

1. How do you know that you know?
2. A human Dilemma - the Lack of Knowledge and its Consequences
3. A World Picture based on Knowledge and its Orientation

The intension was to prepare the handout only for topic 1, which left open a question for me, which when thinking about it resulted in topic 2. Topic 2 was not the logical end of the reasoning => topic3.

So this handout comprises in fact 3 handouts for 3 independent but related topics for 3 different dates.

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1. What is Knowledge?

The Relevance of the topic

Strategic lying is put in place as political methodology by nationalistic populism in many countries in Europe and in the world. Part of this strategic lying is the reluctance to justify pretended facts by reference to reality. This destroys the only relation that human beings have for establishing trustworthy orientation.

If in any situation any a fake reality can be pretended unchecked, then any politics can be justified by fake. This may serve for the influence of nationalistic populism, but it will not solve the problems, which exist independent of how well we understand them.

The reality in which we live and to which we owe our existence is independent of our imagination. This reality is the only base on which a country or any other community can stay united with enough understanding for each other.

If we do not commit and if we do not request to take reality as guiding reference for justifying imaginations we destroy the only means, the only base on which humans can come to a common understanding of their situation and their perspectives and hence to fair agreements.

Also ignoring achieved progress in knowledge may turn out as insisting on old doubtful and obsolete imaginations reluctant to accept a new view on problems and consequently preventing new necessary steps.

Recalling the criteria for what trustworthy imagination (knowledge) are has therefore a political dimension and shall not be conceived merely as intellectual exercise.

The Horizon of our Imaginations and the Gain of Knowledge

Knowledge is the result of a process. Without understanding the nature of this process, it is not possible to tell what knowledge is. This process starts when we are borne. And at this point I suppose we can all agree: We know nothing.

There is a basic relationship between knowledge and imagination:

Our power of imagination limits our knowledge. We have no knowledge beyond the horizon of our imagination. But inside the horizon of our imagination we have to decide, which of our imaginations we want to call knowledge and why. With knowledge we mean those imaginations and experiences which are very trustworthy for our orientation.

So, what makes an imagination trustworthy enough to call it knowledge?

When we were born we knew nothing, we had (like animals) almost no impression no experience of this world and no imagination of the world in which we have just arrived.

Consequently, the process of extending the horizon of our imagination is a precondition for and is also a part of gaining knowledge. (see chapter: "The Surprise" below).

The human Access to Knowledge

The only communication channels by which biological organisms (like animals and human beings) can obtain inputs from the world outside of their skin are senses (5 of them are seeing, hearing, smelling, feeling, and tasting but there are other senses as well, e.g. the sense of balance, ...).

And feeling is the main input we can experience from inside of our own body, which is also part of the real world.

For each of these senses there is a dedicated organ, if you like an extra sensor connected to the nervous system inside of our body, of which our brain is the center. And only with these sensors we can collect impressions of the world and later correlate them in our brain.

As soon as we can remember these impressions we call them experiences. And the more experiences we accumulate in our life, the more we tend to correlate them and build up imaginations on how this world may look like. I call this set of imaginations a "world picture", which may be very incomplete with much room for improvement.

Consequently, we interpret new impressions on the base of the "world picture" we have built up before.

There is not one imagination not one thought which is not stimulated by one or more of our senses.

New experiences can create doubt in our imaginations or in our current "world picture". This may cause a process of readjusting our old imaginations to make them consistent with a new experience. We call these readjustments learning.

The suppression of exchanging experience and the suppression of expressing doubt and objections is therefore a blocking factor for learning and for avoiding mistakes. This justifies the request for free speech.

Human Knowledge has 3 Hierarchy Levels

There are three levels of knowledge human beings work with.

L1. Basic experiences obtained by our senses. They are a type of direct knowledge obtained in a situation in a limited location and limited timeframe. Basic experiences by their nature are logically not correlated to each other but they may have correlations in time, which may be caused by logical relationships.

L2. Assessment of situations: Isolated experiences are not sufficient to survive. Not only humans but also animals need to judge situations and behave adequately. Is a situation dangerous or does it offer advantages, is it safe and stable or risky and likely to change? And if so, in which direction? And what behavior does fit best?

L3. Theories (synonyms are imaginations or concepts) correlate experiences. The extent to which human beings can develop theories / imaginations is the main distinction between humans and other animals. Theories are an indirect source of knowledge based on many basic experiences.

They have two purposes:

- Theories shall cover a larger more general scope of this world, including new situations to come, and not only the basic experiences which are known at the time a theory / imagination is developed.
- Theories describe logical dependencies and independencies and in addition driving factors which intend to explain the dynamic nature and direction of a process or development.

Both aspects are vital for justifying trust in expectations for future developments and for understanding why we are at the point where we are.

One of the most impressive theories was proposed by James Clerk Maxwell, who derived his 4 "Maxwell Equations" (1864), which can explain all kind of behaviors of classical Electromagnetism and also the speed of electromagnetic waves (light), as a material constant value independent of any relative velocities - the starting point for Albert Einstein.

Theories themselves are multi hierarchical. For example, the physical laws of atoms are the base to understand the development of stars. Most natural laws can be formulated by means of mathematical laws, which are proven independently. And laws of mathematics are a hierarchical construction already.

Basic experiences and theories are the only means for human beings to gain knowledge by applying them in this world, which answers the question: DOES OBSERVATION MEET EXPECTATION?

If there is nothing else but this world, this universe of which knowledge can be obtained, then this means: If there is only one (new) experience which is inconsistent with a theory, it may
 - either limit the boundaries in which a theory is valid
 - or falsify a theory completely.

Summary

A falsified theory cannot be considered as knowledge any more. Instead knowledge is established for what is not trustworthy enough to be called knowledge.

Knowledge is not an eternal truth, as we do not know the experiences to come, which may falsify theories in which we currently trust. This gives rise and need to set up new theories and re-orientation.

Knowledge is a continuously improving set of imaginations, which are best linked to experiences.

Consequently, human beings are obliged to follow this dynamic development of knowledge, if they want to be up to date – very inconvenient with a tendency to overchallenge. The concept of Eternal Truth is static and

much more comfortable - once you have been told what it is and once you trust it. However Eternal Truth can be considered as a falsified concept.

Theories which cannot be linked to experiences cannot be qualified as knowledge.

Their lack of visible comparability (and their inconsistency) with the real world is a strong reason for not trusting and therefore not a good basis for our orientation. One example of such a type of theory are theological thinking systems- religions.

Yet societies on all continents throughout history have taken religions as most trusted imaginations for their orientation. Why? (See "2. A human Dilemma – the Lack of Knowledge and its Consequences" below).

The Surprise

We live in two worlds:

- the real world from which we obtain inputs via our senses
- and the world of our imaginations (world picture) inspired by experiences and former imaginations.

How can we distinguish between the imagined world and the real world which is independent of our imaginations? In the end early imaginations are also inputs to new imaginations.

Therefore we must be able

- to distinguish between our imaginations and experienced input from the real world, and
- to verify that imaginations on which we base are justified by experienced input from the real world.

Otherwise we cannot hope to build up knowledge at all. This concern can be clarified by our surprise.

A surprise is a spontaneous emotional reaction of our body when realizing a discrepancy between what we observe and what we expect.

Our expectations are derived from our imaginations, from our "world picture", which is our (best) current thinking model of this world.

What we observe with our senses is an impression which is created independent of our imaginations. It is our reference for the real world. Yet we can mis-interpret observations. Also, our sense can fool us. So, we may have reasons to doublecheck observations.

Surprises may be breath taking. We need not to make specific efforts for being surprised. Each amazed looking child tells us. Every human being has this ability also at a very young age.

Surprises give us a hint and motivation to adjust our world picture and to extend our horizon of imagination, as we have seen something, which we have not imagined before. Each surprise is a trigger for a learning process.

The evolution of life has provided us with the ability to distinguish between the real world and the imagined world. It may be assumed that this ability is a precondition for survival on this planet for animals as for human beings.

2. A human Dilemma – the Lack of Knowledge and its Consequences

It is nice to have criteria for what knowledge is, but this does not really help if knowledge is simply not yet available in fields where answers are desperately needed.

For our own understanding, it is worth trying to imagine the situation of people who were faced with many questions but without a chance to obtain knowledge for the answers.

For everyone gaining knowledge starts in the state of birth in which a human being knows nothing. This also applies for human beings borne in the very early generations of humanity. What experiences could they make? About what experiences could their parents tell them. And which theories which imaginations have been developed already in those days. And what could be justified or falsified with the limited amount of

experiences known by then?

It all starts with basic methods of survival. And the survival as such was taken as validation.

On all Continents Human Beings made/make the same formative Experiences

For human beings live is a struggle. Nature provides extraordinary impressions, its beauty and the basis of survival. But nature can also be extremely threatening:

Earthquakes, tsunamis and volcanoes, strong storms, rain, floods and lightning, heat, fire, all these mighty forces can change live drastically or extinguish live within minutes.

And against these hardly understood strong forces human beings could/can practically not provide suitable protection.

In addition, and this is a specific human aspect, human beings want to understand but could not understand for long periods in history:

- How did this world came about with all its beauty and with all its threats?
- Where does this intimidating natural power come from?
- And why was I hit by a natural threat and others not (or vice versa)? Does this mean anything?
- What is behind all this? **In which context can all this be understood?**

And from now on **the demand for the context became a guiding and driving question.**

A context is needed for all these experiences in order, to know

- What can I do, and what is meaningful to do?
- What can I expect in my situation of this world, and what perspective (vision) may I dream of?
- And what would be my role, what am I good for, what is my value, my importance, what is my identity in this (so far unknown) context?

These questions are imposed by nature. When they came into human consciousness, this was the birth hour of philosophy. But by then there were only questions, there was no answer. Thinking in concepts just started.

Not to have a trusted context which answers these basic questions, means to have no orientation, no identity, condemned to hesitate and finally to act without trusted aim and perspective – unbearable. A situation more overchallenging can hardly be imagined. A change in mind is needed to get rid of this unbearable and degrading feeling.

The feeling to be well orientated is a basic emotional need of human beings - a part of human nature. Human beings cannot bear very long if their basic emotional needs are not satisfied to a minimum extend. If not, they will act.

This situation may be conceived as the expulsion from paradise: The awareness of asking questions for a context (“level 3 knowledge” above) and longing for the related orientation and facing a dilemma.

For almost all human generations in history on all continents, the dilemma was to have these burning questions but no knowledge to answer them. To live in an over-challenging situation was the fate of many generations. Being over-challenged is still part of normality.

A religious World Picture bypasses the Dilemma of lacking Knowledge

What was imaginable as possible answers to the above mentioned basic philosophical questions for early human cultures? Historically the same type of answer was imagined independently on all continents:

An omnipotent immortal being, a God (or more of them, like in the Greece mythology) with high constructive and deconstructive abilities and practically unlimited power, turned out to be the best accepted answer. Deities are supposed to be the master of natural powers.

However, this type of explanation does not give any insight into how the world is constructed and how it will develop. Therefore, a meaningful behavior for human beings could not be derived. If everything is dependent

on the (unknown) intention and mood of a divine authority, the only thing human beings can do is to establish a good relationship to this being, whatever this may mean.

With respect to knowledge the answer was: God knows we do not know, we follow. This seems to be our best orientation.

But this explanation so far only makes human beings willing to follow. So far, no context for orientation is visible to know "in which direction to follow".

For this reason, the needed context for any religious "world picture" is required to include a communication channel between God and human beings, which must serve two purposes:

1. By their behavior (e.g. by praying or by sacrificing and by following certain rules) human beings want to address and influence God (the master of natural powers) for at least their own wellbeing or the wellbeing of the own (religious) community.
2. Through this communication channel also a divine guidance was expected, which tells beyond doubt, what humans should do best in their life.

The claim to be guided by truth was a dominating desire in all human generations. Orientation without believed truth was nowhere accepted for legitimation – a political challenge.

This demand could only be fulfilled by an unearthly input, by **divine revelation**. God does not lie.

At this point politicians (and church) could take people on the hook, and this worked worldwide in history: This pattern of world picture satisfied the basic emotional need for good orientation and made people willing to follow. God's guidance was believed to be the best one and the degrading feeling to be without knowledge and without orientation vanished.

Divine Revelation

The reports in the old religious books all tell that one influential person like Moses (10 Commandments) or Mohamed (114 suras of the Quran) published a divine text to the people. The claim how this text came into the mind of the publishers, who are also the authors of the text, also emphasizes the authority of the text: The asserted mechanism is divine revelation. The same imagination of how extraordinary ideas came about was also expressed by Greece philosophers like Parmenides or Socrates, who also said that their ideas have been introduced to their mind by a (their) God. But politically – and one can assume that politicians of the format of Moses and Mohamed have been aware about it - the quality and purpose of this story is, to give to the publisher of the divine text an exceptional position as someone chosen by God as direct messenger for telling the divine truth. Who dares to contradict?

The only convincing argument against this claim at those times was another God sending another prophet for telling something else – a reason for allegation of heresy and for violence and war.

This is why the first of the ten commandments (which can also be found in Quran (<https://quran.com/17/22> Sahih International) says: „[Thou shalt have no other gods beside me](#)“.

This is a totalitarian claim which basically says: Do not have another opinion than my interpretation of my religion. If the Pope said so at the times of the catholic inquisition, this was a death sentence. The same is true for a fatwa, which calls for killing someone for his/her religious opinion.

This claim contradicts the human rights of freedom of speech, freedom of believe and freedom of opinion and freedom of science.

Today the convincing arguments against the divine revelation are the established laws of nature, and based on the nature of human beings, the human rights.

Other religions had other personalities acting according to the same pattern.

The Advantages of Divine Revelation

Divine Revelation has the following advantages:

- a. It avoids the dependency on (lacking) knowledge
- b. It allows to believe and act and avoids doubt and blocking hesitation.
- c. It provides an imaginable simple “world picture”, satisfying basic emotional needs, and in which people trusted and could find an identity and a (may be not very attractive but finally accepted) perspective for their live and a promise of a much better second life after they died.

You may raise objections like:

- Divine revelation is no means to gain knowledge.
 - It also violates the limits of how human beings can conceive the world.
 - The concept of divine revelation mistakes a human imagination as if it would be an input from the real world.
- These are valid objections, but they have no relevance and are ignored as long as knowledge is lacking anyway. However nowadays when knowledge is not lacking these objections are relevant and to consider them is a matter of intellectual truthfulness.

Nevertheless, politically a religion allowed to unify a community under a unique spirit and rules justified by a divine authority and formulated, interpreted and forwarded by influential politicians. These politicians in this context did not only play dirty tricks. They themselves experienced the same dilemma. It was their task to give orientation and they looked for a plausible context (world picture) which can give legitimation. And their “world picture” had to fulfill two conditions, otherwise their proposed orientation could not be implemented:

1. The divine authority must serve as legitimation for the prophet and his reign.
2. The rules and spirit must be popular enough to win enough support and finally obtain and maintain political power. This can also be called mental leadership - the birth hour of a religion.

Religions have been the first answers in history on the philosophical questions above, for which knowledge was missing when it was needed.

Different religions follow the same pattern. They only differ by the “divine rules” and by the type of consequences for a violation of religious rules.

From the reasons above it can be imagined, that religion is a possible and lasting answer as long as knowledge is lacking. And this answer was proposed and accepted in many, if not in all, parts this world.

But with the continues gain of knowledge over centuries religious answers become more and more suspicious, disorientating and obsolete. But luckily and not only by chance, some religious rules and interpretations are compatible with human rights. They are an important bridge for a transition to an orientation based on knowledge instead of believed - but not known - religious “truth”.

3. A World Picture based on Knowledge and its Orientation

For a long time in history (at least until the middle of 18th century) it was not imaginable that natural laws can explain the world completely without the help of any divine creator. The English astronomer Thomas Wright (1711–1786) in *“An original theory or new hypothesis of the Universe”* (1750) and Kant in *„Allgemeine Naturgeschichte und Theorie des Himmels“* (1755) both outlined how the world and the universe could be imagined solely based on laws of nature. But solid explanations where still missing.

It was also at this time when in Europe and in North America economic development was blocked by absolute monarchy, which claimed to have divine legitimation for their power. And it was at this time that philosophers started to promote the idea of human rights. And demanded this scale to be dominant for the organization of human societies.

But only since the second half of the 19th century

(C.R.Darwin, J.C.Maxwell, the Periodic System of Elements, Marie Curie, the discovery of Radioactivity and X-rays, the synthesis of organic substances (urea))

and later in the 20th and 21th century

(Quantum theory, Theory of Relativity, Physics of elementary Particles and of Stars, the Theory of the Evolution of the Universe, the Genome Analysis, the bio-chemical understanding of human emotions, the understanding of the human brain,)

theories about natural laws have been established, which provide natural explanations for practically all parts of our universe and reached a much better understanding of the evolution of life, as Darwin could obtain in his live time.

The orientation provided by a world picture based on knowledge

Based on the current status of human knowledge the context of this world can be best imagined and explained by the laws of nature.

And from the nature of human beings the Human Rights can be derived as best set of rules for leading a human live with a satisfying perspective and for treating human conflicts in a fair way.

This does not mean that we already know everything about the laws of nature, nor does this mean, that human rights are easy to implement. Not at all. We should not believe, that humanity ever comes to the “end of knowledge”. Also, a world picture based on knowledge is not an intellectual exercise to produce more knowledge. This will happen anyway and attempts to stop it will fail. Knowledge is not an aim it is a mean.

The orientation obtained from a world picture based on knowledge is

1. based on the passion for human rights and the passion for the guidance by reasons and own judgement
2. and is based on the believe, that the best knowledge about nature and the associated degrees of freedom must be applied and used respecting human rights,
3. and is based on the regulation by democratic institutions and transparent checks and balances.

This orientation seems to be the only way for human beings

- to avoid and mitigate conflicts,
- to survive on this planet
- and to live a life which is worth being lived.

Will humanity be prepared to make knowledge a mean for this aim?

This is a very different orientation (and anything but comfortable), compared to aiming for a God-pleasing life - whatever believers are told what means - and for which the reward is expected after death in paradise.

Integration of Knowledge in our Believe

With respect to knowledge God seems to be a possible Joker, which can be placed on all spots where knowledge still shows a white spot on the map.

Where there is no knowledge, there is room for various assumptions. But if knowledge is established, previous used assumptions (no matter of which nature) should be replaced by the available knowledge. And imaginations shall be adjusted, such that they do not contradict to what we know.

This sounds as if we could just go incremental steps, but it may also be a challenging change from blindly following an (divine) authority to a self-controlled judgement and a reasoning why we trust whom in which matter.

Appendix

Believe brings Imaginations to Action

We are looking for knowledge as base to justify confidence in our decisions, in our own acting and why and whom we trust.

We also must be confident enough to believe in newly gained knowledge. If we do not believe in what we call our knowledge, we find it not suitable for our live – then there is an unspoken doubt. Knowledge in which we do not believe will never be a guideline for our live.

Without believe there is no motivation to plan and implement a vision, or an option for a better live.

Believe or strong confidence can already be observed for animals:

A cheetah will start chasing a Gazelle only if he believes that he is fast enough to catch up with the Gazelle of his choice. Otherwise he will not move.

An animal believes in its abilities in a specific situation (“Level 2 knowledge” see above) and may be wrong. Human beings do nothing else. They believe in the best “world picture” they can imagine as guide for their orientation and acting (Level 2 or Level 3 knowledge see above) and may be wrong.

So, believe is not of religious nature.

Believe existed long before religious interpretations of this world emerged.

But a religious “world picture” also needs to be believed in, otherwise it will not have any orientating or disorientating influence.

A strong believe is also needed for a business model. Without believe in the future of a business there will be no investment.

Both examples show, that knowledge is not needed for believing in an imagination and act accordingly.

What is needed is a trusted, a believed expectation. Knowledge only makes the expectation more certain and more precise and should prevent meaningless activism.

Wrong imaginations much more likely may lead to unexpected and undesired results and may end up in activism. Knowledge is just the best orientation to avoid such situations.

Building a Theory

A theory / imagination / concept which may turn out to be trustworthy enough for being qualified as knowledge, starts with a vague intuition into the nature of relationships which are addressed by a question like:

- “Why does the apple fall to the ground and not into the sky?”

- “Are there distinctions between human beings because of which they are subordinated to other human beings?”

Based on intuition assumptions are formulated, which have to be confirmed or modified according to collected relevant experiences (facts). This may be a lengthy and cumbersome process.

In addition, the facts / experiences have to be assessed if they are strong enough and cover all relevant aspects in order to avoid a fast falsification later.

And then there is another question: Can you imagine another theory, which can base on the same facts and explain their relationships equally well or even better?

This process of building a theory is an intellectual challenge but it is not free from emotional influence and political interest.

Knowledge and emotions

We also have emotions associated with each imagination. We may like it or dislike it because of the implied consequences. We may be euphoric or frightened. And we may e.g. contradict to good evidence, because we dislike the consequences. With too much sympathy for an idea we may tend to ignore the weak points of the idea. But we cannot avoid our emotions. The demand to exclude emotions to obtain objective results cannot be fulfilled. No human being can do so. But it is possible to reflect the emotional dimension and make it transparent in order to be aware of the influence of emotions on our judgement. Finally, political interests can be obstacles for obtaining a fair judgement, but they may also be the power to overcome previous unfair judgements. This also affects the balance of power in a society and is not merely an intellectual issue. This is why transparency and public debate is important.

Are these facts a common experience or expectation?

Verantwortung Responsibility	ohne Liebe macht without love makes	Rücksichtslos ruthless
Macht Power	ohne Liebe macht without love makes	Grausam cruel
Glaube Believe	ohne Liebe macht without love makes	Fanatisch fanatic
Klugheit Intelligence	ohne Liebe macht without love makes	Betrügerisch deceitful
Gerechtigkeit Justice	ohne Liebe macht without love makes	Hart harsh
Ehre Honor	ohne Liebe macht without love makes	Hochmütig arrogant
Freundlichkeit Friendliness	ohne Liebe macht without love makes	Heuchlerisch hypocritical
Sachkenntnis Knowledge	ohne Liebe macht without love makes	Rechthaberisch opinionated
Pflicht Duty	ohne Liebe macht without love makes	Verdrießlich morosely
Besitz Property	ohne Liebe macht without love makes	Geizig stingy

Lao Tse ?