

‘Suggestions for action’: Notation and movement in recent music by Christian Wolff

This article examines indeterminate notations of experimental composer Christian Wolff. We align Wolff’s indeterminate notational practices, developed since the late 1950s, with recent contributions to performance studies, focussing in particular on a recent ensemble work, *Resistance* (2017). We present four case studies of types of notation that set up different modes of socio-musical interaction. Approaching Wolff’s notations as objects of ambiguity and disruption, we examine their consequences for the performers’ embodied relationships to their instruments, and their socio-musical interactions with one another. By investigating how the indeterminate notation of Wolff’s music both mediates and unsettles (collective) musical experience, our paper sheds new light on the function of notation in performance.

Key words: Christian Wolff, ensemble performance, experimental music, indeterminacy, notation.

1. Introduction

[1.1] In a far-reaching and influential article Nicholas Cook (2001) argued for music to be viewed *as* performance, emphasising its ‘irreducibly social’ characteristics. Responding to some of the most significant writings about music, performance and ‘werktreue’ at that time, he proposed, with a nod to Stan Godlovitch (1998), a way of thinking of musical works not as ‘texts’ but as ‘scripts’.

Developing the theme of the social within musical creativity seventeen years later, Cook proposed that ‘scores script social interactions’ adding that ‘the consequences of which are by no means just sonic’ (Cook 2018, 17).

[1.2] Cook’s arguments are concerned with the discourses that disconnect Western ‘art’ music from its performance — indeed, he has stated that these ideals have been a recurrent feature since ‘the early modern era and beyond’ (Cook 2013, 11). Yet, it is difficult to think of a composer who embodies the kinds of thinking proposed by Cook (and others in recent scholarship) more literally than the American experimental composer Christian Wolff. Wolff is one of a relatively small number of composers exploring a particular tradition of indeterminacy, largely defined by – if also distinct from – John Cage’s manifesto first articulated at length in his Darmstadt lecture and published in *Silence* (Cage 1961/1958). Cage defined indeterminacy as ‘composition which is indeterminate with respect to its performance. That composition is necessarily experimental. An experimental action is one the outcome of which is not foreseen’ (Cage 1961/1958, 39). For Wolff, ‘notation is before the fact’ (Wolff 1984/2017, 85), ‘one element in a conversation, an inducement to exploration, something flexible, reusable, consistently useful’ (Wolff 1993/2017, 199). His friend, the British composer Cornelius Cardew also conceived of notation in similar terms, describing it as ‘a way of making people move’ (Cardew 1967). Whilst this characterisation of notation is manifest in a variety

of ways since Wolff's first significant explorations in indeterminacy in 1956, over the past 30 or so years his music has tended to combine – often within pieces – notations which are more or less fully determinate with those which are indeterminate in a number of ways, such as tablature-style notations, notations which omit one or more parameters (such as pitch, or duration, clef, instrumentation, and so forth), and procedures for making different kinds of formal, gestural, and ensemble continuities.

[1.3] Typically, the performer negotiates Wolff's notations in two ways: *before* performance, considering limits, possibilities, ambiguities – all of which in an ensemble setting requires conversation, social dynamics to be negotiated, conflict and resolution, trying out of possibilities, what to agree upon in advance (possibly notating decisions), and what not to agree upon; and *during* performance, involving possible selections of material not pre-determined, possible improvisation, decisions which are the result of other players' interactions, or cues. These latter during-performance negotiations may result in surprise, confusion, hesitation, or even breakdown (see, e.g., [Authors] 2020a; 2020b). These are characteristics of the music which are not notated but which arise from the notation and the actions they require. The apparent spontaneity that may be generated by these processes is particular to Wolff's music – distinct from both other forms of indeterminacy and improvisation – and which he often describes as being impossible to notate in any other way (e.g. Wolff 1969/2017, 41; Wolff 2009, 360).

[1.4] In questioning the centrality of the score in music and musicology, arguing that an understanding of performance as 'sociality in sound' (Cook 2013), Cook's work necessarily blurs the distinctions between composition, improvisation, and performance. An understanding of music as performance has been vital in problematizing the work-concept (Goehr 1992/2007) and in identifying previously neglected creative processes of performance (Clarke 2012). While Cook's work has been fundamental in challenging the epistemological and ontological hierarchies that exist in musicology, to elide the composition and performance of fully notated music and improvisation in this way risks overlooking the historically significant aesthetic, ideological, and practical differences between them. Indeed, others have pointed out that a conception of music as performance is too broad in its scope. Ian Pace has criticised Cook's 'monolithic' and 'selective' (2017, 286) handling of twentieth-century performance practices, in a way that assimilates various musical traditions. Georgina Born has highlighted the neglect of issues relating to genre and to the historical genealogy of traditions within Cook's work (Born 2015). Others have questioned the complete erasure of the creative function of notation, and that it might be considered more fruitfully as one of the many

materials that musicians work with (Payne and Schuiling, 2017). In this way, notation might be considered not as representations of abstract knowledge, but as a material object that mediates ‘the social and creative agency of musicians’ (Schuiling 2019, 431). Widening Cook’s discussion to include music beyond that of the common practice period can thus bring new insights to these debates.

[1.5] As a material object, Wolff’s notation (always handwritten) has a sense of immediacy and energy to it that attests to its creative function in performance. The score acts as both a sketch – requiring completion, open to many possibilities – and as a provocation to actions, to ways of acting, or moving. It is progressive, pointing to what is to come rather than to a point of origin, ‘serving’ as Rebecca Kim writes, ‘to relocate the moment of musical creation at the act of performance rather than at the act of composition’ (2008, 78). Or, as Douglas Barrett proposes for music which is indeterminately notated: ‘the score is less a blueprint that mandates a preconstructed musical object and more a prompt that produces a series of contingent consequences in its realization’ (2016, 48–49). On the one hand, then, Wolff’s concern with social organisation means that his notation epitomises an understanding of music as performance; on the other hand, to draw on Floris Schuiling’s concept of notation as ‘entextualisation’, Wolff’s notation can be understood as an essential ‘means of negotiating between text and performance; a process which is simultaneously ontological and ethical, because it concerns how we distribute responsibility and agency’ (Schuiling 2019, 449). Indeed, in ontological terms, much of Wolff’s music is characterised by the fragility of its constraints, or rules, which one might argue is a further challenge to Lydia Goehr’s broadening of a work concept which adheres to ‘a class of performances in which all the appropriate rules are followed’ (Goehr 1992/2007, 33). What might constitute ‘appropriate rules’ in relation to Wolff’s music is often somewhat nebulous, as evidenced by his attitude towards performances of his music. For example, in an interview with Cole Gagne (Wolff 1992/2017) Wolff recalled a performance of *Burdocks* (1970–71) by the Scratch Orchestra at which he was not in the audience but Morton Feldman was. According to Wolff, upon hearing one of the musicians play a folk song, Feldman reportedly ‘got up during the performance and said, “That’s not Christian Wolff’s music!”’ (Wolff 1992/2017, 155), a gesture that suggests the ‘rules’ of *Burdocks* had been flouted. Wolff’s response, however, was more sanguine:

It wasn’t recorded, so I haven’t heard it and can’t tell you, but I suspect that it’s perfectly okay; especially given the nature of that particular group, that it would have been very beautiful. [...] *Burdocks* has a tune in it, which I wrote myself! So if somebody else wants to put a tune in it, that’s not going to wreck the mold of the piece. (Wolff 1992/2017, 155)

This episode is indicative of the openness with which Wolff appears to regard the interpretation of his music, often referring to the score as being incomplete—'no finished object,' (Wolff 1960/2017, 24) or as being 'only material for performance' (Wolff, 1970–71/2017, 47). As he summarised in an interview with the authors, 'That's one of the pleasures of writing indeterminate music! You're constantly surprised by what might turn out.' (Wolff, interview with the authors, June 29, 2017).

[1.6] This article examines some of the ways in which Wolff's notations function and the impact they have upon players, by focussing on some aspects of a recent ensemble work, *Resistance*, for piano and ten or more instruments, which was composed in 2017 for [AUTHOR 1] and the ensemble Apartment House.¹ The article draws upon [AUTHOR 1'S] experiences as a player and observations of rehearsal and concert footage from the premiere performance, which took place in Leeds (UK), on 1 July 2017. We present four case studies of types of notation that set up different modes of socio-musical interaction. Approaching Wolff's notations as objects of ambiguity and disruption, we examine their consequences for the performers' embodied relationships to their instruments, and their socio-musical interactions with one another. By investigating how the indeterminate notation of Wolff's music both mediates and unsettles (collective) musical experience, our paper sheds new light on the function of notation in performance.

2. *Resistance*

[2.1] *Resistance* was composed as a response to Cage's *Concert for Piano and Orchestra* (1957–58). The diverse array of notational techniques found within *Resistance* reflect the even greater range of notational types in the piano part of Cage's work, the *Solo for Piano* (the other instrumental parts that make up the *Concert*, though idiosyncratic, are more or less uniform throughout). The first performance presented both works in a concert of two halves. The differences of aesthetic and procedure between the two composers could not have been made more stark: during the performance of Cage's *Concert for Piano and Orchestra* the musicians behaved (typically) like soloists, concentrating upon their individual parts (which are, in any case, each given the title of 'Solo') whilst also keeping an eye on the conductor who disrupts the passage of time by indicating slower or faster versions of clock time (see Iddon, Payne and Thomas 2019).² By contrast, during

¹ The members of Apartment House in the performance are Bridget Carey (Viola 1), Reiad Chibah (Viola 2), Andrew Digby (Trombone), Ruth Ehrlich (Violin 3), Iain Harrison (Baritone saxophone), Jonathan Heilbron (Double Bass), Jonathan Impett (Trumpet), Anton Lukoszevics (Cello), Aisha Orazbayeva (Violin 1), Melvyn Poore (Tuba), Nancy Ruffer (Flute), Jack Sheen (Conductor), Hilary Sturt (Violin 2), [AUTHOR 1] (Piano), and Vicky Wright (Clarinet).

² A film of the performance of the *Concert* can be found here: <https://cageconcert.org/performing-the-concert/apartment-house-and-philip-thomas-perform-the-concert-for-piano-and-orchestra/>.

Resistance the same musicians could be seen searching around the ensemble for players with whom to partner, often craning their necks to ensure a good eye-coordination, turning in their seat to face different players, and making physical gestures for coordination, pulse, and the beginnings and endings of sounds.³

[2.2] Like many of Wolff's pieces, there are no independent parts for *Resistance*: each musician reads from the same score. Each new page of score presents a new type of material for the performers to negotiate. Broadly, the types may be distinguished by the ways in which the ensemble members behave. Conventional notations predominate, with pitch and rhythm precisely notated, but very often a phrase or sequence may be combined independently with another such sequence in ways that are unpredictable and indeterminate as to instrumentation, tempo and alignment. Similarly, indeterminate notations, including the use of text, may be distributed amongst players to be performed independently, without coordination. Other notations, both determinate and indeterminate, require players to coordinate with each other, sometimes through simple cue-ing procedures, or through coordinating parallel or contrapuntal movement. Finally, other notations are more conventional, requiring all players to adhere to a common pulse and metre.

[2.3] Instrumentation is open, simply requiring there to be a minimum of one of each of piano, woodwind, strings, brass. In the Leeds performance, inevitably, given the restraints of rehearsal time, a certain amount of 'orchestration' was proposed in advance of the rehearsal, subject to discussion. Likewise, options for omission, overlapping and other continuities were proposed in advance. Though there are no indications for the use of a conductor, in this first performance a conductor (Jack Sheen) intervened in the performance intermittently, cueing beginnings and endings of sections, conducting sections that are more conventionally notated and include a time signature, or sometimes just sitting back and watching the action unfold. The conductor's role here was less interpretative than as a necessary facility for the notations which require greater coordination.⁴ The challenges for the players are many, not least shifting rapidly from one notational/behavioural mode to another. Whilst the simplest notations tend to be those in which players are independent of each other, confusion arises from knowing at what point in the piece other members of the ensemble have reached when one player's section end has arrived. Furthermore, whilst choices may be open for each player as to when to begin any section, having *started*, the continuity may *have to*

³ A film of the performance of *Resistance* can be found here: <https://cageconcert.org/project/outputs-and-activities/apartment-house-perform-christian-wolffs-resistance/>.

⁴ It should be noted that although there is no direction suggesting the use of a conductor, and conceivably the music could be performed entirely without conductor, in reality some kind of pulse and direction is required for selected passages, even if supplied by a member of the ensemble.

be observed and thus there is no control as to how relationships between players' material are negotiated. The state is thus one of regular surprise and intrigue, a strange mix of improvisatory sensibilities and Cageian independence. The examples presented below are drawn from the many possible notations available, typifying the range of interactions and processes afforded by each notation, beginning with two examples in which sounds played are chosen independently by the performers whilst following constraints of coordination and timing. Issues of coordination and ensemble interaction from the basis of the next two examples, though exemplifying quite distinct modes of behaviour.

[3] Case study 1: Independent quartets

[Insert Example 1 around here.]

Example 1. Christian Wolff, *Resistance* (2017), p. 22.

[3.1] Page 22 sets up several complex combinations of instrumental interaction (see Example 1). This section is uncondacted, and relies on the players responding to the contingencies set in motion by the notation in the moment of performance. (**VIDEO EXAMPLE 1**) The section opens with a duet between a melody line, indicated to be played by a string instrument (and featuring bracketed 'pizz.' and 'arco' markings) and piano, with the option for one additional instrument to join in the melody line 'ad. lib'. In the Apartment House performance the melody line was taken by violin 1 and clarinet. As in much of the piece, no clef is assigned to the melody line, meaning that it may or may not be played in unison. After four bars of 4/4 time, the melody line stops and two quartets of instruments play a sort of loose counterpoint as an accompaniment underneath the piano line, with each player playing from one of four separate staves of open noteheads (having the appearance of semibreves) connected with cueing notation, sometimes separated by wedge shaped pauses (all of which are common notational devices employed by Wolff). In the performance by Apartment House one quartet consisted of flute, clarinet, violin and trumpet and the other of cello, saxophone, trombone and double bass. Wolff's instructions state: 'Each quartet proceeds independently. Each player chooses one pitch for each line (total 4 pitches)'. Meter, clefs, and dynamics are unspecified. Tempo is free, although at the outset of the whole piece (which lasts just under 45 minutes in the performance given by Apartment House) Wolff suggests an indicative 'reference' metronome mark of crotchet = 72. Vertical lines between notes (as in the one between the first notes of parts 3 and 4) indicate that they should start at the same time; diagonal lines indicate that players should 'hocket' with others in their quartet (i.e., play directly after one another – another common Wolff

procedure). At the same time, a third line for two other instrumentalists is introduced: working independently, they can choose from one of six 'cells', which can be played in any order, as long as they end on the 6th, and another similar procedure is introduced on page 24. These multiple modes of interaction continue across three pages. The section concludes with a brief duet s, with some hocketing between the parts.

[3.2] The first full group rehearsal of this section was initially characterized by a certain amount of hesitation, with players losing their place in the music. It was immediately clear that some practical discussion needed to take place, and the players decided to rehearse each quartet separately. Since the piano material is metered and rhythmicised, leaving little room for flexibility, this served as a practical constraint for the other players. However, there was no lead instrument to follow. On this occasion the quartets consisted of musicians dispersed across the performance space, and so the musicians sometimes were limited in their visual communication, and had to listen carefully to one another to coordinate these entries within their quartet, on the one hand ignoring the soloists but ensuring that they reached the end of the section more or less in unison with the whole ensemble (some of the players exaggerated their entries, for clarity).

[3.3] Wolff's notation and instructions provoked several questions from players, such as the clarinettist Vicky Wright, playing the melody line with violin, asking 'Does that mean I "ad lib" anything I like?' and the trumpeter Jonathan Impett wondering 'How independent are these quartets?' since they were playing from the same part. Wolff, sitting in the room during the rehearsal, typically offered little in terms of answers to these questions, commenting at the end of the session, 'Sounds good', demonstrating little desire to play the 'composer' role once the 'script' has been written, reluctant to contribute in relation to how his music should or should not be played. In this episode, the notation served as a starting point for decisions to be made (orchestration), discussions to be had (working out the hocketing procedures), and shifting between modes of interaction and listening. The conventional points of discussion that might be expected in an ensemble rehearsal – questions of blend, sound, expression, and so on – were absent. Processes of negotiation and exchange were equal to, or almost more important than, the sounding result. There are several reasons for this. As an ensemble, Apartment House's rehearsal practice is influenced by its members' shared attitudes towards experimental music, developed over the course of its 25-year history (even with some changes in personnel). Inevitably the performers have different backgrounds and bring with them different levels of experience, but the ensemble has played Wolff's music regularly for the past 15 years, and most of its musicians are familiar with his

compositional aesthetic. The group's founder and leader, Anton Lukoszevieze, while describing the music the group plays as having 'no dominant aesthetic or style', has asserted that 'the accepted "expressive" playing of much classical music, with vibrato and "phrasing", is an anomaly in our music and frankly absurd'. (Lukoszevieze and Fox 2016, 80). As a consequence, the group's rehearsal process is often less concerned with working towards 'refining' performances in the conventional sense; rather, discussions focus on, as Lukoszevieze puts it 'how to decipher such scores and create music from them.' (Ibid.). Alongside this performance aesthetic, on a practical level, the limited rehearsal time and the complexity of Wolff's notation necessitated that discussions were focused more on how the notation functioned than how it might sound in performance.

[4] Case study 2: Floating dynamics

[4.1] A characteristic of indeterminate music is the omission of one or more properties from the notation that would normally be a requirement of that notation (above and beyond the degree to which all notation is indeterminate in some way). In the early 1950s Morton Feldman composed music which assigned pitch areas (one of three possible registers) but not the pitch specifics, and a decade later he notated pitches but not their durations. Cage composed music which left durations, dynamics and articulations free but specified their pitch and manner of playing (plucked, muted or played normally), later composing pieces which contained no musical content but required the players to assign values to sounds resulting from measurements of lines and points on transparencies.

[Insert Example 2 around here.]

Example 2. Christian Wolff, *Resistance* (2017), p. 25.

[4.2] Page 25 of *Resistance* relates in some way to Feldman's early graph pieces in that the number of sounds within time units is specified, but instead of any indication of pitch the sounds are represented by dynamics only (see Example 2). Thus the three instrumental groups (strings, wind and brass) read from left to right playing sounds in time as suggested by the dynamics written. Where exactly the sounds are placed is unspecified, as long as they occur within the time units provided, which range between two and eight seconds (**VIDEO EXAMPLE 2**). Unless players notate a part – which is entirely plausible – the manner of playing is situated somewhere between improvisation—both within the limits of the individual part and in response to the sounds of other players—and the kinds of complexity which frequently arises in Wolff's music, as players try to observe both the written dynamics and the time units, which pass fairly rapidly. In fact the stripping

away of layers of information (here, pitch and duration) does not result in a less complex situation for the players, who nonetheless have to play *something* (with some pitch or noise content and of some duration), and arguably poses a greater challenge than a notation which is more fixed. More complex still, though admittedly shorter, is the part for piano. Sounds again are represented by dynamics but now with the additional limitation of being scored for each finger. The music is distributed across a ten-line system, one line per finger, with vertical lines demarcating units of time (different from those which are assigned to the other instruments). Over a period of 27 seconds the pianist must play 72 sounds each clearly defined in its dynamic detail, and each with the correct finger. Again, unless the pianist notates a part in advance, the choreography is one which necessitates careful practice and negotiation between the prescribed limits of the notation and the possibilities and limitations of two hands at a piano keyboard. Decisions might include whether to play any note at all, as long as played by the correct finger, or whether to keep hands in more or less the same position (or perhaps with positions changing occasionally) such that notes fall within a hand-span. The technique is not entirely new, and derives from the third and fourth movements of *Pianist: Pieces* (2001) which employ a related tablature notation involving fingerings (see Thomas 2016). Whilst in *Resistance* there are fewer instances of awkwardness than in the solo piano piece there are still some tricky sections, such as the fourth and fifth finger alternations in the right hand particularly. The performer, as so often in Wolff's music, is frequently involved in some kind of struggle, whether that struggle be physical or psychological.

[4.3] The procedure is translated differently in the final section of the page, which is for strings only. Here the system of time-units has been converted into a time grid of half-second units. Crossing these vertical lines is a horizontal grid of four lines denoting the four strings (high to low) of the standard orchestral string instruments (sounds may be played as open strings or other pitches, fingered). One or two dynamics are scattered across each grid unit such that the players must count carefully and play notes of any pitch where they appear as long as played at the 'correct' dynamic and the indicated string. In the rehearsal, the following discussion took place in relation to this section:

Hilary Sturt: But what happens when there's two dynamics on opposing strings that you can't play together?

Anton Lukoszevieve: Play one string.

[AUTHOR 1]: They don't have to be chords. Play one after the other.

Bridget Carey: Yeah but it's fast.

[A1]: Yeah I know! [Laughter]

AL: I think you can just choose what you want to do, and there'll be enough.

The kinds of playing resulting from all these notations flits between the focus required to negotiate one's individual part and the possibility of choices being influenced by the sounds of the other players. This combination of spontaneity and fixity can create a hesitant liveliness in playing, and an internal energy quite distinct to Wolff's music. In rehearsal, the players calculated the performance of this section by reading it as six bars in 4/4 time, at a tempo of crotchet = 120. Indeed, one could always renotate the tablature, fixing what is unfixed for any given performance, but such an approach might seem to miss what is at the heart of Wolff's performance and compositional practice, hence his early experiment in indeterminacy, *For Pianist* (1959), which was designed as a counterfoil to its dedicatee David Tudor's practice of fully realising indeterminate scores in advance (Iddon 2013). In this early work, Wolff specified extreme actions or ways of playing which might result in unstable sounds, the outcome of which determines which from a range of notations the pianist must select. Wolff's emphasis in these early notations, used through the late 1950s and 1960s, was to formulate ways of playing and acting which were dependent upon sounds and events which occur within the performance and which produced 'sounds I could see no other way of producing.' (Wolff, 1969/2017, 41)

[5] Case study 3: Whistling

[Insert Example 3 around here.]

Example 3. Christian Wolff, *Resistance* (2017), p. 29.

[5.1] The upper portion of page 29 of *Resistance* presents the players with a text score in the manner of Wolff's earlier prose pieces.⁵ Like those, the text proposes material and ways of playing which could – if extracted from its context in *Resistance* – be performed by children, or amateur musicians. Players are directed to form small groups – trios or quartets – and make sounds through whistling, either with whistling instruments or conventional whistling, each player utilising three pitches. The instructions read: 'Each trio/quartet plays simultaneously (as possible), makes chords, changing them or not. Pitches are free, but if a player finds herself making a pitch in unison with another, change the pitch during making of chord. Duration and spacing of chords is free (perhaps designate a leader within each trio or quartet).' (**VIDEO EXAMPLE 3**)

⁵ Christian Wolff, *Prose Collection* (1969–84). Published and available for free download by Frog Peak Music http://frogpeak.org/unbound/wolff/wolff_prose_collection.pdf?lbisphpreq=1

[5.2] Whilst much of *Resistance* calls for players to respond to each other in numerous and different ways, including playing in duos, trios, quartets, etc., the instruction to form groups shifts the dynamic toward breaking the larger group into conspicuous smaller ones, requiring players to physically group themselves in order to both see and hear each other's sound-making activities. Indeed, given the size of the ensemble and the amount of whistling made by the other groups (as well as the playing of two or three performers— in the case of the Apartment House performance, tuba and double bass—who, following a further set of instructions, are playing melodic material), members of each group are forced to adjust their seating and sit closely together in order to distinguish each other's sounds and be able to recognize when a unison between two players occurs. The effect in performance is striking as the players move to face one another, with a group 'leader' visually emphasising the entry of each chord. The sounds – which are in any case restricted to a maximum of twelve pitches per group, and quite likely (given the range and capabilities of the whistlers or their instruments) less – arise from the process of playing, the indeterminacies of pitch combinations and the need to make changes to the original starting pitches. There is no stated duration or end-point, and theoretically this section could last a very long time, so either some agreement is made in advance as to duration or the groups simply stop playing at some point, possibly beginning another section. Indeed in discussing how the sections should begin and end, [AUTHOR 1] joked that 'That's the official term of the rehearsal: after a bit'. Gaps between chords are likewise indeterminate, leading to the possibility of prolonged silences across and within the groups. The situation is, if not exactly a game, playful, the sense of which is almost certainly perceived by audience members, even if the rules of playing are not shared. This sense of play was manifest in rehearsal too: during the pause between playing as the players were retrieving their whistles and discussing the formation of the groups, one performer interjected with the melody from the nursery rhyme, 'Pop goes the weasel'. On recording, however, the effect is of a nuanced balance of sounds and combinations contrasted with silences, and one might imagine the music is carefully scored. By way of contrast still, the impression when performing and watching the piece is of a careful balance between improvised playfulness and close concentration, particularly regarding the need to hear the sounds of each member of the group, registering their sound and making a decision as to whether to change one's own pitch and, if so, how to change it, whilst also readying oneself for the next sound which may come immediately, introduced by another player (who, presumably, is not at that point dealing with the same complexity of decision making as the first player).

[6] Case study 4: Chain tag

[Insert Example 4 around here.]

Example 4. Christian Wolff, *Resistance* (2017), p. 30.

[6.1] On the following page (p. 30), a game of a different sort, one which requires considerably more energy and fast decision making, is in play. Here a collection of musical phrases of varying lengths (the shortest lasting just five semiquavers, the longest 18 beats, though the inclusion of indeterminate durations and breaks mean that some phrases might last longer still) are numbered and assigned to instruments 1, 2, 3, etc. up to 22, or are assigned to the piano, the only instrument which is specified. If 22 instruments were available for a performance then each could take one phrase, or, as in the first performance, instruments can have more than one phrase assigned to them. Angled lines connect the ends of one phrase to the beginnings of another, indicating that the material to which it 'connects should follow as directly as possible from where the line originates'. (**VIDEO EXAMPLE 4**). As is characteristic of many of Wolff's indeterminate notational procedures stretching back to the late 1950s, what appears to be a neat device for ensemble interplay is thrown into confusion by overlapping cues, unpredictable durations, and breaks within phrases. Assuming an ensemble of less than 22 players (and even for an ensemble of that size what follows is true at least for the piano part), performers need to carefully gauge how to both take a cue from one player and cue another. It is quite likely that one player of any sequence of three players might be involved in a sequence of cues from another set of three players. Sometimes a cue sets more than one player in motion, and at other times a phrase has no cue, meaning that the player needs to navigate when they might start such that the cue at the end of their phrase is likely to be picked up by the next player, who might be involved in a separate sequence. As Vicky Wright joked after the group discussed the complex entry points: 'See you at the bottom!'. Players have to be continually on their toes, anticipating and responding to other players constantly. Inevitably, the music is prone to collapse, or failure. The first rehearsal of this section was slow and hesitant, coming to an abrupt halt with one player remarking: 'What's going on?!'; the second was more successful, concluding fully but ending in laughter and amusement at the confusion of the interactions. Each point of breakdown then requires one or more players to rescue it in some way, taking on responsibility for the music's continuity in ways that large ensemble music rarely permits.

[6.2] Visually this section foregrounds the kinds of communicative behaviour which characterises much of *Resistance* prior to this point. Players can be seen to be navigating the score – which, in part due to the complexities of the open instrumentation, is hardly lucid – and at the same time trying to locate other players in the space, ascertaining whether their activity (or non-activity) relates to the

cues they are waiting for or offering. Failure gives way to amusement as the confusion of the situation leads to unpredictable and curious results. Even with careful pre-planning, the likelihood of one performance of this section resulting in the same sequences and timings as another is low.

[6.3] In a subsequent group interview undertaken in the days following the first performance, cellist Anton Lukoszevics commented on his view of the particular ensemble dynamics that Wolff's music affords:

In classical music it's the rule that you have to play together. Everything is always synchronised. Everything happens together on the bar. But in jazz or improvisation, it's like 'OK, you're a bit behind or a bit ahead, you speed up, you slow down'. Often in Christian's music, it's flexibility, and the edges get blurred. It produces really interesting situations. But it's also difficult to achieve if you're only doing that for a few bars, and suddenly you have to switch to exactitude, and then you have to free it up. And so you always have to be on your toes with it. It's great. It's like being alive. (2nd July 2017)

While Lukoszevics is perhaps deliberately over-simplifying the synchronicity of 'classical music' here, his comment highlights his heightened sense of awareness resulting from the need to respond in the moment to the unpredictability of the situation set up by Wolff's notation. Wolff himself has reflected on his experiences as a player working with cueing procedures in a duo with Frederic Rzewski:

Each of us would prepare our parts, but then when we started playing together, because we had these variable spaces within which to work, you would respond, almost inevitably, instinctively. And then also consciously you'd be responding to the other player, and in a way other than normal ensemble playing because you'd hear something and you could either play immediately after it, try to play with it, or wait a little bit before you play. So there's a whole range of possibilities there, which form a kind of improvisatory situation. (Wolff 1992/2017, 148)

In contrast to Lukoszevics, trumpeter Jonathan Impett was slightly more cautious in emphasizing spontaneity and risk as unique characteristics of indeterminate music.

[I]t felt to me as if [*Resistance*] was structured around the dynamics of what ideally happens in chamber music, complexified and elevated to a sort of architectural level, such that it becomes the structural mechanism for all of this, this richness of the piece. Knowing that you listen to her there on that note, and something seems to come together with somebody else there on the end of that, often coincides with that, and then it comes back to you the thirteenth time you play it. These sort of things. Different forms of leadership emerge at different points. (2nd July 2017)

For Impett, Wolff's music simply exaggerates the flexibility and group dynamics that are inherent to all chamber music. The thresholds for performance possibilities are shifted: the notation sets quite fixed limits in terms of the collective direction of the ensemble, but players operate at varying levels

of autonomy and negotiation within this overall hive of activity, with different possibilities being proposed, discarded, subverted, and enacted. This music is necessarily collaborative, even if the musical outcome is complete disorder.

[7] Conclusion

[7.1] To riff a little on the title of the piece, Donald Anderson argues that 'indeterminacy is a contemporary and postmodern modality of resistance. It finds its expression within networks of power rather than outside and against dominant forms of power' (2011, 20). Wolff's *Resistance* is unusual in its complexity, its abundance and range of material and notations and different ways of proposing social relations through performance, having to move rapidly between these. This may in part be the result of his having worked with Apartment House for nearly 20 years and his familiarity with their approaches to indeterminacy (Fox 2010), and – combined with a larger than usual ensemble – wanting to find ways of provoking the ensemble to discover new relational networks. Perhaps the notational variety ensured dialogue and communication despite the necessity of less democratic pre-rehearsal planning. Wolff's definition of 'experimental music' in recent lectures is 'something that through the music, through its performance, possibly through the way it is presented ... suggests the possibility of change Which suggests that the world could be different' (Wolff 2014). Although there is a wider network of information about Wolff and his ideas, including recordings of some pieces, the tradition remains firmly a literate tradition, unreliant upon aural transfer and entirely dependent upon responses to the network of codes embedded in the notation. For Wolff, then, notation is the primary means by which the possibility of societal change is enacted. Wolff's notations act less like a map of an object or terrain and more as a set of fragile constraints, conditioning behaviour, though with the understanding that those constraints may be easily broken or subverted. These constraints, or rules, may be ambiguous, are open to different meanings, require negotiation, may, in fact, be perhaps misunderstood, and then re-negotiated in performance, adapted and re-interpreted, and may be the cause of conflict, surprise, frustration, joy – the notation is not, then, a utopian ideal but an actual provocation and demonstration of human behaviour.

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