

ДИСКУССИОННЫЕ ВОПРОСЫ

УДК 167:61

W. Kofler

PHILOSOPHY FOR FUNDAMENTAL SCIENCE AND APPLIED MEDICINE¹

1st Moscow State Medical University, Innsbruck—Moscow, Austria—Russia

Any medical measure has to be done on a scientific basis. But there is no specific theory for medicine. Therefore medicine has to borrow theories from the related sectoral disciplines and to modify its tools according to its needs. These disciplines are based on (former) incompatible paradigms (worldviews = ontological positions): Natural sciences on a materialistic monism, human- and social economic disciplines on an idealistic monism. The body–mind dilemma is an expression of this incompatibility. Modern Medicine has two other similar gaps which should be bridge thanks to a comprehensive theory: the incompatibilities on one hand between individual and society and between reality, *Wirklichkeit* and virtuality. Therefore we have indispensable but not adequately linked scientific branches in medicine: Natural scientific-based medicine, psychosomatics and social medicine - integrated into Public Health with its connections with the health relevant aspects of many professions. Einstein had a similar problem. He was able to solve it. His experience can be used for a more powerful medicine. His problem was that the theories of Newton and Maxwell seem to exclude each another according to the 3rd sentence of the Aristotelian logic. He could handle this with two instruments of his theory of science: He pointed out that any theory and ontology is “just a free invention of the human mind” and can be justified just with the additional explanatory power for a better orientation in our world. The decision for a special ontology defines what we can observe and in which way we have to interpret the observed. This is demonstrated by an historic example. The second instrument was a technique to link former incompatible theories thanks to a modification of a term which is used with the same wording but different meaning in the incompatible theories. The technique is described. Einstein was not only able to unify mechanics, electromagnetism and gravitation within his Relativity Theories. His philosophical tools allow to apply further on “Newton” and “Maxwell” for the “classic” topics. Einstein recommended the application of RTs just for problems which are more basic. So he increased the power of physics without any loss of the given power. One more reason to think about the technique of Einstein: Medicine could not accept even a temporary loss of power in consequence of the implementation period of a more basic understanding of health problems Refs 33. Figs 6.

Keywords: theory of science, ontology, virtuality, Extended View, evolution, systemic approach, medicine.

О ФИЛОСОФИИ ФУНДАМЕНТАЛЬНОЙ НАУКИ И ПРИКЛАДНОЙ МЕДИЦИНЫ

В. Кофлер

Статья посвящена основополагающим принципам научного и клинического мышления и путям их интеграции в практическом умственном труде врача. Риски для здоровья и окружающей среды меняются, и сейчас, впервые в истории человечества, виртуальный мир оказывает на нас влияние: например, виртуальная экономика подвергает опасности реальную экономику. В настоящее время есть два подхода в медицине, которые до сих пор не связаны из-за дилеммы

¹ Based on the introduction guest lecture for the young researchers' conference “Fundamental science and clinical medicine” 19th April 2014, St. Petersburg, State University.

«тело — разум». Это, с одной стороны, медицина для души без тела и, с другой — медицина для тела без души, без вариантов объединить дилеммы «личность — общество» и «действительность — виртуальность» в медицинской деятельности на повседневном уровне. Любое медицинское измерение должно проводиться на научной основе. Но нет никаких общих теорий собственно медицины. Поэтому медицина вынуждена заимствовать теории из соответствующих отдельных дисциплин и изменять свои инструменты в соответствии потребностями. Эти дисциплины развивались на основе ранее несовместимых парадигм (мировоззрений или онтологических позиций). Естественные науки ориентировались на материалистический монизм, а гуманитарные и социально-экономические дисциплины — на идеалистический монизм. Дилемма «тело — разум» и служит выражением этой несовместимости. А. Эйнштейн отметил, что любая теория и онтология — это «только свободное творение человеческого ума» и она может быть оправдана лишь благодаря своей дополнительной разъяснительной силе, позволяющей лучше ориентироваться в окружающем мире. Выбор онтологии в каждом конкретном случае определяется тем, что мы можем наблюдать и каким образом мы должны интерпретировать наблюдаемое. Об этом свидетельствует исторический пример: методика, с помощью которой А. Эйнштейн разработал связь между ранее несвязанными теориями и сделал рамки естествознания и других наук совместимыми. Определения движения Ньютона и Максвелла, казалось, исключали друг друга по аристотелевской логике — как психосоматика и основанная на естествознании медицина, но Эйнштейн эту проблему решил, отметив, что в противоречии находится не природа, а содержание терминов. Анализ различных отраслей медицины показывает: существует дополнительная основополагающая разница между стремлениями частных биомедицинских наук, например биохимии, анатомии, физиологии, медицинской биологии, и прикладными медицинскими дисциплинами. Медико-биологические науки ориентированы на обобщающие объяснения, а врач должен выполнять свой профессиональный долг в конкретной индивидуализированной ситуации. Цель пациента не в том, чтобы получить объяснения относительно исхода и, скажем, эффективности лечения в общем. Он ожидает от врача индивидуального вмешательства и исцеления, на основе учета особенностей его личности, а также конкретной биологической, экономической, экологической, социально-психологической ситуации. Врач имеет дело с намерениями, желаниями и страхами, а также с их реальным влиянием на здоровье. Любой медик испытал силу этих субъективных параметров. Поэтому, стремясь к пользе для больного, он должен интегрировать аспекты, которыми в принципе пренебрегают исследователи, сосредоточенные не на пользе, а на истине, то есть на обобщенных законах и принципах. Эта несовместимость может быть преодолена путем интеграции аристотелевских положений о так называемой «causa finalis». Это нередко применяют для понимания мотивов деятельности человеческой личности, но, как правило, не для эволюционно более древних систем. Однако такое ограничение будет преодолено, если мы применим неоаристотелевскую концепцию глобального эволюционизма к историческому развитию интенциональности в целом. Тогда и другие живые существа могут иметь намерения, хотя и не на уровне целей и планов человеческой личности. Техника Эйнштейна и положения Аристотеля позволяют преодолеть разрыв между ранее разобщенными научными дисциплинами, равно как и между общими и индивидуальными аспектами причинности, в том числе и в медицине. Это будет состоятельным, если мы примем не просто материалистический либо идеалистический субстанциальный монизм, но основанный на глобальном эволюционизме нейтральный монизм. Врачи не физики, не биологи и не психологи, а также и не философы, но только пользователи различных дисциплин — в соответствии с их современным состоянием, — и они могут выбирать инструменты из наследия этих, особенно если приняты несовместимые позиции. Таким образом, решение об особом инструменте — заявление о личной позиции в рамках, например, противоречащих друг другу онтологий в философии. Правильно будет совмещать и модифицировать такие предложения — при условии, что это делается логически непротиворечивым образом. Тогда появится возможность проблемно ориентироваться в одних случаях более на материалистические, в других — преимущественно на идеалистические аспекты. Мы должны признать, что парадигмы изменились (и будут меняться дальше) и служат всего лишь инструментами, между которыми нужно выбирать, чтобы иметь дело с наиболее эффективными и адекватными средствами решения конкретной медицинской проблемы. Библиогр. 33 назв. Ил. 6.

Ключевые слова: теория науки, онтология, виртуальность, расширенное представление, развитие, системный подход, медицина.

1. A short analysis of the given situation

1.1. The basis of medicine is in discussion

The risks for health and environment have changed and will change. First time in the history of mankind virtual world influence us. e.g. virtual economy endangers real economy and therefore health.

The famous psychiatrist Thure von Uexkyll stated in the last century: There are two types of School medicine which are not linked up to now because of the „body-mind dilemma”: *A medicine for souls without bodies and a medicine for bodies without soul* [1]. In the 21st century we have to extend this analysis: Not only could the scientific gap not be bridged between the understanding of body and mind on a causal level. The same is with the gap to understand “individual and society” and “physical reality, psychosocial reality (better “Wirklichkeit”) and virtuality” on a causal level into medicine. Therefore there is a wide discussion about the concept, which was proposed by Jacob and Thure von Uexkyll up to now [e.g. 2], about an adequate understanding of health [3] within the related systems [4]. And worldwide we have discussions about adequate approaches for the humanity survival [5, 6].

But the facts are obvious. And every medical doctor is obliged to do his art according to scientific principles. So he has to integrate the influence of the social conditions on the development of the person as a social being and the options of the different social structures to influence the processes on any level to improve the level of health to prevent illness and increase the offers for curative medicine (Public Health).

1.2. Theory of sciences (philosophical tools)

Why medical science is not able to handle adequate that what each individual person is able to practice permanently: To integrate physical, chemical, biological, cultural, social etc. influences of the environment with the personal wishes, fears and other intentions within a comprehensive answer? It is a lack of adequate tools of the actually used theory of sciences. These allow us answers just on the level of risk — with all its limitations.

1.2.1. The dilemma could not be solved sufficiently thanks to the biopsychosocial model

The problem is well known — latest since the classic publication of Engel in science 1977 [7]. But his proposal of a “bio-psycho-social model for medicine” on the basis of the General System of Bertalanffy [8] could not be transferred into a causal model. The reason was the different content of the identical terms which are used in the different systems of a person (e.g. of the cells, tissues, organs, within family, society, cultural structures etc.) [9]. But we should not believe to be able to solve the problems of the future just with the tools of the past! Our students should solve problems of individual persons within their families but of health related influences of different types of individual and special environmental settings even in 40 years. So we have to take care for best available offer or to modify them or to create adequate ones: This should be a moral must for the medical society.

1.2.2. We can use the success of Einstein’s ongoing:

Einstein had a similar problem like medicine: Incompatibilities between indispensable disciplines: The definitions of „movement“ by Newton and Maxwell seemed to exclude each another by Aristotelian logic — like psychosomatic and natural scientific based medicine seem to exclude another, but also virtuality, “Wirklichkeit” and reality: A statement in mechanics about the movement e.g. of a train moving between Moscow and Paris can

only be scientifically correct if you integrate the position and the speed of the observer: For the person staying close to the rail track the observation would be: The speed is 100 km, independently of the direction (east or west). The observation of the cosmonaut would differ: The train is moving with 800 km or with 1000 km — depending if the movement is in direction of the rotation of the earth or against. Maxwell would accept these statements but would insist: The speed of the light e.g. of all photons of a candle burning in this train would all the time identical — even the observer would be a photon emitted by this candle. You see: A statement about the speed of the light can be only correct if you exclude the speed of the observer. Both statements exclude each another. Aristotle tells us that just one of them can be correct. The other must be wrong and there is no third solution.

Einstein solved this problem: He pointed out that not the nature is in contradiction — just the way scientists are dealing with them: They simplify their view and the content of their terms according to the actually related topic. This recognition was one of the fundamentals for the creation of the Relativity Theories. The other was a very clever tool to deal with terms.

1.2.3. What can you catch with your theory?

Therefore we should think over regularly about the power of our theories and about their restrictions. This is not so common within natural scientific communities. Scientific disciplines are often based on the assumptions:

- the view of the world and the used techniques (“nets”) are ideal and generally applicable;
- the world is ideal and generally predictable too.

Einstein falsified these assumptions: Any theory and any world view are just a “free invention of our mind” about our world and focused and restricting on special aspects. No theory can be ideal. This is not a surprise. Our world is also not ideal. But many theories are based on the wrong assumptions of an ideal and generally predictable world. This must cause failures.

These restrictions and options are based on philosophical tools. So we need more adequate philosophical tools.

Maybe your position is: I do not need philosophy. I could discover in the past so relevant results without philosophy. Philosophy is “unscientific metaphysics”. Maybe you are a sufficient scientist and you could contribute successfully to the increase of our knowledge. But it is impossible to do science without a paradigm (= “worldview” or ontological position). You used ontology unconsciously. If you would use philosophical tools consciously then you can expect an increase in the power and a loss of negative consequences of a misuse.

1.2.4. An alpine metaphor for theories of sciences

Let me compare the relationship of fundamentals of applied sciences (e.g. the used paradigms, techniques of epistemology or different logics) and the problem-oriented use of scientific techniques (e.g. the principles of good laboratory practice, correct selection of a random sample etc.) with a historic alpine tradition: “Fensterln”: “Fensterln” means: To visit your girl top secret by climbing up to the window. The easiest way is to use for this an adequate long ladder. But you do not need this ladder anymore when you have arrived in the room. Then you have to show other skills, attitudes and knowledge.

The ladder can be compared with the fundamentals: epistemology and ontology as the two ladder beams, different logics, ethics, etc. as the rungs. The techniques within the room

with applied scientific tools. If you are lucky and your girl lives at the ground floor you do not need any ladder at all.

In other situations a ladder is also very helpful but should be long enough. But there are problems which need exclusive solutions. We have more and more complex problems which need „exclusive“ solutions!

In spite of my high respect for the giant progress in modern especially curative medicine! But we should open the other eye for the neglected and open aspects too! For that reason we should analyze the given situation of philosophy and medicine: **There is no specific theory for medicine.**

1.2.5. Medicine borrows tools for brothers which seem to be enemies

Therefore medicine has to borrow theories from the related sectoral disciplines and to modify its tools according to its needs. These disciplines are based on incompatible ontologies: Philosophers would say: Human- and social economic disciplines are working on the basis of an idealistic monism. They skip out any materialistic aspect and reduce their view on in idealistic aspects as values, wishes, fears etc. Natural sciences are based on a materialistic monistic ontology. This means they deal with objects as if they it was sufficiently to characterize them only with matter and the processes between objects caused by energy and powers.

Both positions are helpful for special problems: There is no need to include idealistic aspects to calculate the flight path of a missile or to consider the different qualities of paper in a research dealing with the influences on the exchange rate between dollar and ruble. But are subjective aspects in topics of natural sciences really just so called “epiphenomena” and therefore causally not relevant for bodily phenomena and therefore negligible?

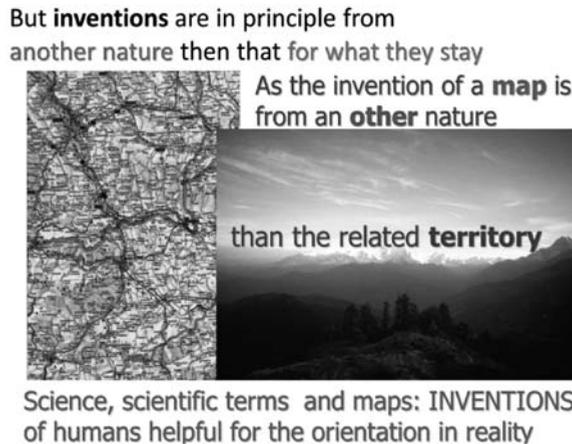


Here you see Brigitte Bardot: alive, 23 years, 63 kg and Aphrodite: terracotta, 2000 years, 63 kg. Are the differences between them negligible? For a materialist jess: The same mass and therefore same number of quanta — modified by materialistic evolution. The “rest” are epiphenomena and for behavior irrelevant. For me not — and for any medical doctor not! Why? BB can fall ill — Aphrodite not!

So we have to attribute additional aspects to quanta as it is sufficient for physics. Additionally the “energy” we have to deal with information. But “information is information, neither energy nor matter” (N. Wiener) and ”information is a difference which makes a difference” as Gregory Bateson stated. So information can be understood as the result of a process between physically characterizable entities[10].

1.2.6. Is the body — mind — dilemma just an artefact of sciences?

Einstein shares this position: “*Body and soul are not two different things, but only two different ways of perceiving the same thing. Similarly, physics and psychology are only different attempts to link our experiences together by way of systematic thought*” [11]. He would formulate: Physics and psychology are just “free inventions of the human mind”. These “*inventions can only be justified*” thanks to the “*better orientation within our world.*”



1.2.7. Not only terms, but every theory and ontology is an invention

This position is well known in linguistic. It was introduced into this discipline by Ferdinand de Saussure 1916 — later then Einstein has applied it. The terminus technicus for this is “arbitrariness” [12].

But Einstein made the next step — relevant for theory of science and philosophy: If the terms are free inventions of the mind then also the theories and ontologies are free inventions. And all of them must have restrictions

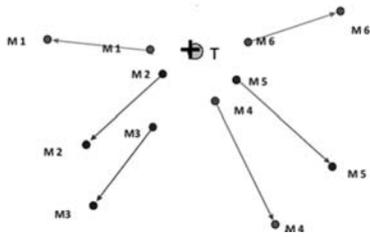
If it is so, then we don't get only the power of the borrowed theories but also their restrictions! And then **your decision** about the adequate theory including its related ontology defines “what we can observe” and in which way we have to interpret the observations.

1.3. The theory defines what you can observe and in which way you have to interpret it: A “thought-experiment”

I demonstrate this with the classic thought-experiment which Bertrand Russell has created to explain his understanding of the special worldview of Einstein [13]: I modified it with respect to the need of applied medicine:

Imagine a situation in which a scientist would be only able to recognize phenomena of the real world on the level of his scientific discipline: Than a physicist would be only able to observe physical phenomena, but not e.g. living beings. Assume a situation in which a big mass in the center is surrounded by smaller masses. Then a sound occurred and the smaller parts moved away from the big mass.

The first scientist would be restricted to physics. He could observe the sound and the movement of the small masses away from the big mass and nothing else. Such a physicist would have to explain this process just as a passive movement caused by a repulsing power from the big mass.



Graph 1. Just physical observations of movement of smaller masses M1-M6 away from big mass T



Graph 2. Biophysical observation allows to distinct the smaller masses as humans the big mass as a free tiger

Graph 2: The second scientist is a biologist. He can distinct also between living and inanimate entities and will recognize: The big mass is a tiger in a cage, the smaller masses are persons around the cage. The sound was produced by the gate of the cage, moved by the wind. So he concludes: The persons got the stimulus: The tiger is free and could get out of the cage. The predictable response is “running away”: This movement is an ACTIVE MOVEMENT — not because of any physical power of the tiger.

of a tiger — combined with the information of an escaped tiger.



Graph 3. A psychologist would assume: The expectation of the tiger is enough to flight



Then the scientist would come to the conclusion: Maybe paranoia. Spontaneity with identical phenomena but different diagnosis

Graph 4. The psychiatrist can distinct between “normal” and ill valuations

The third scientist is a psychologist: He would expect the identical reaction without the presence of the tiger, if it was possible just to create the assumption of the free tiger. E. g. thanks to a loudspeaker behind a bush that produces the roar of a tiger — combined with the information of an escaped tiger. Then any person which is able to perceive the roar would have asufficient reason to run away.

What would be if the fourth scientist would be a well-trained medical doctor: His theory allows to attribute meaning to stimuli and to associate them with memory for active spontaneous actions to distinct on this basis between ill and healthy. The sound coming from behind the bush would be the trout quintet and a person would be stimulated by this sound to run away. One person would explain like this: Oh trout quintet- water — running water! Oh I have forgotten my bath tub! Then the scientist would come to the conclusion: This is plausible. A normal healthy person! Or the person would tell you: “The tiger! Doctor run away! The tiger is coming”. Then the scientist could come to the conclusion: Maybe paranoia. You see: Spontaneous active movement in consequence of identical stimuli with identical phenomena can cause different diagnosis of a well trained outside observer — if

he has the plausible information. But neither the information can be observed by an outside observer nor a difference in the behavior.

You see: The theory defines what you can observe and in which way you have to explain the received information: from the materialistic position — passive movement! Totally different from an idealistic position or a neutral substance monism²: Active movement, caused by more complex valuations according to the assumed ontological level of the observer: just a stimulus response reaction without free will, a valuation including free will, a level which integrates entities with scientific positions about health and illnesses within our world.

2. Additional power for medicine thanks to the problem oriented use of philosophical tools and their flexible combination and modification for medical problems

2.1. Medical doctors are not physicists, not biologists or social scientists etc

Therefore we are also not philosophers. We are users of the different disciplines — all the time according to the actual stay of knowledge of them. But we can select between them — especially if incompatible positions are accepted: as in psychology, social sciences but within philosophy too. Therefore a decision of the doctor for a special tool, which seems to be problem oriented adequate, is not a statement about a personal position within e.g. controversial ontologies in philosophy. It is correct to combine such offers — as long as this is done in a logic correct way.

So it can be adequate to deal with our world as the world would be a plate: If the problem is to evaluate the correct construction of a wall: Then you can use a water-scale. The water scale is based on the assumption of parallel lines. We know: There are no parallel lines. But for our actual problem with the wall it is sufficient to accept the result of the water scale. But we have to lock to be conclusive within all argumentations. Therefore we will not insist in the view “the earth is a plate” in any situations — just in such one, in which the failure of this simplified view is negligible. So it is possible to use problem oriented for one problem e.g. a materialistic position, in another situation an idealistic position — if we are based on a neutral substance monism.

If you do this you are in a good agreement with the physicists and Einstein: It is helpful to simplify the knowledge of field of gravity, energetical fields which cover electric and magnetic field and their expression as mass. It is useful to speak in classic cases further on of “force”, “power” etc. It makes the “story short” to speak of “rainbow”, about “body” and “mind”, and to arrange a meeting with your girl at sunset. This does not mean that you insinuate that the person has never heard that “power” is just a metaphor, simplifying a long story, and that the sun is not moving around the earth. If you use force of gravity then you use a “metaphoric term” — you use that “behind” this simplifying formulation a more fundamental explanation is available — or can be expected.

² A neutral monism allows to focus problem oriented on a materialistic position or an idealistic one, but it does not exclude dogmatically one of the ontologies. A neutral substance monistic position attributes to the identical substance the potential to modify its efficiency either on information related or on energy related effects. So the related efficiencies stay in relation of complementarity (N. Bohr): If you (or any observer/interacter) focus your interest on one type you can not observe the other one: As you can not observe the other site of a coin on your hand — but you would not insist that the other side does not exist because of the fact that you can not observe it now.

2.2. Three key problems for comprehensive medicine — three challenges for philosophical tools

I list three problems we should be able to handle adequately and announce a proposal for its solution:

1. How to link sectoral disciplines, that were so far assumed as incompatible: for that we modify the offer of Einstein's philosophy.

2. How to handle that applied medical activities are usually focused on individual cases but fundamental medical sciences is focused on generalizable positions: for that we propose the revival of the "four causes" of Aristotle (especially of *causa finalis*).

3. How can we invent a health oriented model for a human person which is compatible with the answers to question 1 and 2: for that we use an "Extended View" on evolution.

2.2.1. How to link incompatible theories thanks to the technique of Einstein

His problem I have described above: The prerequisite for mechanics is: A statement about the movement of a star can only be correct with integration of the position and the speed of the movement of the observer. The prerequisite of electromagnetism is: A statement about the speed of the light of this star can only be correct if you do not integrate the position and the speed of the movement of the observer. This seems to exclude each another according to the third sentence of Aristotelian logic: One of the sentences must be right, the other must be wrong and there is no third solution.

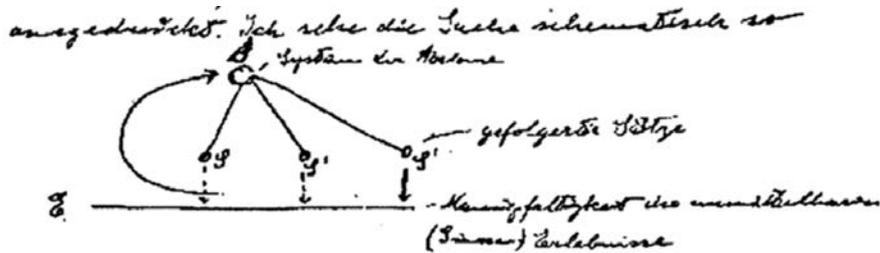
The proposal of Einstein was: Not the nature is wrong — the inventions to deal with nature simplify the natural process: But why it was correct to use the term "movement" in both cases? This seems primarily obvious: Both cases deal with the shift of a physical entity within an Euclid-analog grid. And for that we should use the same term because of the fact that we are willing to communicate about the same. But it is also obvious: There must be anything "behind" these two physical phenomena which is on one hand different — to explain the reproducible facts — but on the other hand familiar — that both effects can cause a shift within the identical grid. This "behind" must be "given" in reality but skipped out in the "wirklichkeit" of the community of physicists. Therefore the understanding of the explanations — which were formulated in physics with mathematical formulas — cover "hidden" contents, which could be recognized thanks to critical but open thinking about a modification of the contents. Einstein has this done and created that "what is behind"³ the movement of masses (mechanics), of electromagnetic field (electromagnetism) and thanks to gravitation.

Such ideas seem to be understandable for an absolver of a high school as long as it would deal with aspects of daily life: Than we should understand that a reproducible phenomenon can be to explain on different levels but all the time conclusive, if we integrate more arguments e.g. about the historic background of the related persons. But why mathematical formulas should allow interpretations? This is not a problem for mathematicians but for me and maybe also for you. Therefore I will give a statement of Einstein as a helping hand: "*As far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality*" [14].

³ In the Extended view „behind“ is understood as „in consequence of the evolutionary process“.

2.2.1.1. The letter Maurice Solvine

Even his friend Maurice Solvine could not understand the technique of Einstein. So he asked him: And Einstein has sent to him the following letter [15]: The easiest explanation of his epistemological technique. Here you see his original letter.



- (1) Die E (Erlebnisse) sind gegeben.
- (2) A sind die Axiome, aus denen viele Folgerungen gezogen. Psychologisch beruhen die A auf E . Es gibt aber keinen logischen Weg von den E zu A , sondern nur einen intuitiven (psychologischen) Zusammenhang, der immer „auf Widerruf“ ist.
- (3) Aus A werden auf logischem Wege Einzel-Aussagen, Satzgebilde welche Ableitungen der Konsequenz auf Richtigkeit erheben können.
- (4) Die S werden mit den E in Beziehung gebracht (Prüfung an der Erfahrung). Diese Prüfung gehört genau betrachtet ebenfalls der extra-logischen (intuitiven) Sphäre an, weil die Beziehung der in den S aufgeführten Begriffe zu den Erlebnisereignissen E nicht logischer Natur sind.

Here I add the english translation to this historic letter.....I see the connection schematically as follows: A system of axioms; S deduced sentences

- (1) The E (experiences) are given.
- (2) A are the axioms we use for deductions. A are psychologically based on E. But there is no logic way from E to A, but there is only an intuitive (psychological) connection which is just for “revocation”.
- (3) The conclusions S are deduced from A thanks to the use of logic. These conclusions can claim to be correct.
- (4) The S were brought in relationship to the E (tested on compatibility with the experiences). This procedure is also part of the extra-logic (intuitive) sphere in the strict sense because of the fact that the type of dependency of the terms used for the S to the experiences E are not from logical nature.

It is a bitty but Einstein did not integrate this graph into the volume 7 of the library of the living philosophers [16]. Einstein is the only natural scientist who was received this honor that a volume in this series was dedicated. This can be compare as the Nobel Prize in philosophy.

Einstein proposed to invent a more general definition of “movement” and adjust the formulas in such a way that the new definition covers all cases of “Newton” and all cases of “Maxwell”. The Relativity Theories were invented.

We can express this with set theory: Former distinct ground sets are now subsets in the new ground set of the RTs.

2.2.1.2. *“Theories of principles” does not falsify the linked theories*

Holden, the professor for philosophy of science of Harvard university, coined the term “theories of principle” for such types of theories. They are distinct from the theories according to the understanding of Popper [17]. Popper proposed to Einstein that he has falsified the theories of Newton and Maxwell. Therefore they should be “wasted”. But this was not the position of Einstein: He did not say: “Sorry but Newton is wrong and Maxwell is wrong too. I know now the objective true” or “I am closer to the objective true.” No. He takes the position: Newton invented a model do deal with mechanics very efficient, but inefficient for the aspects of electromagnetism. Maxwell created another model for movement in physics, which is very helpful for the applications of electromagnetism, but not for mechanics. Now I have created a model which allows to handle with gravitation from the view of mechanics as well as of electromagnetism. But even this model is not the objective true, but very helpful: It is a more fundamental invention covering the power of Newton and Maxwell, but should have other restrictions which I do not know in the moment. You can use my model for any problem in mechanics and in electromagnetism. But the win on power is so small that it can be neglected in classic problems of mechanics and electromagnetism. Therefore use Newton or Maxwell further on to deal with “classic” physical problems.

2.2.2. How to handle individuality and generalization, predictability and spontaneity thanks to a revival of the “causa finalis” of Aristotle

2.2.2.1. Causa finalis can be seen independent from the assumption of teleology

Each individual person is restricted in her/his resources, but their individual wishes, fears and other intentions too. Some of them are common and typical for its psychosocial structures; others are different but usually acceptable within the social and legal rules. Therefore the person has to select the use of the resources. No outside observer can know the ideas, wishes etc. of an individual. But you can learn by consequent observations the preferences, e.g. of a chess player: The horse and the runner have “generalized” the same value, but a chess player can prefer e.g. the horse. Then the observer can “predict” that this individual will save the horse and not the runner — but not because of a “must”, but just because of the common and now repeated decision of the individual.

To save the horse to win the game would be the “causa finalis” according to Aristotle for the moving of the chess-figure. There is no need to attribute to “causa finalis” a teleological/religious aspect. Maybe a different valuation of the intentions can be the final reason not to save the horse and to win the game: Maybe because of the intention of the father that the young son should be the winner — with the intention that the son should have more pleasure and to continue to play chess.

2.2.2.2. *Causa finalis — a conclusive argument for spontaneity*

Such a view would allow to open the understanding for a logically conclusive argument for spontaneity. And the sufficient use of spontaneity and the decision for a “new” application of the given opens the door for the understanding of the occurrence of emergent new.

In the general view we have to take in consideration that chess players can have different preferences. The average of the decisions will inform us about the “generalized value” of the two figures within a collective — without any information about the individual preference and potential “higher level intention” of the individual father in special settings. There is no help to integrate a *causa finalis* in “generalized questions”. “Collective” is from another nature than “individual”!

But this position does not exclude to accept that on individual level a *causa finalis* is helpful and indispensable to deal sufficiently with the given situation.

As long no incompatibility would occur as the argument for neglecting of *causa finalis* is just the intention on the most simple research design and not the dogmatic ontological position against a *causa finalis* in our world. Than you can shift between the integration of *causa finalis* or to skip — temporarily and problem oriented — this type of cause out of your design.

2.2.3. How can we invent a health oriented model for a human person in his different environments which is compatible with the answers to question 1 and 2

The prerequisite for the applicability of the technique of Einstein as a term for a process which is accepted within the disciplines which should be linked but is used with a focus on the related discipline but neglect their use within other disciplines. This term should be compatible with a health relevant — maybe underestimated — aspect in the offer to deal as well with individual — and therefore not predictable — and as with generalized and therefore predictable aspects within our world and therefore with the integration of “*causa finalis*”. Such a term is “evolution” — but from an extended view.

2.2.3.1. *“The synthetic theory of evolution” — matter of critical recent scientific discussion*

The Synthetic Theory of evolution was nearly “untouchable” over decades for followers of Darwin’s fundamental discovery. But Synthetic Theory skipped out aspects which were integrated into the world view of Darwin: E. g. that even an evolutionary process should be assumed even for the inanimate entities and the step from inanimates to animates — not only to explain the evolution of more and more complex species, which is the content of his classic book [18]. And he applied the understanding of evolution not only on the differentiation of energetical/materialistic aspects but on the evolution of (from the philosophical point of view) idealistic aspect. So he published his position about the evolution of the emotion of the earthworm [19]. Nobel Laureate Konrad Lorenz applied this aspect for the development of the so called “evolutionary epistemology” which can be focused on the sentence: “Evolution is a knowledge gaining process”.

There is no discussion. The synthetic theory allowed fundamental progress in the understanding of life. But any theory has its restrictions: One of the restrictions seem to be obvious thanks to the facts of epigenetics — which seem to be in contradiction to the so called Weismann- doctrine of the “one way road” from gene to applicability within environment [20]. So there are fundamental discussions in which way the fundamental conclusions of Darwin should be integrated into a view which covers the recent state of knowledge e.g. of natural sciences: A remarkable proposal was made by the so called meeting of the “Altenberg 16” which was coined as “The Woodstock of Evolution” [21]. I focus your interest also on the remarkable book “Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life” [22].

The term “evolution” was created for biological processes. But it is used now in nearly all scientific disciplines dealing with our world: Einstein was one of the first who used it for the progress in a scientific disciplines and therefore for the “youngest” evolutionary level [23]. Another relevant example of the application of the term “evolution” outside of biology is its use in the oldest level: the cosmology. The state of knowledge changed in this discipline nearly neglected by other scientific disciplines but with great relevance may be for them too: The assumptions about the distribution of energy to different types has changed remarkable: The standard model is based now on the assumption that we are living in an expanding universe consisting with just 4% of light matter (all what we and our instruments can observe), 1% of waves, but about 20% of dark matter and $\frac{3}{4}$ of all energy based on dark energy. Dark energy should not consist on quanta (with the effect of the former Lambda of Einstein). The obviously given stability of the universe could not be explained without the dark energy and the speed of the galaxies can not be explained without the dark energy [24].

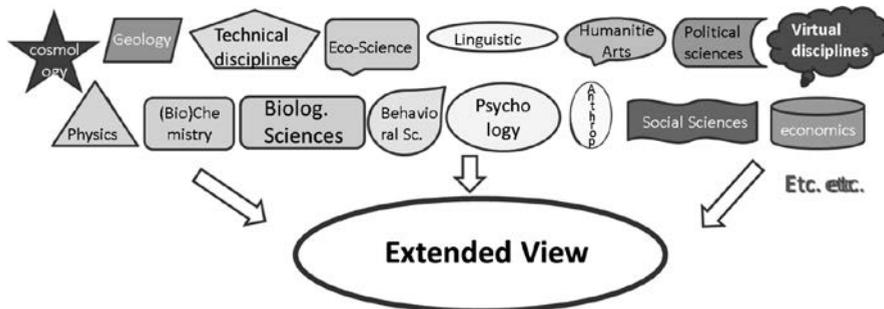
2.2.3.2. *“Evolution”: the term with the identical wording but different meaning — accepted in all health related disciplines*

Therefore the term “evolution” can be used in analogy to “movement” for the adjusted tools which was developed by Einstein: The invention of the explanation for “evolution” must cover all health related entities and processes. The light is the evolutionary oldest health relevant entity — culture and societies the youngest: Therefore we have to integrate all health related processes from Big Bang up to now — “the Big Mac”.

According to Einstein we had to invent “what is behind the evolutionary oldest” health relevant. The quanta is the oldest. So we had to invent the precursors with characteristics which allows do make plausible the autopoiesis of quanta and their processes. We had to integrate the state of knowledge of the related scientific disciplines. Therefore we had to invent a precursor which seems to be in a plausible compatibility with quanta and dark energy: Both must interact on the most basic level. Another prerequisite was the fact that quanta consists from an electric and a magnetic field. There are different offers for such a precursors (e.g. string theory) but no consent within the related disciplines. But it is not relevant for a model for medicine and sustainability which precursors will be confirmed in the future. We need only a “metaphoric term” for the precursor which allows to accept electric and magnetic field — a similar situation as we have with the now “metaphoric terms” forces and mass. We name this “free invention of the human mind” of the joint precursor “mechanoiton”. We hope that astrophysicists will come to consent about the physical nature which is “behind” the metaphoric term, which makes this — up to now — unknown story of the auto-creation of electric field, magnetic field and dark energy short. The characterization of the mechanoitons must be an invention according to epistemological technique of Einstein. After this invention only deductions are allowed. The deductions have to be not in contradiction to the (health related) indispensable facts of the related scientific disciplines. This model could be created. Up to now no incompatibilities occurred.

I am sorry, but there is no time to point out this in detail. But we had to make some modifications of the proposal of Einstein because of the fact that not only sub-disciplines with the same (materialistic) ontological position were to integrate (as for the RTs) but such ones with idealistic positions too.

I demonstrate this on the basis of set-theory: You see the large number of health relevant disciplines as ground sets. We created the new ground set of the Extended View with former ground sets as new sub sets.



Of as human person as a social being and its interactions with and expectations on its different environment

2.2.3.3. “A game like Chess” — a metaphor for relevant aspects of evolution

The example of chess allowed the link to the creation of the emergent new thanks to a special use of spontaneity. Any “emergent new” is a single case and also the winner is a single winner. Evolutionary progress is a generalized phenomenon.

Therefore we have to handle the problem of persistence: “Survival” of the creator is necessary but not sufficient: What would be if he would not share the win with others? Then the new would disappear with the creator. Therefore only emergent new can persist which is spread out thanks to a WINWIN situation. The use of the genetic code is just one, the effect of schools etc. another example.

But we have to integrate *causa finalis* within the evolutionary process: Aristotle has distinct different levels of living entities. So it would be conclusive to attribute to all of them “*causa finalis*”. But it is obvious that the “goal” of a person is on another level than that of a cat. And this is different to them of an alga or a microbe. So the term “finality” seems to me not adequate e.g. for alga. I will use it just for humans. You remember: Konrad Lorenz received the Nobelprize for his position of evolution: “Evolution is a knowledge gaining process”. Therefore the evolution from Big Bang to Big Mac can be seen as a process of an increasing level to deal with information and not only as a process of the autopoiesis of more and more complex structured entities. And another basic agreement is that all observable consists just from quanta and nothing else. Then we have to attribute to quanta not only qualities which can be matter of physico-chemical research but of all health related disciplines: Then we need a term to handle to “goal” of any entity on any evolutionary level. We propose the term “intention and intentionality”.

3. The extended view

All these arguments are integrated within our Extended View of a human person as a social being and its expectations on and interactions with its environments. It is not the topic of this paper to point out the details. But I will focus your interest on different publications: Some arguments are published e.g. in the Sechenov Honour Lecture 2004 [25, 26]. The relationship between materialistic aspects and information related ones is pub-

lished recently in “information” [10]. Examples for the increasing power for medicine and sustainability thanks to the use of the “Extended View” is presented in the inauguration lecture in the 1st Moscow State Medical University [27]. So we could discover a new type of “causally unspecific health effects” in consequence of a lack on capacity for adaptation (on the ability to deal with information) [28]. It was predicted by the theory that there should be a chance that the incompatibility between body and mind and between individual and society can be bridged. It can be bridged. Therefore we could propose a solution for the placebo phenomenon, the white coat phenomenon and Toxicopy [29]. This proposal could be transferred to a guideline for application for legal procedures. This is now state of the art e.g. in Austria [30].

Consequences are to expect for the multimedia applications and the form of communication etc [31].

Another relevant consequence of the model is the prediction that we should not only expect “natural laws” to deal with energetical aspects but “natural principles” to deal with information related ones. One of this fundamental principle was discovered by Sechenov and Pavlov: The principle of inhibition and enforcement [32, 33]: This physiological principle can be understood as the health related expression of a very basic principle.

The complex theory is the center of the Stockholm Project of a scientific structure within the 1st Moscow State Medical Academy and the International Academy of Sciences-Health and ecology. Therefore different publications are available in the webside of the Russian Section of IAS-HE.

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Статья поступила в редакцию 25 декабря 2014 г.

Контактная информация

Kofler Walter — Prof., MD, President International Academy of Science, foreign member of RAS/RAMS
1st Moscow State Medical University, Innsbruck — Moscow, Austria — Russia; walter.kofler@i-med.ac.at