UAP and Global Catastrophic Risks:

No matter if the Phenomenon is Real or not,

We Live in a More Vulnerable World

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**Abstract**: After 2017 NY Times publication, the stigma of the scientific discussion of the problem of so-called UAP (Unidentified Ariel Phenomena) was lifted. Now the question arises: how UAP will affect the future of humanity, and especially, the probability of the global catastrophic risks? To answer this question, we assume that the Nimitz case in 2004 was real and we will suggest a classification of the possible explanations of the phenomena. The first level consists of mundane explanations: hardware glitches, malfunction, hoaxes and lies. The second level involves explanations which are not changing completely our model of the world, but only updating it: new military tech, large psyop operation or new physical effect like ball lightning. The third level of explanations requires a complete overhaul of our world model and includes a large set of fantastic hypothesis: alien starships, interdimensional beings, glitches in the matrix, projections from the collective unconsciousness, Boltzmann brain’s experiences etc. The higher is the level of the hypothesis, the less probable it is, but the bigger is its consequences for possible global catastrophic risks. Thus, “integrating” over the field of all possible explanations, we find that UAP increases catastrophic risks. Technological progress increases our chances of direct confrontation with the phenomena. If the phenomenon has intelligence, the change of its behavior could be unexpected after we pass some unknown threshold. But we could lower the risks if we assume some reasonable policy of escaping confrontations.

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# 1. Introduction

In December 2017 *New York Times* (Blumenthal, 2017)published an article about UAP and the military research in the field and also presented a video from the *Nimitz* carrier group about an encounter with UAP which took place in 2004. Later several people from the carrier group spoke with the press and told what they saw with their own eyes. The Department of Defense then confirmed the authenticity of the video. This makes the *Nimitz case* one of the most credible and simultaneously strange cases of UAP observation: it was observed by qualified observers and confirmed from mutually independent sources; the event also included objects of high strangeness like supersonic "Tic-Tac". The analysis of the event becomes a topic of scientific research (Blumenthal, 2017). Here we assume that these events have actually occurred and the consequences that the underlining phenomenon could have for possible future global catastrophic risks.

Bostrom in his classification of the existential risks included a section of “something unknown” (Bostrom, 2002). The observations of UAP phenomena tell us that something “unknown” really happens, as any rational explanation of the observed phenomena is not complete. Circovic (M.M. Ćirković, 2012) recently published an article about low probability hypothesis with large consequences “Small Theories and Large Risks—Is Risk Analysis Relevant for Epistemology?” He wrote:

“Global catastrophic risks certainly present many orders of magnitude larger societal danger than pseudoscience—and no amount of self-righteousness on the part of scientific orthodoxy will change that… it is easy to imagine a situation in which people tend to downplay the work on some of the more exotic global catastrophic risks in fear of being stigmatized and ridiculed as pseudoscientists (which actually happens all the time when accelerator risk discussions are concerned).”

Thus, UAP is something unknown and some of their explanations are low probability hypothesis with high-level consequences. However, the most popular of such explanations, extraterrestrial hypothesis (ETH) has some conceptual difficulties explored by Vallee (Vallee, 1991; Vallee, 1990): if aliens come to Earth with research proposes, they should not look like humans and unlikely to allow to be observed.

The main question which we will explore here: can UAP be a source of global catastrophic risk or somehow affect the development of the situation in the area of global risk.

This article is based on my text of the same topic from 2009, updated based on new information and literature and shortened.

In this article, the term «UAP» will denote the entire class of objects that create the observed phenomena, as well as space where these objects come from (if any), and what is behind them. The previously popular term “UFO” is too strongly connected with *Extraterrestrial hypothesis* (ETH) and assumes that objects are “alien starships”, which is more like a reflection of 20th-century mythology (the same way similar observations were called “airships” in the 19th century and later “ghost rockets” in 1947).

The term “UAP” – Unidentified Aerial Phenomenon – reflects the fact that the problem of unidentified objects is the problem of the limits of our knowledge. Limited knowledge makes catastrophes more probable when the model of the world doesn’t correspond to the reality (e.g. most aviation catastrophes happens then pilots wrongly understand what is going on, like lose their position in space or wrongly estimate speed).

The risk from UAPs will exist until they will be completely explained. If something is unidentified, its model is incomplete and unverified and we can’t predict its behavior, thus some unexpected events are possible, and some of them may be dangerous. It is unlikely that we will reach a complete explanation soon. A single inexplicable event could destroy our world model, and hence completely change our assessment of the risks of the global catastrophe.

An "Unidentified phenomenon" assumes always a pair – of the observer and of the observed phenomenon. The risk is that once we meet an unidentified object, we do not know what to expect, and in our model of the world has a puncture. While the object remains unidentified, we do not know what to do with it and could act wrongly: it could be an exaggerated response, like firing guns on a flock of birds or blind ignorance, if we assume alien ship is just a cloud of swamp gas.

Despite many science-fictional cliché about “alien invasion”, the question of possible effects of UAP on the global catastrophic risks is underexplored. It was not so on early stages of the exploration of UFO in 1950-1950s when the phenomenon was regarded as evolving. But after the Blue Book project was over, the military concluded that the observations are mundane and safe. One of the reasons for it was that there were only a few cases where objective harm could be attributed to unknown objects to the sky. A couple of planes were lost in not clear situations, a couple of people were victims of something which look like cattle mutilations and that’s all.

One topic of writings is a possible relation between UAP’s observation and nukes. However, if UAP are products of intelligent beings who can’t hide their interest in nukes, then their capabilities are relatively low, and are is fewer chances of global risk. But if they were stealthy effective killers, they will collect all needed data about nuked without relieving their own existence.

One exception are works of Dolan, including “A.D. After Disclosure” (Dolan et al., 2012), where the full chapter 5 is devoted to the risk analysis. His threat analysis is based on three questions: “Who are they? What do they want? Are we safe?” Then he lists main ideas about “other’s” origins but still sticks to the 20th-century narrative (races of greys, motherships, resource depletion). However, the main idea of the Dolan’s book is that “disclosure” would result in mass civil riots, looting and social collapse. But the “soft disclosure” of the Nimitz case and even coronavirus pandemic didn’t result in mass riots, as humans easily adapt to the new state of affair if it doesn’t require immediate actions. We are used to living with the knowledge of nukes targeted to each of our cities, and it doesn’t bother us.

In the article “Spherical Unidentified Anomalous Phenomena: Scientific Observations and Physical Hypotheses, Danger Evaluation For Aviation and Future Observational Plans” (Teodorani, 2010) is explored risks of Earth lights to aircrafts, like electromagnetic effect on avionics. The article is based on detailed observations of Earth lights in Hesdallen. However, there was a [refutation](http://www.itacomm.net/ph/rebuttal.pdf) article, which claims that the observed objects were merely car’s headlights (Leone, 2003).

The best author about UAP remains Jacque Vallee, who was able to find the ways to escape the lure of the extraterrestrial hypothesis (ETH), but didn’t stick to any other simple explanation.

# 2. Inevitable “confrontation” with UAP

In my 2009 work on the topic, I predicted that the growth of the observational capabilities of humanity will make inevitable the registration of the phenomena. Growing networks of cameras, satellites, sensors will cover all the surface of Earth. It actually did happen, but the objective observation capability came not in the form of civilian sensor’s networks which are plagued with fakes (there is a lot of YouTube videos with UAPs, but the level of fakes makes them zero evidence), but from military sensors which are much higher protected from fakes and are designed in the way which makes them capable to observe short-living, remote and half-hidden phenomenon. The observations of UAPs on the Nimitz group began after a new radar system was installed.

Also, there is evidence that the phenomenon is able to actively prevent leaving provable traces. Observations often happen when recording is not possible, or tapes become missing or taken by some unknown people, or the observation is later compromised by adding obvious fakes in the same pool of data. All this has happened again and again inside the field of paranormal research and gave enough food for sceptics to completely dismiss such observations (Hansen, 2001; Mueller, 2017; von Lucadou, 1995).

If we assume exponential growth of human technologies, they will eventually reach the level where we could be able not only reliably observe UAP, but also affect them. This makes inevitable some form of *confrontation* with the phenomena, and such a moment could trigger scenarios of global risks if the phenomena will act against us, or provide us with new dangerous information.

In addition, it is likely that in the next 10-20 years will be developed means of reading thoughts and images from the human brain. This will provide a new way of witnessing UAPs: you can download those images that witnesses saw from their memory, and can much more accurately distinguish between fiction and lies; it will replace the regressive hypnosis in the so-called cases of abduction and will visually compare the experiences of different people.

In any case, the reliable socially important acknowledgement of the phenomenon (aka *disclosure*) will increase chances of the confrontation with UAP. Official recognition of this class of phenomena will lead to the deployment of powerful programs of their study and, in particular, of the ways how to influence on them. After NY Times article, many new organizations appeared which are going to research UAPs, including some Californian [startups](https://www.vice.com/en_us/article/bjw3q5/this-silicon-valley-startup-is-dedicated-to-detecting-ufos-off-the-california-cost).

Experiments may include not only attempts to detect phenomenon, but to affect it, maybe via microwaves, and this could be interpreted by non-human intelligence as an attack on it, which would follow with disproportional reaction. If UAP is not a form of intelligence, but a natural phenomenon like ball lightning, the confrontation will be in the form of acquiring the new knowledge of the phenomenon.

UAP, if they produced by intelligent beings, can resist these developments, depending on their capabilities, their understanding of human intentions (maybe false) and how real, in their view, is the risk to them by human actions. Their failure to act, by contrast, may be due to the fact that they have no power to resist, not understanding that humans tend to conquer every available space, or linked to the understanding of powerlessness of people against them (for example, if we hunt them with bows and arrows). In the case of a high understanding of human motives and techniques, they can choose a preventive action to stop human intervention into their world. (Or completely withdraw from our world... but we always go after.)

Even publishing some ideas could be such a threshold. In other words, the one who reveals “the nature of the UAP” could immediately put the entire world in jeopardy. I hope I will not create an *infohazard* here and trigger a hostile action of an unknown intelligence (Bostrom, 2011).

Thus, our provable discovery of the nature of UAPs might lead to a confrontation between the UAP and people. The higher is the intelligence of UAPs and closer are people to the level of technology development at which they can influence UAP’s world, the higher will be the sharpness and suddenness of the confrontation. For example: If ants from a forest follow a human being and start to build anthills in his house, they will be surprisingly attacked by an insecticide.

There is a hidden assumption that all unexplained phenomena in the sky could be explained by just one correct hypothesis, which could be called an assumption of the unitarily of the phenomenon. It is obviously false as at least some observations have different mundane explanations. However, the observations with highest strangeness suggest that there is some more complex explanation. I will call the most complex explanation as the real nature of UAP. However, it could happen that two or more hypotheses are true and UAPs are in fact several distinct but more mundane phenomena like sleep paralysis, military blimps and ball lightnings.

# 3. Three levels of explanations of UAP observations

## 3.1. The first level of hypotheses: mundane explanations

### 3.1.1. Lies

If every person creates just on tale during his life, there will be billions of non-true stories in the circulation, empowered by natural selection of memes for most interesting and frightening stories. Some people are making up stories for fun, others seem to earn on them ([Mauri island](https://science.howstuffworks.com/space/aliens-ufos/maury-island-incident.htm) incident could be an example).

Even if there will be no other sources of stories about observations of UAP, lies would create enormous massive of texts.

Lies could be a variance of some meme, which explains the similarity between some observations (like black triangles UAP).

### 3.1.2. Hoaxes

Hoaxes differ from the lies that there is one person is duping another via some material instruments. This includes fake photos, creating fake landing sites. At least some of crop circles seems to be elaborated form of landart. Creating hoaxes is a complex material activity of a group of people, who get fun from duping other people. Some hoaxes could have commercial or political goals (discreditation).

### 3.1.3. Observation errors

Observations of the Moon, shooting stars, airplanes, drones and many other things which a person observes under unexpected angle or doesn’t have any experience with, creates large number of UAP reports.

A subtype is errors generated by observational instruments: flares inside a photo camera, radar glitches.

As [ebaracum45](https://web.archive.org/web/20090807120328/http://www.bautforum.com/life-space/85981-ufo-phenomena-first-logical-explanation.html) said: “But I honestly don't think there is enough evidence to suggest that UAPs represent a real phenomenon ­– for instance, they seem to be more easily detected using primitive 1950's radar technology than today's sophisticated phased-array systems. This inverse visibility suggests that they are an artifact of observation, rather than a real example of self-replicating probes.”

### 3.1.4. Hallucinations

Some people may experience hallucinations from time to time, from simple ones like phosphenes in the eyes, to complex visions.

Also, hallucinations may be associated with short-term external causes – chemical poisoning (ergotism, gasoline vapor, a malfunction of liver, mushrooms, drugs) or sleep deprivation, illness, fever, fatigue, etc.

### 3.1.5. Sleep paralysis and dreams with opens eyes

This hypothesis intends to explain UAP through a combination of the following effects:

* short periods of sleep or self-hypnosis, accompanied by a feeling of vibration,
* hallucinations (<http://en.wikipedia.org/wiki/Closed-eye_hallucination)>,
* dreams seen against the backdrop of dark objects (<http://en.wikipedia.org/wiki/Prisoner's_cinema)>,
* sleep paralysis: the feeling of separation from the body and levitation, movement in space, and the presence of strange figures.

The main argument for this theory is that the typical time for UAPs observations is at sunset and around 3 am when the natural peaks of desire to sleep tend to occur. See the works of Robert Monroe about sleep paralysis.

Some people reported the feeling of being paralyzed during UAP observations, and about “electric energy” passing through their bodies as well as sounds of vibration and even levitation. It strikingly resembles the effect of sleep paralysis (See <http://en.wikipedia.org/wiki/Sleep_paralysis>). It would be interesting to explore whether the sensation of sound which occurs during the sleep paralysis is the same as a sound, supposedly produced by a UAP.

Here should be included are all cases where people wake paralyzed and saw «a figure of alien» near the bed. The study “[Alien Abductions, Sleep Paralysis and the Temporal Lobe](http://www.susanblackmore.co.uk/Articles/ejufoas00.html)” (Blackmore & Cox, 2000) shows that there is a correlation between the experience of the abduction and an inclination to have sleep paralysis, but there is no correlation between the experience of abduction and temporal lobe lability, which is contrary to the findings of Persinger that temporal lobe epilepsy is responsible for the hallucinations of the abductions (Pierre & Persinger, 2006).

The validity of this hypothesis is limited by the fact that it is applicable only for observation by a single person. So, it could explain some cases, but not complex daylight cases like Nimitz case with multiple observers. Moreover, it seems that there is some connection between UAP and human unconsciousness, which will be analyzed in the section about third level of explanations.

The catastrophic risk here can only be associated with the fact that the sleep paralysis suddenly affects a decision maker, such as the head of state or a duty officer at the remote missile launch base.

Another interesting effect that may explain the group observations of UAP, is a «collective self-hypnosis». Imagine that there is a certain group of people with high ability to visualize. When one of them said “I see a «red circle»”, others easily visualize it on a background of dark objects (sky), but they think that they see it actually. For example, Jung in the book about UAPs describes a spirit séance, in which 4 of those who present have seen the appearance of glowing ball, but he saw nothing (Jung, 2014).

### 3.1.6. Rare coincidents

If there is a very long series of observations, strange coincidences become possible. As UAP is a rare phenomenon (one of 20 people observes something significant in lifetime), there is always a chance of observing some common objects in very unusual ways.

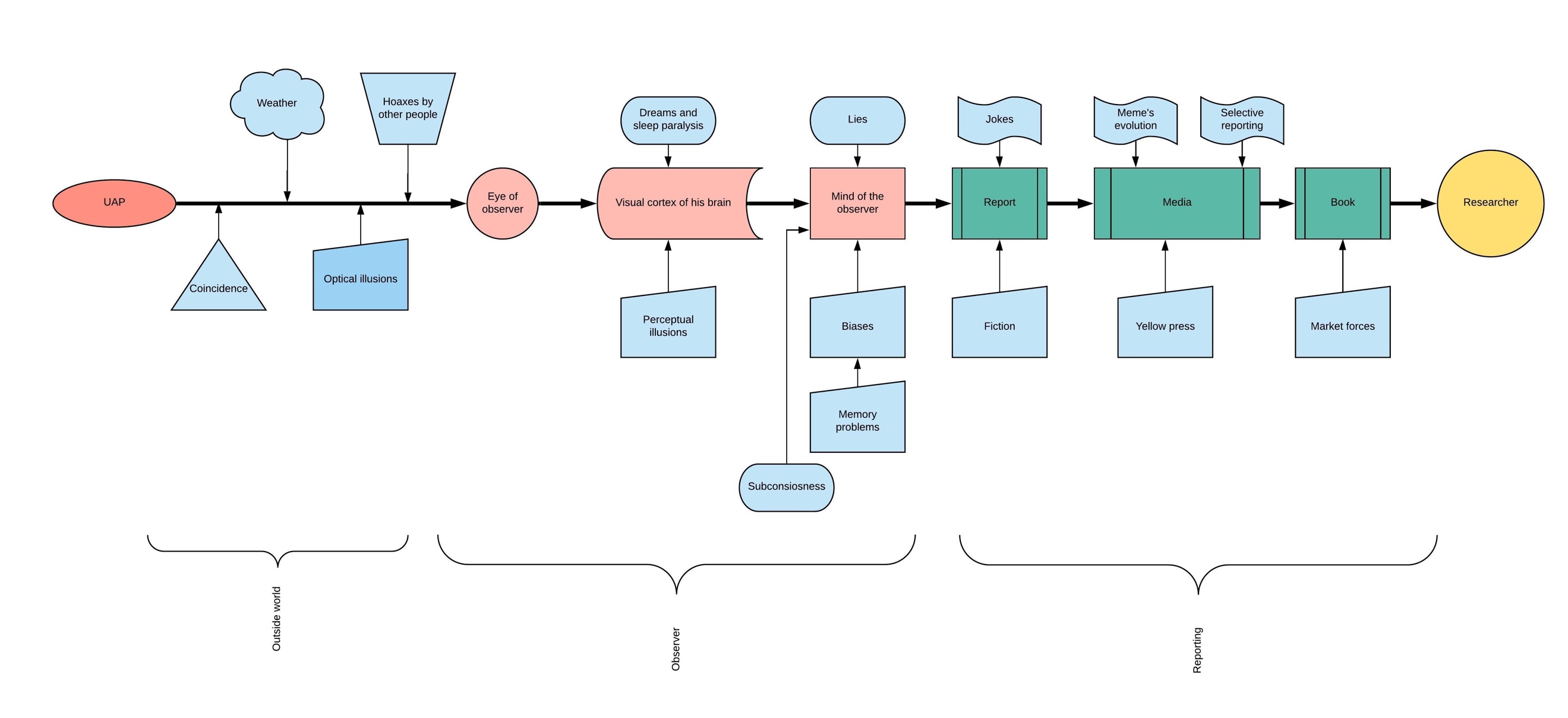
For example, I once looked out the window and saw that it reflects not only my room chandelier, but the next room lamp as if it was not reflected in the window glass, but in some surface, which is far ahead of the window, where you can see both windows of my home. But then I found out that the chandelier from the next room at first is reflected in the glass of cupboard in the hallway, which connected two rooms and only then is reflected in the window of my room.

This all could happen simultaneously: one person lies, another one hallucinates and all it supported by some rare observations. On the other hand, anything could be explained as a combination of hoaxes, randomness and hallucinations, and thus this type of explanations loses its explanatory power: if it explains everything, it doesn’t explain anything!

### 3.1.7. Noise theory of UAP observations and statistical analysis of data

In some sense, all listed above simple explanations of UAP observations could be described by one metaphor: it is a noise in the communication line between presumably observed object and UAP researcher. This signal line is affected by the following possible sources of noise: *rare* coincidence *– rare atmospheric phenomena – observational errors – hoaxes – hallucinations and sleep paralysis – lies and tails – selective reporting and yellow press*. Because there are many such lines from many possible objects, noise accumulates and start to look like patterns.

In figure 1 is presented one such signal line (bold arrow from left to right), which goes from an “object” to a researcher. The line passes through several media. First, through the atmosphere, where it is affected by optical illusions, rare angle of observations of common objects or possible hoaxes prepared by other people. The second medium is the head of the primary observer, where the signal is passing through eyes, visual cortex and mind until it is stored in memory, and it could be distorted on each step. Next medium is human communication where the written report about the event circulates. It again is affected by the yellow press, memes, selective reporting and other things. Finally, the last medium is the researcher’s mind, where again any reports may be affected by his own biases, like prejudice, beliefs, poor memory.



*Figure 1. Information about UAP observation is passing a signal line with many sources of noise.*

The whole line is full of “amplifiers” and amplifiers could, under certain conditions, generate (false) signal (e.g. if there is a negative feedback loop). In other words, very powerful observational “optics” could create observations of phenomena. A famous case of these effects was observations of the channels on Mars at the beginning of 20th century. Combination of the powerful but noisy optics and active imagination of viewers created an illusion of structures. Actually, there is no anything of Mars surface which looks like channels. The same mechanism is true for pareidolia.

S. Shostak from the *SETI Institute* used the noise theory to dismiss observations like Nimitz case as there was a lot of new powerful observation instruments, with enormous signal amplification capabilities, including a new battlefield information integration system. Nevertheless, some pilots said that they saw the *Tic-Tac* UAP object with their own eyes.

However, if it is noise, some special “denoising” technics could be used for the statistical analysis of the data. For example, there are a lot of observations of black triangles, but almost no observations of black squares, pentagrams etc. It could be explained by memetic contamination, but some observations seem to appear independently.

### 3.1.8. Global catastrophic risks and the first level of explanations

If we take only the first level of explanations, we should assume that the group of the best trained nuclear launch officers hallucinated during duty about an alien invasion (Malstrom base case) or that the best pilots on the best aircraft carrier were going to engage with a non-existing object – or they were so weirdly psychotic that they created a complex conspiracy to fool public about their observations for years.

In that case, we obviously underestimate risks of accidental nuclear war, as human beings turn out to be much more unpredictable and crazy than we used to expect.

## 3.2. The second level of explanations

The second level of UAP explanations consists of hypotheses which require some changes in our world model, but not its complete overhaul. Such hypotheses are *a priory* less likely based on Occam-razor-style reasoning, but their consequences for global catastrophic risks are higher.

### 

### 3.2.1. A new optical phenomenon in the atmosphere

One of the possible explanation of UAP (or at least some of them) is complex optical illusions, in which light and images are transferred on long distances. Menzel [tried](https://en.wikipedia.org/wiki/Donald_Howard_Menzel#Menzel_and_UFOs) to explain UAP via temperature inversion in the atmosphere. More complex and rare effects could be something like light transferring waveguide in the air, emerging on the border of the three media (i.e., a layer of warm air between two layers of cold).

Possible risks are associated with false warnings of military systems. Most of the close calls of accidental nuclear war were triggered by errors in early warning systems.

### 3.2.2. Natural geophysical processes which affects human minds

The physical phenomenon that has hypnotic and hallucinogenic effects may explain some observations of UAP – it may be underground gas emissions, such as those that influenced Pythias in ancient Greece, the epidemics of ergotism – that is poisoning by lysergic acid derivatives or the effect of the strong electric fields associated with underground piezoelectricity arising in the quartz rock, and also accompanied by a visible electrical discharges similar to the St. Elma lights or ball lightning and, perhaps, producing gases that can burn or support neurotoxic effects, as well as *telluric currents*, that is, the redistribution of electrical charges on the surface of the Earth.

M. Persinger argued (Pierre & Persinger, 2006) that effects of alternating magnetic fields (transcranial magnetic stimulation) on the temporal lobe of the brain can cause religious experience and sense of the presence of luminous beings, similar to the experiences during epileptic seizures, i.e., hyperactivity of the brain, namely, temporal lobe seizures which are accompanied by hallucinations and changes in mood, but not convulsions. (However, independent investigators have not been able to repeat Persinger’s experiments.) Some kind of magnetic storm could cause such brain effects. This may explain the sense of aura before the close encounters with UAP in some cases and the sense of fatigue after prolonged contact (“the oz factor”, described by Randles (Randles, 2001)).

If geomagnetic storms could be strong enough to affect the mind, the state of paralysis can be attributed to an electric current in the human body caused by underground electric power – and around of the body of the observer could be seen lights like the lights of St. Elma but observed as glowing objects at much higher distance. Even several people may feel it, and if the electric discharge from each of them will have a similar shape and direction, then they will all believe that they see “one remote object”, the same way as several people could see the same rainbow, while it is not a real object.

The most promising candidate for the physical processes with mental action is an electrical discharge between the earth's crust and the conducting layer of the ionosphere, which is causing the formation of ball lightnings which are a powerful source of radio emissions and could severely affect human mind. UAP, in that case, are special type of electrical discharges between the earth's crust and the ionosphere, such as sprites. Here, we should be interested in the first place, what is the maximum possible size of this phenomenon, is here possible «super-eruption» with global implications, as well as whether people can influence events through, for example, atmospheric disturbances (such as HAARP). This idea was put forward by Persinger (in the form of “seismic lights” appearing due to piezo-effect (Persinger & Derr, 1993)), who found that weak variable magnetic fields may cause hallucinations of religious nature (which might be placebo effect) but the correlation between observations of a UAP and fault lines was weak and could be explained by different population densities.

In the case of validity of this hypothesis, no specific risk is expected (expect maybe electric effects on nuclear missiles in silos and their personal – similar to what happened in Minot airbase, when a UAP observation coincided with abnormal behavior of electronics in silos in the 1960s). Other risks are associated with provoking the war and the possibility of creating new ways to influence people's minds.

Persinger suggested that earth strain could create strong electric fields, which are often observed before earthquakes and may be driven by piezoelectric effects. He suggested this as an explanation of the [Hessdalen lights](https://en.wikipedia.org/wiki/Hessdalen_lights) (Persinger & Derr, 1993).

However, this could explain only some observations like Minot airbase observation, but not observations of solid balls or more complex objects.

### 3.2.3. UAP are ball lightnings

Explanation of the UAP nature as ball lightning does not possess a high degree of credibility, because we do not know what is ball lightning itself, and it, in turn, can be called a small UAP. One unknown is explained through another unknown. There are about 200 hypotheses about [the nature of ball lightning](https://en.wikipedia.org/wiki/Ball_lightning), and many of them look convincing. It is well known that most of ball lightnings (BL) occur in the storm with electrical discharges. I myself saw the emergence of ball lightning in the linear lightning channel in Moscow during the summer storm near 1997-99 years.

There is some resemblance between UAP and BL, as BLs are luminous spheres. While the nature of BL is not firmly established, their existence is mostly accepted. Maybe BLs are UAP which become visible during a storm, or at least both of them use the same source of energy? In the appendix I listed many different hypotheses about the nature of BL, and most of them could be also the nature of UAP.



*Figure 2. Hessdalen light and its spectrum*

### 3.2.4. UAP as a global hoax

Information on UAPs, according to this hypothesis, is injected in the society in order to distract it from the real social problems and to cover economic crises, wars, political machinations. While it may be no single universal conspiracy to spread false information about alleged observed unusual phenomena in the sky, such idea appears over and over again, in different circumstances. For example, some say that in the Soviet Union articles about UAPs were published when authorities were going to the next price increase. In the United States the injection of information about UAPs was used to divert attention from other military developments, e.g. (with all uncertainty) Roswell case.

Risks here are associated with, for example, that public attention is diverted from the really important social problems or that such injections will cause uncontrollable mass hysteria. An example of such hysteria is nearly disastrous panic during the radio show «War of Worlds» of Orson Wells.

Jacques Valle believes that the secret services have made models (including full-size) of real UAP in order to arrange provocations to psychological warfare, reconnaissance, or to direct the horror the enemy on the battlefield. One of the most credible explanations of the Nimitz case is that observed radar marks were in fact complex decoys created by the enemies (Russians, Chinese, or even US Air Force which tested its capabilities against US Navy). Such complex decoys could be created from drones or blimps and confuse the enemy about the location of actual military assets or jam their data processing and even intellectual capabilities. As UAPs are generally ignored, anything which looks like UAP is a perfect camouflage.

The same way as there is a constant “war” in radio ether (“[numbers stations](https://warontherocks.com/2018/05/explaining-the-mystery-of-numbers-stations/)”, which main purpose is likely to create confusion in enemy intelligence), there is constant war in the sphere of disinformation between superpowers. Injecting rumors or, as they called now, fake news, could distract enemy. In order to intimidate the enemy (e.g. Soviets) by the mere fact of existence a super-weapon, is enough simply do not give conventional explanations to strange observations. The enemy will have to assume that these sightings of UAP should be observations of a superweapon. The enemy would spend needless effort trying to recreate such non-existent superweapon. Another example of such deliberate disinformation is probably so-called “red mercury”.

Finally, we may suggest that the UAP phenomenon is supported by the yellow press and its writers in order to improve their circulation and to make money. They exploit people naive belief in miracles. In the USSR, the UAP was considered an instrument of capitalists’ anti-Soviet propaganda.

The total of all these theories is that the myth of the UAP purposely created and used by one group of people to manipulate the other, or maybe even by many groups.

From the risk’s point of view, if the government agencies are involved in the mystification, they lose the ability to recognize any of the actual events as they think that all events will be hoaxes (possibly of other government agencies or foreign secret services), and thus we are vulnerable to real events.

### 3.2.5. Secret military technology

The next hypothesis is that UAP are classified military technology. In this case, it is necessary to recognize that the government of at least one country (presumably the US) possess a secret of invisibility, antigravity, moving in the hypersonic speeds without sound and unlimited sources of energy. It is not clear why the government should have to hide such technology but also demonstrate it from time to time meanwhile spending funds on conventional weapons, which, in this case, had no value. In addition, the manifestations of UAP did not especially evolve over time, which is unusual for the terrestrial military technologies, and some UAP have been observed in times, when such technology was impossible: before WW2 or even in XIX century.

Thus, this hypothesis seems to be questionable. But if it is true, it means that very dangerous weapons exist now, and, there is no civilian or international control over these weapons, and this aggravates the existing risks of a global catastrophe.

Some types of UAP observations look like human-made military crafts, first of all, so-called “black triangles”. Such triangles could be military blimps with rigid frame combined with some propulsion and invisibility system (like covering with LCD screens). Sufficiently large rigid metal frame filled with helium could provide enough buoyance in the air to support itself. This doesn’t explain other reported features of such UAPs, like strong lights on the corners or quick movement without sound. Military effectiveness of such blimps is also questionable as they are not very good for gathering intelligence (satellites are better) or as nuclear weapons carriers. In the case of war, a big blimp would be an easy target.

At least some UAP observations later occurred to be tests of military equipment which itself does not violate the laws of physics, but whose optical manifestations seemed strange to an unprepared audience: this is the launch of missiles from the Plesetsk in Russia (the famous [Petrozavodsk UAP](https://en.wikipedia.org/wiki/Petrozavodsk_phenomenon) was, in fact, missile launch from the military facility, even existence of which was secret). Note that there was some smaller strangeness in this case, like holes in the windows or discrepancy of the reported time of the event, which often happens during such events, and could be explained by “cognitive pareidolia” or synchronism (which will be discussed later).



*Figure 3. Petrozavodsk phenomenon (Wikipedia)*

The main risk of the new ways of air travel is rapid, invisible and uninterceptable delivery systems for nuclear weapons which could disturb the strategic balance, allowing anonymous preemptive strike.

Note that the lower is the level of development of hypothetical military UAP, the closer they are to hoax (such as balloons, which imitate the UAP and used for exploration), and the higher it is, the closer are they to the existence of a “second civilization” (hidden in the depths of a national state in this case), covered from ordinary people and possessing a superweapon. More advance military UAP less likely to exist, but present a higher catastrophic risk associated with them.

One of the main properties of UAP is their ability to immediately accelerate and move with hypersonic speeds in the air without creating tremendous sonic booms. This is more likely to be a property of non-material objects. One of the possible explanations of UAP is that it is an illusion created by remote radars. It was suggested that ionized plasma appears that at the point of intersection of multiple radar beams. This plasma could reflect radio waves (e.g. interrupted radio communications with the outside world during the landing of a spacecraft) and it radiates in the UV.

This could explain reported magnetic effects of UAP, and interference with the reception of radio and television signals. Sometimes during the observations of UAP people have eye damage, similar to burns from ultraviolet rays, and plasma could emit such rays.

Controlled interference of many radio sources could create complex holograms. Also, the military has long interest to “beam weapons”, where powerful radars create directed beams of energy which could destroy the enemy’s electronics and shot down their planes. The intersection of several beams would create a zone of higher energy concentration which could be seen optically (the Battle for Los Angeles could be a first case where this happened, as many beams of searchlights intersected in one place and created an illusion of a real object). However, practically it could be difficult, as it requires enormous energy sources and installations.



*Figure 4. Photo of the battle for Los Angeles, where intersection of many lights created an illusion of real object (Wikipedia)*

There are also allegations that the crashed alien spacecrafts have provided American military with the technology to create their own flying sources, and most of the observed phenomena are observations of such human-made devices, which are reverse-engineer. The main problem here is that if alien spacecrafts are effective interstellar travelers, they should have very low level of accidents, and if they are made with superior technology, how they could be reconstructed by humans? (Imagine a scientist from 1950s trying to reconstruct an iPhone.) And if alien spacecrafts are prone to suffer accidents, then a reconstructed flying saucer should be even more likely to crash. Even if such a leak of technology has occurred, it would rather be intentional by the owners of technology, than accidental. And in that case, it is not a “real technology”. In addition, if alien spacecrafts have visited the Earth for a long time and they are not inclined to "clean up after themselves," there should accumulate huge cultural layer of their debris. Finally, if alien spacecrafts are vulnerable to human air defense, they are not so superior in technology and they would not fly in contested airspace.

Another possible way of military technology be UAP is the creation of airships, camouflaged as iconical “UFOs”. Since the idea is widespread that UAPs should not be shot down, because it could lead to "invasion of aliens", this creates a reason to camouflage drones as UAPs. As a veil, one can use Tesla’s transformers, which produce corona discharge around the aircraft. Black triangles could be such type of “artificial UAP”. History knows many cases of the use of mythological beliefs for military activities and the conquest of power, the most famous of which is the conquest of Mexico by Cortes, who was taken as a god. This is close to the global disinformation discussed above.

### 3.2.6. Mystification from the suppressed sub-personalities

People with multiple personality disorder have many subpersonalities with independent memory. They may even not know about each other. A classic novel «[Sybil](http://en.wikipedia.org/wiki/Sybil_(book))» is based on the description of a real clinical case (anyway there is some skepticism about its accuracy). The main character had 19 different personalities. Moving from one personality to another and back was observed subjectively as a syndrome of lost time. For example, Sybil once sat in her class in the third grade and suddenly just moved to the fifth grade having lost two years of her life. Lost time is characteristic also for the observation of UAPs.

In addition, people could develop a state of somnambulism, for example, one person has traveled 17 km on his car to [commit murder](http://en.wikipedia.org/wiki/Homicidal_somnambulism) while in a state of somnambulism. Then he returned to his bed and fell asleep. In doing so, he left many clues and the police found him.   
Further, it is known that many contactees “give” their hand under control of aliens and then the hand automatically writes an extended message. This “aliens” are most likely just a part of their unconscious, as aliens’ knowledge of astronomy is usually at the level of knowledge of the ordinary individual (all these claims like “we are from the Pleiades”). Many other types of psychotherapy, such as voice dialogue, or Jungian active imagination and family system allow to enter into contact with the individual parts of the personality, but often these subpersonalities claim to be not part of the individual, but that they are God, a Higher Self, dead souls, etc.

Thus, we can assume that some people could become entirely under the control of their subpersonalities who pretend to be aliens. Such subpersonality could manifest itself either via forging physical evidence or as dreams about UAP landings and abductions. For example, one American saw an UAP landing, later was abducted for a short time and then at the scene were found material traces. However, in the trunk of his car was found an open bottle of oil, which, according to investigators, he could use to create hoaxes. He could not remember where he got this bottle and why it was opened (as to drive with an open bottle of impossible). Another type of physical evidence created by subpersonalities are stigmata, and some people who claimed to be abducted also has bite marks.

The mere possibility of such complex craziness raises a question: what if a president of a nuclear country become affected by such overwhelming subpersonality and in the state of somnambulism orders nuclear launch command? If we explain UAP as such unconscious behavior, we should increase our estimation of its probability in the general population.

## 3.3. The third level of explanations

The third level of explanation consists of those hypotheses which completely change our world model. But the size of such overhaul could be different: “alien’s existence” is a lesser change of the world model than the idea that our reality is not real at all and we live in a simulation. We will here explore them from smaller changes to higher changes.

Most of the explanations of the strange things in the sky which were presented throughout the civilization history were reflections of the human culture at the moment and tell us more about humans than about “aliens”. In ancient times, it was gods or angels, in 19th century – airships and blimps, after Fau-2 in 1946-47 it was “ghost rockets” and in the space age it was spaceships of aliens, which were taking probes and performing biological experiments. 21st century suggests new ways of explanations, like “glitches in the matrix”, but this again is just our level of understanding. Thus, it is not possible to create a full list of the hypotheses of the third level.

When we speak about the nature of UAP on the higher level of explanation, we should distinguish between several questions: what is the origin of the phenomena, which physical laws it uses for its manifestation and what it wants (if intelligent)? The chart of all possible hypotheses will be presented in section 3.4, but before we will list the most interesting and popular explanations.

### 3.3.2 UAP is a product of another civilization

#### 3.3.2.1. Classical ETH hypothesis

The classical explanation of UAP as spacecrafts sent by an extraterrestrial civilization to explore the life on Earth appeared at the dawn of the space age. Even invention of the Fermi paradox in 1950 was inspired by a discussion about recent UAP sightings. At the moment, it was a very logical explanation, as humanity was going to do the same: to send spacecrafts to nearby planets and collect samples. The logic looked obvious: As we live in a very large and old universe, there should be other civilizations which are sending spacecraft to explore other planets and we observe such spacecrafts as UAPs.

However, Vallee (Vallee, 1990) demonstrated difficulties of the classical ETH:

Five specific arguments articulated here contradict the ETH: (1) unexplained close encounters are far more numerous than required for any physical survey of the earth; (2) the humanoid body structure of the alleged "aliens" is not likely to have originated on another planet and is not biologically adapted to space travel; (3) the reported behavior in thousands of abduction reports contradicts the hypothesis of genetic or scientific experimentation on humans by an advanced race; (4) the extension of the phenomenon throughout recorded human history demonstrates that UAPs are not a contemporary phenomenon; and (5) the apparent ability of UAPs to manipulate space and time suggests radically different and richer alternatives”.

Vallee thinks that if an alien civilization would be interested in research life on Earth, it can put just one small satellite on Earth’s orbit and collect all radio signals; sample gathering could be performed by small drones. There will be no observable traces of such activity.

Also, alien civilizations are unlikely to be biological, but more likely to be robotic.

#### 3.3.2.2. Updated ETH hypothesis: multiple aliens using hyperspace

Wood replied (Wood, 1991) to Vallee and updated the original ETH by suggesting that there are thousands of alien civilizations capable to travel above light speed, and each sends thousands of probes to Earth. Such probes also could appear or disappear from ordinary 3D space, presumably into some “hyperspace”. This explains millions of observations of very different UAP. Here are some quotes from Vallee which show the difficulty of this second-degree ETH.

Wood finds it plausible to assume that several thousand different extraterrestrial civilizations have each authorized up to 1,000 visits by their members over that time period. This is already in sharp contrast with the first-degree ETH, which generally assumes that a single race or, possibly, only a few races of aliens, began visiting the earth after World War Two, with the Kenneth Arnold sighting of June 1947 as the often-quoted starting point. In other words, the high frequency of close encounters does demand that the commonly held view of visiting aliens as interplanetary scientists be abandoned (J. Vallee, 1991).

It is perhaps in this regard that Wood and I have our greatest differences. It is unfair to argue one minute that observed UAP phenomena are nicely behaved and consistent with modern physics, perhaps assuming a few extensions such as the removal of the light speed limit and the use of a zero-point drive, and to throw all constraints to the wind the next minute by stating that any advanced technology would look magical anyway, hence anything goes. If anything goes, then other theories, such as those invoking other dimensions beyond spacetime, the theory of a psychic control system, or the Wormhole travel hypothesis will work just as well or better than the first-degree ETH Wood is defending, as I pointed out in the original article. In fact, they may be more parsimonious, since they also get around some of the other arguments we have reviewed (Vallee, 1991).

Vallee also shows that if there are thousands of civilizations visiting Earth, it is unlikely that all of them will be capable to follow “non-interference law” and that all of them will be humanoids. According to Bramley, Vallee presented three different to ETH explanations in different his works: “the Earth-Light Hypothesis, the Control System Hypothesis, and the Wormhole Travel Hypothesis” (Bramley, 1992).

#### 3.3.2.3. Risks from the “classical” aliens

There are several more or less obvious global catastrophic risks associated with classical alien visitations, but they are not very probable and remind us 20th-century science fiction. One is classical “alien invasion” where aliens decide to exterminate humanity in order to get our planet and live on it. But as human civilization exists on Earth around 5 000 years (depending on how we count), and multicellular life exists for 500 millions of years, then civilizations are much rarer than planets with unintelligent life, with proportion 1 to 100 000, and thus space travelling aliens could get much more empty planets without the need to destroy potentially interesting human civilization. I discuss more of it in “Classification of ETI risks” (A. Turchin & Denkenberger, 2019). For the same reasons, it is unlikely that classical aliens are interested in any recourses of Earth-like water or minerals.

In addition to possible aggression, another risk factor associated with hypothetical extraterrestrial spaceships is that they may suffer an accident. Starship which moves with near-light speed and then impacts the Earth can create destruction, comparable to the impact of an asteroid that is many kilometers in size. If they use a kind of hyperspace, in case of an error during the exit from the hyperspace, the ship would be within the planet which can cause catastrophic explosion.

In addition, it is unlikely that while wandering through the universe, aliens came to Earth only recently. Either they knew for a long time about our planet, for millions of years, or they somehow found out that on Earth has begun an “interesting period” and became attracted to it.

Aliens may still decide to exterminate humanity if they find that we present a risk to their existence or that we could start our own space colonization. However, they also could prevent this, without starting an omnicide.

Another type of accidents which could significantly harm Earth is an accidental release of an alien bacteria, which will not have natural predators or limitation and would devour all organic matter. Even non-catastrophic contamination by alien life could be observed in the form of strange plants or during genetic tests of random samples; no such alien life was ever discovered, which is another tentative argument against ETH.

But if aliens really want to invade the Earth (in the sense of physical capture) they would operate covertly, and then appear with the whole force – nothing of the sort we have seen.

A human military attack on an alien spacecraft, if successful, could trigger retaliation, but this is also unlikely, as the fault will be on the alien spacecraft, which put itself in a dangerous place and didn’t use its superhuman capabilities for self-defense. The leakage of the alien technology to humans is more dangerous as there are historical precedents when tribes getting access to automatic rifles almost exterminate themselves.

If an alien civilization has a different evolutionary path and, say, they had legally prohibited creating of artificial intelligence, then we may soon overtake them in this area and get an intelligent advantage when we create our AI. However, they will still have an advantage of energy and weaponry.

And if there is a law against AI in the alien civilizations, they can prevent us from creating AI.

### 3.3.3. Variants of ETH

#### 3.3.3.1. Alien Superintelligence and space Zoo

The most important feature of an advance alien civilization is that it is in a “post-singularity” stage. Humanity is likely to create above human-level AGI in the next 100 years or earlier (Bostrom, 2014; Turchin, 2018). A civilization, which is older than ours for millions of years, should have created superintelligent AI long before us. (Some may say that superintelligent AI is not possible, but anyway, aliens surely pushed the limit as far as they can in the direction of AI and robotics).

Superintelligent AI doesn’t need a biological body for interstellar travel. It will likely master nanotechnology and will send small self-replicating *von Neumann probes* for space exploration. There is no need to send starships full of biological bodies (at least if space travel is expensive; travelling through “hyperspace” could be much cheaper, but it is less probable based on current scientific understanding of space-time).

Moreover, some think that superintelligent AI will start an “explosion wave” of intelligence which will travel with near-light speed through the universe and will convert ordinary matter into computational resources (Armstrong & Sandberg, 2013; Hanson, 1998). If such wave has reached us, we should not exist, as our planet should be converted into a Dyson sphere millions of years before now.

However, it is impossible to predict the behavior of a superintelligent AI. Maybe it is interested in preserving the local life on Earth. If alien superintelligent AI’s capabilities are almost infinite, but it is *friendly* to its maternal biological alien civilization (Yudkowsky, 2008), it would still preserve biologically looking bodies of aliens as well as their retro-style spaceships as a form of vintage entertainments (the same way as some people would prefer to explore the universe in the Star-trek-style spaceship even if smart dust is cheaper. The people with the same mindset now are sailing the oceans in wind-powered yachts.) However, alien-friendly AI is not necessarily friendly to humans (despite some ideas of “universal cosmic ethics” (Panov, 2015)). It could be “half-friendly”: not explicitly hostile, but preserves us because we are similar to its maternal civilization and may be of interest for “alien tourists” or just because they would not be happy if similar to them beings will be killed.

In that case, the Earth is just a “Zoo” controlled by the alien-friendly superintelligent AI but visited by some adventures beings with touristic goals. But alien superintelligence is not a necessary condition for the Zoo. Even without such AI, alien authorities may decide not to interfere in humans’ affairs. However, this decision (if it really exists) doesn’t seem to be a strong one based on the fact of UAP observations.

Alien superintelligence – if it is here – by definition could create whatever objects in our sky it wants and its behavior as well as its instrumental goals could be completely opaque for us. If ants observe a human being with a smartphone, they will not be capable to have satisfying explanations. We could guess some convergent goals of advance systems like self-preservation (Omohundro, 2008), but not all goals. What looks absurd may have complex meaning in the unknown context. However, this explanation is too universal: it could explain anything, like explanations based on the anthropic principle or God’s will.

Another suggested property of superintelligence is that it will be “locked” on whatever goals its creators put into it (Yudkowsky, 2008). Such goals may be accidental and random, like “tile the universe with smiles” or “calculate the pi number until the end”. If some entertainment robots are locked into their goal system and propagate through the universe, we would see something like “Disneyland of Gods” (Keel, 1988), but without gods: only self-propagating and replicating Disneyland machinery powered by superintelligent AI, which can’t change its final goals.

If there are many superintelligent agents, which are not “overoptimsed” for just one simple goal, they could form very complex environment. First example is a forest created by Darwinian evolution: a lot of different things are there, including flowers, birds, animals, mushrooms. Another example is a complex human activity, like an art exhibition: it could be explained by some combination of basic human drives, like pleasure seeking, need for money, for higher status and for a sexual partner, – but eventually the interplay of all these desires is very complex. It is something like fractals, where simple principles produce very complex objects.

Thus, superintelligent civilization could create very complex structures, which are completely incomprehensible for us or even look absurd. However, this type of explanations is too universal: it could explain any observable or unobservable things, the same way as we could say “a witch behind the corner did it”, or “God did it based on his incomprehensible plan”. However, there are some regularities in the UAP: more probable observation at night etc. ­– and this suggests that a simpler explanation is possible.

Some claim that the best explanation of the Fermi paradox is that any superintelligence will quickly “wirehead” itself, that is, maximize its reward function, and then halts. This creates upper cup on the level of the possible superintelligence, which was once called the *Lebowski theorem of the inevitable wireheading of superintelligence* (Kottke, 2018; A. Turchin & Denkenberger, 2018b; Yampolskiy, 2014b). But if the goal system is really weird or if the intelligence’s master algorithm is not straightforward reward maximizer, such AIs will be not affected by the Lebowski curse. However, the observed behavior and the ways in which they reach their goals will be suboptimal.

Maybe our Zoo is a laboratory of “experimental history”, where some bifurcations are checked, like the [ability to unite civilization](https://www.lesswrong.com/posts/weqBojQfq78bdc27Q/covid-19-as-a-fermi-paradox-zoo-hypothesis-subset-laboratory) and escape global risks. Such material Zoo is needed if simulations turn to be not effective to model the whole details of history. Real world also may be needed to calibrate simulations.

#### 3.3.3.2. Alien nanobots

One possible explanation of the physics of UAP is that they consist of swarms of alien nanobots. Nanobots (envisioned first by Eric Drexler (Drexler, 1986)) are small self-replicating robots, similar in size and function to a biological cell which could sometimes self-organize into larger structures. Clouds of nanobots in the air could look like soft structures or condense into dense looking structures. Such a cloud could mimic any other object, including real clouds or human-made flying machines, as well as it could disappear instantly.

It is more difficult to explain (based on this hypothesis) an apparent supersonic movement of the nanobots’ cloud. There, in fact, could be no movement, but just changes of the transparency of the “[utility fog](https://en.wikipedia.org/wiki/Utility_fog)” already present in the atmosphere: this suggests that alien nanobots are everywhere, but only sometimes condense into observable objects. So, why we don’t see them? They could be only a small part of the mass of Earth, like 0.1 per cent, and effectively escape our microscopes, as they don’t want to be observed.

How alien nanobots could appear on Earth? One explanation is that they were used for the wave of the space colonization by an alien civilization which started long ago and either lost its initial purpose or their purpose is behind our current comprehension capability. At the moment, the most promising form of the space exploration is the use of nanostarships (small spacecraft speeded up by laser beam) which are von Neumann probes: that is, they are able to produce their copies from available materials at the place of arrival. Currently, the [*Breakthrough* Starshot](https://en.wikipedia.org/wiki/Breakthrough_Starshot) initiative founded by Russian billionaire Y. Milner is working on this way of space exploration. Armstrong and Sandberg showed that the use of nanotechnology allows very quick (close to the speed of light) space exploration, so these alien nanobots could come from a civilization originated several billions light-years away (Armstrong & Sandberg, 2013). Aliens robots may also not be interested in immediate converting of all matter into computronium (matter organized for the most effective computations), but more interested to wait until the condition will be more favorable for computations. In that case, they only have to establish their presence on a star system and have to wait few billion years (Sandberg et al., 2017). However, they have to protect the conquered star system from possible other aliens or from an intelligent life which will originate there, so some form of “military installations” and observation points are needed. They also could perform a lot of computations without disturbing macroobjects external view. For example, they could live tens of miles below the Earth surface and use Earth heat stream as an energy source for computations. Or use their excellent mimicry capabilities to look like ordinary sand and stones.

Such sleeping alien tech could work as “berserkers” (Saberhagen, 1984; A. Turchin & Denkenberger, 2019): they wait until a civilization reach some dangerous level and destroy it. Such level is probably near our level of the creation of AI and our own nanotech, as we will be able to find alien nanobots after that. We can think also about the "soft Berserker”, or "regressors", whose main task is just to stop technological progress at some level. They can achieve this via mystifying, destroying key technologies, creating false ideas, influencing the key persons, intimidating (this is close to the Vallee’s ideas of the “messengers of deception”), and only in extreme cases by direct military intervention or small pseudo-natural global catastrophes, like pandemic or asteroid impacts. Note that due to the observational selection, we cannot observe the classes of berserkers, which destroy civilizations at the very early stages of their development, no matter how often they are occurring in the universe (Ćirković et al., 2010).

However, alien nanobots could remain completely unobservable if they would want to do it, even if they are present in my room and even in my brain. So, this variant of ETH hypothesis suffers from the same problem as the previous one: the absurdity of UAP behavior contradicts simple rational explanations. So, some other explanation is needed to rationalize their strange behavior.

For example, self-replicating nanobots could run amok in the scenario called “Grey Goo” (Freitas, 2001), where they start uncontrollably self-replicate, like cancer cells. Such self-replicating nanobots will “eat” the biosphere of their mother planet, but they could eventually start to travel through space, maybe undergoing some form of the Darwinian evolution. This will be a form of *mechanical panspermia*. Such runaway nanobots would be less intelligent than deliberately created for space travel nanotech-based vNP. (Interesting discussion on the topic, including “policing probes”, probe’s Nash equilibrium and even sun dogs [here](https://web.archive.org/web/20090807120328/http://www.bautforum.com/life-space/85981-ufo-phenomena-first-logical-explanation.html).)

Interestingly, interstellar panspermia of living organisms is also possible inside meteors, and thus we could find some alien non-intelligent lifeforms of Earth, maybe something like tardigrades or even something more complex, with animal level of intelligence (Ginsburg et al., 2018; Panov, 2005). It is unlikely to explain UAP, as UAP by definition could fly very effectively and thus don’t need meteorites to be transported. But some seeds of alien life may come to Earth and evolve into non-organic life. General anthropic considerations imply that we are more likely to live in a universe where panspermia is common, as it helps to escape unlikely abiogenesis paradox.

Scientists [discussed](https://theconversation.com/could-invisible-aliens-really-exist-among-us-an-astrobiologist-explains-129419) the idea of a “[shadow biosphere](https://www.astrobio.net/retrospections/a-shadow-biosphere/)” consisting of, say, silicon-based life forms. Observation of it is difficult using currently available instruments, as it can’t be cultivated. Such shadow biosphere may also evolve into direction of its own analog of multicellular life and even intelligence, may be of animal level. Shadow biosphere may flourish in places where carbon-based one can’t live, like lava in volcanos.

Sandberg also wrote about the dynamics of berserkers [here](http://www.aleph.se/andart/archives/2008/03/on_the_killing_of_worlds.html) and suggested “anti-berserker policing probes”, which Dvorsky [called](http://www.sentientdevelopments.com/2008/03/seven-ways-to-control-galaxy-with-self.html) “Sandberg probes”. The idea of something like “policing probes” is needed in any hypothesis of UAP origins where multiple agents are assumed; we will call it UAP police. Such policing is needed to prevent interactions between humans and UAP and to delete any evidence.

Dvorsky suggested 7 types of goals of vNPs:

1. Exploration  
2. Communication  
3. Working  
4. Colonization  
5. Uplifting  
6. Berserking  
7. Policing

These are all rational explanations, but most of the observed UAP behavior is absurd. This absurd behavior may be explained if they are some products of an alien civilization run amok – but are locked in some final goals – like mentioned above entertainment “Disneyland” robots, but without superintelligence. Parent civilization could disappear a long time ago, but some its robots (or other self-replicating units) may continue to propagate through the universe without any clear goal and without complex intelligence which was able to create them. So, they are some form of technological life. S. Lem described such scenario in his novel *Invincible* (Lem, 1973), where robots evolved after a crash of a starship on a planet, and such evolution was favorable to the swarms of small robots which eventually won over larger machines. Such swarms of robots in the novel also possessed a non-verbal type of intelligence, which achieve its goals in human-incomprehensible ways. (More about non-human intelligence below.)

To explain observable characteristics of UAP, we think that it is unlikely that they are large scale mechanical robots: such robots can’t change the form or instantly accelerate, or they should have some unknown ways to manipulate matter, like hyperspace.

Disguising will be important for the extraterrestrial nanobots, if the universe has a lot of different species of them. In this case, natural selection would be in favor of the nanobots that are able to control the largest territory and had the best camouflage to avoid detection and destruction of competitors. Such camouflage could look like the mimicking the best observable flying objects. This explains “ghost airships” of 19 century, “ghost rockets” of the middle of 20 century, and even [*unknown drones*](https://www.nytimes.com/2020/01/01/us/drones-FAA-colorado-nebraska.html) of 21 century: the swarms of alien nanobots just behave like a “chameleon” with any observable tech (and not only tech: “man in black” and even “yeti” could be explained the same way), but they mimic it with errors, as they are not, in fact, intelligent.

These errors in mimicking make the whole idea vulnerable, because if alien nanobots are hiding from some advance civilization, it will be able to recognize fake spacecrafts; even we can do. The better hiding strategy for nanobots is to live inside a small asteroid in very small quantities. But the idea of chameleon camouflage is still interesting and could be applied to other theories about UAP, like that they are non-organic life form.

An important part of the principle of mimicry could be a *deliberately absurd behavior*, which generates noise pollution inside the communication channels for disinformation, something like *white noise* and creating disbelief in the data observed by enemy’s observational channels. If something acts rationally, we could predict its nature and its final goals via observed behavior. However, an absurd behavior could be a camouflage for any real goal, like in “drunk master” kung fu style.

If some alien nanobots are present in the human body, they may connect to the human brain; this explains different aspects of psychic manifestations of UAPs.

Runaway alien nanobots hypothesis may also explain the Fermi paradox, that is, the silence of the universe. Alien nanobots just do not give civilizations to rise above a certain level (for example, by destroying them). But our civilization is relatively close to the level at which we could develop our own nanotechnology.

Alien nanobots hypothesis can’t explain many features of the observed UAP without overstretching its main claim. It can’t explain energy sources of UAP and has difficulties in explaining quick supersonic movement and disappearings. Almost no observations of small strange particles are connected with UAP, except red rain in Kerala (most likely natural) and “devil hair” after some UAP observations in Italy.

Besides alien nanobots, there is a couple of other possible products of alien supercivilization which could produce UAP, but they are less probable based on the current scientific understanding of what is possible. Below we will discuss two of them, but it could be suggested that some other physical process could be used to create self-replicating and space-travelling units (some of such physical process could be also listed as explanations of ball lightnings in Appendix). This includes, but is not limited, exotic quantum structures, space-time foam, unknown particles and fields which could be material to build “non-atomic robots”.

#### 3.3.3.3. Magbots: Alien robots based on electromagnetic knots

Another hypothetical form of alien robots which could be found on Earth is purely electromagnetic machines, in the form of knots in electromagnetic field, which are able to perform computations and affect ordinary matter. This, for now, is just my assumption, and there is no hard science about the possibility of such knotted-field machines. A review of knots in fields is in (Irvine & Bouwmeester, 2008). I present this idea here just to demonstrate that alien spaceships made of atoms or alien nanobots are not the only possible products of alien civilization which could reach Earth. Knotted electromagnetic field has a tendency to dissipate, like Sun’s coronal mass ejections, which consist of magnetized plasma. If they have an energy source or a magnet, they could remain stable, the same way as sunspots remain stable.

Here we could even suggest that UAP are an analogue of sunspots in Earth magnetic field, but this will not explain semi-intelligent behavior of some of them. Sunspots themselves appear when twister ropes of magnetic field crosses sun’s surface, so the sunspot is only a small visible part of a larger object. While unknotting of knotted field is inevitable, complex knots are difficult unknot (as everybody knows who tried to unknot a rope), which could slow the unknotting. If a magnetic knot is connected to an existing magnet, it may also remain stable. A knot may perform computation while unknotting – or perform computations which prevent unknotting, but is using external energy.

Space is full of magnetic fields, even interstellar, generated by stars, interstellar gas and the galactic center. All it is very hand-wavy, but it is interesting to look more into the direction of magnetic robots or life forms (there could be Darwinian evolution of more and more stable knots). Electromagnetic nature could explain many of UAP features: strong radiation, magnetic field anomalies, bright light, instant acceleration, non-frictional moving through air. Instant acceleration could be explained by the fact that the electromagnetic field acts on all parts of a knot simultaneously and isn’t affected by acceleration overload of different parts. The visible part of a knot may be smaller than the whole knot itself, as it is only a zone of the heist concentration of the field, where it emits radiation. This also explains the ability of a knot to disappear. However, Condon report critically [evaluates](https://files.ncas.org/condon/text/s3chap04.htm) claims about magnetic effects of UAP. But there are case studies which indicates magnetic field effects (Maccabee, 1994).

Magnetic-knot-based robots (let’s call them “magbots”) could be von Neumann probes, that is, capable to self-replicate using the resources of the electromagnetic environment. Low mass and ability to use interstellar magnetic fields could allow them space travel with near light speed and effective deceleration on arrival. Thus, they can quickly fill a large portion of the visible universe, if even one civilization once in the past has been able to create them.

Many of UAP features which seem absurd could be the effects of the activity of the electromagnetic knots. For example, the often-observed beams of light could be not searchlights, but an exhaust of excessive radiation from a dense magnetic flux which feeds the observable UAP.

An extension of the magbot hypothesis is that it is not just electromagnetic fields, but some other fields and quantum effects are involved, which are currently not known to us. Anything called “plasmoid” is also a type of stable object made of electromagnetic forces.

#### 3.3.3.4. Dark matter objects: aliens spacecrafts made from exotic matter.

As a lot of matter in the universe consists of the dark matter, it is tempting to suggest that alien spacecrafts (or non-organic life forms) consist of the dark matter, which allows them to be invisible most of the time or even go through the ordinary matter. Only when they are “dense” enough they start to reflect light and become observable. This also allows them to travel through the air without creating sonic booms. De la Torre suggested that dark matter could be used in SETI as it could be primary substrate of the most advance civilizations (G. De la Torre & Garcia, 2018).

However, only some hypothetical forms of the dark matter allow formation of stable compact objects, and in the most theories, WIMPs (particles of dark matter) are not interacting with each other. Maybe some other exotic forms of normally invisible matter exist, which are different from normal dark matter.

#### 3.3.3.5. Time travelers from the future; absurd close time-like curves

Another hypothesis close to the ETH is that observed UAP are travelers from the future. They deliberately do not interact with us in order not to change their future by creating “grandfather paradox” and limit their observable appearances to “plausible deniability” level, which will drown in the informational noise and will not change the future history.

However, because of the “butterfly effect”, even small actions in the past will significantly change the future, and any observation of genius UAP could cause the history to follow alternative scenario which is an existential catastrophe for future civilization, at least if it cares about just one timeline. If many future timelines could coexist, like in the Everettian multiverse, the original timeline is not in danger, and there is no need to minimize the impact. However, in that case, travelling to the past is similar to travelling between different timelines in the multiverse, which will be discussed below.

Nevertheless, in the case of time travel in the multiverse, there is also a form of grandfather paradox, there a loop appears between action in the past which reinforcing some future events which make again this past action more probable. A classic fictional example of such loop is a self-fulfilling prophecy from ancient Greek tragedy [*Oedipus Rex*](https://en.wikipedia.org/wiki/Oedipus_Rex)*,* in which a character tries to escape a prophecy that he will kill his father and kills him as a result.

Such a loop is a closed curve in the space-time, and an object (or data) could move inside it always infinitely. This makes any observer inside such curve much more probable than observers outside the curves. The events inside the curve could be absurd but they exactly create the future which is needed to send the same information into the past again and start all the curve from the beginning. If time-travel or at least sending data back into the past is physically possible, then natural selection will favor such causal circles over liner worlds, and we are likely located in such a world.

So, logical explanations of the goals of time-travelers, as time-tourists are very week (why should they be visible at all?), but the suggested above explanation of the overabundance of closed causal curves in the multiverse with time-travel could be an explanation of strange nature of UAP: they send strange data back which will reinforce the appearance of the strange senders. It could explain just one absurd prophesy, but is not a parsimonious explanation for multiple UAP observations (Vallee estimated that there are millions of them).

If we continue to explore this idea, we could suggest that the causal loops of time travel will be not perfect, but similar to [attractors](https://en.wikipedia.org/wiki/Attractor#Strange_attractor): in the attractors, there is some noise and derivations from the main path, but the “plot” eventually returns to the attractor. Very improbable events could happen if the plot of the causal curve starts significantly deviate from the attractor, and it will return the story back to the plot. This could be used to explain the slow disappearance of UAP evidence and MIB phenomena (if it is real).

Also, the causal loops put the future advance civilization in a strange causal dependency from us: they *must* send travelers back in time. In the multiverse, there are infinitely many futures, and the needed strange civilizations will always be there.

Small risks here are that we “jump out” of the attractor and actually destroy our future, but it is very improbable as attractors are by definition very stable.

There is no much empirical evidence which supports the hypothesis. One of them is reported “time storms” (Randles, 2001) related to the UAP observations, that is “missing time” during observations and desynchronization of watches. Missing time events, if real, suggest that the phenomenon is associated with the capability to manipulate time, and thus time travel is plausible.

However, time storms themselves (as hypothetical natural events) could be an explanation of UAP if UAP are just random observations of some other past or future world during such storm.

Recent book and discussion about the possible explanation of UAP as time travelers (Masters, 2019) and [here](https://www.space.com/aliens-time-traveling-humans-ufo-hypothesis.html).

#### 3.3.3.6. Past civilization of Earth

Current science assumes that there were no advance civilizations on Earth before the current human civilization. It is based on the lack of evidence like extracted mineral deposits, or unnaturally moved species from one continent to another. Advance technological civilization will likely be global like ours as nothing stops it from colonization, so no there was advance but confined to a single islands Atlántida. There is also unlikely that some group of humans outperform all others in technology (like mythical Nazis in Antarctica) without establishing domination and without participating in trade. (However, if UAP are military technology and military capabilities are decades ahead of what is known publically, such “secret military civilization” looks like another advance civilization on Earth.)

Thus, if non-human civilization ever existed on Earth, it happened tens of millions of years before now. In that case, almost all its traces will disappear. (If non-biological life is possible, it could also have its civilization, but in that case, it is not necessary will appear on Earth, but could evolve on other planets of Solar system or in space, and it is ETH all over again). Earliest possible non-human civilization on Earth could be during CT boundary 65 millions of years from now when dinosaurs went extinct or during sudden PEMT global warming event 55 millions of years ago. What could be recoverable traces of a past civilization is discussed in (Schmidt & Frank, 2019), and it is mostly isotopic levels difference. Best places to search for past civilization’s artefacts is Moon, as objects on its surface and especially in craters is very stable (Turchin & Denkenberger, 2018a).

There are two possible ends for a past civilization: 1) Singularity: it has evolved beyond anything imaginable and decided to lessen its footprint on Earth the same way as we preserve nature, in that case, it is a form of the Zoo hypothesis. The civilization still exists, but in the invisible form, and all the earth is a natural reserve; UAO are tourists. 2) Catastrophe: the past civilization went extinct and thus there was something which killed it. Only some of its remnants remained, which could include self-replicating robots or some dangerous artefacts (weapons, biological viruses). UAP, in that case, are abandoned robots.

The risks in the case of past civilizations are that we could accidentally discover something which killed them and reactivate it again. It could be a virus, AI or crazy robots.

#### 3.3.3.7. Underwater civilization

Life existed underwater for much longer time than on the dry land. However, technological civilization is unlikely underwater, as creation of the instruments is difficult in water (no fire, no strong wood). The only way the civilization could progress is via control of its genetic code and evolution of bodies, or mastering control of electromagnetic fields (like electric guitar fish started to do). In the novel [Swarm](https://en.wikipedia.org/wiki/The_Swarm_(Sch%C3%A4tzing_novel)) by Schätzing a possible conflict with underwater civilization of thinking bacteria is depicted. But to explain UAP we may need something more than “bacteria mind”, as they seem to create flying machines using unknown laws of physics.

Significant share of UAP observations are [related](https://www.popularmechanics.com/military/weapons/a29417939/unidentified-submarine-objects/) to the ocean, including the Nimitz case, which started from observations of an underwater object. The analysis of the USO (“unidentified submerged objects”) started from I.Sanderson book [*Invisible Residents*](https://www.amazon.co.uk/dp/1931882207?slotNum=0&ascsubtag=%5Bartid%7C10060.a.29417939%5Bsrc%7C%5Bch%7C%5Blt%7C&linkCode=g12&imprToken=Hp.466wUHvJ0BY5C9v6.pQ&creativeASIN=1931882207&tag=hearstmagazin-21)*.*

The idea that a non-human technological civilization co-exists with ours, but lives in the depth of the seas or even deep underground is less probable, as any advance civilization would colonize all spheres of the Earth and the dry land is the one of the most productive for the technological civilization. The products of our civilization, including waste, sunk ships and nuclear submarines, could be found in the depth of the oceans, but no non-human technological waste could be found on land and on the sea flore.

However, if some non-organic life form does exist, and they are neither very intelligent nor technological, they could be confined to another medium, like dolphins are confined to ocean waters. There is also no such things as large underwater cities or other artificial objects with we will be able to recognize.

#### 3.3.3.8. “Spaceships” from another dimension

The ETH hypothesis could be also adapted, if “interstellar travel” in it will be replaced with “other dimensions” or “parallel worlds” as a place of the origin of the phenomenon. This will explain many features of UAP: their capability to appear and disappear and the lack of any observations of the arrival of spacecrafts from other stars (the deceleration would create a lot of energy dissipation and should be visible).

There are several imaginable types of parallel worlds:

1. **Higher dimensions in our 3D world**. String theory assumes the existence of up to 11 dimensions. Some alien spaceships could be “multidimensional”, like a four-dimensional tesseract, and we observe only part of them at any moment.

2. **Classical parallel worlds**. In higher dimensions could be other 3D-brans**,** that is**,** the whole worlds like our own, and aliens’ spaceships are travelers between such brans. A classical parallel world is just the same universe as ours, with stars and planets. Traveling between universes only replace interstellar travel, and all else is the same as in ETH. However, some parallel worlds may have different physics than our world (as in the Asimov novel “[The Gods Themselves](https://en.wikipedia.org/wiki/The_Gods_Themselves)”).

3. **Parts of our 3D world which consist of the matter with different properties than normal matter** which do not interact with our world. This is like the “dark matter” world discussed above.

4. **Travelers between branches in the quantum multiverse**. According to the Everettian interpretation of quantum mechanics, our universe is constantly branching. The merge of branches is hypothetically possible and would allow travelling between branches. Some branches (infinitely many of them actually) may include much more advance versions of humanity, where, say, technological progress has started several hundred years before ours – or even 100 000 years before now. In that case, the travellers between branches will be the members of Homo Genus, but not Homo Sapience species, and may look different than humans, but still will be our genetic relatives (and so are interested in sexual relations). There is an obvious problem of comparing almost infinite numbers of branches: from which an interdimensional ship could start and where it could arrive. If the number of starting places is infinitely smaller than the number of variants of the current Earth, we will not see any interdimensional travellers, even if they are possible, as they will be diluted.

In sum, it should be noted that we could combine different ideas to get more and more complex explanations and versions of ETH, which, however, are not supported by any data. For example, one more idea is that a future civilization has sent a nanorobot into the remote past via a wormhole which existed near the beginning of the universe. Such nanobots were meant to replicate in secrecy, as it would change the future otherwise. Now, these future nanobots live everywhere, but mostly unobserved. They collect the data needed for the resurrection of the dead. But some of nanobots “revolt” and start independent evolution. This may be a good plot for a science fiction story, but a bad hypothesis based on Occam razor.

One more form of ETH – a telepathic contact with remote aliens – will be discussed below.

### 3.3.4. Controlled hallucinations

There are several UAP observations when different people observed different things. For example, during the Fatima event, some people saw a miracle of dancing Sun, but others (around one third) saw nothing special. Also, the author the book “50 solutions of the Fermi paradox” Webb confesses that he observed an UAP with his school friend, and that the strangest feature is that both of them remember different things about the direction of the object flight. K. Jung describes the case when, during a spirit séance, four of those present witnessed the emergence of a luminous ball, but he did not observe anything.

There is also an obvious connection between the content of the UAP observations and human unconsciousness: we observe what we expect to observe (strange blimps, or rockets, or drones).

Also, difficulties in taking photos of the objects and strange flight patterns implies that they may be not real.

Thus, a suggestion arises that there is some intelligent player, who is capable to create complex illusions by affecting humans’ brains and-or perception in unknown ways. Basically, this idea is behind Vallee’s hypothesis about UAP as “messengers of deception”. These differences between observations may be either intentional or due to the fact that the creators of hallucination cannot achieve a uniform effect on all people or the people differently reconstruct received sensory information.

If where can be positive hallucinations, where also may be *negative* ones, that is selective blinding to some observations (and such events also were reported when one person was unable to attract the attention of another person to the observed strangeness.)

Several questions immediately arise: who are those, who create illusions? What is the instrument of creating illusions? Why? Below are listed 14 ideas about how collective hallucinations could appear, starting from more mundane and probable and ending with completely fantastic and much less probable. First few items from the list are, in fact, related to the lower levels of explanation, but I present them here to get a full list of possible deceptions.

**1) Pareidolia and “creation” of the observable objects out of observational noise.** Humans have a tendency to see things in a certain set of external circumstances. For example, satellite launches during the night were repeatedly mistaken for a close passage of UAPs. That is, a poorly identifiable object on a dark background and high emotional arousal in conjunction with sleepiness can be a powerful natural trigger of dream-style hallucinations and visions. In this case, several sources of the emergence of hallucinations are involved simultaneously: outer space, atmosphere, the eyes, the visual cortex and the human mind, resulting in a stable self-sustaining illusion.

2) **People-magicians**. Some people are reportedly capable to cause others to have hallucination via hypnosis like it is claimed about Soviet stage magician [V. Messing](https://ru.wikipedia.org/wiki/%D0%9C%D0%B5%D1%81%D1%81%D0%B8%D0%BD%D0%B3,_%D0%92%D0%BE%D0%BB%D1%8C%D1%84_%D0%93%D1%80%D0%B8%D0%B3%D0%BE%D1%80%D1%8C%D0%B5%D0%B2%D0%B8%D1%87). Collective hallucination could because by collective hypnosis when a charismatic person is speaking to a group of devotees.

3) **Collective intoxication**. A collective hallucination could be induced some local hallucinogenic factors: by toxic underground gas eruptions, natural electrical currents or changing magnetic fields (as Persinger thought) or by epidemic ergotism.

4) **Media driven hoaxes and disinformation.** A separate level of "hallucinations" is a deliberate distortion, mystification, refraction of messages in the media and other similar activities.

**5) Secret Services creates illusions**. This is the idea of so-called "psychotronic weapons". It includes the manipulation of mind or observations by microwave radiation, holographic projection, radars, lasers, by the transmission of radiation into the eye, via drugs, or small-sized models of UAPs. Stroboscopic effect (which is sometimes reported) of a UAP is like work of video projector if you look into its lens from the image. Artificial miracles could be used to manipulate people, and even CIA tried to this in Cuba by projecting Christ images into the sky. This can’t explain old-time and remote observations. For example, Russian ufologist M. Gerstein (personal communication) searched for earliest observation of a classical disk-shape UAP, and found one reported in Soviet magazine “Atheists” in 1928: a multicolored disk has been flying over a village.

6) **The manifestations of the collective unconsciousness.** Each human presumably has *unconsciousness*, that is, in general, a sum of consciously unobservable processes inside the brain, and more specifically, some authors assume that unconsciousness has its own form of limited agencyand is capable to manifest itself in dreams etc (Freud).   
  
The next step of this idea is that unconsciousnesses of different people could be coordinated or even communicate between each other, forming *collective unconsciousness* (Karl Yung), either via cultural background or via some hidden messages in ordinary channels of communication (steganography, like the tone of voice) or even via parapsychological means (Grof).   
  
If intense communication between different humans’ unconsiosnesses is possible and it has its own distributed agency (the ideas of *ergregor* or of Hellinger’s *family constellations* are examples of this view) when unconsiosnesses could manifest itself in coordinated form for many people. One hypothetical form of such manifestation of collective unconsciousness is *collective hallucinations*, including the ones of religious symbols and UAP.   
  
This could explain the close relation of UAP with dreams, their similar plot structure and dream-like symbolic content. UAP observations are often accompanied by intense and strange dreams. One important feature on the unconsciousness is that it doesn’t “reason” in the rational way of System 2, but is representing itself in symbols, which always have a spectrum of meanings.

7) **Aliens generate illusions.** Aliens, if they are here, could use all technological tricks to foul humans, like holograms, and moreover, if some parapsychological phenomena exist, aliens likely know about them and also use them. This, actually, is a basis of the faith of all *contactees* in the possibility of the telepathic contact with UAP.

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8) **Classical *contactee* or “telepathic contact” with remote aliens.** Here is assumed that physical travel between habitable worlds is almost impossible, but some form of telepathic contact is feasible (utilizing something like “entanglement between quantum minds” or whatever crazy physical theories one could have). Alien messages affect only minds of humans, but can’t be detected by other technical means. This hypothesis is disused by Ukrainian author J. Sochka [here](http://tonnel-ufo.narod.ru/tonn_40_Sochka.pdf) (Сочка, n.d.). The difference from the previous idea is that the former assumes that aliens are present physically on Earth and use local transmitters to create projections. However, it is unlikely mostly because of the non-sense texts which contactees typically produce, like “we came from Alpha Centaurus and we bring you peace”. But any signal received by the human brain will be intensively distorted by the person’s background, biases and fantasy.

9) **Superintelligent AI of nonhuman origin** (from other planets, from another universe, or of past or future). It has an almost unlimited set of tools for this.

10) **Alien nanorobots connected to the human brain**. They would be able to project any possible hallucinations.

11) **Electrical or nonorganic life forms**. If such beings exist, they could pass through ordinary matter and have access to inner structures of the brain. Thus, they can affect the brain or the eyes and even cameras, creating directed electrical currents in these objects. Their task is easier if humans also have non-organic or electric «soul-symbiont», as it will be affected directly.

12) **The act of observation itself is capable to affect the world** and select different observable “sub-worlds”. It reminds the philosophy of Carlos Castaneda where different people are capable “collect” different worlds by manipulating their perception. More about it later.

13) **Matrix did it.** Within a simulation miracles are possible, including different visions for different people.

14) **“Demons-chameleons”.** The basic idea here is that the hypothetical inorganic beings of lower intelligence are posing themselves as creatures with a higher status. So, they are cloaking themselves as aliens spacecrafts, but always fail to take into account all necessary details.

In addition, illusions may be classified by the level of the observation signal (see above chart in Figure 1) on which they operate:

1) **Creation of a false image of the object around a real object**, like a smoke screen or veil (cloaking device).

2) **Holograms in the air**: the creation of an imaginary image of a non-existent object in the atmosphere.

3) **The images inside the observer's eye**: creation of an imaginary picture in the receptors of sensory organs.

4**) The visual cortex of the human brain**: the creation of an imaginary picture in the visual analyzer of the human brain.

5) **Interpretation**: the creation of the right interpretiation in the higher centers of nervous system, based on the beliefs and expectations of the person.

The "higher" is the hallucination level, the more advance should be technology needed for its creation. However, mind could be affected by confirmation bias and hypnosis.

From the risk point of view, UAP (if they are generated illusions) doesn’t actually exist or have the properties they are expected to have based on the reports (supersonic movement, powerful energy), which lessen the expected risks. But in that case weaker, but sneaky agency exists which continuously and effectively dupe human observers with effective technology and with an unknown goal. It short, the actual deceptors (if any) are weaker than observed phenomenon, but more aggressive, which means that total risk is not reduced. If there are no deceptors, but just non-agential tendency to self-deception, it put at risk all our other well-established theories, as they also could depend on this sort of bias. False theories mean unpredictable future and the higher probability of global risks.

### 3.3.5. “Spiritual” explanations

The European tradition of ufology put UAP inside a larger field of paranormal and, moreover, explains the phenomena in the language of religious philosophy, spiritualism and New Age. Such explanations escape exact statements about the physical nature of UAP, but put them in the context of a larger religious world model. While it can’t be satisfactory, it has some explanatory power.

In the previous sections, the main meta-model was “a strange object in the normal world”. Spiritual explanations assume the complete non-materialistic model of the world, which is full of beings living on its different levels (e.g. angel, demons, souls, spirits of nature, whatever). Typical spiritual model of the world assumes that the world consists of several “levels”, where different types of beings live, but these beings could move from one level to another in the extraordinary situations, – but are often remain invisible for the beings on the next level. Only beings with a high level of “energy” could become visible, but not for everybody. Levels are organized hierarchal and the God is on the highest level.

The main attractive feature of this view is that UAP is seen as part of the broader parapsychological field of events (poltergeist, apparitions), many of which have striking similarities with some aspects of UAPs, like unexplained lights, the difficulty of technological fixation and semi-intelligent beings.

Several such theories are relatively modern and pretend to be based on the observations. The two notable examples are the world-model by Robert Monroe (Monroe, 1977), who explored out of body experiences (OBE) and described what he saw (or imagine) in that state of mind, – and the theory of Michael Newton (Newton, 2010), who used regressive hypnosis to explore “past lives” and eventually the life between lives. Interestingly, while both of them present a similar general picture of spiritual worlds, many important details are different, which is enough to seriously doubt such findings.

One of the main tropes in the spiritual world models is the claim that the whole world is not material, but mental. However, it is difficult to say what does it mean for the world to be “mental”. Is a computer game a mental world? In that case, “mental” is analogues to simulation. Or is there some form of a “mental matter”, like unknown elemental particles? This also seems to be an oversimplification and is often condemned as “spiritual materialism”. More advance explanation of the mental world is the idea of “collective dream”. A normal dream is purely mental: its whole content is projections from my mind. It could incorporate some infusions from unconsciousness or the real world. “Collective dream” assumes that mental projections of two (for the beginning) minds are equal and they share the same imaginary world, where they could interact. The highest form of the mental world is based on the idea of some special mental objects like God’s energies, vibrations, emanations, platonic ideas or qualia.

Inside the spiritual explanations of UAP, there are several categories:

1. **Angel and demons*.*** UAPs are some kind of non-organic spiritual beings, which could have higher capabilities and-or intelligence than humans, but are not a direct manifestation of God. Such beings could take any form and trick humans.
2. **Souls of the dead**. In that case, spiritual beings are more related to humans. For example, one could explain *foo fighters* as spirits of the dead pilots who still wanted to participate in the air combat. Souls of the dead typically assumed in esoteric to be weak spirits and “decay” after few years, typically either via reincarnating or moving to upper spheres.
3. **Materialization of thoughts.** In that case, the whole world is regarded as a “collective dream” and thus intense personal visualization could have an effect on the world.
4. **Messages from God**. From ancient Rome times, visions on the sky were regarded as messages from gods which show the direction of the future events or signs. Personally, I was told that one Russian scientist observed a classical disk UAP at the day of the invasion of Germany in the Soviet Union, 22 June 1941.

The main risk here is not UAP themselves, but the wrongness of the world models. If the light in the sky is a demon then God exists and He can end the world because we are full of sins – or something like this, we just don’t know.

#### 3.3.5.1. Artificial creation of UAP by stimulating human parapsychological capabilities

Some people claim the ability to call UAP or to create such objects in the sky.

Persinger showed that abnormal phenomena, such as poltergeist or visions, are associated primarily with intense electrical processes in the right frontal and temporal lobes of the brain (Pierre & Persinger, 2006).

The idea here is that humans have the capability to manipulate an unknown physical force, which creates a full set of so-called parapsychological phenomena but is surprisingly very rare. It is a contradiction from the evolutionary point of view: if some capability is very useful, it should be used relatively often, as it may help to prevent dangerous situations. The only explanation here is that there is a limit of how often such capability could be used, so it is not a *capability*, but a very limited *resource*. Only a few people, “magicians”, could implement it, and not very often. Also, the capability is typically beyond personal conscious control, but is strongly connected with human unconsciousness.

If there is some way to affect observed probabilities of positive outcomes, the evolution should use it, no matter how small the effect is; moreover, the effectiveness of such use presumably grows with evolution, the same way, as cephalization (brain size) had increased. Thus, even animals would have some basic capabilities like a premonition.

A person reported to me that she had about two weeks of strange events after the ball hit her in the head: UAP sightings, strange calls. Another report on Reddit describes how a person observed UAP, then saw stranger person at home and after it was diagnosed with cancer which turned not be fatal.

From this follows that the source of the paranormal phenomena is located in a certain area of ​​the brain, maybe, in the right hemisphere. From here arises the idea to stimulate this center electrically and magnetically in order to cause paranormal phenomena. As a result, one could make an amplifier of miraculous phenomena, which could become a weapon, and such weapon could be scaled, the same way as very weak effects of uranium ore on photosensitive paint were scaled into nuclear weapons.

Thus, the risk is that if humans have some parapsychological capabilities, they could be exploited and converted in a new type of weapons, powerful, but unpredictable, and because of this, they could cause a global catastrophe.

### 3.3.6. We are in the simulation

The main idea here is that the observed world is not real but is designed by some intelligent beings to foul us and to create an illusion. However, the illusion is incomplete and some strange things are often observed, and this is the explanation of UAP. There are several variants of the simulation idea and how UAP is related to them.

#### 3.3.6.1. A simulation’s owners are testing something on us

Bostrom estimated that there are high chances that we live in a commuter simulation created by our descendants (or aliens), as any advance civilization will have capabilities and needs to create billions of past simulations (Bostrom, 2003; Turchin, 2019; Turchin et al., 2019).

Such simulations may have different functions: entertainment, scientific research or AI training and likely is incomprehensible from inside. Simulation’s hosts could create any possible miracles inside a simulation, but it is not necessary that most simulations have miracles.

So, we could suggest that simulation hosts create some UAP for whatever reasons. Like they created UAP just to check how a civilization would react to the UAPs. But this explanation is too universal.

Some imperfection in the simulation is needed to make sense of UAPs.

#### 3.3.6.2. Glitches and viruses in the matrix

If we live in a computer simulation, it could suffer from *glitches*: software malfunctions which produced observable artefact in the simulations.

Well-designed and expensive simulation will be probably protected from glitches, however, *cheap one-person simulations* will probably dominate numerically, so we are located probably inside cheap simulation, which are more prone to glitches. Cheap simulation is the one which is uses less computations, for example, models only surfaces of objects, but not their interiors, and also its use less resources to maintain its integrity. For example, there are more people in the world having night dreams or playing games than detailed *weather simulations* for any given moment.

There are several possible types of simulation in which glitches are possible: cheap simulations like cheap games for some future users, simulations on fragile wet-ware (like dreams of biological brains), abandoned simulations and hostless simulation (like Boltzmann brains, which will be discussed later). I and R. Yampolskiy analyzed many of them in the article “Glitch in the Matrix: Urban Legend or Evidence of the Simulation?” (Alexey Turchin & Yampolskiy, 2019). However, most self-reported glitches are just random mundane effects, like items duplication or sudden disappearance of the objects, but UAP in most cases are not just changes of the texture of sky, but they look like intelligence beings with some type of behavior. Thus, simple software errors in a simulation is not very plausible explanation of UAP.

Thus, the next explanation is possible: if there is a simulation with a low level of the owners’ control, there should be self-replicating units or “viruses”. Biological viruses, transpazones and memes are an example of such self-replicating units inside information processing mediums. In some sense, UAP-legends could be just memes which replicate via creative writing. In that case, strangeness and dreadfulness of the stories only help their self-replication.

Such self-replicating units inside a simulation have a need to be observed as they get some computational resources via it (the same way as creative writing needs to be read and to inspire other to write similar stories for self-replicating). Thus, strange behavior of UAP is just a trick to grab attention of the minds in the simulation (in the cheap simulations only observed objects are computed, so a virus needs to be observed to be processed.) Obviously, aliens don’t fly through the Galaxy to drink blood of cattle; but nightmarish apparitions need to do something dreadful to create the feeling of dread, which they somehow use to get access to computational resources of minds (of cows?) in the simulation. These viruses in the matrix have rather limited intelligence, which explains “robotic” behavior of some observed “ufonafts” or man in black.

However, even simple simulations created by intelligent programmers could be equipped with antivirus programs for a small part of their price: we don’t often see viruses even on cheap computers nowadays, but more often we observe freezing or other low-level artefacts of the limited computational resources. The only explanation is that our simulation is “hostless”: that is, nit programmed by any intelligent force. In the next section 3.3.7, we will explore such possibilities.

The main risk from the simulation is its termination by its creators (Greene, 2018; A. Turchin et al., 2019), the lesser risk is that simulations are more often simulate some catastrophic events (e.g. catastrophic movies).

#### 3.3.6.3. The world is a dream of a superbrain

*Human dreams* are a type of simulations, which are full of strange things. Some very large biological brain in a vat could also have dreams, but much more stable than our dreams. Such megabrains could be created in the future via genetic engineering or brain-modelling.

#### 3.3.6.4. A multiplayer game with privileged players

Only some people in a simulation could have access to “magic”. For example, a simulation could have a few "privileged users", similar to "Agent Smith" in *Matrix* movie, or players in a multiplayer game. They are not the real owners of simulation – they are neither programmers of the simulation, nor those who have the right to terminate it. They are not even its main administrators. However, they have access to such resources, which is out of reach for a normal user of the simulation, so they may look like sorcerers for others. But their intelligence may be limited and consistent with the intelligence of our modern teenagers playing a computer game. Such players could be not human beings, but some alien post-singularity minds with non-comprehensible goals.

#### 3.3.6.5. Visitors from the other simulations

While personal universes may be ubiquitous in the future (Yampolskiy, 2019), they could be not exactly personal and may have visitors from other universes.

#### 3.3.6.6. Material simulation: space tourists in a Space Zoo

One of the explanations of the Fermi paradox is *Space Zoo*: aliens are here but they are invisible as they don’t want to affect human life. However, most of the human natural reserves have tourists (sometimes, illegal poachers).

A Space Zoo is a type of simulation (as it doesn’t allow us to see the real state of affairs), but it is a material simulation, like a theatre or the one from the movie “The Truman Show”. A lot of things could be faked in the material simulations: actual locations of stars and even archaeological data about the past, the same way as a tropical forest could be recreated in the human Zoo which is not in tropics. The “Westworld” TV series also depicts a material simulation, where hosts sometimes found strange things, like an old photo or strange beings.

The theory of Space Zoo better explains not the origins of UAP or their physics, but what are they doing here. Imagine human children playing with an anthill: it may look like scientific experiments. Children could put pieces of sugar there, slash or abduct ants or put a toy inside the anthill. All these they do for the entertainment. They have some limits of what they can do: they can’t put the anthill on fire without making the adults angry (but from time to time even this could happen). The same way human hunters are limited by a forester about what they can do in the forest. Some people practice sex with animals just for fun. So, the Earth is a “Disneyland of Gods” as Keel put it.

An example of a Zoo is current *uncontacted tribes*, first of all, Andaman island people, [Sentinelese](https://en.wikipedia.org/wiki/Sentinelese). Local law prevents contacts with indigenous Neolithic people who live on an island in the Indian ocean. However, some missionaries tried to contact them and preach them Christianity and were killed. Also, illegal tourists used to travel in waters near the island as well as poachers. There is a fragile balance between commercial interests of tour companies and developers – and the law, which protect indigenous people.

### 3.3.7. The world outside is not real at all

There are several different physical theories which question reality itself. First of all, it is quantum mechanics, then the holographic universe and finally theories about Boltzmann brains and chains of observers-moments. They present even more radical change of the world view than the simulation theory which remains classical and assumes only classical computers. In this section, we will check what these theories may tell us about the possible nature of UAP.

Some interpretations of quantum mechanics assume that the outside world is not the same as in classical mechanics. EPR paradox implies that either non-realism or non-locality. Everett interpretation suggests the existence of infinitely many timelines.

#### 3.3.7.1. Macroscopic quantum effects of the observer

If von [Neumann interpretation of quantum mechanics](https://en.wikipedia.org/wiki/Von_Neumann%E2%80%93Wigner_interpretation) is true and consciousness causes collapse, then all unobservable events are in the state of the superposition like a *Schrodinger cat.* Human attention causes the collapse of the wave function in this model. However, objects which get small amounts of the human attention remains in the superposition state, and in such a state may behave surprisingly: for example, dead and alive version of the Schrodinger cat could interact.

Most UAP appear only in the situation of the low level of human attention: at night, without photo and video recording (which represent future human attention, which here acting retroactively), with few observers or on the border of resolution abilities of observational instruments.

A fictional example: In the Greg Egan’s novel *Quarantine* (Egan, 1992) aliens are the beings which exist only in the state of superposition and human telescopes are presenting a danger for them as they are causing their wave function to collapse, so they isolate the Solar System from the rest of the universe. What if UAP are such beings, which could only love in the state of the Schrodingercat? If it were true, they would be completely unobservable, or we could observe only some parts of them, equal to a “dead cat” state.

#### 3.3.7.2. Manifestations of the synchronism and non-locality

While each individual observation of UAP can be explained by a set of natural phenomena or hoaxes, some of these events were so incredible, that look as if there has exploded a «probabilistic bomb». For example, it is unlikely, but it is quite possible that two people will experience the same hallucination. Personally, such an event once happened to me. I was in a village at night and expressed a desire to see something strange. Soon I saw a red glowing vertical cone in the forest, which really spooked me. But soon I realized that it is rising Moon seen through the triangular hole between bushes. So, here was a synchronism between my desire to see something unusual and rare optical effect.

The phenomenon of synchronism can be explained as a manifestation of the human propensity to detect repetitive elements in a random stream of signals, and some random coincidences are not so random as we could naively think, like in the case of the *birthday paradox*, where each group of around 30 people likely to have two people with the same date of birth. More in (Turchin & Yampolskiy, 2019).

But another possible explanation is that evolution should have selected those creatures that were able to influence the probability, especially the one of their survival.

Risks here are associated primarily with the change in the probability of the risk of other events, especially the unique events, to which static probability hardly applies, and global catastrophic risks are such unique events.

#### 3.3.7.3. A chain of the observer-moments and its glitches

The most radical idea which requires the complete change of the world model is that our universe doesn’t actually exist, and I am just a *Boltzmann brain* (BB): a random mind appeared from nothingness because of quantum fluctuations (Turchin & Yampolskiy, 2019). While naïve view at this possibility is that such BB will be completely chaotic, they may be less chaotic from their own internal point of view. Moreover, BB could form chains based on the similarity, as was suggested again by Egan in his novel *Permutation city* (Egan, 2010).Mueller suggested a mathematical model of such chains of observer-moments based on Kolmogorov complexity, which is, roughly speaking, a mathematical analogue of similarity of the observer-moments (OM): for any OM there is a most probable next OM (Mueller, 2017).

Eventually, “it all adds up to normality” (Egan), and the chains of OMs look like the real world with typical laws of physics. However, such a chain is not that stable. As conscious experiences are assumed here as the source of reality, here are become possible some “parasitic” correlations between different minds, which could take a form of all variety of parapsychological events, like synchronicity or telepathy. Also, there could be “repeaters”: self-replicating units which use this property of reality as an instrument for self-replication.

This could explain some combination of absurdity and similarity of the most of UAP observations, as well as some strange connections of UAP with the content of human minds: UAP observations somehow are related to our expectations about them (“ghost airships” of 19 century and abductions) and also UAP could read our thoughts.

It also explains why we can’t collect definite information about the phenomenon. As soon as we get definite information, it starts to contradict the stability of our chain of the observer-moments, and some events happen which make this evidence less plausible. As a result, the whole parapsychological field behaves like a *trickster*, that is, always remain of some level of plausible deniability (Hansen, 2001).

The main global risk here is that the whole our chain of OM would lose stability and become chaotic. This could happen if some UAP observation (or other paranormal events) will be undeniably strong evidence against our stable reality. Or self-replicating units-viruses overwhelm the stable reality.

In some sense, a chain of the observer-moments is a simulation without a simulator, or *hostless simulation*, which I mentioned before in the section about the simulation. Such hostless simulation is not a construction, but merely an *illusion*, and thus it is more likely to experience all types of glitches, and its self-reservation is not an overwhelming antivirus but just a statistical tendency to exclude things from the observation.

An alternative explanation of OM-chains is the idea of the “universe of minds” (Yampolskiy, 2014a). Any observer’s state in this theory is a point in the set of all possible OM.

#### 3.3.7.4. Doomsday argument and the increase of the probability of improbable events

Bostrom wrote an article “The Doomsday Argument, Adam & Eve, UN++, and Quantum Joe” (N. Bostrom, 2001) where he claimed that if we believe in some weird probabilistic trick – that one should be in the middle of the whole population of past and future humans, – when some improbable events become much more probable if they help to preserve expected population size (including near-term global risks). Some of such events may look like miracles, like Eve will unlikely to be able to conceive a child from Adam, despite all odds.

Soviet science fiction writers Strugatsky brothers came to the similar idea in the science fiction novel *Definitely maybe* (Strugatsky & Strugatsky, 1974): the need to return to the thermodynamic equilibrium creates strange events in the past which prevents human progress, including visitations of prominent scientists by absurd beings who claims different fairy tales about who they are, but their only goal is slow down the research. The force itself is not intelligent, but it makes improbable events rather possible and thus looks like as if it were intelligent.

UAP observations also seem to be anti-scientific: they create confusion and often “ufonafts” make anti-progress claims, like that we should get rid of nuclear power.

#### 3.3.7.5. Holographic universe

The idea of the [holographic universe](https://en.wikipedia.org/wiki/Holographic_principle) equals the informational content of a volume and its surface. The theory is difficult and I will not try to repeat it here.

One possible crazy ideas based on it is that any person sees only an internal surface of the universe outside him, like living in a bubble. This creates a deeper connection between observation and reality.

#### 3.3.7.6. Qualia, anthropic principle and reverse causality

Even more crazy idea than Boltzmann brains is that we live in “qualia-first world”. The idea is not yet completely formalized so I just sketch some main lines of it, hoping that the reader could guess the rest.

At first, let’s assume that evolution could be explained by the anthropic principle. That is, all evolution led to the creation of a mind, which is able to ask about the conditions of his own existence. In previous stages of evolution, many random coincidences had to happen, which could look like a miracle, like abiogenesis, the survival of the Earth for a long time etc. The existence of mind makes all these coincidences a necessary.

Moreover, this mind should not only be only a set of bits which looks like a question about its own origins (even dust speckles could create the text of this question by assembling random combinations on the wind), but it should have *mental qualia, or experience of having a thought.* This creates an *illusion of back causation* of miracles: a lot of improbable events had to happen, for me to be able to feel my own existence and ask questions about it.

All said above could be generalized into a *back-causation* principle for qualia: *if I feel something, there should be a source of this feeling*. This principle is behind most of the New Age magic, which assumes that by the experiencing of illusionary feelings, I increase the probability of events which could cause such feeling. For example, if I imagine that I own money, it increases the probability that I will get them. This is based on some form of solipsism as a world model and works only in *I-perspective*, so it can’t be proved by analyzing of the statistic of other people.

Note that I am not claiming here the validity of this New Age theory, but I just show its similarity with anthropic principle relation with qualia.

Also, I am more likely to find myself in a universe with qualia than in the philosophical zombie universe, if such universes are possible. The same way as I more likely to find myself awake than in coma.

Now we could imagine a hypothetical universe where only qualia exist, but all “reality” is just “shadows” (needed preconditions) of that qualia. It is something between a dream, simulation and Boltzmann-brains-chain world, discussed above but made of qualia. In that case, UAP are somehow connected with emotions which they create in the observers, like fear and awe, the same way, as if I start feeling fear inside a dream, I would observe more monsters.

Risks: Because this hypothesis requires a complete change of worldview, it also permits the emergence of risks that we cannot even predict with our current point of view.

#### 3.3.7.7. Long Boltzmann Brains and dissolving of absurdity

The most puzzling feature of UAP is the absurdity of the phenomenon, and all rational hypothesis tries to solve this absurdity by finding the meaning (Vallee & Davis, 2004). But what if the absurdity is in fact the nature of UAP?

Boltzmann Brains are hypothetical random minds which could appear as a result of quantum fluctuations in the vacuum. As we discussed above, BBs could form chains, which look like an ordinary world from inside. Another way to look at BB is the idea that most BB’s mental content should be complete *nonsense*, just random bits. I may be not able to see it from inside, as a BB can’t form coherent thoughts about his own experiences.

However, we could suggest that not just a single BB, but a complete computer, which generates many BBs, could appear from the vacuum. S. Armstrong called such things “[Boltzmann simulations](https://www.alignmentforum.org/posts/ygELzNSAF5nzLXD7j/are-you-in-a-boltzmann-simulation)”. From some anthropic considerations, Boltzmann simulations should generate so many OMs that they will numerically dominate and I am likely to be inside a Boltzmann simulation, not in a standalone BB (Turchin & Yampolskiy, 2019). The more general idea is “Boltzmann typewrites” which denote any randomly appeared system which is capable to generate observer-moments. Earth and our Universe is an example of such a system. A computer simulation created by a random computer is another example. There could be more.

The more OMs are correlated with each other, the less is the absurdity in them, as something absurd in one OM will be explained in the next. For example, a random static in one OM could be explained as TV screen in the next. Thus, a Boltzmann typewriter is “dissolving” the concentration of absurdity in OMs which it generates. The more OMs are correlated, the more structure is observed, and the smaller is the number of absurd artefacts.

As one of the main feature of UAP is its absurdity (which put them into a Fortean class of things, established by [Charles Fort](https://en.wikipedia.org/wiki/Charles_Fort) who declared that unique never-repeating events are also a subject of science), the UAP absurdity could be explained by the facts that we are just Boltzmann Brains with some not-very-effective stabilization mechanism, presumably a Boltzmann typewriter, which reduces randomness in the observations and makes randomness more ordered, but not completely.

### 3.3.8. Different entities in one medium

A person could meet in a forest a lot of objects and entities of the different complexity level. It could be water streams, trees, animals, playing children, their parents or even a military helicopter. They all coexist in one medium of the forest. The same way what we observe as UAP could be observations of more complex reality in which many different entities coexist. This coexistence of different entities is already postulated in some religions (Hinduism), where there are spirits of different levels and capabilities, from elementary spirits of nature and up to sophisticated gods. Here we should add also the “technological” level, which could be represented by so-called *black triangles* UAP.

## 3.4. Conclusion about the hypotheses list

We suggested here the way of hypothesis generation and also listed many hypotheses, ordered from less world-view changing to more groundbreaking. No of the listed above ideas explain all the features of the phenomenon. Obviously, there could be even more crazy ideas with smaller *a priory* probabilities, so the list is not full. Testing of the hypotheses is difficult as most UAP observation cases are not confirmed, and any given case could be just hoax.

Moreover, it seems that the nature of the phenomenon is that it appears only in the situations of low concentration of attention and verifiability – and maybe even actively disproves its own existence.

### 3.4.1. Hypothesis generation spreadsheet

#### 3.4.1.1. Elements of any good explanations

Good hypothesis about UAP (especially if it assumes some non-human intelligence involved) should answer 3 questions:

* where they come from (origins)?
* which physics do they use?
* what are their goals?

These three answers should be in some accordance between each other, and classical ETH provides a solution where all three questions are answered and the answers do not contradict one another. Classical ETH: Aliens originated from other planets of our universe, they use above light speed starships (this is the weakest point) and they come here to make scientific research. “Aliens from other planets” could be replaced with “traveler from parallel worlds” or “travelers in time” without much damage to the structure of the ETH. Not all combinations of three answers make sense, but the table 1 below could help to find lost solutions and show the sheer size of the possible answers.

Based on this three-elements structure of the hypothesis, we could list almost all possible hypothesis by listing possible variants of each element and when using combinatorics. Below in the table 1 is two-dimensional version of the resulting table, and goals could be added as the third dimension.

#### 3.4.1.2. List of possible goals of intelligent UAP phenomenon

The not shown goals axis includes:

First group of goals are centered around humans:

* exploration (scientific research of humans),
* tourism and entertainment (sexual interactions, hunting, playing),
* communication with humans (SETI),
* berserkers (control of the human level of development and prevention of the creation of certain tech),
* human uplifting or deception (missionaries);

The second group of goals is not related to humans:

* they are just living here (and thus have many different goals)
* resources extraction,
* entertainment not related to humans (e.g. alpinism)
* signaling (virtue or sexual; e.g. singing birds)
* policing and control over other entities (other aliens),
* randomly locked goal
* goals non-comprehensible to humans.

Some of the UAP events seems like certainly human centered, like abductions. Other, like Nimitz case looks more like observations of others non-human related activity. If there are many observed goals, it excludes some of the interpretations, like “careful alien scientists” or “single agency”.

#### 3.4.1.3. The table of all possible explanations of UAP

One more dimension of such table would be the level of intelligence of the phenomena: natural, animal level, human intelligence, above human, superintelligence. This creates goals-intelligence axis, in table 2.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | ***Physics of the UAP (from more material to less)*** | | | | | | |
| ***Origins of the UAP:***  ***(from mundane to exotic)*** | ***Types:*** | **Material flying machines** | **Nanobots** | **Fields and exotic matter** | **“Mental” or psi phenomena** | | | **Projections**  **of illusions** |
| **Human minds** | **Errors** | Moons, clouds, planes | – | – | – | | | Lies, tales and memes |
| **Hoaxes** | Drones, balloons | – | – | – | | | Hypnosis |
| **Unconsciousness** | Hoaxes in the state of sleep walking | \_ | – | “Astral projections” | | | -Sleep paralysis and dreams while awake  -Collective unconsciousness coordination |
| **Earth** | **Military** | -New weapons or new type of propulsion;  -Stealth Blimps | Swarms of drones | Secrete generators  of exotic fields | Induced hallucinations | | | -Military disinformation;  -Radar-created holograms |
| **Past civilizations on Earth** | -Remnants of a past civilization: robots;  -We are in the Zoo  -Underwater beings | Ancient nanorobots | Ancient field generators or electromagnetic robots | Timeslips: observation of the past | | |  |
| **Non-organic beings** | Underground civilization in Earth liquid core |  | -Electromagentic knots-based beings  -Plasmoids | -Dark matter beings | | | -“Quantum” beings |
| **Future civilization on Earth** | Time-machines | Nanobots from the future | Electromagnetic robots from the future | Premonitions  Time slips | | |  |
| **Our Universe** | **-Other planets like Earth** | -Alien starships  -Dark matter spaceships | -Space Grey Goo | -Alien superintelligence | -Human symbiont (soul)  -“Mental SETI” | | | -“Messengers of deception” |
| **-Non-planetary life forms** |  |  | -Electromagnetic robots  -Plasmoids |  | | |  |
| **Other dimensions** | **Quantum branches of multiverse** | Interdimensional ships |  | Interference between different quantum worlds  “Half-defined” quantum objects |  | | |  |
| **Parallel worlds (3D branes)** | Interdimensional ships |  |  |  | | |  |
| **Dark matter world** | Starships from dark atoms | Nanorobots from dark matter |  |  | | |  |
| **Our world has more dimensions** | Many-dimensional objects |  |  |  | | |  |
| **Simulation** | **Space Zoo** | Space tourist ships |  |  |  | |  | |
| **Computer simulation** |  |  | Code |  | |  | |
| **Multiplayer game** |  |  | Code |  | |  | |
| **Viruses in the Matrix** |  |  | Code |  | |  | |
| **Hostless simulation** | **A dream of megabrain** |  |  |  |  | | Dream characters | |
| **Chain of observer-moments** |  |  | Mathematical equations |  |  | | |
| **I am Boltzmann brain** |  |  |  |  |  | | |
| **Qualia world** |  |  | Qualia |  | |  | |

*Table 1. Possible types of physics and origins of UAP, 20 origins and 5 types of physics. Bluer cells denote ideas which require more radical change of the world model.*

#### 3.4.1.4. Relation between intelligence and goals

While it is interesting where UAP come from or what kind of physics they use for propulsion and disappearing, the more important question is how are they and what are they doing here. The same wat the knowledge that humans originated from apes in Africa and use Krebs cycle for energy generation is useless if an unknown person approach you in the street.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***INTELLIGENCE of UAP***  ***GOALS of UAP:***  ***HUMAN-CENTERED GOALS*** | **Natural processes** | **Animal or robots** | **Human level** | **Above humans (humanoid aliens)** | **Superintelligence** |  |
| **Scientific exploration** | - | - | + | - | - |  |
| **Entertainment** | - | + | + | + | + |  |
| **Communication** | - | - | + | - | - |  |
| **Berserkers** | - | + | + | - | - |  |
| **Uplifting or regressors** | - | - | +? | - | - |  |
| ***NON-HUMAN GOALS:*** |  |  |  |  |  |  |
| **Living and colonization** | - | + | + | +? | - |  |
| **Resource extraction** | - | + | + | - | - |  |
| **Policing** | - | - | + | - | - |  |
| **Non-comprehensible** | - | + | - | + | + |  |
| **Random goal** | - | +? | - | + | + |  |

*Table 2. Plausibility relation between possible levels of intelligence associated with UAP and its possible goals. “-” means not likely, “+” means likely, and “?” means that I not sure.*

In Table 2, the first column corresponds to the natural phenomena and it is all “negative” because natural phenomena don’t have goals. Superintelligence is almost all “minus” too, because superintelligence doesn’t need any visible activity to reach most its goals, but UAP are visible; the only exception is if its goals are “locked” by AI’s creators and they demand AI to act in a visible manner. For the same reason, most of the goals for classical aliens are “minus” as they can explore the Earth without any visible traces (on which Vallee’s critics of ETH is based). If they are human level (maybe human themselves), almost all goals become plausible. For animal (or robots) level of intelligence, more complex goals become less plausible.

The peak of the UAP’s visibility is near the human-level of intelligence, where most goals are accessible, but the ways to make them secretly are not well defined.

If the UAP have any goals, one subgoal is clear: they don’t want to be observed in the verifiable ways, but also don’t care much about it.

### 3.4.2. Two large groups of hypotheses and their integration

Besides the discussed above levels of explanation, all hypotheses could be divided into two groups:

1. *Objective hypotheses.* They assume that there is a real material phenomenon independent of human consciousness. It could be ball lightning, earth lights, military tech, extraterrestrial spacecraft or interdimensional being. This is the ETH in the nutshell.
2. *Subjective hypotheses*. The phenomenon is somehow generated by the human mind, consciousness or unconsciousness. It includes hoaxes and observation errors, sleep paralysis, and such ideas as a materialization of thoughts and glitches in the chains of observer-moments.

There is also a view derived from Castaneda (here I don’t claim that actual story he told is true, but I use only his theoretical model of perception): that human attention chooses which worlds to observe, the same way as a radio receiver could be tuned into different frequencies. Any object is real in each world, but it will be perceived or not depends on the observer. Also, some objects or beings could be in many worlds but will be perceived differently in each of them, and as a result, *the act of observation presents not only the object itself but also expectations of the observer*. This is a rather general principle, which could be (or not) implemented on different levels.

The simplest example of this observer-dependent perception is *pareidolia*: the tendency of the human mind to see faces and animals in a random chaotic landscape. Another example is dreaming, where our emotions like fear tend to create monsters. Several exotic physical theories could be suggested to support actual world-tuning, like the holographic universe, Schrodinger cat universe, personal simulations, chains of observer-moments or qualia world.

Bramley also tried to reconcile ETH and subjective hypotheses, which he called Valle hypotheses (Bramley, 1992), by suggesting the following ideas: the variable solidity of matter, co-existent environments, the emptiness of basic atomic structure and image manipulation. However, it all is closer to the objective hypothesis.

Vallee also supports this view: “The framework we present here is based on such an apparent contradiction, because we will argue that UAP can be thought of both as physical and as “psychic”. We hope that it will prove stimulating as a unified approach to a puzzling phenomenon that presents both undeniable physical effects suggesting a technological device or craft and psychic effects reminiscent of the literature on poltergeists and psychokinetic phenomena.” (J. Vallee, 1991).

An important distinction in the different theories about the nature of UAP is following: either an observed object is a machine with (biological) inhabitants in it, or the whole observed objects is a living “being”. Military tech, alien spacecrafts and interdimensional capsules are belonging to the first type of ideas, closer to ETH, and the second type includes plasmoids, interdimensional beings, souls of the dead and swarms of nanobots. The third type of theories assumes that it is not an object at all, but projection or illusion.

### 3.4.3. Updating hypotheses’ probability based on the Nimitz case

If we ignore all other accounts but take only the Nimitz case at face value, it looks like we observe *some intelligent beings which are doing their own business on Earth*. While doing this, they are aware of the human surrounding but don’t much care. They also seem to be able to partly suppress information about the event by sending some “people” to collect the data (there was a report that “people in suites” arrived on the aircraft carrier and took videorecordings, so it looks like a “men in black” visit), but again they don’t care to completely erase the data.

If we ignore the visit by MIBs, or if it was just some CIA people, the observed complexity of the intelligent behavior of the UAP is not very high. The UAP have understood the intentions of the fighter jet pilot, but every animal could do the same if it will be chased by another animal.

So, Nimitz case doesn’t support first two levels of the hypotheses (in short, hoaxes or new military tech), but also it is only weak evidence for the classical ETH as observed UAP were not researching humans in obvious ways (or maybe they tried to provoke a certain type of response; also, at the same days, a new type of hypersonic missile was tested near San Diego and it could attract attention of UAP). It looks like the objects didn’t consist of ordinary matter, as they were able to move with too high speeds in the air without sonic booms.

Also, their ability to evade detection speaks about a high level of *camouflage capability.* The camouflage capability means not only the ability to disappear, but also to pretend to be something else: ghost ships, rockets, flying sources, even MIB. Mimicking is the part of animals’ capabilities, even parrots can do it, so it is not necessary part of superhuman intelligence, which will be unobservable. Also, a lot of folklore sources report about beings with camouflage capability, from *werewolf* to *Mothman*.

All this supports the following working hypothesis: *UAP are produced by electromagnetic beings with a non-human type of intelligence, may be using some quantum observational effects and-or some forms of unobservable matter.* Such beings may evolve naturally, but not necessary on Earth.

Non-human type of intelligence means that they can’t be measure in the standard “IQ paradigm”. Some capabilities could be superhuman, while other below human.

If we take only Nimitz case, it is a strong argument in favor of the purely objective hypothesis about UAP nature.

However, there are other cases, where UAP observation was only part of larger parapsychological series of events, which also include apparitions, strange sounds and premonitions, and in that case clearly centered around an observer, the same way, as a poltergeist phenomenon is claimed to be centered around focal person (who may fake it) (Ashford, 2017).

# 4. Types of capabilities of UAP which could cause a global catastrophe

There is a number of hypothetical factors associated with UAP, which may cause harm to the people and lead to human extinction. The existence of these factors could be concluded from the observations of cases like the Nimitz case, where UAP were capable to demonstrate seemingly intelligent (the level of this intelligence will be discussed later) behavior and high-speed flying capabilities. These factors are:

* + The *intelligence* associated with the phenomenon
  + The *energy* available to it
  + The specific method of *virulence*, i.e., causing death, accessible to the phenomenon.
  + Global impact and *penetration ability*
  + The *informational* impact of UAPs

If any of these factors is great enough, the UAP can use it for at least stop the technological progress on Earth, or as a maximum for the destruction of mankind. Now we will explore these factors in details

## 4.1. Intelligence

UAPs, according to reports, are able to draw circles in the fields, to respond to hand gestures, blink lights or copy the flight path of an aircraft. However, we could not find anything *extraordinary intelligent* in their behavior. For example, they never write complex texts (even if you take the testimonies of *contactees*, they reflect only the level of knowledge of people and epoch when it was written). It is important to emphasize the difference between intelligence required to produce technologies based on which UAPs presumably are made, and the intellectual level of their behavior. For example, there is a huge difference between the complexity of the mouse’s organism and the complexity of the mouse behavior. Most relevant here are two metaphors: the behavior of UAPs looks like behavior or children or intelligent animals like dolphins or apes. In this case, UAPs have not sufficient intelligence to plan a sharp global attack or conquer the world in the spirit of Skynet or some form of pure artificial intelligence, independent from the medium, the same way as described in the article of Yudkowsky and Bostrom’s book (Bostrom, 2014; Yudkowsky, 2008).

During the Nimitz case, the UAP reacted to the approaching fighters when they were close, which implies only one-step planning (if UAP were more intelligent, it would know the existence of advance radar system on the ships, and will not appear in this region.) Part of the Nimitz case is the visit of the “men in suits” who took the recording, which has striking similarities with so-called *men in black* (MIB) often reported after UAP observations. Even if that men in suits were the part of the phenomena, they were not extremely intelligent, as they forget to take all the copies of the videorecording. The same “stupidity” of MIB was reported in other cases (Keel, 1975).

Thus, the intelligence of the *UAP-creators* is much higher than the intelligence of *UAP-users* (if we assume the interpretation of the phenomena close to ETH). Vallee wrote about this apparent stupidity as an argument against ETH.

If UAP are in fact some low-intelligent lifeforms consisting of non-organic matter (plasmoids, knots in magnetic field etc), their fate will be similar to the fate of whales: we will eventually hunt them and use them.

The main feature of superintelligence is that it is not tied to its carrier as it is a program, not a body. As a result, if we are talking about the intelligence of a living being or of a computer, it should be a limited intellect.

Another question is about the “unity of intelligence”: is each UAP-object has its own intelligence, or the whole phenomenon and all its instances are controlled by just one mind? For example, any car driver has his own level of intelligence, which could vary. But in case of a military unit, it is controlled by a central command.

The phenomenon could have both types of intelligence, where lower-intelligent units are controlled by some higher intelligent center: it is like a situation when children are playing in the woods, while their parents sit at home. If children encounter a really complex or dangerous problem, the parents will act. This option is the most dangerous, because of the possible mistake of accepting the observable manifestations of UAP’s intelligence as the maximum level: we can create (after some our actions) interest or anger from more intelligent beings.

Intelligence is a universal weapon, as it could create any other weapons. If UAP’s technology is created by some superintelligent force, and such force is still present in the world, the conflict with it could be deadly. But if we will conflict only with the “users” of UAP, their intelligence is of less danger.

There is also a strong connection between the UAP and deception, so the observed intelligence and capabilities should not be taken for granted. In section 5.3 the discussion about UAP intelligence will continue and the problem of misunderstanding will be discussed.

## 4.2. Energy

It looks like UAP have access to some unknown source of energy, which is able to create waves on the water, emit light and accelerate objects. This energy is probably of the order of magnitude of many megawatts. However, we never observe very large explosion related to UAP, like nukes.

J. Vallee estimated the energy levels of the light radiation of UAPs: “[Estimates of Optical Power Output in six cases of Unexplained aerial objects with defined luminosity characteristic](http://www.jacquesvallee.net/bookdocs/optics.pdf.)” (Vallee, 1998) In one case, a luminosity of large disk was calculated, which was brighter than the sun, and it was estimated from 2500 to 30 000 megawatts in the visible light (this is 10 times more than the output of commercial nuclear power plant).

In the terms of energy, it is important not the amount of the energy that UAP emits or which they use for instant acceleration, but the fact that they have access to the unknown to us source of power, from which they can produce enormous amounts of energy within a relatively small volume of the UAP. The existence of a new energy source automatically means that there may be a fundamentally new type of weapon, just as the mechanical energy implies the existence of the bow and arrows, the chemical – of explosives, nuclear – of a nuclear bomb. Use of energy for mass destruction could take a form of a huge explosion, or directional effects (rays). Claims about UAP exist that they are capable to produce explosions, and also are capable of emitting directed energy beams (light or microwave, which can stop a car’s engine).

Access to the powerful energy sources could be used to create global catastrophic scale weapons (think about the Death star). Even if the energy of one UAP is limited, there could be many of them.

## 4.3. The specific method of *virulence* accessible to the UAP

There are only a few cases where UAP is claimed to harm humans (Corales island incident in Brasilia, two burned villages in Senegal and a case of “human mutilation” in Argentine.) There are also cases when UAP is claimed to cause burns or paralyze people by light, create a sense of horror, prevent an electric device from operating, and also where they have a strong emotional impact or even damage to the mind of an observer.

If we take these cases at face value, it seems that several unique ways of harming human beings are connected with UAPs: burning by rays, cutting body parts with laser precision, mind damage.

Other weapons also have other unique ways of harming humans, but they are not observed in UAP cases: nuclear weapons hurt by radiation, biological weapons – via viral illnesses, toxic chemical – via effects on respiration and central neural system.

A small number of manifestations of aggression from UAP may be interpreted as proof of their global safety. But there is not much connection between “aggressiveness” and global risk – for example, bullies do not constitute a global risk, but pollution is. I would even say that if we find aggressiveness at the grassroots level of the UAP, it would be a guarantee of our global security because it would show that their level of intelligence is not high and they can be outmanoeuvred and cheated. But here the main risk factors are their level of intelligence, attitude towards people, and the degree of self-monitoring of their manifestations by some internal authority. See more about "UAP Police".

## 4.4. The global impact and bunker penetration capability

An important factor in the global risk created by UAP is their ability to quickly move across the surface of the Earth and the nonexistence of ways to protect from them. That is, they can penetrate any bunker and find every person, no matter where he is hiding.

Most of the ways to cause death can’t become a global risk as they can’t affect all the surface of the Earth in finite time. But UAP could travel large distances in the air with supersonic speeds and without observable efforts, thus they theoretically could affect any place in the world.

The number of UAP is also not small. One of 20 people have seen UAP in their life (according to Vallee), and if the observation’s typical duration is a few minutes and a human typically look on the sky less than 1 hour a day, it could be calculated that around 100 UAPs are observed every moment in some places on the Earth. So, it is not just one object which appears in different places.

In addition, it was claimed that UAP are able to respond to people's thoughts, which means that they can feel where people are located and thus find them. As a result, they can detect all people on Earth, and in the case of an attack there will be no survivors.

## 4.5. Informational effects

*Informational effects* of UAP are the impacts on the feelings, thoughts, perceptions, belief systems and the mood of the people which finally change their decisions.

One should not underestimate informational effects. UAP could voluntarily or involuntarily become the initiators of accidental nuclear war. For example, by flying under a certain angle they can create the impression of a missile attack. Keel describes the case in Greenland, where the base in Thule “discovered” Soviet missile attack, and then the link to the base was interrupted. This all could have completely mundane explanation via meteors, but it was “unidentified” object for observers and almost caused a nuclear war.

Ronald Reagan observed something which he thought was alien spacecraft (this case had natural explanation) and this probably influenced him to start the “Star Wars” program.

In addition, the phenomenon is able to interfere with radio communications, which can be seen as manifestations of enemy activity on the radio prior to the missile attack and again cause an accidental nuclear war.

Keel and Vallee believed that UAP purposely mystifies us to give us religious or extraterrestrial belief systems, and thus they can impede our progress or understanding of some important things.

Millennial believes and cults (like [*raelits*](https://en.wikipedia.org/wiki/Ra%C3%ABlism)) could be fueled by UAP sightings. Also, the discussion about paranormal topics becomes more often when the situation on a country becomes more *liminal*, for example, in the Soviet Union during *Perestrojka* in the 80s was an explosion of interest to UAPs. But also, it looks like that the phenomenon itself is attracted to historically important events (Foo fighters, Constantin’s cross, ancient belief in celestial signs).

The biggest anticipated informational impact is so-called “disclosure”, that is, the official acknowledgement of the existence of unknown objects in the sky which presumably could cause social chaos. But *soft disclosure* after NY Times Nimitz article didn’t have large social consequences, as people just don’t know what to do with that information and proceed to live their own lives.

## 4.6. The combined action of these factors

It is easy to imagine a situation where each of the 5 mentioned above factors is not enough lethal to pose a global risk, but they pose the risk when combined. For example, there is no need in very high intelligence to direct beam energy on the cities. However, separately neither the level of intelligence sufficient to detect the cities nor the level of energy, enough to burn cities, do not constitute the threat of extinction.

# 5. General considerations about the catastrophic risk from UAP

Above we explored different intrinsic risks related to different UAP-origins hypotheses. Here we will overview some more general considerations about UAP-related global catastrophic risks, which are mostly centered around the idea that unknown non-human intelligence exists on Earth.

## 5.1. Do not provoke!

R. Reagan allegedly had seen UAPs twice in his life, before the presidency. Reagan on several occasions said that the threat from space could bring people together. His intent to create a space defense system with all those lasers and beams of charged particles can be partly explained by his desire to create a defense against possible alien aggression.

However, it was very stupid! Because if any aliens exist, there would be no better way to provoke them for an attack. A spaceship could escape a missile, but any visible objects could also absorb rays, and if it is attacked with lasers or other light-speed weapons, it could be damaged. Thus, such spacecraft (or anything else) has to act preventively from laser attacks.

An early attack on UAP with the help of some new weapons (such as radiation) would be a very wrong action, as well as it could provoke a large-scale asymmetric response. As soon as UAP will realize that we can threaten them, they can take action to deprive us of this possibility.

## 5.2. Lack of UAPs as a factor in global risk

Bostrom, Torres and others estimated that there are is a high risk of human extinction caused by new technologies, with some estimates up to 50 per cent in 21 century (Bostrom, 2002; Torres, 2016; Turchin, 2018b). In addition, there is a so-called Doomsday argument (Bostrom, 2001; Turchin, 2018a), which independently assesses the future of human existence, and it is very small. The main risks associated with the uncontrolled development of breakthrough technologies: nanotechnology, biotechnology and artificial intelligence, but also nuclear war, resource depletion and climate change.

As a result, it could turn out that the chances that we will be saved by some unknown intelligent force are higher than the chances of our survival by our own means, even if the hypothesis of the existence of non-human intelligence on Earth has a relatively small probability.

Thus, the existence of UAP as some form ETH may have a positive net contribution to the likelihood of human survival.

## 5.3. Non-human intelligence of UAP and the risks of misunderstanding

Moreover, it is possible to separately analyze the «psychology of UAP». There were reported instances when UAP destroyed an aircraft, just playing with it.

Jacques Valle wrote: «This obvious absurdity (of abductions) is merely a reflection of cognitive inconsistency or incompatibility problems that exist between people and this phenomenon». (“Incommensurability, Orthodoxy and the Physics of High Strangeness: A 6-layer Model for Anomalous Phenomena” (J. F. Vallee & Davis, 2004). He suggested that non-human intelligence is sending us messages which completely change their meaning after arrival, either they are incomprehensible or deliberately distorted: “UFO abduction cases may exemplify this, in the sense that the “absurd” activities (or scenes) concurrent with abduction events could merely be the iconical defense mechanism deployed by the UAP to protect itself from the victim/subject much like the way Spilomyia hamifera protects itself from insect eating birds by mimicry” (J. F. Vallee & Davis, 2004, p. 6).

In other words, we can assume that we are dealing with a mind of a fundamentally different nature than human. It is important to emphasize that we know several types of intelligence (i.e. optimization processes) which are different from human. For example, evolution can create well-adapted mechanisms, so it meets the definition of intelligence as a process of optimization. However, it is absurd to attempt to “contact” evolution. Both the processes – human thinking and evolution – led to the creation of an “aircraft” with similar outlines and principles (birds and airplanes).

Accordingly, we can assume that there are other ways to optimize and solve problems, which use completely different ways toward their goal. Of course, universal superintelligent AI could use any of these methods of optimization. But non-universal mind would be stacked to one form.

Other forms of intelligence are:

• the intelligence of a child under 3 years old when she is just learning to speak, and which consists of the ability to find patterns in the surrounding world;

• the whole intelligence of the human society, which invented natural language;

• intelligence of bureaucratic corporations and science as a whole;

• effective market intelligence;

• intelligence of unconscious thinking, which is responsible for the creation of images in dreams; another unconscious intelligence is responsible for pattern recognition. Now we know that similar things could be done by generative neural nets.

• animal intelligence;

• intelligence of evolution including natural selection and gender selection.

• intelligence of modern computers which is very effective in some specific applications (like mathlab), but is powerless in other.

• Anthropic principle as an optimization process which selects only some universes for the observation.

Unsuccessful imitation by UAP of human activities (e.g. black helicopters), the genetic experiments in “dreams”, strange “man in black” – all these (if it actually exists) are attempts of fundamentally alien intelligence to work with us and to understand our way of life. And the inefficiency of this interaction is rooted in the fact that the UAP-intelligence has no signs or language in the usual sense of the word (they could send symbols or repeat messages like “We bring you peace”, but nothing complex and rational).

For example, people may attempt to “communicate” with the evolution by the means of artificial selection. There were experiments in the domestication of foxes, which were selected on the principles of friendliness to humans. However, there has been a change of phenotype of foxes: they have changed ears and muzzle, and they began to resemble dogs. That is, the attempt to form a “phrase” in the language of evolution led to the absurd statement in which the result only partially resembled the one that was planned. (In my other article on the risk of SETI, I commented on the fact that it is likely that SETI-signals would be understood (Turchin, 2018c). There is no contradiction here: in the case of SETI, we have a powerful effect of observation selection: of thousands of civilizations, we can only accept signals from those that use the radio and language similar to ours. And among them, there will be those whose messages would be more understandable to us. In the case of UAP, this principle does not work: we face something like thinking-ocean *Solaris* from the novel of S. Lem, and we didn’t select from all available civilizations, but we were selected. In other words, for UAP the selection is for observable objects, and for SETI the selection is for meaningful messages.)

Different types of thinking can share the results of their work, but could not coordinate during the course of thinking. The result of the optimization may be the same, but the ways of optimization could be different. The difficulties of translation often occur even between people of the same sex and age. The possibility that we will not understand each other increases the chances of inadvertent conflict.

We know that a foreigner in a foreign country looks like an idiot. Because he does not catch all the fine points of the meaning of the native speakers. And this happened despite the fact that we are representatives of one species and live in one era. Of course, the absolute superintelligence would have 100 percent ability to mimic any type of intelligence, but not absolute, but superior to us in its world intelligence would be very foolish in the understanding of our world.

Human behavior only seems rational. In fact, every human action is affected by dozens of conscious and unconscious desires, hidden complexes and beliefs.

In the context of our discussion, is interesting one particular form of contact, which is a conflict. (Although one of the parties may not see it as a conflict.) This is a situation where one party wants to force another to do something and/or threatening to use force.

Even worse, what we perceive as a meaningful message could be just a ripple on the surface of our consciousness, caused by factors that have a completely different meaning. For example, once I fell asleep and heard clock ticks in the room. But when I woke up, it turned out that water dripped from the roof. Another time I heard through the sleep eerie music, and realized that it was «song of Demons» and was frightened. But when I woke up, it turned out that the sparrows chirp outside the window.

The ability of UAPs to understand human feelings, and to respond to peoples’ thoughts mean one of two things: our thoughts, either have some kind of an objective nature (it may be qualia), which can be observed, or UAPs are familiar with the peculiarities of the architecture of the human brain and human language.

Connection of UAP with cattle mutilation, religion etc. is an argument that it is not an “alien intelligence” generated by some technological civilization, but it is some kind of phenomenon which is more connected with humans throughout the history (like dreams, hypnosis, art or shamanism are human phenomena).

## 5.4. Psychological catastrophe

Among other things, the public discovery of the existence of UAPs (“disclosure”) will be a powerful psychological revolution. Perhaps, as Jung believed, it will forever make human spirit hamstrung, as we would have to send to landfill all our science and technology and find ourselves in the role of the aboriginal tribes which will only deteriorate in the presence of colonisators. Jung wrote: «The moral implications of such a disaster are easy to imagine by the example of miserable decline of primitive cultures which is happening before our eyes» (Jung, 2014).

Such a discovery may occur not only through the development of effective observation tech, but as a result of certain actions by UAP, for example, long-term large UAP hovering over one of capitals of the world, which will be broadcast on all channels, or a major attack of UAPs, for example, if UAP destroyed significant civilian object, likely a large civilian aircraft by use of its ability to turn off electricity.

In addition, we know that UAPs are often observed in waves (flaps), and if it will be a particularly big flap, the majority of people, including the notorious sceptics would be witnessing it – and this may change the attitude.

## 5.5. UAP Connection with catastrophes

We know that UAPs themselves are associated with catastrophes, that is, they are often observed before, during and after various disastrous events like wars. What is the nature of causation here is not clear. Maybe, it caused by exacerbated the susceptibility of people. Maybe, there is a growing tendency to hallucinations in dangerous situations. Maybe UAPs are the cause of some disaster or harbingers of them. Finally, it is possible that UAPs are simply curious about disasters, and arrive to watch and even help people to mitigate their effects. Maybe they are souls of dead people or even vampires eating their blood (there is a strong connection between UAP observations and so-called *cattle mutilations*).

A famous example is an observation of *Mothman* before West Virginia bridge collapse (Keel, 1975) and Foo fighters during WW2.

## 5.6. Eschatology of UFO cults

In addition, the «belief in UFO» may be a part of the various eschatological cults. Vallee wrote that there were people in Brazil, who first preached on behalf of the UFO, and then began to commit acts of terrorism. It is analogous to how mentally ill person commits murders obeying voices in his head. Vallee marked connection between UFO cults and Nazi symbols of the world.

Eschatological cults await “the end of the world” soon and sometimes even try to accelerate such an event, like in case of Aum Sinreke in Japan. Meeting with UAP, writes Keel, turned atheists to religious zealots, and then to the terrorists.

## 5.7. Catastrophism in the statements of ufonafts

During so-called close contacts “ufonafts” (human-like beings observed near a landing site or during abductions) have repeatedly stated several things. The most probable explanation of such messages is just fantasies of illiterate contactees, but there are no more complex or coherent texts which could be attributed to UAP, and such statements could represent human millennial beliefs.

a) Ufonafts are concerned about the fate of our planet and even that the human actions threaten the «balance of the Universe» because what is happened on the Earth is important to the entire universe (Klaus Joule describes a similar story in his second book “[The Shameful Secret](https://livingonlove.com/read/shameful-secret.html)”; in the novel of G. Igen «Quarantine» humanity is a global threat to the entire universe by its ability to collapse wave function by acts of observation through telescopes and aliens made a shield around the solar system).

b) Ufonafts claim that they can easily destroy life on Earth. While the entourage and the contents of the contacts are more telling about the cultural background of the contactee, some attention should be given to such threats, for example, because they are regularly repeated in different parts of the world from unrelated observers.

с) Ufonafts regularly warn about disasters. In this case, their predictions about insignificant events, like small earthquakes, often fulfil but large projections of global disasters don’t come true. As a result, those who trusted their projections, are fooled, especially when warned about them publicly. It discredits them.

## 5.8. UAP and the Government

There are different views on the relation between UAP and the government, and I do not see any evidence in favor of at least one of them. The easiest point of view is that the government believed that all this is nonsense, largely because anyone who is interested in the subject of UAP, marks himself as a madman and fail to grow in the hierarchy.

Another view is that the government secretly investigate this question, and here the main difference is what they know, listed from more plausible to less plausible ideas: a) the same set of information that the civilians know, b) the existence of certain physical evidence and videos c) the whole saucers in secret hangars, d) government had caught living humanoids d) the whole underground base of aliens exist. Separate idea is that the government got from UAP its military technology, or use the theme of UAPs to distract society from other problems.

Finally, we can suggest that the government either entirely under the control of UAP, or it is in fear of some kind of “man in the black”. For example, if during Nimitz case some man in suites arrived to take tapes, it means either a very deep secret program exists or that “aliens” could impersonate government agents and infiltrate decision-making chains.

Governments in the world could deliberately escalate the hysteria about UAPs in order to spend funds on the creation of a "defensive shield" (even if no UAPs exist), but for some reason, luckily, they don’t do it. As a result, a lot of useless, but dangerous for the people weapons could be created, which could lead to global catastrophe.

The most reasonable way to deal with presumably hostile UAPs is not the development of defense and a crusade against UAP (which inevitably will provoke them and lead to premature battle and defeat – or will be useless), but the development of civilian supertechnologies (like AGI or nanotech), which can be instantly converted into anti-UAP observation instruments and even weapons. In this case, the concealment of any information on UAPs and ridicule of witnesses serves this goal. This masquerade is necessary not to fool the public but in order to fool the UAP and provide them with the illusion that the government did not believe in them or don’t consider them to be extraterrestrials. And maybe I'm wrong that I write openly about it here.

## 5.9. Police of UAP

Perhaps something like «Police» exists in the world of UAP, which does not allow individual UAPs go too far in their “jokes”: that is, leave evidence or injure people (Here we take “absence of evidence” as evidence of suppression which is always bad epistemologically, so we should proceed with caution.) This should inspire hope that such police will not allow a global catastrophe to happen. But in addition, there is a little chance that UAP will prevent a natural or man-made disaster, as it will be melding in the natural course human life, in which they presumably interested.

Whatever is the source of UAP – the matrix, the spiritual world, aliens, or parallel world beings, there is still a question about the level of police control of their supreme power over some of its representatives. In one extreme version, individual representative of UAP do not exist, but they are all manifestations of a single subject and intent of the creator, but in other version UAPs acts at their own risk absolutely at their discretion. Medium variant assumes that there are certain rules with which the majority of UAP complied, but some violate, that is, the same as in the case in human society. Finally, there could be no any police force: any UAP acts individually, or it is not an intelligent phenomenon.

The idea of internal police control over UAP phenomena is supported by:

a) The inability to photograph a UAP or gather enough scientific evidence about them. And also, the fact that UAPs seems avoid causing obvious harm to people, for example, preferring to cause injury to livestock (cattle mutilation), but not completely follow this rule, and sometimes some harm happens

b) The existence of the so-called "men in black". The very fact that we know of their existence said about their low efficiency, if they are real. Low efficiency of them connected with their "stupidity" could be explained in two ways –either they really have limited intellectual resources, as compared with a human or is a powerful "effect of an alien", that is their inefficiency stems from the fact that their world and way of thinking very different from human. Their interest in the human military technology is also not deep – they are attracted to the entertainment aspects such as missile launches, while more interesting may be some mathematical calculations, computers and technology.

c) Cattle mutilation, but not human mutilation (except a few possible cases). However, abduction could be counted as a form of “human mutilation”, and *crop circles* as “crop mutilation”. But if we include the cattle mutilation into the phenomenon, it would be very absurd to assume that “aliens” fly interstellar distances only to secretly drink some blood of animals which cost a few dollars and could be bought or manufactured.

One can suggest that there is a third level of control above the MIBs, which we do not know, because it finally becomes quite effective. This level of control may be related to the level of governments. In the end, it is enough to maintain a negative attitude of several dozen high-ranking officials to make ineffective any research problem.

## 5.10. The war between the UAP

The conflict between two civilizations or types of UAPs may put Earth in jeopardy.

Either the whole Earth is under the authority of one "civilization of UAPs", or are possible conflicts between several UAPs, if we regard them as intelligent beings. If there is an infinite number of independent agents, the scope of conflict will be low.

There are several reports of "battles between the UAP", including the famous battle over Nuremberg in the 16 century (which after closer examination resembles complex sun dogs). Note that the higher is the intelligence of the conflicting sides, the harder it will be an outside observer to recognize the fact of the battle because it will be on higher information level (eg, the fight for the radio ether or complex strategies of the Cold War).

The risk here, obviously, is that either the war would affect Earth (similar to the destruction of an anthill by a tank), or if one side takes Earth as a hostage (in case the Earth is valuable to the other side).

The magnitude of a possible war is determined by the capabilities of the opposing sides. Battle of two luminous balls would have a local character. A battle of two galactic civilizations is global.

## 5.11. Riskiness of the absurd behavior

Dr. Richard Feynman wrote that “I think that it is much more likely that the reports of flying saucers are the results of the known irrational characteristics of terrestrial intelligence than of the unknown rational efforts of extra-terrestrial intelligence” (Feynman, 1965).

If UAPs are rational, that is, their actions are reasonable with simple and understandable goals, it makes them more predictable, and besides, it makes the possibility of negotiations.

If their goals are chosen randomly by a certain technological failure, or if their behavior is goalless, or if they use a method of thinking, which often makes errors, or optimization techniques, which differ sharply from the human’s ones, and if, finally, their behavior is deeply embedded in a culture alien to us – then this behavior would be absurd for us. That is, it will not be completely chaotic, but we cannot explain it in terms of goals and means.

In this case, our risk would be much greater. For example, maybe aliens’ ancient ritual is to destroy every 500 000 years a habitable planet. Absurdity makes impossible to make generalizations like: once they have not destroyed us yet, then they wouldn’t destroy us in the future. Or that it is too expensive to travel interstellarly only to destroy a habitable planet for fun.

I have read somewhere that: “In a private conversation between a colleague of mine and Jacques Vallee (having just-written "Fast Walker") my colleague reportedly made the observation: "The UAP phenomenon appears, in many ways, to be something a primitive culture would produce if capable of advanced psychic phenomena." To which Vallee reportedly responded: "That's EXACTLY right!"

## 5.12. UAP as “progressors” which help to advance humanity

Progressors (i.e. activities of an alien intelligence on the Earth with the goal to improve humanity) is the theme explored by Strugatsky in the novel «The time wanderers» (Srugatsky & Strugatsky, 1985), where it is shown that no matter how good are intentions which guide an alien mind, it would be *his* intention, and thus the loss of our individuality and freedom and not good for us. For example, if this intelligence intervenes and stops the First World War, there would be no Russian revolution in 1917, neither Hiroshima nor a fall of Berlin, or no Moon landing – but we would live a life of domestic animals. And a wiser alien mind can understand this – so he can refrain from intervening if it is no global catastrophe.

Vallee suggested that the whole UAP phenomenon is a way to control human culture and evolution, calling them “messengers of deception” (J. Vallee, 1979), which pretend to be gods, aliens etc. to promote some “humanistic” ideas.

## 5.13. Leakage of technologies and new weapons of mass destruction

Crashes of UAPs (probably deliberate), if they ever happened, can serve as a mean to transfer technologies of alien intelligence to Earth. Even if the technologies could not be recovered, an attempt to reproduce them may lead to new discoveries, for example, it could inspire hydromagnetic aircraft engine (*Cometa* report) as an attempt to replicate behavior of flying saucers. Or the mere the recognition of the possibility of some fundamental phenomena, such as antigravity or paralyzing rays will increase research in this area.

These new technologies will be used first of all for creation of the weapons which could provide decisive advantage over strategic enemies. Such weapons could be dangerous weapons of mass destruction, or provide new hidden attack capabilities. The last one will make MAD equilibrium less stable.

## 5.14. The wrong flow of funds and attention to the UAP distract us from real problems

If UAPs do not exist in reality, the diversion of manpower and resources to this problem and the fears associated with it, and aversion to alternative areas of study, arising from the disappointment in “ufology”, may divert attention from really important problems such as the development of dangerous artificial intelligence, nanotechnology breakthrough, irreversible global warming and the risks of hadron colliders.

## 5.15. Negotiations with UAP

There is an idea that if UAPs are controlled by intelligent beings, we can start negotiations with them and thus increase our security. But negotiations are possible only of the sides are of equal power.

Keel suggests that UAPs can blackmail the governments of the Earth, so that the governments fulfil some of their demands. To reach this goal, they could threaten complete destruction of the Earth and make a demonstrative flying over the government residence, nuclear power plants, storage of nuclear weapons, warplanes, and dive on them, causing the accident. (“Are Extraterrestrials Blackmailing Earth?” By John A. Keel). Keel believes that from 1940 to 1960 manifestations of UAP had steadily increased, and in the 1960s began to appear cases of cattle mutilation whose purpose was to intimidate the governments. It is not clear, however, why it was impossible to intimidate the government quickly with more vivid demonstrations with clearer requirements. And if such a demonstration had actually happened, then why in 30 years the government did not respond to these growing threats. In any case, injury to livestock and overflights of military installations are still going on. The U.S. took only two atomic bombs to push Japan to surrender. If blackmail is the case, then perhaps we should concede.

It is could be suggested that some sort of secret agreement exists between the government and UAPs, but it is the terrain of conspiracy theories.

Anyway, the possibility of meaningful negotiation depends on the intelligence of UAP – if they are at least human-level intelligent and if they are rational – and on the unity of the phenomenon, that is, does UAP police exist, or there are many independent actors. Anyway, the possibility of negotiations assumes that our side has some cards to play, otherwise the negotiations are not-binding to the other side, as could be illustrated by a fictional example of the movie “Mars Attacks!”, where Martians promised peace and constantly killed humans.

Interesting question: Is it possible to trade with alien intelligence via acausal trade, the same way as it was suggested for AI (Turchin, 2017).

## 5.16. The degree of indifference UAP

We can say that UAP, in general, are quite indifferent to the fact that they can influence people and be detected. However, this indifference is not absolute, and they are to some extent try to minimize their influence.

The basic premise of the assumed "safety from UAP" is that we do not ever observe much aggression from them. However, the degree of their “kindness” is also very limited, from which can be drawn a conclusion about how much value have humans to them. For example, there are cases when they caused harm to aircraft, or place aircrafts at risk, forcing them to change course.

The main question about this value: is the human life itself valuable to them, or they do not hurt people for whatever other reasons? For example, because people do not pay too much attention to them, or to save people for something, or in obedience to external rules imposed on them "police of UAPs”.

It seems that human life for them is not a value in itself, at least for some of their specimens (mutilations). As a result, when external circumstances change, they can be much crueller to people.

## 5.17. Space disasters and the power law distribution of the energy of UAPs

Some suggested association between UAP and some of the observed natural disasters. Keel argues that the large fires in the area of Michigan on 8 October 1871 were caused by fireballs falling from the sky. Several similar cases were described in Africa. Tunguska meteorite is also sometimes seen as a "UAP crash". However, more prosaic explanations are more probable, and after California fires, we know how dangerous could be fires during high winds.

At the same time, it was suggested that the Earth is currently is experiencing a period of intense cosmic bombardment studied by Holocene Impact Group. Over the past 5000 years, they found 3 major events that may correspond to the fall of comets with diameters greater than 1 km. The last one happened in 1443 off the coast of New Zealand, the penultimate may have happened the 5th AD off the coast of Australia, and the third one – in the Indian Ocean between Australia and Madagascar, and it was the strongest, causing massive flooding, and perhaps the legend of the great flood. 12900 years ago, there was a possible comet impact near the Great Lakes region in the United States, which led to fires throughout the North American continent and the death of Clovis culture.

However, such frequent impacts contradict our estimations of the background rate of asteroid collisions. Holocene impact group suggested that we live in a period of intense bombardment by fragments of a large comet; however, a large level of recent catastrophes could be also explained by higher energy UAP, or some synchronism events. For example, Chelyabinsk meteorite in 2015 appeared on the same day as another close flyby by the unrelated body and its core ended in the well-known Chebarkul lake, known for its ancient human archaeological sites.

Ghost rockets in 1945-47 also tended to end in Sweden lakes.

Vallee explored the energy of UAP and found it to be up to 30 GW. However, much larger events are possible as a fat tail of the energy distribution. Such high energy UAP may look like catastrophic explosions. UAP also could be put in the context of transient Lunar phenomenon and even maybe Solar spots.

## 5.18. Hypothetical weapons that humans can use against UAP

None of this should be done, in my opinion, but it could happen that some trigger-happy person will try. The reaction depends on the level of UAP vulnerability: no reaction if they are not in danger, or disproportional answer to prevent such attacks forever.

1. The directed beam weapons. Lasers, lasers with nuclear pumping, focused radio waves from radars, streams of charged particles from accelerators.

2. Nuclear weapons. It is unlikely that it can be quickly delivered to the detected UAPs.

3. Psychic attack. If UAP is associated with psychic phenomena, a group of "psychics" can concentrate on UAPs and try to influence it.

4. Future nanorobots. Floating in the air nanobots could happen closer to the UAP and somehow try to get into it unnoticed.

5. Future advance artificial Intelligence. It can detect patterns in their behavior, calculate their language and enter them as a computer virus.

6. The discovery of fundamentally new effects, such as antigravity.

7. Informational influence: attempts to enter into negotiations with a UAP or to send them a message.

One of the possible risks is that people hurt themselves, fighting with the real or imaginary UAP. For example, during the so-called Battle of Los Angeles, 1942, the city witnessed an unidentified object which was thought to be Japanese air raid and started antiaircraft fire; three people were killed because of the debris from firing guns. Also, observations of unidentified underwater UAP in Sweden (preliminary identified as Russian submarines) spurred an arms race in this country.

## 5.19. Humans as a threat to the UAP

The opposite situation is possible that humans will eventually conquer the world of UAPs and use any living being there, the same way as they have exploited whales or Indians in the past. If humans will destroy a whole species of living and intelligent beings, then it too will be a catastrophe.

The reason for such a possibility is that UAP is not evolving, but human civilization is evolving exponentially and will eventually reach the level of UAP, no matter how high is it.

## 5.20. Possible ways of UAP confrontation with humanity

There are several ways how a global catastrophe related to UAP could unfold:

Sudden complete destruction of mankind. This happens after we pass a certain unknown to us threshold in our development, after which we will be a danger to “them”. The higher is the intelligence of UAPs, the more sudden and unlike the previous behavior will be their reaction. But if their intelligence is high, they may believe that we have never been able to pass this threshold.

The gradual conquest, like in "The War of The Worlds” of Wells. I find this option unlikely, since it involves two roughly equal opponents, with a relatively small advantage of one of them.

A catastrophic event, which then leads to the gradual degradation of human civilization. For example, a large UAP accident resulting in radioactive pollution. Or humans get knowledge about a new weapon, which will lead to a world war.

The enslavement of people. Obviously fictional and unlikely.

Hidden harm. Jacques Vallee wrote: "How do you know, if an apparently "non-threatening" by our standards, is not really dangerous on a bigger scale? In our laboratories, we're growing cancer in mice and guinea pig, all the time offering friendship to both” (Vallee, 1965).

A significant limitation of human potential. Restriction of access to space, undermining faith in ourselves, slowing of science, provocation of wars or crazy believes. Bostrom regarded such events as a type of existential risk as they would damage our future (Bostrom, 2002).

7) A large irrational event like cattle mutilation on a massive scale, if their number will increase millions of times. This may or may not lead to human extinction.

8) Humans master the world of UAPs and destroy them.

9) UAP provoke, intentionally or not, nuclear war between the superpowers. Here even unintelligent UAP is enough, like observation errors.

# 6. Conclusion. A possible hostility of UAPs and global risks

The relationship between the estimation of the hostility of some specimens of UAPs and the question "whether the UAP phenomenon constitutes a global risk" is the opposite. For example, if UAP demonstrate hostility at a lower level – say, kidnap people for experiments, perform vampirism, mutilation – that means that their intelligence (and global coordination) is low, and thus global risk presented by them is not high. Similarly, the wolves threaten the travelers in the forest and are hostile to them, but do not pose a global risk. Conversely, if the intelligence of UAPs is high, they could meet their needs without causing harm to people – or kill everybody without any warning.

For example, nuclear weapons were the direct cause of death only a few dozen people in 75 years after Nagasaki, and in the last 30 years they are generally not observable, except a few "earthquakes". However, nuclear weapons are a global risk.

The existence of any uniform rules of conduct of the UAP over the Earth, even positive to human, should alert us as it implies high global coordination and hence the ability of coordinated action against the entire Earth.

It seems that the question of the study of global risks of UAPs should be postponed until the evidence of their existence (if any) became strong for the whole population and governments: something like live coverage by CNN of UAP landing. A sceptic could say: there is no point in studying the risks of an object, whose existence is not proven. However, we must understand: the very moment of the "discovery of UAP" is a moment of global risk. UAPs for many years opposed such a global acknowledgement, by disappearing from the camera, sending "men in black", flying in desert places. And if we can break this rule, perhaps the worst will happen.

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# Appendix 1. Hypotheses about the nature of ball lightnings

Appendix 1. Hypotheses about the nature of ball lightnings

Even if some of the proposed mechanisms are not causes of ball lightning, they may still appear as the mechanisms behind the UAPs. There are several hypotheses to explain ball lightning, which could explain some UAPs. My observation of ball lightning was like this.

1. The first type of ball lightning hypothesis suggests something related to electromagnetic energy. Results in the scientific literature suggested that at least 23 explanations of this kind.

“Plasmoid” theories. That is of stable configurations of the magnetic fields and electric charges in the spirit of http://popovsfti.narod.ru/sharovaia.html.

One hypothesis is that ball lightning is toroidal vortices of magnetized plasma, which supports itself through the magnetic field. http://nt.ru/tp/mr/shm.htm

«It is another hypothesis, suggests Smirnov, dealing with the problem of ball lightning for many years. In his theory of ball lightning nucleus is connected cellular structure, something like air-gel, which provides a solid frame with a small weight. Only the carcass ply - it threads the plasma, rather than a rigid body. And the energy supply of ball lightning entirely hidden in the huge surface energy of such a microporous structure. Thermodynamic calculations based on this model, in principle, does not contradict the observed data».

Ball lightning as an area of low pressure with an excess of electrons, surrounded by areas of high pressure with a positive charge http://arisfera.info/lightning\_articles/lightning\_articles3.html or something like a bubble of high-molecular compounds, silica, or even molten metals.

BLs are something like quazi-atoms where quantized orbits of electrons around the positively charged area. http://arisfera.info/lightning\_articles/lightning\_articles4.html

BL as oscillations of clouds of electrons and nuclei around a common center. http://arisfera.info/lightning\_articles/lightning\_articles5.html

Ball lightnings as a maser amplifier or ball lightning as crown discharge, gradually extending to the surface of the ground after a line lightning strike. http://arisfera.info/lightning\_articles/lightning\_articles9.html

Resonant vibrations inside ball lightning of pair of magnetic dipoles http://arisfera.info/lightning\_articles/lightning\_articles11.html

Electrons orbit and hold positively charged center of its magnetic field. http://arisfera.info/lightning\_articles/lightning\_articles10.html

The theory of magnetic node of Fernández-Ranyad http://arisfera.info/lightning\_articles/lightning\_articles13.html

Fractal in plasma http://arisfera.info/lightning\_articles/lightning\_articles27.html

Plasma crystal http://arisfera.info/lightning\_articles/lightning\_articles29.html

Ball lightning is an aerosol of microscopic batteries http://www.springerlink.com/content/501k0653122j172u/fulltext.pdf

Ball lightning is weakly ionized gas, which is formed Bose-Einstein condensate and/or photons are trapped in the plasma density http://arxiv.org/abs/0811.4640.

In a fireball are formed Cooper pairs, plasmons and superconductivity http://arxiv.org/abs/0902.4596Stable solutions of quantum hydrodynamics, quantum objects in a stable self-sustaining electric field http://arxiv.org/abs/0807.4600

Electric discharge on the surface of the liquid http://arxiv.org/abs/0804.0981

Resonant atoms capture electromagnetic waves http://arxiv.org/abs/0708.4055

Charged ball of plasma, the charge on the surface of which balances the atmospheric pressure http://arxiv.org/abs/0706.2668

A shock wave, blocked by electric friction caused by the internal laser illumination http://arxiv.org/abs/0706.2668

Fractally condensed matter http://arxiv.org/abs/physics/0512245

Giant van der Waals forces between the clusters of molecules and Rydberg atoms http://arxiv.org/abs/physics/0509212

Magnetic vortex http://arxiv.org/abs/physics/0411153

Nontrivial equilibrium configurations of electromagnetic fields. http://arxiv.org/abs/physics/0312122

Some kind of electrical discharge http://arxiv.org/abs/physics/0306158

Circular current in the high-temperature superconductive air http://arxiv.org/abs/physics/0102012

2) Non-autonomous forms of electrical discharges or resonant structures, energized by thunderstorms. P. Kapitza http://www.sinor.ru/~bukren14/kapica\_sh\_m.doc

believes that between the cloud and the ground there is a closed resonator in which there are fluctuations in centimeter range. These vibrations create standing waves near the ground, where reflected wave interfere with a falling wave. In this area air puncture occurs and are formed clouds of plasma. The size of this cloud is that the frequency of natural oscillations corresponded to the frequency of radio waves (radio waves length should be 3.65 times the diameter of the area.) Proof of this is that ball lightning radiates more energy than it is in a cloud of plasma of the same volume, and thus require constant fueling. Therefore, they have a constant diameter and soar low over the ground and disappear instantly. They penetrate into homes by wire or chimneys, which serve as waveguides for the short-wave radiation. This hypothesis seems to be quite convincing. It can be assumed that similar resonance oscillations occur between land and atmosphere, resulting in luminous balls without thunderstorms. This was already discussed above.

3) Explanations related to the chemical reactions in the air. Russian wiki: «Another theory explains all the observed phenomena by thermochemical effects, occurring in saturated water vapor in the presence of a strong electric field. Energy ball lightning is determined by the heat of chemical reactions involving water molecules and ions. The author of the theory is confident that it provides a clear answer to the mystery of ball lightning». This is a good theory to explain the different luminescent fogs. Stakhanov coined the cluster theory of ball lightning. In it ions are surrounded by water molecules, slowing their recombination. http://web.archive.org/web/20160206151605/http://arisfera.info/lightning\_articles/lightning\_articles12.html

4) Alternative forms of ordinary matter. Rydberg matter http://vivovoco.rsl.ru/VV/JOURNAL/NATURE/01\_01/RIDBERG.HTM and http://grani.ru/Society/Science/m.45129.html

Rydberg atoms are the atoms with a very high quantum number, i.e, the electron is very far from the nucleus. Any such atom is like a hydrogen atom. Such atoms can condense, forming a sort of solid material, but with a density of air. This substance may be slightly luminous or transparent. This hypothesis could explain the outpouring of molten metal from a UAP.

5) The combustion of various objects – from the silicon in place hit by lightning, or clouds of methane, or chunks of methane hydrate. It looks doubtful. Fireball, which I saw was high above the ground: hundreds of meters. Clouds of molten silica, intertwine in toroidal vortices generated at the point of impact linear lightning: http://arisfera.info/lightning\_articles/lightning\_articles25.html

Combustion of methane, in the twisted toroidal vortex.

6) Thermonuclear reaction. Cold fusion. In one paper is suggested a chain reaction of combustion of radioactive phosphorus, the speed of the radioactive decay of which it seems to depend from the degree of ionization (as decay occurs due to radiation of an electron, and the presence of a dense electron cloud prevents the escape of an electron from the nucleus.) Ratis, L. “Fireball as a macroscopic manifestation of b-decay of radioactive nuclei of phosphorus bound”. (Letters ECHAYA. - 2005.-V.2, № 6.-S. 64-79 Шаровая молния как макроскопическое проявление b-распада ядер радиоактивного фосфора в связанное состояние).

The hypothesis of oscillations of the cloud of electrons in the plasma, which creates a region of thermonuclear reactions in the center of the sphere. “Electron gas oscillations in plasma. Theory and applications” http://br.arxiv.org/abs/physics/0306157 .

Thermonuclear reactions catalyzed by superheavy particles of dark matter. http://arxiv.org/abs/physics/0406092 .

7) Trapped light. Wiki: «Ball lightning is incoherent optical spatial solitons, whose curvature is nonzero. In translation into more accessible language ball lightning is a thin layer of highly compressed air, in which circulates in all sorts of directions normal intense white light. This light at the expense of creating electro-friction provides pressure on compressed air. In turn, the compressed air acts as a light-guide, which prevents the emission of light in free space». «Self-light-limiting in a type of whispering galleries» Torchigin VP http://zhurnal.ape.relarn.ru/articles/2002/093.pdf

8) Area of breakdown between the two conducting channels in the atmosphere. Something like a spark gap that occurs in the middle of the channel of normal lightning – the current from top and bottom comes to the gap with little resistance on plasma remaining from the passage of lightning, but the presence of gap limits the maximum force of the current throughout the channel, preventing normal lightning. Anyway, the impression I had from my observation of ball lightning was that its brightness and the consistency was like a spark created in the line of lightning.

9) Alternative physical theory. Accretion of matter at the microscopic black hole “Little Black Holes: Dark Matter and Ball Lightning” http://arxiv.org/abs/astro-ph/0212251, magnetic monopoles, antimatter annihilation, opening to another world, spontaneous creation of energy from the vacuum, teleportation of matter from stars through the wormholes in the space-time. Manifestations of the ether electrogravity theory and defects in the structure of the vacuum http://arisfera.info/lightning\_articles/lightning\_articles20.html

Clouds excited by heavy neutrinos http://www.thunderbolts.info/webnews/ieee\_plasma\_balllightening.htm

Hydrino http://en.wikipedia.org/wiki/Blacklight\_Power

Temporal holes through which you can see past state of the linear lightning.

Appearing of additional dimensions or energy transfer from parallel worlds.

10) The optical traces in the eyes of the observer from the observation of linear lightning, phosphenes of different types.

11) Seizures in the temporal lobe caused by a magnetic field of normal lightning. «Could Some Ball Lightning Observations be Optical Hallucinations Caused by Epileptic Seizures?» Gerald Cooray and Vernon Cooray http://www.el.angstrom.uu.se/meny/artiklar/ball lightning.pdf

12) Linear lightning caused luminescence of something, which existed before there was lightning, but which was not visible and do not interact with matter. Maybe they were even living creatures, which feed electrical discharges of conventional lightning, and thanks to the accumulated energy become visible - and die, exploding?

Certainly, at least some sightings of UAPs may be observations of ball lightning. The main problem is not in the physics of processes (number of proposed alternative forms of matter and energy to explain the BL covers all the needs for the "creation" of hypotheses about UAPs), but that UAPs exhibit systematic behavior and able to interact with people, whereas any random physical process should appear more randomly.