## Preamble 3

## Stockhausen:

## *Signals*

> …as an electric system we're always influenced by the waves that run through us. And the sound waves directly attack the whole skin, not only the eardrums. You can hear through the whole body.
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> (Karlheinz Stockhausen, in Cott, *Stockhausen: Conversations with the Composer*)[1]

The 1960s and early 1970s form a threshold within Stockhausen's oeuvre, bringing many of his earlier discoveries to temporary summation, while at the same time bringing new areas of sonic and aleatoric investigation into clearer focus. These works sit between the hyper-serialism of Stockhausen's Darmstadt years and the later, grand musico-theatrical project of *Licht* (1977-2003) and the incomplete *Klang* (2004-2007),[2] which would occupy him until the end of his life. It's a period where Stockhausen explores, fairly systematically, various types of non-standard and hybrid notation, extending the scope of the graphics first utilised in scores such as 1954's *Elektronische Studie II* and 1959's *Zyklus,* and with an increasing use of colour and the visual arts in the creation of scores and supplementary materials also.[3] The 1960s also see the creation of two sets of text scores (Stockhausen's 'intuitive' music), the exploration of ritual performance and physical space, and further researches into electronics, vibrations, and radio; hence the title of this preamble—*Signals.* Signals as a means of communication, as musical messages, material, correspondences, codes, remnants of the living, broken fragments, crackle, static, audio hallucinations, voices of the lost, ghosts? Perhaps…

Visual signals: For a composer so concerned with pictorial, graphic, colouristic, timbral, and imagistic approaches to composition, it seems appropriate to allow the discussion to circulate around Derrida's essay *+R (Into the Bargain)* (1987),[4] following a brush stroke to see where it might lead in terms of sound, vision, space and time. This is doubly appropriate as *+R* also weaves into its fabric a plethora of musical allusions/illusions, doubly threaded through the recurrent use of music as visual subject by Valerio Adami, on whose drawings (which frequently depict the acts of drawing and painting themselves) Derrida is ostensibly focused. Thus, music (but not 'voice') writes through painting, and writing also paints though writing in what Derrida describes as 'not the outburst of voice in painting, but the bursting of speech in drawing, or the patch of colour in graphesis or the *trait* in colour.'[5] In other words, speech is freed from being tied to one domain; speech can burst onto the scene of the visual arts, and be burst into fragments (that defy fixity) through this process of transformation. A signal is broken into other signals; the mortar both glues and explodes (deconstructs).

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[1] Cott, 1974, 28
[2] Stockhausen had completed 21 of the projected 24 hours prior to his death.
[3] Supplementary materials which will include record and CD covers, paintings and drawings, and everyday communications, birthday cards, presents, dedications and so forth.
[4] + R (Into the bargain), in *The Truth in Painting,* 1987.
[5] Derrida, 1987, 160.

> The sentence which crosses the heights of *Ich*, allows itself, up to a certain point, to be deciphered, I mean in the system of language. I abandon this reading to you: polysemia or even dissemination drags it far from any shore [*rive*], preventing what you call an event from ever arriving [*s'arriver*]. Let the net float, the infinitely tortuous play of knots and links which catches this sentence in its drawing.[6]

Derrida is referring to the composite work *ICH/CHI* for which Valerio Adami's *Studies for a drawing after Glas* (1975)[7] are the preliminary sketches, but his statement could equally be applied to music. In Adami's sketch, a spidery hand traces ghostly images, words and fragments of words (sometimes almost surgically removed) from, and related, and yet also heterogenous, to Derrida's seminal text: *Glas.* We have then a juxtaposition and interpenetration of two domains—art and text (three if we permit Adami's creation to claim status as sculpture also),[8] a juxtaposition of two 'authors'—Adami and Derrida (as *Glas* is an interpenetration of three 'authors' Derrida, Hegel and Genet), and the infinite play between these, and beyond them. Thus, a sentence from one domain, crosses over into another, where it is repurposed, whilst remaining fully connected (a signal, if you like) to its original. But the original is as illusory in *Glas* as it is in its new abode (we might even say its 'haunt'); as Derrida points out, the sentence only allows itself to be deciphered *up to a certain point.* Then what? The sentence resists giving up all of its secrets—if it is only partially decipherable even 'in the system of language', then what of its function within the system of, what? Art? Sculpture? Music? It migrates through domains, leaving traces, hinting at pasts and futures.

But could this very mutability of dissemination yield clarification? If the sentence/signal is thrown to the four winds, skittering through domains, will it perhaps land somewhere where it can be fully deciphered? Again, the signal pulls us up short. Decryption is not assured through dissemination; if anything, it is *deferred*. So, dissemination increases play, increases différance; dissemination prevents 'what you call an event from ever arriving'. It is not only the net that floats, simultaneously retaining and releasing its prey, but the sentence/signal is floating too, in and out of the net, it is part of the net, part of the water, infinitely stretching understanding and being. Apparently, the signal is always circulating. It never needs to 'arrive' because, rather like Derrida's spectre, it is always already there. '…a ghost never dies, it remains always to come and to come-back.'[9]

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Stockhausen's scores from 1963 to 1972 begin to develop a certain focus on the idea of 'signals' (radio/live/tape/electronic) in some way, and these works can be placed into one of the following loose (and highly mobile) categories: agency (performer, composer, audience, locale); notation (graphic/symbolic, text, hybrids); and interruption (sound, time, space). The following subcategories (also highly mobile) could be added: the 'other' (astrology, mythology, science 'future'/outer-space);[10] found objects (quotation/self quotation, repurposing of sound 'samples', tape loops, radio);

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[6] Derrida, 1987, 159.

[7] See First Exergue for more information on this work.

[8] Derrida describes the '*Study for a Drawing after* Glas' as 'the two sides of what will be a double-sided serigraph' (Derrida, 1987, 153), so in one sense, insofar as the study plays with the recto/verso opposition 'in the drawn double band…around which you will attempt to go…But you'll never be able to gather it together' (Derrida, 1975, 163), 'it' cannot be viewed in one glance, and could therefore be considered as sculptural.

[9] Derrida, 2006, 123.

[10] This 'other' is very much in the spirit of the times, with both Sun-Ra and Bowie also 'playing' with 'alie/n/ation' and the 'other' to problematise identity, the sense of the collective, and the role of technology.

displacement (physical/ temporal); resonance and vibrations[11] (distortion, contamination, degradation, erasure, electronic manipulation, trace, memory); and indeterminacy (duration, forces, notation, form).

Circulating around to signals again… if we were to adopt a rather narrow, Boulezian definition, a signal is 'an acoustic sign which can mark a break or any other important event…it is non-directional since it neither summarizes what has preceded it, nor anticipates future developments; as such it breaks out of the musical discourse in order to mark an important point of formal articulation.'[12] All of this sounds somewhat onto-theological—something that is simultaneously outside the system of which it is a part. But Stockhausen, perhaps, offers a different perspective, thinking more broadly of the signal in terms of electronic or radio transmissions, or even the extra-terrestrial: 'We are all transistors in the literal sense. Waves arrive, antennae receive them, and the so-called high-fidelity system plays them back as directly as possible without distorting them too much. And a human being is always bombarded with cosmic rays which have a very specific rhythm and structure, and they transform atomic structure and by that his whole system.'[13] And concerning performing with shortwaves: '…I always need at a certain moment to tune in certain shortwaves. Because they're not only the result of interferences from the terrestrial vibrations of all those private and public radio stations, ships and Morse code stations, but in addition to this new quality which results from these interferences, there are also quasar waves. And I'm definitely sure that there are also a lot of rhythmetized waves coming from outside of our solar system.'[14] Therefore, the Boulezian definition actually implies an onto-theological paradox, and is more closely attuned to Stockhausen's cosmic definition than might first be suspected. Thus 'signal' is a very illusive word; primary, local, discrete and focussed, yet also ghostlike, operating universally, cosmically and collectively. Like Derrida's sentence, in the system of language (and music), 'signal' is decipherable 'up to a certain point,' delaying the arrival of the 'event', but becoming part of the 'infinitely tortuous play of knots and links'. In this sense, 'signal' is the disruption of presence; it is 'play.'

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During this period of frenetic compositional activity, Stockhausen produced the following works: *Plus-Minus* (1963), *Mikrofonie I* and *Mixtur* (1964), *Stop* (1965), *Solo* (1965-66), *Telemusik* and *Adieu* (1966), *Hymnen* and *Hymnen mit Solisten* (1966-67), *Prozession* and *Ensemble* (1967), *Stimmung, Kurzwellen, Aus den sieben Tagen, Musik für ein Haus, Hinab-Hinauf* and *Spiral* (1968), *Für Kommende Zeiten* (1968-70), *Kurwellen mit Beethoven* and *Hymnen mit Orchestra, Dr K. Sextett, Fresco,* and *Tunnel-Spiral* (1969), *Pole für Zwei* and *Expo für Drei* (1969-70), *Mantra* (1970), *Sternklang* (1971), and *Alphabet für Liège* (1972).

At first sight, this appears to be a wildly diverse selection of scores, resulting in a sense of information overload; but, by and large, our signal not only moves freely between categories, categories which overlap, as in a Venn diagram, but also navigates a pathway through all of them, a

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[11] Cage also referenced sound in terms of 'vibrations', stating in 'Composition as Process' (*Silence*) "Sounds are just vibrations, isn't that true? Part of a vast range of vibrations including radio waves, light, cosmic rays, isn't that true?" (Cage, [1961] 2011, 51)
[12] Goldman, 2014, 65.
[13] Cott, 1974, 24.
[14] Ibid, 25.

specific, inclusive route. Works inhabit one, two, or several categories simultaneously; or move freely between them via intermediary linkages, so the categories (as well as the contents) are, in a sense, mobile, in that they can re-group; while (via the play of the trace) their borders could also be considered permeable. By grouping together all of the scores that utilise plus minus notation (in however limited or dominant a manner), a small constellation is formed, a constellation (and I use that word deliberately for reasons that will become apparent presently) whose course can be navigated through the 'ether' of the 1960s and 1970s. The constellation functions at several levels: by the concept of the 'signal'; by plus-minus notation; and by its relations, through play and through the trace, to all of the other scores in this decade of composition.

The category of notation, which can be broken into graphic, text and hybrid, covers nearly every work on the above list, plus-minus notation appears in: *Plus-Minus, Mikrofonie I, Prozession, Kurzwellen, Spiral, Pole für zwei,* and *Expo für drei*. In these works, the concept of signal functions in the sense of both a musical message (i.e. notation as language), and a correspondence, (as in notation as sound), as well as in implementing synchronisation, or communication, which Stockhausen refers to as 'feedback,'[15] between players in chamber, (rather than solo), versions of the pieces. Later manifestations of plus-minus notation include signal in the sense of radio signals as well.[16] *Plus-Minus*, 'a composition in which the essential processes are expressed symbolically'[17] introduces a new form of notational representation, one that is able to systematically explore the 'intrinsic tension between form and content, fixed process and variable expression.'[18] Although Stockhausen's experiments in notation are nothing new—the 1950s had seen a slew of innovations in scores such as *Elektronische Studie I* (1953) and *II* (1954), *Klavierstück XI* (1956), *Zyklus* and *Refrain* (1959)—*Plus-Minus* considerably increases the inventiveness of the graphic score. One of the main innovations is a new methodology (a process) for constructing the performance score. The 'score' is in a kit form, with 2 groups of 7 pages: one of pitch aggregates and one of instructions represented by symbolic notation. The two are combined to realise the parts required for a performance, parts which must be prepared in advance of every performance rather than used 'live' as in *Spiral, Pole,* etc.[19] In this early manifestation, the actual plus-minus notation (appearing in flaglike boxes) affects either the repetition or the removal (depending on whether the sign is a plus or a minus) of the form defining 'central sound' (*Zentralklang*) or the 'central sound' defining ancillary notes (*Akzidentien*). Although the plus-minus signs do not occur very frequently, they nevertheless play an important role in controlling the expansion and contraction of the combinations of *Zentralklang* and *Akzidentien*.

Of particular interest is the function of the minus signs, which allow for the insertion of continuous bands of contrasting and compensatory sound whenever the negative sign has caused the complete erasure of the original *Zentralklang* structure. This band can be further punctured or broken by insertions of silence, or it can be completely replaced with silence (if it is a zero-value structure). Most interesting of all are the occasions when the *Zentralklang/Akzidentien* combination either reaches plus 13 (which implies a completely new and different interpretation—in some ways

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[15] Cott, 1974, 178.

[16] For example, Stockhausen suggests inserting 'radio sounds which are fairly undefined' (Cott, 1974, 140) into the 'holes' (generated through the process of further subtraction to events which have already reached '0' value) that form in the negative bands, and Maconie notes that Stockhausen was fascinated by the 1974 Cornelius Cardew and Frederick Rzewski piano duet version of *Plus-Minus,* where Cardew employed transistor radio static for the negative-band material. (Maconie, 1976, 181)

[17] Maconie, 1976, 177.

[18] Ibid, 181.

[19] Kit forms'—the materials of which must be prepared in advance of the live performance, can also be seen to anticipate Stockhausen's use of form schemes in, for example, *Stimmung, Stop, Solo* and *Sternklang.*

anticipatory of the 'spiral' symbols in *Spiral, Pole and Expo*, which ask the performer to transcend their playing capabilities) or reaches minus 13, when the structure is 'disappeared,' permanently erased, and ignored if its symbolic representation reoccurs in the score. The latter case begs a question: where does the signal go when it has been erased, for we still retain a memory of its presence?

Later plus-minus scores add more variety in symbolic notation, with new symbols for difference and opposition appearing in *Mikrofonie I,* while the plus-minus symbols now represent supporting and destroying, rather than simply increasing or decreasing, actions which are now represented by angled, upwards and downwards pointing arrows. *Mikrofonie I* also continues *Plus-Minus'* variable order of event structures. Perhaps its most radical departure from *Plus-Minus*, though, is that the plus minus notation is used to denote relationships between structures, rather than the contents, or transformations, of material within those structures. So structural relationships are fixed, but the order is free, notated using plus-minus symbols; pitches and rhythms or durations use standard notation, and timbre is indicated through text instructions, although the interpretation of these instructions is delegated to the two performers.

In *Prozession,* the plus-minus notation is stripped back to essentials (as it will appear in later scores, such as *Kurzwellen, Spiral, Pole* and *Expo*), emphasising the importance of transforming 'found objects' (in sonic terms), taken from other compositions by Stockhausen: 'Every event must be a variation of an event taken from my earlier compositions. The tamtam player draws from *Mikrophonie I,* viola from *Gesang der Jünglinge, Kontakte,* and *Momente*, electronium from *Telemusik* and *Solo,* piano from *Klavierstücke I-XI* and *Kontakte.'*[20] The plus-minus notation affects musical 'events' played by a particular performer (which may then be subjected to further processes of transformation) or 'events' played by other performers in the group, so the process of transformation throughout *Prozession* is constant. Stockhausen also notes the following: 'Certain framed signs in each part affect the other players. When a player comes to such a sign, he must PLAY a signal which invites the other players to follow him.' He further writes: 'BEGINNING: After all have begun, if a player finds that this beginning sounds similar to that of an earlier performance, he plays a stop signal, and all must begin again. This may happen repeatedly, until no one interrupts anymore.'[21] The same instruction also applies to the ending of the work. Thus, duration (and instrumentation)[22] are indeterminate; signalling is used extensively as a means of fragmentation, punctuation and overwriting during performance; and the entire work is governed by a process of transformation, derived from found objects of the composer's own making—an exercise in archaeology of the self, whilst allowing others (within the 'rules' of the score) to transform that archival self in sound.

Truly an exercise of the supplement on many levels. *Plus-Minus* generates a new score (a new text) for every performance (the performance itself being yet another supplement). As Stockhausen says, 'It's what the compositions I am dealing with are all about. I create something that can recreate itself. Phoenix music. And in *Plus-Minus* I even thought for the first time in my life of composing a piece that would have its own children.'[23] *Prozession* has varying instrumentation and duration, and inherent processes of transformation from and through the original 'text' materials, as well as

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[20] Stockhausen, *Prozession*, p. VI.
[21] Stockhausen, *Prozession*, p. VI.
[22] 'Prozession was composed for the ensemble to which it is dedicated; however, one may replace the instruments with other corresponding ones and draw upon further compositions of the author as sources.' (Stockhausen, 1967, 7)
[23] Cott, 1974, 137.

archival musical material (quotations/found objects): 'A crossing privileged by all the extracts I've sold under my name…According to the χ (the chiasmus)…the preface, as *semen*, can just as well *remain*, produce itself as seminal difference, as let itself be reappropriated in the sublimity of the father.'[24] The supplement, then, has two functions at this intersection, or crossroads: it can be part of Derrida's knotted net—that is of the 'infinitely tortuous play of knots and links which catches this sentence in its drawing'[25] yet it can also be still part of the 'father.'

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Regarding those quotations and signals, sounds which are within and without the work simultaneously, Derrida makes the following observation concerning the function of the quotation: 'Cut out of *Glas,* this quotation describes in advance an escalation, the process of an outbidding speculating to infinity: Who signs? Who reads? Who looks at and depicts the other?'[26]—although perhaps we should say 'Who plays? Who hears?' rather than 'Who reads' where music is concerned. This truly tumbles together notions of authorship and creation—and we should ask ourselves whether the plus-minus works are by Stockhausen, by the performers, or even by the audience? Or are they the product of an almost subconscious form of collective composition, a subtle nod to the explicit use of collective processes in *Musik für ein Haus*? Such questions become even more pertinent when the found sonic objects are imported from randomly chosen radio signals, as in *Kurzwellen, Spiral* and *Pole*—challenging notions of authorship *and* the binary oppositions of time and place, interrupted by the non-place of static, the place of auditory hallucinations, the haunt of sonic 'ghosts.'

Derrida continues this train of thought by considering the function of the *gl* from *glas* in Adami's *ICH*, in other words, concerning the status of the fragment:

> Ground or abyss of the picture: touching the bottom of the sea…a line already "quoted" in *Glas,* here fished up from way back, in inverted commas, angles, crotchets too without a stave [*des noires aussi sans portée*]. In the beginning it was the first line of a bad poem I published…I only retain, wary of it [*Je ne garde, m'en gardant*], the memory of that first line…*Glas* emerges twice in it, in pieces, cut from itself, once in *glu,* within a single word, once inapparent or inaudible, detached from itself by the chasm between two words: it is read, seen written or drawn, held to silence (étan*g l*ait [pond milk], entity [*étant*] become milk [*lait*] again, *étranglé* [strangled] without the *r,* etc.).[27]

In *Kurzwellen* (shortwaves), there is a shift from musical material derived from the immediacy of live playing—be that quotations from other works by Stockhausen or original material, to found materials imported via signals, radio signals and static.[28] *Kurzwellen* uses the same basic model of plus-minus notation as can be found in *Prozession, Spiral* and *Pole,* and it manifests a similar preoccupation with processes of transformation. However, the addition of the short wave radios (as a form of aleatory instrument), and a new instruction to make the live sound processes imitate radio events (as well as imitating the events of other players—which may, of course, themselves be

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[24] Derrida, 1987, 166.
[25] Ibid, 159.
[26] Ibid, 166.
[27] Ibid, 161.
[28] However, in *Kurzwellen mit Beethoven* the performers use four pre-recorded tapes of compositions by Beethoven, subjected to various electronic processes, rather than shortwave radios.

imitations of short wave events), gives an added importance to the concept of the 'signal', it provides both a pervasive timbral layer and the means by which that layer is acquired and conveyed. Although the processes of transformation are tightly controlled in the score, the players do have a certain amount of expressive and performative agency: in duration; in the inherent indeterminacy of the radios themselves (what signals can be picked up in the performance space), and also in their responses to the score's directions for the players to imitate and transform short-wave events. Stockhausen relates an example of 'short circuiting' in *Plus-Minus,* '…I was thinking about "negative sound" and "coloured silences"—silences that would have different shades—and I brought the piece to my first class at the Cologne Courses for New Music, proud that I'd made a piece that allowed for many different versions and which at the same time gave a very strict skeleton for the composing…' Stockhausen then describes one particular interpretation, made by an Icelandic course participant, 'He said: "I've finished…It's short really. I found a way to bring all the seven types in the quickest possible way to -13, and I killed them off." There was just a few blips and blobs and then lots of silences…that was it.'[29] It's a striking example of what a reader can bring to a text—something that is completely unexpected by its original 'author'.

Nevertheless, as anyone who has worked with Stockhausen will be only too aware, if a player produced something undesired, then that event would either be simply faded out or muted during the rehearsal or performance or a creative altercation would ensue, usually to be resolved to Stockhausen's (rather than the player's) satisfaction.[30] Muting, however, is itself  performative: again, it punches holes in the signal, or destroys it outright, like *Plus-Minus'* negative bands or the 'destroying' direction in *Mikrofonie I,* or the static that mediates between sound events in *Spiral* and *Pole .* Signals, like postcards and letters, can get lost in transit, or be indecipherable when they arrive.

Further notational developments occur in *Spiral* and *Pole*, with the addition of new symbols that govern the expansion and contraction of musical parameters, various types of ornamentation, and transformations modelled after electronic, such as 'perm-poly', in which the performer transforms an earlier event into a constituent part of a polyphonic overlay, (rather in the style of the feedback events found in *Prozession*), and 'akk' and 'band', in which earlier note patterns, rather than events, are transformed into either: blocks of arpeggiated sounds (vertical), or extremely fast repetitions of fragments in a continuous sequence (horizontal). In many ways, the most interesting addition is the 'spiral' sign, which requires the performer to 'repeat the previous event several times, each time transposing it in all parameters AND TRANSCEND IT BEYOND THE LIMITS OF THE PLAYING/SINGING TECHNIQUE THAT YOU HAVE USED UP TO THIS POINT and then also BEYOND THE LIMITATIONS OF YOUR INSTRUMENT/VOICE…**For this all visual and theatrical possibilities are also brought into play.**'[31] In a sense, the spiral sign can be seen to echo some of the concerns found in *Aus den Sieben Tagen,* such as the 'process of mutual "feedback,"[32] another telling use of technical language to describe performative practices, and in *Für kommende Zeiten*, most notably in *Über die Grenze (for fairly small ensemble),* in which the performers are asked to demonstrate the highest capabilities of playing and also instrumental possibilities, although in a humorous way:

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[29] Cott, 1974, 141.
[30] I am aware of numerous examples—I was subject to Stockhausen's displeasure in *Sternklang* and *Sirius*, while I witnessed similar instances involving other players in *Sternklang, Inori, Donnerstag*, *Am Himmel wandre ich, Tierkreis, Momente*, and other works. Maconie relates an example of players being simply muted out in *Kurzwellen*, also. (Maconie, 1976, 246)
[31] Stockhausen, 1968, 14.
[32] Maconie, 1976, 252.

*Imagine you are a HIGHER being*

*which comes from another star*

*discovers the possibilities of your instrument*

*and proves to your co-players*

*that in its home-land*


*it is a "Humorous Master-Interpreter"*[33]


Stockhausen's text assumes not only that the performers are *already* 'Master interpreters', that is that their technical skills are assured, but also that they are so at one with their instruments or voices, that again the process of mutual feedback between players, although pushing the expressive and material limits of their instruments or voices, is fundamental to the expansion of material and capabilities. The mutual 'feedback' in *Spiral,* is of course, between the player and the short-wave signal and, in *Pole*, between the two performers and the short-wave events. Describing feedback in *Kurzwellen*, Stockhausen said: '…the *feeding back* really leads to incredible processes of transfigurations and, eventually mutations.'[34] The signal can also be situated in a larger frame; for example, the first line of the excerpt from *Über die Grenze* above, not only builds on the magic (onto-theological) names that are called in *Stimmung*, but also, in both *Sternklang* and *Sirius*, anticipates similar evocations of the cosmic, and of the earth's potential to receive signals from the cosmic.[35] The spiral signs in *Spiral* and *Pole* function as an interruption, or undermining, of the short-wave signal's dominant position in *Kurzwellen*, for now the interpreter is able to draw on what has gone before in the performance and to transcend as well build upon this material. This might also account for the almost cadential use of the spiral symbols in *Pole*—they summarise prior content as well as potentialities. They are gateways to past and future—hauntologies. In *Pole* large plus and minus signs are added to the notational battery; these govern the intensity in one or more simultaneous parameters (duration, dynamics, register etc.,) which are to be held for the duration of the large plus or minus symbol. Through these, a whole event can be governed by, for example, the longest durations, highest pitches, or softest dynamics, working in contrary motion between the two players, so a process of mirror symmetry is always undergoing transformation in *Pole.*

Signals, then, can be mutual feedback between players, short-wave events, players imitating electronic sounds, or transformations between one and the other. The signals can be broken, displaced, interrupted and erased (muted). They can also be *physically* carried, which brings us to *Ensemble*, *Musik für ein Haus, Fresco, Sternklang* and *Alphabet für Liège.*

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[33] Stockhausen, 1968, 16
[34] Cott, 1974, 178.
[35] Stockhausen remained fascinated by 'cosmic' music until his death, completing *Cosmic Pulses* in 2007.

Recall the opening quotation—Derrida states: 'Dissemination drags it far from any shore [rive], preventing what you call an event from ever arriving [*s'arriver*]. Let the net float…' And how does radio operate? It unsettles presence by overturning the binary oppositions of space and time. The supposedly 'live' radio event is never totally live—radio brings forth the voices of the dead and the distant as though they were still living and present; the signal can always be broken or transformed, or even hi-jacked, it can be overlaid with the non-place and non-time of static; the signal operates in more than one place simultaneously—the place of original recording, the place of broadcast or dissemination, the place of reception. Another question: is static a place of mourning for the signal that is lost, or is it a place of waiting for the signal (as event) that is to come, or is it a graveside, a threshold even, where we wait for the return of the ghost, or is static it the ghost itself, the ghost in the machine? Maybe it is static's quality of absence that makes it so alluring sonically, for it can function as a kind of negative temporary autonomous zone which 'erupts into empirical reality'[36] plunging the listener into a sense of aporia. Radio is both temporally and spatially undecidable, allowing us as listeners and performers to complete our own 'stories' within its framework. We don't need to understand the 'whole',[37] we can make our own alternate version.

Do signals that travel arrive as when they left their point of departure? Indeed, do they ever *arrive*? In *Musik für ein Haus, Fresco, Sternklang* and *Alphabet für Liège*, signals and communications have to physically (as well as electronically) move through space*.* By requiring that the signal be physically carried from one point to another, rather than being shared between musicians in a fixed performance space, Stockhausen opens up a new labyrinth of *feeding back*; the net is allowed to float…The journey (as transfiguration) is as important as the destination, and the event (as Derrida describes it) does not arrive, because it is no longer the *same* event, the process of dispatching has instigated a change.

'A chord is moving from orchestra to orchestra with almost exactly the same instruments (horns and trombones) and what changes isn't the pitches but rather the sound in space.'[38] Stockhausen is describing the spatial movement of sound in *Gruppen* (1955-57), and a similar phenomenon arises in, for example, the speaker arrangements of *Gesang der Jünglinge* (1955-56)*,* but the same remarks would apply equally to *Sternklang*, composed sixteen years later. *Ensemble,* which Stockhausen describes as 'a pluralistic, a soloistic and a collective situation all at once'[39] manifests an early systematic exploration of moving sound, but here, the main performance space is a fixed single unit[40] (a large gymnasium), the audience is mobile, the compositional 'events' (provided by the participants of the Darmstadt composition course) are superimposed within a strict formal scheme devised by Stockhausen,[41] and the musical events or 'signals' (including short-wave radio) are selectively transmitted throughout the performance space via a relay of speakers. Thus, there is an overlapping and bleeding of sound between groups of performers in the physical space, electronically by means of the speaker relay, and acoustically by the mobile audience members, who carry the signals with them. Sounds are both doubled and fragmented as the audience and players

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[36] Fisher, 2016, 122.
[37] Which applies equally to the use of quotation.
[38] Cott, 1974, 184.
[39] Ibid, 188.
[40] The performance was not quite restricted to one space. Stockhausen directed the players and composers to leave the gymnasium; 'as they drove away, the instrumentalists kept on playing in the back of the open-roofed cars or through the open windows' in a kind of 'farewell music.' (Cott, 1974, 187)
[41] *Ensemble's* sound events are derived from either notated material, pre-recorded tape, or short-wave radios, and then submitted to various live processes of transformation during the performance.

hear layers of sound being transformed by superimposition, somewhat similar to the effects of *Spiral's* 'perm-poly' symbol. But there are also gaps, holes punched into the fabric of *Ensemble,* and we might ask ourselves (as audience) "do the gaps and overlayerings of *Ensemble's* sound 'maze' serve to undermine or establish the work's identity?"

*Musik für ein* Haus, another collective composition, takes the basic ideas found in *Ensemble* a stage further. Again, tape, radio and live performance are mixed; again, there is a relay of speakers, multiple compositions are superimposed and the audience is mobile, freely accessing the performance at will; and again, the form scheme is provided by Stockhausen. But *Musik für ein Haus* differs in two important ways: the performance space is spread over five different rooms with intersecting corridors and stairways (linked via speaker relay, the fifth, known as the *Klangbox,* houses a simultaneous broadcast of the other four rooms' music), and the performers actively signal one another, through sound *and* movement, for periodic moments of co-ordination*. '*In a given room you could see a trio all of a sudden re-forming into a quintet—two musicians were leaving while four others entered from different places: there was a continual exchange of performers. People really experienced a whole house vibrating.'[42] The event never arrives, because through its dissemination, it is already deconstructed.

Although neither *Fresco* nor *Sternklang* make use of radio, both continue the exploration of sound, signal, and resonance present in the earlier works. *Fresco* is another work for mobile audience, spread over an entire concert hall complex, challenging traditional sound specific modes of listening in the concert hall, and yet, through its embrace of the concert complex as giant vibrating shell, it also seems to resonate with the ghosts of past performances, of performances to come, even of stone tape theory.[43] Audience members are able to move freely through the building, and are enveloped in gentle and slow-moving sound from their first entry into the foyer. Very slow-moving glissandi naturally circulate throughout the complex, played by four instrumental groups derived from the standard orchestral line-up, located in completely separate performance spaces. Again, it is audience members, not the players, who carry the sound signals from space to space in their memories (aural and physical). The players sit against a wall in each performance space (the 'fresco' of the title), reminiscent of passengers in a queue, waiting to board, waiting to 'take off.' 'The pattern of textural activity so produced corresponds to the sympathetic vibration caused by the approach and retreat of a mysterious presence…,'[44] a texture that is punctuated by pauses—by breaks in the signal.

In discussion with Cott, Stockhausen said about *Sternklang*: 'I wanted to make music which was a real spiritual ceremony and which provided a musical atmosphere of vibrations such that beings who visited our planet would really be pleased by it and would understand it.'[45] *Sternklang* is Stockhausen's first work designed for (entirely) outdoor performance, a vast meditation lasting for over three hours, composed for five instrumental groups arranged in a planetary circulation around a central percussionist. Thus, signals, movement, meditation, cosmos—these four words could be used to sum up its principal modes of operation. In many ways *Sternklang* is a summation of previous works: it exploits space, circulation and atmosphere to the fullest by being performed out of doors and at night; both the audience and the performers (in the guise of 'sound runners') are

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[42] Cott, 1974, 189.

[43] Stone Tape Theory, developed by T C Lethbridge, which proposes that hauntings are composed of buildings' intrinsic recorded 'memories' of past traumatic events, is, in a way, an extension of the concept of the 'spirit of place.' For more information see: Lethbridge, T. C., *Ghost and Ghoul,* London: Routledge, 1961.

[44] Maconie, 1976, 290.

[45] Karlheinz Stockhausen quoted in Cott, 1974, 194.

mobile, challenging traditional concepts of performance space (and also making it more reminiscent of a pop festival event); musical material can be heard 'bleeding' between *Sternklang's* instrumental groups, while the sound runners carry musical signals between the instrumental groups and through the audience, making the sound 'move' through space, as do the speaker relays and the called 'cosmic' names,[46] that link groups; the use of astrological star patterns to generate the musical 'models' is reminiscent of *Stimmung* and *Für kommende Zeiten,* while also anticipating *Tierkreis* and *Sirius*, the concept of the 'signal' feeds into all of the earlier works that utilise radio events, or imitate radio events; inter-musician 'feedback', and meditative performance modes echo *Stimmung, Ensemble* and *Aus den Sieben Tagen.*

Moreover, *Sternklang's* use of a central form scheme, further split into performance models of musical material derived from the position of various constellations, Leo, Aquarius, Ophiocus and so forth, again permits a modicum of agency in its order of assemblage, allowing some variability in the pathways of its various signals. Each group is assigned six models, orientated around a set of tempi, durations, and pitches all of which are related to patterns of harmonic sound frequency. Wherever possible, the models are to be produced utilising 'overtones', as in *Stimmung,* and they are similarly notated using a combination of pitches and phonetics. Sound runners carry the models to other groups in the park, repeating the model until the group receiving it has fully assimilated its characteristics. Through dissemination the event itself is transformed, not only by the model's movement through space and the changes in timbre that occur when a new group takes over, but also by the process of running through a large open space while singing or playing which itself transforms the breath and heart rate, all of which affect the model being performed.[47] Stockhausen remarked to Cott: 'While these sound runners were running in circular movements or criss-cross from one group to the other, singing and playing their 'model' for the next group, they made connections between all of them. They picked up new 'models' as they went along, and in this way the music was shifting and rotating very slowly'.[48]

The key phrase here is 'they made connections between all of them.' Dissemination allows for the endless deferral of the arrival of an event that does not exist in one originary form. Therefore:

> I abandon this reading to you: polysemia or even dissemination drags it far from any shore [rive], preventing what you call an event from ever arriving [s'arriver]. Let the net float, the infinitely tortuous play of knots and links which catches this sentence in its drawing.

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[46] For example, A-QUA-RI-US is split between four groups, set to a precise rhythm, which must be adhered to, despite the inevitable sound delays inherent with such a large 'canvas' of spatialization.

[47] I can attest to this, having run all the way round Cannon Hill Park in Birmingham for the 1992 performance, while playing Leo Minor on the Cor Anglais. Various audience members were inclined to enthusiastically 'join in' towards midnight, which made some pretty lively manoeuvres necessary in the safe delivery of the model to the next group.

[48] Cott, 1974, 194.

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