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THUTOAH - The Holographic Universe Theory of Art History

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Abstract
This text is an edit of the audio transcript of interviews with scientists John Ellis, Alessandra Gnecchi and Wolfgang Lerche from my video, *The Holographic Universe Theory of Art History (THUTOAH)*. *THUTOAH* investigates the holographic principle and the theory that our universe could be understood as a vast and complex hologram, and hypothesises that, beyond acknowledged art historical contexts and imperatives, artists may have also been unconsciously attempting to describe the holographic nature of the universe. Projecting over 25,000 chronological images from art history (from cave painting to global contemporary art, including outsider and psychedelic art), *THUTOAH* echoes conceptually the actions of CERN's particle accelerator, the Large Hadron Collider (LHC), accelerating at 25 images per second in a looped sequence. Alongside this colossal library of images is a soundtrack of interviews with, and watercolours by, the scientists at CERN - illustrations and articulations of the holographic principle. *THUTOAH* hypothesises a reality that has perhaps been intuited over the ages, a reality beyond the already documented intentional depictions of spiritual, mystical or transcendent realities or altered states of consciousness; the reality of the holographic nature of the universe.

Keywords
holographic universe, CERN, Treister

THUTOAH - La teoría holográfica del universo de la historia del arte

Resumen
Este texto es una edición de la transcripción de audio de entrevistas con los científicos John Ellis, Alessandra Gnecch y Wolfgang Lerche contenidas en mi vídeo La teoría holográfica del universo de la historia del arte (THUTOAH). THUTOAH investiga el principio holográfico del universo y la teoría de que nuestro universo podría entenderse como un vasto y complejo holograma. Además, plantea la hipótesis de que, más allá de los contextos e imperativos históricos del arte reconocidos, los artistas podrían haber estado intentando describir inconscientemente la naturaleza holográfica del universo. Al proyectar más de 25.000 imágenes cronológicas de la historia del arte (desde las pinturas rupestres hasta arte contemporáneo global, incluyendo arte alternativo y psicodélico), THUTOAH también nos remite a las acciones del acelerador de partículas del CERN, el Gran Colisionador de Hadrones (LHC) mediante una secuencia en bucle de 25 imágenes por segundo. En paralelo a esta colosal librería de imágenes, tenemos una banda sonora de entrevistas y acuarelas de los físicos teóricos del CERN, ilustraciones y articulaciones del principio holográfico. THUTOAH hipotetiza acerca de una realidad que tal vez se haya intuido a lo largo de los siglos, una realidad más allá de las representaciones intencionales documentadas de las realidades o estados alterados de consciencia de carácter espiritual, místico o transcendental: la realidad de la naturaleza holográfica del universo.

Palabras clave
universo holográfico, cern, treister

This text is a transcript of interviews I made with a group of theoretical physicists at CERN in Geneva in 2018. The spoken interviews comprise the audio component of my artwork, The Holographic Universe Theory of Art History (THUTOAH), which investigates the holographic principle and the theory that our universe could be understood as a vast and complex hologram, and hypothesises that, beyond acknowledged art historical contexts and imperatives, artists may have also been unconsciously attempting to describe the holographic nature of the universe

Projecting over 25,000 chronological images from art history (from cave painting to global contemporary art, including outsider and psychedelic art), THUTOAH echoes conceptually the actions of CERN's particle accelerator, the Large Hadron Collider (LHC), accelerating at 25 images per second in a looped sequence.

THUTOAH hypothesises a reality that has perhaps been intuited over the ages, a reality beyond the already documented intentional depictions of spiritual, mystical or transcendent realities or altered states of consciousness; the reality of the holographic nature of the universe.

The ideas behind this work manifested in several diagrams in the project, HFT The Gardener (2014-15) and watercolours in the project, SURVIVOR (F) (2016-ongoing). Eight works on paper from these projects form part of the installation.

THUTOAH was developed as part of the Collide International Award, a partnership programme between Arts at CERN and FACT. It was co-produced by ScANNER (Science-Art Network for New Exhibitions and Research), composed of FACT (Foundation for Art and Creative Technology, Liverpool); Arts at CERN, Geneva; CCCB (Centro de Cultural Contemporania de Barcelona); iMAL (interactive Media Art Laboratory, Brussels); and LLU (Le Lieu Unique, Nantes)

HD video 16:54 mins looped

Audio 51:16 mins looped

Audio transcript:

John Ellis: Hi, I'm John Ellis, I'm a theoretical physicist. I'm employed by Kings. I share my time between King's College London and CERN. I'm mainly interested in possible physics beyond the Standard Model. I'm particularly interested in the problem of dark matter. And so, that gets me involved in the physics of the LHC and also various astrophysical experiments, cosmological observations.

For me the source of the earliest realisation of the holographic principle in some sense was always Plato. So, he imagines that you look inside this cave, which is very topical just at this moment and then you see on the wall of this cave some sort of shadow. And this shadow, of course, is some sort of reflection of something there, which actually has more dimensions than, this is just a two-dimensional surface, right, this is a real three-dimensional object, and it also evolves with time. So, this has more dimensions than that reflection. But, you just can't see it.

So, this is… horizon. And you just have to make sense of that while looking at that.

Suzanne: Hold on so… you've got the person, you've got the shadow in the cave and then, that wiggly line you've drawn around it, is the horizon. Is it the edge of the cave?

John Ellis: So, you're looking into the cave, so your field of view is limited, you can only see the shadow, you can't see the underlying reality, if you like.

But then by observing this you try to figure out what's going on there.

Suzanne: That's what scientists are doing by using the holographic universe principle?

John Ellis: Right and of course, Plato uses to illustrate his concept the world of ideas out there. And what we perceive is just some sort of, if you like, lower dimensional projection of those ideas. And that is in some sense of what we physicists, what we artists, are doing all the time, and as the holographic principle is a modern incarnation of that. I mean, the holographic principle is a very mathematical way of realising this idea, but… so... in some sense it's more precise and in some sense it's more limited. So, it's a different way of cave thinking.

Suzanne: So, one of the other scientists said to me that the boundary, which you've got there as the edge of the cave, exists everywhere and nowhere at the same time. Would you agree with that?

John Ellis: I certainly agree with the everywhere. That's what I was saying before, that every point that we perceive in the universe, that we can see, is actually the tip of some potentially very much higher dimensional iceberg. So, in that sense everywhere and nowhere in the sense that, well, it's not actually in our three-dimensional space. It's not something that we can manipulate, we can't do that with it. You can only do this in three-dimensional space.

Suzanne: And would you say that we can't actually go there in the same way that we can't really get a hold of a shadow and put it in our hand?

John Ellis: Okay, well, here of course we have to be careful because who knows what capabilities, technological capabilities, we may acquire in the future. But, right now, we can't go there.

John Ellis: Could be, who knows. I was talking earlier on about… about wormholes and the idea that you can get from one position in our three-dimensional space to another position in three-dimensional space. And I have always been of the view that these things just cannot be traversed, physically. But maybe they could be traversed in some other ways, some sort of information, theoretic way, and maybe in some sense that's a more profound existence than our physical existence.

Suzanne: What about through other levels of consciousness?

John Ellis: Well, yeah. First of all, we have to figure out a little bit better I think what we mean by consciousness.

Suzanne: Do you see it as being something outside of particle physics?

John Ellis: Yes.

Suzanne: You do, you separate it. You don't think that particle physics will explain it.

John Ellis: So, consciousness I think is very much an emergent phenomenon. And this is part of the flak that was fired at people such as myself talking about a theory of everything. In some sense well it may be a theory of fundamental equations that you can write down on a T-shirt, but it's not a theory of everything in the sense that, you know, given that, you can calculate everything. And somehow, that's a situation where string theory still is. I still think it's the best, maybe the only candidate that we have for the theory of everything. But, so far, they haven't succeeded in coming up with any definite predictions for anything. So, right now, it's still a theory of nothing. Consciousness, I think is going to be a… an incredibly complex, complex phenomenon to explain.

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Alessandra Gnecchi: Hi, I am Alessandra Gnecchi. I am a fellow of the CERN Theoretical Physics Department, I am a researcher and my interests are on black holes and superstring theory and super gravity. We have various tools to study gravity and the unified theories, and what I'm interested in is to exploit holography as a tool to understand the physics of black holes at a quantum level.

Suzanne: So, could you… could you explain the holographic universe principle?

Alessandra Gnecchi: I'll try. The holography is a concept that has been around the ideas of and minds of scientists for quite a long time starting with the proposals by Suskin that are related to work by Stephen Hawking.

The main surprise about black holes, which we think as objects that cannot… where nothing can escape from; actually, if treated in a quantum way, become objects that are thermal, so they emit some radiation that in principle we could collect. And, if we think of a black hole, we think of it as being formed by a collapse of matter. We throw matter in some space of the universe and matter is bound to keep falling in until a horizon is formed, and nothing can escape from this horizon. But we know that matter is quantum particles, and once we think about the space as a quantum space, then we see that this matter can actually escape in a form of radiation. However, the bigger results related also to Stephen Hawking's work, was to discover that this radiation somehow doesn't contain information of the original particles that we threw in. And… so the big problem of understanding how information evolves around black holes has led to the information paradox problem and to the idea of holography. In fact, by treating black holes or looking at black holes in a thermodynamic way, we have to associate an entropy to them, and usually entropy measures the amount of information that is stored in the system. The funny thing with black holes is that, even though black holes are a region in spacetime that contain a certain volume of space, of the universe, the amount of information, the amount of entropy of these black holes is related to the area that surrounds this volume, not to the volume itself. So, it seems that all the information or the relevant information to these mysterious systems is stored on the surface. So, even if we have a volume or a system inside a certain volume of spacetime, what is relevant to it is actually what's in the surface, and in this way the principle of holography was introduced in physics. However, there was no way to give it a quantitative manifestation until the late 90s where these became a, let's say, a well-defined principle in the context of string theory. String theory is a theory that unifies gravity with the other fundamental forces; it requires however to enlarge our description of the universe, and to move from the idea of particles which are point-like to the idea of some fundamental constituents of the universe which are extended objects, they are like strings. And, by vibrating the strings in the same way as we would vibrate the string of a guitar, these vibrations instead of producing music, produce particles of different kinds. And we can relate, in this way, this theory with the theory of particles that we see nowadays, in principle. However, this theory is a theory that requires 11 or 10 spacetime dimensions. So a big part of the work of the theorist has been trying to connect these extra dimensions to the four-dimensions that we see. In this process, there's been a lot of models that have been developed. That have to be tested mathematically, they have to be consistent. And, in studying his model, what was discovered by Juan Maldacena was that… a particular realisation of string theory in a curved space was describing gravity in a certain space, but actually, it was equivalent to a theory that was living at the boundary of this space and, at this boundary, the theory was a theory without gravity. So, the holographic principle was formulated quantitatively as a principle that relates a theory of gravity in a universe which is a curved space, which has a boundary at infinity, to a theory where there is no gravity, that lives in one less dimension, because it lives on this boundary of the space. So, there's this idea of volume of spacetime and its boundary, and the relation between the dynamics and the physics and the principles that are on this boundary, and what happens inside. So, this is the holographic principle, nowadays. And it's been used to study black hole physics, because if you think about black holes as being in this curved space, then we can model the black holes with some quantities in the theories at the boundary, which is somehow much simpler to deal with.

Suzanne: But is this principle implying that the universe is a hologram?

Alessandra Gnecchi: It could be.

Suzanne: And how would you, how would you describe that then?

Alessandra Gnecchi: First of all, by now, just to put our feet in the ground, we know how to work with this principle only in curved space. We don't live in curved space, we live in a slightly curved space of a different kind than the one this principle was formulated on, but we are making progress to generalise this principle. The fact that the universe could store all this information at the boundary is just a realisation of gravity at the quantum level. When do we need to go to this boundary to describe physics? When we want to describe gravity at the quantum level, meaning, at really really high energies or when dealing with black holes, where puzzles like the information puzzles come in. So, in this context, it means that the tool we have to describe the universe is not to look at the particular point in spacetime but it is to move far away to its boundary and recover the information from there. It is a change of perspective and it reflects the point of view that even though we are used to looking at experiments and confine experiments to a laboratory, sometimes, we have to change the paradigm and look elsewhere for an analogous description.

Suzanne: So, if all the information was contained on the boundary, what would it mean about our perceived reality?

Alessandra Gnecchi: That if we stick to look into our corner of the world and try to find the explanation to phenomena in this volume, we would not find the answers, we would constantly find paradoxes. So, we cannot find a consistent explanation of what we see in this little box, and…

Suzanne: But the boundary itself…can you… do you have… you know, when you fall asleep at night, do you visualise it? How do you see it?

Alessandra Gnecchi: I see it…

Suzanne: Purely abstractly?

Alessandra Gnecchi: I see it like this [draws] I see it like two different regions and this is a radius, is a distance, is a spatial distance, and this is a boundary which is an infinite plane, let's say, if I go close enough. And in this plane, I know some rules, and if I move out of this plane, I started feeling I am subject to the laws of gravity. And the more I get into… into this bulk, the more gravity is enough to describe the system, and if I want to describe something that is very very very peculiar of quantum gravity, then, in this picture, I wouldn't be able to model it. And I have to rely on the holographic dictionary and say: "this particle interaction is just an operator on the boundary theory. And the… the boundary it's like a wall where all the bulk fields suddenly ends, and the way they reach this region, the way… the way matter goes into this region, tells what this dictionary has to be. And it's nothing more than a regional space where I can read some properties of quantum gravity.

Suzanne: So, if you're talking about this… the holographic universe principle and the boundary where all the information is stored, what do you imagine being beyond that boundary?

Alessandra Gnecchi: Nothing.

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Wolfgang Lerche: So, this is sort of a manifestation of this holographic principle that has found that in a particular geometric simplified set up and extra symmetries in the theory and so on, it turns out that the information, which is in the system, you could think about putting little bricks or little colour, coloured marbles into this inside, yes. You would think that the inside would contain more information, yes? Like a location of a certain point here and so on [draws], but in fact it turns out all the information is already stored in the boundary, like on a hologram. So, it might look, in a sense, higher dimensional, you might look inside and think "Oh, is this extra dimensions, or there's more stuff to be put there?" But it's not, it's just on the boundary, like… like an optical hologram which is just a plane and where there is an illusion of a higher dimension but actually all the information is already there.

This looks a bit ad hoc, yes? So, first to say what it has to do with the real world and the questions, I don't know. Because the real world doesn't look like this, it has a different topology, there's no obvious boundary, yes? So, if this would be true in the real world, I mean, to be true we need to have some kind of plane where we say "Ok, no?" But... so… This is a bit unclear how to formulate this in the present world. But the reason why one is thinking about this looks ad hoc, the reason comes from black holes. And black holes are very very mysterious objects because they are conceptually on the overlap of two important pieces of physics which is, gravity, general relativity and quantum mechanics, and these things are two pillars of modern physics since a hundred years, and each of them regard quantum mechanics as the most accurate theory of nature, anywhere: price, prices, numbers, the gravity works extremely well for whatever solar system and so on; but black holes are objects which, for which both aspects are becoming simultaneously important and here one finds clashes, you know? You might ask: "well, have we ever seen a black hole?" No, not directly, but there's indirect arguments earlier by certain pulsar observations but more recently, by this discovery of gravitational waves, we haven't seen this very clearly, the traces of colliding black holes. So, there is… there is no doubt they exist really in somewhere in the universe. Also, one doesn't really see them. Too far away, fortunately, close by they could… it could be disastrous, potentially. So… so these black holes exist and then Hawking, something… 40 years ago, found some kind of tricky property namely in a way they are not really black, but they start radiating, they have some temperature, and give away some radiation, and, in a way, it behaves like a hot object. And, by looking more down to those precise properties, one finds conceptual difficulties to make it consistent, with quantum mechanics. So, then, by investigating this theoretically, one found that, actually, what one must have is that, all the information of the black hole must be stored on the surface in some way, but it's a fictitious surface, so this is a quite tricky thing. A black hole is a region of spacetime. Actually, it's something in the middle, which we don't know exactly what it is, it could be a very singular drastic place some… some extreme warping of spacetime. But then there is a fictitious area around it, a horizon, and it is defined by the property that once something falls in it can never ever get out anymore, not even light. Therefore, it looks black. [draws]

So, it's a black thing. But for a person, would go in here falling in and... and traversing this horizon wouldn't notice anything particular, so spacetime is very small, probably, this is doubted by some people. And despite that this is a fictitious surface, it turns out, the information which is stored in the black hole is such... does not go with the volume, it's not like that you could fill up the interior with some marbles or whatever, but everything is such that you could store the information on the boundary, yes?

So... So, in a way, there's a holographic representation of all the information of things which were falling in. And out of these ideas, I mean, this very concrete picture, emerged of... of which is called anti-de Sitter space. This is sort of contained in this black hole geometry and this is a simplified model where one really can do exact computation. So, the black holes in there are a bit unwieldy in many respects, so, this is a little idealised situation where one can study, you know, these... these holographic properties in detail and there's no doubt that this works, it's a mathematical model, well, an abstract physical model. But what does it mean for ordinary physics, it's not so clear, yes? It means in a way that if you take, in our spacetime, any closed surface, then it could be that all the information contained is... is, in a sense, or it is stored at this boundary or something. But it's not... it's not so clear what it really means, at least to me.

Suzanne: So, in terms of planet Earth, where might the boundary be that stored the information?

Wolfgang Lerche: It could be, for example, that the whole solar system could be already inside a black hole. Because the, the... you know, nothing special happens if you fall through the horizon. So, we could be already there not knowing that we will fall into this singularity, because they can be huge black holes, huge ones, yes? In principle we could be already inside one, and doomed, but we don't know. But for any practical purposes, it's not really relevant for us now.

Suzanne: So, if we actually were able to kind of get a better understanding of it and prove it in relation to our universe, there wouldn't really be any repercussions?

Wolfgang Lerche: Not optically, but these indirect measurements, like the radiation of gravitational waves and so on, so, these exist and whenever you would be coming close to a black hole, all these things would be very important, you know. Scientifically it is interesting and important, but whether it's going to be important for mankind or for practical things, this is unlikely, but who knows, for example, you know one can study these gravitational waves, when two black holes merge and all these fantastic things, since 2016 or whatever, for example, when black holes merge, before they do this, they spiral in, they touch the horizons, [draws] and then one could probably miss some, a lot of time and more, and more, and more... and, you know, after 50 years of observation or something, one could disentangle what precisely happens if the horizons touch, and then one could probably measure these kind of quantum effects, yes ?

So... so, it's not something which can never be measured in principle. So, it could be very well experimentally verified, exactly, you know, with man's computing here, one could sort of dig this information out. But, but... this is as far as it should shunt for the time being where there are... Except I should say something else.

This is another thing. This... this string theory, which underlies this, describes also particle interactions. Actually, this was one of the early reasons. Actually, it was the original reason when it was invented in the 70s or, goes back to the 60s actually...

It has been replaced by the mother theory but there are still in some sense in which this string theory also works for these particle collisions. And, so one could ask, how would this principle... how would these, these... black hole things look from the perspective of ordinary particle physics and they're sort of similar if you switch, if you... if you... collide proton beams in the LHC... So then some fantastically excited mass, plasma balls, glue balls, can... can be produced and it turns out that in some sense they could be viewed also as black holes. They're not black holes but they are sort of, in a way, analogues of black holes, which are also discovered in this theory, which is a bit dirty physics because there are so many particles and so many dirty effects and it's not so clear, but at least, it leads... one sees sort of with some unsharp glasses in a way, how this works. Yes? So, there's another application of these ideas of this... of this quantum field gravity duality also in the collider experiments. In these heavy ion collisions you see this kind of highly excited quark, gluon, plasma balls exploding and... and some features, some kind of viscosity features can be modelled also from this point of view. Yes? Also, critics say this is not so conclusive because of uncertainties for measurement and other forms of computation are large enough, so that one cannot really prove this but at least it works in the right direction, at least it is consistent. So, again this shows that this principle of holography could have more... several applications, namely that one theory, which is sort of inside and surrounded by some kind of boundary can also be described by a theory which is only on the boundary. This is the very nature of holography, that you have this duality between the whole volume and just the boundary of it.

Suzanne: So, the theory or idea that I'm making a work about is extrapolating from this. The idea that possibly all of art history might have been an attempt to describe that type of reality.

Wolfgang Lerche: Let me put it this way, I was reading a while ago an interesting book which touches upon also an interesting subject, and... about the unreasonable effectiveness of mathematics in the physical sciences. And... so... this is, this is an interesting subject by itself but, in this context, I was reading an article which had the following idea: "Typically, we physicists think in a reductivistic way." This means we always want to explain things as effects of some causes on the deeper level and if you follow everything through, in a way you have arrows of explanation. If you follow everything through then you always land in particle physics, because that's the most fundamental theory. So, whatever is there in the world, ultimately described. So, in a way, this picture is correct but it's not… it's probably not appropriate because of the phenomena like emergence, yes? That structures appear of collective behaviour, who cannot be sort of traced to the behaviour of components, yes? And the human consciousness is a prime example, yes? So, as in particle physics you have this kind of things, you know? It's not so that you can always follow arrows through, because sometimes we hit boundaries where things grow up and become unified and you don't know how to go past, yes? And, I think a good way of thinking is that there are certain phenomena which ultimately follow the rule of particle physics, like everything must, but the phenomenon it exists… exists on a different level of organisation, like emergence, and you cannot describe or derive these phenomena out of fundamental principles. There's… it doesn't converge, there's no… the arrows of explanation don't go through this. And there was this picture in this article I liked, that… what is the structure of knowledge, yes? And the idea they were saying it's like, this a space of all knowledge and you've areas, and you've arrows of explanation pointing to, and this could be thought particle physics, and this could be like the kind of physics we all do here at CERN. But if you go further out [draws], then maybe the human brain is somewhere here and actually there could be some other fixed point where other phenomena can be explained in deeper structures which are sort of described here which are sort of disconnected from this, yes? So, there could be some other fixed points or attractors. It could be a new space of knowledge and… and somehow what we're doing in physics, in particle physics, we could reduce everything to the laws of particle physics, say, at this point, everything is clear, but, if you're saying the human brain is here, and it may be that the proper arrows of explanations don't go here but go to some other thing, say complexity theory or something. So, in this sense there could be other realities, say in our brain, or say collective phenomena in complex systems, this is the right way. There could be self-organising phenomena in other... which… which cannot be easily described by reducing them to particle physics, but there could be other laws, not in contradiction, but on a different level, like society or so... I mean there's a higher level and it'll never be possible to reduce, say human interactions, to the laws of quantum mechanics and quantum electrodynamics.

So, there are many layers between and it could be that there are barriers where you really cannot really go through.

So, it's very possible that there are other, say states in the brain, which have their own laws and their own… and the connection was, it is not clear whether mathematics describes them, probably not. It could be the mathematical, the idea that mathematics describes the whole world applies only here to what we usually do, yes?

And mathematics is of no use in describing, say, consciousness and so on. And what fascinates me is that by far the majority of brain processes are unconscious. Even if I drive my car, I think about something else and then I realise I am here, but I cannot remember any second when I was driving the car, it was completely unconscious. And many other things, I mean, just from psychology, people doing many things without knowing the reason why they're doing this because their unconscious processes steer them in many ways. So, some of us think the brain is like… is like a big dark area and there's a little spotlight and only the stuff which is illuminated, like that, this laser pointer here, and this is what is conscious and this goes through all this landscape and, typically, holds itself up and certain areas where, you know, of daily life, but the majority of this is completely in the dark. And there could be some… some corners with some other processes we don't know and, again, science fiction… I view ourselves only as a very simple example of consciousness compared to what might be possible in the universe.

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Alessandra Gnecchi: Yes, I think somehow the holographic boundary… the idea is that a region where things are… appear, but in a completely different description. Which is somehow what art is doing, I think. It's trying to use different tools to describe something that in three dimensions we can measure, we can touch, we can see is three dimensional, is very… it's described with some, with some physics laws, but art goes beyond these physics laws and gives sometimes a different interpretation of reality so, somehow, it goes to the boundary where this three-dimensional world is described in a different way. So, I think yes, that's somehow what art has done.

Suzanne: So, you think this… do you think this particular holographic universe theory of art could be like a totalising unifying theory of the history of art, perhaps?

Alessandra Gnecchi: Yes, in a sense, we have somehow… a mathematical way to describe this holographic universe, but I think the concept of it, the concept of a completely different description in a certain regime, really is compatible with art history and the development of art, the development of a new language to describe reality, which may be valid in a different region of our human perspective. Nothing to take away from science and tangible experiments.

Alessandra Gnecchi: I think it's very challenging because it forces me to take a step out of my comfort zone, where I can rely on descriptions, mathematical rules, etc. to give a more, probably, artistic and so completely different idea of it.

Suzanne: Yeah. And what do you think it will mean to make a piece of art which is possibly inevitably something which is trying to describe this boundary, about the boundary itself?

Alessandra Gnecchi: Meta art? Yeah, it'd be meta boundary.

Suzanne: Do you think that boundary exists?

Alessandra Gnecchi: I think we… in many senses we are surrounded by boundaries, we put ourselves out on a boundary. So, it is fair enough to try to explore them and give them meaning. So, yes, I think it exists.

CV

Suzanne Treister at CERN
Photo: Claudia Marcelloni, 2018

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Suzanne Treister is an artist based in London. Initially recognised in the 1980s as a painter, she became a pioneer in the digital/new media/web-based field from the beginning of the 1990s, making work about emerging technologies, developing fictional worlds and international collaborative organisations. An ongoing focus of her work is the relationship between new technologies, society, alternative belief systems and the potential futures of humanity.