

# **Amélie and Quantum Physics, Hamlet, Narrative, Locative and Godard**

## **– The Relation of Mathematics and Metaphor**

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1.

The film "Amélie" by Jean-Pierre Jeunet starts like a news report: a strictly matter-of-fact voice-over accounts of Amélie's early life. The viewer is given a summary of rigorous facts, factual information presented in a universally applicable form, about an exceptionally private and personal life. Factuality is a conscious choice of narration – the tone implies a clear consciousness of what is being done. The film's viewer gets the overall picture at an early stage: the very idea is to highlight contrasts. The first axis of opposites consists in the difference between fact and fiction. The entire film is based on the construction of such contrasts.

The film tells a sympathetic, warm and entertaining story about a girl who likes to play pranks and has a longing in her heart. The object of this longing is, of course, the opposite sex, the fulfilment of life, and the longing is partially painful. However, the poignancy of life is accompanied by life's lightness, and thus the great whole of life and of the film emerges out of opposites. Life and film could be opposites, but it is precisely through contrast that they might explain each other completely.

These shades and colours determine the life of Amélie. There is hope and despair, trial and error, and there are ups and downs. All internal contrasts are matched by their visualizations in external reality. It is far from a coincidence that Amélie lives in a red and green world. Red and green are so-called complementary colours, and in visual perception they are conveyed by the same retinal cells. I.e., a given cell experiences the world as two contrasting colours. The afterimage phenomenon is commonly known: when we stare at a red surface for too long, the visual cells of the eye get tired of producing the corresponding nervous reaction, which soon results in a counter-reaction. The state of equilibrium is passed, and the opposite extreme of the scale is reached. At this point, a splash of green, the complementary colour of red, will be produced by the retina and appear in the field of view.

The complementary and mutually inclusive contrast between colours is like a model of Amélie's world. This is not merely a case of opposites and dualisms, but a case of complementarity which forms a whole in a special way. This phenomenon can be seen from the very beginning, and lots of more or less unfortunate things happen before the happy end is finally reached. Already in the beginning of the story the viewer learns that Amélie's mother died when the girl was but a small child. The tragicomic contrast of the story is expressed in the fact that the mother is crushed by a suicidal person jumping from a rooftop. Now we know the opposite of suicide.

Also a philosophical theory is built already in the beginning. A malicious old man tricks little Amélie into believing that she has caused a car accident with her camera. Causes and consequences are turned upside down for the sake of malice. Causal thinking is undeveloped in infants; indeed, they believe that their thoughts could be the reason of actual occurrences. However, at some point Amélie realizes that the old man is cheating. In retaliation, Amélie makes the theory come true. As the old man watches a football match on television, Amélie climbs to the rooftop and disconnects the television antenna cable every time a goal is about to be scored. The opposite of a wrong theory is its realization: the transmission is interrupted, and the old man goes mad with anger.

A beggar is usually seen as someone wallowing in their own misery. Therefore, we imagine that the opposite of the beggar in the station hall would be a rich person living a leisurely life in a seaside villa. But the opposite of the beggar can be found between his own ears: "No thanks, I do not accept donations today, it's Sunday and I have a day off." – One must be able to be merciful also towards oneself. The self and others, me and you – these are not opposites, but are elements that complement each other. – As Amélie finds an old tin box behind the baseboard in her flat, she decides to find a direction also for her own life. If she could return the box to its owner and if it would turn out that she has been able to help someone in this way, she would devote her entire life to being a good fairy. Amélie does not know what a Pandora's box she is opening. An entire list of possible owners emerges. Well, hope exists; there is no need for despair. Off she goes to ring doorbells.

We hear a scratching sound as Amélie briskly crosses out a name in her notebook – this person was not the one she was looking for. Her hand whooshes from left to right – or from right to left, depending on the viewer's point of view. The immediately following image depicts a string of cars rushing from one side of the picture to the other, or a train flying by in the other direction. Director Jean-Pierre Jeunet reproduces each of Amélie's mental movements in the external world like an echo.

Place and time are not mere coordinates – although some of them are defined in the film, too, even in a pointing fashion. Instead, place and time close and open up possibilities in the world. –

A beautiful episode is related to Amélie's father, who has lived a reclusive life in his house ever since the death of Amélie's mother. There he's repairing a garden gnome, which seems to have become his only friend. It is now on display – it had been abandoned earlier, because the mother could not tolerate it. The gnome leaves its cement pedestal to travel the world, sending postcards in which he poses in front of tourist attractions. The gnome returns later, and then it is time for Amélie's father to travel.

The contrasts included in every scene of the film could hardly be listed. Playing practical jokes in the apartment of a humourless merchant, Amélie removes the door handle and reverses it so that the handle and the knob change places on the door. The foot cream tube and the toothpaste change places. The alarm clock is set to ring in the midst of the sweetest dreams. The comfortably loose slippers are replaced by a pair two sizes too small. Oops, it is fun to tamper with the world. Good people are given assistance, while the world of evil ones is turned upside down. Audrey Tautou fits Amélie's role perfectly.

Amélie acts as Cupid, too. "Look", she says to her fellow waitress working at the tobacco counter, instructing her to sit down at a certain table. "A man comes and sits down here every day. What does he see in front of him from this spot?" "Well, what? I do not understand." "Think about it", Amélie responds. Amélie could as well ask the film's viewer to think about why these contrasts are being built up. – However, Amélie's own life is like a jigsaw puzzle, and the fitting pieces seem to be missing. A strange photo album is shrouded in the mystery. It includes a collection of photo booth pictures showing rejected, torn faces patiently pieced together by someone. Who are all these people, what role do they play in the overall picture of life? No worries, everything clears up in the end. The big overall picture of life and of the film waits for its completion.

The solving of the puzzle is aided by the old wise painter living downstairs – an eternal mythic figure, a timeless man whose bones are too fragile even for bumping into the door jamb. This character is a meeting point of eternal wisdom and Amélie's daily problems. As if to illustrate the contrast between history and the present moment, the man paints a new copy of a Renoir painting each year. At the end of the film, it is he who teaches the merchant's son who was called stupid by the merchant in the beginning of the film.

The characters of the film are always outside or inside, on one or the other side of a dividing line, upstairs or downstairs, at the top or the bottom of stairs, above or below the table level – the director beautifully visualizes a world of nearly unnoticeable contrasts. These contrasts are not mechanical; they are "alive", organic and complementary. They always add something to the world and describe reality better than what could be achieved by using crude one-dimensional black-and-whiteness as a starting point. The perfectionism with which the film's content corresponds to the localizing visualization is something that most filmmakers do not even try to accomplish.

The film gives renewed reason to feel depressed over the poor state of the Finnish film industry. The enormous, harsh brutality of our folk comedies is something that cannot even be mentioned in the same hemisphere. Our reason and emotions are buried in permafrost. Which Finnish film critic has even noticed the complementarity of Amélie? When one does not even see, how could one ever do anything?

2.

The original name of the film "Amélie" is "Le Fabuleux destin d'Amélie Poulain". In French, the title is directly associated to a fairy tale-like, or, even more deeply, a mythical interpretation of reality, to fables, even to forces of destiny. The way in which "destiny" appeared in the role of narrative in ancient myths is well known. Destiny is a real actor-subject, which carries events towards the inevitable end. Narrative truth is the most original form of all truthfulness. The concept of coincidence is unknown to myths. In a world controlled by destiny, it doesn't even matter if the characters of the drama are aware of their own role. This kind of a world is a "factual" world in a particular way, with fairy tale elements functioning as reality effects.

The development of physics as a science is sometimes described as if it were a narrative. In such a case, cognitive development is seen as a series of plot turning points, in which great discoveries enable and follow each other. One typical example concerns the way in which Einstein is imagined to have reached his views on the constancy of the speed of light. Remember that light had long been an almost dark, incomprehensible and inexplicable phenomenon. It was known, for example, that it had a certain speed – but it was difficult to imagine how light could propagate even in a vacuum. There had to be some kind of a medium, in which light could travel – the so-called *aether*.

Aether theory was tested experimentally by American scientists Michelson and Morley, of whom the former could be characterized as a queasy precision mechanic, while the latter was more of an indomitable and straightforward clergyman. They definitely were some sort of a Laurel and Hardy duo of the narrative of physics. With an interferometer installed onto a raft floating in mercury, they registered the travelling speeds of light in different directions for an entire year.

Because notions of light, its propagation and "aether" were quite vague and unclear, the gentlemen were perhaps expecting their experiment, which was implemented on the cosmic scale of the Earth's orbital, to shed light on the questions that had been raised. In retrospect, it is somewhat difficult even to see if there was any sense in the calibration of the initial situation.

In any case, the Michelson-Morley experiment appears in a great number of physics textbooks as some kind of a prelude to the theory of relativity – as if it had created the basis for the need to explain the constancy of the speed of light in a different way. This case reveals how a certain plot, a narrative is superimposed upon the development of physics – while in fact Einstein mentions in his notes that he maybe hadn't even heard of the Americans' experiment when he was writing his first paper. He arrived at his own vision along a completely different path.

Nevertheless, all credit to the diligent raftsmen – which also Einstein gave them later at a dinner in honour of Michelson. Perhaps also Einstein was fascinated by the thought of a historic narrative of science. – At this point of this story we can, however, continue with the Finnish philosopher Georg Henrik von Wright, who is known abroad e.g. as the successor of Ludwig Wittgenstein at Cambridge, from where he moved back home in the beginning of the 1950s. In his later life, von Wright wrote a book named "Science and reason", in which he made an attempt at a comprehensive overview of the spectrum and internal state of the special sciences born during the European modern era. Also von Wright quotes the Michelson-Morley experiment as a predecessor of the theory of relativity. In my opinion, such a superimposed "historical reason" prevents us not only from seeing the truth, but also from realizing the truly endogenous nature expressed by all so called great spirits in their intellectual work. I wrote a letter to von Wright about this, and received a reply in which he said that, apparently in spite of all this, he still found it legitimate to construct connections between great spirits.

In contrast, the Finnish physicist K V Laurikainen – a researcher oriented towards the philosophy of nature, who had known the remarkable genius Wolfgang Pauli in his youth but who familiarized himself with the latter's psychoanalytic and Jungian notions on the mythical nature of mathematics only later – was clearly able to see through the superimposed historical narrative regarding the Michelson-Morley experiment. For him it was absolutely obvious that the experiment didn't have any significance whatsoever for Einstein. Indeed, Laurikainen's actual objects of interest were certain other questions introduced to the fundamentals of theoretical physics by considerations related to the essence of light.

Although the photoelectric effect had been established as the basic phenomenon of nature, as some kind of a point of departure, a constant, which was the case and to which everything else was proportional, light seemed to possess characteristics of both wave motion and particles. The reconciliation of these was considered problematic. The opposing mental images were melted together in the name of "quantum mechanics". In simple terms, this conceptual oxymoron means that differences in quality can be excluded from the picture by putting mental images of quality aside and by starting to operate with mere quantities instead.

This means that the wave-particle duality of light is reconciled by abandoning mental images in which an "atom" is seen as tiny material "particles" and a "wave" consists in the rhythm of the movement of such particles. All that is required for the quantification of everything is a ratio, a numerical value for comparing the relations of both sizes and linear momenta to each other. I.e., a "quantum" is a numerical quantity, some kind of a least common divisor of the whole of reality. The entire world is a multiple of quanta, although in our mental images there's a leap at the point where mathematics changes into macro-world matter.

Quantification has made crossing the threshold between the micro and macro worlds difficult, if not impossible. As a result, reality must indeed be interpreted solely on the basis of probability calculations. It looks as if it is ultimately impossible to definitely predict the existence or destiny of individual particles, whereas in the macro world the laws of occurrence prevail with an almost inevitable probability.

3.

Broadly speaking – I can certainly imagine a speaker who is moving his hands in huge, world-embracing gestures – the roles of the developers of quantum mechanics, the Dane Niels Bohr and the German Werner Heisenberg were distributed in the play of particle physics so that the former, acting in the spirit of integration, stressed the connection with which the quantification of everything closes the gap of wave–particle duality. Complementing each other is exactly what opposites do – indeed, Bohr called this view "complementarity". –

Heisenberg's contribution is, in a way, the opposite. He reminds that it is not possible to superpose two qualitatively different worlds of quantities. As for the world of mental images, "motion" is related to waves, while "location" – i.e., "place" – is related to particles. We cannot determine the location and the motion of a particle "at the same time". An essentially undefined area, a gap between quantities always remains. – This, or something like this, is known as Heisenberg's *uncertainty principle*.

It is evident that the views expressed here on the topic of particle physics are not those of an "expert". What appears to be sure in my opinion could be formulated as follows: in describing and explaining the fundamental level of matter, quantum mechanics ends up in quantification – and in this connection we lose the mental images that stem from the "world of everyday experience". The micro world becomes computational, but comprehensibility decreases with the corresponding increase in control.

The question is: is it possible to return to the other direction, i.e. back from mathematics? By way of extrapolating quantum mechanics to the macro level we end up at Schrödinger's cat, which is, on the basis of probability, simultaneously alive and dead. So, what is the relation between mathematics and metaphor? – We cannot answer such questions. They remain open. A philosophy of knowledge is needed, but it has no legitimate powers. We can formulate the problem, but can we ever even expect to find answers to our most fundamental questions? There is no clear answer. At best, the answer can be something suggestive, maybe a faint shrug, maybe an unfinished sentence?

K V Laurikainen was enchanted by the idea of complementarity. He was an eager defender of the notion that the schisms of all seeming contrasts in the macro world – personally he was interested specifically in the religious type of question about the relation of matter and "spirit" – could be resolved by tracing opposites back to each other. Opposites complement each other and form a whole. The basic nature of reality is dualistic, but it definitely does not follow from this that a sharp borderline should be drawn between, e.g., "belief" and "knowledge". On the contrary: We can revitalize and nurture in our minds both matters of faith and of knowledge – there is no need for any "final battle" between these two in some sort of a recovery point of "absolute truth". –

Laurikainen stressed that this was coming from a scientist, a physicist, from one of the most distinguished scholars of his time. As I wrote to him and called him an apologist, he rejected this notion very determinedly: no, he was not a defender of Christianity; he defined himself as a physicist and his views as those of a physicist.

It is strange that in the debate around K V Laurikainen which has been going on in Finland on the relation between religion and science, advocates of the philosophy of knowledge and of the philosophy of science have taken a highly anti-religious stand. When Laurikainen talked about the philosophy of complementarity and claimed that the issue had not been discussed from the proper starting points at all, he was dismissed for example on the grounds that wave-particle duality was, in principle, nothing more complicated than a seaplane, which in a certain sense is a boat, while in another sense it is a completely real airplane. The question is: can the *relation* of mathematics and metaphor be resolved with the help of a fake comparison on the metaphor level? Why is the very problem avoided? – And this evasive manoeuvre has been justified even by referring to the amount and variety of discussion going on around these issues in the world. –

A question: when one is satisfied with living on the metaphor level, where concepts are defined with each other on cognitive conceptual surfaces, isn't this as useful as what the fools do in Finnish folk stories when they try to make a too short blanket longer by cutting off a piece at one end and sewing it to the other end. – Does this make the blanket, or in this case, the conceptual fabric longer?

Does sticking to mathematics render a person blind on the metaphor level? One of the scholars dismissing Laurikainen, Ilkka Niiniluoto, who could possibly be characterized as the successor of Georg Henrik von Wright in the world of Finnish academic philosophy, has adopted and internalized a more one-sidedly mathematical and analytical approach than his predecessor. Recently, Niiniluoto wrote a review for the largest Finnish daily newspaper Helsingin Sanomat of the successful novel "Sophie's World" (Sofies verden) by the Norwegian priest Jostein Gaarder. The book presents the history of philosophy in the form of a novel, and the turning point of the book is located at the beginning of the European modern era, when a new kind of self-consciousness arose and conquered thinking. At that point, the book's main character, Sofia, realizes that she's nothing but a character in a novel, an imagined person on the pages of the current book. She starts to fear death – she realizes that she exists only as long as the story goes on. She lives on terms of the narrative and cannot escape her own story. What happens when the last page has been read and the book's covers are closed? – Is it possible for a novelist to create a better setting for what he or she wants to say? Gaarder manages to encapsulate everything with his solution: the turning point of the history of philosophy, the difference and the similarity between fact and fiction, and, finally, even questions of life and eternal life. –

In his review, Niiniluoto could not resist the temptation to comment on the way in which the author emphasized the novel's plot by manipulating the order in which Berkeley and Hume usually appear when the history of philosophy is presented in schools. School philosophers, scholastics, believe that the history of philosophy is a merciless argument-based narrative whose plot is dictated by some sort of "doctrinal progress" – i.e., "more thoroughly justified" are supposed to always refute "less thoroughly justified" arguments, allowing us to reach an ever more valid discursive ground step by step. Thus, the review contrasts Niiniluoto's strict "doctrinal" narrative with the artistically "creative" vision conceived by the author's imagination. – Which one of these interpretations of the historical narrative is more correct, more real? Let's put the question differently: which describes reality better? Which gives us more understanding, a better notion of what's going on?

I would say that these interpretations lead to *different directions*. The one offers answers, and through "valid argumentation", "logic" and "mathematic modelling" it leads to a closed chamber furnished with numbers, the door of which could be equipped with a nameplate saying "Absolute Authority." The other road is satisfied with questions and gives more freedom and possibilities for thinking. – But when the delusional nature of "doctrinal authority" is realized, everything remains always open in a way. This in turn requires an ability to withstand deep mental uncertainty. –

But, after all, it remains a fact – let me repeat this: it remains a *fact* that there are *no* answers to the questions regarding the fundamental level of matter, neither on the micro level nor on the macro level. Basically, we are still facing what cannot be known. Why should we address unanswerable questions in the name of the philosophy of science or of the philosophy of knowledge? Isn't it the responsibility of the experts of human knowledge to recognize and acknowledge also situations in which we are facing things that cannot be known?

4.

Let's stick to the question of the relation between mathematics and metaphor. Can we use whichever of the two as a starting point for moving towards the other one? The belief that "mathematics is the language of nature" is called "scientific realism", and if it is extended to the world of metaphors, it is called "scientific naturalism". If the mathematical world is entered through the philosophy of complementarity – as seems to be the case historically – then this philosophy remains nothing more than a stepping stone into the world of quantities. In that case, formalisms have won the final battle, and all metaphoric content has been lost. –

Is it possible to forget the door after entering? Is the connection between the numerical and the verbal lost here? – If we think of, for example, Laurikainen's discussions on matters of belief and knowledge, could the bitter comments by those who belittled him in the name of knowledge and science be explained by the fact that they have, so to speak, conquered their own room and slammed the door behind them? –

Whereas, if we think of the world in terms of metaphors, that "all that exists is but a metaphor", then the philosophy of complementarity may teach us how to dig out the axes of opposites from under the surface of our conceptual reality. The world of metaphor is then revealed in a new way. We see the world differently, and we have different conditions to gain control of it. I don't know if the world of metaphor taken over in this way is the very same which the anti-religious vulgar positivists are ready and for some reason also very keen to dismiss. –

In the world of complementary metaphor, we cannot react to a "given" conceptual reality consisting only of positions that have been disconnected from their negations and autonomized and which we assume to be validated as they are defined by each other. A complementary conceptual system is not such a truth system of "valid conceptual contents". – We cannot treat concepts as if they were autonomous, and as if it were possible to build a correct picture and the entire truth of the world with the help of the "correct concepts". We must accept that all concepts have the cognitive form of axes of opposites. "To be is to be the value of a variable", as the logician Quine put it. A living cat always carries its own opposite underneath its skin, and vice versa. Amélie's world is red and green.

Bohr and Heisenberg developed quantum mechanics jointly, especially during the third decade of the twentieth century. The Solvay physics conference held in Brussels in 1927 has become especially famous. In the meeting, Einstein expressed sharp criticism of the probability interpretation of the micro-world in general and of the uncertainty principle in particular. I imagine that the driving force behind Einstein's attitude was not so much a vision or choice regarding the philosophy of knowledge or the philosophy of science, but mainly his own scientific motivation, which was essentially based on the use of *imagination*. Operating with mental images was typical to him, and actually also his much-quoted harsh judgment of quantum physics, "God does not play dice", is a most visual kind of mental image. Einstein was by no means a philosopher of knowledge – instead, he read literature, pondered political questions and participated in public debate. He played violin, too. It was natural for him to cross the border between science and arts, for him this was a motivating part of his overall personality.

So, what is the relation between mathematics and metaphor? Let's put the question like this: "Is also mathematics a language?" – This could be varied: "Is also mathematics only a language?", or: "Is mathematics more than a language?" – This way we end up reflecting on the foundations of mathematics. These are questions like: Are mathematical symbols symbols, and if they are, in what sense? Does mathematics have semantics? What happens if and when we leave the real-world of meanings with the help of mathematical tools and then return? What is "real" in the first place? Do things like zero and infinity actually exist, how do they follow from equal to or not equal to? And so on. –

Let us remember that, historically, our mathematics is an attempt to document the harmony of numbers. Where our mathematics was born, in ancient Greece, it had more to do with music than with utilization – and music was indeed a science among others until relatively recently, not so many centuries ago. – But also pondering the fundamentals of mathematics leaves the deepest questions on the relation of mathematics and metaphor unanswered. Following this path, we arrive at the same uncertainty we face in connection with quantum mechanics.

It is surely not a coincidence that the philosophy of the twentieth century, the century in which both the theory of relativity and quantum theory were born and developed, concentrated precisely on problems of human language. The presumably most commented-on philosopher of knowledge of the century was Ludwig Wittgenstein, who wrote a huge number of remarks on both the fundamentals of mathematics and on the expressive potential of language. Those considerations shed much light on the nature or quality of the problems at hand. But the final question of what can be said in the first place and what cannot be said is and remains open also in the philosophy of knowledge. –

An area in which much debate has been going on is semantics. Semiotics, a separate field of knowledge focusing on signs and meanings has emerged out of it. If I were making a film, I could direct the spotlight specifically at signs and meanings, and in each angle of view one should ask: "What does this sign mean at this point?" "Point" would refer to something more than just a context, it would be some kind of a *location* structuring both thought and scenery; it would be a perspective of mind, language and world. – I would think about the question whether mathematics has semantics, while music, a particular chord, a strong harmony or disharmony would take the foreground from time to time, stealing the leading role in the narrative and leaving the picture suddenly in the background. Does music have semantics? –

But such films have already been made: their author is the Swiss-French film genius Jean-Luc Godard. From around the middle of the 60s his films have clearly concentrated on problems of language, signs and meanings, and if I'd have to pick up one person from world cinema whose role is similar to the one Wittgenstein played in the century's philosophy of knowledge and philosophy of language, I would name Godard without hesitation. During those years of global youth and moral revolution, his films were shown to full house-audiences also in Helsinki, but later generations do not see and understand them in the same way anymore. Godard's later work, for example the film "Our Music" (Notre musique), which was chosen the best film of the year 2004 by the international critics' association Fipresci and whose name is by no means a coincidence, hasn't received much attention in Finland, either.

As far as I know, "Our Music" has been shown only once by the national broadcast company (YLE). Such a tremendous display of interest says it all about Finland as a film country.

5.

Maybe at this point we should take a step backwards, away from language, away from place and time which creates a curtain between us and reality. What is language? Language is the house man lives in. The name of the house builder is known; it is history. The time when construction began vanishes into the primitive origins of history – somewhere back there the foundation stone dissolves into the primeval mist of figure and concept formation, into the earth from which we all come from. There are many overlapping layers. The house will probably never be finished; it is actually more likely that it will collapse like the Tower of Babel. "Earth to earth, ashes to ashes, dust to dust." – This biblical statement here is a quote by Stephen Hawking, in case you didn't know.

Of course, no-one could have built the house of language alone. Language is not only an historical but also a social construct. Private language is impossible. Our intersubjective language with its conceptual machinery is like a cloud above our heads, changing little by little and shaping the climate of thinking in which generations experience their worlds and live their lives. Language is the house man lives in. – Language as a historical and social construct documents the fact that humans are *essentially* a social being. This is very difficult to comprehend for us, people of the European modern era, who are blinded by our own individualism. I.e., each feeling that emerges in our body is species-specific, and each thought developing in our heads is confined to time. Even the brightest intellectual insights are culture-specific.

If we understood that the limits of our contemporary thinking are determined by our available and historically formed language and its conceptual machinery, we would know that the weather we see through the window of our house is prevailing inside, not outside. What does it mean to lower the shutters, to close the eyelids? You cannot open them and expect to see the world without, really without, absolutely without any meanings. You have been built by time, and the meanings are your very building blocks.

They are waiting for you, the meanings. History has loaded them. In the world everything is always put into place and structured by *some* kind of a reason, a certain specific kind of reason. We do not have a window through which we could see the world without any of the reason imposed on it by ourselves. – We are prisoners of our own reason: what is inside is outside. Days come and go, and in history we do change so that we've seen a very different world out there at different times. However, we can never select the boundary between the "self" and the "world"; it is set by time alone.

We live in a language world, in the house of language, in the cage of language. The limits of my language mean the limits of my world, young Wittgenstein said. High society personalities attempting to impress with their command of a number of languages tend to misunderstand this quote – and civilization altogether. What they do manage to display is their lack of sense for the depth dimension of language. The character of Hyacinth Bucket in the TV series "Keeping Up Appearances" is funny, but the laugh ought to be merciful. These are tremendously difficult issues. Even actually intelligent people may fail to understand them – that is, the way in which the ladder of language is climbed.

In climbing to the vantage point of language, Wittgenstein descends the steps of language's developmental axis deep into the primordial dawn of its history – how meanings are used for referring to meanings, and as the vantage point of self-understanding is achieved, the ladder of language can be thrown away. I would say that this cannot be understood by anyone who's not ready to withstand the deep mental uncertainty involved in the process. – Namely, it is not the case that down there we could find the deeply hidden truth in the cognitive sense. We can only understand that we have reached the limits of "knowledge". There is something that *makes itself manifest* but cannot be specified further. Once you've arrived at that vantage point of language, you can throw the ladder away.

All that exists is but a metaphor, we could formulate in the spirit of Goethe. He was of the opinion that we must look at the world's phenomena closely and carefully – this might open our eyes for something essential, an "archetypal phenomenon" (urphenomenon), for a significant element which reveals what the phenomenon is all about. Spengler, who had internalized Goethe's research approach, said that each language contains its own metaphysics. Language is not just a vocabulary and a grammar; it is history's solution to the coherence problems of thinking. Language forms nations and supports historical communities of fate. Nevertheless, "language is the house man lives in" sounds "existentialistic".

Although Wittgenstein cited Spengler as an influence, his philosophy does not pick up any doctrinal cognitive claims from anywhere – but perhaps he could be interpreted within the continuum of the phenomenological tradition of thinking. Phenomenology is, after all, an attempt to determine which of our initial concepts are located between our own ears and which are "out there". Husserl, Heidegger, Wittgenstein. These names are important in case we want to know what's going on in our heads.

The issues we are discussing here are big, maybe the biggest in the world and in life. In his film "Two or three things I know about her" (2 ou 3 choses que je sais d'elle), which was completed in the latter half of the 60s, Godard performed magic on the silver screen with cosmic star mists located in a cup of coffee and accompanied by an intolerable sound from the loudspeakers, which made the solar flare bursting from a cigarette's glowing end a thousand times stronger. In the film, Parisian residential suburbs were being constructed, crane arms were turning around and jet planes were thundering high in the sky, and the new box-shaped block buildings were inhabited by people longing for a place in the world. The film metaphorically juxtaposes a dividing society in the background with a woman who, in the close-up picture, lives a double life as a mother and as a prostitute. As the mother is putting her child to bed in the evening, the bedtime story is interrupted by a question: "Mommy, what's language?" After thinking silently for a while, the mother responds: "Language is the house man lives in."

6.

In the film "Our Music" Godard tells a story about the developers of quantum theory, Bohr and Heisenberg. During a physics conference held in Denmark, these representatives of the "most realistic" branch of science, physics, took a walk. Pointing at a medieval castle, Bohr said: "Look, the castle of Kronborg!" Heisenberg said that there are lots of castles and that they are all the same. "But this is Hamlet's castle", Bohr explained. Now Heisenberg's face lit up: "Ah, this is *the one!* That very castle! This is the place where it all happened...!" – The world-class physicist saw the castle with new eyes after connecting it to the most famous story in world literature. – But Shakespeare *invented* his story, Hamlet is only a character in a fairy tale, he is fiction, a mere product of imagination. The castle in itself was real, but what made an impression and gave meaning to reality was "only" a story, a work of imagination.

Two questions arise, the first of which is the following: where is "truth" located? The other is: where is "meaning" located? We have a tradition of thought according to which we like to locate "truth" in the so called "objective", "physical" outside world, which we assume to be independent of ourselves. "Meanings", however, we locate between our own ears – we can agree that even if something is considered equally significant by everybody, it is a subjective category. But how to solve the fundamental question of object and subject being ultimately inseparable, of object and subject affecting each other? We always see only a selected part of the whole of reality – history tells us that these selections have varied considerably over time.

There is no reason to assume that things have changed or will change in the future in this respect. We always experience "reality" on the conditions provided by our contemporary thinking. Of course, the conditions can be influenced by the revelation of "new truths". But no matter how closely and carefully we look at the picture of development, we cannot find a single conclusive answer to the question whether it is "truth" or "meaning" that plays a more crucial role.

We could imagine a whole pile of fundamental questions, starting from the relation between mathematics and metaphor as it appears on the level of quantum theory, continuing with the question of the division of roles between object and subject and concluding with questions of the relations between truth and meaning. Regardless of the height of this pile, it would be characterized throughout by one clear rule: all of these questions concern opposites. We are always dealing with axes of opposites. The structural duality manifesting itself in our souls, in our minds, apparently in both our physical and mental apparatus, our dichotomous tendencies – all of our analyses boil down to this fact. –

Do we completely understand the significance of this? I would say that as long as we keep thinking that in the world of contrasts "right" and "wrong" – "form" and "content", "objective" and "subjective", "true" and "false" – or any other dualisms can be handled as if it were possible to cut off the "better" end of each axis and to build a world entirely of the "correct" autonomous conceptual elements, we won't understand complementarity.

Understanding complementarity requires that the preservation of opposites is seen as a prerequisite for opposites to be able to complement each other. Let us think of the moral of the story Godard tells us about the "Hamlet walk" of Bohr and Heisenberg: isn't it related to the question of *imagination*? This question can be posed also on the basic level of opposites: we could think about whether imagination dwells in the world of mathematics or in the world of metaphor. –

I do not require an answer to this question, because even that would mean a restriction of possibilities. Instead, I'd say quite generally: imagination is a condition for development. Imagination is indeed motivation, vital power, it is the excess required for rearrangement. Einstein was right in his motivation, although he was wrong in his attempt to cut the branch of statistical probability off the tree of theoretical physics. Bohr and Heisenberg were also right, when they were speaking of Hamlet. Complementarity is indeed a matter of existence. Is there anything that does not require its opposite?

We could consider the European modern era to have started when Nicolaus Cusanus came upon the idea of the "coincidence of opposites", "*coincidentia oppositorum*". In fact, what happened during the European modern era was quite the opposite: instead of learning to understand how opposites form and require each other and how they best define reality in the form of pairs and axes, we use contrasts only to keep the best sides on the surface of our thinking, on the facade of reality, and to bury the other ends of the axes into the dunghills of our subconscious.

For about four hundred years, from the times of Shakespeare to the present day, our souls have been increasingly taken over by the so-called "Cartesian paradigm", i.e. the juxtaposition of a divergent Subject and an objectified Reality. Regardless of the special significance and the enormous practical world-shaping capacity of this paradigm, it is still, of course, only the topmost layer of our cultural development. Surely contrasts are much more eternal structures than the way of thinking of a given era. Surely the entire history of humans has been a war between opposites: noble and gallant on the surface, but violent, always brutal, primitive and barbaric on the reverse side.

Things will probably go on this way, because dichotomies will continue and people will more and more widely believe that Good must defeat Evil. Godard's "Our Music" has been filmed in Sarajevo, presumably with the underlying thought that this city could symbolize both the burden of historical conflicts and the hope that lessons have been learned for the future. A writer conference with intellectual subjects is described using a threefold division – between hell, purgatory and heaven – borrowed from Dante, and perhaps we do not even have to ask if this meeting is real or only fiction by the film's author. If we had learned our lesson about complementarity, this categorization would neither bother nor lure us. If we had learned our lesson about complementarity, we would know how wholes are built up, and dualisms would not destroy us.

But to understand how opposites really require each other, we should see everything, literally everything what happens, very closely and accurately. This is not the way we see or hear – we misinterpret gestures and hear something other than what happens in reality. The girl acting as the film's lifeline, plot and narrative, Olga, a metaphorical peace angel, is shot as a terrorist because the events are misinterpreted. Although we do not see, there is a force that drives us to choose. Dualisms destroy us. The film ends in paradise, but even from there the picture of Earth's events remains unclear.

7.

What would we see if we managed to look at the formation of our thoughts "closely and carefully"? – I think that a glimpse into our souls' initial darkness, in which figure and concept formation takes place and in which our thinking begins, is more than metaphorically reminiscent of the situation we encounter when we look at the starry sky. For example, it is true in both cases that the further we see, the further we return also in time. Distance and time, location and movement complement each other.

We may get a look at events that have been carried towards our planet by light for billions of years – but we don't even have a clue about the situation prevailing in a given location at the very moment. If I may, I would say that the respective observation falls into a hole of some sort of an uncertainty principle. We can never even know what is happening right "now" at the distance of a light year, a month, a day, an hour or even just a few seconds. When we look at things very closely and carefully, quantum-sized holes are left in the world.

The stars in space really resemble the internal space of our mind. We can portray the similarities with a variety of metaphors. Language and thinking, which are the same thing in the Wittgensteinian sense, are historical and social constructs, and the furthest away from us on the scale of development are the very primitive observations within which some sensory organ in us learned to distinguish objects from the background in the first place. We could probably say that we started with distinguishing movement from location. But the objects taking shape on the canvas of our consciousness in the early phases of development presumably did not have any of the specific characteristics which we currently use to classify our concepts. The original, primitive initial figures must have been objects emerging out of an all-pervading mist, and their selection was likely motivated by our survival needs. Our first words were alarm signals. –

It is all preserved somewhere in the fundamental layers of our consciousness. There, some kind of a "three-degree background radiation" of our space of thinking is still pulsating, a kind of all-encompassing omnipotent magic which we currently use anytime we feel that certain things are related or belong together. Signals were later accompanied by symptoms, which vaguely indicated sensations. Finally, symbols were developed, the concepts in whose metaphoric world we now pursue space science.

The symbol has had a long journey and a lot of available time – from the primitive beginnings of concept formation to the current words that belong to "word classes" and build up sentences that contain "syntactic constituents". Many thresholds have been crossed, but all of the layers are still stored in our brain apparatus. Each "thought" is like a constellation – which, of course, has a certain shape when looked at *superficially*, but its components can sometimes be located quite far away from each other in the depth dimension of thinking. This original "locative", the way in which language's fixpoints are located in the space of thoughts and function as supporting structures for thoughts is definitely the most important of our "thought characteristics". For example, our highest generalizing conceptual abstractions, say, mathematics and logical formalisms, still utilize all-combining magic of the most primitive kind.

From a certain point of view we still "react to language", as Wittgenstein said. In this sense, our mother tongue always occupies a special position, because we identify its deep structures immediately. However, not too many people realize what an internal glue language is for human communities. In the night sky metaphor, the human species could for example be seen as a galaxy held together by very general forces that bind everything together through remote effects. Civilizations, whose way of thinking in a given era belongs to the same category of basic humanity, could for instance be seen as solar systems. One's own mother tongue is the home planet on which all survival-promoting historical abilities have developed. – Wherever there are two languages, there are also always two communities, two cultures, two histories and two moralities. –

Humans are species-specifically – *essentially* – a social being, and it is precisely our social features that have enabled us to survive as a species and that will enable us to survive, if we are to survive at all. This is something very difficult to comprehend for us, people of the European modern era, who are blinded by our own individualism.

I have sometimes asked particle physicists if there's something on the fundamental level of matter that could be used to separate between so called "living" and "inanimate" matter. Such a factor cannot be found, and, of course, the very question is posed in the world of macro-world metaphors, in a way which excludes any answer operating with mere "quantities".

"Life" is a complete mystery to us; an enigma, the biggest of all metaphors. Yet it is our most fundamental matter of fact. We can look at the stars in the sky, many romantic poems have been written about them – but their complete inexplicableness is also an existing reality, whose total absence from our daily lives is something that never ceases to astonish me. People look for "miracles" outside of themselves, in the physical world, without realizing that each and every idea emerging in our own heads is an inexplicable miracle. Our stars are located between our own ears. Why do we brood hell in there, although that sky is paradise?

8.

This year (2014), at the age of 83, Godard has released a new film called "Goodbye to Language" (Adieu au Langage), which experiments with 3D technology. The film's premiere took place at the Cannes film festival in May. The master himself was not present, but in March he gave an interview in Paris in which he told about the film and also about his life's work more generally. I would say that this interview is the deepest content ever to be presented on the subject of cinema.

As suggested by the film's name, human language is dealt with precisely in terms of its most fundamental elements – figure and concept formation, locative positioning, axes of opposites, signs and meanings. Cinematic language in this connection is a special case of language: visualization is a metaphor, a direct image of our consciousness, a space of thinking displayed on the silver screen. – Above, I compared Godard with Wittgenstein, of whom it was said that he had developed an extraordinary ability to analyse the actual diversity of situations of language use. The same is true of Godard: he has an ability to see language and thoughts as locative charges, as spatial visualization.

Do we say goodbye to language at this point? – Maybe, in a certain sense, but Godard reminds us that there's a Swiss canton where the word "goodbye" can be used also for saying hello. As far as I understand, he suggests that it is typical for language's axes of opposites that concepts can have completely opposing meanings. – Such a phenomenon reflects the primitive level of figure and concept formation, and I believe it follows from the way in which we use the same mechanisms to produce sensations and counter-sensations in our body. Of course, this phenomenon can also be attached to doctrinal and theoretical connections, using expressions to shuffle the cards of content, like Marshall McLuhan used the concepts "cool" and "hot" in seemingly contrasting senses when he talked about media. –

But, of course, theories are not made any better by that, and Godard's motivation is indeed quite strongly opposed to all theoretic argumentation. His orientation attempt heads away from all theory construction, from all conceptually validating cognitive security – back to the original space of thinking, where all things are open.

Mental figures can form axes of opposites, and also Godard refers to something like this as he occasionally stops to search for the opposite of a concept that appears strangely autonomous. – "Such-and-such... what is it...? Wait, what would be "non-such-and-such"...? Is there such a thing...?" – Using very fragmentary examples, he reflects on the ways in which locations are performed in various languages. The interview returns also to the old subject of how Godard often tries to depict the "space between people" in his films. – For example, we can remember the forest walk scenes of "Pierrot le Fou" (Crazy Pete), in which the distance between the man and the woman grew to the point where it filled the entire widescreen, so that eventually the connection was about to be severed. – Now it seems that Godard is interested in 3D technology precisely because of the possibilities the third dimension offers for the locative placement of subjects.

It is true that the depth dimension has a particular connection to certain specific abilities and the overall arrangement of our cognition. For example, we perceive "time" somehow through the depth perspective. How does it exactly happen – maybe Godard's camera takes us closer to seeing this phenomenon.

In my opinion, the essential content of this rather dramatic, yet utterly minimalistic interview – it was realized without any external pomposity – has been explained exhaustively above. What, by contrast, is impressing in the interview is Godard's appearance – there are few people who allow themselves the kind of insecurity in which Godard seems to thrive. He is extremely focused, but does not try to enchant anyone with his words.

Suddenly I realize how his wandering thoughts are searching for their locative place on the soil of the mind's original magic, where profundity is surprisingly accompanied by the danger of abusing original primitive power authority. That is how it is – our thoughts consist partially of locations of "power". It is tragic that we need them – "power" and "control" – yet power drives us to tragedies.

With conscious vagueness, Godard tries to refer to and dig out – from somewhere very deep – the prime factors of the figure and concept formation of human language. In doing this, he alienates himself from the stage of life with the same technique as the main characters of his films, who have been cautiously alienated from immediate experiential reality effects. When he speaks of the locative elements of thinking, he must confine himself to a very limited set of expressions – it is impossible to specify these things cognitively or theoretically, because they are not located on the same conceptual surface on which our "reason" would be keen to operate. The hands of the old filmmaker make unsure gestures in the air, reaching out for something in the same way as his sentences do. Deep breaths, sighs; many sentences are left unfinished.

I fear that a speech therapist will soon arrive at the scene along with a presentation skills consultant, ready to help the old man in his trouble. Maybe a professional language planner will come and instruct us on the correct spelling of "know-all". They do not realize that somewhere in the depths of thinking the underlying mental figures differ in their locative character. These know-alls are always right. They are the ones who are characterized by being right. A person who ends up at the edge of uncertainty, where opposites start to complement each other, cannot be right. But this person is the one who is not wrong about anything.

I wonder what kind of a metaphor this remarkable man himself is. Is he the storyteller, the story itself or a character in it? Is he a being, a quality or an event? Is he a Subject or an Object? – We do not know. The questions posed by him question him. – The world under all noise, turmoil and superficial knowledge is still open. There is an open space in which thoughts take shape and wander, searching for their place amidst their supporting structures. How are the elements located, and in relation to what. – "Knowing" is something conceptual and very new – when we "know" something, we have already fixed the locations. After this point, only conceptual specification remains, and for some reason we believe in it with considerable piety. – By leaving his sentences unfinished, Godard manages to give an impression of the quality of the issues at hand at the deep level of thinking, for example of how problematic the role of "narrative" is. In the new film, a dog is located there.