

Standard Human Mesh Recovery Method

On Time:

The essence and Nature of the idea of Time

1. Idea of Time

2. Representation of the Idea of Time

3. Objective Instance of Time

Obejcitve /
Real-world
Observation
of Existing
Implementation
of Time



Word learning task (15 words)

Encoding

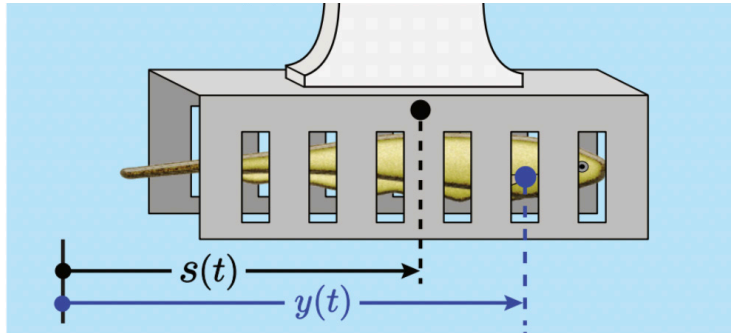
Alive/not alive?

First letter open/closed?

Deep encoding

Shallow encoding

How does the nervous system learn to compensate for such destabilizing dynamics, and what are the benefits of the newly learned control policies?



10.1.4 Disturbances in Fish Refuge Tracking Task

August 11, 1999. 10:00

Found Ježić lying in the back corner — rather unusual for her.

She looked half puffed up.

She was calm and had that cuddly look on her face.

When she moved, she moved slowly and gently.

And she looked at me several times in the way that made me

feel she was trying to tell me something.

I do not see anything but water drops on the intake screen.

But, some of those drops look different.

I take a closer look under another light.

Sure enough, some of those drops are actually tiny clear translucent eggs.

I was surprised by how tiny they were.

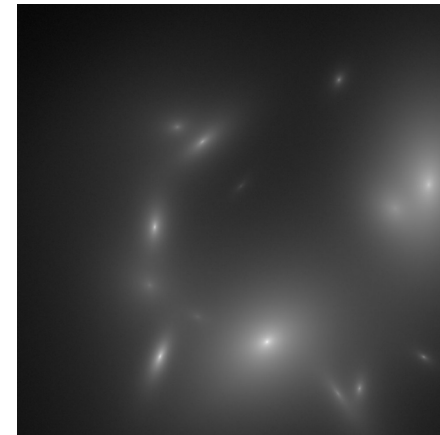
Then I grabbed a strainer and started skimming the surface.

All the info I had said that the porcupine eggs float on the surface.

Yet, I did not see any floating on the surface.

23:45

Tedious work, does not look like I am going to finish anytime soon.



Experimental apparatus. Fish swam in a multi-speed flow tank with two horizontal lights projected

Diodon holocanthus in captivity and lunar cycles

<i>Spawn</i>		<i>Nearest major lunar phase</i>	
Date (Local)	Date (UTC)	Date (local)	%
1999/08/11 22:00	1999/08/11 11:09	34921d 3h 9m	0%
2001/06/24 21:00	2001/06/21 11:58	35601d 3h 58m	0%
2001/08/08 21:00	2001/08/04 05:56	35644d 21h 56m	100%
2001/10/04 20:45	2001/10/02 13:49	35704d 5h 49m	100%
2002/07/20 21:25	2002/07/24 09:07	35999d 1h 7m	100%
2002/09/13 09:30	2002/09/07 03:10	36043d 19h 10m	0%
2003/10/10 23:45	2003/10/10 07:07	36441d 23h 7m	100%
2003/12/21 21:05	2003/12/23 09:43	36516d 1h 43m	0%
2004/01/14 17:30	2004/01/07 15:40	36531d 7h 40m 0s 0ms	100%
2004/02/10 22:10	2004/02/06 08:47	36561d 0h 47m	100%
2004/03/04 21:30	2004/03/06 23:14	36590d 15h 14m	100%
2004/04/02 21:30	2004/04/05 11:03	36620d 3h 3m	100%
2004/04/27 20:50	2004/05/04 20:33	36649d 13h 33m 0s 0ms	100%
2004/05/16 19:55	2004/05/19 04:52	36663d 21h 52m	0%
2004/06/08 21:20	2004/06/03 04:20	36678d 21h 20m	100%
2004/08/16 23:42	2004/08/16 01:24	36752d 18h 24m	0%

<i>Diff-Moon</i>		<i>Moon</i>		<i>Nearest</i>	<i>Notes</i>
A/B	d hh:mm	% Full	% Vis	Tide	
1	30 18:51	3%	6%	New	
1	2 17:02	13%	26%	New	
1	3 23:04	82%	65%	Neap 3	
1	1 14:56	91%	81%	Full	
0	2 03:42	89%	77%	Full	
1	5 14:20	24%	47%	Neap 1	Failed (F)
1	31 00:38	96%	93%	Full	
0	31 04:38	4%	9%	New	
1	6 09:50	74%	47%	Neap 3	Failed (F)
1	3 21:23	83%	65%	Neap 3	Failed (X)
0	31 17:44	94%	88%	Full	
0	1 05:33	92%	84%	Full	
0	5 16:43	76%	52%	Neap 1	
0	1 01:57	7%	15%	New	
1	5 00:00	79%	57%	Neap 1	
1	31 05:18	4%	9%	New	

Empty String
 Stop/end symbol
 External action
 Internal action
 (Internal) Time

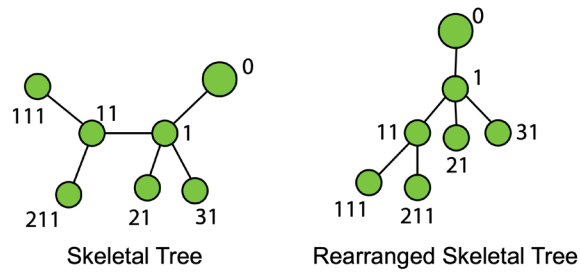
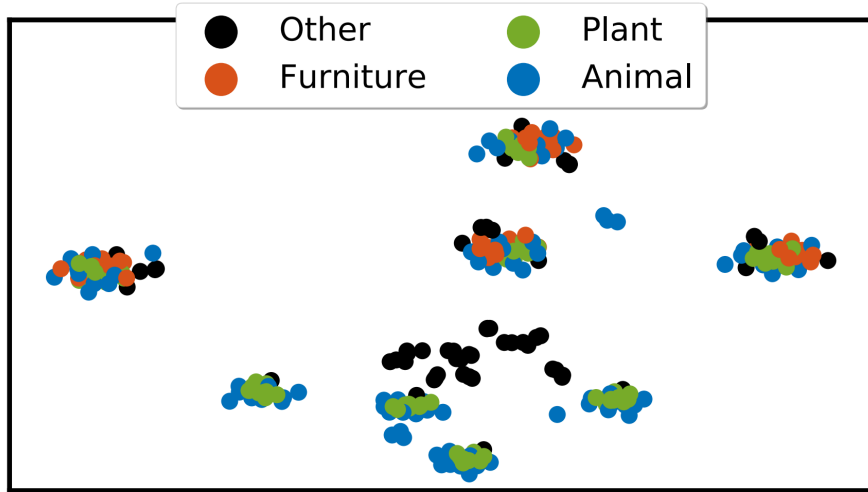


Figure 7: Convergence process for DreamBooth applied to an example concept

(External) states
 (External) Time
 Element of finite alphabet

- 5/26 No interest in food
- 5/27 Did not even touch a mussel, looked at it and swam away.
- 5/28 Had a small bit of an oyster
- 5/29 No interest in food
- 5/30 Had a small bit of an oyster
- 5/31 Did not even touch a mussel, looked at it and swam away.
- 6/1 Pecked at an oyster once at the shell but did not eat any.
- 6/2 No interest in food
- 6/3 No interest in food
- 6/4 No interest in food
- 6/5 No interest in food
- 6/6 No interest in food
- 6/7 No interest in food
- 6/8 No interest in food
- 6/9 No interest in food
- 6/10 No interest in food
- 6/11 No interest in food
- 6/12 No interest in food
- 6/13 No interest in food
- 6/14 No interest in food
- 6/15 Pecked at an oyster once, swam away, splashed, zoomed around disturbed.
- 6/16 No interest in food
- 6/17 No interest in food
- 6/18 No interest in food
- 6/18 Asked for food in the AM; Had a bit of shrimp and 1/2 oyster; Did not want to eat 1/2 oyster in the PM.
- 6/19 Had 1/2 small mussel in the AM.



Thus, say, space is not apparently without a shape, and time apparently is not unchangeable. But, it is hard to imagine something unknown except in frames, terms of the known. Because of this, our every attempt to create a picture of Universe before time or outside of boundaries of space confronts us with, literally, unimaginable.

- | | |
|-----------------------------|-------------------------------|
| Snow-covered mountains | Desert sand dunes |
| Butterflies on flowers | Bees on flowers |
| People shopping in a mall | People dining in a restaurant |
| Elephants in the savannah | Giraffes in the savannah |
| Birds flying in the sky | Airplanes flying in the sky |
| Boats in a marina | Cars in a parking lot |
| Tulips in a garden | Roses in a garden |
| Fish in an aquarium | Turtles in an aquarium |
| Books on a shelf | Plants on a shelf |
| Grapes in a bowl | Apples in a bowl |
| Motorcycles on a street | Bicycles on a street |
| Cows grazing in a field | Sheep grazing in a field |
| Babies in cribs | Babies in strollers |
| Hot air balloons in the air | Kites in the air |
| Penguins in the snow | Seals in the snow |

August 12, 1999. 12:00

Stirred up the eggs 4 to 5 times in each tank throughout the day.

Turned on the light above tank 2 (one 15W fluorescent lamp).

Set the light timer to 12:00 to 19:00.

August 13, 1999. 13:00

Cleaned pumps and skimmer in the spawning tank.

Placed eggs collected from screens (about 100) to tanks 1 and 3.

Enumerate candidates

- <animal, cat, vertebrate>
- <vertebrate, cat, tiger>
- <vertebrate, cat, siamese cat>
- <animal, insect, NONE>

Upon restarting pumps, many eggs that apparently had been settled on the sand in the spawning tank went into suspension. It is too late to return the angels back now. I hope that at least they will enjoy the nutritious food for many days.

20:00

Turned off the pumps in tanks 1 and 2 and replaced them with air-stones.

Most eggs go into suspension (floating around the tank).

Some (mostly in tank 2) settled near the surface.

22:00

Tank 1:

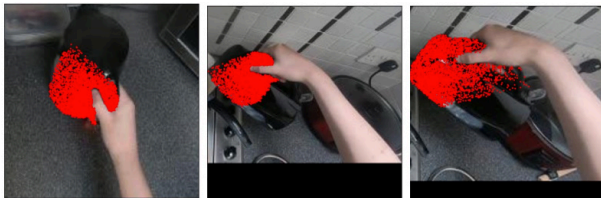
Sample: 3 eggs.

- All 3 breathing regularly.
- 1 also moving the tail section.
- The number of tiny yolks inside eggs between 4 and 8.
- Body size: about the same as at 10:00. Extending over slightly more than half the egg's circumference.

Tank 2:

Sample: 17 eggs (in 4 clusters)

- 14 breathing,
- 3 not sure/not readily visible
- Several moving the tail section.
- The number of tiny yolks inside eggs between 4 and 8.
- Body size: about the same as at 10:00. Extending over slightly more than half the egg's circumference.

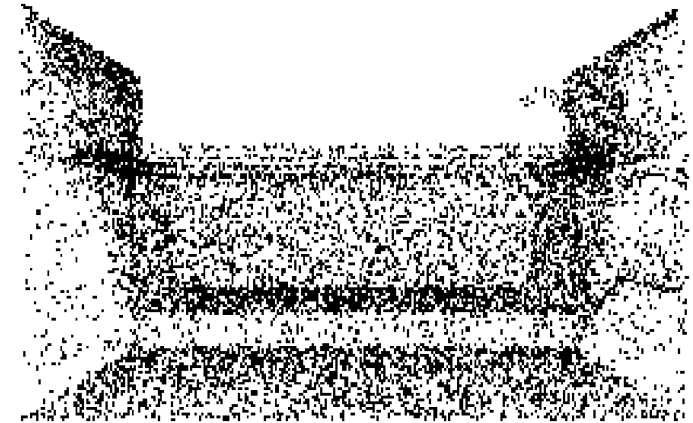


Tank 3:

Sample: 4 eggs.

They appear to be smaller than the ones from tanks 1 and 2. (unless I accidentally moved the scope magnification dial.)

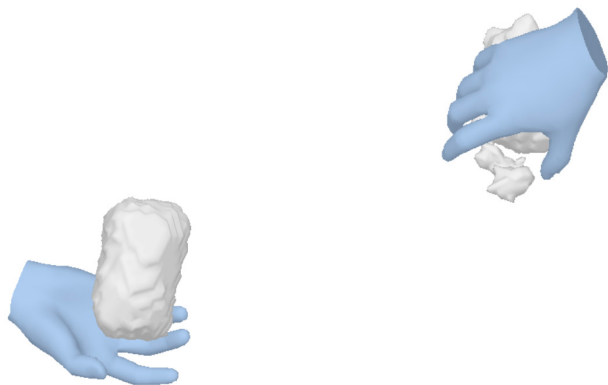
- 3 breathing, 2 of them rapidly
- 1 not sure/not visible
- Body size: about the same as at 10:00.



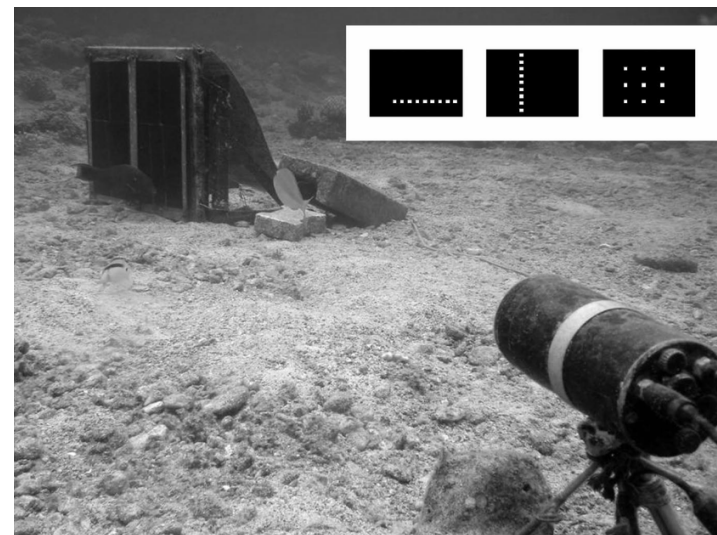
Added 1 capsule (250mg) of a wide spectrum anti-fungal/anti-bacterial "NeoSulfex" (active ingredients: Neomycin, Sulfate, Sodium Lauryl Sulfate and Sulfas: methazine, diazine, thiazole & merazine) hoping this might help the troubled population. Turned on the canister pump.

Stirred up the bottom of all three tanks to send the settled egg clusters from the tank bottom into suspension, hoping to help the living ones stuck with undeveloped eggs.

The absolute space and time are erased, and the seemingly concrete matter which we “feel” with our senses is dissolved into unreal forms of vibrating quantum energy. Fields and particles, space-time and forces, mind and matter, everything is now woven into strange forms completely alien to our experience. Many of the ghostly and abstract conceptions introduced by the new physics have plucked the same string as those connected with mystical beliefs. The widely held belief that precisely in the laws of physics is hidden the enigma of the sense and purpose of our world, suggests to us an unavoidable mystical epilogue of the physics and cosmology.



For, we do not “feel” that which is very big or very small (such as the curvature of space, elongation of time, movement of particles, etc.) And because of that, when we speak about, for example, atoms, we can use our language only as in poetry.

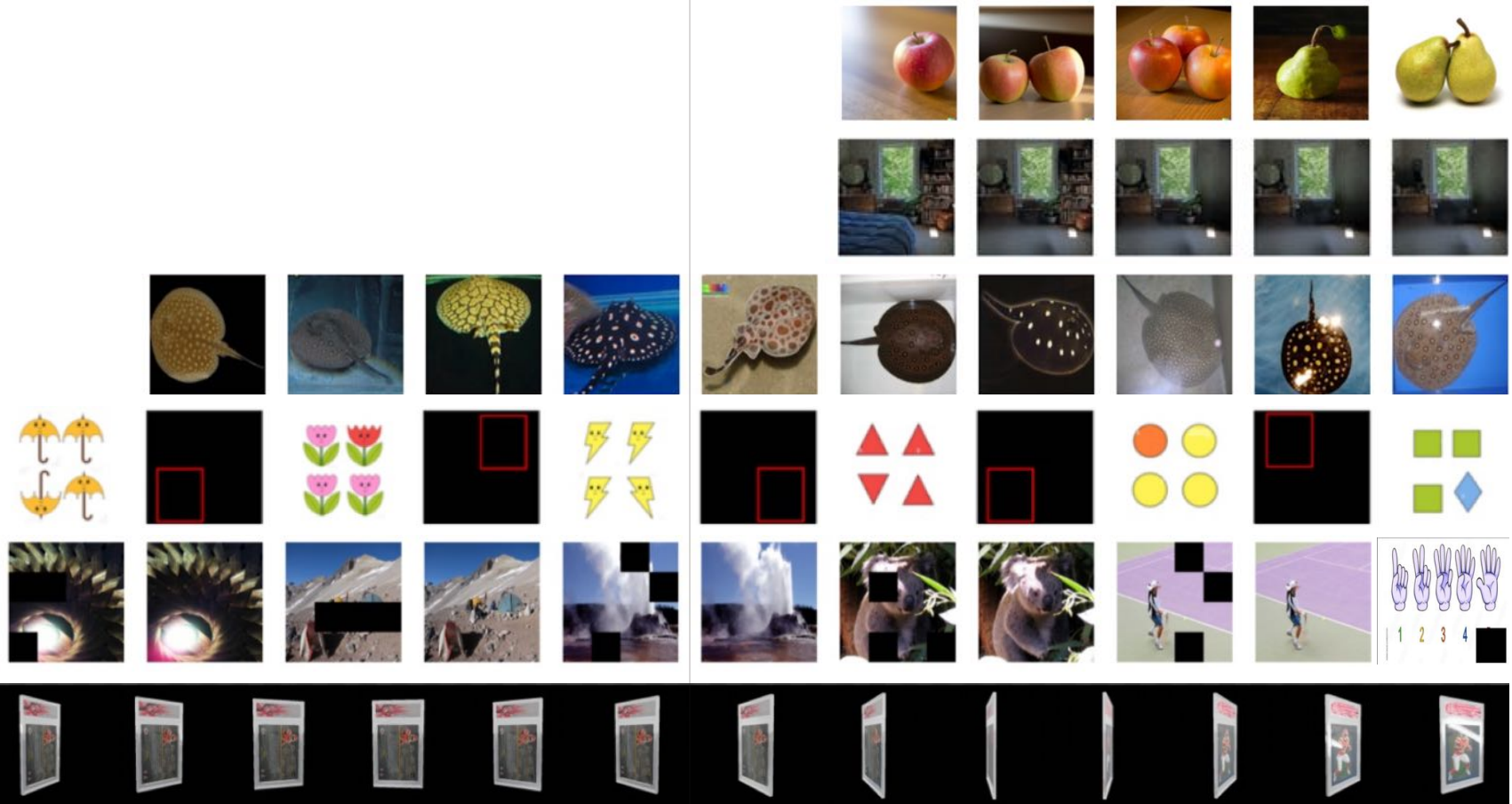


According to this controversial hypothesis, the picture of reality appears even more unusual than the quantum one: the universe is presented as one huge multi-dimensional hologram which exists outside of space and time.

This theory opens the possibility that the science, too, will perhaps one day confirm the reality of extra-sensory phenomena and return from the oblivion one distant windswept past — for the past, the present and the future coexist outside of time in a holographic universe.

This explanation is based on the known property of holograms: in the structure of the hologram (a three-dimensional laser picture), every point contains information about luminosity of every other point (information about the complete holographic scene is woven into every part of the film). This means that in a hologram, a complete three-dimensional picture can be obtained by illuminating only one small part of the holographic recording.

Constructing nonhuman animal emotion:



svemir kao multidimenzionalni hologram

(izvan prostora i vremena)

esad ramić

A rocket explorer named Wright
Once travelled much faster than light
He set out one day
In a relative way
And returned on the previous night

Uvodni stih o putniku kroz vrijeme samo je jedan od bezbroj primjera bezgraničnosti ljudske nade, koja nas pomoću mašte odvođa u okolnosti toliko različite i udaljene od izvjesne stvarnosti. Ali, »koji je kraj te ljestvice «biže boga», ako mi dopuštate tu religioznu metaforu? Ljepota i nada ili osnovni zakoni?« U ovom napisu nemamo namjeru razriješiti tu vječnu dilemu već samo pokazati koliko su ti krajevi, s gledišta recentne znanstvene misli udaljeni i koliko bi, prema nekim spekulativnim, istraživanjima, eventualno mogli biti bliski. I neka čitaoca ne zbuni što ćemo umjesto prostor – vremena u tekstu više pominjati univerzum, kosmos i slične stvari, jer »...početak svijeta i početak vremena su isto (...i kao što nije bilo vremena prije toga, isto tako nema ni prostora izvan njega«.)

Jedan slikovit primjer različitih pogleda svima nam je poznat: projiciranje nekog filma unatrag redovito izaziva buru smijeha u publici. Taj smijeh svjedoči da se u stvarnom životu takvo što ne događa. Na drugoj strani, fizičar koji to gleda nema baš nikakvog razloga za smijeh: po zakonima fizike – filmska vrpca bi morala pokazivati jedno te isto u oba smjera. I, dok smo mi uvjereni da nekako možemo uticati na budućnost – a niko od nas ne misli da bi eventualno mogao izmijeniti prošlost, u nauci još nije pronađeno takvo načelo – ni u kojem od do sada poznatih zakona fizike ne opaža se nikakva razlika između prošlosti i budućnosti.

Poznato je da priroda poštuje simetrije. No, ona ih istovremeno i narušava i – upravo zahvaljujući tome, moguće je postojanje našeg svemira sa najsavršenim bogatstvom oblika. Savršenstvo u prirodi, kao i u umjetnosti, zahtijeva određeno odstupanje od potpune simetrije.)
Penjanje ljestvicama spoznajne stoljećima se odvijalo, mučno i sporo, uglavnom spekulativnom strahom. I, premda svjestan praznine iza i iznad svega toga, gladni ljudski duh se dugo zadovoljavao samim pokušajima spoznavanja Prirode, ispunjen nadom u skorašnju objavu, providenje i spas. Tek u novije vrijeme čovjek je krenuo u drugom stranom, nastupajući (kao Galilej) da je knjiga Univerzuma možda napisana matematičkim jezikom, i da bez njege uzaludno luta mračnim lavirintom.

Ovakav pristup znatno je proširio granice spoznanje: taj stari religijski okvir, koji je čovjeku davao određeno mjesto u kosmosu, postao je preuzak i znanost je sasvim potisnula religiju u domenu sveobuhvatnog i razumnog objašnjenja djelovanja prirode. No, ljudi nastavljaju tražanje za nekim dubljim značenjem svoje egzistencije, sumnjajući pri tom da im znanost može pružiti onu bogatu metafizičku i mističnu osnovu ljudskog postojanja, koja je oduvijek bila glavni prerogativ religije. Međutim, prilike su se znatno izmijenile: moderna znanost sasvim se udaljila od uobičajene predstave o nemaštivotom i dosadnom zanatu, koji nam može reći mnogo toga o uticaju monsunskih vjetrova na priraštaj koala, tvrdom lemjenju legiranih metala, građnji mostova u trusnim oblastima, i tome sličnim »pojednostima«, a gotovo ništa o suštinskim stvarima – o, nama.

Tako nova fizika i kosmologija, ne samo da obavežno imaju taj mistični element u sebi, već obuhvataju najdubija pitanja koja daleko prevazišla djelokrug religije: pitanja postanka, razvoja, pa čak i kraja prostor-vremena, materije i cjelokupnog Univerzuma. Suvremena fizika projicira Boga izvan materije i prostor-vremena u apstraktni svijet logike,

matematike i fizičkih zakona. Apsolutni prostor i vrijeme su zbrisani, dok je prividno konkretna materija koju »osećamo« našim čulima rastvorena u nestvarne oblike vibrirajuće kvantne energije. Polje i čestice, prostor – vrijeme i sile, razum i materija, postali su utkani u paradoksalne oblike sasvim strane našem iskustvu. Tako su mnogi sablasni i apstraktni pojmovi koje uvodi nova fizika pogodili istu žicu kao oni vezani sa mističnim uvjerenjima. I rašireno uvjerenje da se baš u fizičkim zakonima krije zagonetka smisla i svrhe našeg svijeta, nagovještava nam neizbježan mistični epilog temeljne fizike i kosmologije.)

Premda smo odgovorima na temeljna pitanja bliže nego ikad pred nama je još dug, dalek put. Pored toga, za neka već dostignuta saznanja još nemamo jednostavno objašnjenje djetlom i zbog toga što samo opisivane pojave u prirodi predstavljaju posebnu poteškoću. Jer, očigledno, mi ne »osjećamo« ono što je veoma veliko ili veoma malo (poput zakrivljenosti prostora, istezanje vremena, gibanja čestica, itd.) zbog toga kad govorimo, na primjer, o atomu, naš jezik se može koristiti samo kao u poeziji. Pjesnik također ni približno ne nastoji da opiše činjenice, koliko da stvori slike.) Oustalom, cjelokupna znanost i nije ništa više od – oplemenjivanja svakodnevno mišljenja, i jezik koji koristimo da bismo govorili o prirodi i sam je prinuđen da operira riječima koje su neraskidivo vezane sa primitivnim konceptima. Tako, recimo, prostor nije očigledno bez oblika, a ni vrijeme očigledno nije nepromjenljivo. Ipak, nema načina da se zamisli nešto nepoznato sem u okvirima, pojmovima poznatog.) Zbog toga nas i svaki pokušaj da se stvori slika Univerzuma prije početka vremena ili izvan granica prostora suočava sa, doslovno, nezamislivim.

Dobar primjer za to je tumačenje prirode prema kvantnoj fizici, kojim je Nils Bor (Niels Bohr) svojom leđenom briljantnošću ovaj naš objektivni svijet sveo na neku vrstu velike lužnje, čije elementarne čestice izgledaju zadržavajući bliske predmetima iz snova. I dok Njutnova (Newton) fizika vidi kosmos kao jednu ogromnu mašinu, objašnjljvu mehaničkim zakonima uzroka i posljedice, kvantna mehanika – u interpretaciji Kopenhagenske škole – poriče mogućnost da se ikad razumije uzrok kretnja pojedinačnih subatomske čestice. Ovo, u biti racionalno objašnjenje neobičnog ponašanja subatomske čestice, mnogi su naučnici (među njima Aljnštajn) osporavali, ali je pitanje racionalne interpretacije ostalo otvoreno što je, opet, rezultiralo pravom poplavom različitih tumačenja i spekulacija – od kojih je među najinteresantnijim tzv. »teorija skrivenog poretka«, dijelom i stoga što dolazi od istaknutog fizičara, profesora na Londonskom univerzitetu, D. Boma (D. Bohm).

Prema ovoj kontroverznoj hipotezi slika stvarnosti izgleda još neobičnije od one kvantne: svemir je predstavljen kao jedan ogroman multidimenzionalni hologram koji egzistira izvan prostora i vremena. Zanimljivo je da je i Platon svojevremeno došao iznenadjuće blizu ovoj predstavi kada je svakodnevni svijet ljudi, stvari i nemilosrdne vremenske tijerane uporedio sa sjenkama bačenim na tamni zid pećine, u kojoj čovječanstvo leži okovano sopstvenim neznanjem. Ova teorija otvara mogućnost da i znanost možda jednog dana potvrdi realnost izvan nosjetljivih fenomena i povrati iz zaborava jednu davno prohujalu prošlost – jer prošlost, sadašnjost i budućnost koezistiraju izvan vremena u holografskom univerzumu.)

Vrlo je interesantno iskustvo prilikom da iza nivoa običnog subjektivnog iskustva čovječanstvo predstavlja jedan organizam. Implikacije ove ideje neki kvantno svitavaju pa i ziuopotrebijavaju, poput spretnog prodavača mantri, Maharishi Mahesh Jogiija (Maharishi Mahesh Yogi), kao neku »znanstvenu« potvrdu stvarne djelotvornosti (pa, samim tim, i tržišne vrijednosti) njihove usrdne »brige za sreću

čovječanstva« metodom kolektivne meditacije. Jer, po Bomu: kad bi nekih 100 ljudi uspjele zamisliti taj dubiji stratum realnosti i kad bi počeli koristiti svoj kolektivni razum, Ego bi za te ljude iščezao i oni bi obrazovali jedinstvenu svijest, jednako kao što su dijelovi jedne cjelovite ličnosti integrirani u jedinstven karakter. Ovo objašnjenje temelji se na poznatom svojstvu holograma: u strukturi holograma (trodimenzionalne laserske slike) svaka tačka sadrži informacije o osvjetljenosti svake druge tačke (informacije o potpunoj holografskoj sceni utkana je u svaki dio filma). To znači da se kod holograma potpuna trodimenzionalna slika može dobiti osvjetljivanjem samo jednog dijelca hologramskog snimka. Istina, ovako rekonstruirani lik uvijek izgleda nešto nejasnije od kompletnog snimka. Međutim, uporedimo li neki hologram sa »običnom« fotografijom iz porodičnog albuma, gdje prerezavanje slike uzrokuje, recimo, rastanak veselo zagrijetog društva – razlika je fantastična. Na isti način unutar skrivenog poretka (za razliku od eksplicitnog koji se očituje u »običnom« prostoru i vremenu), sve je povezano sa svim drugim i u izvjesnom smislu, svemir skrivenog poretka podjelica na neku vrstu super – rječnika u kojem definicija svake riječi sadrži također i definiciju svake druge riječi u riječniku. Dakle, ako je Bom u pravu, čestice nisu, zapravo, ni razdvojene – mjerne instrumenti i naučnici su stopljeni sa ostatkom svemira da bi obrazovali jednu jedinstvenu cjelinu.

Međutim, ovakvo tretiranje prostora i vremena za sada ostaje u domenu interesantnih razmišljanja, jer ne postoje nikakve opipljive potvrde za to. Ras-korak maštovitih ideja i stvarnih opažanja nije ništa novo ni neobičajeno i znatni – naprotiv, otkrivanje tajni prirode postavljenjem (i obaranjem) vrlo neobičnih hipoteza čak je prilično raširena pojava. Tako, na primjer, čak većina mislilaca (od Platona, preko Kanta) odbacuje mogućnost realnog postojanja svijeta sa više od 3 dimenzije, matematičari se ne uzbuđuju: višedimenzionalni prostor u matematici sasvim je normalna pojava.

A da ne moreju samo spekulacije biti neobične i interesantne, pokazuje nam i teorija »haotične inflacije« – najnovijeg znanstvenog tumačenje postanka svemira. Po ovom objašnjenju, širenje svemira se odvijalo istovremeno u više domena i unutrašnjost svakog pojednog domena inflacije predstavlja mini-vasionu veličine 10 na 28 cm (što je mnogo veće rastojanje od onog koje možemo sagledati). Dakle, za sve praktične svrhe naš domeni jeste vasiona. No, po ovom scenariju, postoji mnoštvo takvih mini-vasiona međusobno razdvojenih domenskim zidovima, u kojima zbog različitih uvjeta djeluju i posve različiti fizički zakoni. Međutim, upravo zbog djelovanja različitih zakona, život poput našeg teško je moguć u drugim mini-vasionama.

Model podjele vasiona u mini-vasiona sugerira nam i odgovor na pitanje o trodimenzionalnosti našeg prostora: proces sazimanja prvobitnih dimenzija može se odigrati sasvim različito u domenima koji su dovoljno udaljeni jedni od drugih, i život kakav mi poznajemo, možda postoji jedino u onim domenima koji imaju tri dimenzije. P. Erenfest (Paul Ehrenfest) ukazao je još 1917. da je trodimenzionalnost prostora intimo povezana sa načinom proračuni pokazuju da je u prostoru sa »n« dimenzija rezultat uvijek zakon sa stepenom »n-1«. Zato u prostorima sa više dimenzija ne bi postojale stabilne orbite za planete u planetarnim sistemima, niti za elektrone u atomima. Stvari ne stoje ništa bolje ni za dvodimenzionalne vasiona. Tako atomi i planetni sistemi mogu postojati kao vezani sistemi jedino u vasioni sa tri dimenzije, kao što je naša. I danas većina kosmologa smatra da je naš svemir zauvijek razdvojen od ostalih svjetova (opšteg univerzuma) relativističkim horizontom i da stoga ni-

To deliberate, remember; to anticipate, forget:



The majority of cosmologists today consider that our cosmos is forever separated from other worlds (general universe) by the “relativistic horizon”, and that therefore we will never be able to ascertain whether anything whatsoever exists outside of our cosmos.

On the other side, every being and every thing (and even that which appears still) is constantly moving, with a goal or without it — through the time dimension. Though the possibility of communications with other worlds is uncertain, we are equally attracted to imagining communications with this our world — in some other times, future or past.

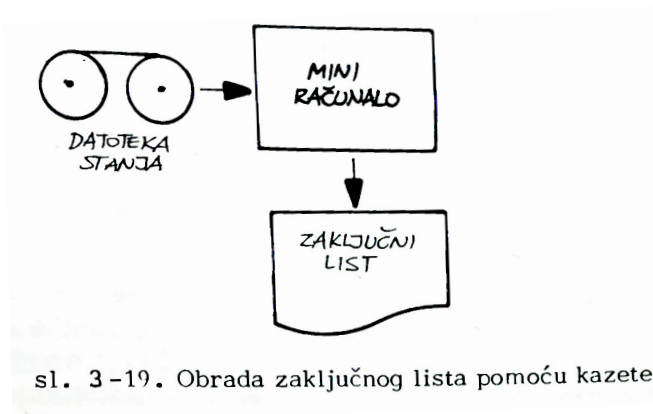
At this distance (for a star of the Sun’s mass, that is the radius of around 3 km), time begins to stretch into eternity. If we observed an astronaut approaching the event horizon, it would appear to us that he is moving slower and slower, until he finally completely stops. It is possible that we would never notice when he crossed that fateful boundary. However, from the view of the astronaut, everything would be all right (except that strong gravitational forces are rather uncomfortable): he keeps accelerating more and more, crosses the event horizon, and soon (a 6-millionth fraction of a second later) he meets singularity — and ceases to exist.

Details of this exceptional experience would, regrettably, for us remain a secret forever, because the astronaut could never return into the time from which he departed.

We remember the past, but do not remember the future.



Actually, an image reconstructed this way looks somewhat less clear than the complete recording. However, if we compare a hologram to an “ordinary” photograph from a family album, where cutting the picture causes, say, separation of a cheerfully embraced group — the difference is fantastic.



August 11, 1999. 17:15

As I was ready to give up and start disassembling all the rockwork, I get lucky.

The Flame angel jumps out of the tank.

It took me a while to find him, but it was much easier to fish him out from the carpet than from the tank.



In the same way, inside the “hidden order” (as distinguished from the explicit order which is observed in the “ordinary” space and time), everything is connected with everything else and, in a certain sense, the universe of the hidden order reminds of some kind of a super-dictionary in which the definition of every word contains also a definition of every other word in the dictionary.



August 13, 1999. 24:20

Yet another violent chase.

I use the otherwise useless night-vision camera to calm them down.

Well, at least the camera helps me find things in dark.

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