

# **Reinventing the Wheel**

The Changing Soundworlds of the Piano

## **Three Dances for Two Prepared Pianos**

(1944-45)

### **Dance Number One**

John Cage

(1912-1992)

The following document outlines context and analysis of John Cage's Three Dances No.1 (1944-45) and serves as a useful reference for EDEXCEL A Level study. This paper was presented as part of a lecture recital at Liverpool Hope University during 2018 and was followed by an acoustic performance of the movement (without amplification) by the piano duo Ian Buckle and Richard Casey.

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## **The Changing Soundworlds of the Piano**

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### **Three Dances for Two Prepared Pianos**

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#### **Dance Number One**

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Commissioned by Robert Fizdale and Arthur Gould in 1944, completed and premiered as a piano duo in New York January 21<sup>st</sup>, 1945.

Premiered with a performance of a short ballet (contemporary dance) entitled Dromenon (for seven dancers) by the Cunningham Dance Company at the Hunter Playhouse, New York City in December 1947.

#### **Influential Figures:**

Erik Satie (1886-1925)

Ferruccio Busoni (1866-1924)

Luigi Russolo (1885-1947)

Arnold Schoenberg (1874-1951)

George Antheil (1900-1955)

Henry Cowell (1897-1965)

Edgard Varèse (1883-1965)

Merce Cunningham (1919-2009)

Cage studied with both Cowell and Schoenberg. Cowell introduced Cage to piano clusters, plucked strings and structural form based upon African rhythmic cycles. Schoenberg introduced Cage to serialist techniques and pitch organisation based upon formulaic process.

The (Merce) Cunningham Dance Company of New York collaborated with Cage throughout his life from 1944 onwards.

## **Precursors:**

Whilst Cage was an innovator of genuine musical originality; he did not exist in a creative vacuum. There were many precursors that laid the foundations for the conception of the prepared piano in 1940. The most notable and direct influence should be accredited to the piano clusters, rhythmic cycles and plucked piano string resonances of Henry Cowell.

Erik Satie (1886-1925) – Alternate forms of notation with unorthodox and innovative approaches to repetitive compositional form and concepts of textural reductionism: The first 'Return to Simplicity' ...

Ferruccio Busoni (1866-1924) – Sketch of a New Esthetic of Music (1911) – Prophetic musings on the future of music – discussions of microtonality and new dissonances.

Luigi Russolo (1885-1947) – Intonarumori (noise intoners): L'arte dei rumori (The Art of Noises) manifesto (1913) – Categories of Sound Noises – Orchestra of Sound Noises (noise intoners): The Futurist Movement ...

George Antheil (1900-1955) – Ballet Mécanique (1924): Typewriters, anvils and mechanised player pianos.

Henry Cowell (1897-1965) – African rhythm cycles as micro, meso and macro formal structure, piano clusters and plucked/scraped piano strings: Aeolian harp (1923), The Banshee (1925).

Edgard Varèse (1883-1965) – Ionisation (1929-31) – Exclusive use of percussion sounds (including a siren).

John Cage – Imaginary Landscapes Number 1 (1939) – With its use of muted piano strings and a structural rhythm (and time) cycle, this is a clear precursor to Three Dances. Cage is often referred to as 'The Grandfather of Turntablism' for this piece.

John Cage – Bacchanale (1940) – Composed for a dance of the same name by Syvilla Fort, this is the first piece Cage conceived and composed for prepared (upright) piano.

Cage felt that the dance (Bacchanale) was African in character, but requested a Gamelan orchestra, which is actually Indonesian (Balinese/Javanese). With no funds available for musicians or hiring instruments and inspired by work manipulating piano strings in the music of Henry Cowell, Cage used fragments of broken plates wedged in between the strings of an upright piano to change the natural acoustic properties of the vibrating strings, literally transforming the piano INTO a Gamelan orchestra.

John Cage – Book of Music (1944) – First piece Cage composed for TWO prepared pianos.

## Sometimes a Bolt is Just a Bolt

(Never in Cage's World)

**Preparation:** Three Dances (No.1) requires approximately 36 notes of each piano to be prepared, some with as many as six different items (preparations) on each note.

Piano One requires a total of 33 different preparations on 14 notes within Dance No.1:

				E6							
C5	D <sup>b</sup> 5				F5		G5			B <sup>b</sup> 5	
		D4			F4		G4	A <sup>b</sup> 4	A4	B <sup>b</sup> 4	
				E3					A3		

Piano Two requires a total of 51 different preparations on 22 notes within Dance No.1:

C6	C <sup>#</sup> 6	D6	E <sup>b</sup> 6								
C5		D5	D <sup>#</sup> 5	E5	F5	F <sup>#</sup> 5		G <sup>#</sup> 5	A5		B5
C4	D <sup>b</sup> 4		E <sup>b</sup> 4	E4	F4	F <sup>#</sup> 4					B4
								A <sup>b</sup> 3		B <sup>b</sup> 3	

Cage offers clear and detailed lists of the preparations within the score preface. Cage's precise measurements are for a Model O Steinway. Cage kept kits of the items required for each piece (nuts, bolts, pennies, screws and other assorted materials), which are now carefully housed by the John Cage Trust in New York.

Disciples of Cage cry authenticity at every turn, demanding precise measurements of strings and correct weights of bolts and accurate thickness of screws, but replicative authenticity can often be an unrealistic and unobtainable goal: Even a counter-intuitive undesirable...

Were Cage's pianos perfectly in tune with equal temperament? When were the pianos last tuned? Were the pianos tuned to Middle A = 440 or Middle A = 446? Had any of the individual strings slipped and detuned slightly? Did any of the strings have any inherent defects or flaws? Even the unique properties, thickness and density of the wood used in the body of the piano and the temperature of the room can affect the timbral vibrations and characteristics of the strings, and then there is the natural reverb of the concert hall.

### Tuning the prepared piano:

Cage is on record as stating that the eventual timbral transformation is 'for the musician to tune and cultivate'. Cage often commented about 'well prepared' and 'poorly prepared' pianos in relation to alternate performances and recordings of his works. The resultant timbral soundworld should (Cage believed) be an expression and extension of the pianist's own musicality. A wide variance can be heard when comparing alternate recordings.

## Notation and Analysis:

Dance Number One is strictly composed around a 30 bar pre-conceived rhythmic cycle:

$$2 - 5 - 2 : 2 - 6 - 2 : 2 - 7 - 2$$

There are eight different cycles (240 bars), with the final cycle repeating in diminuendo to create a total of nine cycles over 270 bars. The tempo (minim = 88) is fairly constant throughout.

The micro units of rhythm (2-5-2: 2-6-2: 2-7-2) are indicated in the score by numbered rehearsal marks and each of the meso-unit 30-bar cycles are clearly marked with double barlines.

Rhythmic structures were used in the music of Cage's teacher Henry Cowell, who also introduced Cage to piano clusters and plucked piano strings. Rhythmic structures and patterns are a primary feature in East African Bagandan percussion music and are often used in the Tal of Classical Indian Music.

The structured approach to strict preconceived form is also reminiscent of the serialist philosophies and techniques of Arnold Schoenberg (also taught Cage).

Brief analysis of the opening bars can tell us most of the fundamentals about the piece:

1a. Cage's Original Notation

$\text{♩} = 88$  2

The image shows the first two systems of a musical score for 'Dance Number One'. The first system is for Piano 1, consisting of a grand staff with a treble and bass clef. The tempo is marked as quarter note = 88. A rehearsal mark '2' is placed above the second measure. The music features a rhythmic pattern of eighth notes with a 2-5-2 structure. The second system is for Piano 2, also a grand staff. It features a complex rhythmic pattern with many rests and a dynamic marking of *pp*. The bottom staff of Piano 2 has a dynamic marking of *fz* and includes accents and breath marks.

The handwritten notation in Cage's original score exaggerates the complexity of the opening bars, but when written in conventional groupings, the music looks far more accessible:

1b. Conventional Groupings

$\text{♩} = 88$  2

Piano 1

*p*

Piano 2

*pp*

*fz*

Essentially Cage is working with alternate pulses (micro rhythms) and displaced accents. The feel of the music should lend itself more to musical pulse than to musical meter:

1c. Conventional Groupings (slurs and accents)

$\text{♩} = 88$  2

Piano 1

*p*

Piano 2

*pp*

*fz*

To be analytically correct, the score starts with the two pianos playing in polyrhythms:

Piano 1 essentially starts in 6/8 at dotted crotchet = 132

Piano 2 essentially starts in 4/4 at crotchet = 176 (minim = 88 in 2/2)

1d. Polyrhythmic Notation

♩ = 132

Piano 1

♩ = 176

2

Piano 2

Repetition, ostinato, displaced accents and polyrhythmic groupings produce virtuosic interactions between the textures of the two pianos within Dance No.1. The use of silence (brief rests) helps to provide a tangible and recognisable form even when the preparations produce widely different timbres in different recordings. The ascending motif at figures 7 and 9 is structurally important within Cycle 1 acting as an aural landmark and transition.

The form of the piece, though cyclic in construct and design, feels more linear and episodic in aural reception (as one could also say about musical form in Stravinsky's famous ballets), and the three movements as a whole could present a more cohesive and integrated musical statement, as they do feel like three individual pieces, but Cage's Three Dances for Two Prepared Pianos is valued far more for its innovative exploration of musical timbre than for its concepts of fluid continuous form and compositional momentum, and so, in that regard, it would be difficult to deny that the work is anything but a clear success.

**Note:** Cage does not use any natural signs throughout the handwritten score as all accidentals only refer to the direct note to which they are attached.

## IMPORTANT

### Consult Original Resources

#### Flaws in Edexcel Score Transcription and Commentary

The most notable error in the Edexcel transcription is that the Cage score clearly indicates the piece starts at a tempo of MINIM = 88. The Edexcel transcription indicates a tempo of crotchet = 88. **This is a fundamental flaw.**

The layout and format of the Edexcel transcription is different to the Cage score, which has been designed around the 30-bar rhythmic cycle that governs the micro, meso and macro form of this piece (systems in the Cage score are notated in groups of five bars).

Bar 30 – Piano 1 – Beat 2 = A<sup>b</sup>4

Bar 36 – Piano 1 – Last quaver = D<sup>b</sup>5

Bar 46 – Piano 2 – Beat 3 = E<sup>b</sup>4

Bar 59 – Piano 2 – Upper note of chord should be F<sup>#</sup>4

Bar 60 – Piano 2 – The upper note for both chords should be F<sup>#</sup>4

Bar 60 – Piano 2 – Mistake on 2<sup>nd</sup> grace notes = D<sup>#</sup>4/E4

Bar 61 – Piano 1 – 4<sup>th</sup> and 5<sup>th</sup> quavers = A<sup>#</sup>4 and C<sup>#</sup>4

Bar 68 – Piano 2 – Offbeat 3 should be D<sup>b</sup>5

Bar 72 – Piano 1 – Forte dynamic is NOT in Cage score, so dynamic remains pianissimo

Bar 79 – Piano 1 – Beat 3 = Cage does not use staccato here, but only a tenuto

Bar 80 – Piano 2 – 2<sup>nd</sup> chord should be A<sup>b</sup>3 and E<sup>b</sup>4

Bar 81 – Piano 2 – 2<sup>nd</sup> chord should be A<sup>b</sup>3 and E<sup>b</sup>4

Bar 82 – Piano 2 – 1<sup>st</sup> note should be B natural (B4)

Bar 108 – Piano 2 – E4 stays in upper (RH) stave

Bar 109 – Piano 2 – E4 stays in upper (RH) stave

Bar 145 – Piano 2 – Upbeat 3 = F<sup>#</sup>4 (not D<sup>#</sup>4)

Bar 165 – Piano 1 – Beat 3 = B<sup>b</sup>5

Bar 229 – Piano 1 – Last quavers should NOT have a natural sign ...

The Edexcel commentary states that the piece should be amplified, but there is no mention of this in the Cage handwritten score. Subtle amplification was most likely used at the request of the Dance Company. It is common practice for dance companies to amplify the music of acoustic instruments in order to mask the sound (footsteps) of the dancers.

*Three Dances for Two Prepared Pianos* was premiered as a piano duo in January 1945 but was not premiered with the Cunningham Dance Company until December 1947. *Three Dances* was not composed specifically for the Cunningham dance (*Dromenon*).



## Further Listening – Changing Soundworlds of Contemporary Music

Modest-Petrovich Mussorgsky (1839-1881) – Rimsky-Korsakov introduced the music of Mussorgsky to Europe at the Paris World Fair of 1889. *Pictures at an Exhibition* (1874) used narrative and analogy to navigate through form, therefore abandoning structural musical form governed by functioning harmony, tonality, modulation and cadence.

Claude Debussy (1862-1918) – Emulated the Indonesian soundworld of Javanese/Balinese Gamelan Orchestra he had heard at the 1889 Paris World Fair, through utilising 'wide interval scales' and extended piano pedalling to blur the lines between progressions of non-functioning harmony. The extended piano pedalling reinvented the sound of the piano at the turn of the twentieth century and strengthened comparisons to visual impressionism and references to Debussy as an impressionist composer (blurring the outlines of reality).

Arnold Schoenberg (1874-1951) – Cage's Teacher and Inventor of 12-tone technique clearly (and quite radically) changed the sound of music in the twentieth century. The scores of Schoenberg's other famous students Alban Berg (1885-1935) and Anton Webern (1883-1945) also became synonymous with 12-tone and serial techniques.

Igor Stravinsky (1882-1971) – Extended scales and atonal modes

Béla Bartók (1881-1945) – Authentic folk melodies, birth of 'musicography' (World Music).

Olivier Messiaen (1908-1992): *Modes of Limited Transposition, Non Retrogradable Rhythms and Modes of Values and Intensities* (composed for Ondes Martenot).

John Cage – *Sonatas and Interludes* (1946-48): Most famous work for prepared piano.

John Cage – *4'33"* (1952) – Through framing silence, Cage conceived a way in which the indeterminate sounds of the localised environment could be the 'instruments' of the piece (soundscape) and brought focus to the simple (or complex) act of listening.

Pierre Boulez (1925-2016) – Milton Babbitt (1916-2011) – Karlheinz Stockhausen (1928-2008): Mid twentieth century High Modernism and Total Serialism

La Monte Young (b.1935) – Terry Riley (b.1935) – Steve Reich (b.1936) – Philip Glass (b.1937): Postmodern minimalists, pulse and phase repetition, African rhythmic structures and gradual process – Repetition as Change ...

Arvo Pärt (b.1935) – Henryck Górecki (1933-2010) – John Tavener (1944-2013): Sacred Minimalism, extreme dynamics, monochromatic elements of structure, pitch organisation and instrumentation, tintinnabulation, reductive and retrospective techniques – The second return to simplicity.

## **Closing Statement:**

The recital today primarily focuses on the music of two composers: Debussy and Cage both reinvented the soundworld of the piano during the 20<sup>th</sup> century.

Inspired by the pentatonic scales, percussive timbres and just intonation of the Gamelan Orchestra, Debussy achieved this through using what he referred to as 'wide interval' modes and holding the piano pedal across non-functioning harmony to blur the combined tones into an impressionistic whole that detunes during its resonance and decay.

Cage's approach was far more radical. Through treating (preparing) the open strings of the piano with a wide variety of materials, nuts, bolts, screws and assorted objects, Cage completely transformed the acoustic properties of the vibrating string, quite literally turning the piano into a Gamelan Orchestra.

This recital features the work of both composers and offers an exciting glimpse into their innovative writing, from lyrical impressionism through to virtuosic polyrhythms exploring the ever evolving and expanding idiomatic properties of the piano.

## **John Cage Quotes:**

"I found I liked noises even more than I liked intervals."

"I can't understand why people are frightened of new ideas. I'm frightened of the old ones."

"Music is 'sounds'; sounds heard all around us whether we're in or out of the concert halls."

"Music is all around us; if only we had ears."

"If you develop an ear for sounds that are musical it is like developing an ego. You begin to refuse sounds that are not musical, and that way cut yourself off from a good deal of experience."

## **Debussy Quotes:**

"Works of art make rules; rules do not make works of art."

"Music is the space between the notes."

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