VYSOKÁ ŠKOLA VÝTVARNÝCH UMENÍ V BRATISLAVE

Evidenčné číslo:

CONTEMPORARY SCIENCE AND CONTEMPORARY ART

TRANSMISSION, DEVIATION AND DISPUTE

Písomná časť dizertačnej práce

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Abstract

The aim of this dissertation is a of the imbalance between contemporary science and art as producers of knowledge about the real, and a search for a possible balance. The written part of this dissertation is an arc of changing one's vocabulary when diagnosing the imbalance, while the final artwork, *New Horizons* is a fusion of my theoretic and artistic endeavor.

The writing aims to retrace my route to pluralistic realism, firstly considering approaches that highlighted to me to the problem of realism, and more importantly different approaches encountered along the road. I sensed an imbalance between how scientific knowledge is valued and how the products of art are assessed. I also assumed that the imbalance could be a symptom of troubles of many legs. My premise was, that behind the value imbalance between science and art a larger, ontological faliure lurks, that looms over the era we live in. This text is also a story of transformation of one's vocabulary when giving account of art, science and its possible relation to reality. If first I sensed an imbalance with severe effects on society, after encountering the thought of Latour and Feyerabend, I am able to give it a name, and even a hope that art has a chance to play an important role in restoring the balance. The second chapter is the setting where I voice my consideration of an imbalance, in the third chapter I talk about my initial localization of the imbalance. In Modern accounts (4th Ch.) in Modes of Existence (5th Ch.) I summarize Latour's argument in *We Have Never Been Modern* and *An Inquiry Into the Modes of Existence*, and its implications to my problem. The sixth chapter is devoted to Feyerabend and an archeology of the scientific method aided by Kuhn and Kvasz. The seventh and eight chapters bring together the implications of pluralistic thinking and fiction on the possible mission of art in giving voice to entities without one, in a discourse dominated by scientific materialism.

The final video *New Horizons* is a science fiction story circling around the problem of infinite scientific-technologic growth. An imaginary account about borders of our planetary system, on relationship of mind and possible ends. The video will be first screened together with accompanied live music when Nasa spacecraft New Horizons will reach Pluto in July.

Abstrakt

Cieľom dizertačnej práce bola diagnostika nerovnováhy medzi súčasnou vedou a umením, ako tvorcami vedomostí o skutočnosti, a hľadanie možnej rovnováhy. Písomná časť dizertačnej práce je oblúkom premeny slovníka pri diagnostike tejto nerovnováhy, kým finálna umelecká práca *New Horizons* je zlúčením mojich teoretických a umeleckých snažení.

Písomná práca má snahu narysovať moju cestu k pluralistickému realizmu, prvotne načrtnúť problém skutočnosti a vymenovanie dôležitých možných prístupov ktoré sa mi odokryli počas cesty. Pociťoval som totiž silnú nerovnováhu v tom ako sú hodnotené vedecké vedomosti, a ako sa pristupuje k "produktom" umenia. Predpokladal som tiež, že táto nerovnováha môže byt symptómom viacerých problémov, na pozadí hodnotovej nerovnováhy umenia a vedy sa skrýva ontologická ruptúra, tieň doby v ktorej žijeme. Text je taktiež príbehom transformácie slovníka v súvislosti s podávaním správy o vzťahu umenia, vied a skutočnosti. Najprv som len pociťoval túto nerovnováhu s ďalekosiahlými dôsledkami na spoločnosť (komunitu ľudí), avšak po zoznámení sa s myšlienkami Bruna Latoura a Paula Feyerabenda to dokážem aj pomenovať a vysloviť nádej, že umenie má úlohu v nastolovaní rovnováhy. V 4. a 5. kapitole sumarizujem argumenty Latourových kníh *Nikdy sme neboli moderní* a *An Inquiry into the Modes of Existence* (Prieskum v režimoch existovania) a vyvodzujem dôsledky pre nachádzanej nerovnováhy. Šiesta kapitola je venovaná Feyerabendovi a jeho archeológii vedeckej metódy, za pomoci praktických výskumov T. S. Kuhna a Ladislava Kvasza. Siedma a ôsma kapitola zhŕňajú argument pluralistického myslenia, sveta fikcie a možnej úlohy umenia pri zosilnení hlasu entít ktoré ostávajú nepočuté v diskurze dominované vedeckým materializmom.

Video – opera *New Horizons* je vedecko-fantastický príbeh ktorý problematizuje nekonečný vedecko-technologický rast. Imaginárna správa o hraniciach našej planetárnej sústavy, o vzťahu rozumu a predstavách konca. Video bude prvý krát predvedené so živou hudbou v čase keď vesmírna sonda New Horizons sa priblíži k telesu Pluto v Júli tohto roka.

INTRODUCTION and METHOD

> *What I am essentially protesting against is the bifurcation of nature into two systems of reality, which, in so far as they are real, are real in different senses. One reality would be the entities such as electrons which are the study of speculative physics. This would be the reality which is there for knowledge; although on this theory it is never known. For what is known is the other sort of reality, which is the byplay of the mind. Thus there would be two natures, one is the conjecture and the other is the dream.*
>
> [Whitehead, Concept of Nature, p. 30]

So. Why am I doing this? What is my reason for participating in this art object creating entertainment business? Why do I have the urge to delve into matters that seem irrational, bogus? Why do I create? What is my interest in creative acts of art? Most importantly for the reader, why did I dabble into the enterprise of research, if I happen to defy the rules of writing a neat science paper, and probably ignore the *Method* (scientific reasoning)? Is there an explanation for taking on a burden, which I will not be willing to carry to the end? The answer to these last questions is not that hard: I did not anticipate it from the beginning. Let me describe my initial motive first, what would be one's reason to look into philosophies that give explanation to the relationship of science and art?

My initial interest came from two sources of experience, firstly a general reverence of science and its success in providing a useful model/knowledge of reality, and on the other hand a kind of self-esteem issue with being an artist. What I sensed was an imbalance between how scientific knowledge is valued; the products of art are assessed.

I assumed, and it was not just merely my intuition at work, that the imbalance could be a symptom of troubles of many legs. My premise was that behind the value imbalance between science and art a larger, ontological failure lurks, that looms over the era we live in.

Thus to be more precise, it was not a mere personal frustration (although who knows?) that led me to find out more about the science – art relationship. What I had in mind was a rebalancing of the dominance, so that no truth procedure or knowledge production method shall have monopoly.

What will have to remain unanswered is my faith in philosophy, because, in order to have a firmer grasp on the imbalance, to find better words and reasons for the diagnosis, I turned to theory. The great part of my research was thus reading through literature of contemporary science studies that would address my imbalance. I also must admit that the choices of literature were slightly biased towards ideas that empowered me with hopes of rebalance.

The symptoms I was experiencing were addressed by many contemporary thinkers, yet the ones that seemed to offer an explanation that fitted my description best were Bruno Latour and Paul Feyerabend. Both of these agents of pluralistic thinking seem to describe a wide and useful role of the arts on equal ground as the usefulness of science. But in texts of both of these authors a technical imbalance is present, that is, since usually firstly the dominance of science (or compounds behind science) has to be contested, the larger part of their work is devoted to „getting the science right". Talking about art is rarely omitted, but usually has a smaller floor. I have to admit, that this kind of technical imbalance was present in my research as well, probably for similar reasons, but perhaps not for the best.

Clive Barnett from Exeter University writes about Latour's latest book: *(...) outlining new ontological pictures of the world helps no-one. I happen to think that Latour might have chosen the wrong register in which to cultivate his preferred virtues, and that that might be because he has made a mistake in his diagnosis of what is lacking in the world.* (Barnett, Are there 15 ways to be unhappy?) As for myself, I say, if a new ontological framing is not what the world needs, may my rambling be excused as surfing in foam on top of the shoulders of giant waves.

But why do I create? In possession of a newly learned vocabulary I will try to answer this still in the last part of this text.

The (non)method of my research was to pay attention to the same experience that the

sensation of my imbalance came from. I was trying to pay attention to utterings around me talking about art, science, reality, knowledge; to approach dominant, popular beliefs. Later, in An Inquiry in to the Modes of Exitence, I learned about the method of Latour's experimental metaphysics, that gave the possibility to understand the contradictions in speech, action, beliefs. And it is rather difficult to follow the threads of experience. The threads had been often cut off by official versions produced by the *moderns*. The way modernist theory understands itself, *subject-object* dichotomy make it impossible to follow our daily most common simple experience. Later I grew to greatly rely on Latours interpretations, in order to put into context discussions of reality, and when it disconnects from experience, register the category mistake.

The experience of reading Latour and Feyerabend had an impact on my style of writing this text. Both authors have written dramatic pieces, where the philosophy unfolds in dialogues (Latour's *Science Wars: A dialogue*; Feyerabend's *Three Dialogues on Knowledge*). But Latour's latest writings (*On Rejoicing, Aime*) wield a certain continuous flow, uninterrupted by hurdles that are required by classic *Academia*, quasi-unified standards of academic writing, his book about religion at times rises to the ways of a sermon, and the Inquiry uses a fictive woman anthropologist to retell a story. Feyerabend's style is also didactic, oscillating between very general data of simple experience and high mathematics, and we are reminded of the destructive, deforming, hindering effect of extrinsic principles of organizations on fields that they regulate. One of the leitmotifs of his *Against Method* is how a single method should never be allowed to have singular dominance in all fields.

This is not however my excuse to try to make my text bulletproof, and for most of the errors, inconsistencies, reductions and misinterpretations I take full credit (and surely a line of fire is in place for certain passages). But it cannot be overlooked that I have been inspired, and perhaps subconsciously influenced by the style of books I have been reading. I try to be honest in most of the places, yet please forgive me for not revealing all the tricks. But Seamus Heaney's *Beowulf* translation also starts with So. And this story is about my adventure.

Advice to readers: Let us distinguish two possible ways of reading a text. Lawyerish and Understandish. In the first case a single contradiction makes the castle of cards fall, while in the second case, a more benevolent reading allows to interpolate between the rough edges of immature thought. If I maybe so bold to ask, please read with the latter in mind.

Note on the typography of citations: Quotation marks are reserved for irony. Single word italics mean an emphasis. Quotations are handled with italics. Starting with a capital and in case of longer text arranged in block. Direct citation sources are in [brackets], a particular section containing figurations by other authors are pointed to sources in (parentheses). A special quotation is used for quoting thought experiments of common sense – these real life sentences are without marked quotation, and appear as normal text.

Abbreviations

Whnbm - We Have Never Been Modern

Aime - An Inquiry into the Modes of Existence

Orsrls - On Revolutions in Science and Ruptures in the Language of Science

THE NARRATIVE

> *B: You mean laymen are supposed to decide scientific matters?*
>
> *A: Laymen are supposed to decide matters in their surroundings on which scientists have opinions and which are being run in accordance with the scientists' wishes.*
>
> [Feyerabend, Three Dialogues on Knowledge, p. 120]

Dear reader, let me guide you through with a stroll of how my thinking has changed, to what paths I have ventured, during the past years, when I should have been doing research. Sure, I was trying to learn more about what I proposed to be true, and initially I was going to stand up and defend *artistic research*, yet as I am about to arrive at a milestone, and show what I accomplished, I am more inclined to use a different vocabulary. I will have to declare my initial intentions and the chosen topic, even more since as I got to a deeper understanding; there have been shifts of the accused and the praised. What remains unchanged is the addresser, a voice, that from an artist's position is sensing an imbalance, me, and the addressee, that is the all-time You, my contemporaries. My initial intent was to examine, in a rather general sense, the arts and the sciences, and to find a way to declare, that art produces knowledge, it is measurable, not completely irrational, comparable to the sciences, and mostly – similarly useful in everyday life. I have envied the sciences, the effectiveness in producing an image of usefulness about themselves, an image of serving us the *truth*. I found that there is an ***imbalance*** between how the sciences are evaluated as givers of truth, the humanities deemed as the lesser problem, and the arts often regarded as mere entertainment, however sophisticated. I planned to find enough evidence in some authors and books of philosophy of art and science, that an axiomatics of art can be created, an objective evaluation method for art. And honestly, it was not just artistic pride what drove me. I was prepared to do all of this for the sake of a practical enjoyment of life – happiness if you like. Now, I still firmly believe that an inclusion of art in daily life improves its quality, but I should have been more careful as to who I accuse of and of what. What is it that creates and sustains the imbalance?

I have learned certain ways to interpret the distinction between what artist, scientist do as their practice, and the way they contextualize it. Scientific practice, the everyday search for solutions to problems will not be target of my criticism. I will deal more with the protrusion of science into everyday life as a scientific materialism, the deployment and universality of the *Method*, and science as propaganda, that non-democratic political power, many manifestations of which are the results of what could be called the *age of reason*. Human reason, more precisely. It is not unfamiliar to us, to hear the phrase: Let us now think it over rationally!, and we make sense of the more exotic utterance of the child first time in the zoo: Mother, is that for real? We usually treat reality within the borders of a vocabulary constituting word pairs as: real - imaginary, intralanguage – extralanguage, nature – society, visible - invisible, objective – subjective. Objective science, subjective art.

As I have *travelled* further I learned to contest these words, and to give a different than proposed account between the common tensions of science and art. Thou often the travel was swimming in vorticious waters, and my head was able to catch this or that, a twig or so. (I am not trying to imply a systematic knowledge of all that follows)

Q(uestion): (What are the interests of an artist to investigate a case of art and science?)

A(ndrás): My personal interest in examining the reasons of imbalance comes from the fact that there was a great number of art works, that I have found to contain important messages, a great beauty, which others have titled waste of time, waste of the energy of society. Rarely is an artwork credited for uncovering new knowledge about what is real. The greatest paradox for me at the beginning was that even if I personally understood art as something more than a circus, there still were artworks that I too considered value bluffs and empty parades. What came to me as the biggest problem was the lack of trustworthy criteria for evaluating them.

DOWN FROM THE DOOR WHERE IT BEGUN

> *It's a dangerous business, Frodo, going out your door. You step onto the road, and if you don't keep your feet, there's no knowing where you might be swept off to.*
>
> [Tolkien, The Lord of the Rings]

I came to be fascinated by the same popular or even “populist” science, which I will be critical about later. I was under the spell of its awe. The science I have become to know from early childhood was of beautiful discoveries, wonderful gadgets, and exciting new worlds above, under and inside of us, humans and other “middle-size” (or human-size) living “objects”. My competitive spirit in mathematics was only recently been capped and contained, and I still hunger for more of the landings on foreign planets, I still go to most movies which hoist interplanetary travel.

When I was about seven years old I had an encounter with a book, a collection of Teilhard de Chardin´s ouvre, the *Journey towards the point Omega*. Even the title haunted me. Later I contextualized Alpha, the great bang, and Omega the great end... Also other memory fragments appeared, from the 3rd semester at the Academy, a lecture about Whitehead, about Continual nature, Being in process... the other time, after the clarinet lesson my older friend told me, that the gold of the alchemists is actually symbolical, that it is true wisdom the alchemists sought...

I carried with me an idea that what we call art today, and what we call science today are different manifestations of trying to find out more about one and the same core issue – how things are, reality. As much as I understood science from the image it showed to me, also its general success in daily life, I was not suspicious. Which is in sharp contrast with how I perceived art, some art spoke to me, but a lot of acclaimed art just seemed to me as bluffs, something-else-then-it-show-s. Often would I hear from other people similar sentences: This does not make sense. You can only understand this subjectively. It says something else to everyone. This appeals to the unconscious. This is bullshit.

How could such statements be in accord with the idea that in their core, these art pieces show the real world from another than factual aspect? The answer I could give by myself was a simple explanation: perhaps there are (and a lot more often in art than in science) wrong approaches. In wished for a universal explanation to solve how reality could have many aspects.

This is where my enthusiasm came from, trying to understand what the arts should or could learn from the sciences to equal their success. I wished to find the axiomatics of artistic knowledge gathering of the real. My goal was to show that art is the other way of producing knowledge about how things are. Before I really did my reading, I brought into discussion my first criterion, that of transparency of research, which I believed could be one of the ways of getting rid of irrationality. I thus began with a series of internet video blogs. The plan was that I will be able to assess elements of scientific research, and decide their relevance for art, discard the rest. It did not take a long time to realize what a problem just transparency meant for even the sciences...

Even if commentators of Kuhn or Feyerabend (Bird, Levanda, or Blake) were careful enough to guide me slowly through scientific literature critical to the positivist science, I was slowly gaining confidence (false confidence as it turns out), that perhaps I too should reconsider the strict categorization, and should shift to the other extreme – relativism. It seems inevitable that not only I cannot extract axioms from science that would universally hold up in art, but even the universality of science can be contested.

Still I felt simply uncomfortable with evaporating rules I projected, and not being able to grasp anything. I was trying to resist what seemed perhaps inevitable, that it is not enough to think that arts are subjective experiences of reality. The sciences are struggling in the same waters, trying to hold up possibly episodic local realities, if they are not utter shams and illusions (Harman in Quadruple Object). The literature on object-oriented ontology which I encountered in 2013 was already a bit behind its peaking (Kassel Dokumenta 2012). But still I understand the appeal of this ontology of the speculative realists, which hides the real from all eyes, science in the first place, and advocates art (and object-oriented ontology) as the only forms of true access to the real.

I began to build up an accusation of the deployment of science and its method, and I began to perceive more attentively a strong oddly religious omni-explanatory belief in sciences, to the extent of forcing a world view, and ridiculing the others (for example the New Atheism movement). The amount of spiteful internet-humor which plays on the backwardness of religion in contrast with the cumulative progress of science is just

overwhelming. Yet again, is there any other way of combating fundamentalism, and debunking the charlatans and tricksters? Can irrationality be combated without the arrogance of rationalism, and thus trampling over delicacies? At this point I must admit I have gone too far in the reduction, should I consider at all a simple division of rational and irrational practices?

This is where a new kind of influence enters, and I began to think differently, one step afar if you will. Surely the scientists could not necessarily have this (power game) in mind. When for example measuring soil, collecting samples in the forest, waiting for data to appear on a screen, they are not making judgments about the world as a whole. Could the problem lie not in what they are doing, in their "sciencing", but in the account, an interpretation they give of it, and their contextualization of it? Why would all scientists say: We want to know the thoughts of gods (like Hawking does famously) Why some of them are saying: There is scientific evidence, it is so and so..., There is no scientific foundation to what you say, I don't believe you. What exactly are they talking about when in higher mathematics, quantum physics we hear: It is like we are doing art! Does this mean that they are suddenly willing to admit that there is some other knowledge, the artistic one? Or that there is an "art of doing science"? Is this just a kind of ironic appeal to a magical world that common people imagine? Or is that scientific speaking about art? And also, art with its frequent appeal to extrarationality and irrationality, is that just a matter of artistic speaking about art? Do artists give a loyal account of what they are doing? At that point I could say an almost instant: No to that. Or could I? What are my conditions for scientist or artistic talk? Isn't my judgment still one-sided?

Now here again "the ones to blame" have shifted, if everyone seems to give wrong reports of their doings, then perhaps the blame for my imbalance can be given to the differentiation and contextualization of various practices. And besides thinking about the role of common sense, if any-body (I mean body), should be accused, than surely it is those creating the medial image and after-image of science and art (including contemporary artists and scientists themselves).

Thus I have been drawn closer to Feyerabend, and closer reading of Latour, especially his new publication An Inquiry into the Modes of Exitence, which, as far as I came to understand propose to reconcile the irrationalism of *anything goes*, and that of rational fact gathering. The multifaceted nature of reality is approached by pluralist realism. The facts of science are real, and should be taken with all seriousness, but the fictions of art are also real, although they should not be taken as facts. This is a position I found to address most of my former intuitions, and provide dignity for both the arts and the sciences alike. I will try to translate and uncover more about this.

COMMON SENSE, COMMON SCIENCE and search for a diagnosis

After having drawn a trail of my thought, and before proposing an acceptable ontological framing - pluralistic realism - of my problem: the imbalance; let me dwell a little how my initial diagnosis formed.

Where do I place my imbalance? Who do I exactly mean, when I write: *we* often hear, *they* often say, this is how *they* think. Is there an exact common place where this imbalance manifests itself? Well, earlier I simply thought, there is a critically thinking learned community where the discussion about such problems is alive, and a non-critical majority, where the debate is heavily biased towards a naive realism and simple materialism. Between the pages, or in nicely formulated words: His artistic research deals with..., What she talks about is *beyond reality*... etc., the problem is not apparent (although not completely absent), but the situation is entirely different when its gets down to daily business: There is no place for *dreaming* now, let us think real; This is science, it *works*. Etc...

But later I sought a finer differentiation, especially since I saw there is a rather amazing amount of scientific data and at-hand evidences for even the critical mind. It seemed to me there is a difference when scientists talk about their own experience, and when other people try to refer to some common scientific knowledge. Thus I came to differentiate between the common sense, which may be as naive as seen realism of the masses; high-end science is the actual graphs, data and definitions of scientists. And I inserted a middle element, almost as a transit zone, which I called Common Science. A field where the older Common Sense and the newest High-End Science combine into a mixture of loosely tied ends, and not fixed mythologies. Without trying to be scientifically elaborate let me provide an example: perhaps all thinking and seeing things share a *common* perception of the moving Sun. Most educated people know that even if the Sun seems to be moving, *in fact*, it is the Earth that moves around the Sun. This knowledge is acquired through the education process. Thirdly - High-End Science would then state, that it is in fact elliptical orbiting of the Sun and Earth around each other, or the Earth sailing forward into the gravitational well of the Sun, which bends space-time, and thus the falling Earth spirals. Even skeptically the High-End scientists

may say - it is a computational method, use which ever gives you usefully correct results the fastest (results optimized). Common scientific knowledge is composed through the medial image of science. The “medial” meaning, the matter science has to travel through, in order to become commonly shared and accepted. Media not in terms of mass media, but *medium*, thus also institutions (from schools to research institutes) and a language, in which science is spoken. And similarly a medial image of art can be fitted into the medial *Common Circus*, the common image we have when speaking of arts: sophisticated, serious, decadent, funny or unnecessary entertainments. The question remains, how these worlds come to exist, what part of education, politics shall now receive the full blow of my accusation?

The way I would rather use the term Common Sense, it is a state of *after education*, not something acquired as an evolutionary feat, and is still heavily susceptible to influences of education and environment. So it was useful for me, besides painting an image of the symptoms (facts of science seems to be accepted as only reality, art appears to be something else), to search for an explanation and a history, that various changes in the relationship between Common sense and cutting edge science.

One of the features of the medial image of science is that it makes the virtues of science – clarity, consistency, tightness of argument etc., incontestable by mystifying the history of these concepts. While their usefulness is backed by a plethora of results, applications in technology, argumentation fights, referral; the non-successfulness when applying these virtues in every way of relating to reality, is more than often evaluated as the weakness of the given field (sociology, art, theology) rather than the method. And of course we do not have to do very far reaching research to come up with examples of the image this approach gives us in the end.

The young person’s first encounters with science are usually finely illustrated books of interesting, and rather mysterious objects of awe. Facts of interest, historic reference to people, fascinating inventions (with allusion to the life before given invention) even facts of art. Classroom demonstrations (or TV, YouTube) show us the miracle of extracting simple laws from complex events - experiments. Chemicals fuse, and still it all works out according to a few lines of formulae. The young person is presented the choice of taking the route of knowledge. While the history of art present similar magic, as ancient inventions, and the creative spirit of the child is not yet problematic, let him create, modern art can pose a problem. Poetry, if not metric analysis can pose a problem. Architecture, if not the enumeration of construction blocks of styles, can pose a problem. It is a challenge to Common sense, to the rationale of Common science. Can the *subjective* be taught? Can the education system process, compare, let compete;

encourage fields that do not adhere to the Method? The pattern translates even better in higher education. Faculties of hard sciences are valued for their fact output, other faculties try to colonize their fields with measurables, make them more science like, to appear more effective, publish in high impact factor journals, and ultimately to receive more state funding, produce a public image of doing good for society.

From a publications perspective, science is either making progress, cumulating knowledge and presented so, or is debunked, refuted, which is deemed due to wrong approaches. Alternative accounts of what it is to know are treated from a position of power as needless and as bluffs. Science articles are often on the hunt for charlatans, and for other fields that pretentiously use the scientific method to prove their importance, usually not with much success. Is there *objective* contribution to knowledge from voodoo? Chinese medicine? Religion? Oral history, social sciences, and finally: art? Art, for that matter, is reviewed (not just contemporary visual arts, but simply film, books). Opinion is given by professional opinion makers, who have successfully mastered all that is to be mastered in the realm of artistic facts, and in light of them, give professional *subjective* opinion. The medial image of science and art infuse the Common

Sense, even in a learned conversation it is not rare to hear: Art is complementary to rational thinking. Art gives voice to the irrational.

While the current medial image of art and science contradicts my intuition, one way to look at it would be, that the account of art and science is not meant to create imbalance; the imbalance is created through the perpetuation of the falsities that are contained in them. *They* have created wrong accounts of their doings, and the perpetuated falsehood creates the imbalance, which is not even meant that way by core actions of agents of either side. An interesting report on the disruption of actual action and the route it takes through medial representation, of how the theory and the actual practice seem to differ in the age of reason, an analysis of what seems to be happening, is offered by Latour in *We Have Never Been Modern*. As far as my interpretation of the work goes, I suspect that in this distance between account and action, I can find a useful diagnosis for the imbalance between how the arts and sciences are perceived.

First paradox

Nature is not our construction; it is transcendent and surpasses us infinitely.

Society is our free construction; it is immanent to our action.

Second paradox

Nature is our artificial construction in the laboratory; it is immanent.

Society is not our construction; it is transcendent and surpasses us infinitely.

Constitution

First guarantee: even though we construct Nature, Nature is as if we did not construct it.

Second guarantee: Even though we do not construct Society, Society is as if we did construct it.

Third guarantee: Nature and Society must absolutely remain distinct: the work of purification must remain absolutely distinct from the work of mediation.

[Latour's table, Whnbm, p.32]

MODERN ACCOUNTS

The origin of the distortion of reflecting what we do, can be framed as an effect of enlightenment scientific practice, colonial hegemony and a general centering around anthropic reasoning. Latour's main diagnosis lies in the accusation of those, who call themselves *modern*, who build around the idea that we are able to differentiate between nature and society. In the book Latour constructs a constitution of the modern, and consequently shows the apparent impossibility to be faithful to this constitution.

The constitution of the community of moderns is built around warranties that nature can be fully known, and represented, and knowledge about nature can be intact of cultural and social influence. Sociology, politics play no role in getting to know nature. Natural science is objective, and is by no means dependent from any human construction, institution. On the other hand, politics, society, the system which is modeled after nature as second nature, is entirely human in its making and is the utter demonstration of freedom, that, which is subjective. One of the main theses of modernity is the non-mixing of these extremes, and also a movement of purification, to get rid of the mixtures that the foregone "dark ages" have burdened us with. A light shines before the eyes of moderns, and human reason stands before limitless possibilities. They are now searching for the pure and cleaned world. Herein lays the objective world. And here, this is our culture that we ever shape for the best.

Yet when one makes the brave step of examining anthropologically our own culture, nothing more, then the exact opposite seems to surface. The fields before us seem to be populated with hybrids of many orders. And not one of the poles can be reduced to one another:

> *Yes, the scientific facts are indeed constructed, but they cannot be reduced to the social dimension because this dimension is populated by objects mobilized to construct it. Yes, those objects are real but they look so much like social actors that they cannot be reduced to the reality 'out there' invented by the philosophers of science. The agent of this double construction – science with society and society with science – emerges out of a set of practices that the notion of deconstruction grasps as badly as possible. The ozone hole is too social and too narrated to be truly natural; the strategy of industrial firms and heads of state is too full of chemical reactions to be reduced to power and interest; the discourse of the ecosphere is too real and too social to boil down to meaning effects. Is it our fault if the networks are*

simultaneously real, like nature, narrated, like discourse, and collective, like society?

[Latour, Whnbm, p. 6]

One of the main motifs in the book is Shapin and Shaffer's *Leviathan and the Air Pump*, and its analysis. The argument is along Boyle's experiment with the air pump, where a committee of scientists makes it a *matter of fact* that they have seen evidence of a vacuum, and comparing Boyle's constants to Hobbes' Leviathan, where the construction of society is relying on a nature out there that is nondependent on human construction.

While the mentioned book discusses how knowledge production is thus also of social order, Latour goes into detail why the method of Boyle was not actually based on logical reasoning, but in order to be accepted, searched for a consensus in common opinion. The difference between Boyle and Hobbes in situating science in society has been happening in a world where science and politics formed a strange amalgam. It is not a mere interaction between the two but they are produced *simultaneously* (Levenda, Have We Ever Been Moder?). This is posed as the birth of modern science, the connection between society and nature is broken. How many non-human actors are left unnoticed in the Boyle Hobbes story. His critique is laid as a provocation to the social constructivist tradition; he asserts there is an asymmetry in the Shapin and Shaffer account. While Boyle separates science from religion and politics, thus creating a new network that would enable the creation of universals;facts, this poses trouble for Hobbes, who wished for constants. Boyle's network is the domain where knowledge is to be found, as is described in Shapin and Shaffer. The nature of objects/subjects or the social context remains unaddressed in their writing.

They [Shapin and Shaffer] seem to believe that a society 'up there' actually exists, and that it accounts for the failure of Hobbes's programme.

[Latour, Whnbm, 26]

Is there a possibility to envision the account with a society that never existed? Or perhaps society can be understood as an entity, one of the players. If we will call project modernity, that travesty of not allowing a complex network between either poles, the nature out there and the circle of humans in here are sharply divided, yet secretly and inadmittedly always and again mixed, then Hobbes and Boyle are exemplary actors of how this enfolded.

Boyle is not simply creating a scientific discourse while Hobbes is doing the same thing for politics; Boyle is creating a political discourse from which politics is to be excluded, while Hobbes is imagining a scientific politics from which experimental science has to be excluded. In other words, they are inventing our modern world, a world in which the representation

of things through the intermediary of the laboratory is forever dissociated from the representation of citizens through the intermediary of the social contract [Latour, Whnbm, 27] *(...) Here lays the entire modern paradox. If we consider hybrids, we are dealing only with mixtures of nature and culture; if we consider the work of purification, we confront a total separation between nature and culture. It is the relation between these two tasks that I am seeking to understand. While both Boyle and Hobbes are meddling in politics and religion and technology and morality and science and law, they are also dividing up the tasks to the extent that the one restricts himself to the science of things and the other to the politics of men.*

[Latour, Whnbm, 30]

Yet there is another dimension of modernity recognized by Latour, a theological one. There is a place for God in the modern constitution, albeit a kind of subliminal God, one who never called upon when discussing politics or science, yet still God remains the immanent source of the spiritual. According to Latour, God is entirely beyond-natural, and mostly irrelevant to the world of moderns, but God goes on to speak:

Modern men and women could thus be atheists even while remaining religious. They could invade the material world and freely re-create the social world, but without experiencing the feeling of an orphaned demiurge abandoned by all. . . . Spirituality was reinvented: the all-powerful God could descend into men's heart or hearts without intervening in any way in their external affairs.

[Latour, Whnbm, 33]

Modernity, in Latour's terms, is the endless evasion from and inclination towards the extremes of a transcendent and immanent Nature, Society and God. There are times when Nature is so strongly transcendent, that we are slaves of its forces, and thus it can serve as the cornerstone of our criticism. And yet again at other moments Nature seems as a human agreement, or bent to the will of God. First, society is understood as something that in the background controls every desire and each action, yet in the next second it seems that it is a human construct and those who created it decided what shall happen next. And what does God do all the time? Most of the time sits disinterested, not interfering, not being able to interfere with neither economics, nor science. But then, at times, Latour says, God whispers to the soul. The Constitution of the moderns is constructed out of these experiences, the strange pendulum between immanence and transcendence (Leithart, We Have Never Been Modern).

Latour draws us the image of what the moderns claim to do, and critiques the divides that are organic parts to this Constitution. The divides seem to make invisible the multiple translations, and seem to cover all the hybridization and other movement. But precisely

the suppression of the idea of hybrids will allow their uncontrolled multiplication.

Now, Latour does think of the next step, and talks about the necessity of a new constitution, an amodern one. He proposes an account, which would address the current world and its materiality. The name Latour gives to the sea of entities in the middle kingdom, between the poles, is quasi-objects/quasi-subjects. As it seems dualisms of object and subject, nature and society are problematic, neither can we give in to knowledge or power, and neither should we say that all is a product of social relations, of society.

In the last part Latour comes to the conclusion of how a possible amodern constitution could look like, but more importantly he describes a methodology of obtaining it. There is a plethora of hybrids just under our noses, but providing the wrong account will not make them any more accessible to us. Besides giving the diagnosis of the wrong accounts, Latour proposes to proceed with caution, as an asymmetry in any other account might only multiply the trouble. Latour is thus warning the social scientists to weigh the words wisely, he:

> *proposes a slimming treatment for the explanations of errors offered by social scientists. It had become so easy to account for deviation! Society, beliefs, ideology, symbols, the unconscious, madness – everything was so readily available that explanations were becoming obese. But truths? When we lost our facile recourse to epistemological breaks, we soon realized, we who study the sciences, that most of our explanations were not worth much. Asymmetry organized them all, and simply added insult to injury. Everything changes if the staunch discipline of the principle of symmetry forces us to retain only the causes that could serve both truth and falsehood, belief and knowledge, science and parascience. Those who weighed the winners with one scale and the losers with another, while shouting 'vae victis!' (woe to the vanquished), like Brennus, made that discrepancy incomprehensible up to now. When the balance of symmetry is reestablished with precision, the discrepancy that allows us to understand why some win and others lose stands out all the more sharply.*
>
> [Latour, Whnbm, 93-94]

As for what Latour's diagnosis means for the imbalance that interests me, I think it can be useful for searching for a new vocabulary. The moderns have taught me certain kind of talking about things and societies. When setting up for search, I have uncritically thought about a unified contemporary science, somewhat unified contemporary art, and would uncontestably think in categories as the forces of nature of currents in society. I registered symptoms of an imbalance (too strong science), and sensed an injustice in it (too weak art), but until I was able to change the scheme of thinking, the epistemological framing, I could only refer to objective – subjective knowing, constructed

common sense, and could search for rules for art, that would finally stand up against the firmness of science.

Of course I was able to point out a few problems with the (still unified) science. I could construct Common Science, and see that facts pass through it in unpredictable ways sometimes. Also I could try to make an argument for a stronger art (and by what I perhaps meant my own practice – then gone too general) by tightening the possibilities, and importing methods that are successful in science: transparency, tightness of argument, clarity... I could criticize The Common Circus and society for their low expectations. Yet all of this would remain vain (and possibly shallow) theorizing when confronted with the flourishing world of hybrid exitents parading around. I embrace Latour's idea that project modernity has in fact never been realized, it gives me an opportunity to give a better account, to diagnose the reasons of the imbalance. It can be perhaps said that the *suspicion* that there is an imbalance (in other word that balance should be some other way) comes precisely from the world of hybrids. The imbalance can now be situated between an aspiration to purify, dissect what is of social and what is of natural origin, and between realizing the hybrid forms our actions take.

However, in order to resolve the tension in the imbalance, and in order to satisfy my query, I was trying to follow Latour's thought in his later publications. The amodern constitution is somewhat opaque for me, and it is perhaps due to the deep embeddedness in processes around me, yet the idea of symmetry sounds just about right for what could be the answer to the imbalance.

In *Politics of Nature Latour* uses a more universal, different terminology than mine which gives more operationality and explanation. Latour talks of the opposition of Good Sense and Common Sense. The Common in his interpretation has an even deeper gravity – it is not only what is shared by all humans, across cultures to the Indians in Amazonia, but it is precisely that, what is Common, what assembles us humans into the community. Good Sense for Latour is the narrower concept, (yet perhaps both my Common Science and Circus could be fitted as subsets) it is the shared knowledge that characterizes the Age of Reason humanity, the Westerns and its colonial affiliates.

Also in *Politics of Nature Latour* comes closer to explaining what we could do to repair the wrong accounts perpetuating in the West, for which he proposes to reach for a metaphysical account. We cannot do again and again the same analysis, though.

> *[M]etaphysics has a bad reputation. Politicians mistrust it almost as much as scientists do. Speculations of philosophers alone in their rooms imagining they can define the essential furniture of the world on their own - just what no serious person should be indulging in any longer. Yet scorn of this sort would keep us from understanding political ecology. If we were to*

abstain from all metaphysical meditation, it would be tantamount to believing that we already know how the world is furnished: there is a nature common to all, and on top of that there are secondary differences that concern each of us as a member of a particular culture or as a private individual. If this were the case, those who have the task of defining the common good would have nothing to worry about, for the bulk of their work would be accomplished: there would already exist a unified, unifying, universalized common world. All they would have left to do would be to bring order to the prevailing diversity of opinions, beliefs and viewpoints - a thorny task, of course, but not one presenting fundamental difficulties, because this diversity does not touch on anything essential, anything that could involve the very essence of things - matters of fact being stockpiled separately in the cold storage of external reality. Now, to speak of nature in this way, separating the question of the common world from the question of the common good, is to cling, as we have seen in the three preceding chapters, to the most politicized of metaphysics, that of nature.

[Bruno Latour. Politics of Nature. p. 128]

In *An Inquiry into the Modes of Existence* (2013) I got another vocabulary help from Latour, in which he tries to tell the story of what we actually *are*, if we have never been modern. The fifteen modes discussed are the answer to the symmetrical account, which could help giving a more faithful recollection. One of the fifteen is actually an impostor, a faux-mode, the way the moderns describe themselves, Latour calls it the Double-click (admittedly an exaggerated technocratic example). Double click is the illusion of instant access, that there is no thread of experience to be entangled tied to any chain of knowing or societal constructing. *Translation without transformation*.

Access to reality had been an important triggering notion for me, and it led me to try to understand more about my imbalance. After reading Latour's book, I am getting more practical use of what art has access to, how and what part of reality does art access, and how does it compare to what the sciences have access to.

Let me now introduce to the main notions of An Inquiry into the Modes of Existence, also my encounters with it.

MODES OF EXISTENCE

My initial response after learning about Latour's book was a kind of excitement, because it promised many things that would resolve some of the conflict, the imbalance I set up. The tensions I was experiencing between my own practice of art and my understanding of science have to a great extent been given an explanation which firstly identifies my problem, and provides analysis of how and what gave rise to it. After *We have never been modern, Laboratory Life*, this book promised to finally systematically answer, what we actually have been, what is the mechanism, that connects our theories of science, politics, religion to their actual practice, and how can we map them?

Latour (and that's a French philosopher using the internet!) makes his physical book only part of the project, the Inquiry continues through the online platform, that invites participation. Various research groups of professionals in many fields took the labor of testing, whether the Modes proposed provide us the promised explanation for our shared experience of modernization. I attended the last of the conferences in Paris, which addressed particularly the ecologic diplomacy aspect of the work. Latour takes the climate debate very seriously, and his defense of the science of global warming was an indicator for me, that if I listen carefully, I might get a glimpse something a lot more sophisticated than a naive relativism, a simple social constructivism. I was enthusiastic.

Yet I am aware of the skepticism, that surrounds Latour's new opus, and sure the digital platform is far from the ideal transparent research tool one would imagine. I am aware of the philosophical background Latour is coming from, and have read many commentators, that accuse Latour of voluntary smudging traces of inspiration, also in Caputo (For Love of the Things Themselves: Derrida's Hyper-Realism), Latour is drawn as not having brought a great innovation, since the pluralism of modes is already present as a possibility in Derrida, Blake points out a great amount of Deleuzian thought, and even Feyerabend in Latour. As far as my reading goes, Latour's style (no quotations, no index in the end) in Aime is performing itself; it is manifesting the method, a voluntary break with single capital A Academia. Also it is possible to say that some chapters seem even more opaque than others, and are more precursors for further research. Although I would be glad to be entitled to say that I find Latour's work as a great event in philosophy, from the position I am I would at least say, it gives me a tool, a method, and ontologic device to decipher my imbalance and speak of my own problems in such way that tensions loosen. Let me shortly introduce an opinion on what is the place of

this work in the current situation and then try to give a summary of the argument.

My story up until now had been under a bias, the reason of which is probably more biographical than other, but my recollection unfolds in the order of encounters. My encounter with the imbalance of a serious science and entertaining art came from a shared experience across my surroundings. That is what I would hear: This is how it works. It looks good. What an imagination! And yet, I have to admit, that this is not the single account I would hear. Another position is all around the air, heard from many sides, that of political correctness and a tolerance of all points of view, without any ordering into a hierarchy of truths. I have already referred to this as a possibility of boundless relativism, an acceptance of all opinions and worldviews, providing an equal dignity to each and every one. Some have hailed this instinctive relativism as an era of enlightenment and dogmatic freedom, a way to combat totalizing ideologies. Even the earlier me has been skeptical about these voices, not on the footing that it would not be to a certain degree plausible, but precisely because of the experience. The opposition of theory and practice of relativism shows, such total democracy is only furthering the imbalance, creates short term mess, irrationalism, which in turn even creates a possible climate that would allow the return of religious theocracy. But again, those who denounce relativism are all too often in favor of the "scientific" method, the modernization front, the purifiers, described in *We Have Never Been Modern*.

In an essay (the section is called very suggestively the Battle for Cognitive Hegemony) Terence Blake writes about Latour's position and relativism, about the "worrisome offshoot" of the political struggle in the academia, that worldview that is the extrapolation of a materialist and naturalist interpretation of scientific practice. All of which supposed to silence discussion and discredit those who oppose Science. According to Blake Latour's emphasis is on splitting science from the political maneuver in the background in scientism, and votes for the protection of sciences from such exploitation. *I want to depoliticize the sciences so that they can't be used in this unsavory way as a tool for silencing political discussion.* [Latour, Science wars: A dialogue]

Thus Blake places Latour's pluralism on the side of irreductive networks, opposed to a constantly withdrawing reality of an inert or linguistic pragmatism. In Latours own words:

Our method thus does not imply asserting that 'everything is true,' 'that everything is equal to everything else,' that all the versions of existence, the back as well as the good, the factitious along with the true, ought to cohabit without our worrying any longer about sorting them out, as is suggested by the popular version of relativism. . . . It implies only that the sorting out will have

to take place, from now on, on a level playing field, contingent on precise tests, and we shall no longer able to endow ourselves with the astonishing facility of asserting that these particular beings exist for sure while those others are, at best, mere 'ways of speaking.' We see why the expression 'to each his own (truth)' not only has the relativist tonality people often grant it; it also implies the daunting requirement of knowing how to speak of each mode in its own language and according to its own principle of veridiction.

[Latour, Aime, p. 143]

Thus Latour introduces us to what I mentioned could be a possible reconciliation for my troubles: a plausible pluralism. A pluralism that seems to attain the dignity of science, its possible access to reality, but Latour does seem not deny the same from art, law or religion even. *In the end, when everything works, when the network is in place, access is indeed obtained; (...) is no limit to knowledge.* [Latour, Aime, p.109]

The Inquiry heavily utilizes his earlier ventures and researches. To an extent it could be evaluated as a summary of his findings, in anthropological approach to science in *Laboratory Life* (1979), *Science in Action: How to Follow Scientists and Engineers through Society* (1987), *Aramis, or the Love of Technology* (1992); economy in *The Science of Passionate Interests: An Introduction to Gabriel Tarde's Economic Anthropology*; Actor network theory - (known as ANT) in *Reassembling the Social* (2007). Each field of study later appears as a separate way of existing, not disconnected but qualitatively different realities. The current book is a guide of systematically studying each field, and through the careful dissection of threads of experience, debunk amalgamated, mystified and covered slight (or radical) differences in the story of the moderns. But modernization is not only an account that went astray, while its practice has produced innocent hybrids. To a certain extent the drive of modernity, constantly admitting hybrids in the past, yet demanding ever more purity, this drive, in fact leads to damaging decisions. Latour believes that the improper amalgamation of science and politics could be held responsible for the exploitation of resources, other than modern cultures, and the perversities of economy, that is claimed to be the pinnacle of hard sciences by some standards. Pluralism it not just a description, a passive ontology, but looking through modes of reality (and not a single discussion that silences all others) provides a way to "get the sciences right", "get" religion right and ultimately to choose between modernization and ecologization. This is the point where I got optimistic - so there is a way to "get" the arts right! It is a question whether our account will address those realities which are invisible, which remain unaddressed by the scientific account. As Blake claims Latour's work is no simple doctrine of relativism, but a doctrine of combat.

The Actor-Network Theory, (ANT) has been rather successful in social anthropology in the 90's, but as Latour points out, he never intended it to be a single unified explanatory force as it is made by some contemporary anthropologists. This is where he starts off his construction: every course of action seems to be describable as a network, a set of actors and their multiple connections. Values can be described as chains in the network, which are regularly maintained, costly and fragile sets of relations. The practicality of this kind of understanding in terms of networks is, that it provides freedom from the burden of being organized into domains. *Especially when we learn to liberate ourselves from some of the supposedly uncrossable borders—which the Moderns constantly cross, however—between nature and culture, for example, or power and reason, the human and the nonhuman, the abstract and the concrete.* [Latour, Aime, p. 62] But what gives the inquiry the possibility to think other modes, and where Latour goes further than previous ANT research is exactly the conception of a different mode of understanding – a preposition – that we can compare kinds of discontinuities in networks, and trace trajectories of discontinuities. This new kind of knowing is perhaps a meta-mode that allows thinking plural reality, in Latour's system it is also noted to be qualitatively different than the other modes. Besides NET (networks) and PRE (the previously mentioned preposition), another kind of possible referral is that of the moderns, and it will be the main antagonist of Latour's book. DC (Double-click) is instant knowledge, that does not confess the mediation of networks, cogwheels of many kind and quality, in sustenance of reality.

The doubleclickers' ignorance of networks and their disjoint continuity is caused by ***category mistakes***, which is the main sin of the moderns, according to Latour, the one that allows misjudgment of religion in scientific terms, misjudgment of science in religious terms, and all other kinds of trouble between politics, reference, fiction and morality.

Each mode is thus characterized by a ***hiatus***, a discontinuity and a particular ***pass*** that enables continuity. In addition, each mode has an internal mechanism for deciding its own truthfulness or deceitfulness, which is set up by the mode's ***felicity*** and ***infelicity*** conditions.

Even after defining the main terms, tools of "inquiring" I grew even more fond of the project, as my first idea of a mediator between real science and the public (Common Science) suddenly seemed to find a rather sophisticated backup. I was encouraged, that the idea of crooked mediation was researched by others, although most of the time I felt ashamed, to the naivety of my own thought. Still I felt thrilled to find a school of

thought, which was actually being thought right now, in these days. Most of the time of my research was spent reading science studies literature out of a double inspiration: awe for science, the interest in its mechanism in a broader sense, and on the other hand the envy of the success of its method, and a possible search to *make room* for success of other methods.

Latour "creates" room with similar intentions; science is not weakened but is under scrutiny, in order to remove unnecessary sediments. One of the most important disamalgamation Latour does in the Inquiry is the analysis and consequential separation of components that make up the materialistic scientific world. What can we anticipate of knowledge and what can we expect from the world? How to overcome the bifurcation into knowing minds and known things?

What we most often call science, according to Latour, is a crossing of two modes of existence that together create a compound, which answer to the question: What is it?

Reference is the mode which crosses the hiatus of distance between forms, and brings back (or fails to bring back) information about the distant. Reproduction is the mode that prolongs lineages of existents, and institutes continuities:

> *The crossing is particularly difficult because it risks being confused, at any given time, with the difference between knowledge - limited to the knowing mind - and the unknowable world of things in themselves - inaccessible to the knowing mind - along the truce lines proposed by Kant, albeit without a peace treaty. Yet these are two positions that belong to [ref] - the knowing subject and known object are "secreted" by the extension of chains. The [rep] path isn't that of "things in themselves" rather that of things "for themselves," based on a quite different truth regime;*

[Latour, Aime online, rep*ref]

The moderns seem to have had a mistaken a view of nature and how the visible world is composed, Latour doesn't find it plausible to talk of a "visible world", the very idea of visibility and invisibility seem to stem in a category mistake. A suspicious symptom can be pointed out, the colonizing violence and the spread of Reason that accompanied it, a symptom of fright and anxiety from something that is asserted not to exist... The moderns accused other cultures of irrationality and of having an illusory mode of existence, and the only explanation that was plausible to them was in terms of psychology and an inner subjectivity. Latour diagnoses it as the attempt to think outside networks, and while attention is only paid to the "visible", invisible infrastructures are forgotten. But the subject cannot be an interiority, as the inside is manufactured, and we forget about networks that enable the psyche. Latour arrives at the conclusion that we must return to original experience of another mode of existence: emotion. Emotion is a form of crisis

where our interiority feels the grip of an outside force. We are invaded, transformed, and left with a change. Metamorphosis (MET) is another mode of existence that traverses the hiatus of crises and shocks and which institutes psyches and divinities!

For myself, I am somewhat overwhelmed by what this mode offers, and as I have been reading reactions to Latour, many say that MET is not yet clear enough, and not enough experimental metaphysics have been done in the book to do it justice. (Blake, aimegroup.wordpress.com)

But what Latour emphasizes is the need for a diplomatic middle-ground, a place where cultures, the modern and other entities can have their complaints and praises. Simply, the ground for discussion that the moderns provide "within Reason" does not allow certain representatives for their speech to be heard.

Middleground! That is something I could do with, ever since I am talking about an imbalance, and trying to uncover the reasons, I am harboring hopes for a rebalance. So when Latour talks about a place where the unaddressed have an opportunity to be addressed, I seem to find hope for a balanced account.

To move forward in this inquiry, we need an ontological pluralism that was scarcely possible before, since the only permissible pluralism had to be sought perhaps in language, in culture, in representations, but certainly not in things, which were entirely caught up in that strange concern for forming the external world on the basis of an essentially argumentative matter (...)

> *We are going to be able to restore to discussion the task of bearing, for each case, its reality test. (...)we shall no longer be able, a priori, without any test whatsoever, to discredit entire classes of beings on the pretext that they have no 'material existence,' since it is matter itself, as we have understood, that is terribly lacking in material existence! It is in the public square and before those who are primarily concerned by it that we have to run the risk of saying: 'This exists, that does not exist.'*
>
> [Latour, Aime, p. 142-143]

Traditional domains are dissected into modes that can translate to each other, but are never fully reducible to each other. Surely the usefulness of such proposition is yet to be tested, but I for my practice feel this approach grants legitimate access to reality to those practices that have been repressed in the "battle for cognitive hegemony" (Blake, From Relativist Epistemology to Pluralist Ontology, The pluralist realism of Paul

Feyerabend and Bruno Latour).

All the modes Latour talks about are not of the same order, some are older than others, a lot of them only appeared with organized humanity, still some are as old as the foundations of earth. Not just for the sake of brevity but also of fright that some delicacies might be mishandled by my understanding, I list now the modes and the exitents they institute. The two meta-modes that enable thinking pluralism are irreducible networks (NET) and preposition of interpretative keys (PRE) for applying other modes.

While reproduction (REP) enables and prolongs lineages and societies of exitents, explores continuities, metamorphosis (MET) bring about beings of change and transformation. Habit (HAB) *is the technical term that has been chosen to designate a mode of existence, which (...) characterized by the designation of a movement directed towards the course of action and therefore away from the preposition.* (Latour, Aime online, HAB) This second group can also be recognized as the quasi-subjects of the amodern constitution for We Have Never Been Modern, and are not a kind of interiority that the moderns often take them for. While there is no more nature for Latour, the fields of nature and super-nature, the exteriorities of the moderns are thinkable in modes that access the far away, Reference (REF) brings us back information about worlds far away, Technology (TEC) as a mode is described as a trajectory of inventions, hands-on approaches, troublesome laboring between small tasks. The distinction between these two modes is crucial to understand what is happening in the laboratories, and how Common Science can be born as a confusion of the two – the zigzags of the invention process, and the access of worlds far away:

> *The hammer that I find on my workbench is not contemporary to my action today: it keeps folded heterogenous temporalities, one of which has the antiquity of the planet, because of the mineral from which it has been moulded, while another has that of the age of the oak which provided the handle, while still another has the age of the 10 years since it came out of the German factory which produced it for the market. When I grab the handle, I insert my gesture in a 'garland of time' as Michel Serres has put it, which allows me to insert myself in a variety of temporalities or time differentials, which account for (or rather imply) the relative solidity which is often associated with technical action. What is true of time holds for space as well, for this humble hammer holds in place quite heterogenous spaces that nothing, before the technical action, could gather together: the forests of the Ardennes, the mines of the Ruhr, the German factory, the tool van which offers discounts every Wednesday on Bourbonnais streets, and finally the workshop of a particularly clumsy Sunday bricoleur.*
>
> [Latour, Aime, p. 249]

Truth-conditions for beings of technology are to be able to adjust, rearrange, destroy, work, while beings of reference are judged whether they are able to supply us with information. Finally the third mode in this group is Fiction (FIC) which allows traversing great distances, allows time, space and even actant shifts, in order to create figurations, forms, multiply worlds. There is no information flow coming back through fiction, and there is a risk of no return.

The Inquiry heavily relies on debunking capital E Economy, which is a product of the modern accounts, and is one of the most dangerous effects of "getting the world wrong". There is 2,3,5 planets we would currently need in terms of resources, but there are no more colonies - or so exclaims the author – and there is no way for the planet to bail itself out. In order to understand something more about what happens to goods, needs, distribution and empires we are given three modes to reflect the flow of resources: Latour differentiates in the Inquiry Attachments (ATT), the multiplication of desires, creating the network out of passionate interest, a mode of Organization (ORG) is a way to describe reality trough scripts so organizations, framings are possible, and the Morality (MOR) mode has the impossible undertaking to calculate an optimum. The seeming neutrality of these modes is perhaps puzzling to me, although I find thinking in terms of organization useful when I come to think of certain aspects of the "art world" – the scripts are either mastered, or lost, and the cohesion dissolves.

Religion (REL), Law (LAW) and Politics (POL) are modes which are ways of speaking to others. The difference between religious truth and the truth of law is perhaps the most accessible way to understand thinking in modes, while religious speech is spoken in order to transform, to convert, law is spoken to connect cases and action through legal means. According to Latour, the "crooked speech" is the automatic way of political talk, in sharp contrast to the straight talk of beings of reference. Political talk is all about regrouping and instituting assemblies, and with the assistance of habit it goes beyond a dialectic of left or right, of simple economic materialism, and arrives to a "wisdom", a true democracy of objects. There is a kind of pragmatism in this, which Latour is willing to accept, as long as a common good serves all existents (either human or nonhuman) and across all modes of existence. Again there is a sense of balance here, and Latour even clarifies, how the multiple reality is not to be imagined in a symbolic way, begins of fiction:

> *... have a kind of ubiquity that allows all the other modes to figure their own reality for themselves. What fiction does for technology and metamorphoses—it folds and reprises*

them—will be done by all the other modes with the help of fiction. Without figurations, no politics is possible— how would we tell ourselves that we belong to any particular group? [FIC · POL]; no religion is possible—what face would we put on God, his thrones, his dominions, his angels and his saints? [FIC · REL]; no law is possible—fictio legis being indispensable to the daring passage of means [FIC · LAW]. Still, this doesn't mean that we live in a "symbolic world"; it means, rather, that the modes lend one another certain of their virtues.

[Latour, Aime, p. 249]

Latour's fiction seems to be a strong new notion in my vocabulary, to describe the imbalance, which inspired this whole writing. Without beings of fiction *no science is possible, and especially no abstract science, unless the world is populated by these little beings capable of going everywhere, of seeing and submitting to the most terrible trials, in place of the researcher trapped in her body and immobilized in her laboratory.* [Latour, Aime, p. 251]. A being of fiction is responsible even for a scientific experiment to faithfully hold together and precisely then can we tell if a fiction of science is well made, if it is coherently told. While the scientific fiction is required to return with information, the fictitious in other cases are free to roam; but they are made of the same stuff.

In order to articulate the world, we are thus encouraged to move beyond a distinction of symbolic/matter or language/real. Fiction that is exceptionally made, is not only able to bring us information, but to formulate, embody new figures which ask for separate care, special attention, in order not to forget: the exciting unsettling hopeless weird wide (multiply twisted, and ontologically flat) world we live in. (Andre Ling, aimegroup.wordpress.com)

We thus arrive at a pluralistic ontology of networks, a real world, in which truth and falsity is decided by the different conditions of the mode of existence in which one utters the words.

SCIENCE STORY (LEARNING TO MAKE ROOM)

Fine-tuning my vocabulary in order to have a firmer grasp on the way I formulate my own practice is perhaps one of the research achievements of my readings. Latour's book helped me to come up with an alternative to both naive realism, and naive relativism. So in a way, again, it is biographical, I have succeeded overcoming layers of my naivety. A pluralistic view, thinking through modes allows me to reconcile my initial awe for science with an art that has its own truth procedures. Yet I believe, I understand, Latour's thought is by far not the only thought that enables plural reality. Previous cognitive attitude have helped me in misinterpreting Deleuze into a preconceived relativist, and I was perhaps under the illusion of popular thought, that what cannot be measured, must belong to the realm of the irrational. My sense that there was a disturbance, and imbalance seems to have not only been somewhat proved, but I also seem to have an apparatus for showing why such intuition is possible: The Double-clickers preach instant access, but the network does not give way. And I can also identify now how the visible world is an unfortunate extract of reference, technology and crooked talk, also how those who try to access the silenced beings of religion, fictitious beings, can feel marginalized. And it is much easier to think of art's burdens too; networks of attachments, organizations and technology come apart to finally unveil artworks, when thought in Latour's modes.

In Latour's Inquiry there is a chapter where he disamalgamates reference and reproduction as the modes which create the category mistake of a singular science. This chapter is called "Learning to make room". The process of recognizing other modes has to be preceded by overthrowing the dominant mode, or at least doing it justice. The making room process in my research was a period of reading literature about approaches to the history of the scientific method. In an article by Terence Blake, where he examines Latour's and Feyerabend's pluralism, Blake asserts, that although Feyerabend is often simply interpreted as a relativist – thanks to his anarchistic method, his thinking is much closer to Latour's, and far from a simple relativism. My former reading of Feyerabend was also that of challenging science by backing up astrologic and mystic practices… but trying to learn from my mistakes, I tried to understand better what Feyerabend says about the scientific method. Blake reminds us, that Feyerabend's criticism of the method is in fact a genuine motivation for protecting science from becoming the dogmatic ideology for the coming era. (Blake, The pluralist realism of

Paul Feyerabend and Bruno Latour)

In the following encounter with the birth of scientific method I was guided by Feyerabend's analysis in *Against Method* and the essay collection *Science as an Art*. Thus my story and partially its style is based upon Feyerabend's recollections. I also include some very vivid examples of the method in practice by prof. Kvasz, whom I got to know during my brief encounter with the philosophy of mathematics.

The story starts, and how else should it start, with the stories itself. The first accounts on what there is, what there is around, or what there is out there, are roughly verbalized in dubiously consistent stories, narratives about experiences.

For millennia before the Greeks, storytelling was the main form of describing a *thing*. These stories, or anecdotes where not aiming at precise description, but rather in circling around the topic, with chains of allusions and comparisons creating an image of the thing that would transition fluently into the background. Gods or the Thunder were described from many angles, through experience, even Plato's Socrates would often recite an anecdote in order to convince, rather than using a philosophical argument. The usage of abstract notions, which began around the 5th— 6th century before Christ, is one of the greatest of novelties introduced into the western culture. Abstract knowledge, constructions of abstract notions, refuses to have unclear boundaries, and is backed by definitions, reduced and surgically separated ways of describing *things*. Shortly, definition relies on a smaller number of irreducibly simple notions (elements), which when combined with irreducibly simple tasks (axioms) can set the boundaries of a thing. These definitions can then become useful for describing more complex notions. The axioms are considered basic truths, and all deducted descriptions from them are true too.

Any description can be found to correctly or incorrectly be using the definitions; in the first case correctly assembled definitions *prove* the truth of the description.

The discovery of proof as a road to irrefutable evidence is one of the greatest finds of Greek culture, and its consequences cannot be unseen even today. The proof standardizes description, or visualization:

> *A basic problem of Egyptian and Babylonian mathematics was the existence of incompatible methods of calculating the same problem, e.g. the volume of a frustum (truncated pyramid). Simple calculative approach does allow choosing from multiple ways of solving, each leading*

to contradictory solutions. If no argument exists, authority takes place. One of the methods is proclaimed right. Administration then forces the use of that method, and if all use the same method (even if it is an incorrect one), no contradictions arise, and satisfaction reigns. This approach is still dominant in engineering, linguistics and the army.

[Kvasz, Orsrls, p. 35]

The Greeks found a way to solve the incompatibility problem by inventing abstract theoretical science. Intuitively deciding for axioms, and defining volume, it could be shown which of the Egyptian methods had proved to be wrong.

While the importance of proof cannot be refused, there have already been contemporary critiques of the implications of what real knowledge is, and what can be understood of the world through abstract notions. In the dialogues of Plato (which is already centuries later) the *difference* between stating true things about structures like the numbers, and stating truths about the world itself is brought to attention:

Theaetetus: But really, Socrates, I cannot answer that question of yours about knowledge, as we answered the question about length and square roots. And yet you seem to me to want something of that kind. So Theodorus appears to be a false witness after all.

[Plato - Theaetetus - 147c]

The reason why abstract notions can be used to prove a thing, is their generality, and they are not bringing a tail of specificities with them. The demand for generality opens the question whether there can also be applied to specific things in the world. [Feyerabend, Science as an Art, p.] The debate to a certain extent and through many iterations remains still actual. While some argue that proof is the basis of all science, and the advancement of civilization happens through better and more complex truths about the world, others question this very development and cumulative progress.

Until Copernicus, most truth in the dominant western culture throughout the Middle Ages, were derived from abstract primary principles. Mathematical truth, religious truth and scientific truth were first argued, and then applied to experience, although we can certainly say that other parallel truths existed. Geography, medicine, astrology or the crafts relied on many other fruitful methods, which were derived from praxis, not to mention practices of mysticism. But generally the abstract truth was thought

of a higher order. Ptolemy's earth-centric model of the skies was based on Aristotle's abstract primary principles of physic (principle of gravitation and levitation, light things go away from the center, heavy things move to the center). When Copernicus, through observation, discovered minor discrepancies in the model, the first to blame was the observation itself; otherwise he would have had to question the authority of Aristotle himself. The risk of taking experimental observation as the basis of truth is an important change of thinking. The Copernican revolution is a change in the evolution of science in the sense that it presents an equally good model of the universe, like Ptolemy's Sun-centered, yet the ease of calculation of circle trajectories compared to epicycloid trajectories is significant. And that is how Copernicus' discovery was regarded long after – a calculation method. Since the contemporary dominant scientific view on what is real was derived from primary principles and authority of old texts, it made no sense to refute a consistent and working model of the planets, until later Newton's innovations of the language of motion, the change in change (acceleration, deceleration) created a frame that made a Sun-centered model to be more consistent with it.

Galileo's mathematization of nature is the real break with Aristotelian physics, and the beginning of modern experimental science. The Greek tradition by being able to create ideal objects through abstraction, was able to define shape, and numerically substantiate objects, which could be viewed as *progress* beyond the Egyptian specific science. Galileo's theories viewed not just shape as mathematical, but also discovered that movement can be idealized. The mathematization of nature is a program that proposes the ability to numerically substantiate not only shape, but invisible phenomena like heat, motion or pressure too. (Kvasz, Orsrls, p.52)

And the new method, beyond deriving truths from abstract primary principles, is experimental science. The natural phenomena are reduced to simple situations where the phenomena can be studied in its essential form. But belief that such essential form exists is a primary principle for experimental science.

Beyond this belief, Galileo possesses the invention to create a useful reduced ideal situation – the experiment. For Aristotle the free fall and horizontal motion are qualitatively different. The free fall being a natural motion (to the center), while for horizontal motion we need a prime mover. Galileo approached the problem through the ramp, and looked at free fall and horizontal movements as special cases of movement along a ramp. The experiment shows how regardless of the degree of sloping, the path of the moving object always accelerates quadratically with time. Not to mention the ease of grasping this acceleration with a small sloping ramp – otherwise hardly visible as the free falling object. The formula of ideal motion could be abstracted from the experiment. The experiment is where the ideal essence of a phenomenon is found by

an artificial situation.(Kvasz,Orsrls,p.33)

Measurement standardizes the experiment, if the same tools and the methods are used, heat, pressure can be idealized, and the view of an objective mathematical nature can be spread, modern physics is born. The Cartesian dualism of the objective nature and the subjective inside is the result of Galileo's mathematization project. Also the relationship between experimental and theoretical science is reversed, what we experience has to have a possible corresponding theory.

The phenomenon of commanding human experience and mind into the center of the source of knowledge is regarded metaphorically also as the – *Kantian-Copernican revolution*, where not the sun, but the human mind becomes the center of the universe, around which all the principles revolve.

To a great extent we still live under this tradition. To sum the aforementioned up, the way to talk about things has gradually gone through series of reductive transformations. Firstly we have seen how from the wealth of stories and descriptions, *certain descriptions* and abstract notions were isolated. Form the inherent generality of abstract notions more general relations, definitions were derived, and with the virtual institution of proof, theoretical science was founded. Copernicus' and later Galileo's break with the understanding of observation as secondary to primary principles, physics has become the true knowledge. This came with the sacrifice of everything beyond the ideal essence of a phenomenon. Also with the enlightenment, the Kantian – Copernican revolution, the human mind is crowned emperor of the creation, and all knowledge is assessed from this point.

The usefulness and immediate results of such method yielded much success, and throughout the 18th - 19th centuries there have been immense discoveries that reached everyday life. The enthusiasm encouraged other fields than physics to apply the method of proving, experimenting and human-centralizing. The success of the method perhaps relied on the inventiveness of experiments, while chemical processes can be relatively easily reduced to abstract, measurable notions, biological systems, sociology or even political sciences pose greater and greater problems for simple measurement. Nonetheless the method still was being applied, and produced results; evolution theory is abstracted observation, meteorology is abstracted targeted observation, geography as abstract map-making.

In mathematics, the logicist approach advocates that mathematics can be made consistent by formulating a set of axioms, from which the whole of mathematics could be derived, while it presupposes that certain approaches of logic are independent of

experience. We see in the work of Henri Poincaré the effort to connect even mathematical knowledge to human interpretation of experience, in his works about the foundations of science he argues against logicism, also against Cantor's new infinite sets as being independent of human thinking. Poincaré stresses the important role of intuition constructing proper foundations for mathematics, while the proof can be validated through logic; the proof itself - the device - has to be created based on intuition.

This also changes how Poincaré understands the role of science – it is a useful tool for prediction, yet not universal knowledge. But the laws of science are not direct transcriptions of experience – a summary of all observations. They are a generalization, smooth curves interpolated between individual observations, missing out some and then correcting some of them. Since all the theories originate in experience, they cannot be proven nor refuted from experience only. He states that in truth, scientific theories are hypotheses.

Our solar system example from the beginning can be now retold another way. Both the Copernican and Ptolemy's models are working models, hypotheses. They are not representing truth, but they are methods of calculation, ways of predicting the position of the celestial bodies. Yet unlike in the 14th century, when Copernicus' model was declined from the point of dominant physics, and fully explained and accepted after Newtonian physics, if scientific theories are hypotheses, none of them can be chosen ideologically, all are equally valid prediction methods – as long as they provide consistent results. So if theories can be compared on a basis of usefulness, then the Copernican model proves to be more useful for calculating trajectories of planets.

This kind of *relativism*, though clearly not boundless, raises the question on how the backgrounds, validation methods gain their mandate within society? Whether psychologically, or within the rationale of science? Thomas Samuel Kuhn, proposes a theory of episodic history of sciences, at roughly the same time when the episodic nature of art history is debated by George Dickie and Arthur Danto. The general idea, and it is much recited, is that a dominant body of thought is the framework for the actual practices; the actual practices are evaluated under the rules of the frameworks. When the dominant pattern of thought changes (often provoked by extra-frame practices), the evaluation of the practices is also changing. While in art-history the underlying and continuous essence is questioned by pointing out an episodic interchange of institutional dominance, that has a constituting effect on *what art is*, Kuhn talks about *paradigm* shifts, dominant frameworks of thought, that validates the results of science in given time. In its generality Kuhn gives us an utter relativistic view, the truths of science are only matters of correspondence with its frameworks, that change, and on no level do they touch on the real. Realism to Kuhn is admittedly an indifferent subject.

Yet psychological or otherwise rethought interpretations yield results beyond utter relativism, and that is what becomes useful for us, when arguing for a pluralistic realism.

The central idea of Kuhn's *Structure of Scientific Revolutions* is the pattern of scientific change, the continual overwriting of frameworks, the dominant body of framework thoughts. When studying history, there is a pattern that seems to emerge: normal science, crisis, extra-ordinary science and new phase of normal science. Normal science, the term coined by Kuhn, represents the everyday puzzle-solving of practice, creating more accurate measurement, searching for similar results, testing for errors. The anomalies that occur in the course of normal science are puzzles that seem to have no solution with the tools present. Crisis occurs when sufficient weight of anomalous puzzles question the capacity of the present tradition to solve the anomalies. Extra-ordinary science – the revolution - is a phase when in order to solve the anomalies, some part of the tradition, something from the body of frameworks thoughts are replaced, with the desired result to enable solving the anomalous puzzles. (Bird,The Structures of Scientific Revolutions and its Significance)

Kuhn calls these frameworks paradigms, a collection of internally consistent methods of finding solutions to puzzles. The paradigm consists of exemplary puzzle-solving methods which serve as models for future puzzle solving. We could also talk of the paradigm as a *disciplinary matrix:*

> *a set of commitments shared by practitioners of a particular scientific field, including a special vocabulary and established experimental techniques, as well as accepted theoretical claims.*
>
> [Bird, The Structures of Scientific Revolutions and its Significance]

The crisis happens when in the given paradigm there is no exemplary practice for solving a puzzle.

Alexander Bird claims that while talking about the emerging pattern and the process of continuous overwriting is reflection of history, yet the explanation, the existence of paradigms, and the fabric of exemplars has a psychological and perhaps sociological aspect.

The consequence of this historical aspect is that progress in science is impossible, or only at an in-paradigm level. There is no new truths added to a pile of older established truth, but the frameworks often overwrite each other and diminish the importance of previous truth. Even if the overcoming and disposal of certain old scientific theories was a commonly known phenomenon, it was regarded as peripheral to mainstream

rational science. Kuhn showed how all scientific practice can be subject to the pattern of changing paradigms, a claim that certainly made science less trustworthy of knowing what is true. Often solving a puzzle in a new paradigm requires a change in vocabulary, and the solutions do not mean anything in the old paradigm, thus the new paradigm is a rupture, and does not simply add to the truths of the previous.

Still, precisely because Kuhn's claim was so general in defining paradigm, it was very easy to find counter arguments and examples when a diversity of scientific revolutions and changes has happened. Even if the idea of paradigms was a strong moment in the philosophy of science, it did not (yet) have the large effect on a general trust that science generates.

The general trust is based on the previous assumption – that science is showing cumulative progress. If science is rational, and the scientific rationality follows given rules, truth is obtained. This is what Kuhn calls the scientific method, and this is the belief which is undermined when the change of paradigms shows a cyclic pattern contrary to cumulative progress.

When I talked earlier about the scientific method as abstraction of principles from the essence of simplified phenomena, the method assumes the results are touching truth. But the fact that the results of scientific method correspond with experience is itself empirically, perhaps statistically obtained – Kuhn psychologizes this step of evaluating, accepting the method itself. In its simplest version the theory of paradigms states that the scientific disciplines are not aiming at truth, but are merely aiming at solving scientific puzzles. This does not exclude some kind of regional evolution, or progress in field. The methods of the new paradigm can perhaps be more successful and useful than the previous one. But science in not closer to truth any more than the various branches of evolution to an ideal living being.

> *When paradigms change, the world itself changes with them (and) after a revolution scientists are responding to a different world.*
>
> [Kuhn, Structure of Scientific Revolutions, p.111]

Yet Bird understands this, and for my aiming for realism, I tend to accept, that Kuhn does not mean a kind of idealism or social constructivism, when he talks about world-change. Bird sees a psychological aspect – since our ability to process knowledge does not only hinge on our imaginative power, but also a number of beliefs and past experiences influencing it. Copernicus' rivals were not unable to conceive a non-earth-centric world-view, it was a psychological impossibility. A scientific revolution changes

the world in a way that it changes some of the background beliefs, and after a slow sedimentation into common sense, it affects the learning processes in the scientific fields. The new generation of scientist learns the new paradigm.

> *Furthermore, our experience of the world is not merely sensory, but is heavily colored by quasi-intuitive emotional and cognitive responses: if one suddenly comes across a poisonous snake, the perception of the snake, fear, and the recognition of it as a threat are all part of one's experience; the last component does not present itself as an inference drawn from the first. Rather, the connection is an intuitive one (possibly innate).*
>
> [Bird, The Structures of Scientific Revolutions and its Significance]

The logic positivists hoped to find a meta-paradigm in inductive logic, but it seems that an intuitive rationality is not based upon such logic.

To interpret the Kuhnian paradigm cycles as refutation that science is getting closer to a knowledge of truth would be far reaching, and would put science into an irrational and rather diminishing position. A more plausible interpretation is that Kuhn talks only about the formal, technical aspect of the paradigm changes. It does not actually mean that chain of paradigms are not circling around what is real, the theory is only considered with the fact that science, or the application of the scientific method, in itself does not guarantee the connection to truth. In the latter sense goes the analysis of L. Kvasz of the scientific revolutions. According to Kvasz an important rethinking of Kuhn would be making the language of paradigms more accurate. In order to talk about the scientific method one needs accurate and rational ways of talking. The important point Kvasz makes is that in order to truly analyze the changes in science we need distinguish between several different kinds of paradigms – this can be plainly illustrated - the Copernican revolution replaced Ptolemy's solar system model, yet the Einsteinian revolution in physics made Newtonian physics still be regarded as regionally useful, and taught at schools. It is indicated that revolutions differ not just in magnitude of effect, but in a qualitative way. The three kinds of revolutions are *ideation, re-presentation,* and *objectation* (*from the summary of Revolutions in Science*):

> *The first kind – ideation – consists in changing the character of the temporal structure of scientific language, which is fixed with the help of idealized objects of the language. The language of mathematics is based on atemporal ideal objects and it originates in the*

destruction of the temporal character of the evidence and in the construction of an atemporal geometrical vision in which the triangle is seen as an ideal from, existing independently from time. The language of physics is based on dynamic ideal objects and it originates in the passing from atemporal forms to dynamic laws.

The second kind – re-presentation – consists in the changes of the way, the discipline visualizes its objects. For instance the difference between Euclidean and analytical geometry could be characterized in the way they generate their objects. Euclidean geometry combines its objects from previously given elements (straight lines and circles). In contrast to this analytical geometry generates its curves point by point from a given formula. In this way there are on the plane qualitatively more curves present. The graph of the polynomial of the fifth degree, which for Descartes is of course present on the plane, for Euclid did not exist. So passing from Euclidean to analytical geometry consists in the change of the visualization of the objects.

The third kind – objectation – consist in the objectivization of some structures of subjectivity in the language. For instance an important aspect of mathematics in Renaissance was, that space became an object of scientific inquiry. The question is, how could this happen. Obviously, space is not a thing that we can take into our hands and investigate. For the Greeks, with the exception of the atomists and the Epicureans, space just did not exist. So the fact that the space became an object of scientific inquiry was not accidental. It is connected with the rise of modern subjectivity, which first appeared in perspectivist painting. The painters started to paint the world as it appeared to them. The spatial structure is a constitutive basis exactly of this subjective perspective. So space appeared in the painting and form where there it came into geometry, in consequence of the changes in the structure of the subjectivity.

[Kvasz, Orsrls, p.199]

I believe I have made effort to illustrate how the scientific method functions – at least in the form as I have been discussing it – it extracts abstractions from experience, and successfully weaves them into a fine fabric of theories. Also, that the much more careful case studies, done by the aforementioned (and others), reveal that trust placed in science to know what is real, that *trust*, is way beyond what the structure guarantees. The scientific method is thus not the blade by which objective nature and constructed society can be divided. The method *alone* does not knight the scientist to be guardians of truth, room has been made.

One of the ways to approach relativism from a more practical sense is to say, not all actual scientific practice happens under the strict rules of the scientific method. Paul

Feyerabend has been defending this position, and has been talking about the many styles of science making, almost to a point of anarchy of method.

In *Science as an Art*, Feyerabend discusses the Riegl premise, which says in art there is no quantitative progress, and brings up arguments why a quantitative progress of the sciences is not plausible. Riegl brings up the many styles of Egyptian art, which even being contemporaries show various levels of advancement (Egyptian painting, sculpture) – that is, if realistic representation is a value. Feyerabend compares the arts to science, and draws the conclusion that if the scientific method would show signs of quantitative progress, then we could talk about knowledge of the real, (otherwise we should talk about styles of doing science).

The problem is that the quantitative progress is already a qualitative change in the style of science, and shifts in paradigm have been even negating the very principles of logic of the previous dominant style. Descartes' vocabulary about curves to mathematics, and Einstein's theory to physics brought ruptures at the heart of these fields. If in the 19th century it was generally accepted that all sciences have a common base in mechanics, yet the theory of relativity and quantum mechanics have brought a change in the essence. Feyerabend reminds us that the argument between Newton and Goethe about the nature of light is in fact not an argument between mathematical nature and qualitative nature, but that the analytical-quantitative and qualitative-holistic view tension is a valid question in mathematics itself to this day. Feyerabend talks with wit about an argument of rationality:

> *The church at the time of Galileo was much more faithful to reason than Galileo himself, and also took into consideration the ethical and social consequences of Galileo's doctrine. Its verdict against Galileo was rational and just, and revisionism can be legitimized solely for motives of political opportunism.*
>
> [Feyerabend quoted, http://www.nytimes.com/2008/01/16/world/europe/16pope.html]

The many-style nature of science is not always recognizable for the today's observer, which is caused by the accident, that is, it can happen to be the only accessible stance. This can justify a belief in the *objectivity* of science, but it does not make it the *truth*. Feyerabend thus advocates a truly democratic approach to science copying the democratic structure in styles – scientist shouldn't have super-scientists as arbiters of their success – but the people, and that would efface the power of the dominant style.

Science can be used as a police to remove unwanted thoughts from society, in which

case it is a political party (or a religious organization). Or we can take science as one of the approaches of researching, in which case it should serve all citizens, and the direction of researches should be decided democratically. As Feyerabend says, we have no knowledge of how it would look like if mass education would have formed out of an other than the scientific tradition, but we can see the results, and what it cannot do. Perhaps there is time for a revision.

FICTION AND REALITY

> *Knowledge is an operation that produces objectivity through practice of collective inquiry with instruments about the world – yet truth is a completely different question.*
>
> – [Latour in https://www.youtube.com/watch?v=0jZrCVjwcIo]

Would it be possible to call my performance of the recent year's research? I believe it is problematic, not just because of the tools I used, but there is a question of direction and impact. The discussion about the notion of artistic research is an ongoing debate, and there are many suggestions as to how to approach such enterprise. In Mika Hannula's *Artistic Research* (2013) there seems to be range of ideas similar to my earlier thought, as of what can be learned from scientific research, what could be useful. Most of the suggested traits are the virtue of honesty, transparency and sharing. In Henk Slagers essay about artists doing research there is much talk of the practice of artistic thinking, more in the line of Feyerabend and a greater freedom in method. Perhaps this is what I feel closer to. As Feyerabend often reminds us, great changes in the course of science history were often done by not being faithful to *The* method, but exploring uncharted territory. Thus experimenting with ways of thinking art, is perhaps the way to do such research art. Still my humble experience with *other thinking* was, that however exciting eruptions and undulations surround me, the accounts of What did just happen? were unsatisfactory.

So what I think this text is about, is the transformation of one's vocabulary when giving account of art and its relation possible to reality. If first I sensed an imbalance with severe effects on society, now I am able to give it a name, and even a hope that art has a chance to play an important role in restoring the balance.

All too often is the imaginary, the fictitious equated with realms of the unreal, the non- existent. But as I have learned from Latour's accounts this distinction of visible and invisible comes from a denial of other kinds of knowledge, which in turn is the legacy of the moderns. If this modernization is thought to an end, all alternatives to one dominant account shall be eradicated, this is a paved road to totality. As we deciphered

the falsities in the report the moderns give about themselves, we are able to recognize the domain of fiction as the part of a plural reality. There is no reason for putting beings of fiction into some other distant supernatural layer of reality either. *. . . it makes no sense to try to continue along the same path since they all have to show, in their manners, that the exploration of inter-agentivity does not lead beyond but rather away, underneath, elsewhere and definitely without.* [Latour, Another way to compose the common world] Without the unified Nature of the moderns there is no beyond, but rather a next to.

The imbalance can be rewritten in new terms. There is no Science that is contested and defeating an irrational Art, as was my initial suspicion. Neither the field of art, nor science is unified, and we should rather talk about arts and sciences in plural. Both of these activities are a complex of amalgams, and a successful report on these activities lies in understanding their underlying components.

What I simply called science was a network of information referring about distant objects, crooked talks that aimed to maintain associations (politics), small steps in order to function (technology), and it hoists the idea of instant access (the modernist fallacy).

If out of this mixture emerges a single material world, it can be seen how other domains become marginalized. Religions and arts struggle to reconnect, beings of fiction and religion form associations with political circles, with networks of goods distribution, try to write their own scripts of organization to being able to maintain connection with materiality. Hans van Maanen analyzes (*How to study Art Worlds*) perhaps more practically, than Latourian grandiose, the fusion of intrinsic and extrinsic values of art. He gives credit to a social, economic, relaxation and informative values of art, but the challenging artistic communication is often endangered, and in face with art we are left with goods, assembled into community, and informed, but the doors to fiction remain closed. But really, who takes art and religion seriously, when we have our great technological progress, thanks to science? Finally we overcame the superstitions! Or: who doesn't take art and religion seriously secretly, but is unable to find the word to express their sensed importance? Can we not hear the voices of all non-western, non-human agents, and others who remain unaddressed by the dominant discourse? Isn't there an imbalance to the voices that become unanswered?

This of course raises the great question, if there is something to be done, and if the damage is not beyond repair. Is there time to address issues of all the unrepresented in our democracies? Not just minorities, but the uncivilized (uncolonized), the non-human, planets. Both Latour and Feyerabend call for an ecologic rethinking of the account, and no more modernization. It is not the technologic innovation that poses a problem here

(although the combustion engine and fossil fuels are a borderline case), but the idea of infinite growth, both in terms of natural capital and intellectual innovation. The idea that human reason is uncapped, and nothing remains hidden to the scientific method is translated into economics, everyone has the possibility to grow: the sky is the limit. Literally: The ozone layer, the greenhouse gases… Humanity has grown to have an impact on the planet, which equals the energy of tectonic plates (Hamilton reminds us Requiem for a Species), and the exploitation of resources of non-humans done by humans in the name of modernization continues. Because of the wrong accounts on Nature and Society, because of the purification of this division, making the voices of others not just unheard, but scientifically impossible to conceive, reconstruct. This imbalance is not the mere frustration of the young artist, this is the point where the path of modernization needs to be averted or the moderns and many others with them must face the wrath of the planet and other beings, and possibly face annihilation.

I feel this is where the first light of a balance appears, and indeed it involves an active participation. Art is needed in order to bring to attention, to figurate beings without a possible voice, cannot remain in servitude of the sciences telling and retelling the science story, there are many other stories to be told. Latour's Fiction allows us to think worlds, build worlds, multiply worlds.

> *We do need arguments – but we also need an attitude, a religion, a philosophy or whatever you want to call such an agency, with corresponding sciences and political institutions, that views humans as inseparable parts of nature and society, not as their independent architects.*
>
> [Feyerabend, Farewell to Reason, On Creativity, p. 141]

Feyerabend also accounts art for representing research with the non-method. The mission of art is to bring the plurality of the world into the foreground, in order that all of reality is represented in the democracies, all entities addressed, and help bringing balance to a world full of one sided accounts.

But one of the most beautiful accounts on the texture of reality, the beings it is woven of, and a response to modernization that takes into account other modes, I found in Tolkien's literature. Two bodies of texts stand out, that deal precisely with the proliferating of words, the reality of fiction and the awkwardness of scientific materialism: the essay On Fairytales, and the poem Mythopoeia. The core of Tolkien's thought lies in contemplating the relationship of myth and truth. Of course his vocabulary is veiled by his study of historic linguistics, and I will commit a fallacy by projecting pluralistic

realism into his words, yet he provides a rather elegant account on the connection of myth, reality and the necessity for creating, multiplying worlds.

There is a distinction when Tolkien talks about facts of the world which are completely physical, and truths of the world that are metaphysical. Myths can express metaphysical truth about the world such as loyalty, deceit, good or evil, yet is outside a world of collected facts. Tolkien rephrases the common notion that myth is born as a side product of the emergence of language, and states that it is precisely the other way around – language is born as a side-effect of stories. As I have already spoken in the Feyerabendian account, description through stories was standard knowledge, before certain descriptions, abstract notions and definitions emerged. The lightning was first god and only later was it turned into word, a physical phenomenon. Myths according to Tolkien are real to the extent they are internally consistent, representative of the phenomenon in question, credible, genuine (Zettersen, Tolkien's Double Worlds and Creative Process, p.207). Thus we can make sense of Tolkien's claim that *myths are largely made of truth*.

Tolkien's idea of a creative method is that of discovery. The act of creating worlds and connecting to truth is similar to what happens in myth, the material emerges from a great network of reality, in Tolkien's words a soup, and either facts or stories are extracted. The success of it largely depends on the internal consistency of the execution. *Is it true? – If you have built your little world well, yes: it is true in that world.* [Tolkien, On Fairy-stories, p. 77]

His term for this human creative act is sub-creation, urge and curiosity planted by a creator into humans, to discover and create accounts of their own about the world, to find out more about the force that gave birth to them – to discover a creative mandate. Even if we hear this genuine urge to curiosity, Tolkien has an answer to the skepticism about the usefulness of imaginary worlds. While gathering facts may seem as a useful activity, factually unreal worlds are often deemed as an escape. But *escapism* is precisely the term through which Tolkien saves the world of fiction. He compares the one who escapes "real life" to fiction to the deserter of an army. Of course desertion is a crime punishable by law, but is it truly a sin to run to another world when the clash of weapons and factual arguments of science seem to claim all territories? This is I think very close to when Feyerabend talks of one-sided accounts, monopoly of science on knowledge, and the role of art in being one of the advocates of distinct other.

Reading Tolkien's ecologic legacy is difficult, since one can easily run into a nostalgic and anti-technology reading. But Tolkien is more subtle than giving voices to trees and birds, his concern is precisely that the reality is reduced into terms of science, an idea of continuous progress:

(...)

I will not walk with your progressive apes,
erect and sapient. Before them gapes
the dark abyss to which their progress tends
if by God's mercy progress ever ends,
and does not ceaselessly revolve the same
unfruitful course with changing of a name.
I will not treat your dusty path and flat,
denoting this and that by this and that,
your world immutable wherein no part
the little maker has with maker's art.
I bow not yet before the Iron Crown,
nor cast my own small golden sceptre down.

(...)

[Tolkien, Mythopoeia]

The *On Fairy-stories* essay is concluded with the argument how fiction can provide real hope and real consolation through the device of the happy ending, or the term Tolkien uses –eucatastrophy. Hope does not seem to be recoverable through facts, only through creative acts. The truth of hope in all worlds is the gleam of the greatest of stories according to him, the *evangelium*, and the true escape from death. For my own practice of art I find this a grapping idea, and it is a way to reformulate the position of arts retorted to entertainment. Can modernization end well? Is art the possible answer to how hope can be rekindled and all shall have their voices heard?

WHY I CREATE?

So what I have achieved with this research is perhaps almost entirely personal in the end. Even if I made an attempt to talk to you, my find is not easily translatable to direct speech. I am aware that I sound unconvincing for those accustomed to swim in waters of philosophy, and probably sound also arbitrarily chaotic at some point to those who are entirely new to pluralistic thinking. If a text fails to bring back information, it is bad science, and if there is no conversion, it is simply bad religion. If there is a possible communication between my find and You, my contemporaries, it is its implementation into my artistic practice. Shall the art I create be mute then I submit to have failed utterly.

As for my initial motivation for creating artworks, it perhaps has always been intuitively close to what Tolkien describes, as I was drawn to the gleam of creating new worlds.

Being brought up as part of an ethnic minority I seem to have acquired a sensibility for representing a certain kind of others, but through my research my eyes and ears were shifted towards other than human entities. A glance through Latour's modes gives me the possibility to look at my practice and the problems I voiced in the beginning, and contextualize it.

I wasn't able to look at the world that art talks about, because of the false idea of reality that came from the moderns, and which infused the medial image of science, art, religion. I was brought up educated with the method of the moderns. Now I feel, and of course I am not committed to think only in Latour's modes, that I can distinguish where data gathering turns into politics, how facts are being extracted from religion due to a category mistake, how the truth of religion and law are distinct domains even if not entirely independent, and how worlds of fiction can be real even if no facts are gathered.

Also I have to admit, that though I was being brought up in a politically rather conservative environment, I have become increasingly more sensitive to different voices of others. While this is no single impact of reading Latour, and is a longer process of maturity, still I have been guided by rather fine explanations. I remember when I was young it was an intellectual feat to be able to distinguish the conceptual difference in the verbs to *invent*

and to *discover* (fabricate vs uncover), also to make a qualitative distinction between domains of *astronomy* and *astrology* (facts vs sham).

I have come to understand how such construction can be an obstruction to seeing, since *We Have Never Been Modern* I can say: the act of invention is always also discovery, and finding the terra incognita is also always inventing it. And the difference between astronomy and astrology is that they are different domains, and both can be made well or badly. There is probably more well-made astronomy in the West, and more charlatans of star charts, but then who is getting thorough astrologic education?

It is also refreshing to understand all the associations the beings of fiction are linked to. They can be in connection with moral (as in optimal good), economic (as in possession goods), organizational (as in institutional), political (as in assembling) values. Yet one, who recognizes the different domains, can freely assign importance to them.

Even more now that I have found the words, I feel there is great sense in creating alternative worlds, and I can project the promise of thinking plurally, that the fictitious beings I address, are real. And what an encouragement when thriving for balance that Feyerabend assigns to art the mission to be one of the voices of rebalancing! Even if a balance is achieved in theory (philosophic reflection), practical plural existence has to be *done* (art, and other others).

The worlds I have been creating have had a connection to the sensory world, but in most aspects their *aboutness* is linked to fiction and in many cases invisible entities. Storytelling is a strong element in my practice, and it is precisely alternative consistency of virtual facts that I weave into my works. With a stroll let me illustrate in a few examples in my latest works.

In the video *Werewolf – a Dresdner mystery* we hear about a skin-changer wolfman and the werewolf-dilemma: If the being is spending too much time in the skin of the wolf, the curse can never be lifted. As the story continues we are transported, bloodstain is everywhere in the slaughterhouse, a new figuration emerges: cursed humanity. The humans become slaves of their own organizations, up the point when there will be no chance of return, and they will remain humans forever. In Werewolf I try to give voice to a concern about the amount of resources needed to maintain the human organization.

Surely it is not true to a full extent, but I try to maintain a degree of medial indifference (now I am using the term media as *carrier*), some of my fiction becomes solidified as videos, some remain in the form of a text, there is music, songs. Some of what I do becomes an art object, some of my work can be framed in institutional (didactic

works) or career-economic (entering art competitions) terms, but often I have interest in evading categories. One of the very interesting projects I came to be part of for only a brief moment is Charles Cameron's Hipbone games project, which is a community trying to simulate Hermann Hesse's glass-bead game. Thought diagrams are generated that range from meditation over notions to problem solving. These community built simple worlds conjure up figures that enable to see through the solidified dominant part of the network.

Another interesting project that enables the collective creation of fiction is MUSH or Multi user shared hallucination, a text-based online social medium on going from the early nineties. A collective effort is made to describe new worlds, and each new action is a new paragraph in the textual interface of the history of given world. Collective fiction. These are I believe examples of fictitious worlds I encountered, which have the quality I value in art, and yet remain out of the institutional bounds.

In the last years in my artistic practice I have used worlds of fiction almost as a simulation laboratory for certain troubling aspects of current times. Often I was more skeptical what substantially new can an artistic view provide in problems with nationalism, mourning, ecologic catastrophe. Shouldn't I rather get the facts right about global warming? Organize a revolution? Accept the end? Of course all that, I should do, but besides that, I am also here to lend my voice through art to beings without one.

In the song collection about the funeral of the Dame Margaret Thatcher I conjure up voices of worms, the dead, and bystanders around the grave, but the lamentation, the idea of an ending world is ultimately a wish for transformation.

Sing on the tune of the American anthem (but in D minor):

G d C G

o say can you see, from the dawns early light

o say can you see, from the dawns early light

E d C G

or are you mesmerized, by the night

so tell me can you see, from the dawns early light

or does it scare you, that the universe

is expending and is spent, is falling apart

it does not come in, grand catastrophe

just everything will dissolve, and slowly fall apart

so tell me can you see, by the dawns early light

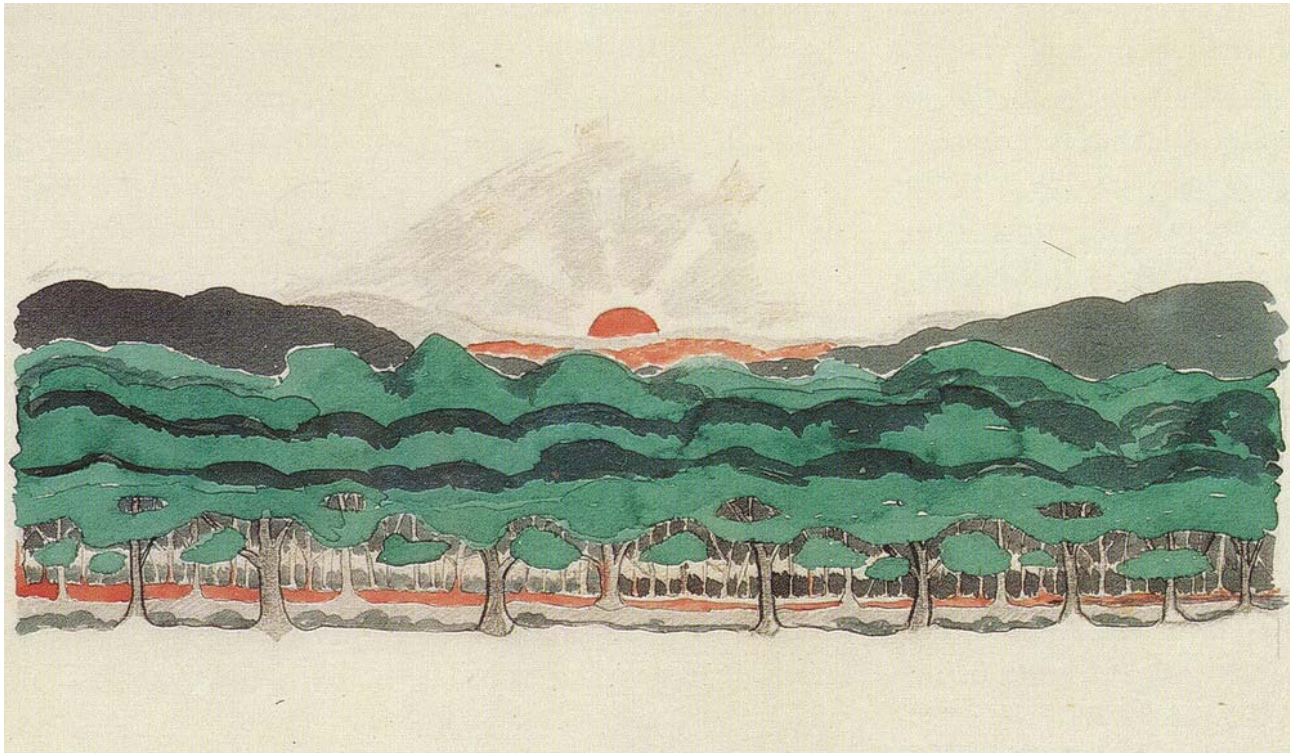
there is no end of the world, but we can want it

Similarly to Tolkien's interest in virtual linguistics and geography, I also find it a great tool to give voice to muted entities through consistent imaginary facts. The problem of nationalism comes up in *Compsognation – a dinosaur's view on the nationstate*, where with computer generated imagery I retell the story of extinction as the cause of excess of tribal collectivism in the late predatory dinosaur clans, and foreshadowing our own road to perdition.

In *Construction of Facts*, we see a Pilate-Jesus scene: guards are taking Pluto the planet to the balcony. The Planet Definition Committee hesitantly utters the judgment: Pluto, not a planet. The people shout Dwarf! Dwarf! while some of the them are dragged away from the crowd and are also ripped of their human title. This fictitious world is a parable, and contemplates the origins of totality in a science dominated world.

The matter of representation and the democracy of entities becomes the main topic of my latest work. The work *Council of Eternally Existing: The Sentence* was created for the synagogue-gallery in Šamorin. Representing three groups (visibles, invisibles and cruxaders), three entities come to say their sentence over humanity. In the middle of the synagogue a chair with a speaker stands alone; projections of three entities, Matthew (a fog), Joanna (black ocean) and Christophoros (a crux spider) speak to the chair, and accuse men of the shift of their center of gravity to human reason. The sentence in the end is: weightlessness (echoing in the synagogue).

The usual choice of carrier in my case comes down to the choice of an audience, with whom I would share my vision. And in that it comes close to Latour's understanding of religion: What good is a sermon, if there is no conversion, what good is an artwork, if there is no transformation?



Wood at the end of the World, illustration by Tolkien

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all web resources are actual to date 15th March, 2015

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