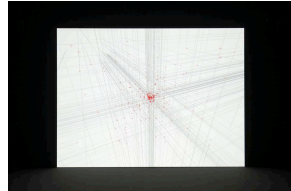




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DATAMATICS [2.0]

Ryoji Ikeda and the spectator's audio-visual immersion in the abstract reality of code



The following paper is a case study and starts from Ryoji Ikeda's creation of *Datamatics 2.0*. It was first presented to the public on 29 October 2007, at the Centre Pompidou in Paris. I believe that the subject studied lays itself open to some short remarks on the wide core of themes which, directly or not, revolve around the production of the Japanese artist. I will tackle here those that seem to the most significant, namely:

- 1 – The centrality of *Datamatics 2.0* within the corpus of the artist's work.
- 2 – The close correlation, at the basis of the performance, of images and sounds, as well as the opportunities of significance offered by a reasoned use and refined research of the dimension of synchronism.
- 3 – The possible metaphorical use of music and at the same time of data, as a world code.
- 4 – The effect that such a case can have within the study of the continuous building of identity, that the film medium needs.

Datamatics is an artistic project, with many outcomes, which aims at exploring the perception possibilities of the *invisible multi-substance of data*, which are part of the world around us. The genesis traces back to a series of performances, under the name of *Datamatics [prototype]*, which started on 3 March 2006 for the *AV festival*, at the Sage Gateshead in Newcastle (UK).

The following development was *Datamatics [1.0]*, a series of shows held between 7 August 2006, with the performance at the California Theater in San Jose (US), and 30 November 2007, with the performance at Le Petit Fauchoux di Tours (Fra). The artist's interest follows in the wake of previous outcomes.

Projecting dynamic, computer-generated imagery - in pared down black and white with striking colour accents, Ikeda's intense yet minimal graphic renderings of data progress through multiple dimensions. From 2D sequences of patterns derived from hard drive errors and studies of software code, the imagery transforms into dramatic, rotating views of the universe in 3D, whilst the final scenes add a further dimension

as four-dimensional mathematical processing opens up spectacular and seemingly infinite vistas. A powerful and hypnotic soundtrack reflects the imagery through a meticulous layering of sonic components to produce immense and apparently boundless acoustic spaces.¹

Towards the end of 2007, owing to the joint co-production of Forma, Les Spectacles Vivants, Centre Pompidou and YCAM (Yamaguchi Center for Arts & Media), the structure of previous audiovisual concerts is implemented with the addition of part two. *Datamatics 2.0* is born, a work that

Using pure data as a source for sound and visuals, (...) combines abstract and mimetic presentations of matter, time and space in a breathtakingly accomplished work.²

If 2.0 series continues in the wake of previous outcomes, what highlights the achievement of a new research maturity is the capacity for totally deconstructing the fundamental elements of the other series, sound and source codes, leading to a sort of true *meta-datamatics*. The data are at the same time theme and material of the work. Such use enables us to investigate the way in which an abstract vision of reality serves to organize, understand and control the world. In this sense, fundamental is questioning the code's dimension, at times ambiguous and polyvalent, in its double meaning herein contained, of a self show, and system of rules which allow the passage between stages which should be equivalent at least within the postulated reference system. (*aliquid stat pro aliquo*).

The way spectators should enjoy *Datamatics 2.0* as chosen by the artist is of particular interest here. If the origins of Ikeda's career stem from the world of ultra-minimalist electronic music, as time went by, he preferred to unstick the label of musician and yearn for that of sound environment designer. Hence, he starts numerous new collaborations with architects and graphic designers leading to the series of *Datamatics*, where sound blends with visual elements. The performance is enjoyed in a closed space. Spectators are arranged in lines of seats in front of a wide screen. Before the show starts, all lights are turned off. Ikeda, with his instruments stands behind the audience. Images flow on the screen in a strict synchronic correlation with the tracks, which follow a fixed sequence. The performance lasts for about an hour and, contrary to most concerts, from chamber to pop music, an encore is not played. Cinema and electronic music share a joint relation between the contamination of means and that of experience grammars which rule the spectators' behaviour.

¹ Comment to the work taken from [http://www.ryojiikeda.com/datamatics/datamatics/datamatics\[prototype-ver.2.0\]/](http://www.ryojiikeda.com/datamatics/datamatics/datamatics[prototype-ver.2.0]/)

² <http://www.forma.org.uk/artists/represented/ryoji-ikeda/works-datamatics>

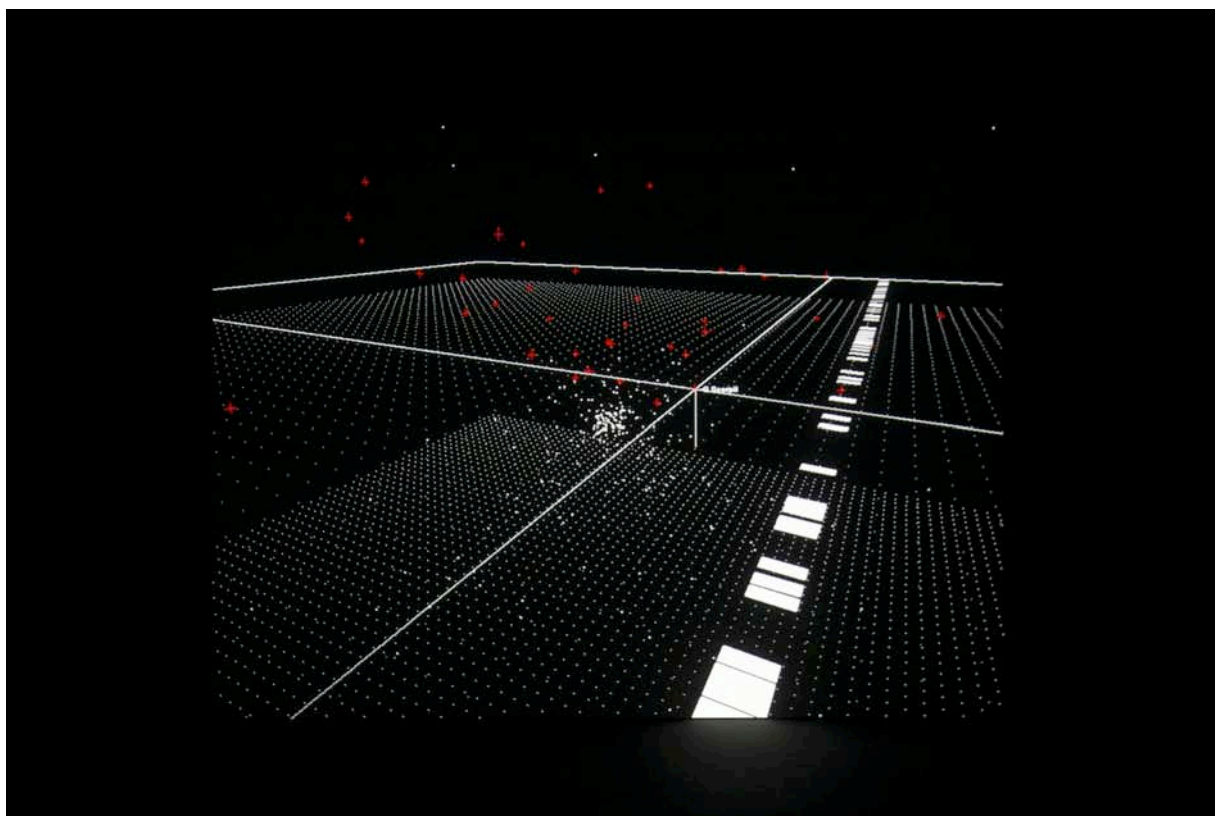


Photo: Ryuichi Maruo (courtesy of Yamaguchi Center of Arts and Media)

With reference to the choice of the images shown and the interaction with the sound score, according to us, there are two main aspects that should be pointed out. First of all, the decision to regulate the link between sound and images through the continuous interest in what Chion defines as *Points de synchronisation*³. The exact correspondence of the two components reaches a point that suggests a level of real concreteness of the image which turns into the producer of the sound perceived. In this sense the figurative component is a journey into the origins of sound. Noteworthy is also Ikeda's insistence on the joint acceleration of sound and images, which explains once again the value of the synchronic aspect. Moreover, it would enable the spectator to identify some irregular phenomena in the flow of the track which are inevitably lost when the rhythm vortically increases. The sense is that of "I understand you, but only partially", leitmotiv of the entire discourse of the artist on the theme of data. What it expresses, is the need to overcome traditional forms of enjoyment, and move on to a new and stronger way of listening; in the framework of an aesthetics, probably mostly yet to come. The metaphor expresses the rationale of a world whose functioning structures we still don't fully understand.

³ "Point de synchronisation: nous appelons point de synchronisation, dans une chaîne audiovisuelle, un moment plus saillant de rencontre synchrone entre un moment sonore et un moment visuel concomitants, autrement dit un moment où l'effet de synchrèse est plus marqué et plus accentué, créant un effet de soulignement et de scansion. La fréquence et la disposition des points de synchronisation dans la durée d'une séquence contribuent à lui donner son phrase et son rythme, mais aussi à créer des effets de sens" Chion M., 2003 *Un art sonore, le cinéma. Histoire, esthétique, poétique*, Paris, Cahiers du Cinéma, p. 430

Ikeda proposes a vision of the binary language, and of mathematics as a whole, which is far from those we normally have. Stripping ourselves of all the known forms of mental visualization of mathematics, brings out its fundamental feature, namely the fact of being a phenomenon of abstraction. Its being “invisible” is disguised by cultural habits we achieve (certainly not autonomously) at a very early age, for fully legitimate practical reasons. It might be useful to remember how children are taught the existence of integrals.⁴ For example: number five. You start by showing them a tangible object they can easily recognize. Let's say five oranges. Then, you make children count them. Then, you show them a picture with five oranges and then another picture which matches the five oranges with the number “5”. At this point, now that these things match in their minds, we can show them a picture of number “5”, without oranges. And they are now ready to do exercises with number five on its own, as an object separate from the presence of oranges and which will surely be useful for the study of arithmetic and the basic relations between numbers. In a certain way we cheat children because we drive them to consider numbers as things and not as symbols of things, problems where facts are not exactly what they seem. But the deceit is to a good purpose, since we have taken them to the fundamental awareness of the need that mathematical entities be abstractions, immaterial ideas, which belong to another category different from both physical objects and images.

Previously we spoke about *Datamatics 2.0* as a sort of meta-datamatics; and the reference is clearly understood on the basis of what aforementioned. Ikeda plans to sew new clothes onto mathematics, in order to bring back the surprise and wonder of the *invisible multi-substance* it is made of. Only in this way he can convey the charm of the endless flow and of the continuous multiplication of such matter. He can make us perceive the chasm of infinity in the number infinitely after *Bremermann Limit*⁵, as well as the infinity of infinites which in the *Number Line* (or in the *Real Line*) are included, for example, between 0 and 1^6 (they are already two types of different infinites).

⁴ I owe the following example (and not only this) to Wallace D. F., 2003, *Everything and More. A Compact History of ∞* , New York, W.W. Norton & Company, Inc.

⁵ Relying on the fundamental quantum theory, in 1962 H Bremermann showed that there is a number of data, after which, if a computational problem needs solving the same or a greater amount of data, there is no point in looking for a solution. This because no data processing system can process more than 2×10^{47} bit per second per gram of its mass. This means that even if the Earth were a huge computer that started working since the Earth was created it would have processed maximum $2,56 \times 10^{92}$ bit. This number is *Bremermann limit*. Computations entailing greater numbers are called *trans-computational problems* and cannot be faced neither in theory.

⁶ It is an interval containing an infinite number of intermediate point.

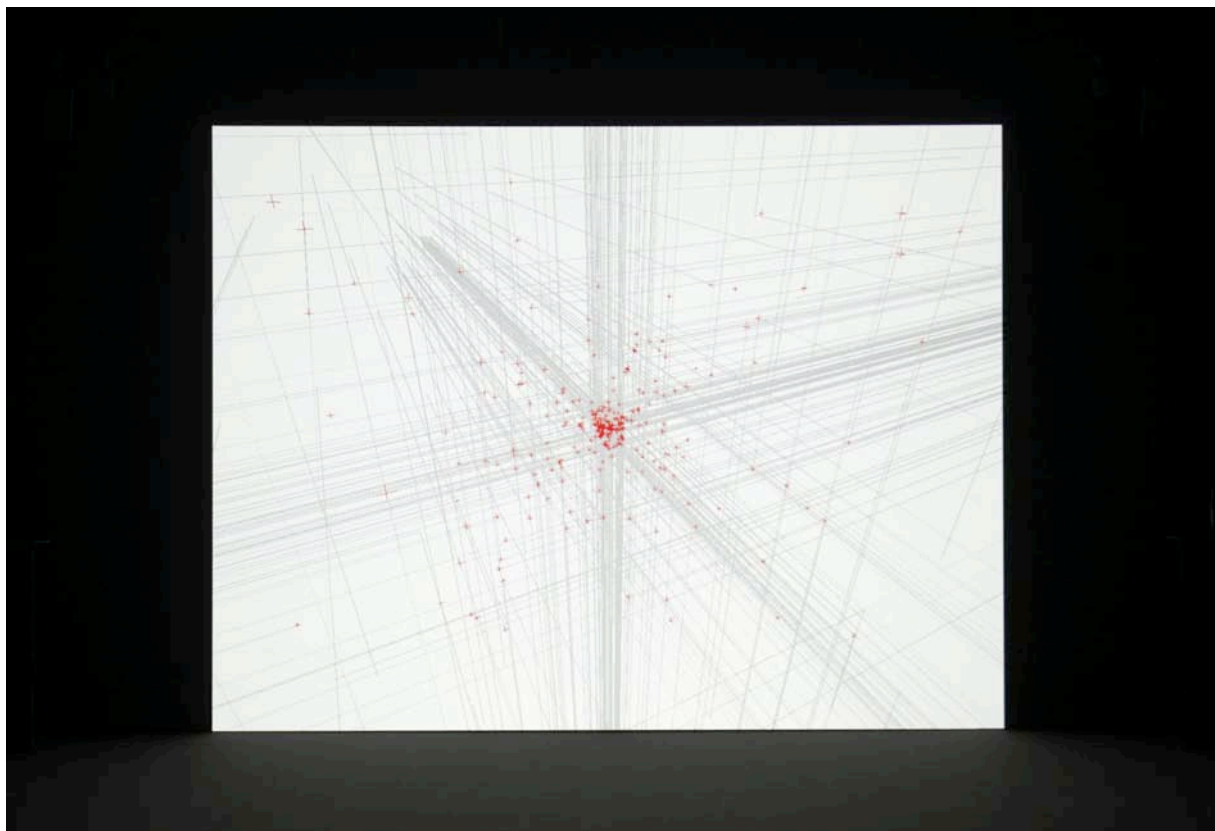


Photo: Ryuichi Maruo (courtesy of Yamaguchi Center of Arts and Media)

Another strong point of *Datamatics 2.0* is the choice of working on the juxtaposition and relation between different encoding systems, in order to build segments of discourse on the abstract dimension of encoding. Ikeda sets up the metaphor of the music code (sound) as synecdoche of the idea of the code as universal, creating a dialogue with the inquiry on the digital data in all its aspects. If such synecdochic choice can seem daring, suffice it to think that it is not the first time and neither one of the most radical.

(...) think upon the fact that this happened with the code of music, transformed from syntactic system into discourse on the laws governing the universe. If the most elementary system which describes the relations between sounds (what we decided to call music code in a broad sense) can be expressed in a mathematical language, the opposite happened with metaphysics, aesthetics and Pythagoric musicology. It was decided that every system, either physical or mathematical – without a sufficiently articulated mathematical language – could be expressed in terms of a musical metalanguage.⁷

This enables Umberto Eco, in the same text, to use as an example one of the most ancient and well-known aesthetic-mathematical theories: the classic theory of proportion. It was certainly linked to

⁷ Eco U., 1988, *opening address at the XIV congress of the International Society of Musicology* (Bologna, 27 August – 1 September 1987). Published in *Intersezioni*, (VIII – 2)

assumptions on relations with the measures of the human body (for instance Policleto) or architectural works (Vitruvio),

(...) but its first formulation appears within Pythagoric musicology. If Pythagoras is the inventor of the mathematical explanation of the universe he is so because *primum omnium Pythagoras (fuit) inventor musicae*, as Monk Engelberto will say in the Middleages.⁸

Another aspect of Ikeda's poetics is linked to this question, i.e. the awareness of the fact that - maybe a bit paradoxically - both music and electronic data, try sometimes to give reason to an empirical experience (for example the experience of sounds) we perceive as qualitative but through quantitative formulas.

At this point let us analyze the aforementioned question which makes *Datamatics 2.0* experience of particular interest. The author's choice of the type of enjoyment which is deeply linked to the grammar of experience of the film spectator. In order to bridge the gap between his work and the *habitus* of the film medium, Ikeda decides to contact what Francesco Casetti, in a recent paper, (we will quote again further on) defined as the *liturgical capital* of the medium (in our case the film).

a medium continues to maintain an identity, that of its uses which have consolidated over time and which don't seem to disappear even if other uses have joined the main one. It continues to maintain an identity on the basis of the "liturgical capital" it hoarded, from which possible new investments are made.⁹

⁸ Id.

⁹ Casetti F., 2009, I media dopo l'ultimo Big Bang, *Che fare? La tv dopo la crisi*, Link 8, p. 199

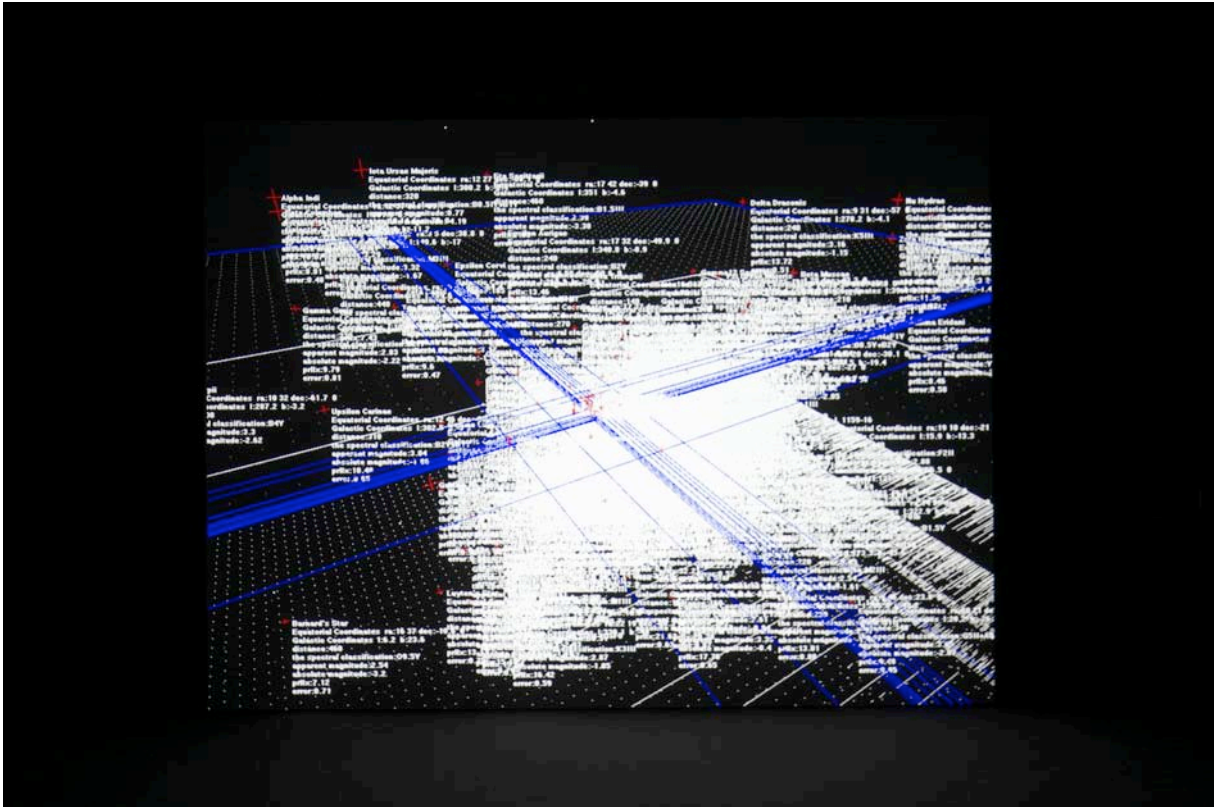


Photo: Ryuichi Maruo (courtesy of Yamaguchi Center of Arts and Media)

In this sense *Datamatics 2.0* is a privileged case allowing us to question ourselves on the forms of persistence of the film. On its capacity to escape from the cages of classic definitions, ever tighter where not already mystificatory, in order to work on the construction of its identity also when it doesn't seem to be envisaged. This because the behavioural habit towards it (in both consumption and production terms) is so strong today that it can colonize spaces which apparently do not seem its own. So as to better understand how this can happen, broadly speaking, as in the case studied herein, we should consider Stanley Cavell's fundamental concept of *automatism*¹⁰. With the term automatism, we mean that set of processes, both technical and linguistic which, building up in a series, show regular features, bringing about the hypothesis of a recurring rule that regulates and explains their functioning, removing them from the mere occasional dimension on one hand and on the other setting them free from the total subjection to the intentionality of the subjects involved. It thus comes before the intentionality of the author's function; both collective (as in the case of a film), or due to a single subject (such as the writing of a novel). Creating a text means always accepting or breaking away from a set of rules or habits, more or less specifically known.

¹⁰ Cavell S., 1971, *The World Viewed*, New York, Viking Press

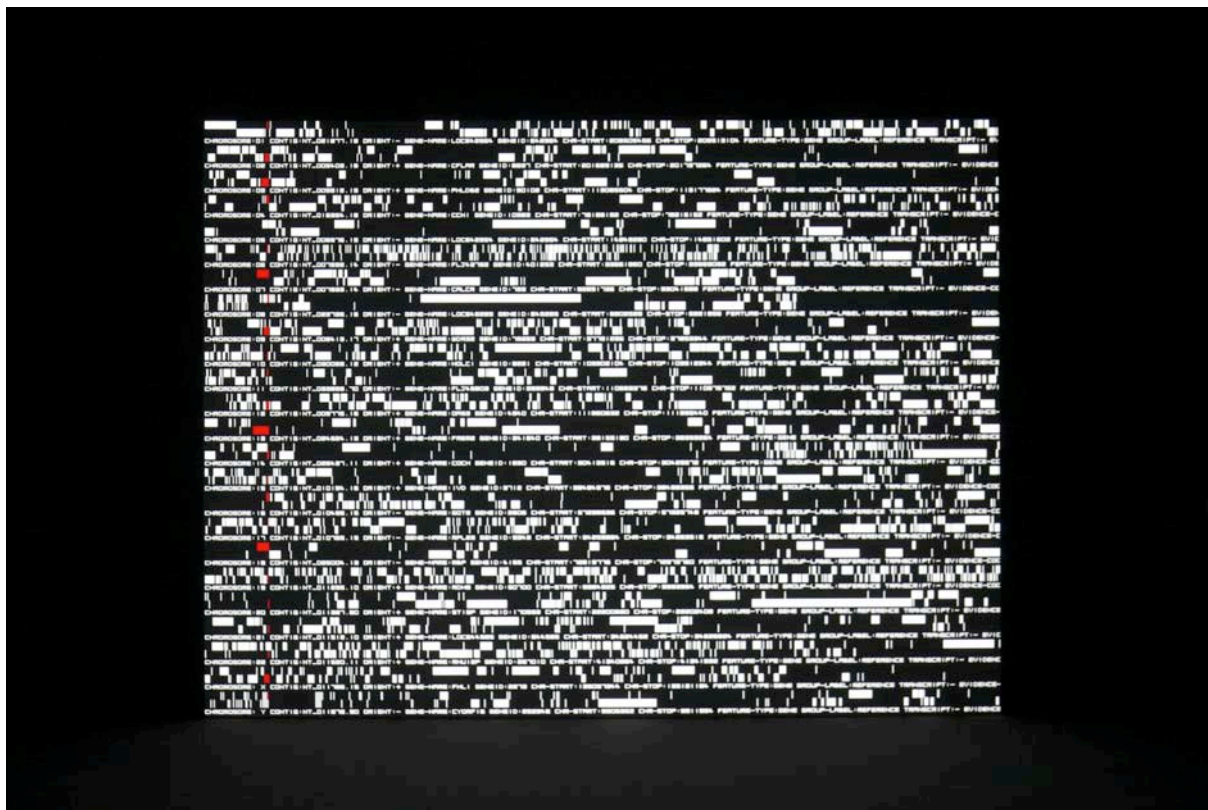


Photo: Ryuichi Maruo (courtesy of Yamaguchi Center of Arts and Media)

With regard to automatism, Casetti places it among the reasons leading to a possible meeting between symbolic demands and the complex of actions, places and speeches.

These recurring procedures offer a stable and tested ground for exercise, where symbolic demands can flow into well oiled mechanisms and at the same time the elements of a communicative situation can lose their occasional character owing to a clearly recognizable framework.¹¹

At the same time he brings some additions to Cavell's concept, one of which is fundamental to understand the functioning of our case study

Speaking about automatism, you can – and perhaps you must – extend its presence from Cavell's speech forms to other types of forms, such as behavioural ways or space types: automatism broadly deals with the *habit*, i.e. with the existence of a custom or use, that Peirce already considered as one of the key elements of signs. The common sense that recognizes the existence of consolidated uses, and fixes media identities from these, finds here new grounds.¹²

¹¹ Casetti F., *I media dopo l'ultimo Big Bang* p. 205

¹² Id., p. 206.

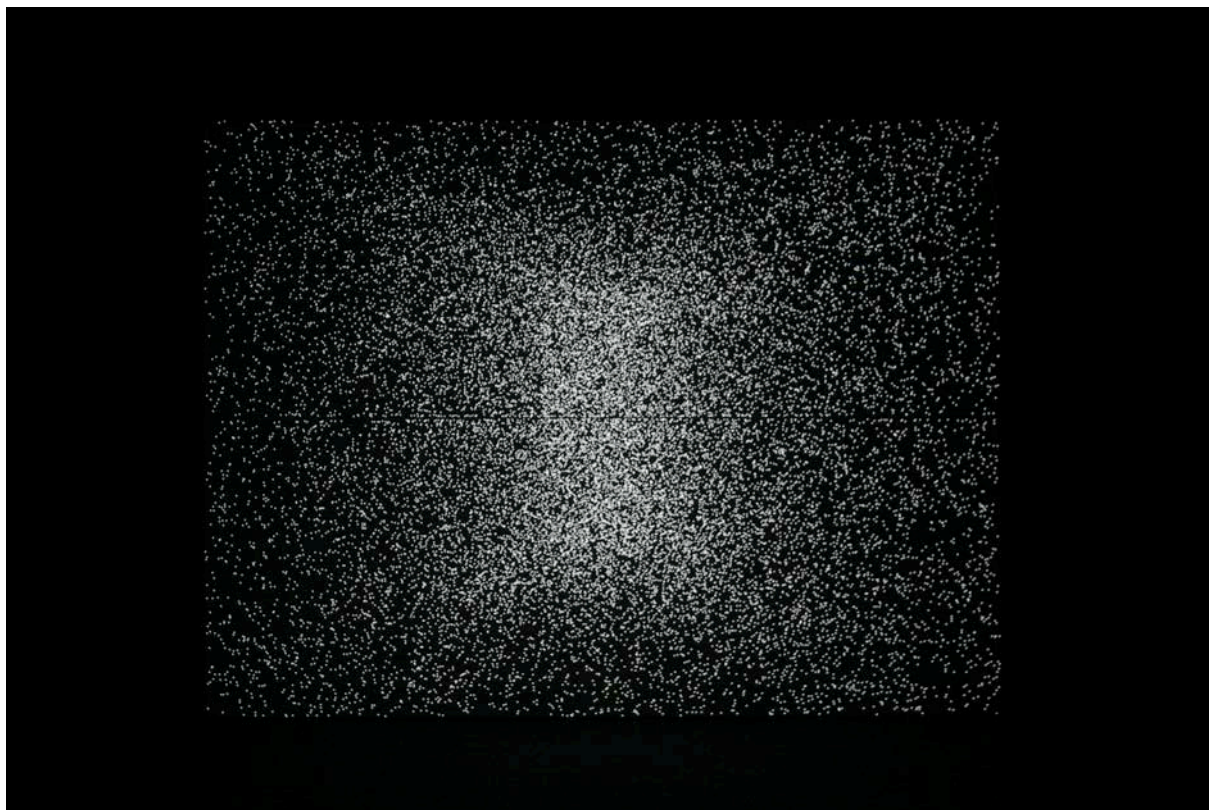


Photo: Ryuichi Maruo (courtesy of Yamaguchi Center of Arts and Media)

Through this viewpoint, we can recognize in Ikeda's work, his ability to exploit the feature of the film medium (as automatism) which manages to make apparently alien texts its own, starting from the processes (production and fruition) it employs. We would also like to stress how *Datamatics 2.0* operation is even more subtle than it seems at first sight. It can look for a comparison with the identity of the film medium, not only in the recognizability of the technical device (which today seems an ever weaker identifying function¹³), but in the way it organizes space and in its social habits (for instance, as aforementioned, paying the ticket, duration of the show, fixed timetable, no encore, etc.).

In these terms, we can add a further element of interest to the rich range of problems Ikeda's work faces: the fact that *Datamatics 2.0* invites us to think about the possibility of looking for the key to the film medium identity, in the paradigm of expression of a cultural and, at the same time, social habit.

¹³ "Cavell has been using the word "medium" to refer both to the physical basis of an art and to the artistic discoveries of form and genre and type and technique that give significance to that physical basis. Because it is by virtue of the automatism of photography that moving pictures satisfy our wish for the world re-created in its own image, the power of the film medium can be said to be the power of its automatism" Rothman W. and Keane M., 2000, *Reading Cavell's The world viewed: a philosophical perspective on film*, Detroit, Wayne State University Press.