Raivo Kelomees
POSTMATERIAALSUS
KUNSTIS

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INDETERMINISTLIK KUNSTIPRAKTIKA JA MITTEMATERIAALNE KUNST

DOKTORITÖÖ

Elektroonilise ja mittemateriaalse kunsti teema on mind huvitanud viimase paarikümne aasta jooksul nii kriitiku kui ka kunstnikuna. Siinse uurimuse pealkirjas "Postmateriaalsus kunstis. Indeterministlik kunstipraktika ja mittemateriaalne kunst" on sellele antud üldisem tähendus. Nimelt tundus, et meedia- ja elektroonilise kunsti küsimustele keskendumine on liialt kitsas. Seda kunstivaldkonda iseloomustav objektne määratlematus ja mittemateriaalsus on huvipakkuv laiemaltki.

Käesolev töö on sündinud tänu toetusele, mida autorile on osutanud mitmed organisatsioonid ja üksiksikud. Nendest nimetaksin Tartu Kõrgemat Kunstikooli, kus töötasin meedia- ja reklaamikunsti osakonna juhatajana 2001–2007 ning mis soosis erialast tegevust ja enesetäiendamist. Tänu TKK-le ja Eesti Kultuurkapitalile oli võimalik resideerida Karlsruhe Kunsti ja Meediatehnoloogia Keskuses 2006. aasta oktoobris ja 2007. aasta veebruaris-märtsis. Võlgnen tänu Eesti Kunstiakadeemiale võimaluse eest töötada Mazzano Romano külalisateljees Itaalias 2007. aasta suvel ning viibida Karlsruhe Kunsti ja Meediatehnoloogia Keskuses 2008. aasta aprillis-mais.

Oluliste pidepunktidena selle töö kirjutamisel mainiksin oma poegasid Hermanit ja Mikaeli ning abikaasat Tiia Johannsoni (1965–2002), kelle kui kolleegi, ereda isiksuse ja kompromissitu kunstniku eeskuju on mind mõjutanud.

Erilise tänu võlgnen töö juhendajale Virve Sarapikule ja temaga peetud inspireerivatele vestlustele, mille tulemusena kujunes selgem arusaam mittemateriaalse kunsti problemaatikast ning selle haruteemadest.

Neljandaks, kunstiteose esemetustamine ja ainetustamine on ambitsioonikas loominguline praktika, omamoodi aastakümnete pikkune trend kunsti võistleval maastikul, mis võlgneb oma köitvuse eest tänu ka teoreetikute üleskihutavale entusiasmile selle käsitlemisel. Teoreetilise käsitluse "immateriaalne" raamistik on parimaks kontekstiks "nähtamatu" ja "olematu" kunsti analüüsimisel.

Viiendaks, mittemateriaalsete ja kommunikatiivsete kunstiideede sisenemisel Eesti kultuuriruumi korratakse varasema rahvusvahelise kunsti arengulugu, mis seisnes nii traditsioonilistest kunstimaterjalidest lahtiütlemises kui ka elektrooniliste tehnoloogiate kasutuselevõtus. Uued tehnoloogiad muudavad ka varasemaid kunstihierarhiaid, andes ruumi pluralistliku kunstiruumi tekkele.

POSTMATERIALITY IN ART

Indeterministic Art Practices and Non-Material Art

DOCTORAL THESIS

9.1. INTRODUCTION.
ART THAT IS NOT DEFINED IN TIME, SPACE, MATERIAL AND AUTHORSHIP

9.1.1. MOTIVATION

I would like to begin with my motivation for writing this thesis. The sphere of art is perceptible differently from the points of view of the creators of art and the reflectors of art.[524] On the one hand, the vague, non-object, flowing world of creators associated with creative activity as a dependent process that ultimately may perhaps also materialise as physical art, and on the other hand, the object-oriented, physical world of artefacts with recognisable specific characteristics that is more typical of the reflectors of art and is based on factual or object-oriented art.

The discussion of art and artists on the basis of results and productivity has always seemed questionable to me. Although this is a simplifying point of view, artists can be very down to earth. It would be just as simplifying to view the reflectors of art simply as researchers of results, artefacts and objects. They could also be interested in process-based art, open creative work, and what takes place in the subtle spiritual and intellectual worlds of the artist or in theoretical historical and social processes in art.

As the second indication of personal motivation, I would point out the conception of a happening (on the basis of which an actual happening was carried out) that I wrote for art collector Matti Milius on 1 March 1985 and which was intended for the film *Matti Milius's Frantic Manifesto* by Haralds Elceris. Its title was *Zero Exhibition* and its objective was to put on an exhibition of blank paintings that would mean playing out wishes and dreams:

> *An exhibition of non-pictures, a display of zero paintings, works of art that embody the most – that which has not yet been started. The negation of an exhibition.*[525]

I would like to mention my article *Video Art* (Almanac *Kunst* (Art), 73/1, 1989), which I wrote without having seen even a single international work of video art, as the third aspect of my personal motivation. Estonian video art did not yet exist as a collective practical experience of artists.

These three examples should frame three aspects of the relationship of the undersigned to the topics considered below. First, the aspect of subjective and intuitively "primitive" cognition that considers non-material creative work to be primary: a certain creative existence without boundaries that is not expressed in matter and facts; the second aspect is the personal experience of authorship and artistic experience, the aim of which has been the creation of "zero art"; and the third aspect is an example of the experience of the writer, where there were no actual contacts with what was passed on through the article.

The fourth, intellectual motivation is to discuss the essence and origin of technical, non-material, rule-based art and to examine those non-material and ephemeral processes that take place in the area between art, the artist and the public with the emphasis on new media art.

I would name the wish to place what is taking place in the Estonian art landscape in the context of international developments as my fifth motivator. This emerges more clearly in the 3rd chapter "The Multilocal and Immaterial Body of the Work of Art" and the 7th chapter "On Internet Art". Here, however, I would like to disavow a certain position of the art historian, the deficiencies of which will undoubtedly be ascribed to the author. Having followed developments in the art world and new media in the 1990's and reflecting them regularly in critical articles,[526] I do not consider it necessary to be the chronicler of the art world and recorder of events in the final decade of the 20th century in this work. Generally speaking, the fostering of new media art and theory has been dealt with in Estonia during the 1990's from both established (Soros Centre for Contemporary Art Estonia, Estonian Academy of Art) and marginal positions (French-Baltic video festivals, offline@online new media festivals, Non Grata vilm and fideo festivals) and it has achieved its culmination in official developments with the development of the Interstanding series of conferences into the ISEA with Estonian participation in 2004.[527] I have not considered it necessary to include all this factological and detailed information in this work since it merits an entirely different kind of method of treatment that is in a certain sense altogether more continuous than the present study is, in which the author's thought process frequently makes detours of a historical nature.

9.1.2. PROBLEM AND OBJECTIVE

Is it possible, on the basis of the artistic subject matter described and analysed in this study, which I refer to as problems of post-material art[528] – indeterministic and undefined artistic practice, nonmaterial art, new media and technological art that includes the authorship, materiality,

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524   I intentionally do not use the words "critic", "theorist", "analyst", or "art scholar", but rather "reflector" in order to make this position more general and vague in this introduction. Both critic and analyst fits into the term "reflector", as does the artist himself, and this is more precise from the standpoint of defining his opposing position in terms of the creator of art and works of art.

525   The conception has not been previously published. I would also classify the following examples in my "zero art", art works or their practical

expression that preclude materiality: Dry Video Art, at the S & K 2 Exhibition, 1992 (documentation of video art without the preceding videos), my solo exhibition Black is Zero and Infinity in the World of Colour, Sinimandria Gallery, 1993 (title, this was an installation of copy art and an exhibition of paintings), S & K – A Certain Void, (exhibition title, with paintings, videos, computer graphics reproductions and copy art in the forefront), Vaal Gallery, 1994 (idea in cooperation with Tiia Johannson; participants: T. Johannson, V. Sarapik, R. & R. Kelomees, N. Rohtvee).

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526   See the author's collection of critiques The Screen as a Membrane, Articles and Reviews 1991–2000. Tartu Art College, Publications 5, 2007.

527   See R. Kelomees, Media Carnival on the Baltic Sea. ISEA 2004 on shipboard, in Tallinn and Helsinki. Sirp, 3 September 2004.

representation and transmission of a work of art, the process of creating art, and the uniqueness of a work of art, to find an invariable factor that combines all of this?

My assertion is that art is not physical and material reality, but rather indefinable reality based on transient objects, variable materiality, and random or purposeful activity by way of matter (or its absence) and sometimes-active agents. Nowadays, art takes place in post-material space that ties physical objects, people, nations, institutions and communications networks together into a perpetually changing self-organising sphere and flowing space functioning between system and chaos. Art that is born in this environment can be referred to as non-material art.

The objective of this study is to render significant the vague and indefinable that lies between works of art, artists and works of art, artists, artists and the public, the material states of works of art, and objects that form a work of art. It is not defined and determined by time, space, material and authorship.

The determination of this field of study is one of the objectives of this study. Its second objective could be referred to as the specification and definition of certain recurrent patterns that can be noticed in art associated with new media. Its third objective is to observe non-material and open creative work in the context of art history as perpetual cultural practice that is part of human activity.

This kind of negation of artefact-oriented art studies is rational, regardless of its apparent contrariness, and contemporary in terms of its aspirations, dealing with art that at least in terms of its ambitions can be considered part of the vanguard. New media and new technology art deals primarily with problems and artistic practices, and is filled with experimentation. To a lesser extent, it deals with the creation of unique artistic products. The study of this intermediate area between objects and phenomena understandably cannot avoid those objects and phenomena themselves, their edges, without which this intermediate area would not exist.

This applies particularly nowadays in terms of studying telecommunicative discourse that is not possible to objectify. It is nevertheless possible to make it factual. The representationist reduction of the existing to mere data does not reveal the nature of phenomena, the manifestation of which is indirect or temporary. Understandably, it is possible to "comprehend" the intransient and invisible by studying formulation or the remaining data, indirectly in this event.

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528   The word "post-material" is not in extensive use in the theory of new media or in scholarly art studies. I have encountered it in the vocabulary of marginal anti-consumerist semi-religious sects. Thus it seems that in the context of this study, this term could have a certain freshness and quality to distinguish this work from studies dedicated purely to technological art. The prefix of this word "post" is undoubtedly part of a trend. A pleiad of "posts" has overwhelmed art criticism and philosophy since the 1980's ("postmodernism", "post-colonialism", discussions associated with the "end" of art and art criticism, "after art", "post-family", Bourriaud's "postproduction", which indeed has been used in association with video for decades). On this point I am indebted to Heie Treier for the need to emphasise the trend of terms beginning with "post".

I aspire to observe defined artistic trends, not detached isolated cases. In discussing the origin of creative directions or art movements, both intentionality and spontaneity can be seen in their evolution. Movements of artistic practice originate through the unification of the desires, interests and practices of artists. These movements are formed into international trends by artists themselves, theorists or artistic institutions after the fact or in real time. A prerequisite for this is a critical mass of active participants or works of art. The selection proposals of institutions, or invitations based on the theme or technology of exhibitions or festivals can cause a commission-oriented phenomenon, and create a critical mass of works or artists that expands under favourable conditions into an international trend or movement.[529]

It is apparently not possible to speak of movements in our contemporary post-media and post-industrial era in the meaning that we have been accustomed to reading about them in art history textbooks, as if it were an artistic fashion based on using one or another method. The art world is fragmented both vertically and horizontally in the sense that "low" and "high" art can exist in parallel and even in one and the same works, that top level art can take place in the periphery, that many ambitious major exhibitions can be less influential, that some retrospective exhibition of old art can be a more innovative event nowadays than an innovative contemporary exhibition. At the same time, since this study discusses digital, interactive art to a great extent, the position of this author is that high technological and highbrow cultural are not necessarily in correlation even in the case of art that has aspired to this. On the other hand, high technology is sometimes intentionally combined with "low" with playful intent, yet also with the wish to avoid conformation in this sphere.

To some degree, this study "contends with" stereotypes set in art history and writings about art, that a work of art is material, permanent, sedentary, that it has a certain author, that art is a comprehensible system, and that the best are at the summit of its hierarchy. I would like to bring the opposite to the forefront with the objective of making the overall picture more complete. Since I have come in contact with what contradicts the object-oriented and permanent in my artistic experience, my intuitive wish is to also demonstrate this. Nevertheless, it must be pointed out that human nature and culture cannot be changed since it is founded on memory. This means that we need anchor points in order to comprehend phenomena and interpret the results of human activity – facts, names, words, emotions, sensations of sensuous and mental origin that become raw material for consciousness in the creation of rational interpretations, theories, and other such "narratives" and "models". The "scheme" for why something takes place, why people do things the way

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529   This can be observed with particular clarity in the example of Ars Electronica and the ISEA - Inter-   Society for the Electronic Arts.

they do, why certain phenomena take place, is created on the basis of mental traces and their interpretation. Thus in the programmatic wish to demonstrate that art does not lie in objects and materiality, we have to accept human nature and the patterns according to which culture functions, which is founded on mental traces that occur according to sensory impressions from the material world of objects.

Nevertheless, we can notice persistent tendencies towards the dematerialisation of works of art and non-material art, which, as I will demonstrate below, take place through three approaches:

1) doing away with and dissolving objects of art, as we can see in conceptual and performance art,
2) the adoption of new artistic materials that we can observe since the 1950's, and
3) the adoption of electronic media and digital technology, which has been taking place since the 1960's.

These developments should be seen as being interwoven within the framework of certain works and exhibitions.

While these phenomena have previously been viewed in terms of artistic movements, decades, or artists, in this work I would like to present more universal tendencies that pervade different eras, media, and ways of creating art as creative currents that are essentially non-material, processual, ephemeral and indefinable in other terms. I would refer to them as being post-material.

Post-material should be comprehended as post- but also as pre-object-orientation, nonmaterial, open, physically and temporally unlimited, also based on electromagnetic waves and digital code. The inner dominant of the concept of "post-material" is temporal and physical indefinability, as we see in art and creative practice that is not static in terms of objects and permanent in terms of matter. This should not necessarily be temporally associated with technological art phenomena of the last quarter of the 20th century, although the primary emphasis of this study nevertheless is on this period. As I demonstrate below, open creative practice that places its primary emphasis on process is universal, and figurative artistic work aimed at object-orientation and physical artefacts is historically recent.

I would avoid interpreting "post-material" in its social meaning as interest in recognition, belonging, society, a fuller life, self-realisation, happiness and other such aspirations and as the opposite of consumerism, as anti-consumerist ideologists use it. I would also analyse examples in this study that have come about through aspiration to oppose object art subject to marketing.

As I mentioned, human consciousness needs anchor points in order to describe the world and to discuss its own nature. These are sometimes

the material "remnants" of creative activity, or works of art. This is the case even in the event of art where the aim of the author has been to focus on that which is not part of the object and on the nonmaterial. Here materiality is the nutritive soil for post-material discussions. This applies with particular clarity to the sphere of media art, where arguments concerning the concepts that define this art and "matter" have not yet subsided. Yet in the thirst of theorists for the absolute, one can arrive at quests for primary matter that are to some extent fruitless. When Armin Medosch[530] proposes to name "electromagnetic waves and code" the material of media art, couldn't one suggest that the reduction of the art of sculpture to its primary matter, in other words crystallised calcium carbonate – $CaCO_3$ – which is what marble consists of, provides just as much clarity and feeling of security? What then would be the primary matter of bronze sculpture or oil painting? Yet as I describe below, non-object oriented art and works are considered nonmaterial first and foremost, in which case non-materiality is a metaphor. In this case, objective material manifestation is a means for manifesting and bringing forth an invisible-untouchable reality.

In his book *The Language of New Media*, Lev Manovich refers to his own method as "digital materialism", tying together the terminology of art theory, literary theory, media studies, social theory and computer sciences.[531] For him, this term is more for referring to a hybrid and multidisciplinary method, which we could conditionally also apply in denoting the art under consideration, primarily within the limits of digital art.

The answer to the natural question of what will ultimately change if art dematerialises, immaterialises, if the author is dissolved, if the objective is not the creation of an object of art, but rather an open process, can be that something will change but much will remain the same. Three aspects will change the most: first, the position of the public will be altered into that of a co-author; second, the artist's position, as the one who presents the work of art as a participatory context, will also become a co-author and part-author, and third, a "universe" of different kinds of temporary works of art will come into being, a post-material environment where works exist thanks to the media used to represent and transmit them.

The fact that in order to speak of phenomena including art, researchers and even artists themselves need anchor points in the form of objects, facts or words that form the basis for discussions of the material existence of a work of art and of the creative process, will remain the same.

530   A. Medosch, WAVES – An Introduction. – The 8th International New Media Art Festival ART + COMMUNICATION 2006: WAVES August 24–26, 2006 in Riga, Latvia. Catalogue, Riga 2006,

pp. 14–23.
531   L. Manovich, The Language of New Media. Cambridge: MIT Press, 2001, p. 10.

9.1.3. methodology, theoretical sources and concepts

This thesis is composed of six parts. I introduce the problem and subject matter in the first chapter. Parts 2–6 are rewritten previous articles.[532] The titles of the chapters have been left unaltered as they were in earlier publications since the writings are thematically directed at one sphere of interest, bearing in mind their congruence into a complete whole, and since they were written within the past two years.

This thesis represents a qualitative direction in research. It is based on overviews of literature concerning the history and theory of media art, catalogues, articles, and discussions that have taken place in e-mail lists, the search for associations and the presentation of contrasts. This is founded on my 20 years of contact with electronic art as both a critic and an artist, during which time I have both as a bystander and as a participant had to resolve questions that arise when new cultural phenomena and technologies become part of culture and that influence artists and the public. My method of research is to make generalisations on the basis of specific material. I use specific works and cases, analysing selected works in varying degrees of detail in order to come to conclusions on the basis of isolated facts, works of art, and artistic trends. I analyse and contrast the discussions of various authors, for which purpose I use multimedia information from the Internet in addition to written sources.

Edward A. Shanken has made the most serious attempt to present methodological points of view from the interdisciplinary sphere of research of art, science and technology in his writing *Historicising Art and Technology: Forging a Method and Firing a Canon*.[533] In writing about the interdisciplinary sphere that he calls AST (Art, Science and Technology), he refers to Jack Burnham's book *Beyond Modern Sculpture: The Effects of Science and Technology on the Sculpture of This Century* (1968), which has inspired him. Burnham, in turn, refers in his preface to Gottfried Semper and Alois Riegl. Shanken points out that the study of art history is by its nature an interdisciplinary undertaking, and studies are inevitably founded on history, philosophy, the sociology of science and technology, literary criticism, and synthetic methods of cultural studies, meaning mass culture, television and film, which has recently been applied by Sherry Turkle and Lev Manovich in analysing screen-based multi-media, and so on. Shanken cites examples from his own writing *Art and Electronic Media* (2002), defining spheres: Coded Form and Electronic Production; Motion, Light, Time; Networks, Surveillance,

Culture Jamming; Simulations and Simulacra; Interactive Contexts and Electronic Environments; Bodies, Surrogates, Emergent Systems; Communities, Collaborations, Exhibitions, Institutions. This, then, is in his interpretation the sphere of art, science and technology. The methodologies for its study are more often than not synthetic.

In terms of literature, I rely on treatments and publications in which art is studied bearing in mind the factor of the indefinability of its materiality, technological nature, or authorship (S. Zielinski, U. Eco, D. Davies, S. Penny, L. Manovich, P. Weibel, O. Grau, E. Huhtamo, F. Popper, H. W. Franke, I. Arns, E. Shanken, P. Galanter, and others). The main referential spheres are media archaeology, the history of electronic art and media art, and the theory of new media. These spheres have formed as directions of research and terms over the course of the past 20 years. Parallel and competing terms are used in reference to them.

It pays to recall historical examples: volume II of *Aesthetica* by Max Bense was published in 1956 under the title *Aesthetische Information.* In 1965, he invented "generative aesthetics", which contains a reference to Noam Chomsky's "generative grammar".[534] *Information Theory and Esthetic Perception,* by Abraham Moles, was published in 1958. The word "information" is also used nowadays as Information Arts (see S. Wilson, Information Arts[535]). "Digital art"[536] and "virtual art" (O. Grau) are also in use. Frank Popper uses the term "virtualism". Mark Tribe and Reena Jana treat new media art as if it were a trend in art history in their book *New Media Art.*[537] Bearing in mind non-existence, temporariness and non-materiality, which I emphasise in particular, I refer to the Finnish study of conceptual and performance art *Katoava taide/Ephemeral Art,*[538] where ephemerality/transitoriness/temporariness is used rather as a covering metaphor, as it could also be spoken of in the case of digital art.

It is possible to find sub-spheres and subject terms among these more substantial concepts (new media art, virtual art, media art, information arts) that artists operate in, such as interactive art, telecommunicative art, telepresence art, bio-cybernetic art, experimentation with nanotechnology, A-life art, the creation of virtual agents and avatars, database art, software art, generative art, hybrid art, multi-media art, interactive film, transgenic art, and internet art. These can be considered sub-spheres of media art. I propose to refer to this sphere of study as the history and theory of media art. O. Grau believes that some of the above-mentioned sub-spheres belong to telematic, genetic and interactive-immersive art, which he refers to as virtual art.[539]

532   R. Kelomees, Kunstiteose multilokaalne ja immateriaalne keha. – Kunstiteaduslikke Uurimusi, 2006, No. 1/2 (15), pp. 63–105; R. Kelomees, Loomemasinad ja indeterministlik kunstipraktika. – Akadeemia, 2007, No. 4, pp. 699–744; R. Kelomees, Reeglitepõhised ja generatiivsed meetodid Eesti kunstis I. – kunst.ee, 2007, No. 3, pp 54–56; R. Kelomees, Reeglitepõhised ja generatiivsed meetodid Eesti kunstis II. – kunst.ee, 2007, No. 4,

pp 38–43; R. Kelomees, Jagatud autorsus: kunstniku hajumine elektroonilistel väljadel. – Kunstiteaduslikke Uurimusi, 2007, 3 [16], pp. 46–85; R. Kelomees, Eesti netikunstist. – Vikerkaar, 2006, No. 10–11.
533   E. A. Shanken, Historicising Art and Technology: Forging a Method and Firing a Canon. – Media Art Histories. Ed. by Oliver Grau. Cambridge: MIT Press, 2007, pp. 43–70.

534   C. Klütsch, Computergrafik. Ästhetische Experimente zwichen zwei Kulturen. Die Anfänge der Computerkunst in der 1960er Jahren. Wien: Springer-Verlag, 2007, p. 100.
535   S. Wilson, Information Arts. Cambridge, London: MIT Press, 2002.
536   C. Paul, Digital Art. London: Thames and Hudson, 2003.
537   M. Tribe and R. Jana, New Media Art.

Taschen, 2006.
538   H. Erkkilä, L. Haapala, H. Johansson, M. Sakari, Katoava taide / Ephemeral Art. Ateneum, The Finnish National Gallery Bulletin, 1999.
539   O. Grau, Integrating Media Art into our Culture. Art History as Image Science. – MediaArtHistoriesArchive, MAHArchive. – http://www.mediaarthistory.org/maharchive/index.html

The study of creative work and theory associated with art, science and technology is understandably interdisciplinary. The methodology for studying it is still evolving. O. Grau refers to the history of media art as image science and in his opinion, the interdisciplinary direction of study that deals with it combines art history, cultural studies, media and the history of science. In Grau's opinion, the world of images and their creation around us has never before changed so rapidly as now.[540]

In terms of the use of terminology, the objective is to rely on concepts that have stood the test of time, like "media art". I point out "hybrid" and "multi-media" as examples illustrating the temporariness of terms.

The content of several terms may overlap or be consensual. Others may be temporary, artificial substitutes. Some terms may be altogether incorrectly interpreted. Take "immateriality" considered below. One author interprets the term as a metaphor and another strives to give it the content of an exact science. Immaterial art does not refer to the total annihilation of the materiality of a work of art, but rather to the disappearance of its objectness.

I mention Siegfried Zielinski's book *Archaeology of Medias*[541] as the most important of historical and theoretical sources. Important points of view from the cultural history of virtual reality are presented in Simon Penny's article *Virtual Reality as the End of the Enlightenment Project.*[542]

In terms of the point of view of the archaeology of media, I consider Erkki Huhtamo's articles and his work as curator within the framework of the Alien Intelligence exhibition[543] that took place in Kiasma in 2000 to be essential. The exhibition made media art expressive within its material and historical framework: exhibits ranged from automata from the 18th century to interactive installations from the 1990's. Lev Manovich's *The Language of New Media*[544] is an important source for analysing the roots of new media art. Oliver Grau's *Virtual Art*[545] places the activity of the virtual artists of the 1990's in the context of historical illusion art. Frank Popper's *From Technological to Virtual Art*[546] is a continuation of the direction of interest of his previous studies, like *Origins and Development of Kinetic Art* (1968), *Art, Action and Participation* (1975) and *Art of the Electronic Age* (1993), the content of which is the detailed documentation of technological art and the activities of artists, and the drawing of conclusions.

In terms of theoretical context, which is the starting point of this study, I mention the collection of articles and exhibition catalogue

Ästhetik der Absenz[547] published by Ulrike Lehmann and Peter Weibel, which contains comprehensive texts about the "absence of art" and the "aesthetics of absence". It places picture denial, the vanishing of the picture, immateriality, destroyed image, and space emptied of art in a context that we could perhaps refer to as "Anti-Art" according to Thomas McEvilley's treatment of this theme.[548]

Yet this approach reflects earlier strategies for the destruction of art and "immateriality". Under the influence of Jean-François Lyotard's exhibition *Immateriality* (1985), electrical-technological and material-based artistic experiments that denied art and broadened the boundaries of art emerged at the end of the 1980's and continue to evolve in the digital art of the 1990's and 2000's. The topic of immateriality became altogether popular at the end of the 1980's in association with new technologies.[549] The Karlsruhe Centre for Art and Media Technology ZKM (Zentrum für Kunst und Medientechnologie) developed the topic of the "aesthetics of absence" into the exhibition "Iconoclash. Beyond the Image Wars in Science, Religion, and Arts" in 2000, attempting to provide an overview of the history of picture and image wars, and subject matter associated with new media.

I refer to the web page www.mediartnet.org of Media Art Net as an important source of information. This is the most exhaustive collection of texts on new media theory and history, to which a multi-media layer has been added. Historical works can be seen as pictures, sound and video, to say nothing of scholarly texts and documents. Its content is preserved in two books: Media Art Net 1: Survey of Media Art and Media Art Net 2: Key Topics.[550] The web page netzspannung.org created specifically for researchers should also be mentioned. I consider the online archive of "Ars Electronica" [551] to be essential, where the catalogues and conference collections since 1979 of Europe's most prominent festival have been stored.

9.1.4. TECHNOLOGY, MATERIAL, MEDIUM

Art and technology are interwoven as a consequence of the centuries-long activity of artists. The gravitation of attention towards the creator, author, maker, or altogether in the direction of the technical means for carrying out the work has frequently been brought about by a circle of artists, observers and researchers, who are convinced of the inevitability of developments. It is as if what went before ushers in the present. This

540   O. Grau, Integrating Media Art into our Culture. Art History as Image Science.
541   S. Zielinski, Archäologie der Medien. Zur Tiefenzeit des technischen Hörens und Sehens. Reinbek bei Hamburg: Rowohlt Taschenbuch, 2002.
542   S. Penny, Virtual Reality as the End of the Enlightenment Project. First presented at the symposium "Ideologies of Technology", Dia Foundation NY, 1992. – ace.uci.edu/penny/texts/enlightenment.html

543   Outoäly – Alien Intelligence. Ed. by Erkki Huhtamo. Helsinki, Nykytaiteen museon julkaisuja, 63/2000.
544   L. Manovich, The Language of New Media. Cambridge: MIT Press, 2001.
545   O. Grau, Virtual Art: From Illusion to Immersion. Cambridge, London: MIT Press, 2003.
546   F. Popper, From Technological to Virtual Art. Cambridge: MIT Press, 2007.

547   Ästhetik der Absenz. Hg. Ulrike Lehmann, Peter Weibel. Klinkhardt & Biermann, 1994.
548   T. McEvilley, The Triumph of Anti-Art. Conceptual and Performance Art in the Formation of Post-Modernism. New York: McPherson & Co., 2005.
549   See Kunstforum International 97, Nov/Dec 1988. Ästhetik des Immateriellen? Zum Verhältnis von Kunst und Neuen Technologien. Teil I and Kunstforum International 98, Jan/Feb 1989. Ästhetik des Immateriellen? Das Verhältnis von Kunst und Neuen Technologien. Teil II.

550   Media Art Net 1: Survey of Media Art. Eds. Rudolf Frieling and Dieter Daniels, commissioned by Goethe-Institut and ZKM Centre for Art and Media Karlsruhe, Vienna/New York: Springer, 2004, Text: German/English; Media Art Net 2: Key Topics. Eds. Rudolf Frieling and Dieter Daniels, commissioned by Goethe-Institut and ZKM Centre for Art and Media Karlsruhe, Wien/New York: Springer, 2005, Text: German/English.
551   http://www.aec.at/festival_history_de.php

can be observed in relation to the art, theory and writing of the history of new media.

The meaning of the means and the medium varies in the writings of different authors. Two interpretations emerge: the medium as material, and as a tool. We can add "medium" to them as an environment of electronic communication.

I nevertheless try to refrain from dealing with material as physical substance for the reason that it is a detached line of research, and the subject matter of means as material has been thoroughly studied in the treatment by Wolfgang Drechsler and Peter Weibel *Malerei zwichen Präsenz und Absenz*,[552] and in the essay by Monika Wagner *Das Material der Kunst. Eine andere Geschichte der Moderne*.[553] In some respects, the topic of physical material is important in the context of the present treatment where material becomes "non-artistic", where material is a means for overcoming and abandoning materiality, an instrument for the destruction and denial of the picture, where it is not traditional material of figurative art.

9.1.5. EMPIRICAL MATERIAL

In terms of empirical material, I use works of art and exhibitions that I have seen over the past 15 years or so, the reflections of which can be found in the collection of articles by the undersigned *The Screen as a Membrane*.[554] In particular, I single out exhibitions, museums and festivals of new media history and art that I have visited, like: ISEA 1995 (Montréal), ISEA 1998 (Liverpool, Manchester), ISEA 2000 (Paris), ISEA 2002 (Nagoya), ISEA 2004 (Helsinki-Tallinn), Interstanding conferences in Tallinn (1995, 1997, 1999); "Ars Electronica" festivals in Linz, Austria (1997, 1999, 2000, 2002, 2003, 2006, 2007, 2008), the Tokyo Inter-Communication Centre media museum (1998, 2002), the exhibitions Alien Intelligence (Kiasma, Helsinki, 2000), Yves Klein. Air Architecture (Vienna MAK, 2005), Algorithmic Revolution (ZKM Karlsruhe, 2006), MindFrames (ZKM Karlsruhe, 2007), Yves Klein. Corps, Couleur, Immateriél. (Pompidou Centre, Paris, 2007), Mouvement des Images – Art, Cinema (Pompidou Centre, Paris, 2007), Bit international (ZKM Karlsruhe, 2007), Rom – offene Malerei. Das Materialbild im Italien der 1950er und 1960er Jahre (ZKM Karlsruhe, 2008), YOU_ser: The Century of the Consumer (ZKM Karlsruhe, 2008), to name the more major events with themes that mesh with this study. These exhibitions and events have allowed me to see 20th century art in its original form that has influenced the evolution of media art history and theory over the last twenty years.

I also refer to media art festivals and exhibitions that I have curated in the context of the international trend of software media art: curating the Estonian selection of the French-Baltic video festivals: 1994, 1996, 1997; the French-Baltic-Nordic Video and New Media Festival 1998; the 2nd offline@online International Media Art Festival 1999; M Cubed/M3, Painting and Multi-Media at the Tallinn Art Hall, January of 2001; In-Cinema conference and exhibition of interactive film at the Tartu Art Hall in 2004.

9.1.6. FIELD OF STUDY: DEFINING THE INDEFINABLE

I could summarise my field of study using the following adjectives, which even overlap since they are both Estonian and foreign language words, and in this way more vividly characterise the area that is the object of this work. These words also characterise works of art, and ways of creating or receiving them: objectless, immaterial, dematerialised,[555] without substance, transient, temporary, ephemeral, nonexistent, missing, mobile, variable, processual, multi-local (present in many places simultaneously), with shared authorship, serial, procedural, generative, algorithmic, systematic, epigenetic,[556] rule-based, combinatory, conceptual, participatory, active, action-based, interactive, telematic, communicative, digital, auto-destructive, indeterministic, random, multiple, non-unique, non-singular, with shared materiality, hybrid, multimedia, mixed, remix.[557]

The common denominator of this direction would be nonmaterial, indeterminist art and in the context of this study the permanence of art that is not defined in time, space, material and authorship and its characteristic place in artistic practice. Since I do not necessarily associate the sphere under consideration with a definite artistic period, but rather with approaches where temporal-spatial-material indefinability is pervasive, then I would use the term post-material to unify it.

552   W. Drechsler, P. Weibel, Malerei zwichen Präsenz und Absenz. – Bildlicht. Malerei zwichen Material und Immaterialität. Wiener Festwoche, Museum des 20. Jahrhunderts, 1991, S. 45–235.
553   M. Wagner, Das Material der Kunst. Eine

andere Geschichte der Moderne. München: C. H. Beck Verlag, 2001.
554   R. Kelomees, Ekraan kui membraan. Artikleid ja arvustusi 1991–2000. Tartu Kõrgem Kunstikool, Toimetised 5. Tartu, 2007.

555   The words "immaterial" and "dematerialised" have been in active use since the 1960's. A certain "immateriality" boom can be observed since the end of the 1980's. Two issues of the journal Kunstforum International from 1988 were even entitled "The Aesthetics of Immateriality" (Kunstforum International 97, Nov/Dec 1988. Ästhetik des Immateriellen? Das Verhältnis von Kunst und Neuen Technologien. Teil I; Kunstforum International 98, Jan/Feb 1989. Ästhetik des Immateriellen? Das Verhältnis von Kunst und Neuen Technologien. Teil II.) Apparently this was due to the influence of J.-F. Lyotard's exhibition "Immateriality" from 1985.
556   "Epigenetic" – a term adopted in art by Roman Verostko in 1987.
557   Many of the adjectives listed like "nonexistent", "missing", "mobile", "variable", "rule-based", "participatory", "active", "action-based", "random", "multiple", "non-unique", "non-singular", "with shared materiality", "mixed" are Estonian/international adaptations to characterise various

manifestations of 20th century art. Their use in this work is founded on the author's intuitive experience. It is not possible to ascertain definite original sources of the use of these words. Some, like "random", "mixed" and others are in general use and are not specific terminology from the sphere of art. On the other hand, the other group of adjectives like "ephemeral", "processual", "multilocal", "combinatory", "conceptual", "interactive", "telematic", "communicative", "digital", "auto-destructive", "indeterministic", "multimedia", "remix" is clearly of international origin, and in use both generally ("ephemeral", "hybrid" and others) as well as specifically in association with new media art ("interactive", "telematic" and others). "Auto-destructive" and "indeterministic" are in use narrowly in association with artistic and musical phenomena. I owe thanks to Heie Treier for the need to direct attention to the origin of words or their previous use. Naturally, the explanations presented above are not exhaustive.

Dividing these adjectives into groups, we arrive at the following five issues that are important from the standpoint of research. I would refer to them as the five areas of post-material art:

1. Concepts associated with authorship (works with common authorship, shared authorship).
2. Concepts associated with artwork as the result of activity and the absence of the material art object (objectless, immaterial, intangible, transient, temporary, ephemeral, nonexistent, absent, sedentary, mobile, variable, digital, conceptual).
3. Concepts associated with imparting information concerning a work of art, the transmission of information concerning a work of art as a temporal process and delay in transmission as a part of a work of art (communicative, multi-local, telematic).
4. Concepts associated with artwork as a process in their relationships with the physical work of art or its absence (procedural, generative, algorithmic, systematic, epigenetic, rule-based, combinative, participatory, active, action-based, interactive).
5. Concepts associated with the uniqueness of a work of art: multiple author's copies of one work of art (*multiples*), one work of art as multiple objects, one work of art from multiple arts, from the content of media (serial, multi-local, interactive, telematic, communicative, digital, multiple, non-unique, non-singular, of divided materiality, hybrid, mixed, remix, multi-media).

9.2. dematerialisation of art and immaterial art

Interpersonal communication and artwork has oscillated on the axis of materiality and immateriality. This is characterised by object-orientation and exchange orientation. Object-oriented and exchange-oriented culture are seemingly opposites and reflect an understanding of the nature and operation of culture in simplified terms.[558]

Facticity is common to both object-oriented and exchange-oriented culture. The ephemeral, non-material, non-object based has also taken place and become real and factual. The ephemeral and non-material work of art is turned into the object of supplementary cultural or economic processes through documentation. We can observe this in the instances or repeated bursts of denial in 20th century art, beginning with Dadaism, in which earlier rules were disposed of, up to situationism, conceptual and land art of the 1960's. The innermost motivation of artists seems to have been the purification of the landscape of rules, the elimination of the previous network of relationships and rules, and the establishment of their own.

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558   I refer to Felix Stalder's collection of essays Open Cultures and the Nature of Networks, New Media Centre_ kuda.org, Novi Sad, 2005, p. 12 as the source of this simplification. Stalder examines Cultures without Commodities, from the Dada movement to manifestations of the free movement of software, relying on Manuel Castells's idea of space of flows.

Speaking of early electronic and digital art, it is often no longer possible to exhibit works. The technical exponents of electronic, digital and immaterial culture are no longer in production, putting collections and exhibitions in the situation where art at an earlier technical level needs to be emulated into a new environment. Otherwise, its exposition proves to be altogether impossible.[559] Alongside the creation of digital culture, the need for archiving and preserving it has arisen.[560]

Experimentation and discussion of immateriality began in the 1950's and is fresh even now. The theoretical journal *Parkett* dedicated a special series of writings running through three issues entitled *(Im)material?* by Johanna Burton, Nicolas Bourriaud and Boris Groys to its 20th anniversary in 2004.

These three points of view characterise the interest in immateriality and dematerialisation in the context of the communication society and digital media. Groys's point of view that "virtual pictures" give off a stronger smell of sweat than traditional works of art is refreshing in its irony, demonstrating at the same time that "immaterial" is more a fashionable brand name for new digital immaterialities than an appropriate essential qualifier.

9.2.1. yves klein's "immateriality" in 1958

I characterise the work of Yves Klein, who has left a vivid imprint on 20th century art with *Anthropometries*, which was painting with nude models, that he began in 1958. In reference to Klein's practice, Monday, 28 April 1958 is of particular importance, when at 9 pm, Yves Klein opened his exhibition of the void *Le Vide* (The Specialisation of Sensibility in the Raw Material State into Stabilised Pictorial Sensibility, The Void) at Iris Clert's gallery in Paris.

In this exhibition, Klein exchanged "immaterial pictorial sensitivity zones" for pure gold. The ritual of relinquishing an immaterial pictorial sensitivity zone was described in detail in the respective document.[561] There were seven such zones in total. Half of the gold acquired as a result of the relinquishment ritual must be cast into the ocean or a river in the presence of two witnesses, where it is lost once and for all. Similarly, the buyer must burn the receipt after marking his name on the receipt. The use of the word "immaterial" is striking.

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559   Changes in technological means and standards have taken place even over the past 15 years, which has created the situation that even digital artists who are presently active cannot demonstrate their works created in the early 1990's on their own (new) computers. For example, projects that work in Mac's so called Classis operation system no longer function in MacOs X, to speak only of the Mac environment. More precisely, I have in mind the earlier works of Chris Hales and Bill Seaman. The authors have complained to the undersigned about the impossibility of showing these works. These problems can be resolved through certain efforts, but that is a different topic. See also the article by Christiane Paul The Myth of Immateriality: Presenting and Preserving New Media. – MediaArtHistories. Ed. by O.

Grau. Cambridge, London: MIT Press, 2007, pp. 251–271.
560   The preservation of digital art and culture is an emerging set of problems. The largest institutions dedicated to this are the Daniel Langlois Foundation in Montreal (www.fondation-langlois.org/html/e/), which founded the international association DOCAM (Documentation and Conservation of the Media Arts Heritage) in 2005. The Laboratory for Antique Video Systems (http://on1.zkm.de/zkm/stories/storyReader$5575) was founded at the Karlsruhe ZKM in 2004, where electronic art created over the past 30 years is restored using over 300 devices.
561   The Ritual for Relinquishment of the immaterial Pictorial Sensitivity Zones. – http://www.yveskleinarchives.org/works/flash/zones01.pdf

Attention should also be directed to Klein's idea of "Air Architecture", where he wrote in 1958 that the classical city of the future will be built of fire, air and water. This kind of city is infinitely flexible, spiritual and immaterial.

The title of his lecture given in the Sorbonne in June of 1959 is The Evolution of Art Towards the Immaterial.[562] His manifesto written in the Chelsea Hotel in New York in 1961 ends with the words "Long Live the Immaterial!"[563]

In the opinion of some authors, his 7-year period of creative work pre-empted happening and performance art, land art, body art, conceptual art and digital art.[564]

9.2.2. LUCY R. LIPPARD'S AND JOHN CHANDLER'S "DEMATERIALISATION OF ART" IN 1968

In association with the dematerialisation of art, it has become canonical to refer to the article by Lucy R. Lippard and John Chandler *The Dematerialization of Art*, that appeared in the February issue of Art International in 1968. In this article, they saw "ultra-conceptual" art budding from two directions: art as an idea, and art as action.

This "ultra-conceptual" means placing the emphasis on the thought process and that the work of art is becoming more of a planned product. This is also conditioned by the fact that a large number of artists have lost interest in the physical evolution of a work of art.[565]

A few months later, Terry Atkinson responded to Lippard and Chandler with the writing *Concerning the Article "The Dematerialisation of Art"*,[566] in which he criticises the use of the word "dematerialisation" in a metaphoric sense. Strictly speaking, art does not deal with this. If an art object is dematerialised, then there should not be any trace of materiality.[567] He goes on to discuss matter as a form of energy in terms that allude more to physics.

Tendencies towards the dissolution or metaphoric dematerialisation of the art object were obviously international.

Lippard also confirms this in her later writing, that at the same time, when meeting with colleagues in different American cities and hearing about the same kinds of developments in Europe that led to conceptual art, she became convinced that "ideas were in the air" and developments took place in parallel. She considered Marcel Duchamp as their most

important art historical source.[568] Jacob Lillemose refers to Lippard in suggesting the differentiation of dematerialisation as an act and immateriality as a condition while discussing the art of the end of the 1960's and the phenomenon of dematerialisation that is mostly associated with conceptual art, tying them to popular scientific theories at that time, for example with system theory.[569]

Lillemose adds that seeing immateriality in the context of dematerialisation is one of the ways to break the technological focus that surrounds only new media – bearing in mind placing discussions in the context of art history.

9.2.3. FRANK POPPER'S "NEW MEDIA" OF THE 1970'S AND "VIRTUALISM" OF THE 2000'S

In keeping with chronological presentation, "new media" should be considered briefly in the context of the artistic and material experiments of the 1960's and 1970's, as considered by Frank Popper in the book *Art – Action and Participation*, published in 1975.[570]

What is "new media" in Popper's treatment? Dematerialisation, light and plastic materials are new media. New materials, material experiments, new material technologies.

He considers the disappearance of the object that is associated with the following developments: participation of the public, the architectural factor, and the use of new, non-solid plastic materials. Attention is directed to the viewer, who is given the power to make permutations and combinations, which weakens the status of the object or "chef-d'oeuvre".

Frank Popper is one of the oldest (born in 1918) new media and technological art historians and theorists with one of the longest tenures. Later, in the year 2000, he has defined the processes of the transformation of artistic materials and the technologisation of art as the virtualisation of art.[571]

In his interview, J. Nechvatal agrees to call this "virtualism", historically defining this as the period from the 1980's until the present.[572]

Popper has studied electronic art since the early 1960's and written 4 important books (see above). Jack Burnham's *Beyond Modern Sculpture* (1968) and Gene Youngblood's *Expanded Cinema* (1970), which has shown how the "virtualisation" of art has taken place, are ranked

562   Yves Klein. Air Architecture. Exhibition catalogue. MAK Centre for Art and Architecture, Los Angeles, and Hatje Cantz, Ostfildern-Ruit, 2004, pp. 35–45.
563   www.yvesklein.org
564   J. Nechvatal, Yves Klein. Corps, Couleur, Immatériel. 5 October 2006 – 5 February 2007. The Centre Pompidou / Musée National d'Art Moderne, Paris. – http://www.eyewithwings.net/nechvatal/Klein/Klein.htm
565   L. R. Lippard and John Chandler, The Dematerialisation of Art. – Conceptual Art: A Critical

Anthology. Ed. by Alexander Alberro and Blake Stimson. Cambridge: MIT Press, 1999, p. 46.
566   Abbreviated version published in the book by Lucy R. Lippard, Six years: the Dematerialisation of the Art Object from 1966 to 1972, (1973), pp. 43–44; publication used here: Conceptual Art: A Critical Anthology. Ed. by Alexander Alberro and Blake Stimson. Cambridge: MIT Press, 1999, pp. 52–58.
567   T. Atkinson, Concerning the Article "The Dematerialisation of Art". - Conceptual Art: A Critical Anthology. Ed. by Alexander Alberro and Blake Stimson. Cambridge, Mass.: The MIT Press, 1999, p. 53.

568   L. R. Lippard, Six years: the Dematerialisation of the Art Object from 1966 to 1972. University of California Press, 1997, p. ix.
569   J. Lillemose, Conceptualising Materiality – Art from the Dematerialisation of the Object to the Condition of Immateriality, Argos Festival, 2005. – umintermediai501.blogspot.com/2008/01/conceptualizing-materiality-art-from.html
570   F. Popper, Art – Action and Participation. London: Studio Vista, Cassell & Collier MacMillan

Publishers Ltd., 1975.
571   J. Nechvatal, Origins of Virtualism: An Interview with Frank Popper Conducted by Joseph Nechvatal. – e-mail list [spectre] 8 June 2004. – http://coredump.buug.de/pipermail/spectre/2004-June/003481.html
572   J. Nechvatal, Origins of Virtualism: An Interview with Frank Popper Conducted by Joseph Nechvatal.

alongside Popper. Popper's *From Technological to Virtual Art* was published in 2007. It dissects the virtualisation of art in the light of digital changes.

Popper's progression from "new media" in the meaning of new materials to virtualism in the meaning of a term uniting the electronic field of artwork is characteristic of the last three decades, one of the traits of which is the entrance of electronic and digital means of creation into cultural information exchange.

9.2.4. JEAN-FRANÇOIS LYOTARD'S "IMMATERIALITY" IN 1985

Les Immatériaux (Immateriality) organised by Jean-François Lyotard and Thierry Chaput at the Pompidou Centre in Paris in the spring of 1985 marked an important change in museo-graphic tradition. It included conventional exhibition objects as well as more contemporary technology. Nowadays it has emerged into the field of vision of researchers both as the predecessor of the technological sphere of art as well as a gigantic multidisciplinary exhibition that did not lack philosophical ambitions.

Lyotard writes in the press release for Immateriality on 8 January 1985:

Why 'Immaterials'? Research and development in the techno-sciences, art and technology, yes even in politics, give the impression that reality, whatever it may be, becomes increasingly intangible, that it can never be controlled directly – they give the impression of a complexity of things.

Lyotard refers to the Sanskrit root word *mâtram*: matter and measure (mât – to make with the hand, to measure, to build). He selected five terms from this root word: material, materiel, maternity, matter, and matrix. "Material" supports the message, "materiel" is the basic stock that carries the message, "maternity" defines the function of the sender of the message, "matter" is the speaker of the message, and "matrix" is the code of the message.[573]

The semantic field should be spacious and enable overlaps and movements from one semantic zone to another.

The basic question: do new "immaterialities" change the relationship between man and materiality or not? The objective of the exhibition was to characterise one aspect of the contemporary situation that is associated with the new technological revolution.[574]

Here is the present situation as well. Immateriality can nowadays be considered a new material condition that new media artists deal with. It is associated with currents of digital electronic objects. It is associated with time, space, material, and the indefinable situation of authorship.

573   J.-F. Lyotard, "Les Immatériaux", p. 164.   574   J.-F. Lyotard, "Les Immatériaux", p. 165.

9.2.5. INTERMEDIATE SUMMARY: ART THAT IS UNDEFINED MATERIALLY AND IN TERMS OF OBJECTS IN THE CONTEXT OF NON-ELECTRONIC ART

We see four important manifestations that I would point out as a form-oriented classification: **first**, the expansion of the concept of artistic materials through the import of new materials (plastic, iron, glass, rubber, concrete, and so on), **second**, the avoidance of physical and object materiality (Klein's "immaterial sensitivity zones", conceptual art, the use of Takis's magnet energy, the use of light as an artistic material, the movement component of a work of art as part of the work), **third**, the inclusion of the public, offering the opportunity to participate (Fluxus's instructions for behaviour and games for them to join in on, kinetic objects that the public can switch on or physically push into action, and so on). **Fourth**, we can add algorithmic and generative compositions that were presented at the New Tendencies exhibition, for instance, which in spite of their mathematical nature were manually carried out. In other words, tangible art on the background of which a certain interest in relation to the natural laws governing visual perception could be surmised. (Manfred Mohr, Victor Vasarely, and others).

9.2.6. NON-MATERIALITY IN THE CONTEXT OF EARLY ELECTRONIC AND TECHNOLOGICAL ART

I would differentiate manifestations of experimentally technological art and exhibitions that test the boundaries of materiality. Artists and approaches exploring the boundaries of materiality, who/which brought new materialities into art, or abandoned those that the public and critics were not accustomed to, were discussed above. In parallel with this, the movement, optical, electrical and computational factor enters into art.

The sources of ideas for the post-Second World War neo-avant garde lay in developments from the beginning of the century. Here geometric abstraction is mentioned. It originated from the *Constructivist Manifesto* by Gabo and Pevsner in 1920, which evolved further into the Abstraction-création movement (1931–1937) and was one of the predecessors of the innovatory movements GRAV, ZERO, "New Tendencies", and various schools of op art and kinetic art in the 1960's.[575] In addition to the schools of thought named above, Gruppo MID, Gruppo N, Gruppo T, Nouveau Realisme, Dvizhenije from Leningrad, GUTAI Group, Equipo 57, Argentina guppo Arte Concreto, and others are considered to belong to the constructivist schools and those dealing with light and kinetics that followed informal art.[576]

575   P. Weibel, Kunst als K hoch 8. Eine Korrektur. – Bit international. [Nove] tendencije. Computer und visuelle Forschung Zagreb 1961–1973. Hg. Peter Weibel, Margit Rosen. ZKM, Karlsruhe, 2008, p. 3.

576   See Heinz Mack's diagram: A. Kuhn, ZERO. Eine Avantgarde der sechziger Jahre. Berlin: Propylän Verlag, 1991, p. 58.

The exhibitions of Nove Tendencije ("New Tendencies", since 1961) in Zagreb can be mentioned at this point. "New Tendencies" evolved into an international movement in the period of 1961–1973, which included artists from the former Yugoslavia, Italy, Austria, Switzerland, Germany, Hungary, Argentina, Spain, Holland, the USA and other countries. Instead of art, they dealt with "visual research".

Bearing in mind the Estonian context, Leonhard Lapin's text *Objective Art* from 1975 can be referenced.[577] Essentially, "New Tendencies" was an amalgam of eight spheres of art: concrete, constructive, kinetic, cybernetic, conceptual art, op art, concrete poetry, and computer art.[578]

Other exhibitions and schools of thought that took place in both Europe and America, and dealt with art in the electronic and early computer art context must not be left out.[579]

Several terms belonging to the sphere of digital art that are customary nowadays, like the concept of "interactivity" in association with art, were used then, where I refer to the presentation of Branimir Makanec, "the role of interaction in artistic expression by means of computer", which he presented in Zagreb in 1968 in discussing interactivity in its present day meaning.

The exemplariness and influence of early electronic and computer art exhibitions on the digital art of today is important, bearing in mind the works of art and methods of the 1960's, where the creation of elementary programmes and systems can be seen. Secondarily, drawings made by the computers of that time are worth mentioning, as they were not at all a marginal phenomenon in the 1960's.

From the point of view of the Estonian context, I refer to the masters thesis defended by Tuuli Lepik in 2004 at the Estonian Academy of Art

577   L. Lapin, Objective Art (speech on 13 December 1975 in Harku). In the catalogue: Harku 1975–1995. Compiled by: L. Lapin, A. Liivak, R. Meel. Tallinn City Gallery, 1995.

578   P. Weibel, Kunst als K hoch 8. Eine Korrektur, p.7.

579   Exhibitions that prepared the way for contemporary "information art", digital art, which are considered most frequently in studies: Exhibition "Movement in Art" (Bewogen Beweging, 1961), Stedelijk Museum Amsterdam, Moderna Museet in Stockholm and at the Louisiana Museum in Copenhagen. Exhibition "Arte Programmata. Arte Kinetica, opera multiplicata, opera aperta" (1962) in Milan, for which Umberto Eco wrote the introduction and whose book published in 1962 bore the title Open Work (Opera aperta). Exhibition "Dylaby – Dynamic Labyrinth" (1962) at the Stedelijk Museum in Amsterdam (Martial Raysse, Robert Rauschenberg, Niki de Saint-Phalle, Daniel Spoerri, Jean Tinguely, Per Olof Ultveldt). The formation of the 1964 school Gruppo MID (Movimento Imagine Dimensione – movement, image, dimension) in Milan (Antonio Barrese, Alfonos Grassi, Gianfranco Laminarca, Alberto Marangoni). Exhibition in 1964 "Licht und Bewegung", Documenta III in Kassel. Exhibition in 1965 "Kinetic and Optic Art Today", Albright-Knox

Art Gallery, Buffalo; "The Responsive Eye", Museum of Modern Art in New York. The 1968 exhibition "The Machine: As Seen at the End of the Mechanical Age" is considered important, its organiser was Pontus Hultén at the Museum of Modern Art in New York. The E.A.T. (Experiments in Art and Technology) Festival "Nine evenings: Theatre and Engineering" is a legendary milestone, which was supplemented by Robert Rauschenberg's performance and organised by engineer Billy Klüver in New York in October of 1966. It was characterised by projections and other technological-theatrical means added in a performance manner. "Cybernetic Serendipity" in London in 1968. The "Art by Telephone" exhibition was organised at the Chicago Museum of Contemporary Art on 1–14 November 1969. Jack Burnham curated the "Software, Information Technology: Its New Meaning for Art" exhibition at the Jewish Museum in New York in 1970. I relied on three sources in compiling this list: the web page of the exhibition "Die Algoritmische Revolution" http://www.zkm.de/algorithmische-revolution; E. A. Shanken's article, Art in the Information Age: Technology and Conceptual Art. – Leonardo 2002, Vol. 35 (4) and the "New Tendencies" exhibition brochure: Bit international, [Nove] tendencije – Computer und visuelle Forschung Zagreb 1961–1973. Hg. Peter Weibel, Margit Rosen. ZKM, 2008.

"END IF, or Early Computer Art and the Beginning of New Media in Estonia 1960-1995",[580] which provides an overview of the visual-experimental activity of scientists, technicians and artists working with computers in Estonia. It is thus far the most exhaustive study reflecting the beginnings of Estonian computer art. Drawing parallel examples from Estonia means quoting Lepik. It is, however, evident that analogous collective and international phenomena, like for example "New Tendencies" in Yugoslavia, which belonged to the so-called Eastern Bloc, did not emerge in Estonia. Nevertheless, the arrival of undulations of op art and kinetic art in Estonia, vividly expressed in the works of Kaljo Põllu and the objects of Kaarel Kurismaa/Härmo Härm, should be mentioned. Works of early computer art were frequently exhibited together with op art and kinetic art in the West and Yugoslavia. Outwardly, computer art was as if one of its sub-forms. In drawing further parallels with Estonia, the beginnings of video, land and performance art can be seen in the films by Jüri Okas. Raul Meel worked in the sphere of concrete poetry since the end of the 1960's already, as he writes in his *Conspectus of the Past* (2002). One "New Tendencies" exhibition from 1969 in Zagreb entitled Typoesie was also dedicated to concrete poetry.[581] If we pose the question of parallels of phenomena between Estonia and the rest of the world, then they did exist. However, due to the isolation of the state, they did not develop into international manifestations. In terms of ambitions, the SOUP 69 school and Harku 75 can certainly be referenced. They looked towards the West and tried to domesticate art in Estonia that was seen mostly in journals and catalogues.

Harku 75 was intended as an event of cooperation between young scientists and artists. Nevertheless, it evolved into a joint action of primarily artists and musicians. The role of scientists lay in participation in the circle of intercommunication and acquaintance, and in providing exhibition space at the Institute of Experimental Biology in Harku.[582] We can speak of the relative synchronicity of Estonian artists and even of being in step with the times on the basis of the example of Harku 75. Inter-media and multimedia were also topical at that time, and they are also discussed in the case of the Harku exhibition. This remained mostly "underground" art that was not displayed at official exhibitions in Estonia due to the closed nature of the Soviet Union.[583]

The objective of the previous part was to create an understanding of the theoretical and historical background system that this study is founded on. The immateriality, dematerialisation and non-materiality of art, which is now placed in the context of digital art and culture, has been spoken of throughout. While non-materiality in the 1960's is mostly in

580   T. Lepik, END IF ehk varane arvutikunst ja uute meediate algus Eestis 1960–1995. Masters thesis. Supervisor S. Helme, consultant M. Tralla. Estonian Academy of Arts, Faculty of Media, 2004.

581   Bit international, 5–6. The World Image. Poésie

Concrète. Zagreb, Yugoslavia, 1969.

582   See catalogue: Harku 1975–1995. Compiled by: L. Lapin, A. Liivak, R. Meel. Tallinn City Gallery, 1995.

583   R. Kelomees, "Harku 75" tähendusest. – Kultuurileht, 12 January 1996.

the meaning of dematerialisation, in the sense of reducing matter that the work of art consists of, then later, beginning in the 1970's already, and pronouncedly since Lyotard's exhibition in 1985, non-materiality has become immateriality, and this is associated with technological means. It is important to follow the manifestations of artists and groupings that have aspired to purge art from matter and pictoriality and make art investigative, including constructivist groupings, the objective of which was to deal with art under the auspices of "visual investigations". "Immateriality" emerges again in the early 1990's, now in association with the digital environment, and has remained a discussed term and more of a metaphor up to the present, since so called immaterial digital art is a labour and material-intensive sphere. In summary, in observing the experimental and theoretical activity around artistic technologies over the past fifty years, it is possible to see two directions: first, dematerialisation in the context of non-technological art, and second, the immaterialisation of the art object in the context of technological art.

9.3. the multi-local and immaterial body of
a work of art

The objective of this chapter is to give remarkable examples from history, and to create a unique 'ladder of development', through which it is possible to see the shortening of the delay between sending and receiving the message of art up to the very disappearance of that phenomenon. Hopefully the author's interest in visual and media art is comprehensible. As in music or in a spectacle, the sending and receiving of the message of art traditionally takes place in the same environment of place and time.

This chapter tries to explain the important questions concerning non-physical and communication art. Does a work of art necessarily have to be represented by a final object? Can the communication between users/viewers be a separate object of art? Can the user's communication via various networks, in discourse with other people or programmed environments, be comparable to the situation where the user communicates with a work of art in a museum or gallery? Should a telecommunicative electronic relationship between at least two objects separated in a room also be seen as an aesthetic object? What should one consider a work or material of art anyway?

At the same time, people wish to distance themselves from the evaluative approach: the goal of art matters and defining a communicative act as an object of art should be seen as the actualisation of those tendencies which already existed in early pre-technological areas of communication but, for technical reasons, could not be expressed. Where physical and psychophysical experience is necessary, it is not connected with a sensorially poor experience. A sensorially poor experience is, these

days, inevitably connected with the options of telecommunication, which are technically imperfect at present. Perhaps in the future it will be different.

We could create an imaginary axis of reception divisions, based on delay, where there are works of art on one side (whose 'transmission' to the receiver has lasted for millennia), and artworks sent and received in real time on the other side. Though this kind of formulation points to the vocabulary of information theory, art, in this chapter, has not been dealt with in this way, though this viewpoint has been considered.

This chapter deals with the subject of media archaeology, which has attempted to discover the technologies that have been used to forward messages throughout millennia.

The prime assignment of a media archaeologist is to explore motives and patterns, which travel through time so they can emerge once again. The second assignment is to try to find unknown connections or principal differences between the past and present. Many examples of earlier art and cultural practice are considered, where it is apparent in what way picture technology 'delivered' far-away art, gave the viewer the ability of 'television' and provided 'participation' in distant reality.

In giving an overview of telepresence, its mythical, magical and Utopian connotations are referred to, so one could move forward to technical solutions and then teleaction, to real telematic action, which is made possible by present-day technology. Here Lev Manovich's discussions are relied upon. Manovich starts with 'image-instruments'. The parts of a picture or image can, in present-day digital design, be programmed into buttons; the picture becomes a control panel and an interface through which physical processes in distant reality can be directed. A picture, even in its traditional meaning, is a means of transmission of actuality, a tele-transporter, a distant means of forwarding reality, through which it is possible to govern it and to operate from a distance. The picture has always been used as an instrument of the power for mobilising and controlling resources. The main difference between picture instruments and telepresence is that, in the latter, representation is transferred simultaneously.

This chapter deals with the discussions of Walter Benjamin, Paul Virilio and Lev Manovich, where the main subject is the rupture created by technical media, which is caused by film and photo in Benjamin's case and telecommunications media in Virilo's case.

In discussing the predecessors of telecommunicative art, early radio and audio art is described. Photographic sound art and telegraphed film at that time presented experiments, which would turn into reality only after the passing of decades.

The aesthetics of communication art should be preceded by a longer discussion of conceptual, and probably also minimalist, art, where E. A. Shanken, who has written a dissertation on the relations between

conceptual and technological art, is referred to. Attempting to stick with the subject and to bring the reader to the main road, attention is directed to communicability, placelessness and experiments to create art as a message, an event between the sender and receiver.

The 1980's are important when it comes to formulating ideas and applications of telecommunicative art connected to technology. From that point forward, it was primarily technology that developed. Applications had already been put into words, which were carried by phrases such as 'Time and Space will constitute the artist of tomorrow's 'raw material'; 'as earlier marble, wood and metal were worked with, the current 'immateriality' is worked with'; 'the human being is moving ever more towards the dematerialisation of his or her every-day experience'; 'the contents of the exchange change from the mechanism of exchange itself'; 'the specificity of communication art is about creating events instead of material objects'; 'the creation of a network of discrimination-free human relations'; 'telecommunication art depicts itself as a culmination of the dematerialisation process of the object of art' etc. All of this sets the coordinates of the attitude, which the developments of the 1990's rely on.

In characterising the 'multi-local object of art' on a new digital 'cycle', a simplifying classification to characterise the communicative art of the 1990's would be: (1) personal, physical, intimate; (2) architectural and environmental; (3) interlocal art - interactive and communicative installation in physically connected rooms; and (4) communicative text or software environments on the Internet. The art of Eduardo Kac, Paul Sermon, Stelarc, Rafael Lozano-Hemmer, and Laurent Mignonneau / Christa Sommerer is discussed.

In introducing the topic of Estonia, the 1993 and 1994 exhibitions of the Soros Centre for Contemporary Arts, Estonia and, primarily, the ideas in the prefaces of the catalogues, which 'import' a discussion of intangible and networked art, can be relied upon. At the same time, Estonian art offers only stand-alone examples, which support these ideas in every way. A larger synchronisation between international and Estonian art can be noticed at the end of the 1990's. The beginning of the decade was spent mainly on adapting and self-searching in a new political, economic and art ideological freedom.

9.4. CREATIVE MACHINES AND INDETERMINISTIC ART PRACTICES

 The aim of this chapter is to describe creative machines and indeterminist art practices.

The first question about the universality and traditionality of creative machines and indeterminist art practices leads to the origin of art and to the Renaissance, when the formulation of visual perception and artistic creation began. Seeking inspiration from a rugged stone wall,

like Leonardo, is relevant nowadays as well, even if the source is a digital image of the stone wall that is modified by different image editing programme filters. The mediation of art does not do away with the relative importance of imagination; rather, technology is for facilitating variations and automating creative work.

The problems of contemporary art cannot be reduced to the increasingly effective possibilities for generating machines. The creative environment using machines and media is a purpose in itself, where one lives and creates. The result of this is non-objects, culture based on relationships and networks and also respective works of art, where the act of gaining information and interaction with the assemblage of information presented by the author is a separate goal and object; where rules, the code and the dialogue with the system is artistic material. I refer to this in the introduction, how the mechanism of production based on relationships and cooperation has gained ever more validity in the age of digital communication, making the earlier object culture and physical artefacts questionable. At the same time, this so called object-oriented, physical culture is also relatively recent, the achievement of the industrial age. It is one of the possibilities for how people's creative activity manifests itself in present day post-modern and post-industrial age art.

The question of bridges and parallels between different areas of art is topical when multimedia art is concerned. I hinted at more archaic shows of multimedia, which humankind has experienced in weather phenomena or natural disasters. Yet when more seriously pondering the synergetic potential of literature, music and depictive art, it is obvious that in 20th century art, these "creative guilds" are increasingly difficult to differentiate. They have become interwoven, exchanged methods, media and authors.

The differentiation of the writing-creating-composing author in the whole of 20th century art and digital technology, and especially art, is obvious. In the context of this chapter, the themes of authorship were not directly discussed, but hopefully two characteristics will emerge, separating indeterminist art from a heroic and romantic author's archetype, who created unique physical single works of art. Firstly, the artist is an author of rules, principles, and methods of combination, which may result in final works of different appearances. Secondly, the artist is one link in creative relationships and the "piece" may be an "objekt" of network and collectiveness, either software or a communicative work of art.

The question – how is the transfer of deterministic, indeterminist, generative and other practices into new technologies, and their appearance in the art of the 1990's and 2000's being dealt with, and if the creative machines of the digital era have come about thanks to new technologies, or is it the logical continuation of previous creative practices – has hopefully been quite clearly answered in the presentation of Roman Verostko's algorism as an example. The understanding of terms

may be different when it comes to the definition of software art. This is exactly what Verostko considers physical visuality-producing software (software art), if the software art defined in the 1990's does not consider a software as a measure of creating objects outside of that software, but if it itself is the object of analysis. The code is social, biological, juridical and artistic material. The code is the "language of our time".

When observing art of the 1990's, the generative approach is elevated from a mechanical level to a digital one. On an earlier level, even manual generative measures were upgraded to a digital environment. Generative methods are sought from Palaeolithic art to defining the whole universe as generative. The subject of biological generativity and emergence was not directly discussed here, but I still refer to a rather independent topic and level of research – artificial life, biological and genetic art.

The fourth question of parallel and analogical manifestations in Estonian art is answered throughout the chapter, during different subjects.

9.5. RULE-BASED AND GENERATIVE METHODS IN ESTONIAN ART

In the case of contemporary technological art, it is considered practically self-evident that this is art where "machines do everything". The opposite of this, creating art manually is seemingly noble, requiring more spirit and inspiration from a person. Departing from the assessive point of view, we can see artwork and creative techniques of numerous artists in art history that are mechanical by nature, even if they are associated with being made by hand. I consider Kaarel Kurismaa, Leonhard Lapin and Raul Meel below, relying on conversations with them and examples of their works.

VARIATION AND TOUCH IN KAAREL KURISMAA'S ART

Kaarel Kurismaa is a creator of kinetic art over a long and active period in Estonia, who has designed humorous, sonorous, kinetic and optical devices for scores of years. In this connection, two of his works dating from different decades are of interest. Firstly, the post office object, made jointly with Härmo Härm and Rait Prääts, opened in the Olympic summer of 1980, and secondly, the kinetic object "Gertrud and Heldur in the Rain" (1995).

The fate of the post office object was dramatic: it was demolished in 2002, because it happened to be in the way of the onslaught of contemporary capitalism and renovations. It was a kinetic sighing object of glass with light effects at the end of an escalator, on the second floor.

The goal of Kurismaa, as he himself said[584] when designing and building the object, was to make a sound, which would be an actual sigh. This sigh, however, turned out to be more like a grunt, a bit raucous, which did

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584   Conversation with Kaarel Kurismaa 8 January 2007.

not leave the listeners passive. Because it started to disagreeably disturb the postal employees, the volume of the sigh was turned down after several years, so that it was heard only on the escalator, and at last the sound was altogether silenced. (As far as I can remember, the escalator did not work most of the time.) In the end, there was neither the light effect nor the sigh any longer. The humanity of the sigh evidently destroyed the peace of mind of workers because of an intuitive compulsion of empathy, which triggers the compassion of every hearer and activates the organism.

Sometime in the old Soviet period (about 1987–1988), when the All-Union Minister of Postal Affairs was visiting Estonia, new life was instilled in the object and it is said to have worked for a couple of weeks. According to Kurismaa's commentary[585] the sigh was explained away to the minister as a reaction of alleviation, accompanying the dispatch of a postal parcel, and as contentment associated with distant communication made possible thanks to the postal system.

In the case of that work, two circumstances are important. Changeability and variation (whirling of trumpets, light effect and sigh) are programmed into the work, just as changeability is characteristic of every kinetic object. When perusing the matter, the sigh, an audible accessory of the work, turns out to be an active vector directed at listeners, triggering an intuitive and emphatic reaction. The listener, postal worker, post office customer was no longer passive. His involvement was "coerced" when the compassion and sympathy reaction was triggered. Although the reader may perceive this line of thinking as artificial, make-believe, a mental concoction of the author, I still think that the switching off of the sound corroborates my presumption. The sigh of the machine became emotionally tiresome to employees who constantly had to hear it because it triggered emotions destined to idle.

"Gertrud and Heldur in the Rain" (1995) is a double level-plane object with specified-time relay switches of a Soviet laundry machine, both being 112 x 56 in dimension – Gertrud and Heldur (figure 1). Seven switches, which the user can turn, are fixed on both panels. When turned clockwise, the switch creates a characteristic ticking sound. When several switches have been wound up, their ticking will mix in asynchrony, reminding us of dripping, the chaotic sound environment created by drops of water. When the ticking of wound-up switches dies away, you get the impression of a ceasing downpour.

In that work, the most important effect is the mood accompanying the ticking, which dies away and is associated with a fresh, calm, after-the-rain nature. It may be that there is no other technological work of art as emotional as that particular piece in Estonian art.

From the analytical point of view "Gertrud and Heldur in the Rain" is interactive, tactile and generative. At the moment A1 the work is not as it was at moment A2. The work is triggered by the user/viewer, who

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585   Telephone conversation with Kaarel Kurismaa 23 April 2007.

can also participate continuously when the work of art is already "operative". The artist has created a system, the performance of which depends on the conduct of the user. Although the operation of the work may be handled as a process proceeding on a time axis, it cannot be defined as having a beginning and an end. The user may determine them by his conduct, however the work of art may equally operate in endless cycles of triggering and pending the triggering, never ceasing to operate. It varies continuously in the meaning of sound.

SYSTEM AND SERIES IN LEONHARD LAPIN'S ART

A great number of Lapin's pieces of writing of the 1970's have been collected in the book Two Arts, where part of the articles are permeated with sincere enthusiasm for the role of technology in altering the world. The keen and eager interest and admiration displayed towards technology and the media awakened by the triumphant progression of digital technology in the 1990's is not extraordinary. The attitude toward technological culture inferred from Lapin's articles (e.g. Objective Art, 1975) is positive, he treats it as a "new nature". In his explanations from 1979 of his 1975 series "Machines", Lapin writes:

The wish to refer, with this series, to the existence of a new nature is fundamental, the process, which moulds new states in the whole of cosmic nature, to the man-made world, the operation of which we as yet render little account of, to ourselves.[586]

Whereas Lapin writes of machines and the man-made environment as a structure of new reality:

That reality does not only encompass individual machines, as for instance a car or a fountain pen, but artificial objects, structures and processes in the widest possible meaning, up to modern hierarchies and industrial societies.

Here I will point out the words "structures" and "processes", to which Lapin refers in the case of the structure of the new reality, assuring the reader that Lapin does not exclude the option that art too will belong to the "new reality".

Leonhard Lapin was influenced, in his own words by Russian constructivism, on the one hand, from which his belief in technical progress also derives:

The other aspect that made me work in series was Tõnis Vint's influence and it came in turn from Sooster. Did he get it from the Pallas period, did somebody teach him... certain themes pervade,

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586   L. Lapin, Masinad. – L. Lapin, Kaks kunsti.   Kunst, 1997, p. 59.
Valimik artikleid kunstist ning ehituskunstist. Tallinn:

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which can be understood as series. Sooster's fish, eggs and other elements too can be understood as a serial approach. Sooster allegedly emphasised to Tõnis Vint that one had to work in series and Tõnis Vint passed it on. Series means that there need not be many differences between two pictures.

Lapin's book Avant-garde expresses almost the same point of view:

The idea of work in series also dates from Sooster, which Tõnis Vint learned from him and which was also transmitted through him into my work. A series of pictures is the best opportunity to lucidly and powerfully bring important ideas into prominence in their multiple planes and to creatively set apart a large message from a small one, from snippets of thought constantly popping into the head...Just as with Sooster, a cult of large picture series lasting for years started and it can also be assured that in Estonian art, it is mainly those working in large series who have made it to the international arena.[587]

Besides the influence of Sooster coming via Tõnis Vint, Lapin considers his second impact factor to be his contact with scientific methods:

Sooster was also in touch with the Znanije i Sila team, Kabakov was there and Jankilevski and Juri Sobolev. It was there they drew on new ideas of science, because it was a focus point attracting the 'cream of the crop' of Russian minds. Illuminators were the best artists and all sorts of fantastic theories were allowed to be published. I think it all comes from there, somewhere. Generally there was fascination with science and engineering, because at that time, physicists and mathematicians supported the new art. I believe that it is systematic work and doing experiments, which is integral with research, experimenting until a test yields something else.

Lapin considers a practical approach to be one of the reasons for working in series, meaning that isolated works at an exhibition do not carry a message: when you place an idea in one work, it has no weight at that exhibition. There is another aspect to it: when curators and art critics come from abroad, they wish to see works *en masse*:

You show only one work. One idea. But it can be expanded right and left. There are also blind alleys, where you cannot proceed further. I have been advising the young to work in series. It is the same machine principle. And I carry on working like that.

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587   L. Lapin, Avangard. Tartu Ülikooli   Leonhard Lapini loengud 2001. aastal. Tartu: Tartu
filosoofiateaduskonna vabade kunstide professori   Ülikooli Kirjastus, 2003, pp. 162–163.

As to my question of whether he has also created art without considering the result, spontaneously, without the guidance of conscience, and later selected from among those works, Lapin says that he puts the base structure in place for a lengthier time:

> *For instance, I know that at that specific point [temporal – R. K.], I will do that. In order to reach that point, I cross through certain structural phases. In order to get there, I take my time and go step by step, however I could go directly. I know that interim stages could also be skipped; there may be something you stumble upon. For instance, I have a picture of those base structures, which I will do at the end of this year. ... Perhaps there will be deviations, however in principle I put the base structures in place. What will happen, the process of handling the paints is purely intuitive. Under the influence of graphics, I deem the process itself as being important.*

Besides Tõnis Vint's direct impact and Ülo Sooster's indirect and scientific-methodical influence, Lapin considers the systematic series of Oriental, especially Japanese graphics, which he grew to know under the influence of Tõnis Vint, to be his impact factor

> *I have a series "A Thousand Cups of Tea" in progress. As it goes in the Far East, by thousands and millions. It is being done in larger orders of magnitude. 600 cups are done. 600 is not the number of pictures but cups. In the verbatim meaning of the word, that is the number of cups.*

It is like a rule or task, towards the solution of which the artist moves. It is also contained in the title of the work. "When you visit China," Lapin says, "you will see that you are in China with your every step. Parks and temples have been made with enormous systematic works from generation to generation."

The matter expostulated below is quite another topic, not directly related to issues of system and rules, however it still casts light on a spiritual atmosphere, which is essential to the artist:

> *The life I am living purifies the soul and is essential to me...*
> *When you grow older, the being becomes more essential. It is not only so in this reality. And because some of my friends are in other realities, those contacts with them are much more essential.*
> *To a man, sensual events are more important. For instance, when I am involved with the solution of a certain problem, I do not refer to the living to seek a solution. I perhaps get much more help from the beyond.*

In the case of Lapin's art, the series "Machines" (1975) and "Codes" (2006) are worth mentioning. In both cases, play with repetitious elements is characteristic. In "Machines" there are "balls", dark circles and oblong objects reminiscent of a stylisation of phalluses. Some works are rather concrete, like the series of "Phalluses". The reproductive organ brings to mind a component of an engine or a gearshift lever of a mechanism. The whole series is exceptionally erotic and Lapin allegedly mentioned in 1994 that he made the female machines in a state of excitation and inspiration very close to orgasm.[588] From the point of view of this chapter, the combination of standardised picture material is important, however it looks like the artist made them based on intuitive decisions, composing every sheet as a unique work of art. "Machines" were not born of "mechanistic" methods, although the graphic and representative elements are "mechanistic".

"Codes" is an exceptionally modern caption to a very minimalist series of pictures, inspired by bar codes. The topic of codes in connection with computer code, biological code, legal code; different social codes are a topical theme of discussion in the area of software art and generative art.

By superficial observation, the work consists of coloured bar codes, however the thickness of stripes still varies. The artist has reduced the composition rules to the minimum. While in "Machines", one can feel the interference of inspiration, which opinion is supported by a somewhat chaotic placement of geometrical objects, in "Codes" everything is in place without compromise: the lines are obstinately vertical.

RULE AND PROCEDURE IN RAUL MEEL'S ART

Raul Meel has been written about, and he has written about himself, based on his Notes on the Past (2002). In order to avoid assumptions, allegations and unsubstantiated constructions regarding the work of the artist and to get answers from the source, I posed a question to Raul Meel at the beginning of 2007:

> *Have you used systems, rules, combinatory techniques in your work, whether intuitive or formulated in words?*

The answer is self-evident. Undoubtedly Meel is an artist of large systems and rules. When posing the question, I was keen on getting the artist's own wording.

Raul Meel answered:

> *The combinatory, the repetitive and regular use of a certain visual element, are in my creative expressions:*

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588   E. Sepp, Autoportree kui paroodia ja paradoks   Kunstimuuseum, 1997, p. 16.
Leonhard Lapini loomingus. – Lapin. Tallinn: Eesti

— *"los figuretus", both by typewriter and also by drawing technically or in free hand;*
— *works of printed graphic art as singles or in lines or in fields or in space installations;*
— *works of concrete poetry with typographical signs and letters and in voice;*
— *paintings within the confines of one field or as various plane-wise or spatially organised ensembles, series, sub-systems, supra-system;*
— *fire installations in the open and clean natural landscape or specifically earmarked natural environment or in the environment of live civilisation;*
— *intangible, and lapsing in rather ephemeral plays of the imagination, pieces of poetry, installations and performances of very scant visual imagery, triggered by a sign, letter, word, and texts;*
— *spacey spatial and also rather level installations of sturdy structure...*
= *It seems almost all I am engaged with. Even my apiculture is the scene of operation of such images and relations.*
... I have predominantly combinatory developments of geometrical-mathematical images or handwriting or typewriting, where I now and again interfere through intuition operating presumably due to my physical-emotional-spiritual experience – selecting, deciding, terminating...[589]

Judging by the above, Meel's whole body of work seems to be subordinated to the criteria of rules-based art. It may be asked, nevertheless, to what extent the respondent has been "forthcoming" to the interviewer, who might have involuntarily embedded the answer into the matrix of the question, and to what extent the creative system of every artist can be dubbed "rules-based". Many artists have their own sets of fixed images, which are repeated and combined from work to work. To what extent, however, is Meel truly an outstanding example of such creative techniques, different from others, in whose work the combinatory and rules-based approach is intuitive, not programmatic?

Combination, rule-based picture composition and the recurrent use of a certain element can be seen in Meel's concrete poetry, in printing machine works. The printing machine's "mechanical-ness" is not so much the determining factor as the outcome it helps to achieve. Elements of play are letter signs of unchangeable shape. The same letter combinations could have been performed with whatever typographical accessory device and today they are done on a computer monitor. Use of

the printing machine is associated with routine and rhythmic ritual, use of an external mechanism for creating an image.

Use of the words "combinatory" and "rule-based" implies a mathematical terminology and with Raul Meel, his engineering education is no secret:

I earned a degree in engineering school. I had ideas and practice in mathematics and I had some engineering skills, the inventor's and designer's insight. What I had imbibed rather strongly was a certain skill of the engineering habit of thinking. And when you come from an engineering school, when you have no tradition at home, when you have not faced it...When you do not know anything when dabbling in art, how to handle the brush, how to dip it into paint, what paints and how to mix. You start approaching step-by-step and you seek support from what you master. And if you do not yet trust your intuition...you do not have your own experience, you will inevitably grasp at mathematical structures, mathematical control mechanisms. Because mathematics is a good thing, it is impersonal. Especially when there is calculation of variations and extraction from many alternatives. It will then enable you to test and play through a certain feasible quantity of variants, while registering, fixing, controlling and later again extracting.[590]

By "extracting" Meel evidently means selection. To illustrate "registering, fixing, and controlling" and later "extracting" of variants, Meel presents his most renowned project "Under the Sky" (coloured screen print or serigraph, 1973, 1979, 1987). It is a two-colour print, where mirror images have been construed. But the preliminary and parallel work concerning that project turned out to be more encompassing and massive. All the possible variations amounted to 1776, which was too much for performance.

To standardise the activity and research of options for selection, Meel wrote down the picture equations in three versions (minus, standard and plus) in three adjacent columns (see figure 2), obtaining 5328 equations. 1776 is standard, which yields 5328, multiplied by three. Those equations were on 20 pages. He did not inscribe in equations the possible vertical-horizontal shifts of the second print image with respect to the first one, because the number of equations already seemed to be beyond grasp. Meel considers those A4 format sheets filled with equations to be avant-garde figurations.[591]

By reducing the choice and by describing the possible pictures with equations, Meel obtained about 200 as a result. Of those, he selected the 45 most impressive variations (see figure 3), which became the 45-picture

589   Raul Meel's e-mail to the author on 6 January 2007.

590   Conversation with Raul Meel on 26 March 2007. The subsequent information is also from the same source if not otherwise indicated.
591   Raul Meel's e-mail to the author on 22 April 2007.

series "Under the Sky". He tested the picture variations on a white base with two films, one above the other. By turning those films with respect to one another and considering the result, the artist made the decision: he ticked the best equation, and marked the unsuitable ones with a cross. That way he could manage a large number of options.

The basis for serigraphs were schemes taken from The Machine Builder's Handbook I (Valgus, Tallinn 1968) cleared of numerical information. The artist determined marks for working out suitable compositions (see figure 4): the first original images C, D, F, G, H, I (see figure 5). There were four variations of each one, each with an angular position at 90 degrees. Then came the colours: M – black colour, S – blue colour, P – red colour, h – light colour, t – dark colour. The rotation of original images (print images) clockwise was marked with degrees: 0°, 90°, 180°, 270°. The marks "+" and "–"were also used, indicating that the lower print image is more or less than 0°, 90°, 180°, 270° with respect to the upper image.

One of the results was the design of the field ensemble of "Under the Sky" 270 x 1180 cm[592], 45 serigraphs, each 65 x 63 cm, position numbers and picture selections, followed by equations of 45 pictures.

For instance, the equation of the 5th picture "FM0/HS+0" should be explained so that the front colour is black original image F, which is oriented at 0°, and the back colour is the blue original image H, which is turned with respect to front colour more than 0°.

The equation of the 11th picture "IM90/HS-270" should be explained as follows: the front colour is black original image I, which is turned by 90 degrees, and the back colour is the blue original image H, which is turned less than 270 degrees with respect to the first.

Here it should be understood that the 45-picture "Under the Sky" was one of a numerous series, which were extracted from the mass of pictures, amounting to 1000 pictures. In subsequent years, he extracted individual pictures and line and field ensembles from it, the size of which has been 2–45 pictures. Altogether Meel is said to have made almost 100 ensembles from it.[593]

„Under the Sky" is the best example of combinatory and series in Meel's art, to which is added the condition that the creative process is planned and written down with equations. We might call it an individual notation system, which is understandable in view of Meel's engineering background. Processes are noted down with signs of fixed semantic meaning in mathematics and physics as well. I would doubt whether the word "score" or "scenario" is befitting because the progression of process, performance is not directly indicated, the "temporal dimension" is lacking in that notification. It amounts to setting down the

592   Raul Meel singles out the outline for the field ensemble of serigraphs "Under the Sky 45" in the manuscript of his book Under the Sky. 1972–1973. Meel

(Under the Sky. 1972–1973. Meel).
593   Raul Meel's e-mail to the author on 22 April 2007.

performance plan, where the artist used self-invented visual-descriptive equations.

Meel's combinatory approach could be named rule-based. He has fixed elements of play, different cleaned figures, by playing with which in a fixed manner befitting compositions are arrived at. An interesting circumstance, nevertheless, is the addition of a subjective dimension in the form of selection. The most suitable ones were ticked and the unsuitable were indicated by a dash. Rule and method are used to create the landscape of possibilities, where the subjectivity of the artist still intervenes. Meel writes:

I verified all those equations visually on a white screen by displacing the positive films and marked the equations, the printing of pictures set accordingly or also several separate printings might reveal more genuine works of art."[594] And the aforementioned answer regarding the combinatory methods: "I have predominantly geometrical-mathematical developments of images or handwriting or typewriting, where I now and again intrude evidently due to intuition occurring from my physical-emotional-spiritual experience – selecting, deciding, terminating.[595]

Raul Meel's designs "Plans 1-40 Selected on White Fields"[596], which he names "brush schemes", are of interest from the point of view of procedure. His ideas already started developing in that direction in 1969. From there, he has attained the 5 schemes of today. However, later Meel found the schemes for Chinese feast tables. Those and the composition rules of geometrical art were the topic of an article published in 1973 in the Polish magazine Projekt (Projekt 1973, no. 4, 95).[597]

The sketches with which Meel works are, as he says elementary: brush strokes, directions, and sequences are noted down there. He sketches a process, marking the sequence of brush strokes with Roman numerals (see figure 6). One of the reasons for marking the painting procedure is the short time during which one paints, because it is done on fresh base colour coating. It is to be done rapidly and accurately. An error cannot be corrected.

Meel says about brush schemes:

594   Raul Meel's e-mail to the author on 22 April 2007.
595   Raul Meel's e-mail to the author on 6 January 2007.
596   R. Meel's elaboration in his e-mail of 22 April 2007: Series of drawings "Plans 1–40 Selected on White Fields", each 420 x 297 mm, drawn with brush and Indian ink on paper, 1969–2007.
597   R. Meel's elaboration in his e-mail of 22 April 2007: Over the subsequent years, I drew hundreds of additional schemes in this series and finally selected

40 schemes, the pictures and drawings of which could "work" in a field ensemble consisting of four columns of 10 pictures placed under one another; these pictures can also be displayed-viewed in one row 1–40. Series of paintings "On White Fields 1–40", each 125 x 100 cm (with nails 131 x 106 cm), acrylic on canvas, 1969–200?. The basis of the composition of these pictures is those same schemes as for the drawings "Plans 1–40 Selected on White Fields". I drew and noted the "brush schemes" according to them.

When I paint, this picture ["brush scheme" – R. K.] must always be in front of me. I always stroke from up down... I have a plumb rule. One brush edge remains against the table edge. Such a demanding operation cannot be done freehand. Vibration tampers with the process anyway. Change of arm strength, small errors in applying the paint – there is no getting away from them. There are particulars for applying colours, pressure, and inclination. It plays a role there. Every brush trace is different. It turns out that it is like documentation of time, the progression of time, progression of an act in time. Every stroke is sovereign, special, and unique. But they run in succession. And there will develop a situation that when you start the picture, the base coat is fluid and wet, it boils up from beneath, over what you stroke onto it. Below there is some tone colour and above I paint with white. When I complete in two hours, the base colour is rather dry. Then those strokes will be rather tightly white. There will be a boiling-through or collateral boiling from the sides. And therefore the temporal documentation of such a picture is well observable. Where it was started and where it was finished. An emotional stress or expectation will develop that it must be followed by the solution of a secret or riddle. When you start following a certain process, you always develop an expectation of what the solution will be like. The whole picture is like a movement towards the solution.

It is of interest how the process of painting settles down in the matrix of the imagined "narrative". Painting is like a process in time, during which "stress and expectation" develops. It is a process after the passing of which one arrives somewhere. All in all it takes about two hours.

Understandably such spiritual play projects "narrative" directed at a solution, a mental event stressing the activity of the artist, of the painting process. We as bystanders consider it important to have the procedure noted down. The sequence of movements and direction has been recorded on sketch, and the plan of the future event is recorded on paper. It is like a graphic scenario of the painting action.

SUMMARY

In this chapter, I pointed out several examples of rule-based methods becoming mechanical and generative. Examples can be drawn from Estonian art to illustrate this. In this connection, I limited myself to Kaarel Kurismaa, Leonhard Lapin and Raul Meel. Other authors could also be included. Mention must be surely made of Siim-Tanel Annus' series, and the modular art of Erki Kasemets.

I was interested in seeking examples of rule-based, systemic, serial and also tactile art, which could be associated with the theme range of rule-based and generative art presented at the beginning of the chapter.

The use of the word "machine" indicates that works should be set apart, where the machine itself or the element of an actually performing machine is a component of the work, as it is in the case of Kurismaa's "Gertrud and Heldur in the Rain", and the works where "mechanical" methods are used, where the rule and system of generation of picture sketches are created. In the latter, the repetition is essential, and a certain spillover is produced, which will underlie the subjective selection, as it is evident in Raul Meel's art. Manifest therein is the use of a permeating rule for the creation of a massive selection of works. It also becomes a basis for presentations of variations, as in the case of Meel's "Under the Sky".

When differentiating Leonhard Lapin's work, I based my study, by and large, on his enunciations more than on his works, because one fact is clear: Lapin's art is serial in its basic attitude. Lapin has repeatedly and clearly postulated his serial attitude. The unit of works created is a series, a set of works with one "base structure". Lapin has been working with fixed base structures for a long time, he plans his activity several months ahead, he crosses interim stages, "structure phases", where he still discovers something. Lapin's commentaries as a professed venerator and harbinger of technical culture reveal the origin and motives of a serial, systemic attitude. On the one hand, the recommendations of the authoritative art person, Sooster, on the other hand the similarity with scientific methodology, and systematic testing. Belief in the role of science and technology transforming the world characterised the cultural atmosphere of the 1960's and 1970's not only in the Soviet Union.

It has also manifested itself in the work of other artists, taking into consideration Ilmar Malin's interest in biological organisms. However, in the context of this chapter, not only the scientific aspect, which is often understood as the dispassionate and systematic search for truth, was under scrutiny. In Malin's sphere of interest, it was a gripping and exciting visual world, opening up thanks to technical devices of vision that he developed up to the end of his creative path. In this connection, I was primarily interested in method and attitude, certain standardising and serialising methods, resulting not only in a single picture but in an integral visual universe, as is evident in the case of Lapin's and Meel's art.

In the sense of findings, I would like to refer to the tactility of Kurismaa's work "Gertrud and Heldur in the Rain", the initial equation of Meel's "Under the Sky" and the procedural aspect of the sketches of "White fields". Without the physical involvement of the viewer/user, Kurismaa's work is not understandable. Touch and playing along, the possibility of participation during the "operation" of the work is characteristic in the case of that work.

Equations of single pictures of Meel's "Under the Sky" are to be conceived as software. It is a rule set down, which underlies the creation of visual work. The systemic activity for working out 5328 compositions is noticeable here, from which a subjective selection will be made.

Expansion in an imaginary narrative with a beginning and an end, which is the event taking place in the artist's spirit, but which also takes place as actual painting, is of interest in Meel's sketches and their further performance. The performance of painting is a temporally stressed mono-spectacle, the solution of which is completeness, closure of composition. It takes place following the "brush scheme" as a noted-down action scenario. The brush scheme could be interpreted as graphical guidelines of the painting procedure.

The three artists subjected to scrutiny are certainly not the sole authors in Estonia acting under the principle of series, system and machine composition. The raising of this theme is open also with regard to other authors. Artists, whom the said topic concerns and who have been determined enough to read this chapter to the end, might see this story as a call to expose their rule-based and generative methods.

9.6. Shared Authorship: Dispersal of the Artist in Electronic Fields

This chapter aims to describe the phenomenon of shared authorship in new media as essentially belonging to the creative field. At the same time, I will try to show that the development of authorship has a cultural, historical and economic impetus that has shaped the institution of authorship for hundreds of years. The topicality of the dispersal and collapse of authorship in today's creative field of the Web will hopefully become clear as well. The revolt against authorship, originality, and everything made with the author's own hands is one of the features of 20th century art that is perfectly realised in today's environment of the Internet and interactive art.

In order to keep the scope of the discussion from becoming overly broad, this chapter will not examine the open movement of open software and the practice of collaborative programming. The end of the chapter illustrates the collective digital work of Estonian art in the 2000's, which could be called interactive film. This will hopefully offer a concrete example of the developments in Estonia that have been relegated to the margins of art discussions.

First of all, I will describe what has been said in more detail in my articles *Multi-Local and Immaterial Body of an Artwork* and *Creative Machinery and Indeterminist Art Practice*.[598] Distributed authorship denotes a "repackaging" of something treated before, but my aims include presenting new material, new points of view and local emphasis. I will then determine the authorship forms shown in previous articles. Firstly, an artist is the author of rules, principles and combinations that

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598   R. Kelomees, Kunstiteose multilokaalne ja immateriaalne keha. – Kunstiteaduslikke Uurimusi, 2006, Vol. 15 (1/2), pp. 63–105; R. Kelomees, Loomemasinad ja indeterministlik kunstipraktika. – Akadeemia 2007, no. 4, pp. 699–744.

probably result in diverse works; secondly, an artist is a link in the network of relations, and the "work" could be a network-related and collective "objekt", either software or communicative artwork.

As the number of works with distributed and dispersed authorship in today's digital art is immense, the examples are endless. The current chapter is limited to three fields of digital art, three blocks, which we could describe as (1) sharing authorship with animals and plants, (2) interactive projects of participatory painting, and (3) contemporary forms of participatory film. For the sake of establishing background, I look at Lev Manovich's opinion of post-media and post-net culture, authors and users as those involved in shaping information and information behaviour and, secondly, his attempt to determine the authorship models of the new media.

The two subdivisions of the chapter, "Selfish Memes: Imitation as Recycling" and "Anthropological and Psychological Background of Authorship" are dedicated to an evaluation-free approach to authorship in the sense that they focus on the essential significance of borrowing, recycling and imitation in human creative practice, as well as on the return of "new" memes. I will examine Lev Manovich's argumentation on the return of the "new" and about how the "new avant-garde" of the 1990's differs from the "new" of the 1920's.

Another nuance of the topic of recycling ideas is added by Richard Dawkins's concept of the meme, which nowadays is itself a kind of infectious meme. In this context, the word "imitation" emerges, and it is the enemy of innovation-eager art. Taking a deeper look at its meaning, the cultural existence of all humanity could be described as imitative. One aspect of education and upbringing is imitating and fixing previous experience. Placing the meme idea into the context of art discussions hopefully will help to get rid of the modernist complex of viewing art history as a range of innovations. Imitation is the foundation of human cultural existence.

The idea of the meme is essential when changes occur. Here we refer to the "Ars Electronica" festival *Memesis* in 1996, which concentrated on the Internet as the emerging distribution environment of the meme. Art ideas as distributing memes are tackled in connection with the international art phenomena that have influenced Estonian art, as we remember them in the art of the 1960's – 1980's and of the 1990's.

Viewing authorship against the background of anthropological and psychological factors, it becomes clear that primitive forms of social interaction are never totally altruistic. Offering a gift in traditional societies is an act that takes place in the context of mutual expectations, hoping to gain status, rights or more gifts in return. The programmer who helps develop a programme for free does so primarily out of an egoistic desire to have his skills properly appreciated. In economic terms, this can be regarded as a non-altruistic interest.

I will also take a brief look at the primary manifestation of forms of artistic abilities, as they can be seen in border societies such as the army and prison. Ilmar Malin's memoirs confirm the idea that in simple societies, hereditary special abilities place an individual in a different position from others.

Significant changes in the status and notion of the artist occurred in the 19th century with the emergence of the institution of exhibitions. Earlier "court" artists who worked for aristocrats, who saw the artists as their private property, were replaced by "exhibition artists". I refer here to Oskar Bätschmann, according to whom the term "exhibition artist" was first used in Johann Heinrich Füssli's letter to his patron William Rosco in 1790.

An author actually consists of several authors, constituting a certain synthesis. For that reason, I call the contemporary author a "combividual" and a hybrid author, who consists of combinations of earlier author's possibilities.

"Combividual" is a playful and ironic term, but accurate in the sense that there is a lot of talk of the hybrid author and hybrid culture. I have in mind "Ars Electronica" in 2005, which was wholly dedicated to that topic.

The theme of participatory art unites a number of sub-topics. In post-WWII art, we can see an increase in participation in two forms. Firstly, the author's activity became a phenomenon worthy of exhibiting. Secondly, we can speak of participation through allowing the spectator to participate. The viewer's co-authorship becomes prevalent. Good examples here are the works of Yves Klein, Nam June Paik and Valie Export. Marinetti's "Tactilism" (1921) manifesto is mentioned, a significant ideological founder of art based on touch. Physical contact with a work of art is important in the interactive art of the 1990's.

The most radical manifestation of authorship is total rejection of authorship, as we see it in conceptual art. In Sol LeWitt's interpretation, the idea of art was a "machine", which means abandoning freedom in the result that occurred during the process of the idea becoming art.

In order to illustrate the authorship models in the new media, I would like to mention projects where authorship is shared with the animal and plant kingdoms. The examples are Ken Rinaldo's "Augmented Fish Reality and Encounters", Christoph Ebener, Frank Fietzek and Uli Winters's "HAMSTER – Symbiotic Exchange of Hoarded Energy" (1999), Garnet Hertz's "Cockroach Controlled Mobile Robot #2" (2005), Yasushi Matoba/Hiroshi Matoba's project "Micro Friendship" (1999), Stadtwerkstatt's installation and action "Bugrace 99" (1999), Eduaro Kac's transgenic project "Genesis" (1999), Christa Sommerer & Laurent Mignonneau's interactive installations "Interactive Plant Growing" (1993–1997) and "A-Volve" (1994/95), and Ken Goldberg's "Telegarden" (1995-2004). Interactive participatory paintings, such as Toshihiro Anzai

and Tamio Kihara's "Moppet" (1997), spatial paintbrush, Young Hay, Horace Ip, Alex Tang Chi-Chung's "Body Brush" (2002), Jackson Pollock's translating method into spatial digital painting, and Golan Levin's synesthetic painting projects characterise the territory of digital art that relies on examples of previous participatory art.

The last part of the chapter, about contemporary forms of participatory film, tackles Estonian examples of art with shared authorship. Examples can also be found in the activity of other Estonian digital artists in the late 1990's but, in the context of the current chapter, the younger generation is perhaps more interesting.

Workshops in interactive narrative and digital film have been organised at the Tartu Art College since 2002 under the supervision of Chris Hales (Great Britain). Projects from the three last years were selected and assembled for the In-Cinema exhibition at the Tartu Art Hall in February of 2004. A workshop dedicated to Korsakow's software took place at the Tartu Art College in April of 2005.

The idea running through the courses has been the making of multimedia and film programmes that the viewer can control and influence. The viewer-user can control the course of the film story and make choices in the programme.

I illustrate the topic with examples of university student projects.

Ülikooli-Vanemuise-Pepleri-Vallikraavi by Gabriela Järvet, Lauri Järvlepp and Kaiko Lipsmäe (2002): a girl, the character of this interactive story, moves along the streets listed in the title. The viewer chooses from four speeds: standing still, walking, running, and riding in a car. *The Sleepy Tramp* by Holger Lihtmaa, Ingrid Väärsi, Maiken Urmet and Heiko Unt (2002) is about the occurrences of a vagabond in a Tartu slum. The viewer can choose ways to disturb the tramp, who is wearily looking for a place to sleep and sober up. In *Tolstoi's Doors* by Triinu Borga and Alis Mäesalu (2003), the viewer can slam the doors of wooden houses, letting people in and out. In the interactive painting lesson *Paint This Way and That* by Fideelia-Signe Roots (2004), one can choose from watercolours, acrylic, and oil paint. The viewer can mix and match them. Martin Rästa's *Visit* (2002) is a personal work, where the viewer plunges into a poetic series of pictures by way of a panoramic view of the author's room. *Origami* by Aive Kalmus and Evelin Meier (2004) offered the listener options in telling an oriental tale through its clear, open nature that addressed the public and easy-going approach.

The Cause and Effect Show was put on in parallel on 12 February 2004. Its content was the presentation of interactive films together with giving the public the opportunity to vote. Chris Hales and Finnish artist Teijo Pellinen (Finland) participated. The compulsory hooting and hollering along with the films became an experience for the sixty people present. People ordinarily sit quietly and patiently in the movie theatre. The theatre of interactive theatre, however, requires active, sometimes

even aggressive intervention; otherwise the film will not progress. The shoutometer of the organisers registered the decibels of the audience's shouts, and the decision concerning the direction of development of the film was made according to the results.

These are examples of digital art with shared authorship in the context of Estonian art.

9.7. ABOUT INTERNET ART

This chapter is based on the article that appeared in the journal *Vikerkaar* (10–11, 2006), in which I refer to an earlier article that considered this topic entitled *Material and Technological in the Art of the 1990's* (in the publication *Nosy Nineties: Problems, Topics and Meanings in Estonian Art of the 1990's*. Centre for Contemporary Art, Estonia, 2001). I describe events and the context that inspired the activities of Estonian Internet artists. This context is perhaps the most unique in 20th century Estonian art. The opportunity to work in synch with international developments in both temporal as well as spatial terms opened up to Estonian artists. Temporal terms in the sense that the origin of internet art is dated at the mid-1990's, and spatial terms in the sense that the presentation environment of the works was the "internet space", or the global electronic, and in this sense both immaterial and material, environment in which the projects of artists were presented. I mention the context-specific projects of Tiia Johannson, Mare Tralla, Virve Sarapik, Raivo Kelomees, Nelli Rohtvee, Laur Tiidemann, Marko Mäetamm, Kristjan Mändmaa, Tõnis Kimmel and the Song and Games Society of Female Artists PUHAS RÕÕM (Pure Joy), which are not/were not conceivable without the Internet environment. They were made for it. The internet-specific nature of these projects did not lie in art created in other media or for other medium outputs, but rather to function and be documented specifically in the Internet environment.

9.8. CONCLUSIONS

In drawing conclusions, I would like to draw attention to five points, the content of which is the phenomenon and nature of post-material – nonmaterial, undefined in object terms, multilocal, shared in the sense of authorship – art both internationally as well as in Estonia.

Firstly, nonmaterial culture founded on exchange (not on objects) is characteristic of human activity, yet its scant emergence in studies is due to the greater difficulty with which it is subject to documentability.

Secondly, part of art history is nonmaterial, not object-oriented, founded on ephemeral processes associated with art in people and between people. A large portion of creative activity cannot be preserved and in the case of certain examples, processualness, proceduralness

and openness becomes the object of the work of art. Nonmaterial and open creative work is a practice that appears consistently in the context of art history.

Thirdly, continuous experimental activity is taking place in the direction of doing away with and dissolving the work of art, the dematerialisation of art, and immaterial art in post-Second World War art as a whole, which can be clearly discerned in the adoption of new artistic materials since the 1950's, the conceptuality and performance art of the 1960's and the adoption of electronic technology at the same time and later, which historically culminates with the developments in digital art of the 1990's, summarising in its own way the anti-object and anti-material aspirations of avant garde art, yet also turning to archaic content in so-called "media archaeological" works.

Fourthly, doing away with the objectness and substance of the work of art is ambitious creative practice, a trend of its own kind that has lasted for decades in the competitive landscape of art, which also owes its appeal to the incitive enthusiasm of theorists in their treatment of it. The "immaterial" framework of theoretical treatment is the best context for analysing "invisible" and "nonexistent" art.

Fifthly, the entry of ideas of nonmaterial and communicative art into Estonia's cultural space repeats the history of evolution of earlier international art, which lay in the abandonment of traditional artistic materials as well as in the adoption of electronic technologies. New technologies also change previous art hierarchies, making room for the genesis of a pluralist artistic space.

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