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**... back to Enchantment ... ?**

**Donald Rumsfeld :  
A View of the World ?**

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*Chairman*

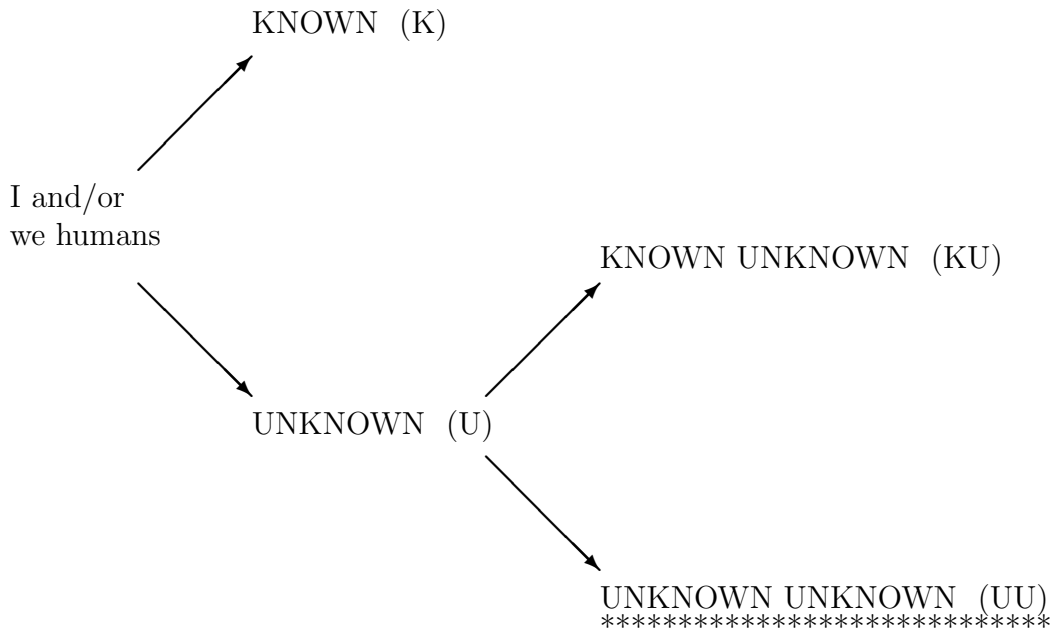
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”There are known knowns” is a phrase from a response United States Secretary of Defense Donald Rumsfeld gave to a question at a U.S. Department of Defense (DoD) news briefing on February 12, 2002 about the lack of evidence linking the government of Iraq with the supply of weapons of mass destruction to terrorist groups. Rumsfeld stated:

Reports that say that something hasn’t happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns the ones we don’t know we don’t know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones.

The relevance of the above is commensurate with the extent that today we are already living in what we like to call to be a "knowledge society", thus the basic categories of "known", respectively "unknown", are of a vital importance. Here, it should be noted that Rumsfeld himself, known throughout his long and diverse career in which he performed successfully in a variety of ventures in politics and business makes the astute remark - which otherwise should be quite self evident - that the really important distinction which, as known so far, was pioneered by himself in his above statement, is that between the "known unknown", and on the other hand, the "unknown unknown". Briefly, we can present this Rumsfeld Scheme as follows :



One may note that the above scheme need not necessarily be seen as an anthropocentric view, and even less as the view of some more or less typical human individual. Indeed, it is rather more natural to see the above scheme as a view of an observer of human affairs, when - as nowadays - humans claim to live in a "knowledge society", thus issues such as "known", respectively "unknown", are indeed essential. A further clarification may possibly be helped by recalling the following citation from the well known philosopher Karl Popper (1902-1994) :

“The more we learn about the world, and the deeper our learning, the more conscious, specific and articulate will be our knowledge of what we do not know, our knowledge of our ignorance”

or reading the early Renaissance book :

“On Learned Ignorance”, Nicholas Cusanus (1401-1464)

Now, in order to better grasp the importance - and truly major consequences - of the Rumsfeld indicated division of (U) into the two so much different parts (KU) and (UU), it is worth recalling what, ever since Renaissance, has been more or less consciously the Western view of the divide (K) versus (U). Namely, during Renaissance, the Western world woke up to the fact that the divide (K) versus (U) is not at all permanent, and thus as such given once and for all. Instead, the (K) part is rather manifestly growing, therefore correspondingly, the (U) part is shrinking ...

And here, a most unfortunate conclusion was reached - one often less than fully rational and conscious, and instead a rather emotional one, yet as such deep going in us humans - namely that the ever shrinking (U) part is actually becoming less and less relevant, less and less important ...

That conclusion was, indeed, most unfortunate, since by the time of the late 1800s it led to a considerable shift from belief in God, to belief in Science, as it was the latter which was making (K) grow more and more spectacularly - with its evermore useful and powerful everyday technological application - thus creating the manifestly arrogant human illusion that (U) was by then obviously counting altogether less and less ...

It all led to a massive *disenchantment* which can briefly be described as, Max Weber (1864-1920), “The Sociology of Religion” :

“ ... the character of modernized, bureaucratic, secularized Western society, where scientific understanding is more

highly valued than belief, and where processes are oriented toward rational goals, as opposed to traditional society, where ‘the world remains a great enchanted garden’ ...”

Well, the above Rumsfeld view introduces (UU), and does so seemingly for the first time in the Western philosophical tradition, even if amusingly, Rumsfeld himself never fancied being any sort of philosopher, and at that particular moment when he introduced (UU) at the mentioned news briefing on February 12, 2002, he did so in a rather trivial manner, seemingly not being in any way whatsoever aware of what may indeed be the extraordinary consequences of the (UU) concept !

And it is most elementarily obvious to any normal decent thinking person that (UU) may indeed be shrinking, yet it is - and it will for evermore remain - nothing short of an ... unfathomably infinite and overwhelmingly important ... entity ...

Unfathomably infinite, at least in terms of each and every human individual, and quite likely, of the whole human species as well ...

Consequently, here we have a most welcome and needed foundational *correction* of the ... learned ignorant arrogance ... we have been wallowing in ever since Renaissance, namely that the World is more and more centered in the ever more knowing human, while by implication, the (U) part keeps more and more fading into irrelevance ...

In particular, we can now recover the essence of the pre-Renaissance *wisdom* of long long ages dominant basic view of the World according to which we humans depend moment by moment, and by far most, on an ... unfathomably unfathomable ... reality, a reality which keeps dwarfing all of (K), no matter how much (K) may ever happen to grow ...

Of course, the point is not in returning wholesale to that pre-Renaissance basic view of the World which had, in fact, been mostly awfully primitive, but rather to its very essence in wisdom, namely that we humans depend moment by moment, and by far most, on the (UU) ...

And if we are lucky - and in fact, if we are no less than blessed - all of what can happen to us in regard to (UU) is but :

1) To wake up, or in the perspective of the longer human history, rather to re-wake up to the existence of (UU) and its primordial and permanent action upon us.

2) To re-start the possibility and practice that, notwithstanding 1), we may be able to interact in a two ways manner with (UU), and do so usefully for us. Thus in the mentioned terms of Max Weber, to go back to a view in which “the world remains a great *enchanted* garden”, as mentioned at the start of the Old Testament.

Traditionally, “prayer” was supposed to be one such “human to (UU)” interaction ...

And in modern times we even manage to turn some parts of the (UU) into the (K). Indeed, electricity, for instance, was for us an (UU), say even merely three or four centuries ago. Yet in some ways we managed to get it most usefully into the realms of the (K) ...

The Hindu Aryan civilization, after millennia and untold millions of pages of books and texts of Vedic literature, led to Adi Shankara (788-820 AD) in its Advaita Vedanta branch, who synthesized much of its essence in the brief statement :

“Atman is Brahman.”

Here, when squeezed into usual words, “Atman” means the human individual’s soul, spirit, self ...

As for “Brahman”, it is supposed to be the soul, spirit, self, etc., of the whole World ...

Well, the simple word “is” in Shankara’s statement is about 2) above.

All in all, it is indeed high time, and seemingly rather dangerously late in fact, to recover ourselves from the ... learned ignorant arrogant delusion ... of Renaissance and reawaken ourselves to the (UU) ...

And when we consider a bit better and more carefully such issues as above, we can simply state that in the realms of our “knowledge society”, the (UU) is nothing short of ... God ..., to use a traditional

terminology ...

In other words, the understanding of above obviously does not need any of the traditional grandiose languages of claimed to be eternally and infinitely separated realms like “sacred versus mundane”, “holy versus profane”, “virtue versus sin”, “sin versus unpardonable sin”, “God versus Devil”, and so on and on ...

Instead, as seen above, with the use of a simple, minimal everyday language and a rather rational use of it, one can get to (UU) and to what appear so obviously to be its most basic consequences even in our moment by moment lives ...

In particular, most obviously, one need not “believe” in the (UU), since its existence and primordial importance in human affairs is trivially obvious, once one manages somehow to wake up from the ... learned ignorant arrogant delusion ... of Renaissance ...

After all, “belief” is a far far too weak and massively error prone ontological position, and we should do far far better than that, and do so through some versions of “knowing”, that being of course in line with our “knowledge society” ...

yes indeed, let us just remember that less than a mere four centuries ago, Galileo Galilei nearly got killed by the Vatican, since he went against the ... belief ... that Planet Earth is immobile at the center of the World ...

So much for relying on mere “beliefs” ...

## Possible Commentaries

We tried to keep the above as short and clear as possible, in order, among others, to minimize the irresistible temptation of the ... learned and distinguished ... members of the “chattering classes” to derail instantly into any number and any sort of hardly relevant directions ...

After all, they, too, are the *victims* of a trouble of which - as so many others in our days - they fail to be aware of. Namely, what CHANGED indeed since the early Renaissance, and even more so since the 1789 French Revolutions, and following it, the early 1800s, is the usual language used by the larger and larger classes of educated persons.

The earlier language was much influenced by that of the great holy

books, which was basically that of various religions. And that language, seemingly, took central stage with the passing about three millennia ago from the ancient Era of Magic to the Era of Myth, to use a terminology introduced by Karl Jaspers (1883-1969).

Now, that language of the Era of Myth proved itself to be nothing short of a miracle in succeeding to impress for nearly five millennia a relevantly large part of a population which was utterly lacking any education, and in its vast majority was in fact illiterate, overworked, poor, and deadly tired most of the time, if not even sick ...

And an important “secret” of this incredible success was precisely in the word “myth”, so perfectly utilized by Jaspers in describing all that long era. Namely, myth is supposed to present one with avalanches of dramas. And dramas are highly popular among the largest masses. After all, in such masses just about each human does nearly all the time experience his own drama which is, and remains much the same during most of his life. Thus added to it comes the drama of its bored hopelessness, or of the hopeless boredom ...

And then, being taken away into the myth can offer a welcome change where so many other and different dramas are recalled as vividly as possible ...

And no doubt, it is nearing quite a top performance in drama when *counter-posing* terms such as “sacred” and “mundane”, or “holy” and “profane”, not to mention “virtue” and “sin”, and why not “sin” and “unpardonable sin”, or ultimately, “God” versus “Devil” ...

And a good part of such implied drama is, of course, a support for the enchantment, even if quite inevitably it also supports a significant amount of awe, and even fear ...

But then, even such a drama-mix does further contribute to the overall drama ...

And clearly, the presently disenchanted masses can only be further disenchanted if in their ontological searches they again and again are presented with the ... language of myth ..., the very language which did disenchant them the first time, and has done so more and more since the Renaissance ...

Shall we then conclude tentatively that, following Jaspers, we may call

by the name of the ... Era of Disenchantment ... the era started with Renaissance, the era when we humans have so massively fallen for an ... ignorant arrogance and arrogant ignorance ... in which we simply and so catastrophically *overreacted* to the promises of the growing modern science ... ?

The above rather short and cursory presentation may be helped by a number of commentaries. And in this regard, any further contributions which may indeed prove to be useful are, needless to say, most welcome ...

a) One may note, as mentioned, that Donald Rumsfeld himself did not seem to care much about the deeper and wider significance of the (UU). In his large and detailed autobiography of 2011, entitled “Known and Unknown”, for instance, the words “known” or “unknown” do not figure in the Index at the end of the book. This fact, however, need not diminish the extraordinary importance of the introduction by him of the division of (U) into (KU) and (UU), and above all, of the introduction of the (UU).

b) The importance of the (UU) does not consist in the possibility, briefly sketched above, to de-sacralize religion, and turn it from an issue of “belief” into one of very simple ... matter of fact ... one. No, a significant importance of the (UU) is in the possibility it offers to the humans of our “knowledge society” who have fallen so hopelessly totally to the mentioned learned ignorant arrogant delusion of Renaissance and place the human at the center of the World, to recover a more realistic and less arrogant ontology.

As for those who have not fallen for the mentioned ... disenchanting and all consuming Renaissance aberration ..., they are welcome to keep to their given ontology, as long as God, Divinity, or any in other way named entity which is ... transcendently transcendental ... is supposed to be the ultimate and all determining foundation of reality ...

c) We can never - and should never - forget that warning of Plato in his book “Republic” that everybody older than the age of ten (yes, 10) should be sent away from Plato’s City. And the reason obviously



is that even by such a young age one has quite likely gotten by hook or by crook, and mostly by default, an ontology which, typically, is hopelessly off the mark in a number of possible ways ...

And indeed nowadays, such a process happens even earlier than the age of ten, and does not lead to better results ...

Of course, as long as such an ontology does not suffer from the mentioned Renaissance aberration, perhaps the respective person need not necessarily be ... sent away ... from anywhere ...

d) Regarding 2) above, which obviously is a rather ... hot ... issue, we humans may inevitably react emotionally, and do so not only as a first reaction, but also rather exclusively so ...

On the other hand, the matter of fact approach to ontology which - as sketched above - the existence of (UU) offers to us must not be neglected.

Fortunately, that matter of fact does not need much further elaboration ...

As for the emotional human reactions, well, they are supposed to range - in terms of usual religions - from awe and fear, on one hand, to love, on the other ...

And the commandment for “love” is quite the same and rather dramatical in its formulation in Deuteronomy 6:5, Mark 12:30, Matthew 22:37, Luke 10:27.

Well, some of us may be accustomed to a matter of fact approach even of such hot issues, and then, deal with the one at hand as, for instance, one deals with “ $1 + 1 = 2$ ” ...

Here however, it may be useful to recall Shankara’s statement that “Atman is Brahman” ...

Or perhaps, even simpler : let us make use of Weber’s term and ... try to find out way back to Enchantment ...

That very Enchantment which we may as well call by the name of (UU), provided that we may recover our ... two-way ... essential interaction with it, as mentioned earlier in 2) ...

e) Above we used the formulation that science “was making (K) grow more and more spectacularly, thus creating the manifestly arrogant human illusion of (U) counting altogether less and less”.

In fact, this turns out to be a considerable understatement of the state

of affairs at the end of the 1800s and beginning of 1900s. A good description of the situation can be found in the 2012 book “Science Set Free” by Rupert Sheldrake, on page 19, in the section “Further fantasies of omniscience”.

One typical example among many other ones is the case of William Thomson, known also as Lord Kelvin, at the time a much celebrated English physicist, who in 1900 stated that : “There is nothing new to be discovered in physics now. All that remains is more and more precise measurement.” ...

And indeed, by the time of the late 1800s, the ever aggravating fundamental Renaissance error, according to which the (U) was evermore fading into irrelevance, managed to go so far as to turn into ... fantasies of human omniscience ...

Yet, in the very same year 1900, Max Planck introduced Quantum Theory, which was so revolutionary new a theory of physics, as to come directly from the (UU) ...

And a few years later, in 1905, a no less revolutionary theory of physics, Special Relativity, was to be introduced by Albert Einstein ...

So much for ... human omniscience ...

f) One *must* be very careful when ... trying ... to think rationally about the (UU) !!!

There is, in our “knowledge society”, an immense temptation to think about the (UU) and assume that the results of such thinking are ... sufficiently ... relevant ...

On the other hand, the very definition of (UU) in the sense of Donald Rumsfeld is precisely that the (UU) is ... untouchable ... by *any and all* rational thinking ...

Of course, since Renaissance, the very existence of such realms which are absolutely outside of our rational human thinking is more and more *totally* rejected : this is but one of the fundamental *insanities* of modern times ...

But then, for instance, just look at a dog which is one of the most intelligent animals quite abundantly present around us humans : does the dog, can the dog ... understand ..., say, Quantum Theory ???

Yet Quanta are absolutely relevant to the moment by moment existence of a dog ...

Yes, the dog cannot at all understand even the very fact that it cannot

at all understand Quantum Theory ...  
Yes, try and make a dog understand :

\*) that there is Quantum Theory

\*\*\*) and that the dog simply cannot understand even the mere fact that there is Quantum Theory.

Somewhat *similarly* are we humans with the (UU) ...

So then, please, try and look at the (UU) at something for us humans which is like Quantum Theory for a dog ...

But then, this is precisely one of the ... reasons ... why we should *recover* our Enchantment now, when we know about the existence of the (UU) ...

g) As for a two way interaction with the (UU) :

g.1) But of course, parts of the (UU) become (K), and they may even do so directly, or first they become (KU). This is clear proof that - at least in principle - we can usefully relate to the (UU).

g.2) It looks most likely that in the World everything depends to some extent on everything else, even if often only on a very small, or rather negligible extent : otherwise, it is us humans who must prove that it is not so, and clearly, we cannot even think how we could ever prove that ...

g.3) The above g.1) shows that we can indeed usefully interact with the (UU), even if we do not seem to know any method which would give us 100% sure results.

g.4) The issue is to find more and more and better and better ways in which we can usefully interact with the (UU) : “prayer” and “scientific research” are so far the two methods seemingly most tired historically in this regard ...

And “scientific research” in its more proper sense is merely a few centuries old, if at all, and it is pursued still by a tiny minority of humans ...

g.5) Since the (UU) is not ... shrinking into relevance ..., and will never ever do so, contrary to the rather insane Renaissance exaggeration, it should be quite likely that moment after moment we depend, and will always depend, far far far more on the (UU), than on anything else ...

h) The concept of the UNKNOWN UNKNOWN (UU) can naturally recall “Theologia Negativa”. And then in fact a *double negation* of Theologia Negativa.

Thus one may wonder whether that would in some possible way amount to a Theologia Positiva ?

In this regard, it may be useful to read the 1931 paper of the presently somewhat less popular Austrian philosopher Robert Reininger : “Metaphysik der Wirklichkeit”, Wien, Wilhelm Braumüller Verlag, S, 396-405. One of the interests of that paper is in its insightful comments regarding the “Absolute” which is the term used by Reininger for other traditional terms, such as “God”, “Brahman”, the “Transcendent”, and why not, as well the UNKNOWN UNKNOWN (UU) ...

What is also remarkable in that paper is the complete submission to the mentioned traditional several millennia old *dramatic* language of theology and related philosophy, a language which again and again shows its aggravated and unavoidable ability to make a description as clear, simple and concise as that following from Rumsfeld’s UNKNOWN UNKNOWN (UU), into an endless story which in our times can hardly have any other effect than the rather instant repulsion by large parts of the better educated public ...

i) An essential practical challenge in the proper use of the UNKNOWN UNKNOWN (UU) is to *bring back* into one’s life the “enchantment” which the Renaissance originated move from religion to science based ontology did exchange for “disenchantment” ...

Needless to say, the “enchantment” which is nowadays supposed to accompany the UNKNOWN UNKNOWN (UU) cannot and should not be the pre-Renaissance one. Instead, it could be an “enchantment” of considerably more genuine nature, as it would incorporate all the true “miracles” turned into “everyday” phenomena which science and technology brought to us humans ...

As for the ways of bringing back such an “enchantment”, that may be

as much a highly specific individual venture, as having also quite close and important similarities with more widespread social trends ...

Here however it is important to note that both “enchantment” and “disenchantment” are essentially individual subjective human states, and as such they are amenable to effective conscious influence by the respective individual, provided that such a individual enjoys a sufficiently developed self-referential ability, one for instance in the sense of Exodus 3:14, or of the ancient Greek admonition :

“Man, first know yourself !” ...

Otherwise, it may be quite likely to end up under the sign of another ancient Greek admonition :

“A life unexamined is not worth living ...” ...

j) As for the “chattering classes”, a few FACTS OF LIFE may be worth recalling :

- their own life starts after a long long “SHUT UP” period about which they do not know much, and do not remember either having been asked the permission to get born, thus be given the possibility to ... chatter ... instantly and endlessly ...
- their own death which, similarly, leads to another long long “SHUT UP” ...

Yes, they could simply wonder WHAT is the position of that “SHUT UP” in the ... greater scheme of things ... ?

Can that be seen in any way as related to what traditionally was attempted to be meant by God ?

And if yes, then such a God may ever have some relevance even during that ... finite ... break from the eternal “SHUT UP” while the members of the “chattering classes” happen to belong to such classes ?

For instance, would such members also comment on

$$1 + 1 = 2$$

and what would possibly be their ... endless ... comments on such a statement ?

After all, being REALLY clever, learned and wise, does NOT AT ALL mean that one can ALWAYS AND INSTANTLY say something to everything ...

NO, it rather means to be able to RECOGNIZE when one's own mind reached the END of human understanding ...

Of course, usually in politics, theology, philosophy, and so on, this is missing quite a lot ...

And so does, of course, in ... chattering ...

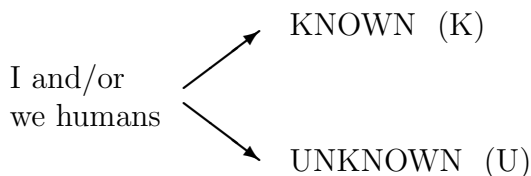
k) One should MOST STRONGLY AND RATHER PERMANENTLY be aware of the following FUNDAMENTAL difference :

- to keep endlessly *elaborating* on one's religion is merely ... theology ...
- to *live genuinely* one's religion is to keep it AS SIMPLE AS POSSIBLE ...

One example in this regard, which - even if rather unwittingly on his part - we owe it to Donald Rumsfeld is the UTTER SIMPLICITY of being made aware of the :

... UNKNOWN UNKNOWN (UU) ...

and thus being ... rescued ... from the slippery slope of ... arrogant ignorance and ignorant arrogance ... upon which we so proudly and over-confidently took marching starting with the early Renaissance, when we noted that in the scheme



the KNOWN (K) is no longer given and fixed for ages upon ages, but instead, keeps expanding, and thus we happily jumped to the ... “conclusion” ... that the UNKNOWN (U) must therefore keep shrinking, and thus ... ultimately ... shrink into ... irrelevance ...

Well, ever since Donald Rumsfeld’s rather off the cuff comment in 2002, we may hopefully WAKE UP to the UNKNOWN UNKNOWN (UU) which - at least within the lifetime of any given human - is NOT AT ALL going to shrink into absolutely any sort of ... irrelevance ...

l) Many of the FUNDAMENTAL mistakes we make are so simple and so obvious that we do not notice them, cannot notice them, and actually, we refuse to notice them ...

For example, look at our pet dogs how confidently and successfully they live and move in our houses where there are any number of high-technology devices, like for instance, our computers ...

And the dogs, which are in fact quite intelligent creatures :

- have absolutely no idea about them,

- have absolutely no idea that they have absolutely no idea about them,

- have absolutely no idea that they have absolutely no idea that they have absolutely no idea about them,

- and so on, WORSE AND WORSE ENDLESSLY ...

- not to mention that it would be impossible to explain them what those computers are all about ...

So then, HOW can we humans be so ... infinitely sure ... that we are NEVER EVER in a similar situation ?

And this is PRECISELY what the UNKNOWN UNKNOWN (UU) is all about ...

m) Ever since Renaissance, it seems simply impossible for nearly EVERYBODY to realize the EXISTENCE and NATURE of the UNKNOWN UNKNOWN (UU) ...

And of course, one simply CANNOT give oneself such an example, since it would contradict oneself ...

However, it is NOT proven that the above situation of ... infinite recursive ignorance ... does not in fact apply to us ...

n) The LANGUAGE in which one thinks is VERY important, since - seemingly still unknown to many - it DOES create a lot of problems which do NOT really exist, and on the other hand, it DISREGARDS lot of important problems.

This fact is a rather new discovery in Western philosophy, and it started with the Vienna Circle in the early 1900s, which is also called as the "Third Positivism". One of its leaders was Moritz Schlick, a Jew, who got assassinated by Nazis in the 1930s. During the same period, and in linguistics, the famous - and similar - "Sapir-Whorf Hypothesis" was developed.

Today, in "Post-Modernism" the story goes by the name "narrative", and it is rather superficial in comparison ...

In this regard, the EXTRAORDINARY advantage of the concept of the UNKNOWN UNKNOWN (UU) is precisely in the extreme simplicity of it, and thus also of the language used to point it out, as seen in k) above.

Furthermore, the language used in formulating the UNKNOWN UNKNOWN (UU) is that within the present day "knowledge society", that is, it is NOT AT ALL affected by any particular "narrative", except by what is relevant to pure and simple rational human thinking and knowing ...

So that, it is MUCH like, say, " $1 + 1 = 2$ ", which is not objected by any philosophy, politics, religion, and do on ...

o) An addition to k), namely :

An outstanding example of ... incisive brevity in the use of simple usual language ... is the following Zen-Buddhist saying :

"You show the fool the Moon, and he is looking at your finger ..."



a saying which amounts to the first two, if not in fact, the first three Commandments in the Old Testament.

In this regard, the concept of the UNKNOWN UNKNOWN (UU) also exhibits a hard to beat ... incisive brevity in the use of simple usual language ...

Let us therefore focus a bit more on the following *three Language Related Criteria* which may be so important regarding k), and therefore, here as well, namely :

- the use of simple usual language in the formulation presented
- the brevity of the formulation
- the manifest relevance at the given time of the specific formulation

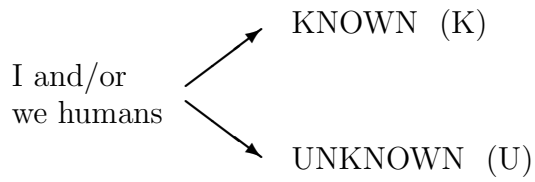
As for the extent of the relevance of the respective formulation given by the concept of the UNKNOWN UNKNOWN (UU), a relevance from the point of view of the message it intends to convey at the given time, that formulation is indeed tuned to our own times which, nowadays, we so much love to call the “knowledge society” ...

As for the position of “knowledge” or “knowing” in the hierarchy of human abilities to relate to the world, we can note the following.

One of the most remarkable features emerging starting with the Renaissance has been the ongoing massive shift from a rather blind “faith”, or “belief” based life to one hoped to be based instead upon “knowledge”, and why not, even upon “understanding” ...

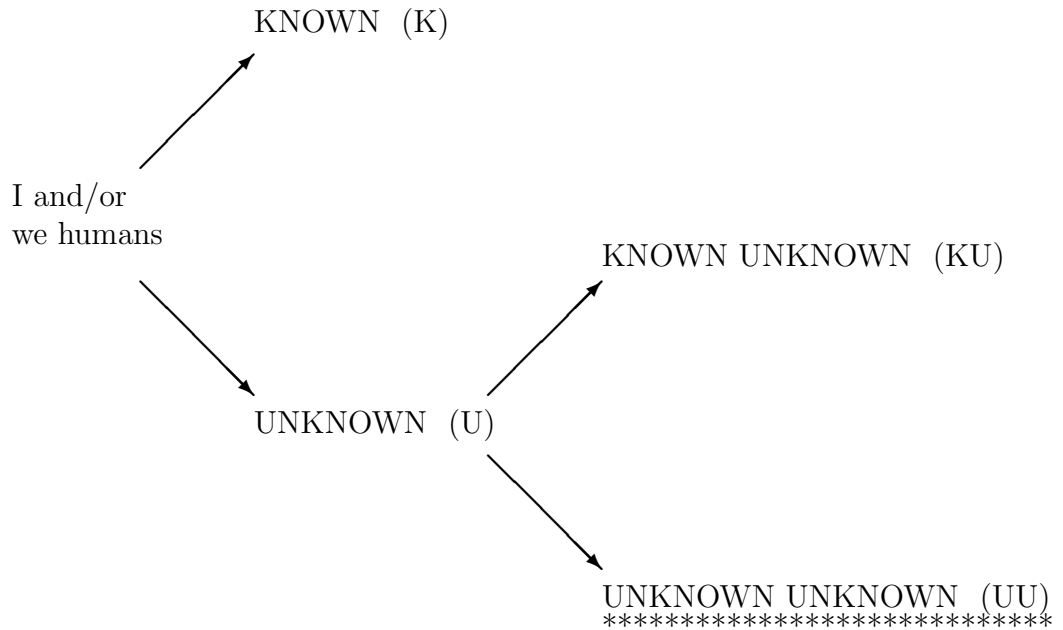
The *difference* between “knowledge” and “understanding”, however, also has the following aspect : “understanding” presumes, implies “knowledge”, while it is not necessarily the other way round.

For instance, already in the pre-Rumsfeld traditional scheme



we are supposed to “understand” the role of the ... UNKNOWN (U) ..., even if by definition, we are not supposed to “know” much about it ...

As for the Rumsfeld Scheme itself, which we consider as basic throughout this essay, namely



the essential and novel contribution of this scheme is precisely in the FACT that :

- we “know” hardly anything at all about the UNKNOWN UNKNOWN (UU),
- yet we may - hopefully - “understand” well enough both the

existence of it, as well as the all encompassing and all underlying fundamental role it plays for us humans.

And again, this Rumsfeld Scheme comes formulated in a way which meets quite remarkably well the above mentioned three Language Related Criteria ...

Of course, there have been as well other formulation which may have met one or more of these three Language Related Criteria. One of them, attributed to Shankara, namely

“Atman is Brahman”

which in Hindu tradition, where the concepts of “Atman” and “Brahman” may be quite familiar, satisfies all the three mentioned criteria.

A few millennia earlier, the formulation in Exodus 3:14, namely

“I Am that I Am”

appears to cover well the mentioned three criteria, and in addition, it is of a rather universal relevance, not being limited in its specific concepts to any particular culture ...

Both of these examples, however, are - rightly or wrongly, and due to various reasons - not particularly appreciated in our present day ... “knowledge societies” ...

Thus, and why not, one may as well try with the Rumsfeld Scheme, more precisely, with the UNKNOWN UNKNOWN (UU) which DOES go quite instantly to what is supposed to be the very heart of our so proudly proclaimed ... “knowledge societies” ...

Now of course, the only potential human alternatives to “knowledge” and “understanding” are “faith” or “belief”, or simply, and also accessible to animals and out own small children, so called mere “instant sensations of truth” ...

Consequently, choosing “knowledge” instead of the mentioned alternatives is considerably more than simply following the latest fashion

suggested in the title of our alleged “knowledge society” ...  
And then, the above remark regarding the difference between “knowledge” and “understanding” has a particular importance ...

As for the DIFFICULTY in the venture of BOTH “knowing” AND “understanding” that human “knowledge” is inherently and inevitably limited, it follows that the primacy in one’s own ONTOLOGY is rather in focusing on, and renewing the basics, than in elaborating on its developments ...

And as the Americans love to say, well, ... right now ... it seems that the concept of the UNKNOWN UNKNOWN (UU) may indeed be particularly suited in our “knowledge societies” which try to belabour in a growing setup of “disenchantments” ...

In this regard, one may note the considerable politeness in the above mentioned Zen-Buddhist saying. Indeed, it may be a lot more appropriate to formulate it in a manner where ... one calls a spade a spade ..., in which case it may rather sound as follows :

“You show the fool the Moon, and he is looking at his own  
dirty toe stuck in the mud ...”

p) Further addition to k) and o), namely :

A truly fundamental and practically nearly impossible challenge in ONTOLOGY, and thus in particular, in what usually is called RELIGION was already suggested in k) as the :

- The CONFLICT between the sine-qua-non need to keep the basic ideas simple, as simple as possible, and on the other hand, to elaborate on them and do so in ways which may be helpful in the day by day practice.

A second and no less fundamental as well as practically nearly impossible challenge is to keep CHANGING the basic ideas.

In this regard, one should recall that a fundamental principle in Reformation has been formulated from the very beginning by the ... commandment ... :

- Ecclesia semper reformanda est.

which means that the Church is ALWAYS to be reformed ...

And here, of course, “reform” is supposed to go deep, as deep as possible ...

On the other hand, it is just about impossible even to imagine how a “church”, any “church” for that matter, may ever step on such a road and survive ...

Here the ... bad news ... is that the very same does essentially and inevitably apply to ONTOLOGY as well ...

As for some ... hoped for ... possible good news, one of the utterly obvious features of the UNKNOWN UNKNOWN (UU), a feature we CAN understand in spite of all the ... unknowns ... involved is precisely the fact that the more one is with the UNKNOWN UNKNOWN (UU), the more one may be OPEN to ... Ecclesia semper reformanda est ...

By the way, as if to illustrate the near practical impossibility of genuine, deep, very deep going reformation, one can note what happens nowadays in various churches : women and openly homosexuals are promoted to priesthood ...

Yes indeed, this is quite an ... extreme ... “reform” from the point of view of long held Christian tradition ...

On the other hand, the risky courtship with polytheism implied by the nearly two millennia old dogma of Holy Trinity has been set aside only by the rather minute in size Unitarian Church, started in 1568 ... Indeed, this latter reform advocating a return to the fundamental monotheism of Abrahamic religions proved to be far too much even for all the other Protestant Churches ...

Amusingly in this regard, the present Pope seems - under obvious Islamic pressure - to make some noises regarding a certain welcome detachment from Jesus Christ ...

After all, the Moslems, just like the Jews, have never accepted the dogma of Holy Trinity, and instead, had most rigorously kept to their monotheism ...

q) Let us try to get a bit more ... PRACTICAL ...

Long before Adi Shankara, who lived somewhat more recently than Mahomed, the ancient Hindu tradition was talking about the Three Laws of Manu, with Manu supposed to be the eternal law giver. And these three laws are :

- Remember your Creator.
- Live according to His Laws.
- Find your way back to Him.

Clearly, these three laws are presented in a natural order, in the sense that the next one assumes the fulfillment of the previous one. Moreover, they also come in an order of ... increasing ... difficulty to comply ...

Let us, therefore, make a few remarks regarding the third, and thus, the most difficult one ...

First perhaps to note is that all these three laws are essentially assuming the a priori existence of TIME ...

And here an ... immense ... problem starts from PRACTICAL point of view ...

Indeed, TIME - much unlike SPACE - hardly leaves us any freedom : we cannot stop it, we cannot go back in it, we cannot slow or hasten it, and we cannot jump ahead in it ...

However - unknown to many and many more - that tyranny of TIME is mostly due to our awfully limited, and thus terribly distorted usual perception of it ...

And in this regard, it is indeed most regrettable that not a few of the greatest ever minds have throughout the ages TOTALLY fallen for such a limited and distorted view of it ...

Let us, in this regard, mention only St. Augustine of Hippo (354-430 AD) and Immanuel Kant (1724-1804). As for St. Augustine, as seen in Appendix, it is most impressive, indeed, to see what a sophisticated view he had of TIME back sixteen centuries ago. Regarding Kant, one of the greatest philosophers in modern times, he saw both TIME and

SPACE as eternally given fundamental entities in Creation ...  
And yet, together with so many most distinguished thinkers, both St. Augustine and Kant turned out to miss just about completely on the more genuine nature of TIME ...

As for what TIME may actually happen to be, historically there seems to have been two more more important directions leading out of its usual limited and distorted view ...

One of them, most likely originating far back in ancient times, prior even to literate civilizations, was the variety of views practiced by what for lack of a better term may be collected under the label of views of “mystics” ...

The other group of views is that about which present day theoretical physicists start to become aware of more and more ...

As for the possible mystical views of TIME they are, naturally, subjective to such an extent that it is bordering on the impossible ever to give any more relevant account of them ...

On the other hand, the views of TIME which seem to be more and more suggested by theoretical physics are supposed to be less subjective and more objective, thus are more amenable to expression. And their common feature is that, much unlike in Kant’s view, TIME appears to be but a mere ... epiphenomenon ... which grows out from yet deeper aspects of Creation ...

But as an illustration of what one may call as the “enigma of TIME”, let us recall some rather down to Earth examples from daily politics.

The Yale University professor, Timothy Snyder in his recent book “The Road to Unfreedom, Russia, Europe, America”, writes about the two sort of politics practiced both traditionally and nowadays, namely, the “eternity politics” and the “inevitability politics” ...

Clearly, both of them make any sense, if at all, only assuming the usual perception of TIME as a dynamics from “past” to “future”, through a rather ephemeral “present” moment ...

And to try to be more clear, let us get into some details.

Snyder points out in his mentioned book the significant popularity among high level Russian political circles which include as well Presi-

dent Putin, of the Russian aristocrat Ivan Ilyin (1883-1954), expelled from communist Russia in 1922, and who had developed a political philosophy based very strongly on Christian religion. Briefly, his basic ideas are as follows, as cited from Snyder's book :

“The one good in the universe, Ilyin maintained, had been God's totality before creation. When God created the world, he shattered the single and total Truth that was himself. Ilyin divided the world into the ‘categorical’, the lost realm of that single perfect concept; and the ‘historical’, human life with its facts and passions. For him, the tragedy of existence was that facts could not be reassembled into God's totality, nor passions into God's purpose.

The Romanian thinker E.M. Cioran, himself an advocate of Christian fascism, explained the concept :

Before history, God is perfect and eternal; once He begins history, God seems ‘frenetic, committing error upon error.’

As Ilyin put it :

When God sank into empirical existence he was deprived of His harmonious unity, logical reason, and organizational purpose.

Clearly, deeply religious persons like Ilyin and others can push themselves into such hopeless blasphemy only to the extent that they do happen to hold to at least one ... terribly mistaken assumption ...

And as all too obviously seems to be case from the above citation, the blatantly mistaken assumption is that the usual human perception of TIME does in fact contain ALL about TIME ...

In this regard, it is indeed a great pity to see persons like Ilyin sentencing themselves irremediably to such a horrible blasphemy, and doing so in total ignorance of the more than one and half millennia old sophistication of a major Christian celebrity like St. Augustine, when it comes to considering TIME ...

Needless to say, there are other major philosophers who are arrested in the usual limited and distorted view of time, thus ALL of their



philosophy suffers considerably, risking to be altogether irrelevant ... And in fact, it may simply be stated that it is hard, very hard, to find a philosopher or scientist who would not be a prisoner of the customary utterly deficient perception of TIME ...

Among such, so to say, prisoner-philosophers is the truly remarkable G.W.F. Hegel (1770-1831), as cited by Snyder :

“... Hegel’s ambition was to resolve the difference between what is and what should be. His claim was that something called Spirit, a unity of all thoughts and minds, was emerging over time, through the conflicts that defined epochs. Hegel’s was an appealing way of seeing our fractious world, since it suggested that catastrophe was an indication of progress. History was a ‘slaughter bench’, but the bloodshed had a purpose. This idea allowed philosophers to pose as prophets, seers of hidden patterns that would resolve themselves into a better world, judges of who had to suffer now so that all would benefit later. If Spirit was the only good, then any means that History chose for its realization was also good.

Ilyin was a Right Hegelian. In a typically sharp phrase, he wrote that Marx never got out of the ‘waiting room’ of Hegelian philosophy. Ilyin nevertheless agreed that by ‘Spirit’ Hegel meant God. Like Marx, Ilyin thought that history had begun with an original sin that doomed humanity to suffering. It was perpetrated not by man upon man through property, as Marxists thought, but by God upon man through the creation of the world. Rather than killing God, as the Left Hegelian had done, Ilyin left him wounded and lonely. Life was poor and chaotic, as the Marxists thought, but not because of technology and class conflict. People suffered because God’s creation was irresolvably conflictual. Facts and passions could not be aligned through revolution, only through redemption. The only totality was God’s, which a chosen nation would restore thanks to a miracle performed by a redeemer.”

On the other hand, in our own days, a highly original way of going far beyond the usual limited and distorted view of TIME was suggested by

Alfred Korzybski in his 1933 book, which later was shortened in “Selections from Science and Sanity, An Introduction to Non-Aristotelian Systems and General Semantics” among others a rather credible such alternative view, and does so simply by stepping out from what prove to be most restrictive constrains of the usual Aristotelian Logic, and specifically, of its “Identity Assumption”.

Not to mention that far too many of the gloomy, tragic, senseless, etc., views of human life may mostly be caused by the simple mistake that their representatives take upon themselves an exaggerated anthropocentric view of the whole Creation ...

In this regard, it may perhaps help as one possible way out to recall the saying attributed to Nicholas Cusanus :

“The World is like a circle whose center is everywhere, and whose circumference is nowhere ...”

In conclusion to this present comment q), we may note :

- Our own, personal, intimate perception of TIME with its limitations and distortions may happen to be one of the very first and hardest obstacles to God, to use a traditional language.
- As far back as sixteen centuries ago, St. Augustine proved to have an impressively clear awareness of the crucial importance of the ... mystery ... of TIME, and went on record with a remarkably sophisticated approach to that vitally important issue. The recent paper in Appendix is a testimony in this regard, as it surveys an impressive list of researchers and their contributions to the issue.
- In our days, one of the remarkable original approaches to the issue of TIME have been proposed in the mentioned book of Alfred Korzybski, and it is the subject for the theory of “General Semantics” introduced by him.
- Recent theoretical physics is showing more and more convincingly that TIME, just like SPACE, is merely an ... epiphenomenon ... which emerges from far deeper aspects of Creation. In this regard, already Special Relativity introduced in 1905,

showed that “absolute” TIME does not exist, just like absolute “simultaneity” of events does not exist either. As it happens however, such FACTS have not yet penetrated into the general awareness, although experimentally they have been, and continue to be tested and confirmed any number of times, including in such by now mundane applications like GPS-s.

- By the way of Special Relativity : In its 1908 Minkowski interpretation, TIME and SPACE do very simply and easily keep transforming into one another. And that highly counterintuitive phenomenon remains valid in General Relativity as well.
- As for truly RADICALLY different views of TIME, one must recall the ancient Greek pre-Socratic philosopher Parmenides of Elea (late sixth or early fifth century BC) who claimed that ... there is no change in the world ...  
In this regard, it is most instructive to read Plato’s book “Parmenides”.
- From the point of view of the perception of TIME among humans, we can even today see the following groups which appear to be rather unaware of one another :
  - the so called “mystics” who are supposed to form a highly heterogeneous multitude according to a rather large variety of subjective ways each of them may happen to be perceiving TIME,
  - the large number - and quite likely, vast majority - of usual humans who cannot even imagine that there may be other ways of perceiving TIME, than the usual, ages old, traditional one,
  - a growing number of physicist who are becoming aware that TIME, just like SPACE, is rather a mere epiphenomenon that emerges from far deeper physical realities; yet hardly any even of such physicists relate to TIME in their day to day life in ways different from the usual one,
  - those like St. Augustine sixteen centuries before us, or about a whole millennium earlier, Parmenides, and as well

those like the researchers mentioned in the paper in the Appendix, for whom - and so much unlike for Kant, for instance - it is obvious that the usual perception of TIME is not to be taken for granted to be the only one possible.

## Appendix

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### **St. Augustines Reflections on Memory and Time and the Current Concept of Subjective Time in Mental Time Travel**

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#### Abstract

Reconstructing the past and anticipating the future, i.e., the ability of travelling in mental time, is thought to be at the heart of consciousness and, by the same token, at the center of human cognition. This extraordinary mental activity is possible thanks to the ability of being aware of subjective time. In the present study, we attempt to trace back the first recorded reflections on the relations between time and memory, to the end of the fourth century's work, the Confessions, by the theologian and philosopher, St. Augustine. We concentrate on Book 11, where he extensively developed a series of articulated and detailed observations on memory and time. On the bases of selected paragraphs, we endeavor to highlight some concepts that may be considered as the product of the first or, at least, very early reflections related to our current notions of subjective time in mental time travel. We also draw a fundamental difference inherent to the frameworks within which the questions were raised. The contribution of St. Augustine on time and memory remains significant, notwithstanding the 16 centuries elapsed since it was made, likely because of the universality of its contents.

Keywords: St. Augustine, subjective time, memory, mental time travel

#### 1. Introduction

Perhaps it might be said rightly that there are three times:

a time present of things past; a time present of things present; and a time present of things future. For these three do coexist somehow in the soul, for otherwise I could not see them. The time present of things past is memory; the time present of things present is direct experience; the time present of things future is expectation.

St. Augustine [1], Book 11, Chapter 20, Heading 26.

Klein [2] stated that St. Augustine's observations in the main belong to the realm of psychological fact. He is one of the rare authors to have acknowledged the influence of St. Augustine's work on scientific psychology. In the same vein, we attempt in the present study to trace back the psychological facts of a selected notion in current neuropsychology, subjective time in mental time travel, to its medieval origins in the Confessions.

We begin by mentioning the importance of subjective time and mental time travel in human cognition and briefly comment on some cognitive-behavioral areas that benefit from research on time-memory relationships. We then suggest the circumstances that might have led St. Augustine to speculate on the concept of the self in past, present and future time. To that end, we briefly comment on some of the ideas that seem to have influenced his work and, most particularly, his method of introspection, and we mention a few examples of fields in psychology that have been influenced by him. We then attempt to draw some comparisons between St. Augustine's and current descriptions of subjective time through the philosopher's reflections to convey meaningful answers to the "mystery" of time. Finally, we comment on a matter-of-fact and unbridgeable difference in the theoretical positions from, which questions are asked and interpretations are advanced.

Suggested by Suddendorf and Corballis [3] and Wheeler et al. [4], the notion that autobiographical memory operates in the two temporal dimensions has gained ground and become consensual (see [5,6] for reviews). The question about the nature of the time in which mental time travel takes place is central in the characterization of this topic [7]. Different terms have been used to discuss subjective time. Szpunar [7] notes that the notion of chronesthesia [8] emphasizes the awareness of the subjective time in which ones self exists, while auto-

noetic consciousness [9] highlights awareness of one's self existing in subjective time. Time and self are, in every case, inextricably related. Likewise, the notion that remembering the past is achieved to envision the future, rather than to obtain a precise and detailed blueprint of events indicates the harmony of operations of time and self. From a more general standpoint, the reason why we seem to remember the past is considered as the hallmark of flexibility of human cognition and behavior (e.g., [10,11,12]). From an evolutionary standpoint, behavior that increases future survival has a selective advantage, and therefore, mechanisms underlying future thinking are ubiquitous. With regard to those mechanisms, a series of arguments have been posited for or against their presence in humans, exclusively. Corballis [13], for instance, strongly advocates for mental time travel as a case of continuity from animals to humans, with only "a difference of degree and not of kind". In a different, but closely related perspective, Suddendorf and Corballis [3,14] and Suddendorf and Busby [15] point out the prerequisite capacities for mental time travel, such as the ability to represent our representations as representations. This ability allows the appropriate use of open-ended generativity that is central in the combination and recombination of a finite set of elements (see below, the "constructive episodic simulation hypothesis"). It has been suggested that at some point in the course of phylogenesis, it was the social pressure that drove the evolution of intelligence. Pinker (in Suddendorf and Coballis, [14]) stated that much of what humans recall and foresee has to do with "who did what to whom, when, where and why". In this same perspective, some studies of personality also underscore the importance of the social, everyday relationship to one another. Uher [16], for example, stated that people encode in their everyday languages all the differences in other people that they perceive as most salient in ordinary encounters and that they consider to be socially relevant.

The adaptive value to cognition and behavior of mental time travel has been actively investigated the last decade. Results are expanding the way in which basic and applied researchers characterize a wide variety of scientific issues. Thus, Atance and O'Neil [17] argued that time-memory relations, particularly, episodic future thinking represent an important organizing construct in cognition, since it can hold

clarifying value in topics, such as prospective memory, goal pursuit and the planning fallacy. Likewise, Szpunar [12] comments on cognitive behavioral therapy reports, which indicate reduction of problem behaviors after appropriate future simulation. In a different perspective, Klein et al. [18] suggest that an evolved organism behave more adaptively at a later time because of experiences at an earlier time, owing to cognitive mechanisms that use earlier information to plan behavior (see above for some comments on evolution and prerequisite capacities for mental time travel). To mention one more area of research, mental time travel has been deemed to be necessary for normal development and independent living [19]. To find out further cognitive capacities that either depend on or are influenced by the ability of projecting oneself in different temporal dimensions is likely one of the most exciting challenges in current cognitive neuropsychology.

With regard to the history of the concept, the vast majority of reviews on mental time travel begin with Tulving's episodic/semantic distinction in 1972 [20], and only a few mention the nineteenth century (e.g., Klein [11] cites an astonishingly contemporary statement by Bradley, who, in 1887, said that our memory is directed towards "the side from which change comes" because of the practical necessity to "go the way of anticipation"). In the rest of the paper, we refer to some of St. Augustines introspective reflections that could be considered as the first inklings of the notion of subjective time in mental time travel.

## 2. The Context of St. Augustine Reflections

The first mention of the power of transcending the irreversibility of (physical) time thanks to memory is in Hesiod's Theogony; in the eighth century BC. St. Augustine was probably familiarized with Greek mythology and Greek philosophy, but contrary to what we suggested in our previous work [21], he may have not been acquainted with Hesiod's oral tradition or, at least, the Theogony was not in his conscious mind when he struggled all along the 31 chapters of Book 11 to grasp the meaning of time (in chapter 22, after deep questioning, he says: "My soul burns ardently to understand this most intricate enigma"). More importantly, Plotinus' way of reflecting seems to have greatly influenced St. Augustine's conceptual elaboration on memory and time [22]. Both Plotinus and St. Augustine can be thought of



as early introspectionists, because of their interest in the human being's inner life. Subjective observation, introspection or awareness of one's own mental processes was named "the interior man's sense" by opposition to the traditional five senses meant to process the outer world. The human being, in the Augustinian conception, is considered from the inner sense perspective and possesses, consequently, self-consciousness (see below).

Being familiarized with Greek philosophy was probably decisive in St. Augustine's reasoning to bypass difficulty in trying to apprehend the essence of the past (pastness). He overcame the impasse, initiating a new perspective in his reflections that resulted in memory of the past bearing relation to anticipation of the future and presence of the present. This volte-face in his way of conceptualizing memory determined both the development of his notion of time in Book 11 of the *Confessions* [23] and the unique place he gave to memory in Book 10 [24]. Indeed, owing to the ephemeral and fleeting nature of the present, memory becomes in St. Augustine's method of introspection, the pivotal entity through which one can think meaningfully of temporal continuity. Experienced continuity is possible only by and through memory.

On his part, St. Augustine has influenced the study of fields as different as the relations between bodily processes and sensation or the domain that is of particular importance in the present study, the introspective principle. Indeed, the description of St. Augustine's introspection became, in Kantor's words [25], the establishment of many of the basic doctrines of psychology. They started as doctrines of the soul to become doctrines of the mind, consciousness and thought. They are all characterized by the primacy of the person, i.e., the assumption that there is something unique about the human organism: a principle or a power that differentiates it from the rest of the world, i.e., self-consciousness. A further central domain influenced by St. Augustine's reflections and one that is inextricably related to subjective time is the sense of self: the absolute uniqueness of the mind, developed below.

### 3. St. Augustine's Introspective Descriptions on Time and Memory

St. Augustine, as he stated throughout his whole work, endeavored to know God, and consequently, introspection on memory and time was scrutinized by means of questions, comments and requests addressed to that end (see [21]). From this perspective, St. Augustine developed the observation of his own learning, recollection and experience of time. The result of this purely introspective venture, still respected 16 centuries later, can be useful, because of the depth of analysis and the accuracy of descriptions. Guided by current notions of subjective time in mental time travel, we have selected a few meditations (a minute fraction of his monumental work).

In Book 11 [1], St. Augustine ascertains the difference between the Creator's eternity and the creature's time. Beginning with the latter, in chapter 6, heading 8 (for all quotation from Book 11, only the section corresponding to the chapter, the first figure, and the heading, the second figure, appear in the remaining of the text; the sole quotation from Book 10 indicates also the Book):

“The syllables sounded and passed away, the second after the first, the third after the second, and thence in order, till the very last after all the rest; and silence after the last. From this it is clear and plain that it was the action of a creature, itself in time, which sounded that voice”

With regard to God's time, St. Augustine adds (in section 7.9):

“For what was first spoken was not finished and something else spoken until the whole series was spoken; but all things at the same time and forever”.

Finally (in section 14.17), St. Augustine summarizes these differences in a brief outstanding description:

“If the present, should always be present, and never pass into time past truly it should not be time, but eternity.”

Being one of the fathers of the church, it was imperative for St. Augustine to let his readers know that his quest and questions were addressed to understand human time. By the same token, he resolved the diffi-

cult question of the present. While for St. Augustine it is tantamount of eternity, for James [26], the present is an ideal abstraction not only never realized in sense, but probably never even conceived of by those unaccustomed to philosophical meditations. On his part, McTaggart's [27] conceived time in two distinct ways called A- and B-series. The former establishes that every moment is either past or present or future, while the latter determines that every moment is earlier or later than each other moment. A parallel between A- and B-series and human time and eternity in the Confessions is tantalizing. Indeed, with regard to B-series, since "M is ever earlier than N", it involves no change and, therefore, cannot be an account of time: facts about B-series are eternal. Facts about A-series, on the contrary, are always changing from future to present and from present to past. They are then a proper account of time, said McTaggart. Opposing unchanged present, i.e., eternity in B-series to constant change in A-series seems to be an echo from the Augustinian conclusion (in section 7.9): "For otherwise, we should have time and change and not a true eternity". McTaggart, later on, described a tautology inherent in the A-series; he could not escape to the contradictions in the physical relation of past, present and future. St. Augustine had resolved this impasse by ascribing the changes in time to "the action of a creature, itself in time" (see above).

The first steps towards reasoning in terms of subjective time might have originated in a different domain: St. Augustine's meditation on the impossibility of eliminating doubt. These meditations have been considered to be one of the finest illustrations of his inner thought descriptions. In that, he not only anticipated the famous Cartesian conclusion, but as Klein [2] stated, he may even have been more accurate than Descartes, since St. Augustine's conclusion was: I doubt, therefore I am. With the process of doubting as a self-conscious event, St. Augustine introduced the separation between subjective and objective observation in psychology. This is essential in several approaches and, particularly, in the study of time perception either as a psychophysical, chronological and unidirectional process or, on the contrary, as the self-conscious, memory-based, subjective phenomenon, i.e., subjective time.

However, what is subjective time in twenty-first century? To respond to this complex question, Szpunar [7] begins by saying what subjective time is not. It is not the time studied by physical sciences, because “past” and “future” do not exist in the physical reality. Subjective time is, therefore, necessarily defined in relation to a sentient observer. Time past and time future are experienced with a sense of a unitary self since past and future exist only in the human mind.

How do the Confessions tackle this difference in types of times? An early observation in Book 11 about the temporal dimensions, past, present and future is close to a physical description (in section 11.13): “Therefore, let it see that all time past is forced to move on by the incoming future”. In 1890, James [26] started his own reflections on time by stating that the lingerings of the past drop successively away and the incomings of the future make up the loss. More to the point (in section 16.21), St. Augustine acknowledges the two different types of time: “We measure the passage of time when we measure the intervals of perception. But who can measure times past which now are no longer or times future which are not yet?”

This distinction guides his reflections towards the mind (in section 18.23):

“For if there are times past and future, I wish to know where they are. Wherever they are and whatever they are they exist only as present. Although we tell of past things as true, they are drawn out of the memory, not the things themselves, which have already passed, but words constructed from the images of the perceptions which were formed in the mind. My childhood, for instance, which is no longer, still exists in time past which does not now exist. But then I call to mind its image”

St. Augustine follows his meditation by tackling the future (in section 18.24):

“Whatever may be the manner of this secret foreseeing of future things, nothing can be seen except what exists (...) I see the dawn; I predict that the sun is about to rise. What I see is in time present, what I predict is in time future because it is not yet. Yet I could not

predict even its rising unless I had an image of it in my mind”.

St. Augustine’s quest on time was defined, to some extent, by measure. He establishes that before measuring the thing, it must be present to be seen:

“Future events, therefore, are not yet. And if they are not yet, they do not exist. And if they do not exist, they cannot be seen at all, but they can be predicted from things present, which now are and are seen” (also in section 18.24).

Interestingly, in a different part of the Book (section 27.36), his example, a series of sounds, is not physically encountered, but imagined. From this image, anticipation takes place and, more important, anticipation is committed to memory:

“If anyone wishes to utter a prolonged sound and if, in forethought, he has decided how long it should be, that man has already in silence gone through a span of time and committed his sound to memory”.

Two different aspects of reflection in relation to subsequent studies of mental imagery are present in this quotation, (i) memories of imagined events and (ii) how to measure mental images. With regard to the first point, Ingvar [28] coined the phrase “memory of the future”. More recently, based on associative processing, whose primary outcome is the generation of predictions, Bar [29] pointed out that the central role of mental time travel is to create scenarios by combining past memories and future projections and to store those “mental memories” that will be used similarly to real memories, to provide scripts for plausible future situations. Moreover, on the bases of the acknowledged role of the hippocampus in associative encoding, Martin et al., [30] interrogated the ability to generate imagined episodic details and that of encoding and remembering the imagined events. Indeed, potential benefits of imagining the future derive from the ability to retrieve the “mental memories” and refer to in future behavior. Martin et al. suggested that imagining the future entails a greater degree of encoding relative to previously stored information, owing to the generation of new mental representations. A further step in the understanding of memory of

the future comprises the study of the impact of the emotional valence on memory of imagined future events. Szpunar et al., [31], investigating this characteristic of mental time travel, found a positivity bias when people remember imagined positive, negative and neutral events.

We turn presently to the second aspect of the quotation. In this paragraph, St. Augustine describes how to measure mental images and by so doing, confers reality to them:

“... we measure periods of time as they pass. And if anyone asks me, ‘How do you know this?’ I can answer: ‘I know because we measure’ ”.

Several famous psychologists followed a similar reasoning, but different method. Thus, James [26] reports that like himself, Wundt and one of his students had tried to measure the present. This was defined as the maximum extent of our immediate distinct consciousness for successive impressions. James also relates Exner’s measures of the present in different sensory modalities. Notwithstanding the efforts to determine experimentally subjective time, the conclusion is similar to St. Augustine’s, that is, that to be conscious of a time interval at all is one thing, to tell whether it be shorter or longer than another interval is a different thing. However, what if the philosopher must remain within the realm of meditations with no experiments whatever? St. Augustine relates measure to temporal dimensions as follows (section 21.27):

“We could not measure things that do not exist, and things past and future do not exist (). Therefore, from what is not yet (future) through what has no length (present), it passes into what is no longer (past). But what do we measure, unless it is a time of some length? For we cannot speak of single, and double, and triple, and equal, and all the other ways we speak of time, except of the lengths of the periods of time. But in what ‘length’ then do we measure passing time?”

Faced with these impasses, St. Augustine’s interim conclusion is as follows (section 26.33):

“From this it appears to me that time is nothing other than extendedness; but extendedness of what I do not know. This is a marvel to me”.

In addition, his conclusion:

“The extendedness may be of the mind itself”.

This conclusion has influenced philosophers and psychologists across centuries. As an example, it is found in Locke’s *Essay* [32], where he explains that as far as the consciousness can be extended backwards to any past action or forwards to actions to come, so far reaches the identity of the person. In this new perspective, to measure is not only unnecessary, but impossible, as the items to be measured have no longer an established order of succession. James [26] gives an example: If idea A follows idea B, consciousness simply exchanges one with another. That B comes after A is for our consciousness a non-existent fact. The echoes of the extendedness of the mind, present in the nineteenth century, are also present in current neuropsychology [7,11,12,33]. Dalla Barba [33], for instance, emphatically criticizes what he calls the paradox of the memory trace. His central argument is that objects and events acquire a temporal dimension, past or future, only in the presence of a person. Consciousness of past things (or future things) is neither contained in a physiological nor cognitive trace, but experienced in a phenomenological way. Nyberg et al. [34] carried out an investigation to tell apart the phenomenal experience and the conscious temporality of the experience. They showed that imagining oneself carrying out a familiar activity at the present time, imaging the same task done yesterday or tomorrow activated the left lateral parietal cortex, the left frontal cortex, the right cerebellum and the thalamus. The interest of Nyberg et al.’s design derives from the fact that holding constant the phenomenal experience (a familiar activity), they obtained a pattern of cerebral activations different from that observed in investigations in which phenomenal experience is at study and in which a relatively consensual observation is a hippocampal involvement. The rich and diverse current investigations, a few examples of which are commented in relation to St. Augustine’s notions of time, have been considered by Schacter et al., [35] in an extensive review on memory and subjective time, in which the authors show the way of future research. For Tulving and Szpunar [36], the most important aim ever in neuroscience’s future research is clearly

stated. The authors tackle a different facet of subjective time, the “apparent paradox” that it engenders. Indeed, something that does not exist in physical reality plays a very important role in governing and regulating something that does exist, i.e., human affairs. To try and resolve the paradox, they propose the existence of two realities, mental (the mind) and physical (the brain). The relations between them are complex, since the mind depends on the brain, but the mind also transcends the brain. The intricate question of searching the common “thing” the mind and the brain are “made of” seems to be inescapable. In section 20.24, St. Augustine makes it clear that the future events are imaginable exclusively because they are conceived in the mind:

“When, therefore, they say that future events are seen, it is not the events themselves (...), but perhaps, instead, their causes and their signs are seen, which already do exist. Therefore, to those already beholding these causes and signs, they are not future, but present, and from them future things are predicted because they are conceived in the mind”.

In the same vein, St. Augustine’s reflections on awareness and attention (being conscious of), describes one of the finest examples of the phenomenological description in section 28.38:

“I am about to repeat a psalm that I know. Before I begin, my attention is extended to the whole; but when I have begun, as much of it as becomes past by my saying it is extended in my memory; and the life of this action of mine is divided between my memory, on account of what I have repeated, and my expectation, on account of what I am about to repeat; yet my consideration is present with me, through which that which was future may be carried over so that it may become past. Which the more it is done and repeated, by so much (expectation being shortened) the memory is enlarged, until the whole expectation be exhausted, when that whole action being ended shall have passed into memory”.

Intriguingly, in Book 10 (section 8.14), St. Augustine had already illustrated the extendedness of the mind in the following, far reaching



meditation:

“Out of the same storehouse, with these past impressions, I can construct now this, now that, image of things that I either have experienced or have believed on the basis of experience - and from these I can further construct future actions, events and hopes; and I can meditate on all these things as if they were present ...”

St. Augustine was very likely the first philosopher to put forward the idea that past and future could be seen as equivalent entities that exist, as long as they are present in our consciousness. From the 1980's with Tulving works, the notion of a common neuro-cognitive platform for past and future was proposed on a theoretical basis [3,9] and, later on, a series of results obtained using functional neuroimaging [37,38,39,40]. Within this context, Schacter and Addis [41] put forward the “constructive episodic simulation hypothesis”, which states that a memory system that allows using stored information in a flexible manner for imagination of future events, as St. Augustine's elegant metaphor describes, must be essentially a constructive memory system. The first inklings of the dynamic nature of autobiographical memory system are found in Bartlett's works [42]. He stated that remembering, particularly in a social context, serves to share our impressions with others, so that people embellish upon their recollections. This notion was later on developed by Conway [43], who suggested the principle of “coherence” between one's life experiences and the representation of oneself. Conway argued that over time, coherence takes precedence over the principle of “correspondence”, which refers to conformity of memories of one's experiences with reality.

#### 4. Frameworks of Interpretation

Current authors working on mental time travel recognize in this notion, an adaptive implication for behavior. The adaptive dimension is the fact of potentially being prepared for near future situations on the bases of past experience. Thus, Klein et al., [44] suggested that the adaptive function of information storage is intrinsically prospective. Interestingly, Klein et al., proposed that mental time travel should not be limited to episodic memory, since the two components of ret-

rograde memory, episodic and semantic are interactive and they are not reducible either empirically or conceptually. It follows, naturally, two distinct times, “lived time” made of episodic past - future events and “known time” made of semantic mental time travel. On their part, Buckner and Carroll [10] put forward a strong case for distinct functions that both used past experiences for mental exploration of the future (among diverse departures from the present) and relied on a common set of processes they called “self-projection”. The authors’ starting point was the existence of a shared brain network to support different forms of the concept of self-projection (but, see [7]). In every case, a central processing component is mental simulation based on personal past experiences that allows the exploration of alternative perspectives. One “leaves”, so to speak, time present or a given place or one’s own personal perspective to explore alternatives, through mental time travel, spatial navigation and the theory of mind, respectively. All alternatives have in common a mental preparation for what might lie ahead. Future planning requires a flexible cognitive system that is assumed to be adaptive (preparing for the future is a vital task in any domain important for survival). The “Self-projection” proposal suggests that mental time travel is only part of a more complex process and emphasizes that thinking ahead is the vital process. Moreover, Bar [29,45] contributed to the same notion, on the bases of analogical thinking. He suggested that when we see a new object or we meet a person for the first time or encounter a new social situation, we follow a recognition-by-analogy process. We use experience (“it looks like ...”; “he reminds of ...”) and the associations that accompanied those initial representations in this mental process. Predictions based on analogy (“that must be a ...”; “he must be nice/ rigid/ unpleasant as ...”) might be seen, therefore, as restraining the selection of what aspects of the environment will be privileged and how they will be interpreted. Analogies imply associations: Bar [29,45,46] proposed associative processing as the fundamental operation of our mental life. Associations, the units of thoughts, are used to generate predictions in an uninterrupted flow. More recently, Szpunar [12], in his comprehensive review on future thought, calls our attention, among other points, to the fact that it represents a frequently occurring mental phenomenon that has clear adaptive implications for behavior. Complementarily, anticipation in the form of predictions determines which

past recollections are “alive”.

St. Augustine’s introspective reasoning on time past and time future, being rooted as it was in the context of his quest of God, could not and did not include any purely human considerations. Although his introspection led him to express essential points of the subject, there could not be any hint of any potential usefulness of the capacity of travelling in subjective time. The twentieth century philosopher, Sartre [47], considered that the essential in man (*le propre de l’homme*) was not to know God, but anticipation. Being an atheist, he bypassed St. Augustine’s ontological questions. Sartre integrated the theory of anticipation to his phenomenological standpoint on the bases of the notion of intentionality [48] He went from the Augustinian “I doubt, therefore I am” (and the Cartesian “I think, therefore I am”) to his own conclusion: “I think, therefore I anticipate”. In Sartre’s notion of time, our memory “uses” the three temporal dimensions, with no separation for we have “these pasts, these presents and these possible futures, all at once”. Past, present and future interpenetrate the mind, and therefore, we are continuously reorganizing the past, present and future, that is, forgetting, restoring and imagining events. Sartre focused on the human mind, from the perspective of existentialism and was able to give a crucial role to mental time travel:

“It is the future that decides if the past is alive or dead. (...). Thus, the order of my future choices will determine the order of my past, and this order is by no means chronological” [47].

## 5. Concluding Comments

In summary, about 16 centuries elapsed between St. Augustine’s meditations and the proposal of a “mental time travel” concept. Impervious to chronological time, it appears that St. Augustine’s Confessions still are and very likely will remain a valuable source of reflection. Two of the reasons may be his outstanding capacity of introspective analysis and the universality of its contents, i.e., memory and subjective time. St. Augustine’s meditations, particularly on the continuity of the self, seem close to ours and their influence on our way of reflecting on mental time travel must have been immense (but never

acknowledged). His considerations of time future could not include the adaptive quality that is the hallmark of current analysis on future thinking. However, in his own perspective, St. Augustine alludes to a beneficial quality of time future (in section 19.25), realizing that God taught him things present from the signs of things future.

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