The Verbal Philosophy of Real Time

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INTRODUCTION

Poetry tries to name what we do not comprehend.
Philosophy attempts to comprehend what we name.

Almost 2400 years after Plato, we are still trying to understand and define the three nominal names which form the European civilization: 'truth', 'goodness' and 'beauty' — not with much success. We can shift the blame for the unsatisfactory results on to our brain which grants unjust privileges to nouns. The brain — not the mind, which Gilbert Ryle[1] labeled as a "verb" already in 1949. In 2010, we learned that the human brain processes nouns and verbs in different ways[2]. Various parts of speech have "warehouses" in distant corners of the brain. The impulses from the spacious noun repository are faster than those from the cramped verb storehouse. A child acquires nouns more easily than verbs; the same applies to adults learning foreign languages. Neurosciences study functional differences between the right and left hemisphere. Science also explains the dissimilarities between a woman's brain and a man's brain. However, the differences in real-time processing of parts of speech are still regarded by science as a marginal curiosity. Meanwhile, the unequal time of access to entire categories of words and phrases in languages of various types may be of groundbreaking significance to philosophy.

I hypothesize that nouns may prove to be the key to certain philosophical problems, while verbs — to others. Still, I do not know which part of speech is more cognitively effective for particular phenomena or issues. Thus, to study the concepts named with nouns, I use verbs *(et vice versa)* because this may reveal new prospects which overstep the limitations we have imposed on ourselves with the paradigm of a given part of speech. The time has come to check what we can already achieve using the verbal method and to postulate that science intensify its multifaceted research on the processing of various parts of speech (as well as metaphors, names of mathematical objects and others) by the human brain.

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[1] Ryle G., *The Concept of Mind*, s-f-walker.org.uk/pubsebooks/pdfs/Gilbert_Ryle_The_Concept_of_Mind.pdf

[2] *Nouns and verbs are learned in different parts of the brain,* February 25, 2010, https://www.sciencedaily.com/releases/2010/02/100225084640.htm

PART 1

THE VERBAL THEORY OF TRUTH

Science pursues the truth about what exists.
Philosophy inquires into what truth is.

Let us imagine an elevator stopped in the middle of a multistory building. One passenger is waiting on the ground floor, another one — on the top floor. They push the button at the same time. Where will the elevator go: up or down? This is the simplest problem faced by the automata theory, which is actually classical logic, although strongly expanded to control various devices. Each of those devices is able to distinguish between an earlier impulse and a later one, but that ability has its limits. Clocks and photo finishes accurate to the millisecond are usually sufficient to determine which sprinter crossed the finish line first, but to the researchers studying the order of certain events in the Large Hadron Collider, even a millisecond can be eternity. (In this book, I give preference to examples coming from high-tech industry because they show the anachronistic nature of some old theses on truth. The contemporary stagnation of the study on truth stems from, among others, considering always the same textbook examples, which leads to the same results, just like ruts in the road.)

In the era of 5G and edge computing, we constantly use various information generators unknown in the epochs which pursued the meaning of the term 'truth'. For example, we glance at our smartphone and rush to the airport. If the screen shows an incorrect hour, therefore providing us with wrong information about the local official time, we will be late for the flight and fail to carry out our plans. Let us also consider a command generated by the GPS navigation system: "Drive straight ahead." It contains a lot of information. When we approach a junction, the command tells us that the shortest or fastest way to the airport leads straight ahead. However, the most important information, which is presupposed in that command, states: "The way straight ahead... exists!" After 100 m, we will see if the navigation system told us the truth — on an obvious condition that we survive the experiment.

A computer processor (CPU) is already an advanced application of the automata theory, though it is completely insignificant and primitive when compared to our brain. Millions of transistors, gigahertzes and terabytes: if a CPU incorrectly interprets the order of impulses, the computer will make an error the consequences of which can be costly beyond imagination. If an elevator goes in the opposite direction, we will simply wait a bit longer. However, if the uranium rods in an atomic reactor are moved in the wrong direction, the Chernobyl disaster will happen again.

The issue of measurement accuracy and allowable error (tolerance) will recur in this book because whatever we measure or state, we always deal with a certain space where our action is carried out. Beyond that space, measurement is sometimes impossible and statements are pointless. Therefore, we must determine the boundaries of the relevant space (one which is significant in the analyzed respect) in each case and be aware that those boundaries may be somewhat fuzzy. Moreover, the location of the analysis subject inside that space may be imprecisely predictable.

Let us now imagine that our mind is to solve a problem and put it into words. Nouns and adjectives swarm on one side, verbs throng on the other, while pronouns, numerals and other parts of speech also try to win the favor of the thinking center. We do not know yet how this happens, but at least we have learned that the brain has its preferences. The noun gate opens a bit earlier than does the verb gate. Does the priority effect matter?

Maybe the brain waits and starts processing only after its working memory has gathered material from all the warehouses — much like a baker, who begins their job when they have sufficient amounts of flour, water and other ingredients. We should not be astonished, however, when it turns out that the mechanism in question works like reproduction of certain organisms. The first sperm that penetrates the egg obtains an exceptional bonus: the access for subsequent sperms is blocked. Everything happens in a split second.

Where a quick verbal reaction is needed, nouns and emotions press forward with greater power and persistence than do verbs and serious reasoning. This is summed up by the slogan: “Turn on emotions, turn off thinking!” Our first reaction is to give a name (not always a decent one if we act under stress). Moreover, when something gets stuck in our head, it becomes extremely difficult to root it out. If a given noun does not satisfy us, we replace it with another noun.

During writing, I try to avoid repeating the same word many times in one sentence. I search for synonyms to replace a noun with... another noun. Reviewing a text by expressing a given thought in a different way, for example, by using a verb instead of a noun, is difficult to me. It re-

quires more work. It should also be mentioned that dictionaries burst at the seams with nouns, while the number of verbs is many times smaller and hardly increases. Millions of nouns and thousands of verbs.

Language reflects the set of activities and states in a very rough-textured manner. I often search for a semantically or stylistically "better" verb, but numerous failures stop me from making further attempts unless they are necessary because I know the chance of finding another verb is slight. The chance of coining a new verb is even smaller. New nominal terms are acquired in large numbers and without objection. New verbs are accepted reluctantly (except for verbal forms derived from newly created nouns).

I use these examples to express my conviction that unequal treatment of parts of speech by the brain does matter, though we still do not know in what way. If billions of brains have preferred nouns for thousands of years, this must have exerted a shaping influence not only on philosophy, but also on the entire civilization. Compared to the scale of that influence, the differences between ideologies (which have also shaped the civilization) do not play an important role and may actually derive from the former differences.

1.1. On real time

The term 'real time' is used to describe events which necessarily take place between a cause and its effect in normal conditions (chapter **1.29**). In the elevator example, it is the specific time (in seconds) between pushing the button and the moment the elevator stops. Normal conditions in such case include good working order of the devices, with only normal disruptions present.

I push the button on the ground floor; the elevator starts going from the fifth floor and stops on the ground floor. On its way, it carries out other priorities. It stops on intermediate floors if other users so demanded; it may also go up first, but it will eventually reach the ground floor and stop. I do not have to push anything again. I enter the elevator, touch the internal sensor and start a new real time sequence which may be of any length (within reasonable limits) and be freely shifted in relation to other sequences. It will happen the way I have described and it cannot happen otherwise.

The Aristotelian phrase "it will happen this way and it cannot happen otherwise" will be repeated many times further in this book. It will always concern events (acts) taking place between a cause and the necessary effect in real time. Such approach allows me to skip chaotic phenomena and

various breakdowns for the time being. **Each process takes place in its own real time sequence**, which is related in some way to the sequences of other processes. Oftentimes a deadline is defined: process **A** must end before event **B**, which it is supposed to influence. If it gets late, somebody or something else will decide.

The conception of real time was created based on information technology, without any connection with the remaining conceptions of time (linear, cyclical and others). An elementary real time sequence is a quantum of the clock time. It has a beginning and an end which is situated at any distance from the beginning. It has no relevant center (inside) and is irreversible. The conception of real time assumes the existence of clock time which has no history in a given system, e.g. in a computer; it begins when the relevant process is turned on and can stop or run the way we set it — slower, faster or even backwards, for instance, when we accelerate or decelerate playing a movie in either direction.

As I am writing this, the passing of time between pressing a key and the appearance of a letter on the laptop screen is imperceptible. My resolution allows me to say that these two events are simultaneous, even though during that time the computer performs a multitude of operations. Those operations are irrelevant to me, but they are important to somebody else in a different process.

When I set the alarm clock, I will hear the effect six hours later. The passing of time between a cause and its effect can also assume a cosmic scale. We can notice a supernova flash only after a million of terrestrial years. Still, that process also takes time in its own real time sequence because a radiation wave will eventually reach us. It will happen this way and it cannot happen otherwise[3], which does not mean that humanity will live to see it.

A type of action in real time important in this work is algorithmic routine (chapter **1.13**. *Algorithm of alethic attribution*). Simply defined, an algorithm is a sequence of specific real activities (which are simultaneously time subsequences) performed in a predefined order. In this book, the

[3] The narration method adopted in this book makes it necessary to repeat certain key theses when the description develops in a way which allows me to present another aspect of a given issue. Another element of the method is frequent references to previous (and subsequent) chapters and scarce references to other authors. This is a book on philosophy, not on philosophical science. I assume online publication at a later date and this allows me to build a network of synchronic access to the book in real time (I explain this in chapter **3.1**). The references are already hypertextual and texts by other authors will be found using a browser.

most important feature of an algorithm is the one owing to which the result is what it is and cannot be different in the real time of a given process (*ceteris paribus*, that is, without changing other conditions).

We do not know what will happen in the future, but we know which activities will be performed and in which order if the subject of our analysis is an algorithmic process. Forecasting differs from prophesying in that it concerns only the processes that we know will be what they are (including the tolerance characteristic of a given issue) and cannot be different. If a thousand computers process the same meteorological data using the same algorithm, we will obtain a thousand of identical forecasts. None of them will probably come true entirely, but I am now considering only the necessary effects in real time, not their correspondence to a future fact.

In the grammar of verbs, the relative counterpart of real time is present tense. An event takes place in the present tense, the previous event is described using the past tense (grammatically) and the next event is referred to using the future tense. Those are the basics, but a certain remark needs to be made. An important property of real time, obvious in information technology, is sequencing. Everything happens between a cause and its effect, stating a problem and solving it, receiving information and making a decision etc.

Aristotle, Kant and others investigated civic virtues, good laws and various postulates. This book investigates decisions and acts as they are (results, not postulates). The philosophical aspect of decision makes one wonder what (in the mind) is decisive in making a decision. The question if a decision is useful or accomplishes goodness cannot be presently considered. Goodness is the subject of Part **2**, where decisions are classified as scalars, which will be explained in chapter **2.7**. The present considerations deal with the short and usually skipped moment of **real time** which precedes a decision.

1.2. Truth as the condition of a correct decision

When it comes to truth, the verbal method does not deal with the intentions of the information author or even its status (be it a human, a thermometer or a bot). The method shifts the subject of the research on truth from the production of a message to its perception; it assumes the possibility, or even the necessity, of image supplementation by its recipient (chapter **1.21**) and divides truth attribution into elementary activities (chapter **1.13**). This is an attempt of continuing Aristotle's verbal methodological achievements (chapter **1.11**), which are presented in *Metaphysics* (not in *Analytics*). See fig. **1**.

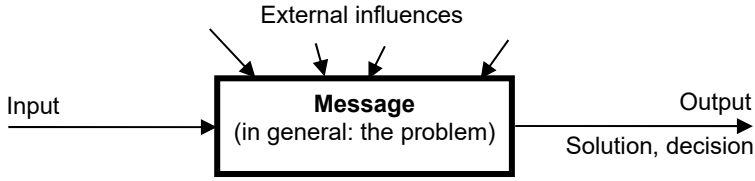

Fig. 1. Problem input and output (elaboration: fig. 2–5).

I wish to underline the shift of the research interest to the "other side" of the message (from the input to the output). This is a significant innovation which completely changes the approach to the issue and leads to a different spectrum of results than expected by tradition. As will be explained further, Aristotle defined truth via alethic attribution (that is, via correctness: true/false) of generated and received information alike. He situated the concept of truth in a nondialogic communication action.

This means a typical situation where something (a message) is said (sending), heard (physical reception) and finally received (decoding, supplementation and understanding). What is created in the recipient's mind on such basis is important because it may influence decisions, and thus also the person's life and the community's fate. It turns out that a decision may be influenced by a part of speech because it carries predecision information! Obviously, a single word or text alone rarely shapes a decision since a new piece of information always merges with the spectrum of our knowledge.

A doctor makes a decision about the treatment method based on extensive information about the patient's state. They have results of laboratory tests, CT and stress tests at their disposal; they also meet the patient and listen to their story. All those pieces of information have their authors, but different authors would not change the doctor's decisions, especially because doctors increasingly often simply enter the obtained information in the computer and suggest an algorithm-based therapy (as it is the only one they get paid for). The only thing that matters is whether the input information is true.

The great decisions about the world, such as those concerning health, pharmaceuticals, peace or climate, should be based on truth. This is what we want. The real world may change depending on the fact whether somebody receives a given piece of information or not. This remark concerns not only the world of elementary particles, where the mere fact of emitting the information is decisive because sending a quantum of information

requires consuming a corresponding quantum of energy, which changes the state of affairs. On the macroscale, where the emission of information about a given fact does not change that fact, only information reception may (but does not have to) cause a change in the state of a given segment of reality. It happens when a human or computer reacts to the information in some way and supplies a portion of energy required to make the change. This is possible after exceeding a certain threshold of insensitivity to information because information itself does not make performance decisions.

Thus far, I have recorded three factors which influence the nature of decisions made by the human as a reaction to a received piece of information. These are: the hemisphere (right or left), the brain owner's sex (man or woman) and the information form (noun or verb). There are many more similar factors at play here and they are gradually being described. However, this book deals with the functioning of the mind, not of the brain, and concerns only parts of speech.

I omit all the nominal conceptions of the human (a new, multidimensional conception is presented in chapter **2.16** and subsequent ones). The human changes the world consciously and unconsciously. We usually do it without reflection to satisfy our needs because, among other things, we need to eat and drink. However, the most important changes of the world are those made via our own decisions based on the recognition of facts or the obtained information about those facts. That information is not always true though! Quite a few senders generate information about a fact without studying the fact first or without the fact taking place, which is actually a trademark of the post-truth and astroturfing era.

The above sarcastic remark concerns generation of information by the human. However, this does not exhaust the correct application of the concept of 'truth'. Let us imagine that we are driving a car. A road sign shows that the speed on that particular road section is limited to 70 km/h and we do not intend to break the law. The speedometer shows 60 km/h, so we may still accelerate a bit. We do not know that the speedometer is broken and shows 20 km/h less than it should. Still, we have no grounds for questioning the trueness of the indications (that is, their correspondence to the fact) because until now everything has worked properly.

We are listening to an interesting program on the radio and do not focus too much on the empty road because the situation does not require us to do so; nothing is happening. We decide to speed up. The speedometer shows 70 km/h, so we maintain that speed (±10). We learn that we drove much faster than the allowed speed only after receiving a photo together with a speeding ticket shortly thereafter.

We make habitual, trained, automatic decisions many times in our life. Our leg instinctively steps on the accelerator, but we do not think about it at all. In this respect, the information conveyed by the speedometer indication influences our decision immensely and immediately. A similar situation is that of a captain who steers a tanker entering a port or a pilot of a landing plane: both of them perform virtually automatic actions according to the information received from people and computers. The untruthfulness of a single piece of that information may lead to a disaster. On the other hand, it also happens that a pilot lands without breakdown even if all the systems fail — this is because the pilot managed to turn off their trust in (or addiction to) external sources of information. They trusted their own qualifications and correctly assessed the risk of error... or they were lucky because all the errors compensated for one another.

1.3. The predecision aspect or the decision theory aspect?

The first part of this book describes truth from the predecision aspect — not the semantic, existential, formal, logical, theological, psychological or critical aspect. I also omit the huge number of other aspects of truth, especially those we cannot even define sensibly. The truth which does not serve an immediate or postponed decision is valueless in social life. This also concerns science: even though its aim is to broaden our knowledge regardless of the usefulness of the discovered truths, scientists also make numerous decisions (for example, about further research) based on the information they possess.

However, the difference between the predecision aspect and the decision theory aspect requires further explanation. Decision theory deals with the decision-making process alone. It describes that process, supports it in various ways, attempts to optimize it, assesses its costs etc. It is a very elaborate discipline which applies advanced methods coming from disciplinary sciences, including psychology (entirely excluded from this book, but not disregarded). Situating the primary location of truth (chapter **1.17**) on the message reception side makes the psychic parameters of reception important (chapter **1.21**).

Decision theory aims at proceeding from a set of available information to the best decision possible in particular circumstances, especially if a value conflict is present. Decision theory does not deal with input information. In this respect, it resembles logic, which leads us unfailingly from true premises to true conclusions. Still, logic cannot prove that a given premise is true. Unlike logic, decision theory is not an algorithm, but it also accepts premises the trueness of which it cannot prove.

In logic, if we reach false conclusions based on true premises, we must have made a mistake in the process. The internal mechanism of logic is absolutely reliable, while decision theory is only trying to get close to logic in this respect (though hardly anyone dreams about complete reliability due to the presence of psychological factors). Therefore, if we make a wrong decision based on correctly complied and true information, the cause may be our mistake in reasoning or the imperfection of the decision theory methods. However, if the information is untrue from the start, the final decision will be entirely random: good or bad.

Truth does not guarantee an optimal decision because human decisions (in nontrivial cases) conceal a bit of irrationality, but lack of truth in the premises dooms us to coincidence in the further process and its result. Truth is not a sufficient condition of a correct decision, but it remains the necessary condition (as defined by Duns Scotus), which means that a contradiction in the premises does not exclude any result. This is an important observation because it describes a paradoxical decision-related situation in human life: we have made many perfect decisions based on falsehood (untrue information), while the "truest truth" and computer assistance have not prevented us from undertaking numerous colossally stupid actions.

When I mention decisions, I stop at the "decision making" point, which sometimes equals "performing an action." Some of our reactions are instinctive, but this book does not deal with that sphere. I do not consider any subsequent (postdecision) external assessment either unless a punishment, reward or criticism exerts a corrective influence on similar future decisions. What I mean is being prepared or, in other words, internal readiness to act (think) via processing the premises in a decision-making situation. I do not mean a "result of previous consideration" (because we often have to make a decision suddenly) or "prudence" (since the latter implies a positive assessment of the readiness in question). I would call it a 'neutral alethic habitus', but... I will not for the time being (see chapter **2.26**).

In this book, the term 'decision' has a natural, broad meaning as defined in dictionaries. Decisions and acts are fuzzy in the sense that no preparation guarantees an action which will fully correspond to a given scheme. When considering a large number of decisions, most of them proves close to the ready pattern, while the opposite or clearly different decisions are much fewer. However, if they are possible, they are inevitable as well (chapter **2.5**) — like upstream Brownian motion.

Let us return to the GPS navigation system, which operates in its real time: it locates the vehicle (phase one), processes the data depending on the destination (phase two) and "recites" the message (phase three) —

always in the same way in the same place, never otherwise. The existence of the way straight ahead is not considered because it does not influence the driver's decision. That issue belongs to the future tense (also from the passengers' perspective). The driver decides to step on the pedal in their real time sequence which starts when the message is received. Will they choose the accelerator or the brake? We do not know till the last moment. The predecision process and the decision theory process are two different processes. Each of them concerns a different aspect and takes place on its own cause and effect path, in its own real time sequence.

1.4. Truth after the post-truth era

The beginning of the 21st century has been called the post-truth era. That era is characterized by a narrative cloud which drops a hail of information and we do not manage to recognize on time whether a given piece of information is true or false or whether it was generated by a real human or artificial intelligence. An information hailstone melts quickly and we forget it because subsequent ones keep attacking us. Meanwhile, we constantly make **decisions** based on new information, like buying or choosing something — or choosing someone. This is important because when decisions depend on a mass of random narratives instead of truth, our choice is sometimes random, too; it can be brilliant as well as disastrous. We make those decisions in real time, helpless in the storm of unverifiable information.

For the sender, however, no narrative is random. Somebody (or "something") ceaselessly gathers hard data on our online behavior, preferences, shopping, payments, e-mails and billings — and maybe even on our feelings and views. Whoever has access to reliable knowledge makes algorithm-based, individualized decisions which are concealed from the recipient. Whoever manages the narratives in the information sphere influences the market, election results and the shape of civilization. Most recipients disregard it though. They settle for the appearance of creativity: the possibility of spreading their own emotions and... lies?

The first factor to blame for post-truth has already been identified: it is supposed to be the sudden development of communication technologies because they have evolved faster than the human brain. Speech, writing, print, radio and television have made the unidirectional transmission of messages reach the limits of perfection, while the Internet, an uncontrolled weapon of mass destruction in the hands of a child which does not grow up, has gone beyond those limits, creating multidirectional interactive tunnels to and from unreality.

A statistical *homo sapiens* has not reached the evolution level appropriate for the present state of mobile technologies. They believe in self-duplicating rubbish on Facebook — and even if they do not, they still make decisions against themselves, as if controlled by a troll from an enemy superpower. They do not want to know that truth is the necessary (although not sufficient) condition of correct thinking because it **helps make good decisions** and protects against disastrous ones. Such state of affairs justifies devoting the first part of the book to truth, but it acts **only** as a gate to the rational decision-making process and, for the time being, exempts the author from participation in the eternal discussion about its moral and political aspects. This work does not deal with historical truth either unless the trueness of information about past facts (e.g. the temperature and concentration of carbon dioxide one hundred thousand years ago) conditions present or future decisions.

Let me now make another methodological remark to which I will refer many times further in this book, for instance, when describing the liar paradox. Considering porcelain, we may state that in (physically) normal conditions it will never conduct current. This is a legitimate statement about the future because it has been proved that the properties of porcelain prevented and will prevent it from conducting current. However, we may never state that a given person's future acts will or will not be of a certain nature just because they were or were not of such nature in the past. Therefore, let us not foretell the future. We should refrain from it not because it is easy to make a mistake foretelling the future, but because prophesying is an error of method — even if prophecies come true. This remark does not apply to methodologically legitimate forecasts or forecasts concerning the effects of our acts — even if forecasts do not come true.

We already know that **verbs and nouns are used by different parts of the brain**. Certain concepts cannot be named with nouns in such a way that the listener understands those words exactly like the speaker does. One such concept, since Parmenides till today, has been 'truth'. Thus, the **predecision aspect of truth** makes one check the semantic, explanatory and communicative potential of verbs once again. It must be checked "once again" because the first philosophers as well as authors of religious and wisdom books, who only began the creation of abstract nominal terminology, used mainly verbs — or, more precisely, enclosed verbs (as the stronger words) in heavier armor. That was also done by Aristotle, whose **verbal definition of truth** (chapter **1.11**) will be operationalized and transformed into an algorithm further on (chapter **1.13**). A 'verbal definition' means formulating a sentence in which a defined term is correctly used. It must primarily stem from that sentence what the designatum of

that term “does” and what we “do” due to that object. A child acquires names of objects and activities in a similar way; only at school will it learn their precise definitions. Certainly, one cannot write using only verbs. In this book, all parts of speech will appear in normal quantitative proportions, but the weight and the burden of proof carried by nouns and adjectives will diminish before the power of verbs. The only statistically significant deviation from the linguistic standards of philosophical writing will be a noticeably smaller share of abstract nouns and the word ‘is’ and a slightly bigger share of names of specific activities. This will make sentences shorter and their sense unambiguous.

The **verbal method** adopted in this book consists in the processualization of abstract concepts by “translation” or “factorization” of abstract nouns into relevantly prime verbs (always with the identification of agents!); this will be explained in chapter **1.11**. The second element of the method is operationalization: something has to stem from each work and, consequently, it must be clear what **activities** the author demands from the addressees of their philosophy (chapter **1.13**). The third aspect of the method is the **principle of relevance**: the essence of a studied issue must be investigated only in the respect analyzed at the moment (reduction of irrelevance), but with due regard for to the relevant infrastructure, which includes any significant contexts, consenses and consituations. The relationship between ‘consense’ and ‘sense’ is analogous to that between ‘consituation’ and ‘situation’ and between ‘context’ and ‘text’. I do not equate consense with consensus.

The **verbal paradigm** in philosophy consciously applies the entire verbal paradigm from grammar. However, it first makes one indicate the subject in a sentence because a proper verb exists only with an (express or implied) agent or patient it serves. It usually names an activity which somebody/something performs using something else or a state in which somebody/something is. Certain other words which fulfill different functions are also called verbs, but they constitute a peripheral issue or, in other words, a slightly fuzzy boundary between the sets of parameters for the individual parts of speech.

Some issues will be elementary, even rudimentary, in disciplinary sciences such as mathematics, cybernetics, physics, methodology or linguistics. I have studied and practiced those disciplines in greater depth than philosophy, the numerous branches and works of which I steer well clear of because they suffer from untreatable nominalinosis. I reckon that finding and processing inspirations coming from various sciences is a responsibility of 21st-century philosophy. In turn, disciplinary sciences should find a place for themselves inside philosophy, “coming back” to where

they came from in order to contribute their methods and support a more comprehensive development of their parent science, which is withering without that support (chapter **1.24.** *On intradisciplinarity*). I think so because it seems to me that, for instance, contemporary epistemology is experiencing stagnation, having completely exhausted its inference potential. It produces increasing amounts of the same content about the same subjects in the same way.

It is withering as a footnote to its own history. Further development of philosophy depends on its hospitality. I hope that philosophy will let disciplinary sciences act in an intradisciplinary manner, tolerating certain clumsiness and excessive aspirations. It will take time to develop a common language. I am writing about **intra**disciplinarity, not about **inter**disciplinarity, which has already shown its suitability and limitations.

In the 21st century, certain sciences should operate in real time not only "between," but also "inside" other disciplines (e.g. statistics inside epistemology). This is what I call '**intra**disciplinarity'. Then, a given discipline can maintain the highest scientific level without lowering itself to the perceptive abilities of specialists in other disciplines, who may then use the results achieved by the guests in their own field and do not have to force themselves to learn advanced mathematics or other disciplines inaccessible to people dealing with the arts. Certainly, somebody finally approves those results to prevent the introduction of chaos or purposeful distortions under the pretext of cultivating intradisciplinarity (compare the Sokal hoax).

I study truth for several reasons. First, truth exists, just like an unconquered mountain peak. It exists as a philosophical problem which has not been correctly solved. Second, truth is important because any decisions shaping the fate of the mankind and the world depend on it. Third, the human brain processes emotions (affects) quickly, but logical operations are digested slowly; negated verbs are acquired reliably, while abstract nouns are learned randomly; lie is accepted easily, whereas truth — with difficulty. Only artificial intelligence does not mind what it processes. We do. Our intelligence is real!

1.5. The bifurcation of 'truth'

An example of bifurcation in nature is one stream which flows from the spring and then divides into two currents. Those two rivers can merge and separate or even flow into different oceans. One river may gracefully flow toward the sea, collecting waters from the entire basin, while the other disappears in the airborne sands of the deserts to emerge on the sur-

face somewhere far away or diminish entirely. The theory of truth has a similar history: it divided into two currents already at the spring. The first one has had a worldwide career, while the second sank into oblivion before it was recognized. The first one is the classical theory of truth, while the second — the verbal theory of truth.

One should add that not only the theory of truth has bifurcated. This has happened to many views which appeared in various places of the world, coexisted with (temporarily) more powerful theories and then disappeared for thousands of years, only to return with new research methods. The most famous views of that type include Democritean atomism and the heliocentric theory by Aristarchus of Samos, which was supplanted by the geocentric Ptolemaic system and then restored by Copernicus in a philosophically brilliant, but scientifically incorrect manner.

The classical definition of truth and its derivative theories are not discussed here because that definition is well-known and has already gathered thousands of commentaries. As we know, the classical theory has not achieved satisfactory results and is still questioned, while nonclassical conceptions contain the classical approach anyway — as a reference which is affirmed, criticized, rejected or deemed unattainable. The multitude of the literary works on this topic exempts me from including a standard chapter entitled *The current state of research* in this book.

In the intellectual traditions of the East, the terms translated in Europe into ‘truth’, ‘goodness’ and ‘beauty’ were used to call various phenomena. Illiterate civilizations also understood those terms in different ways. I remain exclusively in the European circle, remembering that it has also regarded barbaric ideologies of the race, class or cash more highly than the Platonic Triad many times in its history. We live in the information era, so we demand more precise terms than did ancient Greeks. We differ from them: we are not that ancient and we have the results of their thinking at our disposal. We have access to that multitude of nominal philosophical abstractions which require thorough periodic reviews. I do this using the **verbal method** in the 21st century. I do not put forward any preliminary theses and I do not know where this method will lead when it exhausts its paradigm. I just highlight that among all the parts of speech, the verb is the most “socialized” one. It does not dance a solo dance; instead, it holds on to its agent and patient which it serves. This concerns especially verbs and other words and phrases which name individual activities, e.g. ‘write’, ‘run’, ‘sew’, ‘speak’, ‘chop’ or ‘laze around’. I include ‘be’, ‘become’, ‘seem’, ‘appear to be’, ‘transform into’ and similar words and phrases in the category of imprecise verbs. Obviously, the membership of a verb in a category depends on the context, consense and consituation.

We consider ourselves as an information society because, among other things, we do not make random decisions — we base them on received information, and that information may be true or false. The issue of an author and a carrier (Who/What generates the message containing a given piece of information? How is that information recorded and transferred?) is less important because it rarely influences decisions. We usually do not know anything about the author, including in the statistical meaning: the number of persons we can get to know throughout our life is slight when compared to the number of authors generating billions of pieces of information which shape our decisions in various ways.

The growth or loss of our fortune depends on the trueness of stock exchange information. Therefore, the truth about market changes is of utmost importance to an investor, but it is completely unrelated to any judgment expressed by anyone, especially a "judgment" generated by a computer. It is only an information attribute.

I investigate truth only from the decision aspect — I repeat this to avoid being accused of disregarding the other aspects. In the 21st century, nobody writes about "everything" anymore. One just needs to define the precise boundaries of the relevant area and be aware that all the boundaries in social life are fuzzy. This book investigates decisions depending on the trueness of received information, not on the person's mood or similar factors. Decisions are made by the message recipient. Whether the information sender acts consciously or unconsciously (in alethic terms) is inconclusive. The awareness of the sender (e.g. a computer) is completely unimportant to the world. It is the recipient's decision that matters! What, however, should we do with the avalanche of narratives and "media facts" which attacks us at every moment?

A wrong decision may cause a Forex market player to become bankrupt in a second — and this has actually happened many times, though information untruthfulness is rarely the cause. The information is generated automatically and that system works quite credibly and reliably. A more frequent reason is surrendering to marketing strategies, self-righteousness, greed or belief in the information which, as Aristotle put it, "induce a false impression*."* Here lies the phantasm that an ordinary man can earn anything on the Forex market. Truth also has a financial dimension, after all. People wish to make decisions based on information which has been verified in some way. This concerns everybody: housewives and politicians, pilots and bricklayers, profiteers and their victims. The same applies to scientists, who affix the attribute of 'truth' only to what has been proved. Those who reach "truth" via Habermas's consensus and dare to publish it, make fools of themselves.

Habermas is important (or at least he was important till the first decades of the 21st century) for the issue investigated in this book because he has created the last great philosophical system which treats the issue of truth seriously. That system is idealistic, at least because it requires idealizing assumptions: an ideal communicative situation, an assumption that what has been designed for the ideal world does exist in the real world and an assumption that what is (statistically) impossible actually is possible. The result is self-refutation of the system in the form of making the success of a communicative action conditional on observing strict rules, which are obviously not observed by anybody because it is people, not ideals, that negotiate and communicate.

In Habermas's system, somebody or something "must" act every now and then. One should notice that this idealistic system prohibits compulsion, but the verbs 'must', 'cannot' and 'must not' function there as key words. Systemic compulsion prohibits nonsystemic compulsion and compulsory systemic freedom excludes ordinary freedom. By the way, wherever Habermas attempts to regulate the future and change the world instead of describing it, he ceases to be a philosopher and becomes a fashion designer, manipulator, dreamer, Marxist or futurist.

According to Habermas, the claim to importance is settled between the parties to a dispute — between the cheater and the cheated or between two cheaters. There is no judge there; that role is played by a set of rules selected for a given process and both parties have to accept that set before the negotiations. Needless to say, the winning party will not be the one who is right, but the one who skillfully manipulates the rules which leave their honest interlocutor helpless. The rules and definitions were enticingly formulated, so the interlocutor accepted them *a priori*, not knowing they were a trap.

Even if an ideal communicative situation could be achieved to a satisfactory extent, every real (which means: not ideal) participant would strive to achieve decisions favorable to themselves or unfavorable to the partner in the proceedings if the situation in question was a decision-related one (other situations are socially insignificant). Whoever has failed to practice this in minor skirmishes and agrees to "acknowledge the norms" (defined by somebody else) will fall in the great battle for life's decisions because in the abovementioned situation, a decision has already been made before the discourse begins. In Habermas's neodialectics, that decision is conditioned *a priori* by: the discourse theory structure, forced trust in the procedure and the necessary results of the acknowledged norms which, as we learn at the very end, serve our opponent. I discuss this issue again in chapter **2.16.** *The multidimensional conception of a person in a communi-*

ty; let me just mention here that Habermas's discourse takes place in its own real time, between the cause and the necessary effect of the algorithm.

Truth bifurcation has been observed in philosophy many times. Habermas's contribution consists in strengthening the consensual truth, which may now flow freely in its own bed, separated from any other truth. So little is required to achieve this: in theory — the ideal world; in practice — a different world.

1.6. The writing convention

• **A quotation** is put in double quotation marks.

•• Single quotation marks are used when a given word belongs to a different pragmatic order than does the sentence which contains the word, that is, **when such a word does not mean what it names** but is a set of letters, representation, term, sign or graphic symbol of a concept and is provided in a language of a different type or level (metalanguage) than that of the entire sentence.

••• **When a word means what it names**, directly or metaphorically, it is written like the remaining meaningful words in the sentence, that is, without any graphic marks (unless it is a quotation).

For example, "truth" is a quotation which usually carries the meaning attributed to it by the author of the quoted text. When I write 'truth', I mean only the term (a five-letter noun), not *adaequatio intellectus et rei*, since in the latter case I use no graphic marks and simply write: truth.

Unfortunately, this convention is very poor even if one includes small capitals, boldface and various fonts. There are not many acknowledged graphic means of reflecting different semantic or artistic functions of a word in a sentence, especially because publishers, out of respect for the late typesetters and typewriters, allow for expanded characters (which are harmful to DTP) and simultaneously prohibit the use of underlining or new available graphic marks. Till the middle of the 20th century, most printing houses did not possess a set of underlined and strikeout fonts. Thus, authors were prohibited from using those options and this ban has remained in force even though it can presently be justified only by sentimental reasons and nothing else.

There is a multitude of word functions in sentences. A word written as "truth" may also be interpreted as a signal of irony, while italics are used to mark, among other things, titles and phrases from other languages (e.g. *adaequatio intellectus et rei*). Moreover, sometimes various functions overlap and even the author is not really able to indicate the dominant one in a given case.

I call this phenomenon function **opalescence** and I also find it problematic at times. Once in a while, it would be useful to mark mutually exclusive functions, but no relevant method exists.

I highlight this unobvious issue at the very beginning because similar problems constantly occur in colloquial speech, too. We are not always sure if somebody is serious or jocular, or if the abovementioned phenomenon takes place at all (and if so, to what degree). We simultaneously notice other parallel phenomena and, if we have to limit ourselves to one aspect for some reason, it is not always easy to choose the writing convention.

At the next level of text editing, we wonder which of the several existing synonyms we should use to name what we mean (provided that we do know what we mean, which is a rare case). Then, we either express our thought in a simpler way than in the first version of the text or complicate the descriptions to include special situations known to our addressees — especially if, as an author, we care (an even rarer case) about preventing false impressions in the recipient's mind.

Even the most flexible natural language is textured in speech and rough-textured in writing (which Heidegger attempted to bypass in an interesting manner; see chapter **1.25**); thought remains continuous. Every concept is fuzzy (as defined in Zadeh's logic, of course; one should not confuse "fuzziness" with postmodernist "fluidity"), has a vague meaning and functions in a sphere the boundaries of which are imprecisely defined. Consequently, quantifiers like 'everything', 'every', 'never' or 'there is only one' are fuzzy, too. I will come back to this singularity in the chapter on the liar paradox (**1.32**).

Such understanding of natural language as fuzzy (as evidenced by Aristotle in *Metaphysics*, but not in *Analytics*) will be visible on every page of this book. Please forgive me any inevitable inconsistencies; I justify them with the fact that natural language is inconsistent, too — even in dissertations on logic. Logic must be consistent, but it does not use natural language. Some claim that it is enough to find one example which contradicts a view containing a general quantifier in order to invalidate the entire reasoning, so they find it and "invalidate." This is a serious problem because classical logic, the whole quantifier calculus and all other formalisms can be reliably applied only to artificial languages.

Considering colors, we may initially use only two values, "black" and "white," but that is a very rough approximation. Bivalent logic is a similar approximation of certain language properties, but there are no genetic, organic or structural relationships between that logic and language. Frege, Boole and others reckoned that such logic described the laws of thought, if not language. They were wrong.

Bivalent logic resembles the political division into the "right wing" and the "left wing": once upon a time, somebody sat down on the right side of the parliament hall, while somebody else — on the left. The person on the right side expressed certain views and that on the left side voiced opposite ones. It subsequently spread to many nonparliamentary spheres of life — even philosophy. Through centuries, various thought currents have been classified as right-wing and then as left-wing, as right-wing in Europe and left-wing in America and in many other ways. Meanwhile, the new center has become greater and more diversified than the extremes. The divisions which matter most to humanity have been transferred to other issues and the division into the right wing and the left wing often depends only on the speaker's taste. In the 21st century, the division into nominal and verbal philosophy is gaining importance because it opens up a space for further research as nowadays the right wing and the left wing says virtually the same things (in the philosophical respect) and the only difference between them is that they do not like each other.

Formal logic is an absolutely independent abstract creation and cannot undergo any changes regardless of what mankind does to language, thought and itself in a given millennium. Therefore, even if (contrary to the facts) we assume that language and logic were similar once, they must part ways after a longer period and become very different. The reason is that logic will not be shaken till the end of the world, while mankind may cease to exist a bit earlier. Mankind may also completely change or lose natural language or even stop thinking (which is actually what I expect to happen first). However, mankind cannot change anything in formal logic — such is the nature of logic.

We may invent a thousand of other logics, but this will change nothing in classical logic. Moreover, any correctly constructed new logic will not change a jot till the end of the world either. This is what logic is about. This is also the nature of the "logic of choice," the axiom system of which I present in the *Annex* (chapter **1.42**). The remaining chapters are written using natural language — with certain limitations. A written text never reflects all of its author's intentions. If two people read the same passage, we will hear a difference. Let us consider the famous sentence: "I have never said you stole the money." A good reader will utter it in several ways, each of which will convey a different meaning.

Researchers studying interpersonal communication claim that, in an ordinary conversation, words are less important than nonverbal constituents such as gestures, intonation, relationship with the listener's knowledge, closeness to the interlocutors' hierarchy of values, emotions and the like. Therefore, I do not hope I can write down everything that

should be written, but I still do my best. Let me underline that what I write about truth in this book pertains to natural languages used in a natural manner, which does not exclude specialized terminology wherever it naturally belongs. This concerns especially the issue of intradisciplinarity, though it is not too onerous in this particular book.

1.7. The way truth exists

Plato was the first to elaborate on the issue of ideas and, unfortunately, he did it with such diligence that his solutions were not criticized too harshly afterwards. Even though Aristotle rejected ideas entirely, this has not solved the problem as subsequent followers keep emerging until today. Therefore, I will try to attack Plato from a different side that did my predecessors. Plato did not distinguish between exogenous and endogenous ideas. In the former I include ordinary abstractions, while in the latter — our internal desires which **have been named**.

Philosophy attempts to comprehend what we name and this is what distinguishes it from poetry, which attempts to name what we do not comprehend. This distinction allows one to move many writers commonly regarded as philosophers to the poets' group. The consequences are serious because when we attempt to understand a poet, we actually try to square the circle. This does not deny the fact that many poets were fantastic philosophers.

The basic means of expression in poetry is metaphor, the meaning of which does not simply equal the expected sum of meanings of its words and syntactic elements. Even a single word, such as 'radar', has different meanings as a metaphor and as a plain name. Under no circumstances can metaphor be the reasoning method in science or philosophy. Certainly, some issues may be illustrated using metaphors, e.g. the Allegory of the Cave, even in philosophy (in science, this is still prohibited), but Plato's Cave is actually first and foremost a metaphor of a metaphor. It shows to what extent we can be wrong if we apply an erroneous reasoning method.

Metaphor is a priceless tool of thinking, but it is not governed by logic (chapter **1.25.** *Lexicatives*). Neurosciences already know that each linguistic signal activates several centers in the brain. Logic chooses the main ones and metaphor goes for the peripheral ones.

Ordinary abstractions constitute a certain generalization of relevant characteristics, that is, those which are significant in the analyzed respect, e.g. 'sphericity', 'wisdom' or 'white'. Concepts like 'truth' and 'goodness' have an entirely different ontological status. Truth did not come to us from the outside. **Truth is a need of the mind**; we become aware of it verbally