RYOJI IKEDA

SOLO EXHIBITION

池田亮司

個展

08.10.2019 — 11.17.2019

GALLERIES 1A & 1B

Co-curator
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臺北市立美術館
TAIPEI FINE ARTS MUSEUM

Overview

Ryoji Ikeda is an unconventional artist whose creative explorations encompass mathematics, quantum mechanics and philosophy, deploying a complex technical synthesis of sound and image to concretely express his own personal perspectives. His works reveal the connections between the interests that drive him and the wide world. At the same time, the images of the works themselves bring together the classic elements of new media art, seeming to embody the view, supported by many, that digital technology has become the main subject matter of art today. Yet if, in beholding his works with their dazzling visual effects and sonic expressions brimming with tension, we are led by such rich audio and visual elements to draw the evident conclusion that they are purely "technological" in nature, this would only shift our understanding of the works to a utilitarian level: from production to product. More crucially, the artworks of Ryoji Ikeda, though digital and derived from arithmetic calculations, are alive with a personality all their own. For Ryoji Ikeda, the computer languages that comprise source codes and programming are an objective means to establishing a creative vocabulary; controllers and other devices are merely tools.

And specifically because of this, we must seek to access his works from the inside, to comprehend the creative consciousness they convey. To understand Ikeda's works, we must first understand his high esteem for mathematics. Math is a necessary condition for endowing his works with meaning, and also the means by which he expresses his ideas. In mathematics, numbers, forms and relationships are all ontological subjects. Mathematics symbolizes universal truth and encompasses an unlimited form of science. To put it precisely, he creates with numbers; however, he does so not through qualitative change, but through the basic mathematical actions of fragmentation and generation, posing continuous questions and intuitively presenting statements and dialectics regarding time. According to Ikeda's vision, mathematical geometry accurately constructs a view of space, and numbers express ideas about time. Space-time is the foundation of all universes. His works thus convey a form of knowledge based on the belief that mathematical truth is uniquely powerful and serves as a powerful point of reference.

In general, data and code form the foundation of Ikeda's work. Using packets of data, he very accurately reproduces pixels (the basic elements of digital images), lines and points. That is, he uses mathematics to wrestle with the "absolutely large" and to place art within a new paradigm of aesthetics. Thus, Ikeda undertakes dexterous performances with an infinite amount of information. The quantifiable is the only predetermined strategy of his works, but his aim is not to enmesh us in the world of information systems or to trigger in us a state of numbness amidst encompassing technology and industrial mechanisms. It is precisely "quantification" that provides the aesthetic basis of his work, referencing a deduction of infinity.

In 300 BCE Euclid proposed his theorem that there are infinitely many prime numbers greater than one. In the works of Ikeda, we recognize the mathematical nature of art, as well as a philosophical rumination on the infinitesimal and the infinite. When applied in his works, this rumination encompasses the tension between continuity and discreteness, and at its core lies the boundless vastness of prime number +1, which generates the infinity of art. Ikeda uses of the productivity and efficiency of technology to transform the material world into an unbounded universe, revealing the continuity and discreteness hidden within various real systems, and reflecting an awareness of internal order. In the early 20th century, modern art integrated mechanical and industrial processes. Now, the art of Ryoji Ikeda attempts to depict the advanced technological aesthetics at the heart of the 21st century. And using the laws of mathematics, he explores the material that makes up the universe. When an artwork engenders such a broad ecosystem, everything in it has meaning.

About the Artist

Ryoji Ikeda was born in the late 1960s and grew up in the 1970s. In that era, two decades after World War II, the Japanese economy was becoming increasingly robust, and Japan was beginning to develop a progressive society in embryonic form. Art, music, dance, and literature crossed cultural boundaries, while a new experience arose bridging high culture, pop culture, and underground culture, which made use of the differences among them to consider an array of novel things in the world. And the ways in which one might practice art multiplied like a magic trick. For example, musicians found sounds that transcended traditional instruments and made music with new materials and new methods. In such an environment, Ikeda began to collect different kinds of music from radio stations, from punk, new wave, and rock and roll, to industrial music, noise, underground music and electronica. Starting from musique concrète, which directly engages in artistic creation using sounds themselves, he began to play games with music using analog methods such as electronic processing and montage, editing, manipulating magnetic tape, and altering audio frequencies.

In the 1990s Ikeda's art made a quantum leap. In 1994 he helped the multimedia art collective Dumb Type to produce a CD. This group engaged in exhibitions, theater, dance, music and publishing, collaborating with artists from other fields. Ikeda turned his attention to theater and art exhibitions. Later, he began to do sound art performances and became active in music festivals, creating sound installations, recording, and releasing albums. Through this process of evolution, Ikeda became a DJ, musician and sound artist. At this juncture, he also began to use a computer to more easily edit sounds. But repeatedly using sound for the sake of music could not fully satisfy his desire to understand sound itself. Ikeda delved further into the physical nature of sound. From the perspective of physics, sounds are vibrations transmitted in the form of wavelengths. Thus, it is possible to define every sine wave with a specific period and frequency, while

white noise is a random composite of sounds of varying frequency. Sine waves conform to a certain acoustic system and are orderly, but noise has no order. If he were to juxtapose the two, in a manner corresponding to our brain system, how would sound be defined? Or how could he use these two sources to create sound?

For Ikeda, using these two sources represents a deliberate choice of purity – the decision to use sine waves as the raw material for his sound art. Quantum mechanics tells us that sounds are fluctuations transmitted in the form of wavelengths. Sine waves are the basic elements of analog signals – harmonious, regular, repetitive oscillations, with the same structures as those sounds that can be found in nature. For Ikeda, sound can symbolize the pure structure of nature. But not all natural sounds can be perceived by the human ear. A quantum field contains particles with different structures, such as protons, neutrons, atoms, electrons, and photons. All these particles vibrate in the manner of a wave function, and whether a specific particle's vibrations fall within the range of human hearing depends on its period and frequency. So Ikeda made very subtle sounds accessible to our ears, by depicting the microscopic phenomena in our physical environment, using machines (computers) as his tools and employing the language of mathematics. In so doing, he changed how we observe the sounds all around us.

It was at this point that he wrote a new chapter in sound art. Pondering the structural nature of the deployment of materials, he developed a means of placement in accordance with the aforementioned definition of sound that reduced light to pixels. Ikeda shifted his focus to finding new structures of expression, rethinking the nature of space and time through the initial dimensions of his works: he employed pre-designed conditions of "quantification" to each element, from sound and light to digital imagery, in order to facilitate visualization of the architecture of time and space. Starting in 2000, Ikeda used the method of juxtaposing an analog medium (sound) and a digital medium (images) to increase the semantic radioactivity of his works. His creative model was to shape his works with the guidance of two different technologies, which he merged together. This practice reflected a high regard for the scientific community, as well as the rationality of implements, both in theory and in practice.

About the Exhibition

Ikeda's creative model redefines how technology can be used as a midwife for art. But hidden within it is his artistic desire to use numbers, the language of simulation, to reveal the universe that transcends what can be comprehended at the human scale. He sums up the exhibition thusly: "Eventually I made a certain composition that could be navigated and give visitors a great journey through the 'fundamentals of the universe.'" From the lobby and entrance to the final gallery, the exhibition includes the works, all employing data and computer languages, from sound sculptures and audiovisual installations to light

boxes, and two-dimensional artworks. What truths the works themselves reveal depend on the communicative nature of their unique vocabulary. In his conversation with Lista, he notes their conceptual similarity to forms of animism, such as Shintoism. This traditional Japanese religion holds that all things in the natural world, both living and inanimate, have a spirit. In like fashion, Ikeda bestows spirit to machines (computers) and mathematics, creating works of philosophical import that afford a glimpse at the true meaning of the universe, explore phenomena that exceed human perception, and manifest the material world in quantifiable form. This is the artist's power to put art into practice, and his artistic desire to pursue the truth at the heart of science.

Ultimately, this exhibition aims to share the personal ideas of Ryoji Ikeda as he has expressed them through the reliable language of mathematics, concretely yet subtly providing a temporal and spatial image of a universe that is bounded yet infinite. Thus, the placement of the works is coordinated with the architectural design of Taipei Fine Arts Museum to create a metaphysical, spiritual space. The intent is to immerse us in a physical environment that visually and aurally manifests the world as the body perceives it. To be precise, the artist desires that visitors keep floating in a state of spirituality/physicality: suspended between these two extreme states, people's imaginations continually expand, thus drawing forth the degree of acuity innate in each work. From this springboard, the exhibition aims not so much to initiate a new alliance between art and science as to reveal, through the figurative language of the works, a cosmic view informed by the rationality of science, encompassing the artist's own longings for truth, and a transformation of the mundane world.

A Look at the Works

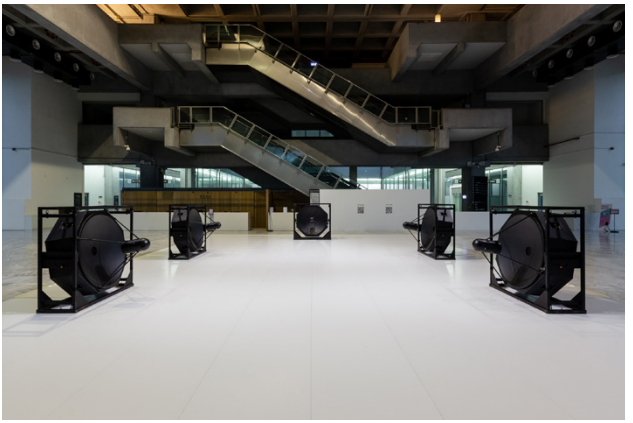
Employing the precise language of mathematics, Ikeda's art rejects the romantic aesthetic experience with its appeal to strong emotions. His works are fundamentally open to interpretation. They fuse such disciplines as physics and philosophy. They ponder the cosmos through the eyes of pure reason. They transform the invisible images of the universe into the material universe, allowing us to perceive its shape, and thus stir us to feel enchanted by the universe.

Instead of the "real" structure of space-time, Ikeda attempts to describe the "imaginary" trajectories of time and space. Discovering the abstract structures of space-time through mathematical means, he allows us access to a space-time that is borderless, conceptual and "imaginary." In a certain sense, he uses math and physics to create a cosmology with unbounded space/time.

Unlike physicists, who ask such questions as, "How did the universe begin? Why is the universe the way it is now? Is there one universe with a vast or infinite amount of space

and time, or is there an infinite multiplicity of universes?", Ikeda views mathematics and physics as reaching different conclusions (though they are not two opposing disciplines), the former expressing infinity, the latter seeking to establish the ultimate laws of nature, and thus he hypothesizes that the universe has no ultimate answer and is constantly evolving. No matter how the universe expands, it is a single concurrence, or multiple concurrences. Ikeda defines the composition of his works as a model of the entire universe described through mathematical calculation. It is an accurate, constant prediction made under mathematical conditions. For the artist, mathematical truth can provide a model of the universe.

A [continuum] (2018)
In *A [continuum]* (2018), the "A" in the work's title stands for the standard concert pitch of 440Hz, so-called "La". Ikeda has assigned each speaker a different historical "A" concert pitch. Once these different pitches and frequencies are superimposed on one another, interference or differential tones arise. Each sound source in this work is a sine wave. The wavelength oscillations of sine waves are non-directional, so the sounds fill the entire space. This sound sculpture blankets the entire space in a supremely complex yet intangible fabric of sound. Sound is the performer, but also a character hidden behind the curtains. For a time, visitors cannot comprehend what kind of sound this obscure resonance actually is. They instinctively use their own bodies and consciousnesses to roam throughout the enigmatic physical environment. Moreover, the combinations of sound and frequency never repeat, so that the work acts with complete autonomy, forming its own content. This produces an inexpressible vitality and freshness, stimulating the ears and stirring the imagination.

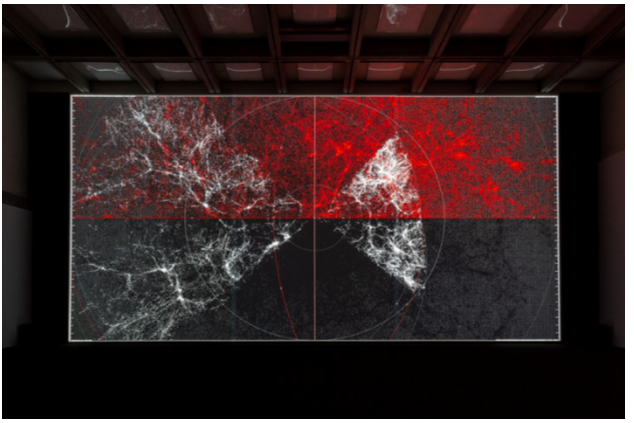


A [continuum]
2018
sound installation
concept and composition: Ryoji Ikeda
programming: Tomonaga Tokuyama
5 super-directional speakers (Meyer SB-1), computer
dimensions variable

point of no return (2018)
point of no return (2018) is a double-faced installation. On one wall a single video projector casts a clearly distinguishable black hole or solar eclipse containing a vast quantity of information. On the other side of the wall a single HMI lamp emits an extremely bright white ring of light with a color temperature nearly the same as the Sun's. This technically simple work echoes the theory of black holes. The general theory of relativity proposes that even light, the fastest thing in the universe, cannot escape from a black hole, which draws anything and everything into itself with its gravity. The region of space-time we call a black hole forms a critical threshold whenever its edge overlaps with the trajectory of light. The artist considers this to be his most metaphysical work. Implicitly, this display of minute things (light and shadow) expresses an enigmatic state transcending reality yet containing limitless images, leading the viewer to sense the presence of a domain their senses can touch but their thoughts cannot penetrate, no matter how much they wish to.

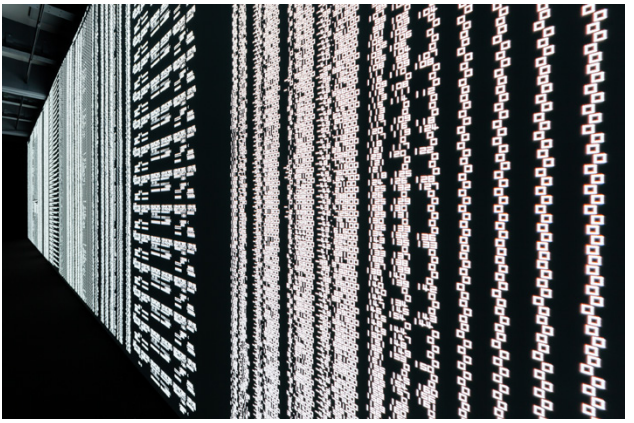
point of no return
2018
DLP projector, computer, speaker, HMI lamp
dimensions variable

the planck universe [macro] (2015)
The large-scale audiovisual installation *the planck universe [macro]* (2015) attempts to make the universe at a vast scale arise from the universe at an infinitesimally small scale. We cannot see the boundaries of the universe, and yet the natural world exists within unbreachable confines. Scientists make use of these extreme boundaries to delineate the real appearance of the world and to ponder the true meaning underlying it, attempting to explain the origins and singularities of the universe. In physics the Planck length is an infinitesimal measurement of space. This work depicts the infinite universe using infinitesimal Planck units. Ikeda employs the basic method for measuring the physical constants of nature, developed by the physicist Max Planck, to explore our perceptions, all the way from the human scale to beyond the observable cosmological scale. This work is a quite clear statement by the artist: He has chosen rational knowledge as his language of expression to make manifest the invisible meaning of the world, and also to argue that we have the potential to perceive the events and phenomena of the natural world.



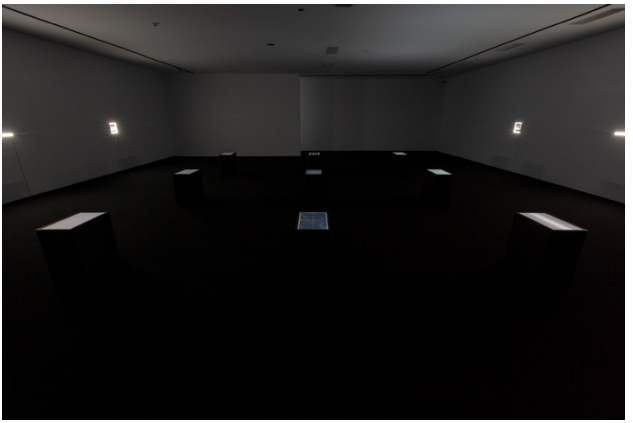
the planck universe [macro]
2015
audiovisual installation
3 DLP video projectors, computers, speakers
dimensions variable

code-verse (2018)
code-verse (2018) is a rescanning and reassembly of the data from a preceding series of works, *datamatics* – not as a simple deconstruction, but as a meta-composition of alphanumerics, signs and symbols, generating a world of code. This abstract narrative is an attempt to splice together multiple codes as a single symphonic, polyphonic composition analogous to music, converting code into the purist of tone poems, without meaning or content. The effect is to overwhelm human perception and cognition, penetrating to a level of awareness the brain cannot assimilate. The critical element is the high-quantity information displayed through precise and rapid transmission within the code. This series of code-based artworks allows us to discover a world spinning at full speed like a high-velocity conveyor belt. Such an image of the world forces us to reconceptualize the world beyond the human scale. When we absorb information from the universe, it implies that greater dimensions of unpredictability are eternally increasing. Throughout Ryoji Ikeda's works, representations of the world of code as a "universe" are clearly evident.



code-verse
2018
audiovisual installation
concept and composition: Ryoji Ikeda
computer graphics and programming: Tomonaga Tokuyama
3 DLP video projectors, computers, speakers
dimensions variable

data.scan [nº1-9] (2011)
In this series of data works, the mathematical abstractions are in fact reproductions of material from the real world, such as stock exchange feeds, human DNA sequences, Morse code, NASA observations, data from high-energy physics experiments at CERN, and two-dimensional images of the universe. None of these real-world materials arise *ex nihilo*; rather, they are generated through transcoding, re-encoding, and mathematical calculation, so that latent within this layer of abstract meaning lies content even more abundant than the original concrete forms. *data.scan [nº1-9]* (2011) is part of Ikeda's datamatics project, which he began in 2006. The series seeks to express pure data in a variety of material forms, such as concerts, installations, publications and CD releases. This work is an installation comprising nine monitors, each embedded within a plinth. Each pixel of the visual content is scrupulously calculated via mathematical formulae, synchronized precisely with a minimal soundtrack. The work mathematically expresses the material structure of an enormous quantity of data, endowing its images with the same representative quality as the vast universe. The *datamatics* series embraces mathematical truth as its standard; rejecting the language of subjective perception and making us perceive the infinite sea of data through mathematical inference. In his works, we become aware; Ikeda employs mathematics and data to vividly depict the logic of the universe.



data.scan [nº1-9]
2011
9 27" LED displays, computer, speaker, wood panels