problem. Perhaps the only way to broach what might appear as a contradiction between flying and falling, is to *steal* its gesture, somewhere in the weary oscillation between one thing and the other. After all, in French, flying and stealing are the same thing.[iv]

> *Enchantment. Here is a story about a girl who steals a top. A wooden top, precious to its owner, who had carved it by hand. This is a story about a girl who fell in love with spinning, not because of movement, but because of stillness. This is a story about a girl who stole spinning, because she thought she could possess it. This is a story about a girl who learnt a difficult difference between stealing stillness and stealing movement. This is a story about a girl.*
>
> ('Enchantment' from *Spinstren,* Gilson-Ellis 2002)

> *Later, she sits in the valley café drinking tea, and Joe comes in & moves into the booth across from her. "I'm not falling" she says. "I know" he says. "It's snow ghosts, tripping me." "I know" he says & turns to order coffee.*
>
> ('Snow Ghosts' from *The Secret Project,* Gilson-Ellis, 1999)

Half-angel to *half/angel*. If we were an art angel, or the third angel, or a company of angels,[v] I suspect we would fly differently. But we are *half/angel*. We hang a little precariously from a flexed foot and a sweaty hand. If angels function as a signatory to hope, then I hope for a stolen falling flight. Such a flight is the poetically-conceived space of our work. Such a flight is composed of a wide tangle of poetic text, sound, performance and technology. Such a flight is a poesis, whether its constituents are actual poetry or not. And they are not, as often as they are.

RP: We build poetic *systems*. They are systems that, crudely speaking, capture the essence of the performing body, turning that information into sonic or visual gesture. In these systems, the centre of attention is not the objective body-state. The focus instead is the subjective body –– the phenomenal dancer. I use off-the-shelf video-

based motion-sensing systems that use a video camera to watch the dancing body(ies) and a computer to analyse that movement and turn it into a sonic or visual gesture. For many years, we used Steim's *BigEye*, but more recently have switched to using David Rokeby's *SoftVNS*. Both of these systems are highly extensible, and allow me great latitude in re-making their purpose. These kinds of systems are designed to provide objective (empiric) information about the movement of a body (or any object), but we don't use them that way. Instead, we build phenomenally-aware systems that look at the phenomenal dancer rather than the empirical dancer: an observation of how she is moving, an attempt to extrapolate the reasons *why* and *how* she is moving – an attempt to create a phenomenal understanding of the movement. Why do we do this? What is it that we found lacking in the objective data about the moving body? In the early research, something just *didn't feel right*:

> *'…Science succeeds in constructing only a semblance of subjectivity: it introduces sensations which are things, just where experience shows that there are meaningful patterns; it forces the phenomenal universe into categories which make sense only in the universe of science. [It cannot realize] that the perceived, by its nature, admits of the ambiguous, the shifting, and is shaped by its content.'*
>
> (Merleau-Ponty 1964: 11)

We found, almost by accident (when Jools was dancing holding a 3m length of bright blue electrical conduit purloined from the streets of Amsterdam in each hand) that, rather than tracking literal body movement, we could begin to look at the information phenomenologically, looking instead at *essence*. In this case, the camera was told to see only the tips of the prosthetic conduit arms –– and we saw something magical. When we began to trigger textual gestures with physical gestures, something alchemical had happened. In creating a system that can extend physical gesture into textual gesture, the aesthetics of movement become the aesthetics of an emergent poetic narrative. Media artist Bill Seaman talks about emergent meaning and recombinant poetics, where "meaning emerges through combinatorial relations of differing media elements"[vi]. He describes this as "a new language, a new approach to linguistics". These systems of ours were not arrived at overnight, but after years of experimentation; years of finding a way *in* to the technology that will allow it to find a poetic voice of its own.

JGE: In Jeanette Winterson's novel *Sexing the Cherry* (1987), the main character Jordan goes to a town where all the phrases, curses, and sweet nothings uttered by the inhabitants float up and clutter the sky with their cyclical chatter. Jordan goes up in a balloon with a woman whose job it is to mop the sky of such verbal ephemera. Although she isn't supposed to, this woman gives Jordan a small box, in which is caught a sonnet. If he opens the box carefully, he can hear it repeating endlessly (Winterson 1987: 18). I've loved Jeanette Winterson's work for a decade and a half. What *half/angel* does is make the box into a space that you can dance inside, so that Winterson's disembodied vocal traces become oddly connected to moving bodies. Such bodies are ghostly in their relation to this utterance. Sometimes it seems clear that they speak their poem before us, but at other times, we are troubled by the nature of the connection between flesh and sound. As she moves, so phrases tumble. If she is still, there is often silence. Sometimes when she moves and speaks, there are too many voices for one body. It might be that she shifts in memory, repeating something she hears tumbling. Or perhaps she sets the poem-spell running with a different kind of agency. She navigates time oddly. Something of the grammar of her moving body is in the present tense (she is here before us), but because the voices are sometimes visibly uttered by her, and at other times 'moved' by her (the same voice, the same poem, but connected to / triggered by movement), utterance troubles time.[vii] Jordan's sonnet repeats endlessly, curling back on itself. With our sonnet, the navigation between the present tense of voicing and moving, and the past tense of writing and recorded voice, perform another kind of resistance. This is a resistance to the difference between past and present; a resistance to the difference between internal and external worlds. To confuse the two of these in performance is an unsettling enchantment. When it works well, I believe it approaches the operations of the unconscious, and it is this that is so troubling, both to perform and to watch.

My writing always had a bent for the magical, but the experience of working with technologies in this way makes me a different kind of writer. If I was irreverent about technology's limitations when I had no knowledge of them, now I imagine vast impossible alchemies that make Richard giggle. What I want to suggest is that *this is important*. Such an alchemical gesture is rooted in a physical understanding of the poetics of the work. But it also always asks, 'what could we make if we were better magicians?' This writing is part of a process in which Richard and I demand a poetic alchemy from the digital. This gesture of challenging technology's digital duplicity into

the trouble of poetry's metonym (in whatever genre) is a double trick.[viii] We do not want to see technology, we want always to see its spell.

RP: Of course, I'd worked with others who wanted to work with technology but not within it (no alchemical processes allowed, sorry). Their demands made me inwardly sigh, but not giggle. If Jools has impossible dreams about how we can use our technologies, they are dreams that still retain a place in the final work: a shared dreaming space, perhaps. The world behind the computer screen is a pragmatic one; my job is to let poetic spells weave their magic to overcome the limitations and realities of dumb hardware and pre-cogniscent software. I build systems that have an intrinsic poetic space of their own –– sonic spaces that yearn; spaces that are obsessively languorous, unsettling an audience and disconnecting them from reality. In *Spinstren*, the three-dimensional soundworld hovers between the real, the remembered, and the imagined. Visual imagery weaves its own spell, in its own time, as well as improvising with text grammars to create new narratives, barely glimpsed.

✷

The three-dimensional soundworld we use in *Spinstren* is a special haunting within the physical performance space. I am using specific techniques and technologies (none of which I can claim to have invented) to expand the perception of physical space. I can send sound spinning around within this three-dimensional space, sometimes gently and slowly, at other times impossibly fast. The soundworld underpins the entire piece – there are very few moments when we are not within a sound environment. The demands of poetic alchemy are sometimes those which simply call for a light touch, for a technoetic (Ascott 1999) space which is tender and peripheral.

JGE: After the show, I introduce Richard to Maud. 'This is the composer' I say. 'Ah!' she says, 'you're the one who makes it float.'

✷

Underworld

Carla is caught staring at a thousand webs in the field beside the well house. Carla is caught. Where the field is, there is an underworld of tiny spiders, who rise to the

surface, and weave another fabric to lay across the grass. She knows that if the light shifts she'll not see it again. So she stands stock still, with her back against the well house door. In wonder. Carla is caught.

('Underworld' from *Spinstren*, Gilson-Ellis 2002)

JGE: This is something I saw. An impossible thing. I run breathless to the cottage to get the camera. Back at the well house, I crouch on my haunches with the video poked through the fence. It's so magical, it doesn't look real. A field of iridescent webs, moving like an ocean in sunlight. I am enchanted it is captured on video at all. Richard edits it simply, overlaying the text. After the show, people ask us what effect we put on the grass to make it shimmer so. Technology can make wonder, but it can also steal it.

RP: Video, after all, is all-too-often an all-too-literal space, except when it descends into a postmodern, distressed fog or an undergraduate abstraction. Working with videospace in realbodyspace is a challenge that few have met (we feel) with success. Videospace is a dominant space, that grabs and unseats the magical and which competes for our attention, demanding it without compromise or recompense. The lonely body(-ies) on the stage look forlornly on as the audience's eye is stolen by gleaming photons. We have experimented with combining the realbodyspace with the videospace, but have not yet had the courage to take our experiments to performance. Instead, I'm always insistent on using *real* images (never computer generated, rarely digitally-invented or composited) to create the *unreal*. Sometimes words are projected (in the case of *The Secret Project*, onto a curtain of falling rice). Moments of beauty prick the continuance of body-narrative, tell their story, and fade away.

The Lost Song

JGE: 'The Lost Song' was one of many texts I wrote for *Spinstren* which were not used in the final performance. But this text is different. It's different because, in another sense, it was used. I liked it as a text, because it tried to wrestle with what it meant to sing, but also what it meant to be haunted by song. I had this idea that Carla was incompletely taken by these group of women called the *Spinstren*. The Spinstren, who use spinning tops to weave all kinds of healing and troubling spells, aren't sure what happened with Carla. The top Carla stole was one of their hunting tops. These are knowing and gentle hunters, and the compulsion to steal them happens only when a

choice is made about becoming one of the *Spinstren*. Such a choosing is woven thing, not something made clearly by either Carla or the *Spinstren*, but a moment when she and they and the top span perfectly, and the unutterable balance between falling and spinning and stillness compelled Carla to take the top. Other (rare) times when the *Spinstren* hunting tops were stolen, there followed a slow process of transferral; something I can't tell you about because it is a deep secret. The hunting tops didn't hunt for new recruits, they hunted for a moment when time and spinning and falling came together powerfully. In this way, those who stole the tops, were already moving towards the Spinstren. This was how it was with all of them. But not Carla. Carla was caught between worlds; an unheard of trouble. And the Spinstren were troubled. They could not bring her to them, nor could they release her. But they could sing to her:

> *Carla woke up singing. It had happened twice before, but only since she stole the damn top. When they move towards her, one beside the other, tall and stout and slight, their woven voices in a four-thread, their singing moved inside her, lifting the lost song. This was the song, the lost song. And as they moved past her, she wept. And then there was nothing.*
>
> *Here in the roar of it came a moving steady knowledge. She let herself loose from conscious shores, and belly sound wound from her. It moved around and beside and inside the song between them. Unknowingly, she knew where her voice could find its way between the other ribbons of song. Sometimes their voices rose to a tumult, all of them keeping voices rising and swelling in strange harmonies. Other times she would turn and find herself in a whispering conspirational tangle - intimate and urgent. Carla woke out of breath.*
>
> *They were calling her. She could hear it in her deep sleep. Gentle almost-sounds, in harmony.*
>
> ('The Lost Song' from *Spinstren*, Jools Gilson-Ellis, 2002)

For some reason, this text faltered in rehearsal. Eventually I realised that this was because what I wanted was singing, not a description of singing. Cindy, who has a knack for these things, had been working out how to use the peg tops. These are old-fashioned wooden tops wound around with string, which you throw in order to spin. It's extraordinary when it works, because it flies from your hand through the air, and lands spinning. We went back to 'The Lost Song' and began to work with its

sensibility. What would it be like to have lost a song? How might you sing yourself towards it? We sang with the peg top clasped in our hands. We played with traces of lost songs, and then we would throw the top, and as it hit the stage and (hopefully) span, so we would move into a full-bodied song, and as the top slowly ceased to spin and toppled, so our song would stop. Richard watched all this, and suggested we try to design an intelligent space in which we could literally find traces of a lost song in the air. So we did. And so Richard made a space in which I am lost in a forest of half-heard voices. And just as I described before with poetry, this is a space in which times and corporeal borders become muddled.

RP: How do I make space intelligent?! (laugh) Artificial Intelligence mumbo-jumbo aside, I want to make the case that these systems are *emotionally intelligent* because they sense phenomenally. Here we wanted to evoke the loss of the song –– a troubled kind of finding. I asked Jools to sing, to give me the material for a library of sung phrases; some were extremely short, barely vocalised, others were longer. All were tentative, often placed on the edge of voicing. These I split into two classes –– the tiny barely vocal phrases, and the rest, more clearly sung. The system is designed to pick up *tiny* movement, almost as invisible to the audience as to the computer's eye). The anchor for this loss is melancholy; it isn't a maddened chase. Jools is rooted in the floor, so almost all of the movement comes from the upper body The lighting is very dim, so the system is pushed to its limit as it tries to see through the gloom[ix]. The system is relatively simple. I use a counter to expand the possible library of sounds that could be triggered. The first set of sounds are only from the first class, as Jools attempts to find her voice; later the more clearly vocalised phrases begin to appear, as Jools begins to inhabit her voice and the song. I also add a long sustained open fifth vocal chord –– a sonic chair…

If Merleau-Ponty suggests that consciousness is a fundamental property of a phenomenal system (1964: 58-9), then in creating a phenomenal motion-sensing system, are we implying that the machine itself has consciousness? In one sense, yes (phenomenally), but at the objective level, it's patently rubbish. So what is happening is that we are *introducing* phenomenological understanding by the way in which we build our systems: we are privileging certain kinds of information and discarding loads of the empirical data that are usually the core of these systems (things like xyz position, and so forth).

JGE: I stand in the wings clasping my peg top, watching the video of the field beside my house. As the image fades I walk into darkness. This piece, which began in a text that isn't here in performance, finds me standing with the top in my hand. I slowly look up. I begin to glance around me. I've lost a song, and as I try to hear it in the air, so I brave a tiny phrase, only to lose it again. After a while, Richard brings in the environment so that I perform a plural utterance – one live, the other mediated. An audience has difficulty distinguishing between the two kinds of voice, because they sound the same. But they know that there are too many voices for one body, even as the manner of their utterance is connected to my movements whether I actually voice them, or whether I 'move' them. Such voice ghosts perform loss, as I yearn to find the slipping song, only to sing with myself. Gradually I build up the interplay of live voice with pre-recorded sample, until I throw the peg top. The scarlet top turns in the air, lands, and spins impossibly. As it spins, so I find the song and shift into full-bodied and singular voice (Richard takes out my room of ghosts), a song that ends as the top slowly looses from its spinning, and topples.

Generating Text

From the beginning, we had always felt a need to work with generated texts –– words and poetic phrases cultured and spoken by the machines we use. Richard has often used (and continues to use) generated music within our work –– there is something about the *liveness* of this that fits within the general sphere of the work; often tweaking and prodding happens during performance. Generated text involves the use of various software systems which analyse style, vocabulary and grammar, in order to generate 'original' texts. Such texts often have a strong taste of their original, but are also quite different. It is possible to alter the degree of autonomy the software has over composing its own texts. It is also possible to *combine* various texts. Our early experiments included combining Ovid's description of the myth of *Arachne and Athena*, with Grimm's version of *Sleeping Beauty*. The idea behind such experiments, was that we might also be able to weave with writing itself. As we become more proficient in these technologies, we begin to develop ways in which such texts might be generated in the moment of performance. For *Spinstren*, these experiments resulted in vertical projected texts, generated in performance – one of *Arachne and Athena* in Ovid's original Latin, another of Perault's *Sleeping Beauty*, and a third of one of the Carla texts.

The early research dealt with attempting to generate text in realtime. Actual generation of text, using Markov techniques to create new texts from known language/style bases was relatively trivial. What we wanted to do, however, was to generate *spoken* text in realtime –– spoken, performed text is, after all, so much the basis of our work. This meant providing a grammar by recording a segment of text, cutting it up into word fragments, and making those fragments available as a library. We attempted to generate language information (ie grammar) from these fragments, but of course their original syntax was lost once they were broken up into individual words – we could only generate word frequency counts rather than actual grammar. This worked –– technically –– but Richard was very unhappy with the result. The text sounded entirely artificial, simply because the intonations of the individual words, taken out of context, were artificial. Platform information in many railway stations is now generated remotely (literally coming from some other part of the country) by stringing together samples of individual words. They are carefully intoned (performed) so that they are emotion-neutral, and even largely intonation (pitch)-neutral. Speech patterns are well-designed and constructed in such a way that it becomes possible to patch words together in any order and have them sound somewhat natural. Poetic language, however, doesn't conform well to this kind of processing. It became apparent quite quickly that attempting to generate a spoken poetic text, *and keep a sense of the poetic in its performance* was not easily possible. We decided to abandon this approach and find other ways to work with text generation.

In 'Geometries' from *Spinstren*, two performers share a text which is broken up with repetition. Such verbal fracturing also connects to the movement of the other performer. This is not generated text, of course, but it is nevertheless a narrative re-working of the text such that apparently random repetition and re-iteration of words and phrases are used, moving in the tide of the narrative's direction.

Richard also made a series of generated texts on video that were to be used in performance. Once again, this is not being generated by the computer in the space of performance; the text we see is the result of a process in which Richard made a file from each word of a text, designed as a vertical stripe. Each word lasts only 5 frames (one fifth of a second), except for what I chose as 'keywords' – words I considered important to the narrative. *Some* of these words are elongated to one second (although they instantly begin to fade once they appear on the screen, so they are not actually visible for the entire second). In practice, this created a blurred, illegible

series of words flashing by on the screen, with some of the keywords being legible or close to legible. Because they are vertical they are even harder to grasp (and switching them to the horizontal made them too concrete, too easily narrative, too *real*). These columns of words construct a narrative of falling, of being just beyond one's grasp, even as their glimpsed phrases tell another counter- narrative. Like the teasing of wool to open its fibres, this process produces unusual archaeologies of familiar and less familiar texts, to produce tumbling phrases, and odd rhythms of stasis and percussion that are always different. Perhaps this isn't so much as storyweaving, as storyspinning.

Generating Song

RP: Almost all the music heard in *Spinstren* is made in the moment, based on algorithmic recipes that twist and turn tonalities and tunings; that bend the melodic line; that make phrase lengths that are quite unpredictable in their nature and shape. Ironically, the pre-cogniscent machine is left to make decisions that ought to be solely in the realm of the composer. Perhaps it's a certain lack of alpha male genes, but I have long ago given away the composer's secrets, and sold the power to dominate. In building performance systems that are live and (sometimes) interactive, I'm giving away any final say on what the soundworlds will be. (This is, crudely, a feminised composition space. When others ask me if I'm uncomfortable with the gendered space of much of our work, I can quite easily say no.) In *Spinstren*, when a performer is not controlling and making the soundscape, the computer is making the final decisions not just about what notes we hear when, but where they are placed in the space. Of course, I haven't given everything away. I still have control over the ingredients of this recipe –– I can still control the inherent shape of the sounds, how they will spin around the space, how their tunings will be bent and shaped. I make tables of melodies from which the machine-tunes are derived; I absolutely control the quality of the sound; I keep open ends and final bits of control that I manipulate in the performance. Just as in the interactive sections where I can control *how* the system is reacting, so too can I control the overall qualities of the melodies that are being shaped; where and how they place themselves into the space. But the control is not absolute, as such absolutism is not part of the spaces we create.

end

'Halving angels' serves as a metaphor for a process of poesis that operates in our collaboration and finished work. Halving angels is a process of examining what flies,

falls, and is stolen in the poetics of making work. This is a book about technology. For us, technology is part of the poem, just as it makes a different poem possible.

People often ask us why our company is called *half/angel*. There is an old joke in which I reply 'well, I'm the angel, and Richard's the half.' But Richard is tired of this joke. Perhaps a different version might cheer him up: 'Why are you called *half/angel*?' 'Well, Richard and I are both quarters, and the angel is technology and poetry entwined in a magnificent heavenly embrace!'

✷

> *I am falling slowly. I am in the middle of falling and able to think inside my own troubled descent. I am unprincipled in this falling. It is a kind of downwards, outwards endless stumble. This happens to me. I don't choose to fall. Falling approaches, and suddenly I am inside it.*
>
> *Am I fallen?*

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[ii] We often make our pieces by having different sections written on postcards stuck to a wall, and then we move them around to experiment with different compositional possibilities. Towards the end of this process, things that haven't found their place will often get cut, or thrown on the floor.

[iii] This is Cindy Cummings and Mary Nunan, both independent choreographers and performers in *The Secret Project*.

[iv] This connection is taken from Cixous' extraordinary 1975 text 'The Laugh of the Medusa' in which she elaborates the compounded meanings of the French word 'voler,' which means both 'to fly' and 'to steal.' JGE first read this text as a young graduate student in 1988. Its wide passionate geography has continued to inform her practice, in particular around the notions of flight and theft as they relate to femininity:

> Flying is a woman's gesture – flying in language and making it fly. We have all learnt the art of flying and its numerous techniques; for centuries we've been able to possess anything only by flying; we've lived in flight, stealing away, finding, when desired, narrow passageways, hidden crossovers. It's no accident that *voler* has a double meaning, that it plays on each of them and thus throws off the agents of sense. It's no accident: women take after birds and robbers just as robbers take after women and birds. They go by, they fly the coop, take pleasure in jumbling the order of space, in disorienting it, in changing around the furniture, dislocating things and values, breaking them all up, emptying structures, and turning propriety upside down.
>
> (Cixous 1975: 258).

[v] Perhaps this is also a cultural preoccupation with angels; in the UK there are at least three other performance / arts admin. companies with 'angel' in their name*; Artangel, Third Angel*, and *Company of Angels*.

[vi] In an (unpublished) interview with Richard Povall, September 2000.

[vii] What I mean by this is that the pre-recorded vocal sample belongs to the past, and the live (miked) utterance belongs to the present. In this kind of performance, these two temporal spaces are confused intentionally. This is possible because they sound qualitatively the same (both are amplified), and because the physical gestures of utterance, are mixed up with other kinds of choreography, which themselves trigger pre-recorded samples of utterance. This is a confusion between voicing and moving. The programming of these intelligent environments is designed so that the computer can 'see' subtle as well as larger scale gestures, according to the 'taste' of the piece.

[viii] Our editors tell us this sentence is 'rather opaque', but I rather like it. When I use the phrase 'technology's digital duplicity' I'm referring to the binary nature of the digital, by playing on the term 'duplicity' meaning both 'double' (like a binary structure) and 'shady' or 'double-crossing.' I like this playfulness because our use of such technology is both through a process of programming numbers in a digital framework, and by corrupting such apparent order with a poetic gesture. '(T)he trouble of poetry's metonym' refers to metonymy within poetry, which is the process of referring to a part of something in order to suggest its entirety. Metonymic structures are horizontal, like the ripples of a pebble entering water. They are, by definition, unfinishable. This is in contrast to the vertical structure of metaphor, where one thing clearly stands for another; this thing replaces that thing. Metonymic structures allow a reader / audience to enter into a work differently than in metaphoric structures. I believe that our work is powerfully constituted by metonymic structures in language, sound and performance: I will give you a small part of something, but I will not tell you what that thing is, and it is that that will continue to unsettle you. This is a very particular kind of invitation into the work. '(P)oetry's metonym' is 'trouble' because of this unfinishablity, it can go on and on resonating in you, because we only offered a fleeting part of it, and so you are left wondering what it was, or even if you saw it at all. And finally, the "double trick" is the collaboration between Richard and I, which produces such metonymic structures (in part) from a binary machine called a computer.

[ix] This is one major limitation of using video-based systems, and one that we aim to look at in future research. We are hoping that using an infrared system may solve visible light dependency issues.