

Models of the Reality

A Small Religious Booklet

for my son Florian

and for all his gamer friends

Version: 0.3 (glossary updated),
Date: 2022-01-12



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Longing for the Truth

Dear Reader – Dear Friend!

I have been writing "Small Religious Booklets" since 2014 now – all of them in my mother tongue, which is German.

Now I am facing another challenge and start a new booklet in English language.

Well, it will not be that new. I will again write about my life's main challenge, which is T H E T R U T H .

You must know, I am a programmer.

Probably I am not the best of all and I am not the worst of all, just what makes the difference I like to stand still sometimes, looking backward, looking forward, thinking, w h a t h a v e I d o n e , w h y h a v e I d o n e t h i s a n d w h a t w i l l b e m y g o a l s f o r t h e f u t u r e .

Is that religious?

Is it already religion, if you are on a q u e s t f o r t r u t h ?

Is it OK to say: "No, I am not interested in religion", meanwhile longing sufferingly for the truth?

Well.

First of all, we have to admit, we do not k n o w t h e t r u t h . None of us mortal knows the truth (OK, Jesus Christ might be the exception).

And none of us mortal has got contact with the reality (same exception as above).

We are embedded into our bodies, whose senses and skills connect us to the "outer world".

First we need to t r u s t o u r o w n b o d i e s , who provide senses and skills to explore the universe.

Self confidence is the first and ever needed asset that is a condition-sine-qua-non.

If we do not trust in our own perception of the world, then we lose our identity and cannot proceed in life.

We then need help (fortunately we get help in many cases, by our parents, by our siblings, friends, relatives, therapists, and so on, however not all of the help is for free).

The **main skill of my brain is to provide me a world view**, or, as-I-call-it a "**Model of the Universe**" (**MotU**).

That MotU helps me to understand the universe:

- the MotU adds meaning to the perceived phenomena
- the MotU helps to predict future phenomena
- the MotU helps to find appropriate measures, if I'd like to influence (parts of) the universe

At the beginning of my life, the MotU was quite simple, e.g.:

- hungry --> cry --> getting satisfied (many people stick to this paradigm until high age)

Most of the intelligence was still outsourced to mom.

It was up to mom to challenge me.

If she wants me to proceed in life, she will leave more and more problems to be solved on my own.

This way I will grow my MotU over the years.

I will make some experiences, hence create/assert some statements about the universal truth (which I believe to exist as a property of the universe) and – if I am an open minded person and let the universal truth judge over my statements – then I will test (or let test) the statements of my MotU against the "real" reality, hence learning to

render the "real" reality (somewhere out there) by my "virtual" reality (within my MotU) in an acceptable way.

In the best case, me and you – we – and the whole mankind will improve our personal MotUs and our common MotU (which is called "science") to a best fit with the universal truth, having a life full of harmony with ourselves, with each other and with the universe at all.

ME	WE	<i>inhabit/explore</i>	Universe
<i>MotU</i>	<i>Science</i>	<i>asserts/tests</i>	<i>universal truth</i>
<i>Body</i>	<i>Bodies</i>	<i>interact</i>	<i>physical objects</i>
<i>Soul</i>	<i>Souls</i>	<i>interact</i>	<i>souls/things</i>

So, we assume a, we believe in a universal truth, in a "real" reality, which exists "somewhere out there" and which can be interacted with in the way of "physical objects", i.e. in the way of entities that are characterized by categories like matter/energy and space/time.

Each person – if he acts scientifically – and the science as a whole – assert statements about the universal truth and test and use these statements while interacting with the universe accordingly.

So we have got a first impression about how rational science works, as long as we are directly involved, and as long as we are willing to test our statements against the truth in an experimental way.

The next chapter about story telling will find another way, which is not directly scientifically involved, but which is more involved with artwork and virtual reality (VR) and with the trust in an author.

However, before we close this chapter, let's ask additional questions:

- Is science all we need? Exists something except the universe?
- Will science solve all our problems?
- Does science explain ALL phenomena?

Well, religious people, and I think I am one, assert the existence of something what-I-call "Celestial Affairs".

Celestial Affairs would be something, which **cannot** be described by science (as long as science sticks to their experimental paradigm), they would be something existing "outside of the known universe".

In particular, a celestial experience could not be systematically repeated (which is a prerequisite for scientific experimentation).

Like a scientist, who cannot know the universe, but who has to believe in the existence of the universe and its universal truth, before he can explore it systematically, the religious people believe in what-I-call "Celestial Affairs", get into contact and create some models for this celestial reality, except the possibility of experimental evidence.

ME	WE	<i>experience</i>	Celestial Affairs
<i>Belief</i>	<i>Religion</i>	<i>asserts</i>	<i>eternal truth</i>
<i>Body</i>	<i>Bodies</i>	<i>interact</i>	<i>celestial entities</i>
<i>Soul</i>	<i>Souls</i>	<i>interact</i>	<i>souls</i>

So, in a nutshell, I am asserting the reality as being a combination of universe (which is subject to science) and celestial affairs (which are subject to religion).

I use the adjectives "universal" and "eternal" to distinguish the kinds of truth the both domains are dealing with.

I believe that both science and religion deal with real truth, where the both kinds of truth cannot contradict each other, I think they are complimentary.

Jesus Christ himself is truth-in-itself – he himself asserts this.

If I believe in Jesus Christ, then I can accept that (probably after some arguments).

What's the meaning of religion and belief?

If the celestial entities (angels, demons, the spirit, ...) are performing a bombardment, then you will need some belief – some trust in heaven – some shelter to cope with this situation. The pure MotU won't help here.

This bombardment can be manifold. The 4th religious booklet "Feed Back from the Soul" elaborates a few statements about this "echo from the universe".

The Art of Story Telling / Teaching

In the first chapter, we described, how a direct experience can lead to a calibration / improvement of our MotU and/or of our belief.

Such "scientific" experiences or "celestial" experiences, which happen, when a part of the truth is revealed to us in the course of meditation of a scientific experiment or a psychological happening, can be subsumed under the term "revelation".

Now the occurrence of a revelation is – I would say – a rare thing.

It will happen more often to people, who are natively curious than to people, who are self-contained and steady.

On the other hand, our life is short. We don't have much time to pass our knowledge on to the next generation.

Therefore mankind invented (or "found") the art of story telling.

Like the Creator has left his mark in creation, we are creating artwork to tell the next generation about the truth, which we have perceived.

It's again the same persons: there is a ME, who is embedded in a WE, who inhabit a virtual reality (an artwork).

ME	WE	<i>inhabit/explore</i>	VR / ART
<i>MotU / Belief</i>	<i>Science / Religion</i>	<i>Influenced by</i>	<i>story</i>
<i>Body</i>	<i>Bodies</i>	<i>interact</i>	<i>roles/models</i>

Together WE inhabit an artwork, e.g. a 3D Multiuser Scene – a game –, we collaborate, chat, play and – all-in-one – we perceive the story about some universal or eternal truth from an author.

So an author – if he is willing to tell us something about his/her MotU/Belief – will thoroughly create roles and models that shall help us to learn something about the universe or about celestial affairs.

This way, we can perform "learning by doing" in a playground environment, without suffering the tough reality.

Note:

Many people love to inhabit VRs and artworks and would like to avoid "real" physical and celestial experiences, that's because of the softness of VR and the toughness of reality.

Unfortunately, the reality actually exists and we MUST understand, VR is just a playground to get fit for reality, it is not actually the reality.

Furthermore we talk about "inspired" VR / ART, if the story in the VR / ART is about "Celestial Affairs" and if the story is actually true.

To give an example:

In the case of Christianity, one of the told stories is the gospel according to Mark, where the magisterium of the Catholic Church approves the "being inspired" of the story.

Indirect Reality

We stated, that life is sometimes a little bit tough, when we have to deal with the reality of the universe or of celestial affairs, which are not always willing to behave according to our will, but they behave according to their universal truth or eternal truth, respectively.

So a Virtual Reality (VR) is sometimes more intriguing than the Real Reality (RR), because its truth is more simple to influence than that of the RR.

Consuming resources that I have not deserved and giving not anything back to the cycle, creeping into the VR and hiding from the world. Feeling humble and lost. Depression.

But what about actually dealing with the RR, while using some VR tools?

Wouldn't this make my life easier, still being and feeling responsible for some part of the Real Reality, but handling via VR?

Well, this is the story of tools, it's the story of media and the story of easiness. And the story of waste of resources, too.

An old story, the story about Prometheus, tells us about one of the most important tools – about FIRE.

Mankind was suffering from life and god Prometheus decided to steal the fire and bring it to the people.

But WHAT is a tool?

A tool is an entity that enables or eases the handling of other parts of the reality by a user.

As we know, it was not a completely good decision.

So, WITH the tool, the quality of life has increased for the user, but also the distance to nature has increased. Our life is easier, but a little bit more VIRTUAL.

If once our tools will separate us from nature completely, then we will have reached a fully immersive experience in a virtual world.

Everybody, who knows the movies about "the matrix", understands, what I try to explain.

ME	WE	VR / TOOL	
		<i>Inhabit indirectly</i>	Subset of Reality
<i>MotU</i>	<i>Science</i>	<i>asserts / tests via tool</i>	<i>universal truth</i>
<i>Body</i>	<i>Bodies</i>	<i>interact via tool</i>	<i>physical objects</i>

What does this mean to science?

Well, not only we must trust into our own bodies – into their senses and skills – but now another trust must be added:

- the trust into the tool.

Either we must know exactly, how the tool works,

- so that we can compensate for the effects of the tool,

or the tool must deliver an "accurate artifact" of the part of the universe that is under consideration,

- so that we can take the artifact for truth.

Furthermore, we recognize each tool is somehow "specialized". Each tool will only allow access to a subset of the universe.

This is OK, since our senses and skills allow access to a subset of the

universe, too.

The majority of the universe cannot be accessed by our senses and skills. On the other hand, we cannot use Hubble telescope to explore effects on earth.

What about tools in religion?

Can we say each individual human person has the ability to recognize God, independent if he/she gets in contact with the church or not?

In principle it's the same as with science.

Everybody has the ability to recognize God and to get in touch with eternal truth, but if we do it together and if we receive the sacraments on a regular basis, then it's easier.

If we try a metaphor, then we can say something like: as god Prometheus brought the fire down to mankind, it's the same with Jesus Christ, who founded the church as a tool for us, such that we can easier get into touch with God and all the "Celestial Affairs".

Of course, the metaphor of the church as a tool is just a metaphor that shall help science people to understand the story of Jesus Christ and his Church.

ME	WE	CHURCH	
		<i>experience indirectly</i>	Celestial Affairs
<i>Belief</i>	<i>Religion</i>	<i>asserts via church</i>	<i>eternal truth</i>
<i>Body</i>	<i>Bodies</i>	<i>interact via church</i>	<i>celestial entities</i>

So Many Things Have Still to be Said

So many things are to say, if you want to describe the quest for truth, which many people of good will are on.

Science is a method – and a community – which is about to discover some of the last secrets of universe, what is an intriguing and satisfying way of life.

However, some people are a little bit pretentious guys and think their way of life being the only way longing for truth.

They think, religious people cannot be on the same quest for truth, as they are dumb, uncritical and following people.

I would say, both are on a quest for different parts of the truth, I call the parts the "Universe" and the "Celestial Affairs".

Call them as you like, just the hidden meaning is always the same :-)

Glossary

Scientific (http://simulrr.sourceforge.net/concepts/001_Glossary.pdf)

Reality, Virtual Reality, Real Reality

There is only one **reality**, but every person carries an own **model of the reality** in his/her/its mind.

This model helps the person to foresee the future evolution of the reality and it helps the person to induce changes to the reality according to his/her/its will.

Virtual reality is a part of the reality that is implemented by means of technology and that helps one or more persons (see **user**) to inhabit a virtual scene that needs not be directly related to the **real reality**.

Strictly spoken, an ancient form of virtual reality is already to sit around the camp fire telling stories. Also books and movies form kinds of virtual reality.

Usually we use the **narrow term of virtual reality**, if some minimum technological requirements are fulfilled, e.g. the usage of stereoscopic realtime computer graphics.

We use the term **real reality** to denote all parts of the reality that are not part of the virtual reality in question, but that are of relevance for that virtual reality.

Anything else is just **the reality**.

User

A **user** is a person who uses a personal scene instance (see below) to inhabit a Simple Multiuser Scene (see below) in the course of a multiuser session (see below).

Personal Scene Instance (PSI)

A personal scene instance is the collection of all technological facilities that are needed so that one user can inhabit a Simple Multiuser Scene (in the course of a Multiuser Session).

One important facility of the PSI can be a Web3D browser that interprets a concrete scene graph.

The user interface of the PSI can be used via the real senses and skills (SaSk, see below) of the user.

Server/Controller Scene Instance (SCSI)

The Server/Controller Scene Instances connect the multiuser session to the real reality in order to synchronize real life facilities (see below) with virtual life facilities (see below).

This ensures the mixed reality mode can be used as operational mode (see below).

Simple Multiuser Scene (SMS)

A Simple Multiuser Scene is a collection of facilities that are accessible via standardized protocols and that can be instantiated within PSIs and SCSIs to enable virtual, remote and augmented senses and skills (SaSk, see below) for users.

Such facilities include, e.g. (see below for detailed definitions):

- **Application Avatars** to be able to represent virtual identities
- **Application Models** to be able to render renderable objects of the scene
- **Application Modules** to be able to render surroundings of the scene
- **Geographic infrastructure** (GeoIS) to be able to render "GeoIS Avatars", "GeoIS Models" and "GeoIS Modules" of the scene.

Note: the difference between "Application Facilities" and "GeoIS Facilities" is not so much a technical difference but more an economic difference.

- "Application Facilities" have not (yet) been written off.
- "GeoIS Facilities", on the other hand, HAVE been written off.

Multiuser Session

A multiuser session is an instantiation of an SMS for a concrete set of (potential) users.

Those (potential) users will be able to inhabit the SMS together.

Technically spoken, a multiuser session is a collection of one or more PSIs and of zero or more SCSIs (see below), all of which are synchronized to each other and connected to the users or to the real reality, respectively.

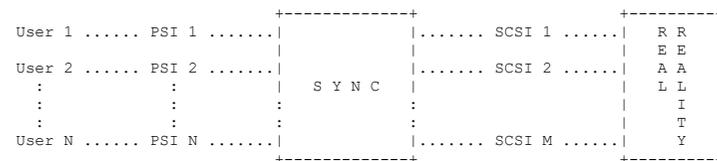


Figure 1: Rough architecture of a Multiuser Session (MS)

When **Figure 1** shows a rough idea of a multiuser session on the one hand, then on the other hand this is **only valid in the case of pure Virtual Reality (VR)** (which may be additionally connected to the real reality).

This is a very basic case of "Mixed Reality (MR)", where additional cases like "Augmented Reality (AR)" or "Augmented Virtuality (AV)" need additional considerations.

In case of AR/AV, each user (or at least some users) might be co-located with a PSI AND with a SCSI (i.e. with a combined PSI/SCSI) and they might inhabit the real reality, too.

In case of a **combined PSI/SCSI** we speak about "**local SYNC**". In case of more than one user or more than zero standalone SCSIs, we speak about "**global SYNC**" ("global SYNC" needs networking capabilities).

For example: we have a count of N_a AR/AV and of N_v VR users, M_s standalone SCSIs

====> we have $M = N_a + M_s$ SCSIs at all

====> we have $N = N_a + N_v$ PSIs at all

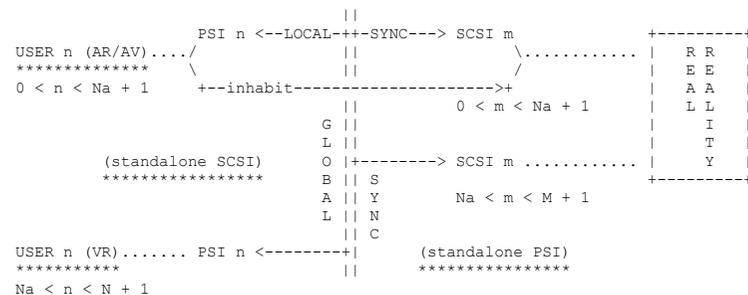


Figure 2: Local Sync in AR/AV instances of the Multiuser Session (MS)

Virtual Life Facility (VLF)

Virtual life facilities are used to enable virtual, remote or augmented senses and skills (SaSk, see below) for a user. In mixed reality mode VLFs may be synchronized to real life facilities (see below).

A VLF is an instantiation of a facility of the SMS.

Examples of VLFs are:

- **Virtual life avatars** (or simply avatars – see below) to represent virtual identities to one user
- **Models** (see below) to render the renderable objects of the scene to one user
- **Modules** (see below) to render the surroundings of the scene to one user

Real Life Facility (RLF)

Real life facilities are parts of the real reality.

We distinguish following kinds of RLFs:

- **real life avatars** (see below),
- **real life objects** (see below) and
- **collateral entities** (see below).

Operational Modes (OM)

A multiuser session can operate in one of following modes:

- **Single User Mode (SUM)** – only one PSI exists
- **Multi User Mode (MUM)** – more than one PSI exist
- **Mixed Reality Mode (MR)** – at least one SCSI exists

where the Mixed Reality Mode (MR) is orthogonal to the other two modes, i.e. following combinations exist

- 1) SUM.....Single User Mode / pure VR
- 2) SUM + MR.....Single User Mode / Mixed Reality
- 3) MUM.....Multi User Mode / pure VR
- 3) MUM + MR.....Multi User Mode / Mixed Reality

- 1) NEVER needs global SYNC
- 2) MAY need global SYNC
- 3) ALWAYS need global SYNC

Synchronization (local SYNC or global SYNC or both) is needed at all

- for 2) or
- for 3), but
- never for 1)

Note: Needing SYNC at all is equivalent to the "old" term of "multiuser mode", which was used up to and including SRR Framework step 0033.10

Model, Real Life Object (RLO)

A model is a facility of an SMS that can be rendered relative to a module.

In other words, it is a direct (or proxy) object to the virtual (or remote / augmented) senses and skills (SaSk, see below) of a user, when inhabiting the SMS through the PSI.

In mixed reality mode, a model may represent a real life object (RLO) and hence make the RLO an indirect(!) object to the remote or augmented senses and skills (SaSk, see below) of a user.

An RLO is always represented by a model, otherwise it would be a Collateral Entity (CE).

Avatar, Virtual Life Avatar (VLA), Real Life Avatar (RLA)

An avatar is a facility that **represents a virtual identity** (see below).

A virtual life avatar is a model that represents a virtual identity and

a real life avatar is an RLO that represents a virtual identity.

Collateral Entity (CE)

A collateral entity is an RLF that is not an RLO. I.e. it is a real life facility that is somehow relevant for the multiuser session, but it is not modelled in the SMS.

Module, Universal Positioning System (UPS)

According to the MMF paradigm, an SMS consists of one or more modules that build the surroundings of the scene, whereas each model is assigned to one of the modules.

A module spans a local (pseudo-) euclidean spacetime, which is used to render the models relative to the module.

In mixed reality mode, we will often use WGS84 coordinates as global coordinates, which can be used to position the modules.

Hence a local coordinate system in real reality can be defined relative to GPS.

Now the concept SMS aims to be a concept for the 21st century and hence a GPS will not be enough. We will need something that includes the universe into its concepts, not only the globe.

UPS the right wording for such idea.

And it needs to be hierarchical, according to the eMMF paradigm. One level of modules being the top level (within a scene) containing top level models.

Each top level model may contain second level modules containing second level models and so on.

Clear, there is nothing like a „top“ level in universe (in UPS), Hence the top level must be identified by gravitational field instead of velocity and position. This is ffs.

Geographic Infrastructure, Tiles

The relations among modules, geographic infrastructure and tiles are ffs.

Identity, Virtual Identity, Real Identity

Need not be defined. If we need to explain this, then we do really have a problem.

Synchronization ("local" SYNC and "global" SYNC)

The projects "simulrr" and "smuos" use the Network Sensor / Event Stream Sensor for synchronization of scene instances. This may lead to the specification of standardized communication protocols for SMS.

The software objects that are used within PSIs and within the SCSIs to synchronize the multiuser session, are called MIDAS Objects (Multiuser Interactivity Driven Animation and Simulation Objects). In case of the projects "simulrr" and "smuos" the MIDAS Objects are realized by X3D prototypes written in X3D and ecmascript.

Senses and Skills (SaSk)

Real Senses and Skills: these are senses and skills of the body of a user.

They can be used by the user,

- a) to inhabit the SMS through a PSI
- b) to inhabit the real reality directly

Virtual Senses and Skills: these are senses and skills of a user that are related to VLFs that do not represent RLOs during the inhabitation of an SMS.

They can be used by the user

- a) to perceive the reality of non-avatar VLFs
- b) to influence the reality of non-avatar VLFs

Remote Senses and Skills: these are indirect senses and skills of a user that are related to RLOs or other users that cannot be reached directly by his/her/its real Senses and Skills, but must be reached indirectly via the PSI.

They can be used by the user

- a) to exchange information, emotion or services with persons or groups of persons (via his/her/its RLA and/or via their avatar(s))
- b) to perceive the reality of non-avatar RLFs
- c) to influence the reality of non-avatar RLFs

Augmented Senses and Skills: these are a mixture of a user's real senses and skills that are used to inhabit the real reality related to RLOs or other users that can additionally be reached by remote senses and skills via the PSI.

They can be used for the same purposes like remote Senses and Skills can be used, however the augmented Senses and Skills will in many cases be more capable related to the real reality than pure real or pure remote Senses and Skills are

Point of Interaction, Point of Interest (POI)

A POI is a unit that can be addressed via the IoT.

A Point of Interest delivers a stream of data to the multiuser session. This stream is about (a part of) one or more RLOs.

A Point of Interaction accepts a stream of states and/or other control data from the multiuser session. This stream influences (a part of) the states of one or more RLOs.

A Point of Interaction may deliver a stream of data to the multiuser session. This stream is about (a part of) one or more RLOs.

Modes of Operation of POIs

POIs can be connected to a SCSI or they can be disconnected, furthermore they can be connected to some user(s) directly, without traversing a SCSI.

Hence we roughly define following Modes of Operation:

- Connected Mode:
 - The POI is controlled by a pilot.
 - It may report its state to the multiuser session, and
 - it may report directly to other user(s) – e.g. a video stream.
- AC/DC Modes:
 - Autonomous Mode / Connected:
 - The POI acts autonomously. If it is connected to a pilot, then he is restricted by this autonomy in his controlling activity.
 - The POI may report its state to the multiuser session, and
 - it may report directly to other user(s) – e.g. a video stream.
 - Disconnected Mode: The POI is "black". Either it is disabled or it acts autonomously. Who knows?

Religious / Philosophic

The Reality

Everything that is identical to itself, is reality and truth.

God is identical to himself in a way and to an extent that is not available to any created person, object or other entity.

He is the identity-in-himself and the truth-in-himself and the reality-in-himself.

Potential Reality

Everything that is real and true, and that can potentially be perceived by a (group of) person(s), is potential reality (with respect to that (group of) person(s))

Perceived Reality

Everything that has been incorporated into the MotU/Beliefs of a person or into the Science/Religion of a group of persons in a more or less correct way, is said to be "perceived" reality / "perceived" truth.

Perceived Reality is a function of Potential Reality, which depends among others on self confidence and curiosity.