What is truth?

"And speech created thought which is the measure of the Universe" (Shelley: Prometheus Unbound)

If one speaks of "truth" two things are assumed namely

a) that there is an underlying "language" and

b) that a "Person" calls something expressed in this language as "true".

Our first goal is to bring some order into this underlying concept.

We start with the order of the possible "languages". As a first step we skip from "language" to "writing". We therefore limit ourselves to written languages.

By that we first restrict severely the range of possible languages. After all volume, tone, accompanying body language etc. often are deciding factors for the "information" given by the language. But initially we only want to deal with those truths, expressed written in the traditional manner as e.g. mathematical proofs.

Although we first have restricted strongly the range of investigations (seemingly) we will expand strongly the range of possible writing. All written messages in the form of a "message" specified below are allowed.

In a message M of size n we mean a square area consisting of n^2 "elementary squares" of side length 0,01 mm that are either white or black. Such a square area can be e.g. a piece of paper, a blackboard, a monitor etc. with visible signs. With this definition of a message M the restriction on written evidence does not limit the generality. So we want to focus on such evidences, which can be represented in the form of a message M.

Now we will bring all possible messages M in a countable order. First we sort the messages M in groups according to their size n. Every message of size n consists of n^2 elementary squares, arranged in n lines of n places. Each of these elementary squares is either white or black. To a white elementary square we assign the number 1, to a black the number 2. The square, which is in line j on place k, we denote by EQ_{jk} and the assigned number (1 or 2) by a_{jk}. Every message M of size n is then clearly represented by the decimal number

$$a(M) = 0,a_{11}a_{12}...a_{1n}a_{21}a_{22}...a_{jk}...a_{nn}$$

All possible messages M we bring now in an accountable order AO(M) according to the size of a(M).

A message M is "by itself "senseless". She is a physical object: a piece of paper, a blackboard, a monitor etc.. A page of Chinese characters is e.g. for the author of this thesis without meaning, since he cannot speak or read Chinese. Only by a person P reading and understanding the message M this message can get a "sense" and that just for the Person P. Such sense, created by reading, than clearly is an object of thought of P. We can consider this sense as a dependent object of thought of P and M and denote by DO(P,M).

At this point it is necessary to indicate a weakness of any language. Used terms are often not very accurate and therefore for the assessment of statements as "true" or "not true" only limited suitable. Just one example: in the phrase "God is love" the terms "god", "is" and "love" will have often different "sense" for different Persons.

We continue then with the countable arrangement of all possible read operations. We assume that any possible person P at the time of any possible read operation L(P) occupies a certain minimum volume of space and that any reading operation needs a certain minimum time. Now we choose a coordinate system in the space-time-universe with three space coordinates and one time coordinate and divide it into space-time-elements RZE[1]

A space-time element RZE is a (four-dimensional) elementary cube EW of side length 0,01 mm (three space coordinates) and the duration of 0,01 sec (one time coordinate). With the help of the above mentioned coordinate system in the space-time-universe all elementary cubes EW can be countable arranged in an order AO(EW).

Without loss of generality can be assumed that each of the space-time-volume, the possible person P in each possible read operation L(P) occupies, contains at least one elementary cube EW in full. This elementary cube uniquely identifies the reading process L(P).

With the help of the countable order AO(EW) of all elementary cubes all possible read operations L(P), who are each uniquely identified by at least one elementary cube EW, can be arranged countable. We call this arrangement of all possible read operations L(P) with AO[DO(P,M)].

We finish our order structure with the countable arrangement of all possible objects of thought. As a "object of thought" we have called the "sense" of a "message M" for a "person P", reading this message. Every possible object of thought is therefore based on a possible message M and a possible read operation L(P) that identify this object of thought uniquely. All possible messages M are countable arranged in AO(M), all possible read operations

[1] Abbreviations are based on the German version

L(P) in AO[L(P)]. From the countable arrangements AO(M) and AO[L(P)] one obtains therefore a countable arrangement AO[DO(P,M)] of all possible objects of thought.

In this arrangement, the original question "What is truth?" plays a role only in so far as a person P referred to a statement contained in a message M to be "true" or to be "not true". The concept of "truth" is therefore used only in reference to a certain Person. It is therefore a "relative truth", namely in relation to the person P. The term "absolute truth" is not used. Even a ruling by the author of this thesis about an object of thought and therefore about the sense of a message M plays a role in the arrangement only in those cases, where the author is the person P. The same is true for every reader of this thesis.

But this relative truth has a weakness: Only the person P itself can indeed find the "sense" of a message M or what object of thought represents M for P. For this statement too there is no other criterion than the expression of P itself. P can be convinced of the correctness of his interpretation, even if it is false. P can express himself well against his inner conviction saying (subjectively) the untruth or he can reject any statement. The goal of objective truth proves to be unattainable.

From the possibility of a countable arrangement AO[DO(P,M)] of all possible objects of thought despite the weakness far-reaching conclusions can be drawn. One of these conclusions, e.g. in the field of mathematics, is, that in evidence of the uncountable of sets - e.g. the set of real numbers between 0 and 1 - can be derived a contradiction. Conclusions of the relativity principle of truth can also be expected in other areas such as "natural law", religion etc..

The initial question "What is truth?" can strictly speaking be answered only by "Truth is relative" or "Truth is something individual". For details: <http://www.fam.tuwien.ac.at/~wolff/>