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Loie Fuller.
The Shock of Electricity and the Technological History of Modern Dance or the Overwhelmingness of Technology and the Possibilities of Art

A conversation between Martina Leeker and Wolfgang Hagen¹

MARTINA LEEKER: One focus of the workshops Dance and New Media was dance on telematic stages, created through the use of telecommunications technology. When and how did the history of so-called telematics begin, from the standpoint of the history of technology?

WOLFGANG HAGEN: The beginnings of modern dance and what is known in Germany as Ausdruckstanz (expressive dance) can be traced to the late 19th century. In my view, it all begins with the American dancer Loie Fuller, who caused a sensation at the 1900 Paris Universal Exhibition and subsequently gained a considerable amount of fame and influence. In the realm of literature, for example, she played a crucial role in the symbolism of Mallarme, while her work at the same time took on central importance for expressive dancers Isadora Duncan and Ruth St. Denis. Focusing in on this seminal scenario against the context of technological history, the medium that played the most decisive role in the emergence of modern dance in the tradition of the above-named artists is photography. I would like to claim here that Loie Fuller completely redefined the relationship between dance and photography, and to explain how she did this - thereby elucidating what photography has to do with telematics.

It's important to remember that, for contemporary viewers in the 1890s, photography functioned as a medium that ipso facto had something telematic about it. Those seeing photography for the first time after 1860, by which date extremely short exposure times had become possible, must have wondered what kind of split second, what kind of moment was being captured in the picture? By the end of the 19th century, thanks to the perfecting of chemical and mechanical processes allowing for the acceleration of exposure times, photography had advanced to the status of a scientific, experimental medium. Now, completely new natural and moving forms could be made accessible. Marey and Muybridge are the most well known names in this connection. Already in its nascent stage encounter photography as a tele-medium, inasmuch as it has something to do with accessing something not there, through the use of a medium. One must keep this context in mind in order not to be taken in by the reductions that one is easily subject to in today's environment of advanced technological development. It would be a reduction to say that

telecommunications consists of seeing something that's somewhere else, or that I can use it to appear somewhere I'm not. You can already achieve that through photography, the effect that something about me or about an image appears which was not there in >fact< or in reality.

This relationship between visibility and invisibility plays a crucial role in the dances of Loie Fuller and in subsequent modern dance, even up until today. Loie Fuller was already 38 years old when she achieved renown in Paris in 1900. Up until then Fuller had been unknown, a somewhat chubby vaudeville dancer who had travelled the world with small-time opera, theatre and dance ensembles. Against this vaudeville background, her dance of the veils came about basically by accident, and then went on to make her famous and become her trademark. One of these fringe or vaudeville productions included a hypnosis scene in which Fuller was to play the medium. But the director of the production didn't know how to go about depicting on stage a medium slowly submerging into a state of hypnosis. Fuller suggested using a veil for this purpose. She chose a long piece of silk that she had received as a gift from an Indian officer. The silk had a green shimmer to it and could be used to achieve interesting effects on stage. Swathed in this length of iridescent fabric, she could believably generate the proper trance-like mood during the hypnosis scene. According to contemporary reports, this performance practically sent the audience into fits of ecstasy. The production was only interesting because of this one hypnosis scene with Loie Fuller. Fuller quickly recognised this and extracted this one episode out of the otherwise trivial piece, using it as the basis for developing her serpentine dance. For this she took extremely fine lengths of silk-like material, about two meters by six meters in size, which she could waft around using two bamboo sticks she held in her hands - moving them like wings, in and out, up and down. In this way she was able to generate larger-than-life figures with the veils, up to four meters high and three to four meters wide. Since the veils sank very gradually, she was able to perform countless different figures in this way.

Fuller's key special effect was made possible by the fact that she was able to work on stage with the first electric spotlights. From 1840 to about 1885, well into the Wagnerian era, stages had been lit primarily with gaslights. Through the development of electricity, the invention of the light bulb and the possibility of supplying strong current using generators, the first modern spotlights came into use. And Fuller was a gifted technician in the use of spotlights. One can picture her dance of the veils something like this: Fuller floats four-by-eight-meter swaths of extremely filmy, translucent fabric of various colours around the stage. There was no other stage decoration, and thus the dance used this one medium only. This means that the only space on the stage - and we're talking here about 1893/1894! - was a light space. A light space generated by the spotlights.
How - this was obviously what Fuller asked herself - could one now make this special effect, this kind of dancing, accessible to a wider public? Here, Fuller could fall back on her contacts with opera and theatre photographers. What she was doing on stage lent it very well to photographs, and hence the medium for her success turned out to be photography. Why? Capturing the moment when the veils are floating through the air means that, with a short exposure time, one achieves a precise image of parts of the veil, while other parts appear only with indefinite contours. The veils thus appear to emerge out of nothingness, to come from the beyond, and it was by exploiting this effect that Fuller achieved worldwide fame. And she did so using a medium that was new for her time. Starting around 1900, she had various photo postcard series produced. Mass production of this kind of postcard had begun only around 1895. Thus it came about that in practically every photography museum in the world one could find a well-stocked Fuller collection.

This brings me back to the beginning of my reflections. The central consideration is that feedback using a medium - in Fuller's case, feedback by means of the photographic representation of what is happening on the stage - expresses the telematic element, in this case, the intangible moment of her dance. One of Fuller's most influential friends was Carmille Flammarion, a spiritist astronomer in Paris and at the same time an esteemed scientist, who did research into the fourth dimension and the dimension of psychic powers. He had close contact with the relevant physics-oriented scientists of his day, who were busy exploring the phenomenon of the invisible. The question of whether there's something that we can demonstrate scientifically, which cannot be seen or perceived, and is difficult to access through experimentation, is an issue that played a major role in 19th century physics.

Today, the pertinent literature generally accepts the view that Fuller performed a danced photography. What she was doing could easily be spun around the media axis and seen from the other side as an interpretation of photography as the chosen medium for her dance. This then evokes a connection to spirit photography, which played a not inconsiderable role in both science and art between 1860 and about 1900. Spirit photography is the technique of deliberately or accidentally exposing or double-exposing photographic plates with or without using a camera. Since 1890, for example, a certain Hyppolite Baraduc had been working on such photographs in Paris' Salpetriere. He hypothesised that it was possible to measure a person's psychic powers as emanations, then capture the balance of energy in these emanations on photographic plates. Based on this theory, Baraduc developed photographic techniques with which these emanations around the head and body of a subject - the psychoconic aura - could be made visible. The interesting aspect is that a human being enters the medium of photography and then something appears that makes something, which is otherwise invisible, suddenly visible. This occurrence applies not only to Loie Fuller - on the contrary, it's a widespread phenomenon of her time.
When a workshop or production using telecommunications technology is conducted today in the tradition of modern dance, i.e. in the tradition of the secession from classical ballet, which took place in the late 19th century through Isadora Duncan, Ruth St. Denis and Loie Fuller, then the theme on which it's based corresponds with Loie Fuller's own most basic original theme. The media tricks, but also the media craftsmanship, with which she treated this theme stand, in my opinion, on the same level as work being done today using video, double exposures, blue box and the projection of different rooms. There's a continuity that can be demonstrated against the background of technological history, with dimensions that are fascinating and problematic. The question posed today, namely how does man react to a medium that he himself created, but which is obviously not merely human, is a dimension that has lost nothing of its relevance or its explosiveness. However, to my mind, this question has not really evolved. Without a doubt, there has been an immense evolution in media technologies. But not in the questions posed by these technologies from the outset. They simply continue to ask the same 19th century question again, perhaps in radically new ways, but always overwhelming our human senses, and always revolving around the same point.

MARTINA LEEKER: Essential to your outline of the technological history of modern dance is that it manages to link technology, media effects and the history of mentality. In the history of technology, the theme of the human image is a much-belaboured point.

WOLFGANG HAGEN: Important to me is that one takes technological history seriously as a history of discourse, without erroneously or rashly speaking of man. Man did not make technology. Technological history, viewed materially, allows at best for the use of the less meaningful plural: people. There is no man who invented some kind of technology. In historical terms, we are dealing in the history of technology at best with a strange, mysterious interaction, intermission, interdependence or interpenetration. To speak structurally or con structivistically, we are dealing with discourses. Man as ideal unit of reason plays no role here. This man, if he even exists, only comes into the picture later. First, there is the effect and then the man who doesn't exist, sees the effect and thinks it's his. That's the epistemological problem.

Within the present context of modern dance, I would like once again to illustrate the significance of a history of technology that is not considered from the standpoint of the human being. Specifically, I will show how to embed its protagonists, Rudolf von Laban and Mary Wigman2, in this technological history. In the years following 1900, the Theosophical Society, dedicated to theosophy and anthroposophy (a splinter group of theosophy) takes on enormous importance for European and American art. This fact is far from unknown and is simply part of the theme of modern dance. Madame Blavatsky, who founded the Theosophical Society in 1875 in New
York, was initially nothing other than one of those numerous charlatan mediums summoning knocking spirits, of which there were hundreds at that time in America and Europe. She became famous by carrying out séances in which tables move and one invokes the spirits of the dead to achieve spiritual intercourse. The wealthy widow of a Russian general, she travelled the world, discovering in Indonesia and India and other continents outside Europe a variety of spiritual rituals, which she skilfully combined with the mediumistic seance techniques induced by telegraphy and photography in use at the time in both Europe and America. This was her own special talent. In countless books written between 1875 and 1885, she was able to integrate, the technologically influenced seances and the non-European spiritualisms to form the ideology of the Theosophical Society. The society met with incredible success and is still influential today. Rudolf Steiner was its most important agent in Germany. For around 15 years he was in effect nothing more than the German secretary of the Theosophical Association.

Theosophy and its popularity around 1900 brought about a very special result. It created a connection between the history of religion outside of European culture and the search within the history of technology and the natural sciences for those third and fourth powers, for psychic powers and extrasensory perception and of the impossibility of representing electricity. Blavatsky cleverly combined these two worlds as a new amalgam, giving rise to a new ideology of theosophy and anthroposophy. This amalgam was fruitful for the generation of artists around the turn of the century, especially in the famous first decade of the 20th century in Paris, when virtually the entire European avant-garde came of age. Theosophy was selling an expansion of horizons, saying that as a human being, as a subject/object either meditating or submerged in a trance, one could simultaneously emanate out of oneself and generate something from within one's being. That was the trick from a philosophical standpoint, the ignominious trick of theosophy. And hence even today the horizon of technological history is forgotten, that made it possible for Madame Blavatsky to set this synthesis or this syncretism in motion. Edison, for example, was a founding member of the Theosophical Society. Edison was a professed spiritist, and it's quite clear to me why he should be one. He was at a loss to explain the many inventions and phenomena that he had produced using technical means. This brings us back to my thesis, that technological history may not be regarded from the point of view of people creating technology, but must be viewed from the perspective of people being overwhelmed by technology.

This overtaxing has a long history and at its core has to do with the central theme of scientific history during the 19th century. The prime theme of 19th century scientific history is electricity. Later, this is joined by thermodynamics, which continues to make its mark well into the 20th century. But at first, starting from about 1800 onwards, and primarily electrical phenomena enter the discourse of knowledge. Volta with his battery in 1800, Oersted with his Electromagnetism in 1820; the telegraph as of 1840, underwater cable in 1860, electromagnetic waves in 1888, X-rays as of
1895 - the implementation these new inventions exercised a tremendous effect on technology and culture. Nevertheless, over the span of the entire century, a coherent theory of electricity failed to emerge. This void engenders the overwhelmingness of technology, from the point of view of the history of science. I omitted photography, the physical and chemical effects of which people were also unable to comprehend. Man suddenly had access to the most amazing effects and could exploit them to achieve breathtaking applications, but there was no explanation available for how they work, and no theories with which to place them within a comprehensible context.

This brings us to the deconstructivist theories of Lacan and Derrida, which - to my mind - describe the fact that reality, the perceived world, cannot be comprehended according to the logic of the human image, of a logocentric entity, of a rational subject, or whatever one wishes to call it. The discourse in question involves elements and structures that, at the moment one tries to capture them, have a way of eluding one’s grasp. To ascertain this escape of the real as itself being something real, which precisely by virtue of its evasion - paradoxically - can no longer be moved from its place, this is probably the neatest method for philosophical stocktaking of the reality surrounding us.

MARTINA LEEKER: Are we still chasing a human-centred technological history today, or do we already sense something of a deconstructivist attitude toward man and media?

WOLFGANG HAGEN: It would better if we would do so. To carry on my train of thought, it is important to explain what deconstructivism entails, in order not to fall prey to a new ideology. We have to enter into the discourses, knowing that our means to understand them are limited, since all of the means at our disposal, such as linguistics, psychoanalysis, constructivism, deconstructivism, are themselves offspring of this history of discourses, which we reflexively try to use to understand it. Epistemologically, Lacan’s psychoanalysis and Luhmann’s constructivism are after-effects of cybernetics. But that does not mean they are explanations of cybernetics. As systems with massive degrees of feedback multiplied on the technical scene, cybernetics entered the picture, claiming that the whole of society was a feedback system. This had the consequence that we could no longer answer the question of what society is. We are part of society; there is no point outside society from which we can observe it objectively. But we still do it, or more accurately: our media do. This paradox, this impossibility, is referred to by constructivism as a coupling or a strict coupling. In this respect, the history of our society, if there is such a thing, is a history of the media in our society. I believe that, in much the same way, the history of technology is always a media-related history of technology. One cannot separate technological history from the history of media. Technology has something to do with media.
MARTINA LEEKER: What do you mean by something to do with media?

WOLFGANG HAGEN: Simply put, that there exists in some form an inbetween, something that appears as effect, as something invisible. And that goes for the term media itself.

Only in the second half of the 20th century does the word media take on significance, via the work of McLuhan. Between 1950 and 1960 Marshall McLuhan follows in the footsteps of Harold Innis, taking up media as a concept and turning the cultural critique that had been developed thus far, oriented until that time more around Wyndham Lewis and Ezra Pound (two artists), into a veritable media theory. As he explains in the foreword to Mechanical Bride, his attitude toward technology up till then had been based more on Edgar Allen Poe's story of maelstrom. A gigantic eddy that sucks everything under into the depths of the sea overrides a shipwrecked sailor. The sailor is doomed. But then - in Poe's story, and this is the decisive point for McLuhan - while caught in this whirlpool he begins to observe the characteristics of all of the objects swirling around him. He finds that some of the objects are not being sucked down into the abyss, but instead drawn up out of the water, and he grabs one such object and hangs onto it.

This image, that one can save oneself from being overwhelmed by a shipwreck or maelstrom by means of close observation, is the starting point for McLuhan's media theory, and this even before the term media is brought in. This only comes later, bringing with it the ideology of media as extensions of the human being, which McLuhan derives from Gehlen and other anthropological sources. True, this is a relatively untenable theory. But, after all, McLuhan's main concern was only salvation from the overwhelmingness of the media, in the form of identification with the attacker.

Repression of technology, as something that one is incapable of coming to terms with, first becomes a relevant theme after the Second World War. Before things can come to this pass, man must experience the horrendous technological catastrophes of the war. Only then does Heidegger appear on the scene, and Lacan as well, almost at the same time, with his famous thesis that, although technology is not inhuman, it is - according to Heidegger - decidedly not merely human. There's no use either trying to construct some kind of evolutional theory behind the expansion of the technological. We don't even know whether our technological and media-influenced civilisations, seen from a global perspective, represent an evolution at all. We don't know very much about the logic and dynamics of technological development, when one takes into consideration all its surrounding conditions, that is, on a worldwide scale.

MARTINA LEEKER: With this in mind, it seems to make sense, within a workshop in which dance and technology meet, to deal with technological history in order to understand where we're coming from.

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WOLFGANG HAGEN: I believe that, for this reason, art now has to make technological history in order to find its way back to the old media. In this way it can free itself from the delusion of being avant-garde since, even today, it can only be retrogarde. There’s just no alternative. Dance must come to terms with the fact that it will always be running after technologies that have long been available, or that have just reached the degree of sophistication that allow them to be applied.

Technological history is therefore also important because it opens up a space that affords art another kind of intervention. One needs to look backwards in order to be open for a kind of questioning that can be more radical and fundamental - instead of merely operating with the most advanced forms, such as Internet, computers and telecommunications, etc. I maintain that, in artistic or aesthetic terms, there’s no more inherent telematics in the Internet or in data transmission via IP3 than there is in a photograph of Loie Fuller.