

MINIMALISM
SPACE · LIGHT · OBJECT
MINIMALISMI

SOUND
ROOM



Minimalism: Space. Light. Object.
Sound Room Reader

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Designed and printed by Black Mongrels
Published by ArtScience Museum, Singapore 2018 @ArtScience Museum
ISBN 978-981-11-9458-0

Published to accompany the exhibition:
Minimalism: Space. Light. Object.
16 November 2018 – 14 April 2019
Organised by National Gallery Singapore and ArtScience Museum

Curated by Eugene Tan, Russell Storer, Silke Schmickl and
Goh Sze Ying from National Gallery Singapore, and
Adrian George and Honor Harger from ArtScience Museum



AN INTRODUCTION TO SOUND ROOM

The Sound Room is a key part of the exhibition, *Minimalism: Space. Light. Object.*, South East Asia's first major survey of minimal art, held at ArtScience Museum and National Gallery Singapore, from 16 November 2018 to 14 April 2019. Through over 150 artworks, spanning sculpture, painting and installation, the exhibition shows how Minimalism became a radical turning point in the history of 20th century art.

Whilst the galleries of ArtScience Museum and National Gallery Singapore emphasise how visual artists sought to express the profundity of simplicity, the Sound Room reveals how Minimalism manifested within music and sound art. It presents over 40 compositions of Minimalist music, a sonic artform that emerged alongside the visual art that came to define Minimalism in 1960s.

Minimalism within music is based on the idea that there is virtue in drawing back from musical opulence and excess canons to reveal the essence of listening, of sound, and of the absence of sound. It is music made with limited or minimal musical materials suggesting that simplicity can be beautiful, and can reveal its own unexpected complexity. Sometimes austere and terse, at other times expansive and mind-altering, Minimalist music is characterised by steady pulses, gradual transformation, syncopated rhythmic loops, gliding drones, and the repetition of musical phrases. It traces its roots to the radical experiments of John Cage, who showed that even silence is part of music, as well as the deconstructed works of early modernist music, and Asian traditions such as Indian classical music and Balinese soundscapes.

The Sound Room charts the course of the development of Minimalist music, from the avant-garde modernisers of early 20th century music, to Minimalist innovators such as Terry Riley, Steve Reich and Philip Glass, who worked alongside their visual art counterparts in the 'High Minimalist' period of the 1960s and 1970s, to a new wave of Minimalism which emerged in the latter part of the century. It presents not only the canonical works of Minimalism, but also the emerging experimental practices that predated them, and those that show their legacy is not only living on, but is actively evolving with a new generation of musical experimenters.

As in visual art, Minimalism in music has been profoundly influential. It was described by music critic Kiran Sande as "the single most important idea of the last century, the one that made possible virtually all that we now listen to and hold dear, from punk and techno to ambient and grime".¹ The term describes not only a set of aesthetic practices, but also a conceptual and often philosophical understanding of the relationships between composer, performer, listener, and sound. Many of the written scores, performance instructions, or the geographical and political contexts of each work are sites where the ongoing development of Minimalist music can be seen, revealing deeper layers to the practice of this sonic art form.

¹Sande K (2010), "A Brief History of Minimalism", FACT, 1 February 2010, viewed online 9 November 2018.

The Sound Room begins with programme one, *During Minimalism*, an aural exploration of the key tropes of Minimalist music in the 1960s, including the extended cyclical drones of La Monte Young and Tony Conrad, and the repetitive pulsing rhythms of Steve Reich and Terry Riley. Their work was made in reaction to other music styles, such as the Serialism of Pierre Boulez and Karlheinz Stockhausen, which had made avant-garde music complex and difficult to listen to. By contrast, the Minimalists stripped music down to its core essential elements, focusing on its pure aural power, rather than anything it might represent.

Programme two, *Before Minimalism*, investigates the genre's precursors, showing how paradigm-shifting early works like Yves Klein's *Monotone Symphony* (1949) - an orchestral piece incorporating a 22-minute silence - took the process of paring back to an extreme, removing even the basic requirement of music - sound itself. The introduction of the idea that silence could be a constituent of musical composition was amongst many radical innovations made by the "ultra-modernist" composers of first part of the 20th century, who transformed the way that we listen, and inspired a new approach to Minimalist music-making.

The Sound Room culminates in programme three, *After Minimalism*, examining how a new generation of musicians, such as Ryoji Ikeda, Thomas Köner and alva noto have used technology to redefine Minimalism for a digital age, creating works of extreme sparsity and hypnotic depth.

The Sound Room also includes composers who have often been overlooked in traditional musical histories, including women such as Éliane Radigue, Johanna Beyer, Daphne Oram, Else Marie Pade and Maryanne Amacher, who made pioneering and unique works which amplified our understanding of Minimalism, but went largely unappreciated during their own time. Acting as a counterpoint to the American composers of the High Minimalist period are musicians who draw upon more diverse cultural traditions, including Colin McPhee, Jo Kondo, and Hiroshi Yoshimura. In moving beyond its conventional definitions, we aim to present an expanded concept of Minimalist music across the three programmes, to add new conceptual and poetic layers to the acoustic experience.

Minimalism went further than being a musical movement. It shook the foundations of our understanding of music, and redefined what sound art can be. The Sound Room offers visitors a unique communal listening environment; the opportunity to sit in a calm space dedicated to a contemplative sensory experience, and become immersed in a musical form that shapes perceptions of time and space.

As conductor, Charles Hazlewood advises, "you have to drop your usual way of listening, lose your expectations and surrender to an eternal now."²

PROGRAMME ONE: DURING MINIMALISM

Minimalist music emerged in parallel to the visual art that has become associated with Minimalism in New York in New York during the 1960s. If Donald Judd, Frank Stella and Robert Morris can be thought of as the key proponents of 'High Minimalism' in visual art, then their musical equivalents are Terry Riley, Steve Reich, and La Monte Young.

The first programme of the Sound Room presents the work of a group of composers who helped define Minimalist music in the West. It also includes the work of groundbreaking female composers who were overlooked for many years within the canon of Minimal music, such as Maryanne Amacher, Éliane Radigue and Pauline Oliveros, and non-Western innovators, including Jo Kondo and Hiroshi Yoshimura.

TERRY RILEY <i>In C</i>	1964	0:42:01
LA MONTE YOUNG <i>The Well-Tuned Piano</i>	1964	0:59:18
TONY CONRAD <i>Four Violins</i>	1964	0:32:30
PAULINE OLIVEROS <i>Bye Bye Butterfly</i>	1965	0:08:09
STEVE REICH <i>Piano Phase</i>	1967	0:20:37
PHILIP GLASS <i>Two Pages</i>	1968	0:18:01
<i>Einstein On the Beach:</i> <i>Knee Play 1</i>	1976	0:03:52
JO KONDO <i>Sight Rhythmics</i>	1975	0:13:10
JOHN ADAMS <i>Phrygian Gates</i>	1977	0:29:39
ARVO PÄRT <i>Spiegel im Spiegel</i>	1978	0:09:24
CHARLEMAGNE PALESTINE <i>Excerpt from Evolution of a Sonority in Strumming and Arpeggio Style for Bosendorfer Piano</i>	1978	0:06:43
HIROSHI YOSHIMURA <i>Dream</i>	1982	0:05:35
<i>Dance PM</i>		0:06:32
ÉLIANE RADIGUE <i>Jetsun Mila, Pt. 1</i>	1987	0:44:25
MARYANNE AMACHER <i>Chorale 1</i>	1999	0:05:54

²Hazlewood C (2018), "Adventures in Motion and Pitches: How Minimalism Shook up Classical Music", The Guardian, 2 March 2018, viewed online 9 November 2018.

—
In C
 1964

American composer and performer Terry Riley is considered one of the founders of the Minimalist music movement. Born in 1935, Riley studied music in California, alongside fellow minimalist pioneer, La Monte Young. After moving to New York, Riley began creating compositions that employed the structured interlocking, repetitive patterns which became his hallmark.

Riley's rhythmic Minimalism was highly influenced by his long study with Indian classical musician, Prandit Pran Nath, a master of the Kirana gharana singing style. With many Western musicians citing Riley as an influence, Pran Nath's teaching has indirectly impacted the music of many other performers, such as The Who, Mike Oldfield, and many more.

One of the defining works of Minimalist music, Riley's masterpiece, *In C*, exhibits a tension in its playfulness. The score is written entirely in the key of C, but within each movement there are purposefully loose guidelines to give space for its performers to innovate within.

LA MONTE YOUNG

—
The Well-Tuned Piano
 1964-73-81 – Present

La Monte Young is an American musician and artist often considered to be amongst the first Minimalist composers. Born in 1935, Young became known for his important work in Minimalist drone music, or 'dream music' as he calls it. In New York in the 1960s, he formed the experimental music collective, Theatre of Eternal Music (also known as The Dream Syndicate), alongside Marian Zazeela, Tony Conrad, John Cale, Angus MacLise, and others, whose performances helped define the particular kind of psychedelic Minimalist drone music which has been so closely associated with Young ever since.

His improvisational, long-form minimal masterpiece, *The Well-Tuned Piano* (1964) is described by Young as being 'unfinished' and ever-evolving. Its distinctive sound originates in the tuning of the piano being played, which is tuned using a 'just intonation' approach. This is a mathematically-oriented method of tuning the instrument, creating a different perception of harmonics than those produced through traditional 'equal temperament' tuning. While it may sound 'out of tune' at first, those who listen to the entirety of this five-hour recording often find their listening transformed. They perceive it as deeply harmonious by the end, with traditionally-tuned music initially sounding 'out of tune' to their ears afterwards.

TONY CONRAD

—
Four Violins
 1964

Tony Conrad was an American musician, composer, and experimental filmmaker. Born in 1940, Conrad initially pursued a career in mathematics and computer programming, before moving to New York, to pursue avant-garde music. As a performer with the legendary ensemble, the Theatre of Eternal Music, Conrad was at the centre of the New York Minimalist music scene in the 1960s, which he later described as, "something just beyond music, a violent feeling of soaring unstoppably, powered by immense angular machinery."³

Conrad's amplified violin introduced the sustained drone into minimal music. His cyclical, long-form minimalist music, exemplified by works such as *Four Violins* (1964), has a trance-like effect on the listener, as he draws upon the full range of his violin, to occupy the senses with immersive soundscapes.

Equally well-known within the worlds of experimental music and film, Conrad was one of the first minimalists to fully enmesh visual and sonic arts within one practice. His mesmeric minimal film, *The Flicker* (1966) is considered to be landmark in structural filmmaking. Conrad's music and film create an almost synesthetic relationship between sound and visual art, pushing at the boundaries of both mediums.

PAULINE OLIVEROS

—
Bye Bye Butterfly
 1967

Pauline Oliveros was an American musical theorist, composer, and author. Born in 1932, Oliveros was not only a key figure in the development of electronic music as an artform, but in pushing the boundaries of what it means to listen. In 1962, she co-founded the San Francisco Tape Music Center, which also included, at various times, Minimalist composers such as Terry Riley and Steve Reich. During this time, she developed the 'Expanded Instrument System', an electronic signal processing instrument she designed for her performances and recordings.

Oliveros' influential concept of 'deep listening' framed listening as an active, meditative, and political act, and one that actually generates music through the reflexive practice of listening in group improvisation performance. Her compositions encourage a focused, attentive approach to her often-minimal arrangements. Her range of instruments included acoustic instruments, hand-built electronic devices, field recordings, and later the sonic capacities of the online virtual spaces.

³Conrad T (1997), "Early Minimalism Volume 1", Table of the Elements, 1997.

Piano Phase
1967

Steve Reich is an American composer who pioneered Minimalist music in the mid 1960s. Born in 1936, Reich developed a musical style defined by a minimum of musical means, using repetition, propulsive rhythms, tape loops and distinctive harmonic structures to create compositions that have become canonical to Minimalism. His work has also had a profound impact on contemporary sound, leading music critic Andrew Clements to note that Reich is one of "a handful of living composers who can legitimately claim to have altered the direction of musical history".⁴

Reich's mesmerising work, *Piano Phase*, seems to shift with each listen; notes come in and out of focus as the ear tries to synchronise with the drifting pianos. This work is the result of Reich's experiments with 'phasing', a technique where two identical performances or recordings slowly shift into and out of temporal unison with each other.

Reich's work with phasing began with recorded music, using simultaneous control of two tape machines to create his compositions. *Piano Phase* was his first work that phased two live instruments in this way, a performance that requires incredible concentration and skill from its performers.

PHILIP GLASS

Two Pages
1968

American composer, Philip Glass is regarded as one of the most influential musicians of the late 20th century. Born in Baltimore in 1937, Glass is most closely associated with New York, where he rose to prominence in the late 1960s. His cyclical approach to composition, which was influenced by his work with Indian musician, Ravi Shankar, would come to revolutionise Minimalist music.

His exhilarating 1968 work, *Two Pages*, showcases many of the techniques which came to exemplify his approach to Minimalism. One such technique is the use of arpeggios performed without vibrato, producing an almost motoric form of repetition. This served to sublimate the individual expression of the performer, escaping the traditional attention on virtuosity, to focus upon the sonic form of the composition itself. This has the effect of creating a sonic landscape evocative of the glassy-smooth work of Minimalist sculptors such as Donald Judd, akin to a search for a 'pure' form of musical sculpture.

JO KONDO

Sight Rhythmics
1975

Japanese composer, Jo Kondo, developed an avant-garde approach to music in parallel to the evolution of Minimalism in the West. Born in 1947 in Japan, Kondo studied classical composition, before spending a year in New York in 1978, where he became acquainted with the work of many Minimalist musicians.

Kondo developed a theory he referred to as 'sen no ongaku', often translated as "linear music". His linear music aimed to disrupt a melodic syntax with a focus on individual sounds and distinct and repetitive groupings. In *Sight Rhythmics*, one of the central examples of linear music, Kondo allows fragments of melodies to develop only to intercept these with unexpected patterns of sounds, encouraging an active mode of listening from his listeners. Kondo's work synthesizes Japanese aesthetic sensibility with western Minimalist harmonic structure, creating a unique hybrid sound.

⁴Clements, A. (2005), quoted in "In Praise of ... Steve Reich", The Guardian Editorial, 8 August 2011, viewed online 9 November 2018.

—
Phrygian Gates
 1977

John Adams is an American composer who began creating Minimalist music in the 1970s, and became known in later years for his pioneering Minimalist operas, such as *Nixon in China*. Born in 1947, Adams, like other Minimalists, including Philip Glass and Terry Riley, used a metronomic pulse that demarcated and controlled his music.

His Minimalist piece, *Phrygian Gates*, is based on a repetitive structure. It acts as a reflection on the capacities and limitations of both the human and the electronic. In contrast to traditional piano performance, the score of the work instructs that no hand should be played 'dominantly', and that each key should be played with equal intensity. In its performance, this produces a work that provokes the tensions between human physicality and mechanical precision.

ARVO PÄRT

—
Spiegel im Spiegel
 1978

Whilst Minimalism is often considered a primarily American musical tradition, there were many composers working with Minimalist ideas in other countries. The so-called 'Holy-Minimalists of Eastern Europe' are represented in the Sound Room by Arvo Pärt.

Pärt is an Estonian composer of classical and religious music, composed in a distinctly Minimalist style. His signature 'Tintinnabuli' style of Minimalism is also a form of mystical thought for the composer. Influenced by Gregorian chants, Pärt sees the technique as his own metaphor for a personal search for unity in his life, work, and music. The work *Spiegel im Spiegel* translates to English as "mirrors in mirrors", a reference to infinity mirrors which reflect an image using parallel plane mirrors to give the sense of an infinitely occurring reflection. It's a particularly apt name for this Minimal composition, which seems to move both towards and away from itself in its circular movements.

CHARLEMAGNE PALESTINE

—
Excerpt from Evolution of a Sonority in Strumming and Arpeggio Style for Bosendorfer Piano
 1978

Charlemagne Palestine is an influential experimental American musician. Born in 1947, Palestine's early musical experience was of singing sacred music in synagogues. He was a bell ringer at St Thomas Church in New York in the 1960s, which began his life-long fascination with church bells and organs as instruments for his sonorous, often ecstatic, compositions. Palestine's well-known work, *Strumming Music for Piano, Harpsichord and String Ensemble (1974)* is regarded as a benchmark piece for Minimalist composition. Whilst Palestine uses a deliberately restricted range of materials and a repetitive technique, he has repeatedly eschewed the term Minimalism, arguing the opulent fullness of his music would more accurately be described as "maximalism".

Palestine's intense, ritualistic music centres around layered overtones, and electronic drones, which build and change gradually, gently harmonizing. He also makes use of a technique called 'strumming', where dense hypnotic rhythms are created by percussive repetition. His performances are often shamanistic, and overtly spiritual in nature. He has released over 20 solo records, and has collaborated with artists as diverse as Pan Sonic, Tony Conrad, David Coulter and Michael Gira.

HIROSHI YOSHIMURA

—
Dream
Dance PM
 1982

Japanese artist and composer, Hiroshi Yoshimura is considered a pioneer of ambient music, a form of sparse music, which was influenced by the development of Minimalism in the 1960s and 70s. Born in 1940, Yoshimura perceived his pared back compositions as a collection of sounds and silences. He referred to his musical process as seeking a prime number, perhaps to describe their almost mathematical purity.

In 1972, whilst composers such as Philip Glass and Charlemagne Palestine, were creating some of their most significant Minimalist works, Yoshimura started the computer music group, Anonyme in Japan, which ushered in an entirely electronic form of music-making. His slightly later record, *Music for Nine Postcard*, from which *Dream* and *Dance PM* are both taken, took as its starting point the abstracted view from nine windows, and evoke a series of peaceful contemplations of nature.

—
Jetsun Mila, Pt. 1
 1987

For almost fifty years, French composer, Éliane Radigue has been a pioneer of starkly Minimalist electronic music. She studied 'musique concrète' in Paris under the tutelage of Pierre Schaeffer and Pierre Henry before moving to New York in 1970. Within the Minimalist movement characterised by Steve Reich, Phillip Glass and others, Radigue distinguished herself with compositions that comprised of pure electronic drones, that slowly unfolded over long intervals. Her meditative, long-form electronic compositions are influenced by her practice of Tibetan Buddhism. Much of this practice has involved the deep exploration of a single instrument, the ARP 2500 modular synthesizer.

Radigue has enjoyed a recent surge of interest alongside composers such as Daphne Oram and Delia Derbyshire, whose pioneering work has for many decades been overlooked in a field dominated by men. With this dominance being challenged by a new generation of critical musical thinkers, Radigue is being rightly recognized as both a pioneer of Minimalist music, and a master of her craft. Whilst, she is represented in the Sound Room with a later work, *Jetsun Mila, Pt. 1 (1987)*, her sparse compositions of 1970s are now considered essential works in the Minimalist music tradition.

—
 MARYANNE AMACHER

—
Chorale 1
 1999

Maryanne Amacher was an American composer and sound installation artist. Born in 1938, Amacher studied composition in the US, Austria, and the UK, before making her first major work in 1967. A contemporary of the Minimalist pioneers of the 1960s, she often collaborated with avant-garde composers such as John Cage.

In contrast to her Minimalist peers, Amacher was known for her radical exploration of 'otoacoustic emissions', a type of psychoacoustic phenomenon. In this phenomenon, a sound is produced by the resonances of the listener's inner ear in response to two pure-tone frequencies played at high intensity. This 'third sound' is produced entirely within the ear itself. Through this effect, Amacher used the listener's own physiology to add a new sound to the ensemble in her composition; sounds that reflect the condition of the ear itself, and may well be utterly unique to each listener. Her work was always best experienced as site-specific architectural sound installation, where she was able to create complete immersion for the listener in a controlled environment.

Represented in the Sound Room with a later composition, *Chorale 1* from 1999, Amacher's work is a crucial contribution to the expanded field of Minimalist music.

PROGRAMME TWO:
**BEFORE
 MINIMALISM**

The second programme of the Sound Room explores composers whose work can be seen as influencing Minimalism, or in some cases, a precursor to it.

The programme shows how figures such as Erik Satie, George Antheil, Pierre Schaeffer, and John Cage laid the conceptual and experimental groundwork for Minimalism, introducing many of the techniques and aesthetic ideas which would be utilised by later musicians in the 1960s and 70s. It also focuses on the pioneering contributions of lesser-known musicians who are now being reconsidered as vital early exponents of experimental Minimalist sound, such as Johanna Beyer, Daphne Oram, and Else Marie Pade.

ERIK SATIE <i>Vexations</i>	1893	0:07:42
ARNOLD SCHÖNBERG <i>Three Piano Pieces, Op. 11: I. Mässige</i>	1909	0:04:10
<i>Three Piano Pieces, Op. 11: II. Mässige achtel</i>		0:08:05
<i>Three Piano Pieces, Op. 11: III. Bewegt</i>		0:02:48
ANTON WEBERN <i>Children's Piece for Piano (Kinderstück)</i>	1924	0:01:46
GEORGE ANTHEIL <i>Ballet Mechanique</i>	1924	0:09:10
BÉLA BARTÓK <i>Out of Doors Sz. 81: IV. Night Music, Lento</i>	1926	0:05:37
COLIN MCPHEE <i>Tabuh-Tabuhan: I. Ostinatos</i>	1936	0:07:06
JOHANNA M. BEYER <i>Music of the Spheres</i>	1936	0:06:00
JOHN CAGE <i>Sonatas and Interludes for Prepared Piano – Sonata V</i>	1948 / 2011	0:01:36
<i>Sonatas and Interludes for Prepared Piano – Sonata VII</i>		0:02:03
<i>Sonatas and Interludes for Prepared Piano – Sonata XII</i>		0:02:57
YVES KLEIN <i>Monotone Symphony</i>	1949	0:02:50
PIERRE HENRY & PIERRE SCHEAFFER <i>Dramatic Cantata – The Veil of Orpheus</i>	1952	0:15:36
ELSE MARIE PADE <i>Syv Cirkler (Seven Circles)</i>	1958	0:07:06
DAPHNE ORAM <i>Four Aspects</i>	1960	0:08:15

—
Vexations
 1893

Erik Satie was a French composer and pianist. Born in 1866, he was a key figure in the Parisian avant-garde of the early 20th century. Whilst best known for his melodic and melancholy piano pieces, such as *Trois Gymnopédies* (1888), he was in fact a musical maverick, whose work went on to influence Minimalism, much later. His tendency towards extreme simplicity is apparent in his progressive work, *Vexations*. Never performed during Satie's lifetime, *Vexations* remained relatively obscure, until the score was found in 1963 by John Cage, one of the most influential figures in 20th century experimental music. Cage noted that the simple but haunting refrain had an instruction on the manuscript for it to be performed "840 times in succession", which resulted in the organisation of an 18-hour long performance of it by many luminaries of experimental music. *Vexations* was both a provocation for these performers, and a clue that they may have been predated by one of the most radical figures in early 20th century music.



ARNOLD SCHÖNBERG

—
Three Piano Pieces, Op 11
 1909

Arnold Schönberg was an Austrian-born American composer theorist, teacher and artist. Born in Vienna in 1874, Schönberg's radical ideas on musical organisation profoundly influenced modern composition. Schönberg's work in 'Twelve tone music' arguably underpins much of what was to come in Minimalist music. In this revolutionary new approach to composition, the basic unit of the scale was not the chord, but the individual note. This allowed for a completely new approach to arrangement and harmony, producing new tonal relationships and sonic textures. It also opened the door for further challenges to traditional composition in a classical music culture that was, like many other cultural forms at this time, rapidly changing in the wake of the Industrial Revolution. *Three Piano Pieces* is an early example of his 'Twelve tone music'.



ANTON WEBERN

—
Children's Piece for Piano
(Kinderstück)
 1924

Anton Webern was an Austrian composer, whose highly compressed serial musical structures are considered by some to be the root of musical Minimalism. Born in 1883, and a student of Schönberg, Webern's work represents perhaps one of the most thorough contemporary interrogations of Schönberg's 'Twelve tone' compositional technique. The abstraction from traditional relationships of rhythm, scale and harmony opened up a radical new artistic language for Webern, where conceptual rigor collided with new forms of space and temporality. Such a challenge to the 'norm' was not without its social and political ramifications. After Germany annexed his native Austria, his music was banned by the Nazi Party, who attempted to dismiss it as a 'Jewish-Bolshevik degenerate art'. He went on to exert a strong influence on the Serialist composers of the later part of the 20th century, such as Pierre Boulez and Karlheinz Stockhausen, and on the Minimalists of the 1960s.



GEORGE ANTHEIL

—
Ballet Mechanique
 1924

George Antheil was an avant-garde American composer. Born in 1900, Antheil moved to Paris in 1923, where he was acquainted with some of the giants of modernist art, including Pablo Picasso, Salvador Dali, literary figures such as Ezra Pound, James Joyce, and fellow composers, Erik Satie. His work during this period was considered radical, employing many curious sound sources and unusual instruments. His concerts in the 1920s often led to uproar, which contributed to his international notoriety.

His magnum opus during this period was, *Ballet Mechanique*. Though it sounds remarkably modern today, through its use of sirens, car engines, airplane propellers and metronomic dissonance, it was nothing short of revolutionary when it was first performed in 1926. The use of mechanical elements was an integral part of Antheil's response to the early 20th century he was living through, a time when many societies were rapidly adjusting to the increasingly mechanized soundscape of the world around them. By including them almost as 'readymades' within his compositions, Antheil was exploring the artistic potential of these new industrial and mechanised aesthetics, rather than isolating himself and his practice from them.

—
Out of Doors Sz. 81: IV.
Night Music, Lento
 1926

Hungarian composer, pianist and musicologist, Béla Bartók is considered one of the most important figures in 20th century music. Born in 1881, Bartók composed at the intersection between the old and the new. Even while he continued to challenge traditional Western harmonic systems, he drew significant inspiration from folk and traditional music of his native Hungary. In 1938 he wrote that, "all efforts ought to be directed at the present time to the search for what we will call 'inspired simplicity'".⁵ The 'inspired simplicity' of his own progressive piano pieces, his use of unusual scales and chromatic patterns endeared him to a generation of Minimalist composers who came later, particularly Steve Reich.

An avowed anti-fascist, Bartók's in-depth research into his national and cultural heritage was, unlike others, not an attempt to unearth a racially 'pure' national art. It instead both challenged and respected the past while synthesising it into something wholly new. His research eventually became fundamental to the development of ethnomusicology, the scholarly discipline of contextually studying the cultural, historical, and social aspects of music from around the world.

COLIN MCPHEE

—
Tabuh-Tabuhan: I. Ostinatos
 1936

Colin McPhee was a Canadian composer and musicologist. Born in 1900, he studied with the avant-garde composer, Edgard Varèse, before joining the 'ultra-modernists' group of composers in the 1920s, who were interested in what would become known much later as 'world music'.

McPhee's work is an example of how engaging with wider contexts of musical and cultural thought can create whole new movements in art. During his time living in Bali in Indonesia in the 1930s, he studied, interviewed and recorded Balinese people, and their culture. His work acted as an introduction for many to Balinese culture, particularly gamelan, a predominantly percussive traditional music style. His key piece from this period, *Tabuh-Tabuhan*, is based on his explorations of this musical form. Gamelan had a tremendous influence on a host of Western composers, including several Minimalist composers of the 1960s. It presented them with a rich new musical form and an alternative way of thinking to the historically entrenched practices of Western music.

JOHANNA M. BEYER

—
Music of the Spheres
 1936

Johanna Beyer was a German musician who composed important early work for electronic instruments. Born in Germany in 1888, she moved to New York in 1923. She was part of the 'ultra-modernist' circle of musicians, alongside composers such as John Cage, who performed several of her works in the 1930s.

Her 1938 piece, *Music of the Spheres*, is one of the first compositions ever written for electronic instruments. Its opening 'lion's roar' immediately marked it out as a truly prescient modernist composition. Beyer's employment of the subtle glissandi made possible by electronic instruments demonstrated her thoughtful reflection on the technical capacities and artistic potential of these new instruments.

During her life, Beyer was acutely aware of the lack of acceptance of her and other women into the male-dominated field of experimental composition, an injustice still experienced by women in electronic music today, 80 years later.

JOHN CAGE

—
Sonatas and Interludes for Prepared Piano - Sonata V, VII, XII
 1946 - 8

American composer and artist John Cage revolutionised modern music. Born in 1912, Cage challenged the very definition of what music is, introducing unconventional instruments, electronics and a playfully profound approach to improvisation, which remains provocative and inspiring to this day. Deeply influenced by Asian philosophies, his work explored the harmony that exists in nature, as well as elements of chance. Cage's impact on minimalist music cannot be understated. His 1952 piece "4'33", an entirely 'silent' composition, changed the way that music was understood, and ushered in radical new approaches to composition.

His *Sonatas and Interludes for Prepared Piano* were composed for the 'prepared piano'. Cage placed objects such as bolts, nuts, and tin foil within the body of the piano to manipulate and expand the range of sounds it could produce. The works were performed by Singaporean musician, Margaret Leng Tan, whose interpretation of these works draws upon her own explorations with the prepared piano, where her mechanical interventions on the instrument interrogate both its history and its potential future.

—
Monotone Symphony
 1949

Yves Klein was a French conceptual artist and composer with a wide-ranging practice. Born in France in 1928, he is best known for his visual artworks in an iridescent shade of blue, which he patented and called International Klein Blue (IKB). He used his distinctive blue paint to create his famous 'monochrome' works, which have been described as an attempt to "unlock the endless void of space."⁶

Prior to the 'monochrome' works, Klein composed *Monotone Symphony*, a musical work suggestive of what was to come for both performance art and experimental music in the 20th century. In it, a single chord is held for twenty minutes, followed by a twenty-minute silence. Both sections challenged the conception of what music was, and could be, toying with conventions of musical structure and order that dominated the Western canon. At the end of a performance of *Monotone Symphony* in 1960 where Klein himself was the conductor, he purportedly only said one thing: "The Myth is in the Art".

PIERRE HENRY & PIERRE SCHAEFFER

—
Dramatic Cantata - Veil of Orpheus
 1952

Henry and Schaeffer were French experimental composers and formative personalities in what Schaeffer termed 'musique concrète'. This form of music exploited the emergence of the tape machine as a completely new tool in composition. The 'infinite' looping of tape allowed for a form of close-listening to recorded sound never before possible, leading to 'musique concrète's' exploration of sounds distinct from their source: captured, looped, re-placed and re-arranged. This form of 'acousmatic listening' became a considerable influence on the rapidly expanding field of sound art and Minimalist music, emphasising, as it does, the deep sensorial appreciation of sound and its manipulation.

ELSE MARIE PADE

—
Syv Cirkler (Seven Circles)
 1958

Else Marie Pade pioneered electronic music in Denmark. Internationally, she belonged to a wave of women composers, including Delia Derbyshire and Daphne Oram, who made major contributions to experimental, Minimalist composition.

Pade was born in 1924. As a child, she would create pictures in her mind from listening to sounds from outside her window - a practice that would play a major role in the distinctive aesthetic of her later work. A student of Pierre Schaeffer in the 1950s, Pade also worked with Karlheinz Stockhausen and Pierre Boulez, before spending most of her career composing music soundscapes for radio.

During World War II, Pade was a member of the Danish Resistance, and was held in a German prison camp, where she devised a music notation system which she carved onto the prison walls. After the war, she began to create her own electronic compositions. Her 1958 masterpiece, *Syv Cirkler*, employs two of the core characteristics of Minimalism, repetition and cycles. It sonically depicts the movements of the stars through a pulsing array of undulating tones and quivering drones. She notes, "I could imagine that the stars and the moon and the sky uttered sounds and turned those into electronic music".⁷

DAPHNE ORAM

—
Four Aspects
 1960

Daphne Oram was an English experimental composer and a groundbreaking musical technologist. Born in 1925, she is known for 'Oramics', a method of composition, which involved hand-drawing shapes and patterns onto 35mm film, which was passed through photocells, converting the light into an audio signal. This was an early example of electronically synthesising sound, producing musical textures without employing a traditional musician or instrument - creating a sound from 'nowhere'.

Her conceptual thinking behind this work was articulated in her multiple tracts on the physics and philosophy of sound, including what she saw as the essentially 'mystical' nature of her compositional practice, and of sound itself.

⁶Klein Y (1958), quoted in "Yves Klein And James Turrell Dialogue At Lévy Gorny", Art is Alive, 5 June 2018, viewed online 9 November 2018.

⁷Pada EM (2013) *Interview with Else Marie Pade* by Anne Hilda Neset, The Wire Issue 354, August 2013.

PROGRAMME THREE: AFTER MINIMALISM

The final programme in the Sound Room explores the new wave of Minimalism that emerged in the late 20th century, and continues to develop as a major aesthetic movement within contemporary experimental music.

'Digital Minimalist' musicians such as Ryoji Ikeda, alva noto and Tetsu Inoue incorporate glitches, digital reverb and compression artefacts into their compositions, creating a new kind of computational 'musique concrète'. Like the minimal techno which emerged from the underground clubs of Detroit in the 1990s, Digital Minimalism often emphasises rhythm and repetition, instead of melody and linear progression. Other artists, such as Hildegard Westerkamp and Jana Winderen explore new Minimalist ideas through recording and production techniques alongside field recordings, overlaying the natural world with the digital imaginary. Meanwhile, a new generation of composers are embracing the cyclical drone so important for the High Minimalist period, with artists with as Thomas Köner and FM3 creating pulsating, hypnotic soundtracks that are entirely distinctive.

THOMAS KÖNER <i>Permafrost</i>	1993	0:10:09
TETSU INOUE <i>Low of Vibration</i>	1994	0:11:11
RYOJI IKEDA <i>Headphonics 0/0</i>	1996	0:03:13
<i>Headphonics 0/1</i>		0:03:12
<i>Headphonics 1/0</i>		0:04:17
HILDEGARD WESTERKAMP <i>Talking Rain</i>	1997	0:17:31
ALVA NOTO <i>Module 3</i>	2001	0:10:09
RYUICHI SAKAMOTO <i>Solitude</i>	2002	0:04:54
UNSUK CHIN <i>Piano Etude No.5 (Toccata)</i>	2003	0:02:47
FM3 <i>Ma</i>	2005	0:04:06
<i>Zheng</i>		0:04:17
<i>Sheng</i>		0:03:45
<i>B1</i>		0:04:06
<i>Yang</i>		0:04:02
FRANCISCO LÓPEZ <i>Untitled #225</i>	2009	0:09:43
JANA WINDEREN <i>Isolation/Measurement</i>	2010	0:11:41
CATERINA BARBIERI <i>Scratches on the Readable Surface</i>	2017	0:05:56
ADELIN WONG <i>Herringbone</i>	2018	0:06:00

THOMAS KÖNER

Permafrost
1993

Thomas Köner is a German artist and musician whose work combines visual and auditory experiences.

His piece, *Permafrost* may well be one of the evolutionary apexes of the 'drone', one of the most important tropes within contemporary Minimalism music. The term 'drone' evokes both the cyclical and meditative properties of compositions such as *Permafrost*, whose minimalism creates a soundscape that provokes the listener's other senses. This suggests the tactile effect of cold wind on skin, or the white-out of a blizzard. Glacial both in its movement and in the atmosphere it evokes, *Permafrost* presses upon the ears. It implicates the listener in its movements through the skill of Köner's refined production, and the tension he weaves into the composition.

TETSU INOUE

Low of Vibration
1994

Japanese musician, Tetsu Inoue is a key practitioner of a new genre of Minimalist music that began evolving in the 1990s, as digital sound technology became more widely available. His approach to music, referred to as "Digital Minimalism", is ambient in nature, employing slowly shifting haze of electronic sound, gliding drones, and softly repetitive beats to lull the listener into a meditative frame of mind.

The work, *Low of Vibration*, comes from Inoue's first solo album, *Ambiant Otaku* released in 1994. Inoue's characteristic warm and ethereal style permeates a shimmering composition, comprised of fragile fragments of melodies, which repeat and loop, in a classic Minimalist way. In Inoue's pieces, the line between music and sound collage dissolves, as the work reveals exquisite details, which are deceptively complex in structure and form.

—
Headphonics 0/0
Headphonics 0/1
Headphonics 1/0
 1996

Ryoji Ikeda is a Japanese electronic composer and visual artist who currently lives in Paris. Considered one of the most important exponents of a new form of Minimalism that appeared as digital music took hold in the 1990s, Ikeda's work skirts the paradoxes of the micro and macro scale. As both a composer and an installation artist, his work often evokes a grand scale built from infinitesimally small grains of sound. Ikeda's sonic aesthetics conjure up both austere computation and the intimate rhythms of the human body.

In these works from the album +/- he employs headphones as his canvas, playing with this contained space to create a form of hypnotic immersion, gradually submerging the listener in a dispersed field of minimal sonic elements.

HILDEGARD WESTERKAMP

—
Talking Rain
 1997

Hildegard Westerkamp is a composer, radio artist, teacher and sound ecologist born in Germany and based in Canada. Westerkamp's work pushes at the liminal space between electro-acoustic composition and field recordings, between the real and the hyper-real. Her work constitutes a different kind of approach to Minimalism, where the environment becomes an active component of the composition. In compositions such as *Talking Rain*, the fine line between the composer's hand and chance become blurry, provoking reflection on the musicality of the sounds which make up our environment. Westerkamp is an active researcher and campaigner at the intersection of sonic preservation and ecology, and is a founder of the World Forum on Acoustic Ecology. Both her writing and music challenge the relationships between noise, nature, and listening - promoting a synthesis where all three are in balance.

ALVA NOTO

—
Module 3
 2001

alva noto is the alias of Carsten Nicolai, a German artist who is a major figure in both electronic music and visual art. Alongside peers such as Ryoji Ikeda, Tetsu Inoue and Thomas Köner, alva noto is one of a generation of musicians who employed digital technology to create a new Minimalist aesthetic in the 1990s and 2000s. As critic Philip Sherburne has noted, the music of alva noto has an austere purity, whilst his spartan sculptures and installations suggest Donald Judd's clinical influence.

His work, *Module 3*, part of the larger *Transform* suite, opens alva noto's world of digital sonic aesthetics to the listener, creating an evocative and spacious work that pushes the boundary between the audio serendipities of the subtle hiss of vinyl playback and the rhythmic skipping of a CD.

RYUICHI SAKAMOTO

—
Solitude
 2002

Ryuichi Sakamoto is a Japanese musician, and Oscar-winning composer of film scores. Sakamoto's incredible breadth of compositional skill is evident in the fact that his work stretches across both the realm of traditional classical music and the fringes of electronic arts. His early experiments with synthesiser keyboards and drum machines creates a minimal sound that was wholly his own. His later collaborations with German musician, Carsten Nicolai on albums such as *Vrioon* (2002), *Insen* (2005) and *Glass* (2018) are considered key works of contemporary Minimalist music.

The piece, *Solitude* was part of Sakamoto's soundtrack for the film, *Tony Takitani*. Based on a short story by Haruki Murakami, the film explored the nature of social and emotional isolation. *Solitude*, a sparse minimal and melodic work, was its central theme.

—
Piano Etude No. 5 (Toccata)
 2003

Unsuuk Chin was born in Seoul, Korea, has worked and studied extensively internationally and now lives and works in Berlin, Germany. She cites multiple influences to her practice, including pre-minimalist composers, Béla Bartók and Anton Webern but also perhaps less obviously, visual artist Olafur Eliasson, who appears elsewhere in this exhibition, and Samuel Beckett.

Her contemporary Minimalist music is complex to perform and perhaps even more difficult to define. Unsuuk describes her music as non-tonal and sees a role for it as white space in a hectic modern world. It is, she says, "a source of contemplation [which is] direly needed in our times of information overkill and consumerism – it is a health product whose effect is profound, even though it can't be easily measured".⁸

FM3

—
Ma
Zheng
Sheng
B1
Yang
Buddha Machine
 2005

FM3 is the name of musical duo, Christiaan Virant and Zhang Jian. Based in Beijing, they are considered pioneers of Digital Minimalism in China. Their approach to music draws on many ideas within the Minimalist tradition, including looping and repetition, and sparse, drawn-out drones.

FM3's meditative music combines Chinese classical music with modern digital techniques. They are best known for their musical works composed for devices they call, *Buddha Machines*. Each *Buddha Machine* is a small plastic box with a speaker and minimal controls, roughly the size of a cigarette packet. The *Buddha Machine* plays short minimal musical compositions in a continuous loop, creating an object that is both the container of its compositions and the method of their playback. The *Buddha Machine* was inspired by similar devices used as part of Buddhist meditative practices in China, India, and elsewhere. These portable playback devices for recorded chants and traditional compositions can be brought to meditation sites, no matter how distant or isolated it may be.

—
Untitled #225
 2009

Francisco López is a Spanish sound artist and composer working at the intersection of many strands of sonic arts, including sound installation, noise and avant-garde experimentation. He is a key exemplar of a particular type of contemporary Minimalist music which emerged in the 1990s, and was often characterised by the use of microsound.

Untitled #225 combines the dark soundscapes of his work with processed sounds that are tantalisingly close to everyday noises, creating something akin to a hyperreal field recording of an alien landscape. This is all the more impressive given his minimal sonic palette, which uses tones at both extreme ranges of the audible sonic spectrum to create an immersive audio presence.

—
Isolation/Measurement
 2010

Jana Winderen is a musician who lives and works in Oslo, Norway. She creates immersive multi-channel recordings, installations and concerts. Winderen hunts for sounds hidden from us, either by geography or by the limits of our senses, and draws them together into compositions which act as records of these far-off or imperceptible realms. Like Hildegard Westerkamp, Winderen's approach to Minimalism stems from a fascination with natural environments and ecosystems, much like the visual arts tradition of Land Art.

For the recordings that are combined in *Isolation/Measurement*, she travelled to several Nordic seas to explore glaciers, fjords and cracks in the earth to capture their most intimate sounds. She extensively employed hydrophonic microphones that can record underwater, bringing the sounds of marine life mating and hunting into this rich and dense sonic evocation of the cold fringes of the world.

Scratches on the Readable Surface
2017

Caterina Barbieri is an Italian composer based in Berlin. Her practice of Minimalist composition is driven by her investigations into machine learning and object-oriented philosophies, extending these logics into an exploration of modular synthesizers such as the vintage Buchla 200, which she has composed extensively for.

Like many Minimalist composers from previous generations, who are presented in the Sound Room, Barbieri's music is both a response and a challenge to the cultural and technological contexts she finds herself living through. Her compositions engage with this through the capacity of sound to transform our perception of space, and transform ourselves as the listeners within it.

ADELINE WONG

Herringbone
2018

Adeline Wong is a Malaysian composer based in Singapore. Her contemporary classical music, which includes many Minimalist elements, is bold, with textural energy and kaleidoscopic colours. Her recent work is marked by the use and concentration as little material as possible. From 2016-2018, she conceived of a series of five connected pieces, in which the musical materials used in the ending of a piece are utilised in the beginning of a new one, thus giving the works an organic, circular quality. *Interweaves* (2016) was the first of this series, followed by *Nexus* (2017), and most recently *Herringbone* (2018), which is comprised of a texture of persistent repeated notes. The sudden shifts of dynamics, registers and textures from the keyboard gives the impression of a high-speed school of herring suddenly changing course.

THE EXHIBITION

Minimalism: Space. Light. Object. (16 November 2018 – 19 April 2019) is a major exhibition that unfolds across the galleries of ArtScience Museum and National Gallery Singapore. Featuring 150 artworks, the exhibition includes canonical names in Minimalism, as well as key contemporary figures in visual art and music.

The term "Minimalism" was first used to describe the minimum requirements needed for something to be considered a work of art. The artists who were to become grouped as "Minimalists" in turn encouraged viewers to respond only to what was in front of them, an idea beautifully encapsulated by painter Frank Stella, who said of his paintings, "What you see is what you see." In Minimalism, the medium of the artwork, its form and how it is situated within the gallery, become the focus.

Within *Minimalism: Space. Light. Object.* at ArtScience Museum, these qualities are exemplified in significant works by Carmen Herrera, Donald Judd and Richard Long.

Playing to our strength as a museum of art and science, we have also chosen to present artworks which meditate on the notions of the cosmological void, emptiness and nothingness — principles which resonate with both Minimalism and science. The vacuum and the void are central features of physics, which have helped shape our understanding of reality. The vast emptiness that permeates the universe, and the structure of atoms, has long given both scientists and philosophers pause for thought. Whilst quantum mechanics teaches us that empty space in nature is never truly empty - undulating as it is with vacuum fluctuations, gamma rays, and invisible quantum fields - it is extraordinary to ponder the sheer sparsity of the cosmos. Artist, Frederick de Wilde, addresses the cosmological void through the use of a material considered the blackest black in the world. When gazing at his artwork, created from carbon nanotubes that are able to capture all light at all frequencies, viewers are literally looking into nothing, a void space, and the closest approximation of emptiness that is possible to experience.

Minimalism: Space. Light. Object. creates dialogue between these scientific notions and the Zen Buddhist ideas of the void. We have delved deeper into Asian philosophy, exploring to Minimalism as seen in Zen, Chinese Maximalism and contemporary abstraction, with works by Tan Ping, Wang Jian, Zhou HongBin, as well as Song Dong, CharWai Tsai and Morgan Wong.

Anish Kapoor and Olafur Eliasson take a different position on Minimalism, emphasizing intangible elements such as light and pure colour within their installations. Their stunning environments articulate somatic experiences that emerge from the Post-Minimalist dematerialization of the art object.

Singaporean artist Jeremy Sharma takes this notion of dematerialization one step further and, with the spoken word only, seeks to describe the physical experience of colour using sound. Music and sound form a major part of the exhibition, with 40 artists, musicians, artists and composers presented in the Sound Room, which acts as an auditory counterpoint to the visual explorations of Minimalism presented within the galleries.

Experienced together, the artworks and compositions in *Minimalism: Space. Light. Object.* at ArtScience Museum reflect on the profound simplicity and stillness inherent in Eastern interpretations of Minimalism, whilst also seeking to embody the angular starkness that made Minimalism such a vital force following its emergence in the 1960s.

The exhibition seeks to express the idea, often attributed to Albert Einstein that, "everything should be made as simple as possible, but not simpler."

Minimalism: Space. Light. Object. is organised by National Gallery Singapore and ArtScience Museum.

Curated by Eugene Tan, Russell Storer, Silke Schmickl and Goh Sze Ying from National Gallery Singapore, and Adrian George from ArtScience Museum.

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