



The UFO Rabbit Hole

**WAKING UP INSIDE THE
CAVE [PT 1]:
EVERYTHING YOU KNOW
IS WRONG**

Episode 19

1
00:00:16,160 --> 00:00:00,709
[Music]

2
00:00:24,040 --> 00:00:16,170
[Applause]

3
00:00:33,410 --> 00:00:24,050
[Music]

4
00:00:36,170 --> 00:00:33,420
welcome back to the UFO Rabbit Hole

5
00:00:38,090 --> 00:00:36,180
podcast I'm your host Kelly Chase in

6
00:00:40,490 --> 00:00:38,100
many ways our trip down the rabbit hole

7
00:00:43,069 --> 00:00:40,500
has been leading us inevitably to this

8
00:00:44,950 --> 00:00:43,079
episode it's in this episode that we

9
00:00:47,270 --> 00:00:44,960
reach a decisive inflection point

10
00:00:49,310 --> 00:00:47,280
nothing will be the same after this

11
00:00:51,770 --> 00:00:49,320
maybe not even you

12
00:00:53,930 --> 00:00:51,780
over the previous 18 episodes I have

13
00:00:56,630 --> 00:00:53,940

done my best to make the case not only

14

00:00:58,790 --> 00:00:56,640

that the UFO phenomenon is real but that

15

00:01:01,250 --> 00:00:58,800

the complexity ubiquity and

16

00:01:03,410 --> 00:01:01,260

unintelligibility of the phenomenon are

17

00:01:05,870 --> 00:01:03,420

so great as to suggest that many of our

18

00:01:08,149 --> 00:01:05,880

most fundamental assumptions about the

19

00:01:11,030 --> 00:01:08,159

nature of reality itself may be

20

00:01:13,070 --> 00:01:11,040

incorrect this episode is my closing

21

00:01:15,770 --> 00:01:13,080

argument in the case of the phenomenon

22

00:01:17,570 --> 00:01:15,780

versus consensus reality and when it's

23

00:01:20,149 --> 00:01:17,580

done I hope that you'll agree with me

24

00:01:22,190 --> 00:01:20,159

that it's time to burn it all down or at

25

00:01:24,170 --> 00:01:22,200

the very least I hope you'll agree that

26
00:01:26,210 --> 00:01:24,180
perhaps it's time to consider some new

27
00:01:28,310 --> 00:01:26,220
models of reality that have the

28
00:01:30,289 --> 00:01:28,320
potential to reintroduce meaning and

29
00:01:32,510 --> 00:01:30,299
intelligibility into our broken world

30
00:01:35,270 --> 00:01:32,520
where impossible things won't stop

31
00:01:37,789 --> 00:01:35,280
happening when I first began my own trip

32
00:01:39,410 --> 00:01:37,799
down the UFO Rabbit Hole this is not at

33
00:01:42,170 --> 00:01:39,420
all the place that I imagined that I'd

34
00:01:44,210 --> 00:01:42,180
end up I started out like so many others

35
00:01:46,789 --> 00:01:44,220
before me with the goal of using logic

36
00:01:49,190 --> 00:01:46,799
in science to solve the UFO mystery once

37
00:01:50,870 --> 00:01:49,200
and for all either UFOs would prove to

38
00:01:52,850 --> 00:01:50,880

be be some kind of a hoax or a

39

00:01:54,410 --> 00:01:52,860
misunderstanding or it would be

40

00:01:56,630 --> 00:01:54,420
discovered to be some kind of a natural

41

00:01:59,569 --> 00:01:56,640
phenomenon with a rational explanation

42

00:02:02,389 --> 00:01:59,579
the naivete of that assumption makes me

43

00:02:04,910 --> 00:02:02,399
smile now because when you dig into the

44

00:02:07,449 --> 00:02:04,920
evidence for UFOs what you find is a

45

00:02:11,630 --> 00:02:07,459
phenomenon that is both undeniably real

46

00:02:13,970 --> 00:02:11,640
and entirely irrational UFOs can be

47

00:02:16,550 --> 00:02:13,980
neither explained nor explained away

48

00:02:18,770 --> 00:02:16,560
because of this there are many that have

49

00:02:21,949 --> 00:02:18,780
compared the UFO phenomenon to a Zen

50

00:02:24,410 --> 00:02:21,959
koan a koan is a paradoxical question or

51
00:02:26,210 --> 00:02:24,420
statement used in Zen Buddhism to help

52
00:02:27,949 --> 00:02:26,220
students deepen their understanding of

53
00:02:30,410 --> 00:02:27,959
the nature of reality and develop

54
00:02:32,690 --> 00:02:30,420
insight into their true nature one of

55
00:02:34,790 --> 00:02:32,700
the most famous examples is what is the

56
00:02:37,190 --> 00:02:34,800
sound of one hand clapping while they

57
00:02:39,170 --> 00:02:37,200
might sound nonsensical at first the

58
00:02:41,449 --> 00:02:39,180
purpose of a koan is to help the student

59
00:02:43,070 --> 00:02:41,459
transcend conventional thinking and to

60
00:02:45,830 --> 00:02:43,080
awaken them to a deeper level of

61
00:02:47,990 --> 00:02:45,840
understanding Koons are not intended to

62
00:02:50,630 --> 00:02:48,000
be solved logically or intellectually

63
00:02:52,670 --> 00:02:50,640

but rather to be contemplated or

64

00:02:54,470 --> 00:02:52,680

meditated upon in a way that allows the

65

00:02:56,750 --> 00:02:54,480

student to move Beyond dualistic

66

00:02:59,150 --> 00:02:56,760

thinking and experience a moment of

67

00:03:01,430 --> 00:02:59,160

insight or Enlightenment the UFO

68

00:03:03,949 --> 00:03:01,440

phenomenon challenges Us in this same

69

00:03:06,229 --> 00:03:03,959

way it forces us out of our comfortable

70

00:03:08,809 --> 00:03:06,239

paradigms and it makes us consider the

71

00:03:10,970 --> 00:03:08,819

possibility of a Transcendent reality

72

00:03:13,130 --> 00:03:10,980

that might be able to not just contain

73

00:03:15,589 --> 00:03:13,140

the paradoxical nature of the phenomenon

74

00:03:18,350 --> 00:03:15,599

but make it somehow coherent and

75

00:03:20,869 --> 00:03:18,360

intelligible in a way that eludes us now

76

00:03:23,630 --> 00:03:20,879

and I am increasingly convinced that

77

00:03:25,610 --> 00:03:23,640

such a paradigm exists it's being

78

00:03:27,589 --> 00:03:25,620

developed and put forward right now by

79

00:03:29,390 --> 00:03:27,599

some of the top Minds in fields ranging

80

00:03:31,610 --> 00:03:29,400

from cognitive science to religious

81

00:03:34,009 --> 00:03:31,620

studies and I believe that this new

82

00:03:36,710 --> 00:03:34,019

paradigm has the ability not just to

83

00:03:38,630 --> 00:03:36,720

explain the UFO phenomenon but to fix

84

00:03:41,750 --> 00:03:38,640

the fundamental issues with our models

85

00:03:44,030 --> 00:03:41,760

of reality and if true the transition to

86

00:03:45,890 --> 00:03:44,040

this new paradigm will undoubtedly mark

87

00:03:48,589 --> 00:03:45,900

one of the most significant moments in

88

00:03:50,750 --> 00:03:48,599

the history of humanity thus far

89

00:03:52,970 --> 00:03:50,760

but before we can get to that new

90

00:03:55,009 --> 00:03:52,980

paradigm we have to tear the old one

91

00:03:57,470 --> 00:03:55,019

down and so that's what we're going to

92

00:03:59,390 --> 00:03:57,480

do today in this episode we're going to

93

00:04:01,970 --> 00:03:59,400

take a wrecking ball to everything that

94

00:04:04,309 --> 00:04:01,980

we thought was true starting with the

95

00:04:06,110 --> 00:04:04,319

official story of everything the

96

00:04:07,789 --> 00:04:06,120

official story of everything is the name

97

00:04:10,250 --> 00:04:07,799

I'm giving to the narrative that we

98

00:04:11,630 --> 00:04:10,260

generally use in Western society as the

99

00:04:14,449 --> 00:04:11,640

container for what we know about

100

00:04:17,449 --> 00:04:14,459

ourselves and the universe it should be

101
00:04:19,250 --> 00:04:17,459
very familiar to you it goes like this

102
00:04:21,170 --> 00:04:19,260
everything in the known universe came

103
00:04:24,050 --> 00:04:21,180
into being in an event called The Big

104
00:04:26,390 --> 00:04:24,060
Bang around 13.8 billion years ago

105
00:04:28,790 --> 00:04:26,400
starting out as a single point of

106
00:04:31,189 --> 00:04:28,800
infinite density and pressure it began

107
00:04:34,310 --> 00:04:31,199
to expand rapidly outward in a massive

108
00:04:37,850 --> 00:04:34,320
explosion this explosion was so intense

109
00:04:40,189 --> 00:04:37,860
that it took 380 000 years after the big

110
00:04:42,230 --> 00:04:40,199
bang for things to cool down enough for

111
00:04:44,150 --> 00:04:42,240
the first atoms to form

112
00:04:46,610 --> 00:04:44,160
over the next several hundred million

113
00:04:48,530 --> 00:04:46,620

years those atoms that were in denser

114

00:04:49,670 --> 00:04:48,540

regions of the universe began to

115

00:04:52,550 --> 00:04:49,680

coalesce through gravitational

116

00:04:54,710 --> 00:04:52,560

attraction over time these regions

117

00:04:57,650 --> 00:04:54,720

became increasingly dense eventually

118

00:04:59,390 --> 00:04:57,660

forming gas clouds Stars galaxies and

119

00:05:00,950 --> 00:04:59,400

other astronomical structures that we're

120

00:05:03,350 --> 00:05:00,960

familiar with today

121

00:05:05,570 --> 00:05:03,360

the early Universe was a chaotic place

122

00:05:07,129 --> 00:05:05,580

with lots of newly formed objects

123

00:05:10,189 --> 00:05:07,139

slamming into each other and creating

124

00:05:12,050 --> 00:05:10,199

new objects but over time the force of

125

00:05:14,629 --> 00:05:12,060

gravity continued to bring these massive

126
00:05:16,550 --> 00:05:14,639
objects together creating more and more

127
00:05:19,490 --> 00:05:16,560
order within the universe

128
00:05:21,770 --> 00:05:19,500
our own planet formed around 4.5 billion

129
00:05:23,570 --> 00:05:21,780
years ago or a little over 9 billion

130
00:05:25,790 --> 00:05:23,580
years after the big bang

131
00:05:28,430 --> 00:05:25,800
over hundreds of millions of years the

132
00:05:30,950 --> 00:05:28,440
planet cooled and solidified the oceans

133
00:05:33,469 --> 00:05:30,960
in the atmosphere began to form the moon

134
00:05:35,090 --> 00:05:33,479
showed up somehow and if you want more

135
00:05:37,730 --> 00:05:35,100
details on that you can find it in

136
00:05:39,770 --> 00:05:37,740
episode 15. and the moon brought with it

137
00:05:41,570 --> 00:05:39,780
the tides which churned the oceans of

138
00:05:43,670 --> 00:05:41,580

the planet creating the conditions that

139

00:05:46,610 --> 00:05:43,680

make it particularly well suited to life

140

00:05:48,710 --> 00:05:46,620

and in these favorable conditions the

141

00:05:52,129 --> 00:05:48,720

first microscopic organisms appeared on

142

00:05:53,870 --> 00:05:52,139

Earth about 3.7 billion years ago over

143

00:05:56,450 --> 00:05:53,880

time through the process laid out by

144

00:05:58,730 --> 00:05:56,460

Darwin these microscopic organisms

145

00:06:00,290 --> 00:05:58,740

evolved into increasingly complex and

146

00:06:01,909 --> 00:06:00,300

differentiated forms of life over

147

00:06:05,150 --> 00:06:01,919

billions of years

148

00:06:07,490 --> 00:06:05,160

eventually around 850 million years ago

149

00:06:09,290 --> 00:06:07,500

some of these organisms developed early

150

00:06:12,050 --> 00:06:09,300

forms of consciousness

151

00:06:14,990 --> 00:06:12,060

then around 2 million years ago our

152

00:06:16,930 --> 00:06:15,000

first human ancestors appeared a million

153

00:06:19,610 --> 00:06:16,940

or so years ago they began to use fire

154

00:06:22,550 --> 00:06:19,620

and finally after spending millions of

155

00:06:24,230 --> 00:06:22,560

years as hunter-gatherers around 12 000

156

00:06:27,590 --> 00:06:24,240

years ago right at the end of the last

157

00:06:28,850 --> 00:06:27,600

ice age humans developed agriculture six

158

00:06:30,529 --> 00:06:28,860

thousand years later the first

159

00:06:32,510 --> 00:06:30,539

civilizations appeared followed by

160

00:06:35,210 --> 00:06:32,520

writing math philosophy and the other

161

00:06:38,270 --> 00:06:35,220

trappings of high civilization until

162

00:06:40,309 --> 00:06:38,280

finally we find ourselves here as a

163

00:06:41,870 --> 00:06:40,319

newly space-faring species with a

164

00:06:43,790 --> 00:06:41,880

stunning command of the world around us

165

00:06:45,770 --> 00:06:43,800

the knowledge that we have developed

166

00:06:47,510 --> 00:06:45,780

over Millennia has brought us to the

167

00:06:49,909 --> 00:06:47,520

point where we aren't just able to put a

168

00:06:52,249 --> 00:06:49,919

man on the moon but we're able to peer

169

00:06:54,590 --> 00:06:52,259

back into the unfathomable depths of

170

00:06:57,409 --> 00:06:54,600

time and understand how it all began

171

00:06:59,090 --> 00:06:57,419

pretty cool right the problem with this

172

00:07:01,670 --> 00:06:59,100

story though is that it's almost

173

00:07:03,469 --> 00:07:01,680

certainly not true the most important

174

00:07:05,870 --> 00:07:03,479

thing for us to recognize about the

175

00:07:08,570 --> 00:07:05,880

official story of everything is that

176

00:07:10,550 --> 00:07:08,580

it's just a story it's a narrative woven

177

00:07:13,010 --> 00:07:10,560

Loosely together connecting various

178

00:07:14,809 --> 00:07:13,020

popular theories the only thing that

179

00:07:17,330 --> 00:07:14,819

holds it all together is the mere

180

00:07:19,610 --> 00:07:17,340

agreement that this is what is true

181

00:07:21,770 --> 00:07:19,620

and this story is the lens through which

182

00:07:24,170 --> 00:07:21,780

we view the world ourselves and the

183

00:07:26,029 --> 00:07:24,180

cosmos it's one of our most basic

184

00:07:28,189 --> 00:07:26,039

meaning making devices

185

00:07:30,290 --> 00:07:28,199

the problem is that if you drill down

186

00:07:31,790 --> 00:07:30,300

into literally any aspect of this

187

00:07:33,529 --> 00:07:31,800

narrative that we use to form the

188

00:07:36,710 --> 00:07:33,539

foundation of what we deem to be

189

00:07:38,870 --> 00:07:36,720

possible and true you quickly find that

190

00:07:41,990 --> 00:07:38,880

this Foundation is built upon rapidly

191

00:07:43,790 --> 00:07:42,000

shifting Sands virtually all of the

192

00:07:46,370 --> 00:07:43,800

theories and models upon which the story

193

00:07:48,350 --> 00:07:46,380

is based have been fatally wounded if

194

00:07:51,589 --> 00:07:48,360

not outright disproven over the last

195

00:07:53,629 --> 00:07:51,599

century the few that remain largely owe

196

00:07:55,550 --> 00:07:53,639

their explanatory power to the fact that

197

00:07:58,490 --> 00:07:55,560

they are impossible to verify one way or

198

00:08:01,070 --> 00:07:58,500

another and yet this story hobbles on

199

00:08:02,270 --> 00:08:01,080

barely held together with duct tape and

200

00:08:04,070 --> 00:08:02,280

fairy tales

201
00:08:06,050 --> 00:08:04,080
we're going to go through this story in

202
00:08:08,150 --> 00:08:06,060
just a minute and I'll show you point by

203
00:08:11,029 --> 00:08:08,160
Point how every bit of this narrative is

204
00:08:13,969 --> 00:08:11,039
likely untrue and how this fact is too

205
00:08:15,529 --> 00:08:13,979
obvious to be denied and as we do that

206
00:08:18,650 --> 00:08:15,539
you might start to wonder to yourself

207
00:08:21,409 --> 00:08:18,660
how did this happen how did we get here

208
00:08:23,330 --> 00:08:21,419
how could we be so wrong about so much

209
00:08:25,430 --> 00:08:23,340
and not know it

210
00:08:28,610 --> 00:08:25,440
in his book The Four Agreements Don

211
00:08:30,650 --> 00:08:28,620
Miguel Ruiz uses ancient Toltec wisdom

212
00:08:32,329 --> 00:08:30,660
to explain how the basic agreements

213
00:08:34,490 --> 00:08:32,339

about the nature of reality that are

214

00:08:36,529 --> 00:08:34,500

made between groups of people end up

215

00:08:37,969 --> 00:08:36,539

becoming deeply entrenched Norms the

216

00:08:40,850 --> 00:08:37,979

people are taught to accept without

217

00:08:42,829 --> 00:08:40,860

question in the Toltec culture it was

218

00:08:45,170 --> 00:08:42,839

believed that all of human life is a

219

00:08:47,630 --> 00:08:45,180

dream that the fundamental nature of a

220

00:08:49,490 --> 00:08:47,640

human is that of a dreamer a and that

221

00:08:53,449 --> 00:08:49,500

the beliefs that we hold create and

222

00:08:56,030 --> 00:08:53,459

shape our reality he writes quote humans

223

00:08:58,250 --> 00:08:56,040

are dreaming all the time before we were

224

00:08:59,870 --> 00:08:58,260

born the humans before us created a big

225

00:09:02,090 --> 00:08:59,880

outside dream that we will call

226

00:09:02,870 --> 00:09:02,100

society's dream or the dream of the

227

00:09:06,710 --> 00:09:02,880

planet

228

00:09:09,470 --> 00:09:06,720

collective dream of billions of smaller

229

00:09:11,509 --> 00:09:09,480

personal dreams which together create a

230

00:09:14,269 --> 00:09:11,519

dream of a family a dream of a community

231

00:09:16,490 --> 00:09:14,279

a dream of a city a dream of a country

232

00:09:18,590 --> 00:09:16,500

and finally a dream of the whole of

233

00:09:21,170 --> 00:09:18,600

humanity the dream of the planet

234

00:09:23,329 --> 00:09:21,180

includes all of society's rules its

235

00:09:25,370 --> 00:09:23,339

beliefs its laws its religions its

236

00:09:27,470 --> 00:09:25,380

different cultures and ways to be it's

237

00:09:30,350 --> 00:09:27,480

government schools social events and

238

00:09:32,509 --> 00:09:30,360

holidays end quote this dream of the

239

00:09:34,670 --> 00:09:32,519

planet is taught to us by rote from the

240

00:09:36,470 --> 00:09:34,680

time we're born first it's taught to us

241

00:09:38,750 --> 00:09:36,480

by our mothers and fathers and then by

242

00:09:40,850 --> 00:09:38,760

school and the outside world through

243

00:09:42,949 --> 00:09:40,860

this shared dream we learn what is good

244

00:09:45,230 --> 00:09:42,959

and what is bad what is possible and

245

00:09:47,389 --> 00:09:45,240

what is impossible what is acceptable

246

00:09:49,190 --> 00:09:47,399

and what is unacceptable we learn how to

247

00:09:51,110 --> 00:09:49,200

live in society and one of the most

248

00:09:53,630 --> 00:09:51,120

fundamental agreements that is required

249

00:09:55,550 --> 00:09:53,640

of us to be accepted by our community is

250

00:09:58,850 --> 00:09:55,560

that the dream of that Community is

251
00:10:00,710 --> 00:09:58,860
objective truth Ruiz emphasizes that all

252
00:10:02,630 --> 00:10:00,720
the things that we claim as our most

253
00:10:03,470 --> 00:10:02,640
fundamental beliefs are not really our

254
00:10:05,990 --> 00:10:03,480
own

255
00:10:08,090 --> 00:10:06,000
he writes quote it was not your choice

256
00:10:09,949 --> 00:10:08,100
to speak English you didn't choose your

257
00:10:12,290 --> 00:10:09,959
religion or your moral values they were

258
00:10:14,210 --> 00:10:12,300
already there before you were born we

259
00:10:16,490 --> 00:10:14,220
never had the opportunity to choose what

260
00:10:18,350 --> 00:10:16,500
to believe or what not to believe we

261
00:10:20,930 --> 00:10:18,360
never chose even the smallest of these

262
00:10:23,150 --> 00:10:20,940
agreements we didn't even choose our own

263
00:10:25,070 --> 00:10:23,160

name end quote and so if we're asking

264

00:10:27,290 --> 00:10:25,080

how it is that we could be so wrong and

265

00:10:28,970 --> 00:10:27,300

not know it the Toltec answer would be

266

00:10:31,250 --> 00:10:28,980

that it's simply the nature of the

267

00:10:33,050 --> 00:10:31,260

shared dream and the Toltec culture

268

00:10:35,030 --> 00:10:33,060

weren't the only ancient people to hold

269

00:10:37,070 --> 00:10:35,040

this sort of view of reality

270

00:10:39,350 --> 00:10:37,080

over the last two episodes in my

271

00:10:41,990 --> 00:10:39,360

interviews with Dr Diana Walsh basulka

272

00:10:44,690 --> 00:10:42,000

and Dr James Madden we took a deep dive

273

00:10:45,949 --> 00:10:44,700

into Plato's allegory of the cave if you

274

00:10:47,870 --> 00:10:45,959

haven't gotten a chance to listen to

275

00:10:50,509 --> 00:10:47,880

those interviews yet I highly recommend

276

00:10:52,550 --> 00:10:50,519

you go back and do so the ideas there

277

00:10:54,110 --> 00:10:52,560

serve as a great introduction and means

278

00:10:56,030 --> 00:10:54,120

of framing the ideas that we're going to

279

00:10:57,530 --> 00:10:56,040

talk about in this episode

280

00:10:59,690 --> 00:10:57,540

one of the most important ideas

281

00:11:01,670 --> 00:10:59,700

presented through Plato's Cave is the

282

00:11:04,430 --> 00:11:01,680

idea that the default state of human

283

00:11:06,470 --> 00:11:04,440

civilization is that of Illusion

284

00:11:07,970 --> 00:11:06,480

the people in the cave are tied up and

285

00:11:10,790 --> 00:11:07,980

forced to watch Shadows on the wall

286

00:11:12,829 --> 00:11:10,800

which they mistake for reality when on

287

00:11:15,110 --> 00:11:12,839

occasion one of these strange prisoners

288

00:11:17,030 --> 00:11:15,120

manages to untie themselves they

289

00:11:19,250 --> 00:11:17,040

discover the fire behind them and the

290

00:11:20,930 --> 00:11:19,260

people casting Shadows on the wall and

291

00:11:22,970 --> 00:11:20,940

are confronted with the disturbing

292

00:11:25,550 --> 00:11:22,980

realization that what they thought was

293

00:11:27,949 --> 00:11:25,560

reality was only a shadow play emanating

294

00:11:30,949 --> 00:11:27,959

from a reality that is quite literally

295

00:11:32,750 --> 00:11:30,959

more real and to any of these escaped

296

00:11:34,790 --> 00:11:32,760

prisoners who returned to the cave to

297

00:11:37,430 --> 00:11:34,800

tell others what they have seen nothing

298

00:11:39,290 --> 00:11:37,440

good awaits the prisoners don't want to

299

00:11:40,730 --> 00:11:39,300

know that they are prisoners they don't

300

00:11:41,990 --> 00:11:40,740

want to consider the idea that

301
00:11:44,750 --> 00:11:42,000
everything that they thought was real

302
00:11:46,910 --> 00:11:44,760
was only an illusion and the idea is

303
00:11:49,490 --> 00:11:46,920
easy to push back against because it

304
00:11:51,949 --> 00:11:49,500
sounds crazy to them Preposterous even

305
00:11:53,810 --> 00:11:51,959
so the people who returned to the cave

306
00:11:56,329 --> 00:11:53,820
to try to tell them the truth end up

307
00:11:58,490 --> 00:11:56,339
being labeled as crazy they're ridiculed

308
00:12:00,650 --> 00:11:58,500
and shunned they might even be killed

309
00:12:02,630 --> 00:12:00,660
but it's important to recognize that the

310
00:12:05,389 --> 00:12:02,640
dream of the cave isn't the result of a

311
00:12:07,250 --> 00:12:05,399
conspiracy per se or or at least it

312
00:12:09,650 --> 00:12:07,260
isn't necessarily the result of a

313
00:12:11,690 --> 00:12:09,660

conspiracy rather it's an emergent

314

00:12:14,269 --> 00:12:11,700

phenomenon resulting from the beliefs of

315

00:12:16,090 --> 00:12:14,279

the people who came before the dream of

316

00:12:18,829 --> 00:12:16,100

the cave is self-creating

317

00:12:20,449 --> 00:12:18,839

self-perpetuating and self-enforcing the

318

00:12:22,550 --> 00:12:20,459

vast majority of people live their

319

00:12:25,550 --> 00:12:22,560

entire lives inside of it and never know

320

00:12:27,170 --> 00:12:25,560

the difference it's no easy task to wake

321

00:12:29,509 --> 00:12:27,180

up inside the cave

322

00:12:31,670 --> 00:12:29,519

everything about the Cave reinforces the

323

00:12:34,130 --> 00:12:31,680

reality of the cave everything you learn

324

00:12:36,350 --> 00:12:34,140

in school everything you see on TV and

325

00:12:39,590 --> 00:12:36,360

the answer to every Google search is in

326

00:12:41,930 --> 00:12:39,600

some very real way a manifestation of

327

00:12:43,490 --> 00:12:41,940

the cave and should you ever catch a

328

00:12:45,530 --> 00:12:43,500

glimpse of anything that suggests that

329

00:12:47,690 --> 00:12:45,540

the Shadows on the wall might not be all

330

00:12:49,670 --> 00:12:47,700

there is to your reality the other

331

00:12:51,410 --> 00:12:49,680

prisoners are quick to remind you that

332

00:12:54,050 --> 00:12:51,420

such thoughts will only result in

333

00:12:55,610 --> 00:12:54,060

isolation and ridicule most of us learn

334

00:12:57,350 --> 00:12:55,620

to ignore such things

335

00:12:59,030 --> 00:12:57,360

because we are so strongly

336

00:13:01,250 --> 00:12:59,040

disincentivized from questioning the

337

00:13:03,410 --> 00:13:01,260

nature of our reality it often takes

338

00:13:05,990 --> 00:13:03,420

something drastic to shock someone awake

339

00:13:07,850 --> 00:13:06,000

I think it's significant that in Plato's

340

00:13:10,009 --> 00:13:07,860

Cave The Prisoner who manages to get out

341

00:13:12,530 --> 00:13:10,019

of the cave doesn't escape of their own

342

00:13:15,230 --> 00:13:12,540

volition they are dragged out of the

343

00:13:16,970 --> 00:13:15,240

cave because in many cases it is a

344

00:13:18,530 --> 00:13:16,980

traumatic event or an anomalous

345

00:13:20,930 --> 00:13:18,540

experience that can't be easily

346

00:13:22,670 --> 00:13:20,940

explained away that first causes a

347

00:13:25,370 --> 00:13:22,680

person to begin to question

348

00:13:27,470 --> 00:13:25,380

but thankfully trauma and ontological

349

00:13:30,110 --> 00:13:27,480

shock aren't the only ways to escape the

350

00:13:33,050 --> 00:13:30,120

cave if you're sufficiently open-minded

351
00:13:35,509 --> 00:13:33,060
and curious It's also possible to think

352
00:13:37,910 --> 00:13:35,519
your way out and if you can manage it

353
00:13:39,769 --> 00:13:37,920
that's definitely the way to go because

354
00:13:41,750 --> 00:13:39,779
while there are still plenty of Trials

355
00:13:44,210 --> 00:13:41,760
and pitfalls along the way for those who

356
00:13:47,329 --> 00:13:44,220
take that path it certainly beats being

357
00:13:49,610 --> 00:13:47,339
dragged so where should we begin just

358
00:13:51,470 --> 00:13:49,620
like in a 12-step program the first step

359
00:13:53,509 --> 00:13:51,480
in beating our addiction to consensus

360
00:13:54,350 --> 00:13:53,519
reality is admitting that we have a

361
00:14:00,410 --> 00:13:54,360
problem

362
00:14:02,690 --> 00:14:00,420
recall in 1897 the physicist William

363
00:14:04,370 --> 00:14:02,700

Thompson Lord Kelvin looked at all the

364

00:14:06,530 --> 00:14:04,380

tremendous advancements in electricity

365

00:14:08,930 --> 00:14:06,540

astronomy and biology that marked his

366

00:14:11,449 --> 00:14:08,940

age and concluded there is nothing new

367

00:14:13,250 --> 00:14:11,459

to be discovered in physics Now All That

368

00:14:15,710 --> 00:14:13,260

Remains is more and more precise

369

00:14:17,810 --> 00:14:15,720

measurement and our boy simply could not

370

00:14:19,730 --> 00:14:17,820

have been more wrong just two decades

371

00:14:21,650 --> 00:14:19,740

later the discovery of quantum mechanics

372

00:14:23,509 --> 00:14:21,660

blasted a hole in the hull of classical

373

00:14:24,949 --> 00:14:23,519

physics and it's been taking on water

374

00:14:27,110 --> 00:14:24,959

ever since

375

00:14:28,790 --> 00:14:27,120

when William Thompson Lord Kelvin made

376

00:14:31,069 --> 00:14:28,800

that Infamous statement at the turn of

377

00:14:33,470 --> 00:14:31,079

the 20th century it represented the

378

00:14:35,210 --> 00:14:33,480

prevailing view of the time and the fact

379

00:14:36,889 --> 00:14:35,220

that he was proven to be decisively

380

00:14:38,389 --> 00:14:36,899

wrong has done little to prevent that

381

00:14:40,790 --> 00:14:38,399

from being the prevailing Viewpoint

382

00:14:42,769 --> 00:14:40,800

today even among scientists who

383

00:14:45,110 --> 00:14:42,779

acknowledge the clear issues created by

384

00:14:46,670 --> 00:14:45,120

the discovery of quantum mechanics most

385

00:14:48,530 --> 00:14:46,680

still seem to be functioning under the

386

00:14:50,569 --> 00:14:48,540

assumption that all of this is just a

387

00:14:53,150 --> 00:14:50,579

temporary setback that what is broken

388

00:14:55,009 --> 00:14:53,160

about physics is fixable and I simply

389

00:14:57,290 --> 00:14:55,019

don't agree the more we discover about

390

00:14:59,509 --> 00:14:57,300

the universe and nature of reality the

391

00:15:01,069 --> 00:14:59,519

less it makes sense instead of moving

392

00:15:02,689 --> 00:15:01,079

ever closer toward a theory of

393

00:15:04,490 --> 00:15:02,699

everything that would unite the various

394

00:15:07,310 --> 00:15:04,500

theories of science into a coherent

395

00:15:11,990 --> 00:15:07,320

whole such a theory seems to be receding

396

00:15:16,730 --> 00:15:14,990

as a result there is a rising chorus of

397

00:15:19,430 --> 00:15:16,740

voices from within the scientific

398

00:15:21,110 --> 00:15:19,440

establishment itself that is making the

399

00:15:23,210 --> 00:15:21,120

very strong argument that it might be

400

00:15:25,069 --> 00:15:23,220

time to admit that our current paradigms

401
00:15:27,110 --> 00:15:25,079
are no longer tenable in the face of

402
00:15:29,810 --> 00:15:27,120
emerging scientific discoveries and

403
00:15:32,090 --> 00:15:29,820
Humanity might be on the precipice of a

404
00:15:34,009 --> 00:15:32,100
profound shift in perspective to which

405
00:15:35,689 --> 00:15:34,019
Quantum leaps of the past from the

406
00:15:37,389 --> 00:15:35,699
discovery of fire to the recognition

407
00:15:40,910 --> 00:15:37,399
that the Earth revolves around the Sun

408
00:15:42,650 --> 00:15:40,920
surely pale in comparison and before we

409
00:15:45,350 --> 00:15:42,660
begin I just want to make a few things

410
00:15:46,850 --> 00:15:45,360
clear first of all though I recognize

411
00:15:49,370 --> 00:15:46,860
that I'm making some pretty big claims

412
00:15:50,990 --> 00:15:49,380
in this episode I want to emphasize that

413
00:15:52,850 --> 00:15:51,000

nothing that I'm saying here about

414

00:15:55,129 --> 00:15:52,860

various scientific theories is

415

00:15:57,769 --> 00:15:55,139

particularly controversial these aren't

416

00:15:59,870 --> 00:15:57,779

Fringe theories by and large what I'm

417

00:16:02,050 --> 00:15:59,880

presenting here in this episode is the

418

00:16:04,189 --> 00:16:02,060

exact party line of mainstream science

419

00:16:06,230 --> 00:16:04,199

the only thing that's controversial

420

00:16:09,769 --> 00:16:06,240

about what I'm saying is that I'm asking

421

00:16:11,509 --> 00:16:09,779

does this actually make sense I'm asking

422

00:16:14,269 --> 00:16:11,519

if perhaps the emperor might have

423

00:16:16,670 --> 00:16:14,279

forgotten his lows because as I'll argue

424

00:16:18,769 --> 00:16:16,680

these theories heavily rely on a

425

00:16:20,870 --> 00:16:18,779

combination of unsupported absurdities

426

00:16:23,509 --> 00:16:20,880

and outright denial of the question at

427

00:16:25,970 --> 00:16:23,519

hand as the duct tape that barely holds

428

00:16:28,850 --> 00:16:25,980

this old jalopy of a world view together

429

00:16:30,949 --> 00:16:28,860

and we don't need phds to explore these

430

00:16:32,389 --> 00:16:30,959

ideas we don't need to get deep into the

431

00:16:35,150 --> 00:16:32,399

weeds with the particulars of these

432

00:16:37,730 --> 00:16:35,160

theories themselves because as we'll see

433

00:16:40,430 --> 00:16:37,740

the issues with these theories don't lie

434

00:16:42,889 --> 00:16:40,440

in the details the rod is structural

435

00:16:45,230 --> 00:16:42,899

it's in the very foundation of the ideas

436

00:16:46,970 --> 00:16:45,240

themselves the second point of

437

00:16:48,350 --> 00:16:46,980

clarification that I'd like to make is

438

00:16:50,269 --> 00:16:48,360

that because of the way these

439

00:16:52,430 --> 00:16:50,279

conversations are usually framed in our

440

00:16:54,949 --> 00:16:52,440

culture you might hear my arguments

441

00:16:57,949 --> 00:16:54,959

against consensus reality as an argument

442

00:16:59,569 --> 00:16:57,959

for the existence of God that is not my

443

00:17:01,670 --> 00:16:59,579

purpose here and I intentionally have

444

00:17:03,590 --> 00:17:01,680

stayed out of that debate what I'm

445

00:17:05,210 --> 00:17:03,600

advocating for here is that we work

446

00:17:07,189 --> 00:17:05,220

toward new theories that have the

447

00:17:09,770 --> 00:17:07,199

ability to integrate all of human

448

00:17:11,630 --> 00:17:09,780

experience and Discovery those theories

449

00:17:14,090 --> 00:17:11,640

may or may not end up pointing to the

450

00:17:16,669 --> 00:17:14,100

existence of God but that is well above

451
00:17:18,530 --> 00:17:16,679
my pay grade and the final thing that I

452
00:17:20,329 --> 00:17:18,540
want to make clear is that I don't think

453
00:17:22,130 --> 00:17:20,339
that any of what I'll talk about in this

454
00:17:24,049 --> 00:17:22,140
episode is the result of some sort of

455
00:17:26,630 --> 00:17:24,059
conspiracy among scientists and

456
00:17:28,309 --> 00:17:26,640
academics to hide the truth from us nor

457
00:17:30,730 --> 00:17:28,319
do I think that mainstream scientists

458
00:17:33,530 --> 00:17:30,740
are inherently dogmatic backward or dumb

459
00:17:35,990 --> 00:17:33,540
in my experience these people tend to be

460
00:17:37,490 --> 00:17:36,000
extremely intelligent hardworking and do

461
00:17:39,890 --> 00:17:37,500
their jobs in good faith for the

462
00:17:41,690 --> 00:17:39,900
betterment of humanity as a whole and I

463
00:17:42,950 --> 00:17:41,700

think it's extremely important that when

464

00:17:45,289 --> 00:17:42,960

we challenge the scientific

465

00:17:47,029 --> 00:17:45,299

establishment that we not forget that

466

00:17:49,370 --> 00:17:47,039

it's made up of good people who are

467

00:17:51,350 --> 00:17:49,380

earnestly doing their best the reality

468

00:17:54,110 --> 00:17:51,360

of science is that given a long enough

469

00:17:56,390 --> 00:17:54,120

timeline even the brightest Minds end up

470

00:17:58,370 --> 00:17:56,400

on the wrong side of History our quest

471

00:18:00,650 --> 00:17:58,380

to understand the cosmos and ourselves

472

00:18:02,990 --> 00:18:00,660

has always been fraught with setbacks

473

00:18:05,630 --> 00:18:03,000

dead ends and circuitous detours that

474

00:18:08,210 --> 00:18:05,640

bring us maddeningly right back to where

475

00:18:10,549 --> 00:18:08,220

we started men and women will dedicate

476

00:18:12,950 --> 00:18:10,559

their entire lives to developing one

477

00:18:15,230 --> 00:18:12,960

single idea only to have it washed away

478

00:18:17,750 --> 00:18:15,240

like a sand castle by the next wave of

479

00:18:19,909 --> 00:18:17,760

Discovery and Innovation there's a real

480

00:18:22,370 --> 00:18:19,919

nobility to that it's something that I

481

00:18:24,049 --> 00:18:22,380

deeply respect nothing that I'm saying

482

00:18:26,750 --> 00:18:24,059

here is meant to be an attack on the

483

00:18:28,730 --> 00:18:26,760

institutions of Science and Academia but

484

00:18:31,250 --> 00:18:28,740

I hope that it might serve in some small

485

00:18:32,990 --> 00:18:31,260

way as a call to action as we've

486

00:18:35,690 --> 00:18:33,000

discussed in the past few episodes in

487

00:18:38,330 --> 00:18:35,700

our exploration of Plato's Cave humans

488

00:18:40,370 --> 00:18:38,340

are natural cave Builders we create

489

00:18:42,529 --> 00:18:40,380

meaning making narratives to explain our

490

00:18:44,029 --> 00:18:42,539

world and our society functions on the

491

00:18:46,430 --> 00:18:44,039

basis of our agreement to those

492

00:18:48,650 --> 00:18:46,440

narratives these narratives are usually

493

00:18:50,870 --> 00:18:48,660

very useful they help us with everything

494

00:18:52,370 --> 00:18:50,880

from building a spaceship to quieting

495

00:18:54,049 --> 00:18:52,380

that nagging voice in the back of your

496

00:18:56,210 --> 00:18:54,059

head that says that something about the

497

00:18:59,090 --> 00:18:56,220

nature of your reality isn't quite right

498

00:19:02,150 --> 00:18:59,100

and so we become very attached to these

499

00:19:03,590 --> 00:19:02,160

narratives because they help us but we

500

00:19:05,750 --> 00:19:03,600

need to always be aware that just

501
00:19:08,270 --> 00:19:05,760
because an idea is useful doesn't mean

502
00:19:10,549 --> 00:19:08,280
that it's true my very educated mother

503
00:19:12,289 --> 00:19:10,559
just made us nine pizzas is a useful

504
00:19:14,450 --> 00:19:12,299
mnemonic device for remembering the

505
00:19:17,690 --> 00:19:14,460
order of the planets but it doesn't have

506
00:19:20,029 --> 00:19:17,700
any truth value on its own and pizzas

507
00:19:21,409 --> 00:19:20,039
aren't even a planet anymore the

508
00:19:23,029 --> 00:19:21,419
argument that I'm making in this episode

509
00:19:24,950 --> 00:19:23,039
is simply this

510
00:19:27,529 --> 00:19:24,960
our current meaning making narratives

511
00:19:29,090 --> 00:19:27,539
have outgrown their utility we have

512
00:19:31,730 --> 00:19:29,100
progressed to the point where we need

513
00:19:34,130 --> 00:19:31,740

new ones and if we look at all the ways

514

00:19:35,390 --> 00:19:34,140

in which our current models fail those

515

00:19:37,549 --> 00:19:35,400

things might point us in the direction

516

00:19:40,250 --> 00:19:37,559

of a new official story of everything

517

00:19:42,230 --> 00:19:40,260

that allows for the full scope of human

518

00:19:44,270 --> 00:19:42,240

experience and which allows us to draw

519

00:19:45,650 --> 00:19:44,280

better conclusions about the nature of

520

00:19:48,289 --> 00:19:45,660

our reality

521

00:19:50,930 --> 00:19:48,299

let's start with the big bang Terence

522

00:19:52,789 --> 00:19:50,940

McKenna famously said modern Science is

523

00:19:55,310 --> 00:19:52,799

based on the principle give us one free

524

00:19:57,950 --> 00:19:55,320

miracle and we'll explain the rest the

525

00:19:59,930 --> 00:19:57,960

Big Bang is that free miracle though

526

00:20:01,789 --> 00:19:59,940

it's presented to us in school as a

527

00:20:04,190 --> 00:20:01,799

scientific explanation for the existence

528

00:20:06,169 --> 00:20:04,200

of everything if you ask even the most

529

00:20:08,510 --> 00:20:06,179

basic and immediate questions that come

530

00:20:10,490 --> 00:20:08,520

to mind you may start to get the sense

531

00:20:12,110 --> 00:20:10,500

that the Big Bang isn't actually all

532

00:20:14,450 --> 00:20:12,120

that scientific and that it doesn't

533

00:20:16,130 --> 00:20:14,460

really explain anything either the

534

00:20:17,990 --> 00:20:16,140

miracle of the Big Bang is how it

535

00:20:20,570 --> 00:20:18,000

manages to get everything from nothing

536

00:20:22,430 --> 00:20:20,580

it's the ultimate magic trick but

537

00:20:25,190 --> 00:20:22,440

instead of pulling a rabbit out of a hat

538

00:20:27,890 --> 00:20:25,200

the Big Bang pulls everything that ever

539

00:20:29,210 --> 00:20:27,900

was or ever will be out of absolute

540

00:20:31,610 --> 00:20:29,220

nothingness

541

00:20:32,870 --> 00:20:31,620

it's a task so big that it was once

542

00:20:35,990 --> 00:20:32,880

believed that it could only be the work

543

00:20:38,450 --> 00:20:36,000

of God but since it was proposed in 1931

544

00:20:40,250 --> 00:20:38,460

the Big Bang has become the prevailing

545

00:20:43,310 --> 00:20:40,260

theory for the origins of the universe

546

00:20:44,870 --> 00:20:43,320

at least among 99.9 percent of the

547

00:20:47,390 --> 00:20:44,880

members of the National Academy of

548

00:20:49,310 --> 00:20:47,400

Sciences however if you look closely

549

00:20:51,590 --> 00:20:49,320

you'll see that the Big Bang doesn't

550

00:20:54,289 --> 00:20:51,600

actually dispatch any of our questions

551
00:20:55,970 --> 00:20:54,299
about where the universe came from it

552
00:20:57,529 --> 00:20:55,980
just tucks them conveniently out of

553
00:21:00,289 --> 00:20:57,539
sight with some quick sleight of hand

554
00:21:01,970 --> 00:21:00,299
I'll show you how it works we'll start

555
00:21:03,950 --> 00:21:01,980
with one of the most obvious questions

556
00:21:05,890 --> 00:21:03,960
that an elementary school student might

557
00:21:09,470 --> 00:21:05,900
have upon hearing about the Big Bang

558
00:21:11,330 --> 00:21:09,480
what happened before the Big Bang the

559
00:21:14,450 --> 00:21:11,340
official answer is this

560
00:21:16,850 --> 00:21:14,460
time can only arise alongside matter and

561
00:21:19,669 --> 00:21:16,860
energy there was no time before the Big

562
00:21:23,029 --> 00:21:19,679
Bang so the question has no meaning

563
00:21:26,330 --> 00:21:23,039

C sight of hand now you see it now you

564

00:21:28,789 --> 00:21:26,340

don't let's try another one what is the

565

00:21:31,430 --> 00:21:28,799

universe expanding into

566

00:21:33,529 --> 00:21:31,440

and the official answer you can't have

567

00:21:35,990 --> 00:21:33,539

space without objects defining it so the

568

00:21:37,490 --> 00:21:36,000

question doesn't have meaning also you

569

00:21:39,649 --> 00:21:37,500

can't think about the universe from the

570

00:21:42,409 --> 00:21:39,659

outside there's nothing outside of the

571

00:21:44,750 --> 00:21:42,419

universe so the question is nonsensical

572

00:21:46,669 --> 00:21:44,760

do you see what I mean the Big Bang

573

00:21:48,409 --> 00:21:46,679

Theory doesn't really explain anything

574

00:21:50,330 --> 00:21:48,419

when it comes to the origins of the

575

00:21:51,950 --> 00:21:50,340

universe it just shuffles things around

576
00:21:54,230 --> 00:21:51,960
so that all of the most profound

577
00:21:55,909 --> 00:21:54,240
questions that we have are out of bounds

578
00:21:58,970 --> 00:21:55,919
and there's something deeply

579
00:22:00,950 --> 00:21:58,980
unsatisfying about that because when we

580
00:22:03,830 --> 00:22:00,960
inquire into what it was that brought

581
00:22:06,169 --> 00:22:03,840
the universe into existence most people

582
00:22:07,730 --> 00:22:06,179
aren't asking about the exact series of

583
00:22:10,130 --> 00:22:07,740
events that immediately followed its

584
00:22:11,690 --> 00:22:10,140
creation which is ultimately all that

585
00:22:14,450 --> 00:22:11,700
the Big Bang deals with

586
00:22:18,230 --> 00:22:14,460
we're asking where the universe came

587
00:22:21,230 --> 00:22:18,240
from we're asking why it happened what

588
00:22:23,210 --> 00:22:21,240

caused it and how and these are the very

589

00:22:25,850 --> 00:22:23,220

questions the proponents of The Big Bang

590

00:22:27,950 --> 00:22:25,860

Theory tell us are meaningless it's a

591

00:22:30,289 --> 00:22:27,960

very Wizard of Oz moment pay no

592

00:22:32,270 --> 00:22:30,299

attention to that man behind the curtain

593

00:22:34,430 --> 00:22:32,280

I suspect that this might be the reason

594

00:22:36,049 --> 00:22:34,440

why despite the fact that the vast

595

00:22:38,570 --> 00:22:36,059

majority of scientists believe in the

596

00:22:39,649 --> 00:22:38,580

big bang a majority of Americans aren't

597

00:22:43,490 --> 00:22:39,659

so sure

598

00:22:45,890 --> 00:22:43,500

in 2014 an AP poll reported that 51 of

599

00:22:48,169 --> 00:22:45,900

Americans said that they were not too

600

00:22:51,350 --> 00:22:48,179

confident or not at all confident that

601
00:22:53,870 --> 00:22:51,360
the statement the universe began 13.8

602
00:22:56,570 --> 00:22:53,880
billion years ago with a big bang was

603
00:22:59,210 --> 00:22:56,580
correct and basically all of the news

604
00:23:01,190 --> 00:22:59,220
outlets that covered this story included

605
00:23:02,930 --> 00:23:01,200
quotes from rode weary scientists

606
00:23:04,430 --> 00:23:02,940
throwing up their hands in dismay over

607
00:23:06,169 --> 00:23:04,440
the fact that people just aren't

608
00:23:08,270 --> 00:23:06,179
accepting the science

609
00:23:10,310 --> 00:23:08,280
but I'd argue that in this case

610
00:23:12,710 --> 00:23:10,320
scientists are asking people to accept

611
00:23:15,169 --> 00:23:12,720
their answer to a question without

612
00:23:17,090 --> 00:23:15,179
recognizing that it's fundamentally not

613
00:23:19,370 --> 00:23:17,100

the question that was asked

614

00:23:20,690 --> 00:23:19,380

think about it this way even if you

615

00:23:22,490 --> 00:23:20,700

could account for every single thing

616

00:23:24,529 --> 00:23:22,500

that happened in the minute immediately

617

00:23:26,810 --> 00:23:24,539

following the initial impact of a car

618

00:23:29,450 --> 00:23:26,820

accident you still couldn't be entirely

619

00:23:31,190 --> 00:23:29,460

sure of what caused the accident you

620

00:23:32,570 --> 00:23:31,200

could make a decent guess based on the

621

00:23:34,909 --> 00:23:32,580

trajectory of the cars and people

622

00:23:37,430 --> 00:23:34,919

involved but that wouldn't tell you the

623

00:23:39,830 --> 00:23:37,440

whole story was it caused by road rage

624

00:23:42,770 --> 00:23:39,840

negligence a drug driver a heart attack

625

00:23:44,330 --> 00:23:42,780

an honest mistake we have no way of

626
00:23:47,390 --> 00:23:44,340
gaining a full picture of what happened

627
00:23:49,850 --> 00:23:47,400
if we only look at the aftermath and

628
00:23:51,350 --> 00:23:49,860
it's the same with a big bang we tend to

629
00:23:53,630 --> 00:23:51,360
think of the universe like billiard

630
00:23:55,610 --> 00:23:53,640
balls with objects smashing into each

631
00:23:58,730 --> 00:23:55,620
other and knocking each other around in

632
00:24:00,350 --> 00:23:58,740
predictable measurable ways and in that

633
00:24:02,390 --> 00:24:00,360
way we aren't much different than our

634
00:24:04,909 --> 00:24:02,400
old friend William Thompson Lord Kelvin

635
00:24:06,649 --> 00:24:04,919
we assume that the laws of physics are

636
00:24:09,049 --> 00:24:06,659
more or less figured out and that given

637
00:24:10,970 --> 00:24:09,059
enough time and processing power that we

638
00:24:12,770 --> 00:24:10,980

could look at the speed and direction of

639

00:24:15,230 --> 00:24:12,780

all of the objects in the universe as

640

00:24:16,789 --> 00:24:15,240

they are now and run back the tape to

641

00:24:19,250 --> 00:24:16,799

the very beginning of time to see what

642

00:24:20,690 --> 00:24:19,260

happened and in a lot of ways that's

643

00:24:23,029 --> 00:24:20,700

basically what we've done with the big

644

00:24:25,070 --> 00:24:23,039

bang we know that the universe is

645

00:24:26,930 --> 00:24:25,080

expanding rapidly outward from its

646

00:24:29,330 --> 00:24:26,940

Center and so we assume that it must

647

00:24:30,529 --> 00:24:29,340

have started from there we run the tape

648

00:24:32,450 --> 00:24:30,539

all the way back to the first

649

00:24:33,830 --> 00:24:32,460

microseconds of the universe and make

650

00:24:35,450 --> 00:24:33,840

assumptions about what must have

651
00:24:38,330 --> 00:24:35,460
happened and what the conditions must

652
00:24:40,250 --> 00:24:38,340
have been like but even if all of the

653
00:24:42,710 --> 00:24:40,260
many assumptions that we've made all

654
00:24:45,169 --> 00:24:42,720
turn out to be correct we still haven't

655
00:24:46,909 --> 00:24:45,179
answered the question about who hit play

656
00:24:48,830 --> 00:24:46,919
in the first place

657
00:24:50,110 --> 00:24:48,840
and you might think that question is

658
00:24:52,070 --> 00:24:50,120
falling into the Trap of

659
00:24:53,990 --> 00:24:52,080
anthropomorphizing a physical process

660
00:24:55,850 --> 00:24:54,000
just because we don't know who did it

661
00:24:58,549 --> 00:24:55,860
doesn't mean that God did it you say as

662
00:25:00,770 --> 00:24:58,559
you shake your fist and I don't disagree

663
00:25:02,810 --> 00:25:00,780

who pressed play may not be the right

664

00:25:05,210 --> 00:25:02,820

question but what we're talking about

665

00:25:07,370 --> 00:25:05,220

here is trying to understand where we

666

00:25:09,710 --> 00:25:07,380

got this perfectly tuned Universe in

667

00:25:12,110 --> 00:25:09,720

which every physical action has a

668

00:25:14,149 --> 00:25:12,120

physical cause and we find that there

669

00:25:17,149 --> 00:25:14,159

are only two explanations within our

670

00:25:19,130 --> 00:25:17,159

current Paradigm either one the universe

671

00:25:22,310 --> 00:25:19,140

is infinite and has no beginning or end

672

00:25:25,789 --> 00:25:22,320

which doesn't seem likely or two it was

673

00:25:28,250 --> 00:25:25,799

set into motion by some uncaused cause a

674

00:25:30,110 --> 00:25:28,260

first mover something outside of the

675

00:25:32,450 --> 00:25:30,120

bubble of space and time that erupted

676
00:25:34,789 --> 00:25:32,460
into being at the start of the universe

677
00:25:36,590 --> 00:25:34,799
you can call that God or not it doesn't

678
00:25:39,649 --> 00:25:36,600
really matter for the purposes of this

679
00:25:42,350 --> 00:25:39,659
conversation but the question is there

680
00:25:44,390 --> 00:25:42,360
and the question is legitimate and the

681
00:25:46,490 --> 00:25:44,400
question has not been answered by

682
00:25:48,289 --> 00:25:46,500
science the only thing that science has

683
00:25:49,669 --> 00:25:48,299
succeeded in with the big bang is

684
00:25:51,710 --> 00:25:49,679
convincing people that the biggest

685
00:25:54,049 --> 00:25:51,720
questions that we have about our Origins

686
00:25:56,450 --> 00:25:54,059
are meaningless while giving us nothing

687
00:25:57,409 --> 00:25:56,460
to replace them and that is not an

688
00:26:00,350 --> 00:25:57,419

answer

689

00:26:01,970 --> 00:26:00,360

now to be fair science actually does

690

00:26:05,630 --> 00:26:01,980

have an answer for what caused the Big

691

00:26:07,789 --> 00:26:05,640

Bang the official party line is this we

692

00:26:09,590 --> 00:26:07,799

observe particles materializing in empty

693

00:26:11,649 --> 00:26:09,600

space and then Vanishing these are

694

00:26:14,330 --> 00:26:11,659

called quantum mechanical fluctuations

695

00:26:16,730 --> 00:26:14,340

given enough time one would expect the

696

00:26:19,370 --> 00:26:16,740

fluctuation to involve so many particles

697

00:26:21,529 --> 00:26:19,380

that an entire universe would appear

698

00:26:23,149 --> 00:26:21,539

so basically one of the many weird

699

00:26:25,549 --> 00:26:23,159

things about quantum mechanics which

700

00:26:27,230 --> 00:26:25,559

we'll get to shortly is that particles

701
00:26:29,690 --> 00:26:27,240
can sometimes appear and disappear in

702
00:26:32,149 --> 00:26:29,700
space and so given enough time

703
00:26:34,070 --> 00:26:32,159
eventually this would randomly happen to

704
00:26:35,630 --> 00:26:34,080
so many particles simultaneously that

705
00:26:37,490 --> 00:26:35,640
the Universe would spring into being

706
00:26:38,510 --> 00:26:37,500
much in the manner that we see with the

707
00:26:40,669 --> 00:26:38,520
big bang

708
00:26:43,310 --> 00:26:40,679
but I'd argue that there are serious and

709
00:26:45,769 --> 00:26:43,320
glaring issues with this idea as well

710
00:26:48,289 --> 00:26:45,779
first of all the idea that given enough

711
00:26:50,269 --> 00:26:48,299
time an unspeakably vast number of

712
00:26:52,130 --> 00:26:50,279
particles would randomly appear in the

713
00:26:55,730 --> 00:26:52,140

same place at once to create the

714

00:26:57,649 --> 00:26:55,740

universe requires time that implies a

715

00:26:59,510 --> 00:26:57,659

timeline and a reality existing outside

716

00:27:02,149 --> 00:26:59,520

and separate from our universe because

717

00:27:05,269 --> 00:27:02,159

as we already established space and time

718

00:27:07,430 --> 00:27:05,279

didn't exist before the Big Bang so once

719

00:27:09,169 --> 00:27:07,440

again we're given this hint that there

720

00:27:11,029 --> 00:27:09,179

is something on the other side of the

721

00:27:13,789 --> 00:27:11,039

curtain but if you want to be taken

722

00:27:15,470 --> 00:27:13,799

seriously in polite educated Society you

723

00:27:17,570 --> 00:27:15,480

were only allowed to gesture at it

724

00:27:18,649 --> 00:27:17,580

vaguely you aren't allowed to ask what

725

00:27:20,990 --> 00:27:18,659

it is

726

00:27:23,029 --> 00:27:21,000

and my other issue with this is that it

727

00:27:25,610 --> 00:27:23,039

uses the loophole of infinity as a

728

00:27:27,049 --> 00:27:25,620

crutch to explain the unexplainable this

729

00:27:28,789 --> 00:27:27,059

is a trick that is used in a few

730

00:27:30,590 --> 00:27:28,799

different places and the official Theory

731

00:27:32,510 --> 00:27:30,600

of Everything to prop up some of the

732

00:27:35,630 --> 00:27:32,520

ideas for which there is literally no

733

00:27:38,570 --> 00:27:35,640

rational justification and frankly I

734

00:27:40,310 --> 00:27:38,580

call the entire argument rests

735

00:27:41,990 --> 00:27:40,320

on the idea that given an infinite

736

00:27:44,750 --> 00:27:42,000

amount of time everything that could

737

00:27:46,430 --> 00:27:44,760

happen will eventually happen and there

738

00:27:48,649 --> 00:27:46,440

are a few issues with that

739

00:27:51,350 --> 00:27:48,659

first of all we don't have proof that

740

00:27:53,570 --> 00:27:51,360

infinity even exists Infinity is

741

00:27:56,390 --> 00:27:53,580

generally regarded to be simply a useful

742

00:27:58,130 --> 00:27:56,400

idea we use it in math and science all

743

00:28:01,250 --> 00:27:58,140

the time to do calculations that would

744

00:28:03,769 --> 00:28:01,260

otherwise be impossible and it works but

745

00:28:05,630 --> 00:28:03,779

like the square root of negative one we

746

00:28:07,850 --> 00:28:05,640

don't have any proof that Infinity is

747

00:28:09,350 --> 00:28:07,860

something that can actually exist more

748

00:28:11,630 --> 00:28:09,360

than hypothetically

749

00:28:13,850 --> 00:28:11,640

so for this idea to work we have to

750

00:28:16,190 --> 00:28:13,860

assume infinite time something for which

751
00:28:18,890 --> 00:28:16,200
we have no proof and this infinite time

752
00:28:21,110 --> 00:28:18,900
has to exist somehow apart from or

753
00:28:23,390 --> 00:28:21,120
separate from the space-time in which we

754
00:28:25,669 --> 00:28:23,400
currently find ourselves embedded which

755
00:28:28,570 --> 00:28:25,679
means that we can't verify it or even

756
00:28:31,610 --> 00:28:28,580
meaningfully inquire about it and listen

757
00:28:33,529 --> 00:28:31,620
that still might be the answer but when

758
00:28:35,750 --> 00:28:33,539
we're talking about introducing an idea

759
00:28:37,850 --> 00:28:35,760
for which there is no evidence and which

760
00:28:40,130 --> 00:28:37,860
by its very nature can't be proven one

761
00:28:41,930 --> 00:28:40,140
way or another there is literally no

762
00:28:43,610 --> 00:28:41,940
reason for us to show any kind of

763
00:28:46,610 --> 00:28:43,620

preference for that answer over any

764

00:28:48,529 --> 00:28:46,620

other to do so requires a blind leap of

765

00:28:51,230 --> 00:28:48,539

faith that would make the most stalwart

766

00:28:52,669 --> 00:28:51,240

young Earth creationist proud if they

767

00:28:53,870 --> 00:28:52,679

weren't too busy disagreeing with the

768

00:28:55,909 --> 00:28:53,880

conclusion

769

00:28:58,250 --> 00:28:55,919

and there are a few other issues with

770

00:29:00,049 --> 00:28:58,260

the big bang for example the Big Bang

771

00:29:02,269 --> 00:29:00,059

explains where everything we see

772

00:29:04,070 --> 00:29:02,279

everything that has form and all of the

773

00:29:04,909 --> 00:29:04,080

known energies of the universe comes

774

00:29:06,950 --> 00:29:04,919

from

775

00:29:09,289 --> 00:29:06,960

however all of these things only

776
00:29:12,649 --> 00:29:09,299
comprise four percent of what the actual

777
00:29:14,690 --> 00:29:12,659
universe is made of 96 of the universe

778
00:29:16,850 --> 00:29:14,700
is composed of dark matter and dark

779
00:29:19,549 --> 00:29:16,860
energy and we literally don't know what

780
00:29:21,350 --> 00:29:19,559
those things are so it's actually quite

781
00:29:24,049 --> 00:29:21,360
bold of us to assume that we have

782
00:29:26,210 --> 00:29:24,059
definitive answers on where the universe

783
00:29:28,610 --> 00:29:26,220
came from when we don't even know what

784
00:29:31,190 --> 00:29:28,620
96 of it even is

785
00:29:33,049 --> 00:29:31,200
and while the Big Bang is the one free

786
00:29:34,970 --> 00:29:33,059
Miracle to which Terence McKenna

787
00:29:37,010 --> 00:29:34,980
referred if you look closely at the

788
00:29:39,110 --> 00:29:37,020

official story of everything you begin

789

00:29:41,690 --> 00:29:39,120

to realize that scientists are asking

790

00:29:43,549 --> 00:29:41,700

for more than just one Miracle they're

791

00:29:45,830 --> 00:29:43,559

asking for several one of the biggest

792

00:29:48,169 --> 00:29:45,840

mysteries about the origin of life is

793

00:29:49,850 --> 00:29:48,179

how the universe came to be so perfectly

794

00:29:52,070 --> 00:29:49,860

tuned to support it

795

00:29:54,289 --> 00:29:52,080

all four of the universe's four forces

796

00:29:56,570 --> 00:29:54,299

and all of its constants don't just

797

00:29:59,330 --> 00:29:56,580

allow for life they seem to be

798

00:30:01,430 --> 00:29:59,340

specifically coded to encourage it and

799

00:30:04,330 --> 00:30:01,440

the chances of things just happening to

800

00:30:06,590 --> 00:30:04,340

unfold that way are astronomically small

801
00:30:08,210 --> 00:30:06,600
the slightest change in the initial

802
00:30:09,889 --> 00:30:08,220
conditions of the universe could have

803
00:30:12,049 --> 00:30:09,899
resulted in a version of the universe

804
00:30:15,049 --> 00:30:12,059
where life is impossible

805
00:30:17,210 --> 00:30:15,059
for example if the Big Bang had been one

806
00:30:18,889 --> 00:30:17,220
part in a million more powerful it would

807
00:30:20,870 --> 00:30:18,899
have expanded too quickly for the

808
00:30:23,630 --> 00:30:20,880
galaxies and therefore life to develop

809
00:30:26,149 --> 00:30:23,640
if the strong nuclear force were

810
00:30:28,070 --> 00:30:26,159
decreased by just two percent Atomic

811
00:30:29,269 --> 00:30:28,080
nuclei wouldn't hold together and the

812
00:30:32,389 --> 00:30:29,279
universe would be filled with nothing

813
00:30:35,210 --> 00:30:32,399

but hydrogen if the gravitational force

814

00:30:36,950 --> 00:30:35,220

were decreased by just a hair Stars

815

00:30:39,710 --> 00:30:36,960

including the sun would never have

816

00:30:41,630 --> 00:30:39,720

ignited the carbon that is in our bodies

817

00:30:44,149 --> 00:30:41,640

and that is necessary for Life as we

818

00:30:46,909 --> 00:30:44,159

know it to exist is created by nuclear

819

00:30:49,370 --> 00:30:46,919

reactions inside of stars but until

820

00:30:52,010 --> 00:30:49,380

about 50 years ago scientists weren't

821

00:30:53,750 --> 00:30:52,020

sure how this even happened most nuclear

822

00:30:56,149 --> 00:30:53,760

reactions occur when two extremely

823

00:30:58,250 --> 00:30:56,159

fast-moving Atomic nuclei or protons

824

00:31:00,590 --> 00:30:58,260

Collide and fuse to form a heavier

825

00:31:02,810 --> 00:31:00,600

element that is usually helium

826

00:31:05,149 --> 00:31:02,820

it shouldn't be possible to manufacture

827

00:31:07,549 --> 00:31:05,159

carbon by this process because all of

828

00:31:10,909 --> 00:31:07,559

the intermediate elements from Helium to

829

00:31:13,190 --> 00:31:10,919

carbon have highly unstable nuclei

830

00:31:15,649 --> 00:31:13,200

the only way for it to work would be for

831

00:31:18,049 --> 00:31:15,659

three helium nuclei to collide at the

832

00:31:20,389 --> 00:31:18,059

same time but the likelihood of that

833

00:31:22,250 --> 00:31:20,399

happening is minuscule and it certainly

834

00:31:23,990 --> 00:31:22,260

couldn't happen at a rate high enough to

835

00:31:24,950 --> 00:31:24,000

account for all of the carbon in the

836

00:31:26,870 --> 00:31:24,960

universe

837

00:31:29,269 --> 00:31:26,880

what scientists eventually discovered

838

00:31:31,250 --> 00:31:29,279

was that carbon has a resonant State at

839

00:31:33,289 --> 00:31:31,260

just the correct energy that causes

840

00:31:36,110 --> 00:31:33,299

helium to come together in precisely

841

00:31:38,510 --> 00:31:36,120

this way as a result of this resonance

842

00:31:41,210 --> 00:31:38,520

stars are hardwired to be able to

843

00:31:43,610 --> 00:31:41,220

produce carbon in large quantities

844

00:31:46,490 --> 00:31:43,620

these examples are a few of just more

845

00:31:48,950 --> 00:31:46,500

than 200 physical parameters within the

846

00:31:51,289 --> 00:31:48,960

solar system in the universe that had to

847

00:31:54,169 --> 00:31:51,299

be precisely calibrated for life to

848

00:31:56,269 --> 00:31:54,179

emerge given that fact it's clear that

849

00:31:58,930 --> 00:31:56,279

by far the most likely result of the Big

850

00:32:02,090 --> 00:31:58,940

Bang would have been a lifeless Universe

851
00:32:03,950 --> 00:32:02,100
in fact the chances are so minuscule

852
00:32:06,409 --> 00:32:03,960
that a universe suitable to Life as we

853
00:32:08,389 --> 00:32:06,419
know it could emerge that it's LED some

854
00:32:10,490 --> 00:32:08,399
scientists to ask how it could be that

855
00:32:13,370 --> 00:32:10,500
we find ourselves in this exceedingly

856
00:32:16,130 --> 00:32:13,380
unlikely Goldilocks Universe where

857
00:32:18,230 --> 00:32:16,140
everything seems to be just right and

858
00:32:20,510 --> 00:32:18,240
the official answer contains more of the

859
00:32:21,289 --> 00:32:20,520
familiar sleight of hand it goes like

860
00:32:23,930 --> 00:32:21,299
this

861
00:32:25,610 --> 00:32:23,940
If gravity was a touch stronger or if

862
00:32:27,710 --> 00:32:25,620
the Big Bang had just a little less bang

863
00:32:30,289 --> 00:32:27,720

we wouldn't be here to ask about it

864

00:32:32,570 --> 00:32:30,299

because we're here the universe had to

865

00:32:34,789 --> 00:32:32,580

be calibrated in a way for us to emerge

866

00:32:37,669 --> 00:32:34,799

so it's actually not unlikely at all

867

00:32:40,070 --> 00:32:37,679

case closed and if you find that answer

868

00:32:43,190 --> 00:32:40,080

to be unsatisfying you're certainly not

869

00:32:46,310 --> 00:32:43,200

alone in his 1989 book universes

870

00:32:48,350 --> 00:32:46,320

philosopher John Leslie wrote quote a

871

00:32:50,930 --> 00:32:48,360

man in front of a firing squad of 100

872

00:32:53,450 --> 00:32:50,940

Riflemen is going to be pretty surprised

873

00:32:55,250 --> 00:32:53,460

if every bullet misses him sure he could

874

00:32:57,110 --> 00:32:55,260

say to himself of course they all missed

875

00:32:58,549 --> 00:32:57,120

that makes perfect sense otherwise I

876

00:33:01,010 --> 00:32:58,559

wouldn't be here to wonder why they all

877

00:33:03,529 --> 00:33:01,020

missed but anyone in his or her right

878

00:33:06,289 --> 00:33:03,539

mind is going to want to know how such

879

00:33:08,570 --> 00:33:06,299

an unlikely event occurred end quote

880

00:33:11,570 --> 00:33:08,580

once again the answer that we're given

881

00:33:13,370 --> 00:33:11,580

isn't an answer it's a non-answer that

882

00:33:15,649 --> 00:33:13,380

attempts to sidestep the question by

883

00:33:17,690 --> 00:33:15,659

making it meaningless and the fact that

884

00:33:19,789 --> 00:33:17,700

the universe is perfectly calibrated to

885

00:33:22,009 --> 00:33:19,799

support life is only the first of three

886

00:33:23,149 --> 00:33:22,019

miracles of life that we have to account

887

00:33:25,970 --> 00:33:23,159

for

888

00:33:28,549 --> 00:33:25,980

the second Miracle of Life lies in the

889

00:33:30,710 --> 00:33:28,559

fact that it emerged at all we have no

890

00:33:32,870 --> 00:33:30,720

idea how that happened there are

891

00:33:34,909 --> 00:33:32,880

theories of course most involve slow

892

00:33:38,090 --> 00:33:34,919

random changes over billions of years

893

00:33:39,950 --> 00:33:38,100

like we discussed in episode 15 the moon

894

00:33:41,810 --> 00:33:39,960

may have played a role in the emergence

895

00:33:44,210 --> 00:33:41,820

of Life by churning the oceans and

896

00:33:46,190 --> 00:33:44,220

causing the tides turning the surface of

897

00:33:49,190 --> 00:33:46,200

the Earth into a giant chemistry set

898

00:33:51,830 --> 00:33:49,200

that eventually by dumb luck struck upon

899

00:33:54,110 --> 00:33:51,840

the formula for life and sure maybe

900

00:33:56,570 --> 00:33:54,120

that's how it happened but it's just a

901
00:33:58,850 --> 00:33:56,580
theory and the reality is that even if

902
00:34:00,470 --> 00:33:58,860
that's a exactly the series of events

903
00:34:02,870 --> 00:34:00,480
that led to the emergence of life on

904
00:34:05,750 --> 00:34:02,880
Earth we still don't understand the

905
00:34:07,669 --> 00:34:05,760
mechanism by which that happened we have

906
00:34:10,310 --> 00:34:07,679
no way of explaining through any current

907
00:34:12,050 --> 00:34:10,320
theory how inert matter can somehow

908
00:34:14,450 --> 00:34:12,060
become alive

909
00:34:16,550 --> 00:34:14,460
even the simplest single-celled organism

910
00:34:18,530 --> 00:34:16,560
contains an inner complexity that makes

911
00:34:21,829 --> 00:34:18,540
it difficult to imagine how it could

912
00:34:23,810 --> 00:34:21,839
emerge entirely at random the simplest

913
00:34:25,810 --> 00:34:23,820

single cell organism has been shown to

914

00:34:29,629 --> 00:34:25,820

require somewhere between

915

00:34:32,270 --> 00:34:29,639

265 and 350 genes to survive and

916

00:34:34,310 --> 00:34:32,280

reproduce in a lab but where did the

917

00:34:36,770 --> 00:34:34,320

genes to create the first single-celled

918

00:34:39,290 --> 00:34:36,780

organism come from it's the ultimate

919

00:34:41,570 --> 00:34:39,300

chicken in the egg scenario and like

920

00:34:44,030 --> 00:34:41,580

with the big bang we're given elaborate

921

00:34:46,190 --> 00:34:44,040

descriptions about how a fire grows in

922

00:34:47,629 --> 00:34:46,200

response to our question about what lit

923

00:34:50,270 --> 00:34:47,639

the first Spark

924

00:34:52,369 --> 00:34:50,280

and the third Miracle of Life is that

925

00:34:55,190 --> 00:34:52,379

despite being able to describe many of

926
00:34:57,770 --> 00:34:55,200
the processes of life we have no real

927
00:34:59,810 --> 00:34:57,780
idea of what life is

928
00:35:01,790 --> 00:34:59,820
scientists have not even been able to

929
00:35:03,589 --> 00:35:01,800
strike upon a consistent list of the

930
00:35:05,630 --> 00:35:03,599
characteristics of life

931
00:35:07,750 --> 00:35:05,640
a commonly accepted list of traits

932
00:35:10,730 --> 00:35:07,760
includes order growth and development

933
00:35:13,089 --> 00:35:10,740
homeostasis metabolism reaction to

934
00:35:16,010 --> 00:35:13,099
stimuli reproduction and evolution

935
00:35:17,329 --> 00:35:16,020
however it's extremely easy to begin to

936
00:35:19,550 --> 00:35:17,339
poke holes in this list of

937
00:35:22,069 --> 00:35:19,560
characteristics there are exceptions

938
00:35:23,930 --> 00:35:22,079

that can be found to every rule for

939

00:35:26,210 --> 00:35:23,940

example crystals are not generally

940

00:35:29,150 --> 00:35:26,220

considered to be alive yet they are

941

00:35:31,609 --> 00:35:29,160

highly organized and they grow a fire

942

00:35:33,829 --> 00:35:31,619

consumes energy and grows and on the

943

00:35:36,349 --> 00:35:33,839

other end of the spectrum bacteria

944

00:35:38,810 --> 00:35:36,359

tardigrades and even some Crustaceans

945

00:35:41,150 --> 00:35:38,820

can enter long periods of dormancy where

946

00:35:43,790 --> 00:35:41,160

all growth change metabolism cease

947

00:35:46,609 --> 00:35:43,800

entirely and yet they aren't technically

948

00:35:49,010 --> 00:35:46,619

dead the strange truth is that we don't

949

00:35:50,750 --> 00:35:49,020

really know what life is We Believe

950

00:35:53,030 --> 00:35:50,760

instinctively that there is a clear

951
00:35:55,250 --> 00:35:53,040
obvious difference between a dog and a

952
00:35:57,410 --> 00:35:55,260
crystal between a bacterium and a grain

953
00:36:00,290 --> 00:35:57,420
of sand but when pushed to clearly

954
00:36:02,690 --> 00:36:00,300
identify what that difference is we find

955
00:36:04,670 --> 00:36:02,700
that we come up empty there seems to be

956
00:36:06,829 --> 00:36:04,680
a ghost in the machine machine but we

957
00:36:08,990 --> 00:36:06,839
don't have the right language to name it

958
00:36:10,490 --> 00:36:09,000
some have gone so far as to argue that

959
00:36:11,930 --> 00:36:10,500
the reason that we can't name the

960
00:36:14,150 --> 00:36:11,940
difference between things that are alive

961
00:36:15,829 --> 00:36:14,160
and things that aren't is that there is

962
00:36:17,510 --> 00:36:15,839
no difference and that life doesn't

963
00:36:19,250 --> 00:36:17,520

actually exist

964

00:36:22,630 --> 00:36:19,260

in an article for Scientific American

965

00:36:26,270 --> 00:36:22,640

entitled why life does not really exist

966

00:36:28,730 --> 00:36:26,280

writer Ferris jabber argues quote life

967

00:36:30,829 --> 00:36:28,740

is a concept that we invented on the

968

00:36:32,930 --> 00:36:30,839

most fundamental level all matter that

969

00:36:35,329 --> 00:36:32,940

exists is an arrangement of atoms in

970

00:36:36,950 --> 00:36:35,339

their constituent particles these

971

00:36:39,290 --> 00:36:36,960

Arrangements fall into an immense

972

00:36:41,390 --> 00:36:39,300

spectrum of complexity from a single

973

00:36:44,210 --> 00:36:41,400

hydrogen atom to something as intricate

974

00:36:46,069 --> 00:36:44,220

as a brain in trying to Define life we

975

00:36:47,810 --> 00:36:46,079

have drawn a line at an arbitrary level

976

00:36:49,550 --> 00:36:47,820

of complexity and declared that

977

00:36:53,030 --> 00:36:49,560

everything above that border is alive

978

00:36:55,430 --> 00:36:53,040

and everything below it is not in truth

979

00:36:58,130 --> 00:36:55,440

this division does not exist outside the

980

00:36:59,930 --> 00:36:58,140

mind there is no Threshold at which a

981

00:37:02,750 --> 00:36:59,940

collection of atoms suddenly becomes

982

00:37:04,490 --> 00:37:02,760

alive no categorical distinction between

983

00:37:07,310 --> 00:37:04,500

the living and inanimate no

984

00:37:09,050 --> 00:37:07,320

frankenstinian spark we have failed to

985

00:37:10,910 --> 00:37:09,060

Define life because there was never

986

00:37:12,410 --> 00:37:10,920

anything to Define in the first place

987

00:37:14,870 --> 00:37:12,420

unquote

988

00:37:16,730 --> 00:37:14,880

and this is exactly the absurdist

989

00:37:19,730 --> 00:37:16,740

position that we find ourselves in again

990

00:37:22,069 --> 00:37:19,740

and again we inquire after the origins

991

00:37:23,870 --> 00:37:22,079

and nature of life and finding that our

992

00:37:25,790 --> 00:37:23,880

models aren't sufficient to explain it

993

00:37:28,069 --> 00:37:25,800

it is decided that it's not a question

994

00:37:29,930 --> 00:37:28,079

worth answering anyways anything that

995

00:37:32,030 --> 00:37:29,940

doesn't make sense about that answer is

996

00:37:34,180 --> 00:37:32,040

just in your head and if you question

997

00:37:52,270 --> 00:37:34,190

that you're the crazy one

998

00:37:52,280 --> 00:38:01,690

thank you

999

00:38:25,069 --> 00:38:11,530

[Music]

1000

00:38:25,079 --> 00:38:33,950

thank you

1001

00:38:38,390 --> 00:38:36,050

and if life is hard to explain within

1002

00:38:39,890 --> 00:38:38,400

our current Paradigm it has nothing on

1003

00:38:41,930 --> 00:38:39,900

what is perhaps the most baffling

1004

00:38:43,370 --> 00:38:41,940

mystery in all of science

1005

00:38:45,230 --> 00:38:43,380

consciousness

1006

00:38:47,450 --> 00:38:45,240

at least in the case of the origins of

1007

00:38:49,310 --> 00:38:47,460

life we may not know what lit the

1008

00:38:51,829 --> 00:38:49,320

initial spark but we have a pretty

1009

00:38:54,589 --> 00:38:51,839

decent idea of the biochemical processes

1010

00:38:56,450 --> 00:38:54,599

that make it work the discovery of DNA

1011

00:38:59,030 --> 00:38:56,460

in particular has helped us to literally

1012

00:39:01,490 --> 00:38:59,040

decode many of what used to be life's

1013

00:39:03,650 --> 00:39:01,500

most mysterious aspects with

1014

00:39:06,770 --> 00:39:03,660

Consciousness however we've made no such

1015

00:39:09,710 --> 00:39:06,780

progress in fact not only can scientists

1016

00:39:11,630 --> 00:39:09,720

not explain how Consciousness arose are

1017

00:39:13,790 --> 00:39:11,640

current scientific models don't even

1018

00:39:16,730 --> 00:39:13,800

allow for the existence of Consciousness

1019

00:39:19,790 --> 00:39:16,740

I'll say that again our current

1020

00:39:22,910 --> 00:39:19,800

scientific models don't even allow for

1021

00:39:25,730 --> 00:39:22,920

the existence of Consciousness and this

1022

00:39:27,950 --> 00:39:25,740

is a major problem in fact there is no

1023

00:39:30,650 --> 00:39:27,960

bigger problem in all of science because

1024

00:39:32,690 --> 00:39:30,660

all of science all of logic all of human

1025

00:39:35,210 --> 00:39:32,700

accomplishment and even our ability to

1026

00:39:37,630 --> 00:39:35,220

sit here and have this conversation is

1027

00:39:40,250 --> 00:39:37,640

only possible because of Consciousness

1028

00:39:42,170 --> 00:39:40,260

everything that you've ever felt seen

1029

00:39:43,550 --> 00:39:42,180

thought or experienced has been a result

1030

00:39:45,589 --> 00:39:43,560

of consciousness

1031

00:39:48,290 --> 00:39:45,599

in the words of famed theoretical

1032

00:39:50,569 --> 00:39:48,300

physicist Max Planck we cannot get

1033

00:39:52,310 --> 00:39:50,579

behind Consciousness everything that we

1034

00:39:54,890 --> 00:39:52,320

talk about everything that we regard is

1035

00:39:57,589 --> 00:39:54,900

existing postulates consciousness

1036

00:40:00,890 --> 00:39:57,599

and yet despite this self-evident and

1037

00:40:02,750 --> 00:40:00,900

entirely undeniable fact we don't have a

1038

00:40:05,569 --> 00:40:02,760

single way to account for Consciousness

1039

00:40:07,609 --> 00:40:05,579

with any of our current models the best

1040

00:40:08,810 --> 00:40:07,619

we've managed to do is to sort the

1041

00:40:11,510 --> 00:40:08,820

things that we don't know about

1042

00:40:13,310 --> 00:40:11,520

Consciousness into two buckets the easy

1043

00:40:15,470 --> 00:40:13,320

problem of Consciousness and the hard

1044

00:40:17,569 --> 00:40:15,480

problem of Consciousness the easy

1045

00:40:19,910 --> 00:40:17,579

problem of Consciousness has to do with

1046

00:40:22,370 --> 00:40:19,920

explaining how various phenomena related

1047

00:40:24,770 --> 00:40:22,380

to Consciousness work these phenomena

1048

00:40:26,690 --> 00:40:24,780

include things like the ability to

1049

00:40:29,390 --> 00:40:26,700

discriminate categorize and react to

1050

00:40:32,089 --> 00:40:29,400

environmental stimuli the integration of

1051
00:40:34,730 --> 00:40:32,099
information by a cognitive system the

1052
00:40:36,890 --> 00:40:34,740
reportability of mental States the

1053
00:40:39,589 --> 00:40:36,900
ability of a system to access its own

1054
00:40:42,829 --> 00:40:39,599
internal States the focus of attention

1055
00:40:44,630 --> 00:40:42,839
the deliberate control of behavior and

1056
00:40:47,569 --> 00:40:44,640
the difference between being asleep and

1057
00:40:50,210 --> 00:40:47,579
awake and we refer to this as the easy

1058
00:40:51,950 --> 00:40:50,220
problem of Consciousness because even

1059
00:40:54,109 --> 00:40:51,960
though we don't know how any of those

1060
00:40:55,609 --> 00:40:54,119
things work right now we are holding out

1061
00:40:57,829 --> 00:40:55,619
hope that some kind of a breakthrough

1062
00:40:59,450 --> 00:40:57,839
will do for Consciousness what DNA did

1063
00:41:01,370 --> 00:40:59,460

for the understanding of the processes

1064

00:41:03,290 --> 00:41:01,380

of life perhaps such a breakthrough

1065

00:41:05,210 --> 00:41:03,300

could provide us with some sort of a

1066

00:41:07,010 --> 00:41:05,220

Rosetta Stone that will show us how

1067

00:41:08,930 --> 00:41:07,020

these phenomena map to particular

1068

00:41:11,089 --> 00:41:08,940

structures and processes within the

1069

00:41:13,250 --> 00:41:11,099

brain it's not actually an easy problem

1070

00:41:15,710 --> 00:41:13,260

at all but it is at least easy in

1071

00:41:17,450 --> 00:41:15,720

comparison because we think we have some

1072

00:41:19,609 --> 00:41:17,460

prayer of solving it at some point in

1073

00:41:21,230 --> 00:41:19,619

the future with the hard problem of

1074

00:41:23,630 --> 00:41:21,240

Consciousness we have no such

1075

00:41:25,670 --> 00:41:23,640

expectation the hard problem of

1076

00:41:27,589 --> 00:41:25,680

Consciousness is a philosophical issue

1077

00:41:30,109 --> 00:41:27,599

that has perplexed Scholars for

1078

00:41:32,210 --> 00:41:30,119

centuries it is the question of how

1079

00:41:35,210 --> 00:41:32,220

subjective experience arises from

1080

00:41:37,670 --> 00:41:35,220

physical matter or more simply put why

1081

00:41:39,650 --> 00:41:37,680

and how our brains create consciousness

1082

00:41:41,510 --> 00:41:39,660

despite the significant advancements

1083

00:41:43,550 --> 00:41:41,520

made in the field of Neuroscience and

1084

00:41:45,950 --> 00:41:43,560

cognitive science we still don't have a

1085

00:41:47,329 --> 00:41:45,960

satisfactory answer to this question at

1086

00:41:48,890 --> 00:41:47,339

the heart of the hard problem of

1087

00:41:50,990 --> 00:41:48,900

Consciousness is the idea that

1088

00:41:53,270 --> 00:41:51,000

Consciousness is not reducible to

1089

00:41:55,069 --> 00:41:53,280

physical processes while scientists can

1090

00:41:57,650 --> 00:41:55,079

observe brain activity and measure

1091

00:42:00,109 --> 00:41:57,660

neural responses to stimuli these

1092

00:42:02,030 --> 00:42:00,119

observations do nothing to explain the

1093

00:42:04,910 --> 00:42:02,040

subjective experience of Consciousness

1094

00:42:06,890 --> 00:42:04,920

in other words science can describe some

1095

00:42:08,870 --> 00:42:06,900

of the neurological processes that occur

1096

00:42:11,930 --> 00:42:08,880

in your brain when you see a red apple

1097

00:42:14,270 --> 00:42:11,940

but it can't explain why you have an

1098

00:42:16,910 --> 00:42:14,280

experience of the Red Apple think about

1099

00:42:19,490 --> 00:42:16,920

it this way what actually happens when

1100

00:42:21,170 --> 00:42:19,500

you see the Red Apple the process of

1101
00:42:23,390 --> 00:42:21,180
seeing the Apple begins when light

1102
00:42:25,730 --> 00:42:23,400
bounces off of the apple and enters the

1103
00:42:27,710 --> 00:42:25,740
eye through the cornea the clear outer

1104
00:42:29,630 --> 00:42:27,720
covering of the eye after passing

1105
00:42:31,910 --> 00:42:29,640
through the cornea the light enters the

1106
00:42:33,950 --> 00:42:31,920
pupil the black circular opening in the

1107
00:42:35,630 --> 00:42:33,960
center of the eye the size of the pupil

1108
00:42:37,609 --> 00:42:35,640
can change depending on the amount of

1109
00:42:39,890 --> 00:42:37,619
Light present with the pupil constricted

1110
00:42:42,290 --> 00:42:39,900
in bright light and dilating in low

1111
00:42:44,270 --> 00:42:42,300
light conditions the light then passes

1112
00:42:46,310 --> 00:42:44,280
through the lens which adjusts its shape

1113
00:42:48,650 --> 00:42:46,320

to help Focus the light onto the retina

1114

00:42:51,290 --> 00:42:48,660

a layer of light sensitive cells at the

1115

00:42:53,569 --> 00:42:51,300

back of the eye the retina contains two

1116

00:42:55,790 --> 00:42:53,579

types of photoreceptor cells rods and

1117

00:42:57,710 --> 00:42:55,800

cones rods are more sensitive to light

1118

00:43:00,170 --> 00:42:57,720

and more responsible for our ability to

1119

00:43:02,210 --> 00:43:00,180

see in low light conditions while cones

1120

00:43:04,550 --> 00:43:02,220

are responsible for our color vision and

1121

00:43:06,230 --> 00:43:04,560

our ability to see fine detail when

1122

00:43:08,210 --> 00:43:06,240

light hits the photoreceptor cells in

1123

00:43:10,250 --> 00:43:08,220

the retina it triggers a chemical

1124

00:43:12,109 --> 00:43:10,260

reaction that produces an electrical

1125

00:43:14,329 --> 00:43:12,119

signal these signals are then

1126
00:43:16,010 --> 00:43:14,339
transmitted through the optic nerve to

1127
00:43:19,010 --> 00:43:16,020
the brain where they are processed and

1128
00:43:20,930 --> 00:43:19,020
interpreted as visual images the brain

1129
00:43:22,910 --> 00:43:20,940
then combines the signals from both eyes

1130
00:43:25,309 --> 00:43:22,920
to create a three-dimensional image of

1131
00:43:27,530 --> 00:43:25,319
the world this process known as

1132
00:43:29,210 --> 00:43:27,540
binocular vision allows us to perceive

1133
00:43:31,849 --> 00:43:29,220
depth and distance

1134
00:43:33,589 --> 00:43:31,859
and all of that is well and good you

1135
00:43:35,270 --> 00:43:33,599
might even be persuaded to think based

1136
00:43:37,550 --> 00:43:35,280
on all of that that we understand how

1137
00:43:41,150 --> 00:43:37,560
sight works but when you look at the Red

1138
00:43:43,309 --> 00:43:41,160

Apple where does that site occur you

1139

00:43:44,809 --> 00:43:43,319

aren't seeing with your eyes your eyes

1140

00:43:46,609 --> 00:43:44,819

are just acting like a switchboard

1141

00:43:48,829 --> 00:43:46,619

sending the signals to where they need

1142

00:43:50,569 --> 00:43:48,839

to go in your brain it's your brain that

1143

00:43:53,510 --> 00:43:50,579

then translates that signal into sight

1144

00:43:55,730 --> 00:43:53,520

and strangely these visual impulses are

1145

00:43:57,829 --> 00:43:55,740

translated into what you see in the

1146

00:44:00,230 --> 00:43:57,839

occipital lobe which is in the back of

1147

00:44:02,210 --> 00:44:00,240

your head nowhere near your eyes so

1148

00:44:03,950 --> 00:44:02,220

where is it that your experience of

1149

00:44:05,630 --> 00:44:03,960

sight takes place

1150

00:44:08,089 --> 00:44:05,640

maybe you've never thought about it

1151

00:44:09,710 --> 00:44:08,099

before most people haven't our

1152

00:44:11,870 --> 00:44:09,720

subjective experience is the most

1153

00:44:14,450 --> 00:44:11,880

fundamental element of every aspect of

1154

00:44:16,309 --> 00:44:14,460

Our Lives from birth to death and so it

1155

00:44:18,050 --> 00:44:16,319

takes a bit of an intuitive leap to be

1156

00:44:19,849 --> 00:44:18,060

able to zoom out and begin to ask

1157

00:44:21,710 --> 00:44:19,859

questions about the nature of your

1158

00:44:23,990 --> 00:44:21,720

experience and what it means

1159

00:44:26,270 --> 00:44:24,000

we have no way to explain the

1160

00:44:28,910 --> 00:44:26,280

interiority and the subjective nature of

1161

00:44:31,010 --> 00:44:28,920

experience we can't explain why it is

1162

00:44:33,470 --> 00:44:31,020

that you have a sense of being you and I

1163

00:44:35,210 --> 00:44:33,480

have a sense of being me even my cat

1164

00:44:37,670 --> 00:44:35,220

seems to have her own unique lived

1165

00:44:39,410 --> 00:44:37,680

experience if we are nothing more than

1166

00:44:42,050 --> 00:44:39,420

complex Arrangements of physical matter

1167

00:44:43,970 --> 00:44:42,060

we have no way of explaining how it is

1168

00:44:46,790 --> 00:44:43,980

that matter when arranged in particular

1169

00:44:48,530 --> 00:44:46,800

ways takes on the quality of being aware

1170

00:44:50,690 --> 00:44:48,540

of itself and wondering what it will

1171

00:44:52,490 --> 00:44:50,700

have for dinner and the fact that we

1172

00:44:54,290 --> 00:44:52,500

each have our own subjective experience

1173

00:44:56,510 --> 00:44:54,300

is what makes this problem even more

1174

00:44:58,190 --> 00:44:56,520

difficult to solve if you've ever

1175

00:45:00,470 --> 00:44:58,200

wondered to yourself when you look at

1176

00:45:02,809 --> 00:45:00,480

the sky if the blue you're seeing is the

1177

00:45:04,730 --> 00:45:02,819

same as the blue someone else sees then

1178

00:45:07,430 --> 00:45:04,740

you understand the Crux of the issue

1179

00:45:08,930 --> 00:45:07,440

when we talk about the color blue we

1180

00:45:11,089 --> 00:45:08,940

assume that we're talking about the same

1181

00:45:12,950 --> 00:45:11,099

thing but because I have no way to

1182

00:45:15,230 --> 00:45:12,960

access your personal subjective

1183

00:45:17,690 --> 00:45:15,240

experience of the color blue and you

1184

00:45:19,730 --> 00:45:17,700

have no way to access mine we will spend

1185

00:45:22,250 --> 00:45:19,740

our entire lives talking about the color

1186

00:45:24,230 --> 00:45:22,260

blue without ever knowing if talking

1187

00:45:26,450 --> 00:45:24,240

about the same experience

1188

00:45:28,670 --> 00:45:26,460

and that's what's so baffling about the

1189

00:45:30,650 --> 00:45:28,680

hard problem of Consciousness because we

1190

00:45:32,270 --> 00:45:30,660

are conscious intelligent beings we're

1191

00:45:35,030 --> 00:45:32,280

able to do things that would otherwise

1192

00:45:37,010 --> 00:45:35,040

be impossible we can go to the Moon we

1193

00:45:38,630 --> 00:45:37,020

can take an x-ray of a broken bone and

1194

00:45:41,089 --> 00:45:38,640

talk to friends on the other side of the

1195

00:45:43,130 --> 00:45:41,099

world with the push of a button and yet

1196

00:45:45,950 --> 00:45:43,140

although all of this is only possible

1197

00:45:48,410 --> 00:45:45,960

because of our conscious Minds we have

1198

00:45:51,230 --> 00:45:48,420

absolutely no idea what Consciousness is

1199

00:45:53,150 --> 00:45:51,240

or how it works it's actually kind of

1200

00:45:54,950 --> 00:45:53,160

stunning when you think about it and the

1201
00:45:57,650 --> 00:45:54,960
Mystery concerning Consciousness doesn't

1202
00:45:59,690 --> 00:45:57,660
stop there as we've discussed previously

1203
00:46:01,609 --> 00:45:59,700
about a hundred years ago quantum

1204
00:46:04,430 --> 00:46:01,619
mechanics delivered such a shocking

1205
00:46:06,650 --> 00:46:04,440
indecisive blow not just to physics but

1206
00:46:09,230 --> 00:46:06,660
to everything about how we conceptualize

1207
00:46:10,550 --> 00:46:09,240
the world that a century later we still

1208
00:46:12,950 --> 00:46:10,560
haven't figured out how to put the

1209
00:46:14,809 --> 00:46:12,960
pieces back together and at the center

1210
00:46:18,050 --> 00:46:14,819
of the mystery that took a wrecking ball

1211
00:46:19,550 --> 00:46:18,060
to Newtonian physics is consciousness if

1212
00:46:21,770 --> 00:46:19,560
you want to do a deeper dive on this

1213
00:46:23,510 --> 00:46:21,780

check out the first half of episode 5

1214

00:46:26,470 --> 00:46:23,520

which deals with the interdimensional

1215

00:46:29,150 --> 00:46:26,480

hypothesis but here's a quick refresher

1216

00:46:30,890 --> 00:46:29,160

the reason that quantum mechanics breaks

1217

00:46:32,990 --> 00:46:30,900

our understanding of reality can be

1218

00:46:34,970 --> 00:46:33,000

summed up in a famous experiment called

1219

00:46:37,309 --> 00:46:34,980

the double slit experiment

1220

00:46:39,230 --> 00:46:37,319

so imagine you're in a lab and you have

1221

00:46:41,270 --> 00:46:39,240

a beam of photons that you can point at

1222

00:46:44,089 --> 00:46:41,280

a screen that has two vertical parallel

1223

00:46:46,010 --> 00:46:44,099

slits cut into it when that beam passes

1224

00:46:47,870 --> 00:46:46,020

through the slits and hits a screen on

1225

00:46:49,790 --> 00:46:47,880

the wall what you'll see is an

1226

00:46:52,190 --> 00:46:49,800

alternating pattern of light and dark

1227

00:46:53,870 --> 00:46:52,200

called an interference pattern the

1228

00:46:56,089 --> 00:46:53,880

reason you get an interference pattern

1229

00:46:57,950 --> 00:46:56,099

is because waves of light work in the

1230

00:47:00,530 --> 00:46:57,960

same way as waves in a pool of water

1231

00:47:02,750 --> 00:47:00,540

when you drop a stone into a pool of

1232

00:47:05,089 --> 00:47:02,760

water ripples form in concentric circles

1233

00:47:06,890 --> 00:47:05,099

that move outward if you drop another

1234

00:47:09,290 --> 00:47:06,900

Stone in the pool next to it another

1235

00:47:11,510 --> 00:47:09,300

wave pattern will form and when those

1236

00:47:13,670 --> 00:47:11,520

waves run into each other in some places

1237

00:47:15,710 --> 00:47:13,680

the crest of one wave collides with the

1238

00:47:18,230 --> 00:47:15,720

trough of another wave causing those

1239

00:47:20,030 --> 00:47:18,240

waves to cancel each other out this same

1240

00:47:21,710 --> 00:47:20,040

sort of process results in the

1241

00:47:24,230 --> 00:47:21,720

alternating pattern that you can see on

1242

00:47:26,510 --> 00:47:24,240

the wall what's strange is that even if

1243

00:47:28,609 --> 00:47:26,520

you stop the beam of photons and you

1244

00:47:30,770 --> 00:47:28,619

only shoot one Photon at a time at the

1245

00:47:32,390 --> 00:47:30,780

screen with the double slits waiting for

1246

00:47:34,730 --> 00:47:32,400

each Photon to hit the screen on the

1247

00:47:36,589 --> 00:47:34,740

wall before firing the next one you will

1248

00:47:39,530 --> 00:47:36,599

still will get the same interference

1249

00:47:42,470 --> 00:47:39,540

pattern which to be clear is completely

1250

00:47:43,730 --> 00:47:42,480

mind melting how are photons interfering

1251

00:47:45,230 --> 00:47:43,740

with each other to create an

1252

00:47:47,510 --> 00:47:45,240

interference pattern if we're only

1253

00:47:49,609 --> 00:47:47,520

sending one Photon through the slits at

1254

00:47:51,829 --> 00:47:49,619

a time but the insanity doesn't stop

1255

00:47:54,170 --> 00:47:51,839

there there's a second half to the

1256

00:47:56,030 --> 00:47:54,180

double slit experiment in this part of

1257

00:47:58,309 --> 00:47:56,040

the experiment we introduce a device

1258

00:48:00,530 --> 00:47:58,319

that tracks which of the two slits the

1259

00:48:02,990 --> 00:48:00,540

photons go through and what we find when

1260

00:48:05,569 --> 00:48:03,000

we do the experiment again firing one

1261

00:48:08,329 --> 00:48:05,579

Photon of the screen at a time is it the

1262

00:48:10,250 --> 00:48:08,339

interference pattern is now gone the

1263

00:48:12,470 --> 00:48:10,260

photons now form a pattern on the wall

1264

00:48:14,990 --> 00:48:12,480

in two straight lines corresponding with

1265

00:48:17,089 --> 00:48:15,000

the two slits on the screen so what is

1266

00:48:20,030 --> 00:48:17,099

going on here the truth is we don't

1267

00:48:21,950 --> 00:48:20,040

really know what we do know is this if

1268

00:48:23,690 --> 00:48:21,960

we don't look to see which of the slits

1269

00:48:25,550 --> 00:48:23,700

the photons went through they behave

1270

00:48:27,470 --> 00:48:25,560

like a wave and go through both of the

1271

00:48:30,230 --> 00:48:27,480

slits at once and we get an interference

1272

00:48:32,030 --> 00:48:30,240

pattern when we do look to see which of

1273

00:48:33,950 --> 00:48:32,040

the slits the photons went through they

1274

00:48:36,170 --> 00:48:33,960

behave like a particle and only go

1275

00:48:38,450 --> 00:48:36,180

through one slit or the other so we

1276

00:48:39,950 --> 00:48:38,460

don't get an interference pattern and

1277

00:48:42,290 --> 00:48:39,960

although this experiment has been

1278

00:48:44,690 --> 00:48:42,300

replicated more times and through more

1279

00:48:47,089 --> 00:48:44,700

permutations than almost any other this

1280

00:48:49,190 --> 00:48:47,099

is what happens every time and the

1281

00:48:51,950 --> 00:48:49,200

inevitable conclusion is that the mere

1282

00:48:54,650 --> 00:48:51,960

Act of observing the photon Alters Its

1283

00:48:56,510 --> 00:48:54,660

Behavior the problem is that we have

1284

00:48:58,730 --> 00:48:56,520

nothing within our current scientific

1285

00:49:01,309 --> 00:48:58,740

models and paradigms that can help us to

1286

00:49:03,170 --> 00:49:01,319

understand how it can possibly be true

1287

00:49:04,550 --> 00:49:03,180

that subatomic particles behave as

1288

00:49:07,550 --> 00:49:04,560

though they respond to conscious thought

1289

00:49:09,290 --> 00:49:07,560

and yet they do the specifics of quantum

1290

00:49:11,690 --> 00:49:09,300

mechanics despite being seemingly

1291

00:49:13,910 --> 00:49:11,700

impossible are extremely well documented

1292

00:49:15,530 --> 00:49:13,920

and we've used what we know of quantum

1293

00:49:18,410 --> 00:49:15,540

mechanics to make everything from

1294

00:49:21,230 --> 00:49:18,420

electron microscopes to lasers to atomic

1295

00:49:23,210 --> 00:49:21,240

clocks to quantum computers so while we

1296

00:49:25,730 --> 00:49:23,220

can't explain how quantum mechanics

1297

00:49:27,230 --> 00:49:25,740

works we know that it does work and we

1298

00:49:29,450 --> 00:49:27,240

can use it to understand and predict

1299

00:49:32,150 --> 00:49:29,460

other things to an extremely high degree

1300

00:49:34,250 --> 00:49:32,160

of accuracy so we find ourselves in

1301

00:49:36,290 --> 00:49:34,260

quite a pickle we're in a position where

1302

00:49:38,930 --> 00:49:36,300

we have no rounds to accept the obvious

1303

00:49:40,809 --> 00:49:38,940

conclusions of quantum mechanics and yet

1304

00:49:43,490 --> 00:49:40,819

we absolutely can't dismiss them either

1305

00:49:45,650 --> 00:49:43,500

Nobel physicist Richard Feynman once

1306

00:49:47,809 --> 00:49:45,660

said I think it's safe to say that no

1307

00:49:49,370 --> 00:49:47,819

one understands quantum mechanics do not

1308

00:49:51,890 --> 00:49:49,380

keep saying to yourself if you can

1309

00:49:54,050 --> 00:49:51,900

possibly avoid it but how can it be like

1310

00:49:56,329 --> 00:49:54,060

that because you will go down the drain

1311

00:49:58,609 --> 00:49:56,339

in a blind alley from which nobody has

1312

00:50:00,890 --> 00:49:58,619

yet escaped and this seems to represent

1313

00:50:02,270 --> 00:50:00,900

the thoughts of mainstream Academia in

1314

00:50:04,910 --> 00:50:02,280

general when it comes to quantum

1315

00:50:06,290 --> 00:50:04,920

mechanics we recognize that particles

1316

00:50:08,390 --> 00:50:06,300

behave as though they respond to

1317

00:50:09,890 --> 00:50:08,400

conscious thought but in our current

1318

00:50:12,589 --> 00:50:09,900

Paradigm we've decided that can't

1319

00:50:14,210 --> 00:50:12,599

possibly be right so instead we've

1320

00:50:15,650 --> 00:50:14,220

proceeded for the last century either

1321

00:50:18,349 --> 00:50:15,660

under the assumption that quantum

1322

00:50:20,150 --> 00:50:18,359

mechanics is entirely inexplicable or

1323

00:50:22,430 --> 00:50:20,160

we've come up with elaborate and

1324

00:50:24,829 --> 00:50:22,440

entirely unverifiable explanations to

1325

00:50:26,569 --> 00:50:24,839

attempt to account for it within these

1326

00:50:28,490 --> 00:50:26,579

two camps you'll find the two most

1327

00:50:30,710 --> 00:50:28,500

popular theories for the explanation of

1328

00:50:33,470 --> 00:50:30,720

quantum mechanics both of which have

1329

00:50:35,569 --> 00:50:33,480

major flaws the first is what is known

1330

00:50:38,030 --> 00:50:35,579

as the Copenhagen interpretation which

1331

00:50:41,089 --> 00:50:38,040

was introduced by Fame physicists Neil

1332

00:50:43,250 --> 00:50:41,099

Bohr and Verner Heisenberg in the 1920s

1333

00:50:45,410 --> 00:50:43,260

this is the version that is most often

1334

00:50:47,510 --> 00:50:45,420

taught in schools according to the

1335

00:50:49,250 --> 00:50:47,520

Copenhagen interpretation we can explain

1336

00:50:51,470 --> 00:50:49,260

the double slit experiment by

1337

00:50:53,750 --> 00:50:51,480

understanding that the photon exists in

1338

00:50:56,030 --> 00:50:53,760

a blurry and determinate State as a wave

1339

00:50:58,250 --> 00:50:56,040

function of probability it doesn't

1340

00:51:00,710 --> 00:50:58,260

actually have a definite position until

1341

00:51:03,230 --> 00:51:00,720

its wave function collapses something

1342

00:51:05,569 --> 00:51:03,240

that only happens when it is observed so

1343

00:51:07,910 --> 00:51:05,579

basically the conclusion here is that

1344

00:51:09,890 --> 00:51:07,920

the photons actually are responding to

1345

00:51:11,530 --> 00:51:09,900

conscious thought but there are two

1346

00:51:14,450 --> 00:51:11,540

major issues with this interpretation

1347

00:51:16,609 --> 00:51:14,460

the first is that we have no way to

1348

00:51:18,650 --> 00:51:16,619

explain how that happens and the second

1349

00:51:20,329 --> 00:51:18,660

is that if it's true it breaks

1350

00:51:22,730 --> 00:51:20,339

everything that we know about the nature

1351
00:51:24,109 --> 00:51:22,740
of our reality you know just a couple of

1352
00:51:26,270 --> 00:51:24,119
minor issues

1353
00:51:28,430 --> 00:51:26,280
because the thing is that literally

1354
00:51:31,130 --> 00:51:28,440
everything that we interact with is made

1355
00:51:33,290 --> 00:51:31,140
up of subatomic particles so if the

1356
00:51:35,150 --> 00:51:33,300
Copenhagen interpretation is correct and

1357
00:51:37,309 --> 00:51:35,160
we take the double slit experiment at

1358
00:51:39,049 --> 00:51:37,319
face value and accept that a photon

1359
00:51:41,870 --> 00:51:39,059
doesn't have a specific position until

1360
00:51:44,750 --> 00:51:41,880
it's observed then the clear implication

1361
00:51:47,030 --> 00:51:44,760
is that nothing has a specific location

1362
00:51:48,470 --> 00:51:47,040
until it is observed and that just

1363
00:51:50,210 --> 00:51:48,480

simply flies in the face of everything

1364

00:51:52,549 --> 00:51:50,220

we've come to believe about the nature

1365

00:51:54,049 --> 00:51:52,559

of our reality and so there are those

1366

00:51:55,490 --> 00:51:54,059

who simply throw up their hands and say

1367

00:51:57,950 --> 00:51:55,500

that quantum mechanics defies

1368

00:51:59,750 --> 00:51:57,960

explanation in an attempt to save

1369

00:52:01,910 --> 00:51:59,760

physics from the implications of quantum

1370

00:52:04,069 --> 00:52:01,920

mechanics other interpretations have

1371

00:52:06,309 --> 00:52:04,079

been introduced the most popular of

1372

00:52:09,890 --> 00:52:06,319

which is the many worlds interpretation

1373

00:52:11,809 --> 00:52:09,900

developed by Hugh Everett in 1957 the

1374

00:52:13,910 --> 00:52:11,819

many worlds interpretation states that

1375

00:52:16,370 --> 00:52:13,920

the wave function is the true nature of

1376
00:52:19,370 --> 00:52:16,380
reality and therefore it never actually

1377
00:52:21,290 --> 00:52:19,380
collapses it only appears to collapse

1378
00:52:23,150 --> 00:52:21,300
because we can only see one of a

1379
00:52:25,549 --> 00:52:23,160
potentially infinite number of outcomes

1380
00:52:28,250 --> 00:52:25,559
when the OB server looks to see which

1381
00:52:30,530 --> 00:52:28,260
slit the photons go through they see

1382
00:52:33,530 --> 00:52:30,540
just one possible outcome because

1383
00:52:35,630 --> 00:52:33,540
they're only aware of one world but in

1384
00:52:38,329 --> 00:52:35,640
reality there are many potentially

1385
00:52:40,430 --> 00:52:38,339
infinite worlds in which every possible

1386
00:52:43,069 --> 00:52:40,440
Quantum probability gets a chance to

1387
00:52:44,870 --> 00:52:43,079
play itself out and every world is

1388
00:52:47,930 --> 00:52:44,880

equally real to the people living in it

1389

00:52:49,549 --> 00:52:47,940

so in your world you see one outcome but

1390

00:52:52,069 --> 00:52:49,559

there is a world that exists for each

1391

00:52:54,230 --> 00:52:52,079

and every possible outcome and in each

1392

00:52:57,049 --> 00:52:54,240

of those worlds you are experiencing

1393

00:52:59,390 --> 00:52:57,059

only that outcome and if that hurts your

1394

00:53:02,450 --> 00:52:59,400

brain consider that the photon isn't the

1395

00:53:04,250 --> 00:53:02,460

only Quantum system in this scenario you

1396

00:53:07,130 --> 00:53:04,260

as the Observer are part of the quantum

1397

00:53:09,410 --> 00:53:07,140

system as well so each of your actions

1398

00:53:11,510 --> 00:53:09,420

and decisions plays out in the same way

1399

00:53:13,730 --> 00:53:11,520

with every permutation of every

1400

00:53:15,349 --> 00:53:13,740

possibility playing out somewhere out

1401

00:53:18,170 --> 00:53:15,359

there in a world that looks a lot like

1402

00:53:20,089 --> 00:53:18,180

this one but isn't the basic premise of

1403

00:53:22,069 --> 00:53:20,099

the many worlds interpretation is that

1404

00:53:24,950 --> 00:53:22,079

everything that can happen does happen

1405

00:53:27,349 --> 00:53:24,960

and as we discussed earlier I take issue

1406

00:53:29,510 --> 00:53:27,359

with this approach first of all we don't

1407

00:53:32,270 --> 00:53:29,520

have any proof that either Infinity or

1408

00:53:34,309 --> 00:53:32,280

other dimensions actually exist they

1409

00:53:36,589 --> 00:53:34,319

might but we don't have one shred of

1410

00:53:38,450 --> 00:53:36,599

tangible proof for that and when we are

1411

00:53:40,250 --> 00:53:38,460

backed into a corner we can't just pull

1412

00:53:42,710 --> 00:53:40,260

the escape hatch into Infinite other

1413

00:53:44,630 --> 00:53:42,720

dimensions and call that an answer one

1414

00:53:46,430 --> 00:53:44,640

of the most problematic elements of the

1415

00:53:49,370 --> 00:53:46,440

many worlds interpretation is its

1416

00:53:50,930 --> 00:53:49,380

implications for free will because with

1417

00:53:52,790 --> 00:53:50,940

this Theory it's not just that

1418

00:53:55,670 --> 00:53:52,800

everything that can happen does happen

1419

00:53:58,010 --> 00:53:55,680

but that everything that can happen has

1420

00:54:01,549 --> 00:53:58,020

to happen and when taken to that extreme

1421

00:54:04,309 --> 00:54:01,559

an infinite reality is inherently a

1422

00:54:06,349 --> 00:54:04,319

deterministic reality and any illusion

1423

00:54:08,390 --> 00:54:06,359

that we have of making a choice is

1424

00:54:10,730 --> 00:54:08,400

simply the forced perspective of only

1425

00:54:13,549 --> 00:54:10,740

having awareness of one reality at a

1426

00:54:15,650 --> 00:54:13,559

time and that's unsettling I don't think

1427

00:54:18,530 --> 00:54:15,660

that anyone likes the idea of being just

1428

00:54:20,510 --> 00:54:18,540

another Cog in a cosmic wheel we want to

1429

00:54:22,849 --> 00:54:20,520

believe that we have choices and that we

1430

00:54:25,370 --> 00:54:22,859

can shape our own destiny or at the very

1431

00:54:26,870 --> 00:54:25,380

least that what we do matters and I

1432

00:54:29,210 --> 00:54:26,880

personally don't think it's just the

1433

00:54:31,910 --> 00:54:29,220

protestations of our fragile human egos

1434

00:54:34,130 --> 00:54:31,920

that makes us feel this way we all seem

1435

00:54:36,950 --> 00:54:34,140

to have a deep sense that Free Will is

1436

00:54:38,630 --> 00:54:36,960

intrinsic to our Humanity it's hard to

1437

00:54:40,430 --> 00:54:38,640

fully Embrace a theory that deals so

1438

00:54:43,190 --> 00:54:40,440

dismissively with something that seems

1439

00:54:46,430 --> 00:54:43,200

so foundational to our lived experience

1440

00:54:47,930 --> 00:54:46,440

and sure I can admit that just because I

1441

00:54:50,030 --> 00:54:47,940

don't like the idea that we might not

1442

00:54:53,150 --> 00:54:50,040

have free will doesn't mean that it

1443

00:54:54,770 --> 00:54:53,160

isn't true it could be but I'm deeply

1444

00:54:56,150 --> 00:54:54,780

suspicious of any framework that

1445

00:54:58,790 --> 00:54:56,160

attempts to solve our deepest

1446

00:55:00,650 --> 00:54:58,800

existential questions by insisting that

1447

00:55:03,290 --> 00:55:00,660

some of the most self-evident realities

1448

00:55:05,450 --> 00:55:03,300

that we encounter like the existence of

1449

00:55:06,890 --> 00:55:05,460

free will or even the existence of life

1450

00:55:09,670 --> 00:55:06,900

is something fundamentally different

1451

00:55:11,750 --> 00:55:09,680

than inert matter are mere illusions

1452

00:55:13,910 --> 00:55:11,760

especially when there is not a single

1453

00:55:16,849 --> 00:55:13,920

shred of tangible evidence to back up

1454

00:55:18,770 --> 00:55:16,859

those claims and especially not when

1455

00:55:20,630 --> 00:55:18,780

it's done in an effort to prop up a

1456

00:55:23,210 --> 00:55:20,640

failing Theory that's already shot

1457

00:55:24,829 --> 00:55:23,220

through with theoretical bullet holes

1458

00:55:26,510 --> 00:55:24,839

and it's not just the issue of

1459

00:55:28,430 --> 00:55:26,520

Consciousness that makes quantum

1460

00:55:31,370 --> 00:55:28,440

mechanics incompatible with our current

1461

00:55:33,829 --> 00:55:31,380

paradigms quantum mechanics also manages

1462

00:55:36,109 --> 00:55:33,839

to break the concept of space-time in

1463

00:55:38,089 --> 00:55:36,119

such a profound way that it's led many

1464

00:55:40,130 --> 00:55:38,099

scientists to speculate that the view of

1465

00:55:42,950 --> 00:55:40,140

space-time is the fundamental fabric of

1466

00:55:45,109 --> 00:55:42,960

reality is ultimately doomed the core

1467

00:55:47,569 --> 00:55:45,119

problem with space-time arises from the

1468

00:55:49,970 --> 00:55:47,579

conflict between general relativity and

1469

00:55:52,309 --> 00:55:49,980

quantum mechanics the two most

1470

00:55:55,010 --> 00:55:52,319

successful theories in all of physics

1471

00:55:57,230 --> 00:55:55,020

general relativity describes gravity as

1472

00:55:58,849 --> 00:55:57,240

the curvature of space-time while

1473

00:56:00,890 --> 00:55:58,859

quantum mechanics deals with the

1474

00:56:02,329 --> 00:56:00,900

behavior of particles and Fields at the

1475

00:56:04,490 --> 00:56:02,339

microscopic level

1476

00:56:06,589 --> 00:56:04,500

however when these two theories are

1477

00:56:08,750 --> 00:56:06,599

combined they give rise to mathematical

1478

00:56:10,730 --> 00:56:08,760

inconsistencies and contradictions that

1479

00:56:11,870 --> 00:56:10,740

suggest the breakdown of the space-time

1480

00:56:13,730 --> 00:56:11,880

concept

1481

00:56:15,710 --> 00:56:13,740

one of the most major issues with

1482

00:56:17,690 --> 00:56:15,720

space-time is that it assumes that the

1483

00:56:19,970 --> 00:56:17,700

fabric of the universe is continuous and

1484

00:56:22,430 --> 00:56:19,980

smooth which is not consistent with the

1485

00:56:24,349 --> 00:56:22,440

quantum nature of reality in quantum

1486

00:56:26,329 --> 00:56:24,359

mechanics particles and fields are

1487

00:56:28,670 --> 00:56:26,339

described in terms of discrete packets

1488

00:56:30,950 --> 00:56:28,680

of energy and their behavior is subject

1489

00:56:32,630 --> 00:56:30,960

to the uncertainty principle which makes

1490

00:56:35,630 --> 00:56:32,640

it impossible to know both their

1491

00:56:37,549 --> 00:56:35,640

position and momentum precisely this

1492

00:56:39,710 --> 00:56:37,559

means that space-time cannot be a

1493

00:56:41,930 --> 00:56:39,720

continuous fabric but must be made of

1494

00:56:44,809 --> 00:56:41,940

discrete units or quanta

1495

00:56:46,370 --> 00:56:44,819

moreover the space-time concept is also

1496

00:56:48,349 --> 00:56:46,380

challenged by the existence of

1497

00:56:50,450 --> 00:56:48,359

singularities such as those found in

1498

00:56:52,849 --> 00:56:50,460

black holes according to general

1499

00:56:55,430 --> 00:56:52,859

relativity the gravitational force of a

1500

00:56:57,470 --> 00:56:55,440

black hole is so strong that it warps

1501
00:57:00,109 --> 00:56:57,480
the fabric of space-time to the point of

1502
00:57:01,849 --> 00:57:00,119
becoming infinitely curved leading to a

1503
00:57:04,730 --> 00:57:01,859
singularity where the laws of physics

1504
00:57:07,670 --> 00:57:04,740
break down this suggests that space-time

1505
00:57:09,770 --> 00:57:07,680
cannot be a fundamental concept but

1506
00:57:12,230 --> 00:57:09,780
rather a phenomenon that emerges from

1507
00:57:15,770 --> 00:57:12,240
the behavior of matter and energy

1508
00:57:17,210 --> 00:57:15,780
so once again we find ourselves in a

1509
00:57:19,609 --> 00:57:17,220
place where we are confronted with the

1510
00:57:21,710 --> 00:57:19,619
walls of our known reality and the hint

1511
00:57:24,890 --> 00:57:21,720
that something else might lie Beyond it

1512
00:57:27,349 --> 00:57:24,900
after all what happens inside of a black

1513
00:57:29,270 --> 00:57:27,359

hole when space-time breaks down and if

1514

00:57:31,609 --> 00:57:29,280

space-time is just an emergent property

1515

00:57:33,650 --> 00:57:31,619

of matter and energy doesn't that imply

1516

00:57:36,770 --> 00:57:33,660

the existence of some deeper reality

1517

00:57:38,930 --> 00:57:36,780

beneath space-time I could go on for

1518

00:57:41,210 --> 00:57:38,940

countless hours dismantling the official

1519

00:57:42,950 --> 00:57:41,220

story of everything it could be its own

1520

00:57:44,930 --> 00:57:42,960

podcast called everything you know is

1521

00:57:47,270 --> 00:57:44,940

wrong and I don't think we'd ever run

1522

00:57:48,890 --> 00:57:47,280

out of topics for discussion and even

1523

00:57:50,990 --> 00:57:48,900

with the topics that we have covered

1524

00:57:53,390 --> 00:57:51,000

just know that we've only scratched the

1525

00:57:55,670 --> 00:57:53,400

surface there is so much more that can

1526
00:57:57,410 --> 00:57:55,680
be said I'll include a reading list for

1527
00:57:58,970 --> 00:57:57,420
this episode so that you can dive deeper

1528
00:58:01,010 --> 00:57:58,980
into any of the topics if you're

1529
00:58:02,510 --> 00:58:01,020
interested in learning more yet even

1530
00:58:04,130 --> 00:58:02,520
though we've only just scratched the

1531
00:58:05,690 --> 00:58:04,140
surface I think that what we have

1532
00:58:07,849 --> 00:58:05,700
covered is more than enough to

1533
00:58:10,069 --> 00:58:07,859
compellingly make the case that our most

1534
00:58:12,890 --> 00:58:10,079
fundamental meaning making models are

1535
00:58:15,230 --> 00:58:12,900
irretrievably flawed so let let's do a

1536
00:58:17,030 --> 00:58:15,240
quick recap we don't know what caused

1537
00:58:19,250 --> 00:58:17,040
the big bang and the theory of the Big

1538
00:58:21,170 --> 00:58:19,260

Bang does nothing itself to explain the

1539

00:58:22,910 --> 00:58:21,180

origins of the universe only what

1540

00:58:25,309 --> 00:58:22,920

happened in the immediate aftermath of

1541

00:58:27,109 --> 00:58:25,319

being formed and even then we can only

1542

00:58:30,230 --> 00:58:27,119

account for four percent of what makes

1543

00:58:31,609 --> 00:58:30,240

up the universe the other 96 remains a

1544

00:58:33,710 --> 00:58:31,619

mystery to us

1545

00:58:36,349 --> 00:58:33,720

we don't know how the universe against

1546

00:58:38,990 --> 00:58:36,359

astronomically impossible odds became so

1547

00:58:40,849 --> 00:58:39,000

perfectly well suited to life and even

1548

00:58:43,910 --> 00:58:40,859

in the context of this perfectly tuned

1549

00:58:45,770 --> 00:58:43,920

Goldilocks Universe we have no idea how

1550

00:58:48,470 --> 00:58:45,780

it is that inert matters somehow gave

1551

00:58:49,970 --> 00:58:48,480

rise to life and actually now that you

1552

00:58:52,010 --> 00:58:49,980

mention it we don't even know what life

1553

00:58:54,109 --> 00:58:52,020

is although its existence is

1554

00:58:56,089 --> 00:58:54,119

self-evident we can't come up with a

1555

00:58:58,309 --> 00:58:56,099

single working definition to describe

1556

00:59:00,829 --> 00:58:58,319

what life is and what makes it distinct

1557

00:59:02,510 --> 00:59:00,839

from anything else in the universe we

1558

00:59:04,730 --> 00:59:02,520

also don't know how Consciousness arose

1559

00:59:07,069 --> 00:59:04,740

our scientific models don't even allow

1560

00:59:08,750 --> 00:59:07,079

for the existence of Consciousness we

1561

00:59:10,970 --> 00:59:08,760

have no way to account for the

1562

00:59:12,530 --> 00:59:10,980

experience of Consciousness and although

1563

00:59:15,049 --> 00:59:12,540

it is the result of our Consciousness

1564

00:59:16,549 --> 00:59:15,059

that we are able to know anything we

1565

00:59:18,710 --> 00:59:16,559

find that we are unable to say much

1566

00:59:19,910 --> 00:59:18,720

about Consciousness itself with any kind

1567

00:59:22,430 --> 00:59:19,920

of certainty

1568

00:59:24,049 --> 00:59:22,440

we have known for a century that quantum

1569

00:59:26,809 --> 00:59:24,059

mechanics breaks all of our existing

1570

00:59:28,970 --> 00:59:26,819

models the undeniable implication of the

1571

00:59:31,010 --> 00:59:28,980

double slit experiment is that subatomic

1572

00:59:33,589 --> 00:59:31,020

particles and therefore reality itself

1573

00:59:35,270 --> 00:59:33,599

responds to conscious thought but

1574

00:59:36,950 --> 00:59:35,280

because we've decided that can't be true

1575

00:59:38,630 --> 00:59:36,960

scientists generally throw up their

1576

00:59:41,210 --> 00:59:38,640

hands and say that quantum mechanics is

1577

00:59:43,069 --> 00:59:41,220

somehow inexplicable we deny the clear

1578

00:59:45,289 --> 00:59:43,079

implications of quantum mechanics even

1579

00:59:47,270 --> 00:59:45,299

as we leverage the exact properties that

1580

00:59:48,650 --> 00:59:47,280

we deny to create Next Generation

1581

00:59:50,329 --> 00:59:48,660

Technologies

1582

00:59:52,490 --> 00:59:50,339

we've discovered through quantum

1583

00:59:54,170 --> 00:59:52,500

mechanics that space-time which we have

1584

00:59:56,450 --> 00:59:54,180

largely regarded to be the fabric of

1585

00:59:58,910 --> 00:59:56,460

reality is actually an emergent

1586

01:00:01,670 --> 00:59:58,920

phenomenon which implies a deeper more

1587

01:00:04,309 --> 01:00:01,680

fundamental reality and most damning of

1588

01:00:06,349 --> 01:00:04,319

all is this the fact that we are asking

1589

01:00:08,450 --> 01:00:06,359

these questions presupposes the

1590

01:00:11,329 --> 01:00:08,460

existence not just of the universe but

1591

01:00:13,670 --> 01:00:11,339

of life and Consciousness and yet our

1592

01:00:16,190 --> 01:00:13,680

most basic meaning making models can't

1593

01:00:17,990 --> 01:00:16,200

account for any of those things they

1594

01:00:20,450 --> 01:00:18,000

don't even attempt to Grapple with them

1595

01:00:22,730 --> 01:00:20,460

they're simply swept unceremoniously

1596

01:00:24,890 --> 01:00:22,740

under the rug and anyone who asks after

1597

01:00:27,650 --> 01:00:24,900

them is shamed for trying

1598

01:00:30,170 --> 01:00:27,660

so why are we so endlessly committed to

1599

01:00:31,670 --> 01:00:30,180

these narratives I mean sure our

1600

01:00:33,470 --> 01:00:31,680

scientific models allow us to do

1601

01:00:35,990 --> 01:00:33,480

incredible things in our physical world

1602

01:00:37,490 --> 01:00:36,000

so we absolutely don't need to rush to

1603

01:00:40,190 --> 01:00:37,500

throw the baby out with the bath water

1604

01:00:42,049 --> 01:00:40,200

or anything but when they fail to answer

1605

01:00:44,150 --> 01:00:42,059

our most basic questions about the

1606

01:00:45,829 --> 01:00:44,160

nature of our reality and when they fail

1607

01:00:47,930 --> 01:00:45,839

to in any way account for the most

1608

01:00:50,630 --> 01:00:47,940

significant aspects of that reality

1609

01:00:52,609 --> 01:00:50,640

namely life and Consciousness then our

1610

01:00:54,289 --> 01:00:52,619

loyalty to them shouldn't go any further

1611

01:00:56,390 --> 01:00:54,299

than their utility

1612

01:00:58,730 --> 01:00:56,400

so much of our inquiry into the UFO

1613

01:01:01,069 --> 01:00:58,740

phenomenon boils down to a question of

1614

01:01:02,690 --> 01:01:01,079

what is possible and when we look at the

1615

01:01:04,490 --> 01:01:02,700

models that we use to make those kinds

1616

01:01:06,470 --> 01:01:04,500

of determinations what we quickly

1617

01:01:08,450 --> 01:01:06,480

discover is that we simply don't have

1618

01:01:10,849 --> 01:01:08,460

enough information to be making any

1619

01:01:13,549 --> 01:01:10,859

kinds of proclamations about what is

1620

01:01:15,049 --> 01:01:13,559

possible and what isn't there are holes

1621

01:01:17,210 --> 01:01:15,059

in our theories that are more than big

1622

01:01:19,609 --> 01:01:17,220

enough for an entire fleet of UFOs to

1623

01:01:21,230 --> 01:01:19,619

fly through and so perhaps we shouldn't

1624

01:01:23,450 --> 01:01:21,240

be surprised that they have

1625

01:01:25,670 --> 01:01:23,460

and I think it's time to admit that the

1626

01:01:27,349 --> 01:01:25,680

emperor has no clothes what's

1627

01:01:29,990 --> 01:01:27,359

interesting about this exercise of

1628

01:01:32,210 --> 01:01:30,000

questioning consensus reality is that in

1629

01:01:34,010 --> 01:01:32,220

the process of doing so we don't just

1630

01:01:36,109 --> 01:01:34,020

find definitive proof that the official

1631

01:01:38,690 --> 01:01:36,119

story of everything is but a shadow play

1632

01:01:41,930 --> 01:01:38,700

on the wall but the shape of the cave

1633

01:01:43,609 --> 01:01:41,940

itself begins to reveal itself to us the

1634

01:01:46,190 --> 01:01:43,619

problems with The Narrative of consensus

1635

01:01:48,230 --> 01:01:46,200

reality reveal themselves as limitations

1636

01:01:49,730 --> 01:01:48,240

in the kinds of information that we are

1637

01:01:52,730 --> 01:01:49,740

able to access

1638

01:01:54,470 --> 01:01:52,740

everywhere we turn there are walls when

1639

01:01:56,030 --> 01:01:54,480

we inquire after the origins of the

1640

01:01:57,890 --> 01:01:56,040

universe we find that we run into this

1641

01:02:00,410 --> 01:01:57,900

wall right at the moment of its creation

1642

01:02:02,150 --> 01:02:00,420

it's there again at the furthest edges

1643

01:02:04,970 --> 01:02:02,160

of the universe when we ask what the

1644

01:02:07,270 --> 01:02:04,980

universe is expanding into and inside of

1645

01:02:09,049 --> 01:02:07,280

black holes when space-time breaks down

1646

01:02:10,789 --> 01:02:09,059

everywhere that we get close to

1647

01:02:12,770 --> 01:02:10,799

answering the questions about the

1648

01:02:15,890 --> 01:02:12,780

ultimate Origins and nature of reality

1649

01:02:18,230 --> 01:02:15,900

there is this Veil a horizon past which

1650

01:02:20,170 --> 01:02:18,240

we cannot see and there's something

1651

01:02:23,569 --> 01:02:20,180

about that reality that is unsettling

1652

01:02:25,130 --> 01:02:23,579

why are we boxed in this way why are the

1653

01:02:27,349 --> 01:02:25,140

answers to the most profound questions

1654

01:02:29,690 --> 01:02:27,359

about who we are and what we are and

1655

01:02:31,609 --> 01:02:29,700

where we are always on the other side of

1656

01:02:33,890 --> 01:02:31,619

some impenetrable Veil

1657

01:02:36,289 --> 01:02:33,900

is this just what it means to be a human

1658

01:02:38,870 --> 01:02:36,299

and therefore a platonian cave Builder

1659

01:02:41,750 --> 01:02:38,880

or could it be that the walls of the

1660

01:02:43,130 --> 01:02:41,760

cave aren't only self-created what if

1661

01:02:44,870 --> 01:02:43,140

they were created by something else

1662

01:02:46,250 --> 01:02:44,880

something that wants to keep us

1663

01:02:48,049 --> 01:02:46,260

contained

1664

01:02:50,270 --> 01:02:48,059

and that's where we'll pick this up next

1665

01:02:52,190 --> 01:02:50,280

time with the question that arises

1666

01:02:53,630 --> 01:02:52,200

inevitably from our discovery of the

1667

01:02:55,910 --> 01:02:53,640

walls of our cave

1668

01:02:57,930 --> 01:02:55,920

are we living in a simulation

1669

01:03:01,250 --> 01:02:57,940

until next time

1670

01:03:01,890 --> 01:03:01,260

[Music]

1671

01:03:03,700 --> 01:03:01,900

foreign