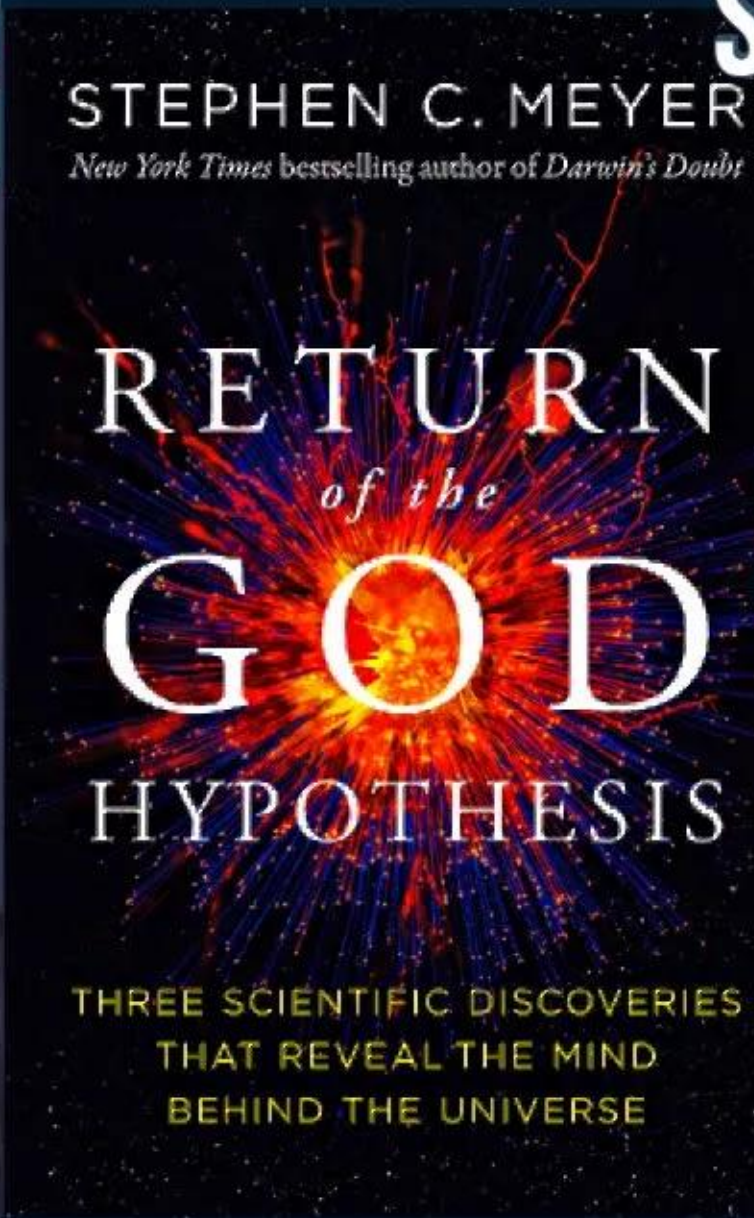


HIDDEN TRUTH SHOW WITH JIM BRESLO



STEPHEN C. MEYER



1
00:00:06,389 --> 00:00:03,110
okay here is our interview with stephen

2
00:00:07,909 --> 00:00:06,399
meyer the cambridge experience must have

3
00:00:10,790 --> 00:00:07,919
been pretty fascinating

4
00:00:11,910 --> 00:00:10,800
it was enchanting yeah challenging but

5
00:00:15,110 --> 00:00:11,920
very very cool yeah

6
00:00:17,910 --> 00:00:15,120
pretty serious luminaries from there

7
00:00:19,029 --> 00:00:17,920
isn't uh didn't hawking go there hawking

8
00:00:21,189 --> 00:00:19,039
did go there

9
00:00:23,109 --> 00:00:21,199
yeah he was there i actually was

10
00:00:24,950 --> 00:00:23,119
fortunate enough to attend a lecture

11
00:00:26,950 --> 00:00:24,960
series that he gave based on

12
00:00:28,310 --> 00:00:26,960
that was the basis of the book a brief

13
00:00:31,750 --> 00:00:28,320

history of time which i

14

00:00:34,069 --> 00:00:31,760

address in the new book oh super cool

15

00:00:35,270 --> 00:00:34,079

and then what about um the brilliant

16

00:00:38,389 --> 00:00:35,280

mind guy

17

00:00:39,510 --> 00:00:38,399

was he there too um remember the movie a

18

00:00:43,110 --> 00:00:39,520

brilliant mind with

19

00:00:46,549 --> 00:00:43,120

oh nash yeah nash i think he was

20

00:00:48,709 --> 00:00:46,559

and um the the people that were most

21

00:00:50,630 --> 00:00:48,719

important for my story that were there

22

00:00:50,950 --> 00:00:50,640

were all the molecular biologists you

23

00:00:54,310 --> 00:00:50,960

know

24

00:00:57,029 --> 00:00:54,320

francis crick and watson and

25

00:00:58,310 --> 00:00:57,039

those folks so those laboratories are

26

00:00:59,910 --> 00:00:58,320

still there they've turned out a lot of

27

00:01:01,750 --> 00:00:59,920

nobel laureates over the years i think

28

00:01:02,869 --> 00:01:01,760

cambridge still has the most of any

29

00:01:06,710 --> 00:01:02,879

university

30

00:01:10,469 --> 00:01:06,720

second so

31

00:01:12,469 --> 00:01:10,479

um so and your degree your phd really is

32

00:01:14,630 --> 00:01:12,479

in the philosophy of science

33

00:01:16,870 --> 00:01:14,640

it's philosophy of science and i did i

34

00:01:17,590 --> 00:01:16,880

worked on origin of life biology so it

35

00:01:19,109 --> 00:01:17,600

was a sort of

36

00:01:21,270 --> 00:01:19,119

and that's that's the kind of the nature

37

00:01:24,789 --> 00:01:21,280

of the field it's interdisciplinary

38

00:01:26,070 --> 00:01:24,799

uh uh looking at questions that

39

00:01:28,230 --> 00:01:26,080

are at the intersection between

40

00:01:29,990 --> 00:01:28,240

philosophy and science wow

41

00:01:31,910 --> 00:01:30,000

are there many universities that even

42

00:01:35,190 --> 00:01:31,920

offer that um

43

00:01:35,830 --> 00:01:35,200

it's a it's a yeah a fairly common field

44

00:01:39,350 --> 00:01:35,840

now uh

45

00:01:40,789 --> 00:01:39,360

university of um wisconsin

46

00:01:42,550 --> 00:01:40,799

is often combined with history and

47

00:01:43,670 --> 00:01:42,560

philosophy of science uh the two

48

00:01:45,910 --> 00:01:43,680

together but uh

49

00:01:47,830 --> 00:01:45,920

harvard university of wisconsin oklahoma

50

00:01:49,510 --> 00:01:47,840

are really three really great programs

51
00:01:51,670 --> 00:01:49,520
in the united states in that field

52
00:01:53,429 --> 00:01:51,680
i think ucla has probably some good

53
00:01:54,789 --> 00:01:53,439
people there too so

54
00:01:57,190 --> 00:01:54,799
and just briefly again how would you

55
00:01:59,030 --> 00:01:57,200
describe what it means to say the

56
00:02:03,109 --> 00:01:59,040
philosophy of science

57
00:02:06,069 --> 00:02:03,119
looking at questions at the foundation

58
00:02:08,949 --> 00:02:06,079
of scientific disciplines

59
00:02:10,309 --> 00:02:08,959
sometimes questions of epistemology and

60
00:02:12,070 --> 00:02:10,319
scientific methods how do we know what

61
00:02:15,589 --> 00:02:12,080
we know how do we evaluate

62
00:02:19,030 --> 00:02:15,599
how reliable our methods are um

63
00:02:20,150 --> 00:02:19,040

and and then questions at the foundation

64

00:02:23,270 --> 00:02:20,160

of disciplines

65

00:02:25,190 --> 00:02:23,280

so the question of origins is both

66

00:02:26,630 --> 00:02:25,200

a scientific question but also a

67

00:02:28,869 --> 00:02:26,640

philosophical one because it

68

00:02:30,390 --> 00:02:28,879

intersects with the fundamental

69

00:02:34,630 --> 00:02:30,400

considerations of world view

70

00:02:36,710 --> 00:02:34,640

for example um every worldview

71

00:02:38,550 --> 00:02:36,720

has to answer the question what is the

72

00:02:39,990 --> 00:02:38,560

entity or the thing or the process from

73

00:02:41,830 --> 00:02:40,000

which everything else comes in

74

00:02:43,270 --> 00:02:41,840

philosophy they call that the question

75

00:02:44,869 --> 00:02:43,280

of ontology

76

00:02:46,550 --> 00:02:44,879

what's fundamental what's the prime or

77

00:02:48,710 --> 00:02:46,560

ultimate reality but

78

00:02:49,990 --> 00:02:48,720

it happens that there are scientific

79

00:02:51,670 --> 00:02:50,000

fields that address that same

80

00:02:53,589 --> 00:02:51,680

question so there's an intersection you

81

00:02:55,509 --> 00:02:53,599

know where we have questions of

82

00:02:56,949 --> 00:02:55,519

biological origins questions of

83

00:02:59,430 --> 00:02:56,959

cosmological origins and those are

84

00:03:01,270 --> 00:02:59,440

things that have always interested me

85

00:03:04,390 --> 00:03:01,280

so and then to get to the crux of your

86

00:03:06,790 --> 00:03:04,400

book in the course of your studies there

87

00:03:08,070 --> 00:03:06,800

was this kind of one of the things that

88

00:03:12,630 --> 00:03:08,080

was being considered

89

00:03:15,350 --> 00:03:12,640

is origins of everything and

90

00:03:16,550 --> 00:03:15,360

whether there's any explanation for for

91

00:03:18,390 --> 00:03:16,560

it all

92

00:03:20,869 --> 00:03:18,400

well right there's a whole field of

93

00:03:24,309 --> 00:03:20,879

study called origin of life research

94

00:03:27,589 --> 00:03:24,319

it's mainly uh conducted by biochemists

95

00:03:29,990 --> 00:03:27,599

and cell biologists and molecular

96

00:03:32,390 --> 00:03:30,000

biologists who understand the

97

00:03:34,070 --> 00:03:32,400

complexities of the cell at a

98

00:03:37,830 --> 00:03:34,080

biochemical level

99

00:03:39,670 --> 00:03:37,840

um it's also philosophical because it

100

00:03:41,509 --> 00:03:39,680

raises this big question of

101
00:03:43,430 --> 00:03:41,519
you know where where did life come from

102
00:03:45,030 --> 00:03:43,440
that's a question that's been debated

103
00:03:46,630 --> 00:03:45,040
all the way back to the ancient greeks

104
00:03:47,910 --> 00:03:46,640
and there were materialists like

105
00:03:49,589 --> 00:03:47,920
democritus

106
00:03:51,350 --> 00:03:49,599
and there were people who were more

107
00:03:53,190 --> 00:03:51,360
theistically oriented like plato and

108
00:03:56,869 --> 00:03:53,200
aristotle

109
00:03:57,429 --> 00:03:56,879
and so i was very interested in the

110
00:03:59,990 --> 00:03:57,439
question

111
00:04:02,149 --> 00:04:00,000
of the scientific methods that are used

112
00:04:03,509 --> 00:04:02,159
to reconstruct the past

113
00:04:05,509 --> 00:04:03,519

there we always talk about the

114

00:04:07,190 --> 00:04:05,519
scientific method but

115

00:04:08,309 --> 00:04:07,200
the when you get into the philosophy of

116

00:04:08,949 --> 00:04:08,319
science you learn that there are

117

00:04:10,550 --> 00:04:08,959
actually

118

00:04:11,589 --> 00:04:10,560
multiple scientific methods there are

119

00:04:12,949 --> 00:04:11,599
different methods for different

120

00:04:14,070 --> 00:04:12,959
disciplines some of them have things in

121

00:04:14,710 --> 00:04:14,080
common some of them are slightly

122

00:04:16,550 --> 00:04:14,720
different

123

00:04:18,229 --> 00:04:16,560
but when you're investigating the past

124

00:04:20,949 --> 00:04:18,239
the one thing you can't do

125

00:04:22,150 --> 00:04:20,959
is uh replicate the events that you want

126
00:04:24,710 --> 00:04:22,160
to study

127
00:04:25,430 --> 00:04:24,720
in controlled laboratory environments

128
00:04:26,950 --> 00:04:25,440
you

129
00:04:28,629 --> 00:04:26,960
might be able to simulate some parts of

130
00:04:30,790 --> 00:04:28,639
those events but you

131
00:04:31,830 --> 00:04:30,800
the the events the origin events

132
00:04:35,510 --> 00:04:31,840
happened

133
00:04:37,670 --> 00:04:35,520
a long time ago so

134
00:04:39,110 --> 00:04:37,680
you have to use different methods to

135
00:04:43,030 --> 00:04:39,120
study the past than you do

136
00:04:45,189 --> 00:04:43,040
to study how nature ordinarily works on

137
00:04:46,790 --> 00:04:45,199
an ongoing basis which is what a lot of

138
00:04:49,270 --> 00:04:46,800

science is about so

139

00:04:51,030 --> 00:04:49,280

i was not only interested in the

140

00:04:53,430 --> 00:04:51,040

question of the origin of life but also

141

00:04:54,390 --> 00:04:53,440

how do scientists investigate that

142

00:04:56,150 --> 00:04:54,400

question

143

00:04:58,310 --> 00:04:56,160

and what constitutes a legitimate

144

00:04:59,030 --> 00:04:58,320

scientific explanation of a singular

145

00:05:01,350 --> 00:04:59,040

event in the

146

00:05:02,629 --> 00:05:01,360

in the remote past so it's a much more

147

00:05:05,350 --> 00:05:02,639

forensic style

148

00:05:05,909 --> 00:05:05,360

of of science where you've got the clue

149

00:05:07,909 --> 00:05:05,919

my

150

00:05:09,270 --> 00:05:07,919

phd thesis in fact was called of clues

151
00:05:10,390 --> 00:05:09,280
and causes you've got the clues that are

152
00:05:11,670 --> 00:05:10,400
left behind

153
00:05:13,909 --> 00:05:11,680
now what do you make of what caused

154
00:05:15,830 --> 00:05:13,919
those clues and what caused the events

155
00:05:19,029 --> 00:05:15,840
that the clues attest to

156
00:05:20,710 --> 00:05:19,039
so um that was so i was interested in

157
00:05:22,790 --> 00:05:20,720
the science of origin of life research

158
00:05:25,110 --> 00:05:22,800
and the methods of studying

159
00:05:26,710 --> 00:05:25,120
where the first life came from and it

160
00:05:29,350 --> 00:05:26,720
turns out those methods are also

161
00:05:30,950 --> 00:05:29,360
used by for example cosmologists trying

162
00:05:32,150 --> 00:05:30,960
to figure out how the universe came to

163
00:05:34,390 --> 00:05:32,160

be

164

00:05:35,670 --> 00:05:34,400

and you're doing these studies around

165

00:05:39,350 --> 00:05:35,680

presumably

166

00:05:42,070 --> 00:05:39,360

primarily atheists primarily

167

00:05:44,070 --> 00:05:42,080

i think the default way of thinking in

168

00:05:45,430 --> 00:05:44,080

most major western universities in this

169

00:05:48,230 --> 00:05:45,440

in science departments

170

00:05:50,390 --> 00:05:48,240

is certainly uh what you might call

171

00:05:52,629 --> 00:05:50,400

naturalistic or materialistic in the

172

00:05:55,110 --> 00:05:52,639

sense that the assumption is that

173

00:05:56,950 --> 00:05:55,120

um that the physical world of the

174

00:05:57,590 --> 00:05:56,960

physical or natural world is all there

175

00:06:01,909 --> 00:05:57,600

is

176
00:06:02,390 --> 00:06:01,919
matter and energy space and time and

177
00:06:08,550 --> 00:06:02,400
that's

178
00:06:09,909 --> 00:06:08,560
challenge to that that i've been making

179
00:06:11,830 --> 00:06:09,919
and proponents of the idea of

180
00:06:12,629 --> 00:06:11,840
intelligent design have been making is

181
00:06:15,189 --> 00:06:12,639
that

182
00:06:16,309 --> 00:06:15,199
there are features of the of the

183
00:06:19,749 --> 00:06:16,319
physical world

184
00:06:21,909 --> 00:06:19,759
particularly the living world that are

185
00:06:24,070 --> 00:06:21,919
indicative in our experience of the

186
00:06:27,350 --> 00:06:24,080
activity of designing intelligence

187
00:06:29,110 --> 00:06:27,360
so can we begin can we can we invoke the

188
00:06:31,510 --> 00:06:29,120

notion of creative intelligence as an

189

00:06:33,189 --> 00:06:31,520

explanatory principle as we're studying

190

00:06:35,510 --> 00:06:33,199

for example the origin of life or the

191

00:06:37,590 --> 00:06:35,520

origin of the information

192

00:06:38,870 --> 00:06:37,600

that's in life that's necessary to make

193

00:06:40,870 --> 00:06:38,880

life function that's one of the

194

00:06:42,150 --> 00:06:40,880

indicators i was just referring to

195

00:06:44,469 --> 00:06:42,160

this this was the big discovery of

196

00:06:47,990 --> 00:06:44,479

modern molecular biology is that

197

00:06:49,830 --> 00:06:48,000

at the foundation of life in the large

198

00:06:51,830 --> 00:06:49,840

what are called macromolecules things

199

00:06:55,350 --> 00:06:51,840

like dna and rna

200

00:06:56,790 --> 00:06:55,360

there is uh information stored in a

201
00:06:59,510 --> 00:06:56,800
digital form

202
00:07:01,029 --> 00:06:59,520
and in our experience information

203
00:07:03,189 --> 00:07:01,039
especially if it's functional and

204
00:07:05,589 --> 00:07:03,199
digital

205
00:07:07,430 --> 00:07:05,599
is the product is always the product of

206
00:07:09,189 --> 00:07:07,440
an intelligent agent

207
00:07:11,430 --> 00:07:09,199
uh bill gates has said dna is like a

208
00:07:12,390 --> 00:07:11,440
software program richard dawkins has

209
00:07:15,350 --> 00:07:12,400
acknowledged that

210
00:07:15,990 --> 00:07:15,360
the dna contains machine code uh leroy

211
00:07:19,110 --> 00:07:16,000
hood a

212
00:07:21,350 --> 00:07:19,120
great bio uh technologist has described

213
00:07:22,950 --> 00:07:21,360

dna as simply digital code

214

00:07:23,990 --> 00:07:22,960

well where does digital code come from

215

00:07:25,589 --> 00:07:24,000

in our experience it comes from

216

00:07:28,870 --> 00:07:25,599

programmers

217

00:07:30,629 --> 00:07:28,880

and so the the discovery of information

218

00:07:31,909 --> 00:07:30,639

at the foundation of life i've argued

219

00:07:34,309 --> 00:07:31,919

seems to point to a designing

220

00:07:36,390 --> 00:07:34,319

intelligence and in making that

221

00:07:38,230 --> 00:07:36,400

argument i use the same method of

222

00:07:39,909 --> 00:07:38,240

reasoning that i discovered was commonly

223

00:07:43,270 --> 00:07:39,919

used by historical scientists

224

00:07:44,150 --> 00:07:43,280

including darwin and other great 19th

225

00:07:47,270 --> 00:07:44,160

century uh

226
00:07:47,990 --> 00:07:47,280
evolutionary biologists who uh initiated

227
00:07:49,830 --> 00:07:48,000
this method

228
00:07:51,270 --> 00:07:49,840
of reasoning so reasoning from the

229
00:07:53,749 --> 00:07:51,280
effect back to the cause if there's only

230
00:07:55,510 --> 00:07:53,759
one known cause of a given effect

231
00:07:57,270 --> 00:07:55,520
uh if it's true that where there's smoke

232
00:07:59,990 --> 00:07:57,280
there's uh

233
00:08:01,510 --> 00:08:00,000
there's always fire you can infer if you

234
00:08:02,869 --> 00:08:01,520
see smoke coming over wafting over the

235
00:08:04,629 --> 00:08:02,879
hillside you can infer that there's a

236
00:08:06,869 --> 00:08:04,639
fire below out of view

237
00:08:08,469 --> 00:08:06,879
well if it's true that information in a

238
00:08:10,150 --> 00:08:08,479

functional and digital form always

239

00:08:11,749 --> 00:08:10,160

arises from an intelligent source than

240

00:08:12,710 --> 00:08:11,759

the discovery of information and living

241

00:08:15,189 --> 00:08:12,720

systems

242

00:08:16,790 --> 00:08:15,199

points i've argued to the activity of a

243

00:08:17,589 --> 00:08:16,800

designing intelligence in the origin of

244

00:08:19,430 --> 00:08:17,599

life

245

00:08:21,189 --> 00:08:19,440

okay so and i want to get into that i

246

00:08:22,790 --> 00:08:21,199

know that in in your new book you

247

00:08:24,550 --> 00:08:22,800

specifically talk about three particular

248

00:08:27,510 --> 00:08:24,560

discoveries that you think

249

00:08:29,029 --> 00:08:27,520

point to this but just laying a little

250

00:08:29,909 --> 00:08:29,039

bit more foundation before we yeah yeah

251

00:08:33,589 --> 00:08:29,919

yeah no we can't

252

00:08:36,149 --> 00:08:33,599

get into that so what what are

253

00:08:38,230 --> 00:08:36,159

you as far as when it comes to your

254

00:08:40,389 --> 00:08:38,240

personal views about god how were you

255

00:08:41,350 --> 00:08:40,399

raised as far as religion goes and what

256

00:08:44,310 --> 00:08:41,360

are your current

257

00:08:45,190 --> 00:08:44,320

religious beliefs yeah i'm i'm a

258

00:08:48,710 --> 00:08:45,200

christian

259

00:08:50,710 --> 00:08:48,720

and i was raised in a kind of nominally

260

00:08:54,150 --> 00:08:50,720

catholic home

261

00:08:55,829 --> 00:08:54,160

my personal conversion to a religious uh

262

00:08:57,750 --> 00:08:55,839

my conversion to a personal religious

263

00:09:01,030 --> 00:08:57,760

belief took place

264

00:09:03,430 --> 00:09:01,040

over a period of time about seven years

265

00:09:05,269 --> 00:09:03,440

of uh from late high school through the

266

00:09:08,389 --> 00:09:05,279

first couple years out of college

267

00:09:10,389 --> 00:09:08,399

took me a while to settle in in the

268

00:09:14,710 --> 00:09:10,399

conviction that it was actually true

269

00:09:17,990 --> 00:09:14,720

um and it was it was um

270

00:09:19,990 --> 00:09:18,000

i the the scientific challenges

271

00:09:21,190 --> 00:09:20,000

to faith that are often presented never

272

00:09:22,550 --> 00:09:21,200

really bothered me

273

00:09:24,310 --> 00:09:22,560

i was pretty content with an

274

00:09:24,550 --> 00:09:24,320

evolutionary account of things and still

275

00:09:44,550 --> 00:09:24,560

i

276

00:09:47,750 --> 00:09:44,560

uh

277

00:09:49,030 --> 00:09:47,760

as an undergraduate and i became

278

00:09:52,230 --> 00:09:49,040

intrigued with this

279

00:09:54,389 --> 00:09:52,240

argument about uh i

280

00:09:56,389 --> 00:09:54,399

became intrigued with the realization

281

00:09:59,509 --> 00:09:56,399

that the presence of information

282

00:10:00,070 --> 00:09:59,519

in living systems was the main reason

283

00:10:01,110 --> 00:10:00,080

that

284

00:10:03,350 --> 00:10:01,120

scientists were having trouble

285

00:10:04,550 --> 00:10:03,360

explaining the origin of life that

286

00:10:06,710 --> 00:10:04,560

it's hard to explain how you could get

287

00:10:07,670 --> 00:10:06,720

from chemistry in a prebiotic soup to a

288

00:10:09,750 --> 00:10:07,680

functioning

289

00:10:11,350 --> 00:10:09,760

uh digital code with an information

290

00:10:12,550 --> 00:10:11,360

processing system which is what we find

291

00:10:14,949 --> 00:10:12,560

in cells

292

00:10:16,470 --> 00:10:14,959

so my my scientific conversion if you

293

00:10:19,829 --> 00:10:16,480

will to intelligent design came

294

00:10:22,630 --> 00:10:19,839

after a religious conversion

295

00:10:24,470 --> 00:10:22,640

and so at the time that you went to

296

00:10:26,310 --> 00:10:24,480

cambridge

297

00:10:28,389 --> 00:10:26,320

you had pretty strong christian

298

00:10:31,350 --> 00:10:28,399

convictions

299

00:10:32,949 --> 00:10:31,360

yes indeed yes i did and still today and

300

00:10:35,350 --> 00:10:32,959

and then when we talk about

301
00:10:37,269 --> 00:10:35,360
you know the possibility you know the

302
00:10:41,509 --> 00:10:37,279
god hypothesis

303
00:10:44,470 --> 00:10:41,519
and um is that a christian god

304
00:10:45,430 --> 00:10:44,480
that you believe that you were providing

305
00:10:49,350 --> 00:10:45,440
evidence of

306
00:10:52,550 --> 00:10:49,360
as opposed to any other type of god

307
00:10:54,790 --> 00:10:52,560
it's a theistic god

308
00:10:56,069 --> 00:10:54,800
i think the science the scientific

309
00:11:00,550 --> 00:10:56,079
arguments and evidence

310
00:11:03,590 --> 00:11:00,560
that i marshall can only take you so far

311
00:11:05,670 --> 00:11:03,600
they point i think to an intelligence i

312
00:11:07,350 --> 00:11:05,680
think it takes intelligence or mind to

313
00:11:08,870 --> 00:11:07,360

generate information

314

00:11:10,470 --> 00:11:08,880

i think we have information at the

315

00:11:12,230 --> 00:11:10,480

foundation of life and information at

316

00:11:13,829 --> 00:11:12,240

the foundation of the cosmos as well and

317

00:11:15,750 --> 00:11:13,839

the fine-tuning

318

00:11:17,269 --> 00:11:15,760

that we can discuss one of the three big

319

00:11:18,710 --> 00:11:17,279

things i discuss in the book and and

320

00:11:21,750 --> 00:11:18,720

some other evidence of that

321

00:11:23,590 --> 00:11:21,760

so i think you see evidence of of mind

322

00:11:25,190 --> 00:11:23,600

and i think you see evidence not only of

323

00:11:26,470 --> 00:11:25,200

a mind who has been active in the

324

00:11:28,790 --> 00:11:26,480

creation but one

325

00:11:30,630 --> 00:11:28,800

who has the capability of structuring

326

00:11:33,509 --> 00:11:30,640

the whole of the universe

327

00:11:34,069 --> 00:11:33,519

we see what was called the fine-tuning

328

00:11:35,590 --> 00:11:34,079

of the

329

00:11:37,670 --> 00:11:35,600

laws and constants of physics the

330

00:11:39,509 --> 00:11:37,680

initial conditions of the universe

331

00:11:41,430 --> 00:11:39,519

from the very beginning of the universe

332

00:11:42,069 --> 00:11:41,440

suggesting a mind which has the ability

333

00:11:43,750 --> 00:11:42,079

to

334

00:11:45,910 --> 00:11:43,760

structure the whole of the universe and

335

00:11:49,590 --> 00:11:45,920

so i think you see evidence of both

336

00:11:51,990 --> 00:11:49,600

transcendence as well as

337

00:11:53,590 --> 00:11:52,000

imminence that is an intelligence that

338

00:11:54,389 --> 00:11:53,600

is active in the creation i think that

339

00:11:56,949 --> 00:11:54,399

comports

340

00:11:58,790 --> 00:11:56,959

well with the judeo-christian concept of

341

00:12:01,509 --> 00:11:58,800

god but also the concept of god that

342

00:12:02,550 --> 00:12:01,519

have has been held by other uh classical

343

00:12:05,910 --> 00:12:02,560

theists

344

00:12:07,829 --> 00:12:05,920

um so yeah i don't think it helps

345

00:12:09,990 --> 00:12:07,839

the the kinds of evidence that i'm

346

00:12:11,670 --> 00:12:10,000

marshaling the kind of evidence that

347

00:12:13,350 --> 00:12:11,680

i cite and the arguments that i'm

348

00:12:16,550 --> 00:12:13,360

marshaling support

349

00:12:19,350 --> 00:12:16,560

theism versus say deism or pantheism

350

00:12:20,629 --> 00:12:19,360

or one idea that's been proposed called

351

00:12:22,790 --> 00:12:20,639

panspermia

352

00:12:24,069 --> 00:12:22,800

the idea that life was seeded to earth

353

00:12:27,269 --> 00:12:24,079

by an intelligent alien

354

00:12:30,230 --> 00:12:28,870

perhaps fanciful but some scientists

355

00:12:32,150 --> 00:12:30,240

have actually proposed that in recent

356

00:12:33,269 --> 00:12:32,160

years because they see how severe the

357

00:12:34,949 --> 00:12:33,279

problem of

358

00:12:36,829 --> 00:12:34,959

explaining the origin of life is by

359

00:12:38,389 --> 00:12:36,839

reference to chemical evolutionary

360

00:12:40,790 --> 00:12:38,399

processes uh

361

00:12:41,910 --> 00:12:40,800

and i i examine that thesis i take it

362

00:12:43,829 --> 00:12:41,920

seriously and and

363

00:12:45,030 --> 00:12:43,839

uh but i think that's inadequate so i

364

00:12:46,470 --> 00:12:45,040

think that the

365

00:12:48,470 --> 00:12:46,480

concept of god i have in mind is

366

00:12:50,150 --> 00:12:48,480

something that would be affirmed by

367

00:12:52,389 --> 00:12:50,160

by traditional jews and christians and

368

00:12:55,910 --> 00:12:52,399

other traditional theists

369

00:12:57,350 --> 00:12:55,920

and and theism just to find that for us

370

00:12:59,190 --> 00:12:57,360

quickly as opposed to the other thing

371

00:13:01,750 --> 00:12:59,200

yeah theism is the idea that there

372

00:13:02,550 --> 00:13:01,760

is a personal god a god that has a mind

373

00:13:05,350 --> 00:13:02,560

and

374

00:13:06,389 --> 00:13:05,360

self-conscious deliberation who created

375

00:13:10,629 --> 00:13:06,399

the universe

376

00:13:13,190 --> 00:13:10,639

after the beginning

377

00:13:14,949 --> 00:13:13,200

um deism is the concept that god there's

378

00:13:16,310 --> 00:13:14,959

a god who transcends the universe who's

379

00:13:18,230 --> 00:13:16,320

separate from the universe who created

380

00:13:20,150 --> 00:13:18,240

the universe but then had no

381

00:13:21,750 --> 00:13:20,160

involvement with god with the universe

382

00:13:24,710 --> 00:13:21,760

after the beginning

383

00:13:26,790 --> 00:13:24,720

pantheism the eastern concept of god is

384

00:13:28,949 --> 00:13:26,800

god is not a personal

385

00:13:30,310 --> 00:13:28,959

being it's not a conscious intelligence

386

00:13:32,150 --> 00:13:30,320

to whom you could

387

00:13:34,550 --> 00:13:32,160

pray or with whom you could communicate

388

00:13:37,829 --> 00:13:34,560

but rather a kind of mystical force or

389

00:13:38,790 --> 00:13:37,839

oneness a sort of unity in all things

390

00:13:42,230 --> 00:13:38,800

but not

391

00:13:44,030 --> 00:13:42,240

um a person and then there are variants

392

00:13:47,430 --> 00:13:44,040

of those concepts

393

00:13:47,990 --> 00:13:47,440

pan-enthism and psychism there's

394

00:13:49,350 --> 00:13:48,000

something

395

00:13:50,550 --> 00:13:49,360

i deal with those as well in the book

396

00:13:52,069 --> 00:13:50,560

but i so i look at these different

397

00:13:54,949 --> 00:13:52,079

philosophical options

398

00:13:56,470 --> 00:13:54,959

for explaining the crucial evidences

399

00:13:58,230 --> 00:13:56,480

that we have about the origin of the

400

00:14:00,310 --> 00:13:58,240

universe the origin of the fine-tuning

401
00:14:02,150 --> 00:14:00,320
of the universe and the origin of life

402
00:14:04,310 --> 00:14:02,160
and argue that theism provides the best

403
00:14:06,310 --> 00:14:04,320
overall uh explanation of

404
00:14:07,750 --> 00:14:06,320
those three classes of evidence looking

405
00:14:09,509 --> 00:14:07,760
at the competing if you will

406
00:14:11,030 --> 00:14:09,519
metaphysical hypotheses the different

407
00:14:12,550 --> 00:14:11,040
world views that you could adopt as a

408
00:14:15,990 --> 00:14:12,560
philosopher

409
00:14:17,509 --> 00:14:16,000
okay so let's dig into the um

410
00:14:19,509 --> 00:14:17,519
the three disc the three recent

411
00:14:22,790 --> 00:14:19,519
discoveries that you believe

412
00:14:25,509 --> 00:14:22,800
support this yeah absolutely

413
00:14:26,790 --> 00:14:25,519

uh they are number one that the universe

414

00:14:29,110 --> 00:14:26,800

had a beginning

415

00:14:30,069 --> 00:14:29,120

uh as best we can tell from both the

416

00:14:31,910 --> 00:14:30,079

evidence of

417

00:14:33,430 --> 00:14:31,920

observational astronomy and theoretical

418

00:14:35,670 --> 00:14:33,440

physics uh

419

00:14:36,629 --> 00:14:35,680

secondly that the universe has been

420

00:14:38,949 --> 00:14:36,639

finely tuned

421

00:14:41,110 --> 00:14:38,959

from the beginning and soon thereafter

422

00:14:44,389 --> 00:14:41,120

to it and by fine-tuning i mean

423

00:14:46,870 --> 00:14:44,399

precisely calibrated against all odds to

424

00:14:49,670 --> 00:14:46,880

allow for the possibility of life and

425

00:14:52,629 --> 00:14:49,680

even as it turns out basic chemistry

426
00:14:53,110 --> 00:14:52,639
and thirdly that at the foundation of

427
00:14:56,230 --> 00:14:53,120
life

428
00:14:59,110 --> 00:14:56,240
we have evidence of information

429
00:14:59,430 --> 00:14:59,120
in a functional and digital form in fact

430
00:15:06,069 --> 00:14:59,440
a

431
00:15:07,829 --> 00:15:06,079
in even the simplest living cells

432
00:15:08,949 --> 00:15:07,839
suggesting as i argue in the book the

433
00:15:12,870 --> 00:15:08,959
need for

434
00:15:15,350 --> 00:15:12,880
intelligent agent to

435
00:15:15,910 --> 00:15:15,360
generate that information okay so and

436
00:15:17,590 --> 00:15:15,920
let's take them

437
00:15:19,430 --> 00:15:17,600
one at a time so the first you're

438
00:15:21,829 --> 00:15:19,440

essentially talking about

439

00:15:23,110 --> 00:15:21,839

scientific discoveries in the past 100

440

00:15:25,269 --> 00:15:23,120

some odd years

441

00:15:26,230 --> 00:15:25,279

that tend to point to what's generally

442

00:15:28,949 --> 00:15:26,240

called the big bang

443

00:15:30,710 --> 00:15:28,959

the big bang sure which is what is

444

00:15:33,829 --> 00:15:30,720

commonly believed to be

445

00:15:35,829 --> 00:15:33,839

the creation of our universe so that

446

00:15:37,670 --> 00:15:35,839

the fact that you can point to a

447

00:15:41,269 --> 00:15:37,680

beginning

448

00:15:44,790 --> 00:15:41,279

aids in arguing that there was a creator

449

00:15:46,389 --> 00:15:44,800

correct um the the the story

450

00:15:48,310 --> 00:15:46,399

of the discovery the beginning is

451
00:15:49,910 --> 00:15:48,320
fascinating because you

452
00:15:51,430 --> 00:15:49,920
first get indications of that from

453
00:15:53,269 --> 00:15:51,440
observational astronomy in southern

454
00:15:56,710 --> 00:15:53,279
california where you are the uh

455
00:15:57,749 --> 00:15:56,720
mount wilson observatory um uh where

456
00:16:00,629 --> 00:15:57,759
hubble was

457
00:16:03,430 --> 00:16:00,639
they were able first to detect that the

458
00:16:06,230 --> 00:16:03,440
light coming from distant galaxies

459
00:16:09,509 --> 00:16:06,240
was being stretched out that the as if

460
00:16:12,949 --> 00:16:09,519
the galaxies were receding from us

461
00:16:13,910 --> 00:16:12,959
and light that's being stretched out has

462
00:16:18,069 --> 00:16:13,920
longer wavelengths

463
00:16:20,470 --> 00:16:18,079

redder end of the visible spectrum

464

00:16:21,269 --> 00:16:20,480

so this evidence is called the red shift

465

00:16:23,990 --> 00:16:21,279

evidence

466

00:16:25,509 --> 00:16:24,000

and it suggested a universe that was

467

00:16:27,430 --> 00:16:25,519

expanding outward

468

00:16:29,030 --> 00:16:27,440

in a roughly spherically symmetric way

469

00:16:32,069 --> 00:16:29,040

like a balloon

470

00:16:33,509 --> 00:16:32,079

and if you begin if you think of

471

00:16:34,790 --> 00:16:33,519

that in the forward direction of time

472

00:16:36,150 --> 00:16:34,800

you have an expanding universe but in

473

00:16:38,389 --> 00:16:36,160

the reverse direction of time

474

00:16:39,670 --> 00:16:38,399

the galactic material would be getting

475

00:16:40,870 --> 00:16:39,680

closer and would have been closer and

476

00:16:41,829 --> 00:16:40,880

closer and closer together and

477

00:16:43,910 --> 00:16:41,839

eventually

478

00:16:45,670 --> 00:16:43,920

converged on a point past which you

479

00:16:48,389 --> 00:16:45,680

cannot go

480

00:16:49,030 --> 00:16:48,399

physically speaking and that point would

481

00:16:50,550 --> 00:16:49,040

mark the

482

00:16:52,389 --> 00:16:50,560

beginning of the expansion and arguably

483

00:16:55,430 --> 00:16:52,399

the beginning of the universe

484

00:16:56,629 --> 00:16:55,440

that evidence from observational

485

00:16:58,389 --> 00:16:56,639

astronomy

486

00:17:00,069 --> 00:16:58,399

was reinforced by developments in

487

00:17:01,670 --> 00:17:00,079

theoretical physics

488

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

starting mainly with einstein's new

489

00:17:03,990 --> 00:17:03,600

theory of gravity which was new in 1915

490

00:17:07,110 --> 00:17:04,000

not new

491

00:17:09,110 --> 00:17:07,120

now but uh called the idea of general

492

00:17:12,390 --> 00:17:09,120

relativity and the idea of that was that

493

00:17:17,429 --> 00:17:12,400

massive bodies are actually curving

494

00:17:21,270 --> 00:17:19,429

if you had more and more mass

495

00:17:23,270 --> 00:17:21,280

concentrated more densely

496

00:17:24,710 --> 00:17:23,280

in the reverse direction of time the

497

00:17:26,390 --> 00:17:24,720

curvature of space would be getting

498

00:17:29,430 --> 00:17:26,400

tighter and tighter and tighter

499

00:17:33,110 --> 00:17:29,440

and in 1966 stephen hawking and his

500

00:17:34,950 --> 00:17:33,120

phd thesis a chapter essentially

501
00:17:36,310 --> 00:17:34,960
proving that if you go back far enough

502
00:17:39,190 --> 00:17:36,320
you reach a limiting case where the

503
00:17:42,390 --> 00:17:39,200
curvature of space goes to an infinite

504
00:17:43,430 --> 00:17:42,400
corresponding to zero spatial volume and

505
00:17:46,150 --> 00:17:43,440
at that point

506
00:17:48,070 --> 00:17:46,160
when you have zero spatial volume that

507
00:17:49,590 --> 00:17:48,080
corresponds to also

508
00:17:52,230 --> 00:17:49,600
no mass you can't put anything in no

509
00:17:54,630 --> 00:17:52,240
space so it's a kind of a limiting case

510
00:17:55,990 --> 00:17:54,640
past which is the british astrophysicist

511
00:17:57,830 --> 00:17:56,000
paul davies has pointed out

512
00:17:59,750 --> 00:17:57,840
no physical reasoning is possible and

513
00:18:01,590 --> 00:17:59,760

that marks the beginning of the universe

514

00:18:03,110 --> 00:18:01,600

now there have been there's there there

515

00:18:05,830 --> 00:18:03,120

are ways around the

516

00:18:06,470 --> 00:18:05,840

what what hawking and his colleagues uh

517

00:18:08,789 --> 00:18:06,480

uh

518

00:18:10,870 --> 00:18:08,799

george ellis and roger penrose proved

519

00:18:13,190 --> 00:18:10,880

they're called singularity theorems

520

00:18:14,310 --> 00:18:13,200

there are ways around those uh but there

521

00:18:16,310 --> 00:18:14,320

have been other other

522

00:18:17,590 --> 00:18:16,320

proofs from theoretical physics based on

523

00:18:19,430 --> 00:18:17,600

special relativity

524

00:18:20,710 --> 00:18:19,440

that also established that time itself

525

00:18:23,510 --> 00:18:20,720

had a beginning

526

00:18:24,789 --> 00:18:23,520

and and so that as i argue in the book

527

00:18:25,830 --> 00:18:24,799

that is best we can tell the universe

528

00:18:27,190 --> 00:18:25,840

had a beginning and even

529

00:18:29,029 --> 00:18:27,200

even the cosmological models that

530

00:18:31,029 --> 00:18:29,039

attempt to circumvent the beginning end

531

00:18:34,230 --> 00:18:31,039

up presupposing the singularity

532

00:18:35,830 --> 00:18:34,240

and they have uh theistic implications

533

00:18:37,350 --> 00:18:35,840

for other reasons

534

00:18:39,029 --> 00:18:37,360

this is highly significant from a

535

00:18:40,150 --> 00:18:39,039

philosophical point of view because if

536

00:18:43,190 --> 00:18:40,160

you think of matter

537

00:18:45,110 --> 00:18:43,200

space time and energy beginning to exist

538

00:18:46,870 --> 00:18:45,120

you can't really explain the origin of

539

00:18:48,710 --> 00:18:46,880

the universe in materialistic terms

540

00:18:50,710 --> 00:18:48,720

there was no matter prior to the origin

541

00:18:53,590 --> 00:18:50,720

of matter to do the causing

542

00:18:55,190 --> 00:18:53,600

and so this is a profoundly it was a

543

00:18:57,190 --> 00:18:55,200

very unsettling result for many

544

00:18:58,950 --> 00:18:57,200

scientific materialists

545

00:19:00,230 --> 00:18:58,960

robert jastrow from the goddard space

546

00:19:01,669 --> 00:19:00,240

institute

547

00:19:03,590 --> 00:19:01,679

memorably wrote a book called god in the

548

00:19:07,110 --> 00:19:03,600

astronomers

549

00:19:08,789 --> 00:19:07,120

concluding that the the story of the

550

00:19:10,310 --> 00:19:08,799

discovery the beginning ends like a bad

551
00:19:11,830 --> 00:19:10,320
dream for scientists who have lived by

552
00:19:14,310 --> 00:19:11,840
the power of reason he says they

553
00:19:16,150 --> 00:19:14,320
they scale the highest peak and they

554
00:19:18,070 --> 00:19:16,160
confront a band of theologians that have

555
00:19:19,909 --> 00:19:18,080
been waiting there for centuries so

556
00:19:21,190 --> 00:19:19,919
um but the big problem is how do you

557
00:19:22,950 --> 00:19:21,200
explain the origin of the material

558
00:19:24,870 --> 00:19:22,960
universe before there was

559
00:19:26,230 --> 00:19:24,880
matter to cause it to come into

560
00:19:28,390 --> 00:19:26,240
existence the

561
00:19:30,230 --> 00:19:28,400
the nature of the event requires a cause

562
00:19:31,590 --> 00:19:30,240
which transcends

563
00:19:33,430 --> 00:19:31,600

matter space time and energy the

564

00:19:35,190 --> 00:19:33,440

material realm

565

00:19:37,190 --> 00:19:35,200

yeah we don't have a scientific

566

00:19:37,990 --> 00:19:37,200

explanation for the moments before the

567

00:19:40,150 --> 00:19:38,000

big bang right

568

00:19:41,510 --> 00:19:40,160

that's the big opening unsettled

569

00:19:44,230 --> 00:19:41,520

question well you

570

00:19:45,350 --> 00:19:44,240

in a sense you can't have uh i would say

571

00:19:47,990 --> 00:19:45,360

um

572

00:19:49,510 --> 00:19:48,000

you know how we define science is is up

573

00:19:51,590 --> 00:19:49,520

for grabs because this is a

574

00:19:52,789 --> 00:19:51,600

an area where you're you've got a

575

00:19:53,990 --> 00:19:52,799

scientific and philosophical

576

00:19:56,310 --> 00:19:54,000

considerations

577

00:19:57,510 --> 00:19:56,320

what you can't have is a materialistic

578

00:19:59,990 --> 00:19:57,520

explanation

579

00:20:01,669 --> 00:20:00,000

is not materialistic maybe you don't

580

00:20:05,270 --> 00:20:01,679

call that scientific that's okay

581

00:20:07,029 --> 00:20:05,280

but the point is that you can't explain

582

00:20:08,870 --> 00:20:07,039

the origin of the physical universe by

583

00:20:10,630 --> 00:20:08,880

reference to physics because it's

584

00:20:12,230 --> 00:20:10,640

it's the physical universe and physics

585

00:20:14,070 --> 00:20:12,240

that come into existence at that point

586

00:20:15,510 --> 00:20:14,080

in time you can't explain it materially

587

00:20:16,870 --> 00:20:15,520

materialistically because it's matter

588

00:20:18,310 --> 00:20:16,880

and energy that come into existence at

589

00:20:20,950 --> 00:20:18,320

that point in time

590

00:20:21,750 --> 00:20:20,960

uh robert dickey this uh famous

591

00:20:23,669 --> 00:20:21,760

physicist at

592

00:20:25,270 --> 00:20:23,679

uh princeton said an infinitely old

593

00:20:26,630 --> 00:20:25,280

universe would relieve us of the

594

00:20:28,630 --> 00:20:26,640

necessity of explaining

595

00:20:29,990 --> 00:20:28,640

the origin of matter at any finite time

596

00:20:33,110 --> 00:20:30,000

in the past

597

00:20:36,390 --> 00:20:33,120

um so if we

598

00:20:39,510 --> 00:20:36,400

we we see a beginning there and

599

00:20:40,149 --> 00:20:39,520

no scientific explanation for how that

600

00:20:41,909 --> 00:20:40,159

began

601
00:20:44,390 --> 00:20:41,919
the beginning took place right

602
00:20:46,789 --> 00:20:44,400
essentially or whatever

603
00:20:47,750 --> 00:20:46,799
but okay but then let's talk about god

604
00:20:51,350 --> 00:20:47,760
so

605
00:20:54,549 --> 00:20:51,360
when did god come into existence

606
00:20:55,350 --> 00:20:54,559
uh the point that i have made is that

607
00:20:58,070 --> 00:20:55,360
every

608
00:20:59,190 --> 00:20:58,080
philosophical system has to posit

609
00:21:02,230 --> 00:20:59,200
something as what

610
00:21:05,510 --> 00:21:02,240
philosophers call a primitive or the

611
00:21:06,950 --> 00:21:05,520
ultimate or prime reality prior to the

612
00:21:07,590 --> 00:21:06,960
discovery that the universe had a

613
00:21:09,350 --> 00:21:07,600

beginning

614

00:21:11,909 --> 00:21:09,360

the default way of thinking among many

615

00:21:13,270 --> 00:21:11,919

scientists and philosophers

616

00:21:14,870 --> 00:21:13,280

in some cases going all the way back to

617

00:21:16,310 --> 00:21:14,880

the ancient greeks but certainly through

618

00:21:18,549 --> 00:21:16,320

the 19th century

619

00:21:20,789 --> 00:21:18,559

was the idea that the universe was

620

00:21:22,390 --> 00:21:20,799

eternal and self-existent it had always

621

00:21:25,190 --> 00:21:22,400

been here and therefore

622

00:21:27,350 --> 00:21:25,200

per the quotation from professor dickie

623

00:21:29,350 --> 00:21:27,360

at princeton that i just cited

624

00:21:30,630 --> 00:21:29,360

there was no need to explain the origin

625

00:21:32,789 --> 00:21:30,640

of the universe

626

00:21:34,070 --> 00:21:32,799

in terms of anything else it was the

627

00:21:35,830 --> 00:21:34,080

primary thing

628

00:21:37,830 --> 00:21:35,840

by which we explain everything else it

629

00:21:40,630 --> 00:21:37,840

was the thing that had always been here

630

00:21:43,029 --> 00:21:40,640

uh carl sagan in his famous cosmos

631

00:21:46,390 --> 00:21:43,039

series which was rebooted by neil

632

00:21:49,110 --> 00:21:46,400

degrasse tyson recently had his famous

633

00:21:51,029 --> 00:21:49,120

sort of scientific naturalist mantra the

634

00:21:52,870 --> 00:21:51,039

universe is all there is all there ever

635

00:21:55,029 --> 00:21:52,880

was all there ever will be

636

00:21:55,909 --> 00:21:55,039

well it turns out the universe was not

637

00:21:57,510 --> 00:21:55,919

always here

638

00:21:58,950 --> 00:21:57,520

and therefore it can't be invoked as the

639

00:22:00,070 --> 00:21:58,960

fundamental thing from which everything

640

00:22:01,750 --> 00:22:00,080

else comes

641

00:22:04,310 --> 00:22:01,760

uh but something in every system of

642

00:22:06,310 --> 00:22:04,320

thought functions in that role and so

643

00:22:07,350 --> 00:22:06,320

the in theism the thing that has always

644

00:22:09,909 --> 00:22:07,360

been here

645

00:22:11,510 --> 00:22:09,919

that uh is the prime reality that is the

646

00:22:11,990 --> 00:22:11,520

thing from which everything else comes

647

00:22:14,870 --> 00:22:12,000

is

648

00:22:16,390 --> 00:22:14,880

god and if you the new cosmology

649

00:22:19,110 --> 00:22:16,400

suggests that

650

00:22:20,630 --> 00:22:19,120

that the theistic metaphysics is more

651
00:22:22,310 --> 00:22:20,640
consistent with the reality than the

652
00:22:24,870 --> 00:22:22,320
naturalistic or materialistic

653
00:22:27,669 --> 00:22:24,880
universe or metaphysics in other words

654
00:22:30,549 --> 00:22:27,679
um the the

655
00:22:31,430 --> 00:22:30,559
the physical universe is a bad candidate

656
00:22:32,710 --> 00:22:31,440
to be

657
00:22:34,549 --> 00:22:32,720
the thing from which everything else

658
00:22:36,789 --> 00:22:34,559
comes because it itself comes into

659
00:22:37,590 --> 00:22:36,799
existence a finite time ago it has a

660
00:22:40,870 --> 00:22:37,600
beginning

661
00:22:43,990 --> 00:22:40,880
and and therefore would need to be

662
00:22:47,270 --> 00:22:44,000
created by something outside itself and

663
00:22:48,390 --> 00:22:47,280

there's something else um just to go

664

00:22:49,990 --> 00:22:48,400

there for a moment then i want to move

665

00:22:52,390 --> 00:22:50,000

on to number two

666

00:22:53,510 --> 00:22:52,400

theoretically that is what has been

667

00:22:57,350 --> 00:22:53,520

around forever

668

00:22:59,110 --> 00:22:57,360

this personal god correct we're positing

669

00:23:00,789 --> 00:22:59,120

as the prime reality something other

670

00:23:02,149 --> 00:23:00,799

than the universe

671

00:23:04,310 --> 00:23:02,159

given that the universe hasn't always

672

00:23:07,029 --> 00:23:04,320

been here right and what about

673

00:23:08,230 --> 00:23:07,039

the purpose of god creating what he

674

00:23:11,110 --> 00:23:08,240

created do you

675

00:23:13,270 --> 00:23:11,120

get into theories on that uh we can

676
00:23:14,149 --> 00:23:13,280
detect purpose of intelligence without

677
00:23:16,390 --> 00:23:14,159
knowing

678
00:23:17,750 --> 00:23:16,400
all the purposes a and intelligence

679
00:23:20,950 --> 00:23:17,760
might have

680
00:23:22,710 --> 00:23:20,960
so i argue that the fine-tuning of the

681
00:23:26,470 --> 00:23:22,720
universe suggests that a purpose of

682
00:23:30,230 --> 00:23:26,480
intelligence was responsible i don't uh

683
00:23:32,950 --> 00:23:30,240
i don't attempt to discern

684
00:23:34,630 --> 00:23:32,960
all the thoughts of the deity but rather

685
00:23:36,070 --> 00:23:34,640
simply that the deity had thoughts and

686
00:23:37,270 --> 00:23:36,080
that they were expressed in this in the

687
00:23:39,190 --> 00:23:37,280
structure of the universe that was

688
00:23:41,269 --> 00:23:39,200

produced that made life possible

689

00:23:42,470 --> 00:23:41,279

um okay so let's go to i think because i

690

00:23:44,390 --> 00:23:42,480

think number two

691

00:23:47,269 --> 00:23:44,400

envelopes that the fine-tuning part

692

00:23:50,310 --> 00:23:47,279

right that you're saying we've seen

693

00:23:51,830 --> 00:23:50,320

fine-tuning in evolution

694

00:23:53,830 --> 00:23:51,840

can i can i make one more point about

695

00:23:55,590 --> 00:23:53,840

the origin of the universe the method of

696

00:23:56,630 --> 00:23:55,600

reasoning i use is the method that's

697

00:23:58,630 --> 00:23:56,640

used

698

00:24:00,070 --> 00:23:58,640

by historical scientists and that is the

699

00:24:01,269 --> 00:24:00,080

method of inference to the best

700

00:24:03,590 --> 00:24:01,279

explanation

701
00:24:04,390 --> 00:24:03,600
when you're looking at the evidence that

702
00:24:07,430 --> 00:24:04,400
the universe had

703
00:24:09,350 --> 00:24:07,440
a beginning um it then suggest

704
00:24:11,430 --> 00:24:09,360
then that leads you to ask well what

705
00:24:13,269 --> 00:24:11,440
what sort of metaphysics

706
00:24:14,630 --> 00:24:13,279
uh what sort of metaphysical hypothesis

707
00:24:17,110 --> 00:24:14,640
could explain that

708
00:24:18,630 --> 00:24:17,120
materialism fails because matter is what

709
00:24:20,630 --> 00:24:18,640
comes into existence so

710
00:24:21,830 --> 00:24:20,640
materialism is a metaphysical system of

711
00:24:25,590 --> 00:24:21,840
thought fails

712
00:24:28,070 --> 00:24:25,600
um but both theism and deism posit

713
00:24:29,830 --> 00:24:28,080

an entity that is transcendent beyond

714

00:24:30,950 --> 00:24:29,840

the material universe that could act as

715

00:24:32,950 --> 00:24:30,960

a cause so they

716

00:24:34,470 --> 00:24:32,960

they function as better explanations

717

00:24:37,029 --> 00:24:34,480

than a materialistic

718

00:24:38,470 --> 00:24:37,039

uh worldview so i'm actually using the

719

00:24:39,830 --> 00:24:38,480

the method of inference to the best

720

00:24:42,630 --> 00:24:39,840

explanation use common

721

00:24:43,590 --> 00:24:42,640

commonly in science as well as in

722

00:24:46,870 --> 00:24:43,600

philosophy

723

00:24:49,269 --> 00:24:46,880

to adjudicate or assess the competing

724

00:24:52,470 --> 00:24:49,279

worldviews or metaphysical hypotheses

725

00:24:54,630 --> 00:24:52,480

right still just a theory obviously

726

00:24:56,310 --> 00:24:54,640

sure we're using our reasoning to try to

727

00:24:57,110 --> 00:24:56,320

make the best sense of the evidence that

728

00:24:59,990 --> 00:24:57,120

we have

729

00:25:00,789 --> 00:25:00,000

right and and we're kind of filling in a

730

00:25:03,110 --> 00:25:00,799

blank

731

00:25:04,630 --> 00:25:03,120

that we don't know but you know i could

732

00:25:07,190 --> 00:25:04,640

argue on the other side that well

733

00:25:08,390 --> 00:25:07,200

we've filled in blanks before that

734

00:25:10,950 --> 00:25:08,400

science then later

735

00:25:11,990 --> 00:25:10,960

filled in well it's it's how all science

736

00:25:14,549 --> 00:25:12,000

reasons and in fact

737

00:25:15,269 --> 00:25:14,559

all theor you know much of science uh if

738

00:25:17,350 --> 00:25:15,279

we mean by

739

00:25:18,789 --> 00:25:17,360

if if our definition of knowledge is the

740

00:25:21,110 --> 00:25:18,799

thing the only things we know are the

741

00:25:23,990 --> 00:25:21,120

things that we can directly observe

742

00:25:25,830 --> 00:25:24,000

then most of science is not would not

743

00:25:27,830 --> 00:25:25,840

constitute knowledge but we make

744

00:25:29,029 --> 00:25:27,840

inferences in science from things we can

745

00:25:31,350 --> 00:25:29,039

observe to things that we

746

00:25:32,230 --> 00:25:31,360

we don't observe theoretical physics is

747

00:25:33,269 --> 00:25:32,240

full of it we

748

00:25:35,830 --> 00:25:33,279

we think there are things called

749

00:25:36,390 --> 00:25:35,840

electrons and protons and neutrons and

750

00:25:38,390 --> 00:25:36,400

atoms

751
00:25:40,149 --> 00:25:38,400
we don't directly see those but we see

752
00:25:41,029 --> 00:25:40,159
effects that lead us to infer their

753
00:25:42,310 --> 00:25:41,039
existence it's

754
00:25:44,310 --> 00:25:42,320
how we came to know about the dna

755
00:25:45,750 --> 00:25:44,320
molecule as well right so

756
00:25:47,430 --> 00:25:45,760
i'm using that same method of reasoning

757
00:25:51,510 --> 00:25:47,440
reasoning from things we can see

758
00:25:53,029 --> 00:25:51,520
to uh affirm the existence of the most

759
00:25:55,110 --> 00:25:53,039
the thing that would best explain the

760
00:25:55,590 --> 00:25:55,120
things that we do see and in this case

761
00:26:02,310 --> 00:25:55,600
that

762
00:26:03,430 --> 00:26:02,320
in science um so the big bang being one

763
00:26:06,230 --> 00:26:03,440

of them i mean big bang

764

00:26:07,029 --> 00:26:06,240

is still technically a theory because we

765

00:26:12,310 --> 00:26:07,039

haven't

766

00:26:14,230 --> 00:26:12,320

proven it maybe you would disagree with

767

00:26:17,190 --> 00:26:14,240

that but i mean we've we've

768

00:26:18,149 --> 00:26:17,200

to a certain level scientific certainty

769

00:26:21,029 --> 00:26:18,159

it's believed

770

00:26:22,789 --> 00:26:21,039

that it happened well right we don't

771

00:26:25,029 --> 00:26:22,799

prove things in science that

772

00:26:27,029 --> 00:26:25,039

uh mathematicians prove things from

773

00:26:27,909 --> 00:26:27,039

axioms and they reason deductively from

774

00:26:30,230 --> 00:26:27,919

axioms

775

00:26:31,430 --> 00:26:30,240

scientists attempt to formulate theories

776

00:26:33,909 --> 00:26:31,440

and they affirm

777

00:26:36,310 --> 00:26:33,919

as most likely to be true those theories

778

00:26:38,789 --> 00:26:36,320

that provide the best explanations

779

00:26:40,470 --> 00:26:38,799

of the evidence at hand and i'm using

780

00:26:42,630 --> 00:26:40,480

that same method of reasoning

781

00:26:44,470 --> 00:26:42,640

to affirm first that there is evidence

782

00:26:46,310 --> 00:26:44,480

of a designing intelligence

783

00:26:48,149 --> 00:26:46,320

uh responsible for life but secondly

784

00:26:50,710 --> 00:26:48,159

that the designing intelligence

785

00:26:53,029 --> 00:26:50,720

responsible for life in the universe

786

00:26:54,390 --> 00:26:53,039

most likely has the attributes that jews

787

00:26:56,549 --> 00:26:54,400

and christians have always ascribed to

788

00:26:59,590 --> 00:26:56,559

god

789

00:27:00,230 --> 00:26:59,600

so whereas the big bang has been proven

790

00:27:01,750 --> 00:27:00,240

to

791

00:27:04,549 --> 00:27:01,760

a pretty high degree of certainty at

792

00:27:06,549 --> 00:27:04,559

least among the scientific community

793

00:27:08,470 --> 00:27:06,559

what you're positing as far as what

794

00:27:12,149 --> 00:27:08,480

precedes the big bang

795

00:27:13,750 --> 00:27:12,159

is is a theory that that fits it it

796

00:27:14,470 --> 00:27:13,760

certainly can't be disproven at this

797

00:27:16,070 --> 00:27:14,480

point

798

00:27:17,830 --> 00:27:16,080

and you're saying you believe is

799

00:27:19,110 --> 00:27:17,840

essentially the best theory that's out

800

00:27:22,070 --> 00:27:19,120

there at the moment

801
00:27:22,789 --> 00:27:22,080
well the the big bang is an event it's

802
00:27:25,350 --> 00:27:22,799
the first

803
00:27:26,950 --> 00:27:25,360
event of the universe in which matter

804
00:27:28,630 --> 00:27:26,960
and energy burst into existence and

805
00:27:31,909 --> 00:27:28,640
begin to expand

806
00:27:34,070 --> 00:27:31,919
um we posited the big bang as an

807
00:27:35,750 --> 00:27:34,080
explanation for other evidences that we

808
00:27:37,669 --> 00:27:35,760
could see

809
00:27:39,669 --> 00:27:37,679
the red shift the cosmic background

810
00:27:42,789 --> 00:27:39,679
radiation anomalies and the cosmic

811
00:27:45,269 --> 00:27:42,799
background radiation etc

812
00:27:45,990 --> 00:27:45,279
so using the same method of reasoning

813
00:27:47,750 --> 00:27:46,000

now we

814

00:27:49,590 --> 00:27:47,760

take the big bang the beginning of the

815

00:27:54,070 --> 00:27:49,600

universe the fact of the beginning as

816

00:27:57,590 --> 00:27:54,080

a a point of data i'm now asking well

817

00:28:00,950 --> 00:27:57,600

among the competing explanations

818

00:28:02,310 --> 00:28:00,960

for that what would provide the best

819

00:28:03,909 --> 00:28:02,320

what would provide the best causal

820

00:28:05,350 --> 00:28:03,919

explanation of the universe having a

821

00:28:07,430 --> 00:28:05,360

beginning so i'm using the exact same

822

00:28:10,070 --> 00:28:07,440

method of reasoning

823

00:28:11,990 --> 00:28:10,080

and if you evaluate the competing the

824

00:28:14,950 --> 00:28:12,000

competing alternatives

825

00:28:16,389 --> 00:28:14,960

uh materialism pantheism deism theism

826

00:28:17,830 --> 00:28:16,399

for example

827

00:28:19,430 --> 00:28:17,840

deism and theism provide good

828

00:28:21,510 --> 00:28:19,440

explanations for

829

00:28:23,190 --> 00:28:21,520

a beginning pantheism and materialism

830

00:28:26,149 --> 00:28:23,200

don't so they're to be preferred as

831

00:28:29,510 --> 00:28:26,159

better explanations

832

00:28:31,590 --> 00:28:29,520

okay let's go to the the fine-tuning

833

00:28:32,789 --> 00:28:31,600

elements which you say provides further

834

00:28:36,149 --> 00:28:32,799

evidence

835

00:28:38,549 --> 00:28:36,159

of your theory um because broadly

836

00:28:40,470 --> 00:28:38,559

speaking when i think of the big bang

837

00:28:41,909 --> 00:28:40,480

i think of that being the beginning of

838

00:28:45,990 --> 00:28:41,919

evolution

839

00:28:48,310 --> 00:28:46,000

about uh you know is darwinism type

840

00:28:50,070 --> 00:28:48,320

evolution where we see the species you

841

00:28:51,430 --> 00:28:50,080

know changing in from one thing to

842

00:28:54,310 --> 00:28:51,440

another but

843

00:28:55,029 --> 00:28:54,320

uh from my kind of simplistic view of

844

00:28:56,710 --> 00:28:55,039

things that

845

00:28:58,710 --> 00:28:56,720

evolution really started with the big

846

00:29:00,070 --> 00:28:58,720

bang and you have

847

00:29:01,830 --> 00:29:00,080

things evolving and evolving and

848

00:29:04,149 --> 00:29:01,840

evolving as this universe is

849

00:29:04,950 --> 00:29:04,159

cosmic evolution stellar evolution yeah

850

00:29:08,310 --> 00:29:04,960

exactly right

851
00:29:11,110 --> 00:29:08,320
galactic evolution there you go and and

852
00:29:12,789 --> 00:29:11,120
galaxies are formed and stars are formed

853
00:29:15,029 --> 00:29:12,799
and planets are formed in solar systems

854
00:29:18,149 --> 00:29:15,039
and so on and

855
00:29:21,190 --> 00:29:18,159
it and then things

856
00:29:21,990 --> 00:29:21,200
start happening on some of these planets

857
00:29:24,389 --> 00:29:22,000
in particular

858
00:29:26,470 --> 00:29:24,399
earth right and that things start

859
00:29:28,549 --> 00:29:26,480
evolving on earth and

860
00:29:30,310 --> 00:29:28,559
that evolution just provides kind of the

861
00:29:31,029 --> 00:29:30,320
perfect explanation for everything that

862
00:29:33,830 --> 00:29:31,039
we've seen

863
00:29:34,389 --> 00:29:33,840

or can observe and study from the big

864

00:29:37,669 --> 00:29:34,399

bang

865

00:29:41,190 --> 00:29:37,679

forward you're saying that no actually

866

00:29:44,230 --> 00:29:41,200

there's things that can't be explained

867

00:29:45,909 --> 00:29:44,240

by cosmic evolution slash human

868

00:29:49,830 --> 00:29:45,919

evolution

869

00:29:52,149 --> 00:29:49,840

of different things if it means

870

00:29:53,990 --> 00:29:52,159

it can mean change over time okay so the

871

00:29:55,269 --> 00:29:54,000

universe is changing over time from the

872

00:29:57,350 --> 00:29:55,279

beginning until now

873

00:29:58,870 --> 00:29:57,360

it can also refer to the very specific

874

00:30:00,870 --> 00:29:58,880

claims about

875

00:30:02,310 --> 00:30:00,880

certain mechanisms that are responsible

876

00:30:04,950 --> 00:30:02,320

for certain types of change

877

00:30:07,029 --> 00:30:04,960

so uh and and with that the notion that

878

00:30:09,110 --> 00:30:07,039

these changes are completely undirected

879

00:30:11,269 --> 00:30:09,120

or unguided and taking place only as the

880

00:30:13,029 --> 00:30:11,279

result of natural processes

881

00:30:15,029 --> 00:30:13,039

so when you get to the ex trying to

882

00:30:16,870 --> 00:30:15,039

explain the origin of the first cell on

883

00:30:19,110 --> 00:30:16,880

planet earth

884

00:30:21,669 --> 00:30:19,120

the the theories that have been proposed

885

00:30:24,549 --> 00:30:21,679

usually fall under the heading of

886

00:30:26,389 --> 00:30:24,559

evolutionary abiogenesis or chemical

887

00:30:28,870 --> 00:30:26,399

evolutionary theory

888

00:30:30,070 --> 00:30:28,880

and the idea there is that the first

889

00:30:32,310 --> 00:30:30,080

life arose as a

890

00:30:34,549 --> 00:30:32,320

series as a result of a series of

891

00:30:37,990 --> 00:30:34,559

undirected evolutionary changes

892

00:30:41,029 --> 00:30:38,000

in among uh

893

00:30:42,149 --> 00:30:41,039

non-living chemicals over a vast amount

894

00:30:44,070 --> 00:30:42,159

of time

895

00:30:46,230 --> 00:30:44,080

as we've attempted to simulate that in

896

00:30:49,669 --> 00:30:46,240

the laboratory

897

00:30:51,909 --> 00:30:49,679

those processes turn out to be

898

00:30:53,510 --> 00:30:51,919

the the the chemistry that inc occurs

899

00:30:55,029 --> 00:30:53,520

naturally doesn't

900

00:30:56,710 --> 00:30:55,039

tend to lead in a life-friendly

901
00:30:58,310 --> 00:30:56,720
direction and

902
00:30:59,830 --> 00:30:58,320
uh the only way to get it to move a

903
00:31:01,430 --> 00:30:59,840
little bit in a life-friendly direction

904
00:31:02,630 --> 00:31:01,440
is to manipulate it with intel

905
00:31:04,549 --> 00:31:02,640
the intelligent design of the

906
00:31:06,149 --> 00:31:04,559
experimentalist which doesn't really

907
00:31:09,830 --> 00:31:06,159
simulate an undirected

908
00:31:12,470 --> 00:31:09,840
unguided process of evolution so

909
00:31:13,269 --> 00:31:12,480
the origin of the first life is a huge

910
00:31:14,389 --> 00:31:13,279
unsolved

911
00:31:16,789 --> 00:31:14,399
problem from the standpoint of

912
00:31:18,789 --> 00:31:16,799
evolutionary theory in part because

913
00:31:21,029 --> 00:31:18,799

of the growing awareness we have of the

914

00:31:21,990 --> 00:31:21,039

integrated informational complexity that

915

00:31:25,350 --> 00:31:22,000

we're finding in living

916

00:31:26,870 --> 00:31:25,360

systems um 19 yeah go ahead

917

00:31:29,350 --> 00:31:26,880

well yeah i want to make sure i'm

918

00:31:31,590 --> 00:31:29,360

understanding so

919

00:31:33,430 --> 00:31:31,600

where you're saying we lack a good

920

00:31:36,070 --> 00:31:33,440

scientific explanation

921

00:31:36,470 --> 00:31:36,080

is the appearance of the first living

922

00:31:38,710 --> 00:31:36,480

cell

923

00:31:40,070 --> 00:31:38,720

on earth is that what you're saying

924

00:31:41,909 --> 00:31:40,080

where we lack a good

925

00:31:43,590 --> 00:31:41,919

evolutionary explanation is the

926

00:31:45,590 --> 00:31:43,600

appearance of the first

927

00:31:48,310 --> 00:31:45,600

living cell on earth i think intelligent

928

00:31:50,149 --> 00:31:48,320

design is a good scientific explanation

929

00:31:51,750 --> 00:31:50,159

for some of the features of those cells

930

00:31:54,870 --> 00:31:51,760

in particular the the

931

00:31:56,630 --> 00:31:54,880

origin of the the digital code and the

932

00:31:58,149 --> 00:31:56,640

information processing systems that have

933

00:31:59,430 --> 00:31:58,159

been discovered inside cells

934

00:32:02,070 --> 00:31:59,440

okay let's stick with that cell for a

935

00:32:04,389 --> 00:32:02,080

second so this single cell

936

00:32:05,750 --> 00:32:04,399

right that's the mystery how the single

937

00:32:09,110 --> 00:32:05,760

living cell was created

938

00:32:12,149 --> 00:32:09,120

which was in the ocean somewhere right

939

00:32:13,029 --> 00:32:12,159

presumably or a hydrothermal vent or i

940

00:32:16,389 --> 00:32:13,039

mean people have been

941

00:32:18,630 --> 00:32:16,399

uh formulating all kinds of

942

00:32:19,909 --> 00:32:18,640

hypotheses about where a suitable

943

00:32:21,590 --> 00:32:19,919

environment might have

944

00:32:23,269 --> 00:32:21,600

been for this chemical evolutionary

945

00:32:24,870 --> 00:32:23,279

process to take place but that was the

946

00:32:27,750 --> 00:32:24,880

original idea was uh

947

00:32:28,950 --> 00:32:27,760

and have we or have we not found a

948

00:32:31,509 --> 00:32:28,960

prebiotic soup

949

00:32:32,149 --> 00:32:31,519

basically yeah right okay have we or

950

00:32:35,350 --> 00:32:32,159

have we not

951
00:32:38,070 --> 00:32:35,360
found a single living cell on

952
00:32:39,350 --> 00:32:38,080
for instance mars no we have not found a

953
00:32:42,950 --> 00:32:39,360
single living cell

954
00:32:44,070 --> 00:32:42,960
on mars we found water right water right

955
00:32:45,990 --> 00:32:44,080
but we haven't been able to take a

956
00:32:47,990 --> 00:32:46,000
sample

957
00:32:49,029 --> 00:32:48,000
water is a necessary but nowhere near

958
00:32:52,789 --> 00:32:49,039
sufficient condition

959
00:32:53,750 --> 00:32:52,799
of of life and we didn't find it on the

960
00:32:57,029 --> 00:32:53,760
moon

961
00:32:59,669 --> 00:32:57,039
was

962
00:33:00,230 --> 00:32:59,679
uh we found i have a colleague who jokes

963
00:33:03,990 --> 00:33:00,240

about

964

00:33:06,470 --> 00:33:04,000

finding buicks on io the jovian moon the

965

00:33:08,389 --> 00:33:06,480

moon of jupiter because they found some

966

00:33:09,269 --> 00:33:08,399

evidence of iron or something on one of

967

00:33:11,990 --> 00:33:09,279

the uh

968

00:33:13,590 --> 00:33:12,000

the moons and he said well it's short

969

00:33:15,430 --> 00:33:13,600

you need iron to make to make

970

00:33:17,190 --> 00:33:15,440

cars so therefore there must be buicks

971

00:33:18,789 --> 00:33:17,200

on io but this has been one of the

972

00:33:20,070 --> 00:33:18,799

fallacies in a lot of science reporting

973

00:33:23,110 --> 00:33:20,080

if you find some

974

00:33:24,710 --> 00:33:23,120

constitutive element of a living system

975

00:33:25,509 --> 00:33:24,720

then people jump to the conclusion that

976

00:33:27,190 --> 00:33:25,519

hey it's

977

00:33:28,870 --> 00:33:27,200

easy to produce life in these other

978

00:33:30,470 --> 00:33:28,880

environments but there's a difference

979

00:33:31,990 --> 00:33:30,480

between a necessary and a sufficient

980

00:33:33,669 --> 00:33:32,000

condition

981

00:33:35,029 --> 00:33:33,679

so water is necessary but nowhere near

982

00:33:37,830 --> 00:33:35,039

sufficient producing

983

00:33:38,950 --> 00:33:37,840

once we're able to do more experiments

984

00:33:42,149 --> 00:33:38,960

on mars

985

00:33:44,070 --> 00:33:42,159

do you believe it's possible we will

986

00:33:45,750 --> 00:33:44,080

find a living cell on mars

987

00:33:47,269 --> 00:33:45,760

i think it's i mean obviously anything's

988

00:33:48,470 --> 00:33:47,279

possible but i mean likely

989

00:33:50,149 --> 00:33:48,480

it wouldn't be a matter of experiments

990

00:33:51,590 --> 00:33:50,159

it'd be a question of whether they were

991

00:33:52,630 --> 00:33:51,600

whether there was life there or not i

992

00:33:54,470 --> 00:33:52,640

don't think there's there are

993

00:33:55,430 --> 00:33:54,480

good indications that there is i don't

994

00:33:57,029 --> 00:33:55,440

think it's likely that there will be

995

00:33:59,990 --> 00:33:57,039

life found on mars

996

00:34:01,509 --> 00:34:00,000

but the the question of where life is is

997

00:34:02,070 --> 00:34:01,519

separate from the question of how it

998

00:34:05,669 --> 00:34:02,080

would be

999

00:34:08,069 --> 00:34:05,679

how what it would take to produce it um

1000

00:34:09,909 --> 00:34:08,079

let's say that you went to antarctica

1001
00:34:11,990 --> 00:34:09,919
and you were an explorer

1002
00:34:14,550 --> 00:34:12,000
and you had assumed that there was never

1003
00:34:17,829 --> 00:34:14,560
any intelligent life on antarctica

1004
00:34:18,710 --> 00:34:17,839
but you entered a large cave and lo and

1005
00:34:19,990 --> 00:34:18,720
behold as you

1006
00:34:22,310 --> 00:34:20,000
entered the cave you found that there

1007
00:34:23,109 --> 00:34:22,320
were these scratchings on the wall that

1008
00:34:25,030 --> 00:34:23,119
looked like

1009
00:34:26,710 --> 00:34:25,040
maybe egyptian hieroglyphs or some

1010
00:34:29,589 --> 00:34:26,720
something similar to that and then

1011
00:34:31,829 --> 00:34:29,599
associated with these symbols there were

1012
00:34:33,669 --> 00:34:31,839
actually drawings of different types of

1013
00:34:35,430 --> 00:34:33,679

animals indigenous to that maybe

1014

00:34:36,950 --> 00:34:35,440

penguins or something

1015

00:34:39,270 --> 00:34:36,960

and as you studied them for a while you

1016

00:34:40,629 --> 00:34:39,280

correlated the pictographs with the

1017

00:34:42,550 --> 00:34:40,639

symbols and you realize no this was an

1018

00:34:43,909 --> 00:34:42,560

informational script

1019

00:34:46,230 --> 00:34:43,919

though you had previously thought that

1020

00:34:47,909 --> 00:34:46,240

there was no intelligent life

1021

00:34:49,030 --> 00:34:47,919

on antarctica that no one had ever lived

1022

00:34:50,389 --> 00:34:49,040

there you would have to change your

1023

00:34:52,230 --> 00:34:50,399

assessment because you had discovered

1024

00:34:54,310 --> 00:34:52,240

information and you know of only one

1025

00:34:55,510 --> 00:34:54,320

cause of the origin of information and

1026

00:34:56,629 --> 00:34:55,520

that's mind

1027

00:34:58,710 --> 00:34:56,639

the scientists looking for

1028

00:35:00,950 --> 00:34:58,720

extraterrestrial intelligence

1029

00:35:02,390 --> 00:35:00,960

in the cosmos are assuming the same

1030

00:35:03,670 --> 00:35:02,400

thing they're looking for

1031

00:35:05,990 --> 00:35:03,680

they're looking for evidence of

1032

00:35:08,069 --> 00:35:06,000

information embedded in radio signals

1033

00:35:09,829 --> 00:35:08,079

if they find it they'll they'll infer

1034

00:35:10,870 --> 00:35:09,839

that there is an et out there now they

1035

00:35:13,030 --> 00:35:10,880

haven't found it

1036

00:35:13,990 --> 00:35:13,040

but we have found information in a

1037

00:35:16,310 --> 00:35:14,000

digital form

1038

00:35:17,829 --> 00:35:16,320

stored in every single strand of dna in

1039

00:35:19,589 --> 00:35:17,839

every single cell

1040

00:35:21,030 --> 00:35:19,599

and that information is part of as i

1041

00:35:22,550 --> 00:35:21,040

mentioned this complex information

1042

00:35:23,510 --> 00:35:22,560

storage transmission and processing

1043

00:35:26,870 --> 00:35:23,520

system

1044

00:35:27,750 --> 00:35:26,880

that that uh exceeds our the complexity

1045

00:35:30,870 --> 00:35:27,760

of our own

1046

00:35:33,750 --> 00:35:30,880

uh digi high-tech digital technology so

1047

00:35:34,870 --> 00:35:33,760

um just like the the the the

1048

00:35:37,510 --> 00:35:34,880

archaeologist

1049

00:35:38,550 --> 00:35:37,520

and on you know and in antarctica the

1050

00:35:40,310 --> 00:35:38,560

most logical thing to

1051
00:35:42,550 --> 00:35:40,320
to conclude from the discovery of that

1052
00:35:44,069 --> 00:35:42,560
information is that a mind played a role

1053
00:35:45,589 --> 00:35:44,079
in the origin of that information the

1054
00:35:48,710 --> 00:35:45,599
information present in life

1055
00:35:49,750 --> 00:35:48,720
and and this sophisticated network that

1056
00:35:53,349 --> 00:35:49,760
you describe

1057
00:35:55,589 --> 00:35:53,359
is uh apparent in a single cell

1058
00:35:57,510 --> 00:35:55,599
is a single cell that is sophisticated

1059
00:35:58,790 --> 00:35:57,520
in even the simplest living cells even

1060
00:36:01,670 --> 00:35:58,800
in bacterial cells

1061
00:36:02,470 --> 00:36:01,680
in in what are yeah i mean what is this

1062
00:36:05,109 --> 00:36:02,480
what is this

1063
00:36:06,630 --> 00:36:05,119

if there was a an initial cell how would

1064

00:36:08,550 --> 00:36:06,640

you define that cell

1065

00:36:09,420 --> 00:36:08,560

the the first cell that ever appeared on

1066

00:36:10,550 --> 00:36:09,430

earth

1067

00:36:12,950 --> 00:36:10,560

[Music]

1068

00:36:14,630 --> 00:36:12,960

well we can look at our own cell you

1069

00:36:14,870 --> 00:36:14,640

know the cells that we have now and look

1070

00:36:16,710 --> 00:36:14,880

at

1071

00:36:18,470 --> 00:36:16,720

there are two two basic types of cells

1072

00:36:19,270 --> 00:36:18,480

there's eukaryotes and prokaryotes the

1073

00:36:21,990 --> 00:36:19,280

prokaryotes

1074

00:36:22,390 --> 00:36:22,000

are cells without nuclei and even they

1075

00:36:24,390 --> 00:36:22,400

have

1076

00:36:26,150 --> 00:36:24,400

these extraordinarily complex

1077

00:36:28,630 --> 00:36:26,160

information processing systems inside

1078

00:36:34,069 --> 00:36:32,470

uh and so so if the theory then

1079

00:36:35,510 --> 00:36:34,079

is that there's you're saying there's no

1080

00:36:36,550 --> 00:36:35,520

evolutionary explanation for the

1081

00:36:38,790 --> 00:36:36,560

appearance of this

1082

00:36:40,069 --> 00:36:38,800

cell so you you posit that essentially

1083

00:36:43,270 --> 00:36:40,079

it was god that placed the

1084

00:36:45,910 --> 00:36:43,280

the cell there and so so people

1085

00:36:48,630 --> 00:36:45,920

who are believe christians today are

1086

00:36:52,310 --> 00:36:48,640

believers today would have to believe

1087

00:36:55,510 --> 00:36:52,320

not in this idea that humans are somehow

1088

00:36:59,190 --> 00:36:55,520

special and unique in god's eyes that

1089

00:37:02,310 --> 00:36:59,200

really everything living

1090

00:37:05,510 --> 00:37:02,320

on earth plants animals bugs

1091

00:37:06,870 --> 00:37:05,520

humans all evolved from the single cell

1092

00:37:09,270 --> 00:37:06,880

that god planted

1093

00:37:10,950 --> 00:37:09,280

on earth well i'm not necessarily saying

1094

00:37:12,710 --> 00:37:10,960

that there was then a seamless process

1095

00:37:13,910 --> 00:37:12,720

of evolution from that point forward but

1096

00:37:16,630 --> 00:37:13,920

i am saying that

1097

00:37:17,109 --> 00:37:16,640

you can't get to the first living cell

1098

00:37:18,870 --> 00:37:17,119

via

1099

00:37:20,790 --> 00:37:18,880

an evolutionary pathway that's

1100

00:37:22,069 --> 00:37:20,800

undirected and unguided what you see is

1101

00:37:25,190 --> 00:37:22,079

evidence of design

1102

00:37:26,630 --> 00:37:25,200

at the very beginning i think you see

1103

00:37:28,870 --> 00:37:26,640

evidence of design

1104

00:37:30,390 --> 00:37:28,880

uh down the timeline there are

1105

00:37:31,190 --> 00:37:30,400

subsequent events in the history of life

1106

00:37:34,310 --> 00:37:31,200

that also

1107

00:37:36,550 --> 00:37:34,320

manifest massive bursts of new

1108

00:37:37,510 --> 00:37:36,560

information i wrote a second book called

1109

00:37:40,710 --> 00:37:37,520

the

1110

00:37:44,390 --> 00:37:40,720

darwin's doubt

1111

00:37:45,990 --> 00:37:44,400

so um uh i i don't necessarily concede

1112

00:37:47,430 --> 00:37:46,000

the universal tree of life picture of

1113

00:37:47,910 --> 00:37:47,440

the history of life but the point is

1114

00:37:50,230 --> 00:37:47,920

that

1115

00:37:51,990 --> 00:37:50,240

even committed evolutionary biologists

1116

00:37:54,470 --> 00:37:52,000

today acknowledge that we do not have a

1117

00:37:55,750 --> 00:37:54,480

chemical evolutionary origin

1118

00:37:57,670 --> 00:37:55,760

explanation for the origin of the first

1119

00:37:58,630 --> 00:37:57,680

life richard dawkins who's perhaps the

1120

00:38:00,470 --> 00:37:58,640

foremost

1121

00:38:03,589 --> 00:38:00,480

spokesman for scientific atheism in the

1122

00:38:05,990 --> 00:38:03,599

world in a 2008 interview he did with

1123

00:38:08,150 --> 00:38:06,000

ben stein in a film called expelled

1124

00:38:09,430 --> 00:38:08,160

openly acknowledged no no one knows from

1125

00:38:10,150 --> 00:38:09,440

an evolutionary point of view how the

1126

00:38:12,550 --> 00:38:10,160

first life

1127

00:38:15,589 --> 00:38:12,560

arose from simple prebiotic simple

1128

00:38:17,829 --> 00:38:15,599

chemicals in a prebiotic environment

1129

00:38:19,270 --> 00:38:17,839

yeah it's not something so when i argue

1130

00:38:20,630 --> 00:38:19,280

for intelligent design is the best

1131

00:38:21,190 --> 00:38:20,640

explanation for the origin of the

1132

00:38:23,670 --> 00:38:21,200

information

1133

00:38:24,790 --> 00:38:23,680

necessary to produce the first life i

1134

00:38:26,870 --> 00:38:24,800

actually stand in no

1135

00:38:29,030 --> 00:38:26,880

fear of contradiction there isn't a

1136

00:38:31,109 --> 00:38:29,040

there isn't an adequate explanation

1137

00:38:32,310 --> 00:38:31,119

that is strictly materialistic on offer

1138

00:38:33,750 --> 00:38:32,320

so we've never

1139

00:38:35,829 --> 00:38:33,760

this is fascinating to me because not

1140

00:38:38,310 --> 00:38:35,839

something i've ever focused on the

1141

00:38:39,109 --> 00:38:38,320

the existence or creation of the first

1142

00:38:41,510 --> 00:38:39,119

cell

1143

00:38:43,109 --> 00:38:41,520

on earth but uh well it you know it's

1144

00:38:44,870 --> 00:38:43,119

super understandable because

1145

00:38:47,109 --> 00:38:44,880

most people don't know that darwin never

1146

00:38:49,430 --> 00:38:47,119

really addressed that topic

1147

00:38:50,390 --> 00:38:49,440

in the origin of species he presupposes

1148

00:38:53,910 --> 00:38:50,400

one or ver

1149

00:38:56,870 --> 00:38:53,920

or or a few very simple forms from which

1150

00:38:57,270 --> 00:38:56,880

biological evolution would then unfold

1151

00:39:00,550 --> 00:38:57,280

but

1152

00:39:02,550 --> 00:39:00,560

uh only in a in a single letter uh

1153

00:39:04,069 --> 00:39:02,560

did he speculate about the origin of

1154

00:39:04,790 --> 00:39:04,079

first life to a friend named joseph

1155

00:39:06,150 --> 00:39:04,800

hooker and he

1156

00:39:08,150 --> 00:39:06,160

that's where we got the idea of the

1157

00:39:10,310 --> 00:39:08,160

prebiotic soup he talked about life

1158

00:39:11,349 --> 00:39:10,320

possibly arising in a in a warm little

1159

00:39:13,990 --> 00:39:11,359

pond of

1160

00:39:14,710 --> 00:39:14,000

all the diff right you're saying we have

1161

00:39:19,270 --> 00:39:14,720

we've never

1162

00:39:22,470 --> 00:39:19,280

in a lab in a petri dish created a cell

1163

00:39:25,670 --> 00:39:22,480

no nowhere near nowhere near we've

1164

00:39:28,550 --> 00:39:25,680

we've caused cells to to expand or or or

1165

00:39:31,030 --> 00:39:28,560

well we've we've done experiments where

1166

00:39:32,150 --> 00:39:31,040

we put dna from one cell into another

1167

00:39:35,990 --> 00:39:32,160

things like that

1168

00:39:38,230 --> 00:39:36,000

uh but there's no uh there's never been

1169

00:39:39,109 --> 00:39:38,240

a synthetic form of life developed in a

1170

00:39:40,630 --> 00:39:39,119

laboratory

1171

00:39:42,550 --> 00:39:40,640

but what about just you know what you

1172

00:39:45,349 --> 00:39:42,560

know standing water

1173

00:39:46,150 --> 00:39:45,359

which creates mold and bacteria and all

1174

00:39:47,910 --> 00:39:46,160

kinds of

1175

00:39:49,510 --> 00:39:47,920

nonsense i mean isn't that well that's

1176

00:39:50,310 --> 00:39:49,520

that's the old idea of spontaneous

1177

00:39:52,630 --> 00:39:50,320

generation

1178

00:39:54,150 --> 00:39:52,640

from the 19th century louis pasteur and

1179

00:39:56,150 --> 00:39:54,160

others refuted that

1180

00:39:57,750 --> 00:39:56,160

when you get when you have the

1181

00:39:59,589 --> 00:39:57,760

appearance of life coming out of nowhere

1182

00:40:01,349 --> 00:39:59,599

it's usually from spores or bacteria

1183

00:40:04,470 --> 00:40:01,359

that were there pre-existent and we just

1184

00:40:05,270 --> 00:40:04,480

we didn't see them so no life has not

1185

00:40:08,069 --> 00:40:05,280

been

1186

00:40:09,430 --> 00:40:08,079

uh generated or created in a laboratory

1187

00:40:11,510 --> 00:40:09,440

by human beings but if it were

1188

00:40:12,470 --> 00:40:11,520

notice what it would what it would show

1189

00:40:15,109 --> 00:40:12,480

if it took

1190

00:40:16,870 --> 00:40:15,119

human ingenuity to structure a bunch of

1191

00:40:19,829 --> 00:40:16,880

chemicals to create

1192

00:40:21,750 --> 00:40:19,839

life then what would you be stimulating

1193

00:40:23,349 --> 00:40:21,760

you wouldn't be simulating an undirected

1194

00:40:25,589 --> 00:40:23,359

unguided chemical process

1195

00:40:26,870 --> 00:40:25,599

you'd be simulating the the need for

1196

00:40:28,309 --> 00:40:26,880

intelligent design

1197

00:40:29,990 --> 00:40:28,319

this is one of the arguments i make in

1198

00:40:32,710 --> 00:40:30,000

the book there are what are called

1199

00:40:34,390 --> 00:40:32,720

ribozyme engineering experiments or

1200

00:40:36,230 --> 00:40:34,400

prebiotic simulation experiments where

1201

00:40:38,069 --> 00:40:36,240

the chemist actively

1202

00:40:40,230 --> 00:40:38,079

is manipulating a series of chemical

1203

00:40:42,390 --> 00:40:40,240

reactions to move chemistry in a

1204

00:40:43,430 --> 00:40:42,400

more complex more life-friendly

1205

00:40:45,109 --> 00:40:43,440

direction more

1206

00:40:46,870 --> 00:40:45,119

life-relevant direction trying to

1207

00:40:48,790 --> 00:40:46,880

produce some of the precursors of

1208

00:40:51,510 --> 00:40:48,800

biological molecules

1209

00:40:53,430 --> 00:40:51,520

but that's those experiments to the

1210

00:40:55,030 --> 00:40:53,440

extent they've been successful

1211

00:40:57,190 --> 00:40:55,040

have been successful because of the

1212

00:40:59,750 --> 00:40:57,200

active manipulation and guidance

1213

00:41:01,270 --> 00:40:59,760

of an intelligent agent so the

1214

00:41:02,150 --> 00:41:01,280

simulation experiments are meant by the

1215

00:41:04,550 --> 00:41:02,160

logic of the

1216

00:41:05,750 --> 00:41:04,560

of origin of life research to simulate

1217

00:41:07,510 --> 00:41:05,760

what might have been happening on the

1218

00:41:08,790 --> 00:41:07,520

early earth but if you can't get the

1219

00:41:09,990 --> 00:41:08,800

life to move and

1220

00:41:12,150 --> 00:41:10,000

if you can't get the chemistry to move

1221

00:41:15,109 --> 00:41:12,160

in a life-friendly direction without

1222

00:41:16,790 --> 00:41:15,119

the use of intelligence you're not

1223

00:41:18,309 --> 00:41:16,800

simulating an undirected unguided

1224

00:41:19,349 --> 00:41:18,319

process you're simulating the need for

1225

00:41:21,589 --> 00:41:19,359

intelligent design

1226

00:41:23,190 --> 00:41:21,599

yeah but i mean wouldn't that i mean all

1227

00:41:25,030 --> 00:41:23,200

science is directed by

1228

00:41:27,430 --> 00:41:25,040

intelligent humans so you would

1229

00:41:29,270 --> 00:41:27,440

discredit any scientific discovery with

1230

00:41:30,230 --> 00:41:29,280

that argument no you know much science

1231

00:41:32,710 --> 00:41:30,240

is involved is

1232

00:41:34,309 --> 00:41:32,720

it involves intelligent humans observing

1233

00:41:35,990 --> 00:41:34,319

processes in nature that take place

1234

00:41:37,190 --> 00:41:36,000

without our assistance guidance or

1235

00:41:39,109 --> 00:41:37,200

direction

1236

00:41:41,349 --> 00:41:39,119

when we have to assist guide and direct

1237

00:41:43,829 --> 00:41:41,359

to get the outcome we want

1238

00:41:45,430 --> 00:41:43,839

and to we can't say that that simulate

1239

00:41:46,630 --> 00:41:45,440

simulating what nature would do on its

1240

00:41:49,750 --> 00:41:46,640

own

1241

00:41:52,150 --> 00:41:49,760

okay okay so now let's move to

1242

00:41:53,990 --> 00:41:52,160

you what you're saying is no jim i'm not

1243

00:41:55,670 --> 00:41:54,000

saying that the single cell that was

1244

00:41:57,430 --> 00:41:55,680

created by god

1245

00:41:59,109 --> 00:41:57,440

resulted in all the evolution that we

1246

00:42:01,990 --> 00:41:59,119

see today including the creation of

1247

00:42:05,030 --> 00:42:02,000

humans you believe that then god

1248

00:42:06,470 --> 00:42:05,040

interceded at other points so how many

1249

00:42:08,390 --> 00:42:06,480

other times did he

1250

00:42:10,550 --> 00:42:08,400

intercede or what was the ma the the

1251
00:42:11,990 --> 00:42:10,560
main well i i think it's first important

1252
00:42:14,950 --> 00:42:12,000
to understand the argument

1253
00:42:16,870 --> 00:42:14,960
the way i've unfolded the argument uh in

1254
00:42:17,349 --> 00:42:16,880
my book signature in the cell i made the

1255
00:42:19,430 --> 00:42:17,359
case

1256
00:42:21,589 --> 00:42:19,440
for the intelligent intelligent design

1257
00:42:23,510 --> 00:42:21,599
is the best explanation for the origin

1258
00:42:24,870 --> 00:42:23,520
of the information needed to build the

1259
00:42:27,430 --> 00:42:24,880
first light

1260
00:42:28,230 --> 00:42:27,440
and i don't didn't conclude from that

1261
00:42:31,190 --> 00:42:28,240
alone that the

1262
00:42:31,589 --> 00:42:31,200
the designing agent was necessarily god

1263
00:42:35,270 --> 00:42:31,599

to

1264

00:42:39,349 --> 00:42:35,280

discussion

1265

00:42:42,309 --> 00:42:39,359

i expanded the in this new book i expand

1266

00:42:43,910 --> 00:42:42,319

the the the data under examination and

1267

00:42:44,470 --> 00:42:43,920

look at what we know from physics and

1268

00:42:47,030 --> 00:42:44,480

bio

1269

00:42:48,790 --> 00:42:47,040

and cosmology about the universe having

1270

00:42:50,150 --> 00:42:48,800

been finely tuned from the beginning the

1271

00:42:52,150 --> 00:42:50,160

fine-tuning i argue

1272

00:42:55,030 --> 00:42:52,160

is evidence of a fine tuner as many

1273

00:42:56,950 --> 00:42:55,040

physicists themselves have pointed out

1274

00:42:58,390 --> 00:42:56,960

and that that evidence of design is

1275

00:42:59,109 --> 00:42:58,400

present from the very beginning of the

1276

00:43:01,190 --> 00:42:59,119

universe

1277

00:43:02,630 --> 00:43:01,200

so if you only had evidence of design

1278

00:43:04,069 --> 00:43:02,640

long after the beginning you might

1279

00:43:04,790 --> 00:43:04,079

consider the possibility that the

1280

00:43:06,870 --> 00:43:04,800

designing

1281

00:43:08,069 --> 00:43:06,880

agent had been an agent within the

1282

00:43:10,790 --> 00:43:08,079

cosmos

1283

00:43:12,630 --> 00:43:10,800

and no less a person in science than

1284

00:43:13,990 --> 00:43:12,640

francis crick proposed that idea it's

1285

00:43:15,589 --> 00:43:14,000

called panspermia

1286

00:43:17,030 --> 00:43:15,599

dawkins actually floated the idea in

1287

00:43:20,150 --> 00:43:17,040

this interview that i

1288

00:43:22,309 --> 00:43:20,160

mentioned with ben stein

1289

00:43:23,990 --> 00:43:22,319

and i argue that that ends up not being

1290

00:43:25,109 --> 00:43:24,000

a very good explanation of the origin of

1291

00:43:27,030 --> 00:43:25,119

life because

1292

00:43:28,150 --> 00:43:27,040

if life was seeded here by an

1293

00:43:29,589 --> 00:43:28,160

intelligent agent

1294

00:43:31,589 --> 00:43:29,599

that evolved someplace else in the

1295

00:43:33,190 --> 00:43:31,599

cosmos you still got to get that

1296

00:43:34,150 --> 00:43:33,200

evolutionary process going which will

1297

00:43:36,470 --> 00:43:34,160

require

1298

00:43:37,910 --> 00:43:36,480

a first cell and information and if you

1299

00:43:38,710 --> 00:43:37,920

can't solve the information problem on

1300

00:43:40,150 --> 00:43:38,720

planet earth

1301

00:43:42,390 --> 00:43:40,160

it doesn't solve it just to kick it out

1302

00:43:43,990 --> 00:43:42,400

into outer space but secondly and even

1303

00:43:45,910 --> 00:43:44,000

more fundamentally

1304

00:43:48,069 --> 00:43:45,920

no being within the cosmos could explain

1305

00:43:48,790 --> 00:43:48,079

the origin of the cosmos itself a finite

1306

00:43:50,950 --> 00:43:48,800

time ago

1307

00:43:52,710 --> 00:43:50,960

or the fine-tuning of the universe that

1308

00:43:55,430 --> 00:43:52,720

makes its very life possible

1309

00:43:57,190 --> 00:43:55,440

so the alien designer idea i argue is

1310

00:43:59,030 --> 00:43:57,200

not as good an explanation of the

1311

00:43:59,589 --> 00:43:59,040

overall ensemble of evidence that we

1312

00:44:02,150 --> 00:43:59,599

have

1313

00:44:03,670 --> 00:44:02,160

from biology physics and cosmology as

1314

00:44:05,270 --> 00:44:03,680

the god hypothesis so i

1315

00:44:07,030 --> 00:44:05,280

i don't jump immediately to the god

1316

00:44:10,550 --> 00:44:07,040

hypothesis from the design

1317

00:44:12,309 --> 00:44:10,560

evident in life to to to infer

1318

00:44:14,870 --> 00:44:12,319

that the kind of intelligence that we

1319

00:44:16,230 --> 00:44:14,880

have involves a transcendent mind

1320

00:44:18,390 --> 00:44:16,240

you have to look at the physics and the

1321

00:44:21,750 --> 00:44:18,400

cosmology as well

1322

00:44:24,950 --> 00:44:21,760

okay um all right and

1323

00:44:28,950 --> 00:44:24,960

what are the elements that you believe

1324

00:44:31,030 --> 00:44:28,960

indicate that god has interceded

1325

00:44:32,309 --> 00:44:31,040

more than just by planting a single cell

1326

00:44:35,190 --> 00:44:32,319

on earth

1327

00:44:37,990 --> 00:44:35,200

well i think the evidence of what is

1328

00:44:39,990 --> 00:44:38,000

called fossil discontinuity

1329

00:44:42,069 --> 00:44:40,000

uh throughout the history of life i look

1330

00:44:46,150 --> 00:44:42,079

at another similar

1331

00:44:51,030 --> 00:44:48,390

striking example of this in my second

1332

00:44:53,270 --> 00:44:51,040

book darwin's doubt

1333

00:44:56,390 --> 00:44:53,280

there is an event in the history of life

1334

00:44:58,550 --> 00:44:56,400

known as the cambrian explosion in which

1335

00:44:59,430 --> 00:44:58,560

most of the major animal what are called

1336

00:45:01,589 --> 00:44:59,440

body plans

1337

00:45:02,470 --> 00:45:01,599

emerge abruptly in the fossil record

1338

00:45:07,510 --> 00:45:02,480

with no

1339

00:45:11,190 --> 00:45:09,270

transition a series of prior

1340

00:45:13,589 --> 00:45:11,200

transitional intermediates

1341

00:45:14,710 --> 00:45:13,599

as you would expect on a darwinian view

1342

00:45:16,790 --> 00:45:14,720

and

1343

00:45:18,790 --> 00:45:16,800

that presents two mysteries one the

1344

00:45:19,910 --> 00:45:18,800

first mystery is where all the missing

1345

00:45:23,430 --> 00:45:19,920

intermediates if

1346

00:45:25,589 --> 00:45:23,440

a gradualistic darwinian process had had

1347

00:45:28,069 --> 00:45:25,599

produced all these new forms of animal

1348

00:45:30,550 --> 00:45:28,079

life but secondly it also

1349

00:45:32,230 --> 00:45:30,560

uh creates a mystery of how these animal

1350

00:45:34,630 --> 00:45:32,240

forms would have been built

1351
00:45:36,710 --> 00:45:34,640
because post watson and crick and the

1352
00:45:38,710 --> 00:45:36,720
molecular biological revolution we know

1353
00:45:40,390 --> 00:45:38,720
that building new forms of animal life

1354
00:45:42,150 --> 00:45:40,400
requires new information

1355
00:45:44,390 --> 00:45:42,160
if you want to give your computer a new

1356
00:45:47,030 --> 00:45:44,400
function you've got to provide new code

1357
00:45:49,670 --> 00:45:47,040
you want to build a new uh form of

1358
00:45:52,309 --> 00:45:49,680
animal life with new organs and tissues

1359
00:45:53,190 --> 00:45:52,319
and an overall body plan new overall

1360
00:45:55,030 --> 00:45:53,200
body plan

1361
00:45:56,710 --> 00:45:55,040
you need both genetic information and

1362
00:45:58,230 --> 00:45:56,720
other forms of biological information to

1363
00:45:59,589 --> 00:45:58,240

accomplish that the evolutionary process

1364

00:46:01,670 --> 00:45:59,599

would need to do that

1365

00:46:03,030 --> 00:46:01,680

when you examine the evolutionary models

1366

00:46:05,589 --> 00:46:03,040

on offer

1367

00:46:07,190 --> 00:46:05,599

they either presuppose pre-existing

1368

00:46:08,870 --> 00:46:07,200

unexplained information or they don't

1369

00:46:09,910 --> 00:46:08,880

address that fundamental informational

1370

00:46:12,550 --> 00:46:09,920

problem

1371

00:46:14,390 --> 00:46:12,560

and um and so i think that when you have

1372

00:46:16,470 --> 00:46:14,400

these big events in the history of life

1373

00:46:17,910 --> 00:46:16,480

where you see massive innovation in

1374

00:46:20,870 --> 00:46:17,920

biological form

1375

00:46:22,390 --> 00:46:20,880

implying the need for new bursts of

1376

00:46:25,349 --> 00:46:22,400

biological information

1377

00:46:26,710 --> 00:46:25,359

i think those are likely uh uh events

1378

00:46:29,990 --> 00:46:26,720

that also required

1379

00:46:31,510 --> 00:46:30,000

active the action of an active designing

1380

00:46:33,270 --> 00:46:31,520

intelligence

1381

00:46:35,109 --> 00:46:33,280

so what you're really referring to

1382

00:46:37,109 --> 00:46:35,119

kraken wrong is is

1383

00:46:38,230 --> 00:46:37,119

what people commonly refer to as the

1384

00:46:44,710 --> 00:46:38,240

missing link

1385

00:46:45,270 --> 00:46:44,720

which some of those have subsequently

1386

00:46:46,710 --> 00:46:45,280

links

1387

00:46:48,470 --> 00:46:46,720

have been found right so there's been

1388

00:46:49,510 --> 00:46:48,480

unexplained how we got from this to this

1389

00:46:52,550 --> 00:46:49,520

and then

1390

00:46:53,990 --> 00:46:52,560

later more discoveries reveal those

1391

00:46:56,150 --> 00:46:54,000

links

1392

00:46:57,670 --> 00:46:56,160

the overall pattern in the fossil record

1393

00:47:00,710 --> 00:46:57,680

is one of discontinuity

1394

00:47:03,030 --> 00:47:00,720

there are there are examples

1395

00:47:05,750 --> 00:47:03,040

of continuous change but at what are

1396

00:47:07,990 --> 00:47:05,760

called lower taxonomic levels at species

1397

00:47:09,030 --> 00:47:08,000

genus maybe up the level of family when

1398

00:47:11,190 --> 00:47:09,040

you're looking at the

1399

00:47:13,270 --> 00:47:11,200

major major innovation in the history of

1400

00:47:14,790 --> 00:47:13,280

life we're fundamentally new forms

1401
00:47:16,470 --> 00:47:14,800
of life fundamental fundamentally new

1402
00:47:18,390 --> 00:47:16,480
body plans where body plan

1403
00:47:19,990 --> 00:47:18,400
is a unique a unique way of arranging

1404
00:47:21,750 --> 00:47:20,000
body parts and tissues

1405
00:47:23,430 --> 00:47:21,760
when you see new body plans come into

1406
00:47:25,510 --> 00:47:23,440
existence we're talking about

1407
00:47:26,630 --> 00:47:25,520
in the higher taxonomic categories of

1408
00:47:30,710 --> 00:47:26,640
classes

1409
00:47:34,230 --> 00:47:30,720
the orders

1410
00:47:38,390 --> 00:47:34,240
um these events are almost universally

1411
00:47:41,910 --> 00:47:38,400
highly discontinuous the abrupt uh

1412
00:47:42,710 --> 00:47:41,920
change in form uh abrupt new innovation

1413
00:47:45,430 --> 00:47:42,720

in the history of life

1414

00:47:46,150 --> 00:47:45,440

so so just tick through us real quickly

1415

00:47:48,230 --> 00:47:46,160

if you could just

1416

00:47:49,510 --> 00:47:48,240

you know the the major ones that you're

1417

00:47:50,870 --> 00:47:49,520

talking about that

1418

00:47:52,230 --> 00:47:50,880

don't really have an evolutionary

1419

00:47:53,349 --> 00:47:52,240

explanation yeah things like the the

1420

00:47:56,790 --> 00:47:53,359

cambrian explosion

1421

00:48:00,549 --> 00:47:56,800

the uh the uh

1422

00:48:02,230 --> 00:48:00,559

explosion of the mammalian radiation the

1423

00:48:03,910 --> 00:48:02,240

appearance of flowering plants the

1424

00:48:05,510 --> 00:48:03,920

cretaceous um

1425

00:48:07,349 --> 00:48:05,520

i have an article i wrote with the

1426
00:48:09,270 --> 00:48:07,359
german paleontologist gunter beckley

1427
00:48:11,190 --> 00:48:09,280
about 17 major

1428
00:48:13,510 --> 00:48:11,200
uh innovations in the history of life

1429
00:48:14,309 --> 00:48:13,520
that are profoundly discontinuous and

1430
00:48:17,589 --> 00:48:14,319
lack

1431
00:48:20,710 --> 00:48:17,599
uh ancestral fossils so

1432
00:48:21,270 --> 00:48:20,720
these would be examples of under your

1433
00:48:25,030 --> 00:48:21,280
theory

1434
00:48:28,470 --> 00:48:25,040
that god interceded and decided

1435
00:48:29,670 --> 00:48:28,480
that on this little tiny rock in this

1436
00:48:33,109 --> 00:48:29,680
humongous

1437
00:48:36,230 --> 00:48:33,119
universe i'm going to plant this

1438
00:48:38,870 --> 00:48:36,240

single cell and then later

1439

00:48:40,150 --> 00:48:38,880

a few hundred million years later what

1440

00:48:42,790 --> 00:48:40,160

have you he decides

1441

00:48:43,349 --> 00:48:42,800

now i'm going to plant put a plant there

1442

00:48:45,190 --> 00:48:43,359

and then

1443

00:48:46,630 --> 00:48:45,200

100 million years after that i'm going

1444

00:48:49,670 --> 00:48:46,640

to put a little

1445

00:48:52,230 --> 00:48:49,680

animal here or a little bugger whatever

1446

00:48:54,710 --> 00:48:52,240

is so so this is an intelligent

1447

00:48:55,430 --> 00:48:54,720

i i see personal god i see evidence of

1448

00:48:58,790 --> 00:48:55,440

design

1449

00:49:00,790 --> 00:48:58,800

in those events uh because of the large

1450

00:49:02,790 --> 00:49:00,800

discontinuous increases in the

1451
00:49:03,910 --> 00:49:02,800
information content of the biosphere at

1452
00:49:05,670 --> 00:49:03,920
those points

1453
00:49:06,710 --> 00:49:05,680
so that's a god but you know under that

1454
00:49:08,230 --> 00:49:06,720
let me come back at you a little bit

1455
00:49:11,510 --> 00:49:08,240
because just that the tone of

1456
00:49:13,109 --> 00:49:11,520
the your question is sort of designed to

1457
00:49:15,750 --> 00:49:13,119
make this sound implausible

1458
00:49:17,030 --> 00:49:15,760
but let's compare it to something how

1459
00:49:20,230 --> 00:49:17,040
plausible is it that

1460
00:49:23,109 --> 00:49:20,240
undirected unguided processes produced

1461
00:49:24,470 --> 00:49:23,119
all these beautiful organ structures and

1462
00:49:26,870 --> 00:49:24,480
body plans

1463
00:49:28,470 --> 00:49:26,880

and informational codes that are

1464

00:49:30,390 --> 00:49:28,480

necessary to build these living

1465

00:49:31,670 --> 00:49:30,400

organisms without the guidance of an

1466

00:49:33,430 --> 00:49:31,680

intelligent agent

1467

00:49:36,230 --> 00:49:33,440

we've gotten used to thinking and it's

1468

00:49:38,630 --> 00:49:36,240

sort of a default materialism where

1469

00:49:39,670 --> 00:49:38,640

anything that involves mind or agency is

1470

00:49:42,710 --> 00:49:39,680

somehow

1471

00:49:45,510 --> 00:49:42,720

like something spooky or weird

1472

00:49:46,630 --> 00:49:45,520

but maybe it's more weird to think of

1473

00:49:49,750 --> 00:49:46,640

nature

1474

00:49:51,750 --> 00:49:49,760

uh uh brute matter having these prop the

1475

00:49:55,750 --> 00:49:51,760

properties of ingenuity

1476

00:49:58,069 --> 00:49:55,760

on its own and so it's uh

1477

00:50:00,230 --> 00:49:58,079

i i i just pushed back at the the sort

1478

00:50:03,430 --> 00:50:00,240

of the um

1479

00:50:05,109 --> 00:50:03,440

the kind of the the incredulity that we

1480

00:50:07,270 --> 00:50:05,119

reflexively feel

1481

00:50:08,870 --> 00:50:07,280

about talking about the action of an

1482

00:50:10,309 --> 00:50:08,880

agent in the history of life

1483

00:50:12,069 --> 00:50:10,319

okay that's you know we're not used to

1484

00:50:13,670 --> 00:50:12,079

thinking that way we've inherited

1485

00:50:15,510 --> 00:50:13,680

a way of thinking from the late 19th

1486

00:50:17,990 --> 00:50:15,520

century that says that

1487

00:50:19,750 --> 00:50:18,000

you know that nature has these

1488

00:50:21,990 --> 00:50:19,760

properties we should we should not be

1489

00:50:23,190 --> 00:50:22,000

talking about creative intelligence as

1490

00:50:25,349 --> 00:50:23,200

an explanation

1491

00:50:26,790 --> 00:50:25,359

right but we're looking at features in

1492

00:50:29,270 --> 00:50:26,800

living systems which in

1493

00:50:31,190 --> 00:50:29,280

any other realm of experience would

1494

00:50:32,710 --> 00:50:31,200

immediately trigger an awareness of the

1495

00:50:35,030 --> 00:50:32,720

activity of a designing mind

1496

00:50:37,750 --> 00:50:35,040

i had a microsoft engineer who was

1497

00:50:39,349 --> 00:50:37,760

working with us

1498

00:50:40,870 --> 00:50:39,359

writing he wrote ten thousand lines of

1499

00:50:42,390 --> 00:50:40,880

code to simulate

1500

00:50:44,630 --> 00:50:42,400

what's called the gene expression system

1501

00:50:46,790 --> 00:50:44,640

how the information in dna

1502

00:50:48,549 --> 00:50:46,800

directs the construction of proteins he

1503

00:50:50,470 --> 00:50:48,559

came into my office one day and threw a

1504

00:50:51,190 --> 00:50:50,480

book down on my table called design

1505

00:50:54,230 --> 00:50:51,200

patterns

1506

00:50:55,109 --> 00:50:54,240

the standard design manual for software

1507

00:50:57,349 --> 00:50:55,119

engineers

1508

00:50:59,349 --> 00:50:57,359

and a design pattern he explained to me

1509

00:51:02,230 --> 00:50:59,359

is an established way

1510

00:51:03,349 --> 00:51:02,240

of storing or processing digital

1511

00:51:05,990 --> 00:51:03,359

information

1512

00:51:07,750 --> 00:51:06,000

and he said as i'm in order to to to

1513

00:51:09,510 --> 00:51:07,760

write the code to simulate

1514

00:51:11,510 --> 00:51:09,520

how the information in dna is being

1515

00:51:13,670 --> 00:51:11,520

expressed to produce proteins

1516

00:51:15,510 --> 00:51:13,680

i'm encountering all kinds of design

1517

00:51:17,030 --> 00:51:15,520

patterns that i recognize from high-tech

1518

00:51:19,270 --> 00:51:17,040

digital computing

1519

00:51:20,710 --> 00:51:19,280

in the cell you have automated error

1520

00:51:22,549 --> 00:51:20,720

correction well we have a

1521

00:51:24,230 --> 00:51:22,559

we have a we have a spell check in our

1522

00:51:26,230 --> 00:51:24,240

in our computers in our software pro

1523

00:51:28,150 --> 00:51:26,240

you know in our word processing programs

1524

00:51:29,990 --> 00:51:28,160

um we've got

1525

00:51:31,589 --> 00:51:30,000

information compression technologies

1526

00:51:34,790 --> 00:51:31,599

we've got uh

1527

00:51:37,030 --> 00:51:34,800

cryptographic decoding technologies so

1528

00:51:38,470 --> 00:51:37,040

this is very sophisticated information

1529

00:51:40,150 --> 00:51:38,480

technology that we're finding in even

1530

00:51:43,430 --> 00:51:40,160

the simplest living cells

1531

00:51:44,549 --> 00:51:43,440

and so um it might be time to not only

1532

00:51:46,710 --> 00:51:44,559

change our theories but our

1533

00:51:48,950 --> 00:51:46,720

sensibilities that suggest that

1534

00:51:49,990 --> 00:51:48,960

if if we're invoking something other

1535

00:51:51,589 --> 00:51:50,000

than a purely

1536

00:51:53,510 --> 00:51:51,599

materialistic explanation that we've

1537

00:51:55,430 --> 00:51:53,520

somehow uh jumped off the edge of the

1538

00:51:59,190 --> 00:51:55,440

rational universe

1539

00:52:01,109 --> 00:51:59,200

yeah well look i i find evolution

1540

00:52:02,710 --> 00:52:01,119

difficult to believe also so don't don't

1541

00:52:04,069 --> 00:52:02,720

get me wrong i mean you know the idea

1542

00:52:06,790 --> 00:52:04,079

that everything created from this

1543

00:52:07,270 --> 00:52:06,800

single cell it is it is hard to believe

1544

00:52:09,030 --> 00:52:07,280

it does

1545

00:52:10,549 --> 00:52:09,040

seem to be at this point the best

1546

00:52:13,109 --> 00:52:10,559

scientific explanation

1547

00:52:14,069 --> 00:52:13,119

but you know there's gaps in it and

1548

00:52:17,510 --> 00:52:14,079

holes in it and it

1549

00:52:19,829 --> 00:52:17,520

and it is hard to believe but it is

1550

00:52:22,549 --> 00:52:19,839

it isn't let me spend my money but it is

1551

00:52:24,230 --> 00:52:22,559

it is rational though

1552

00:52:25,510 --> 00:52:24,240

you know it it it does seem to make

1553

00:52:26,710 --> 00:52:25,520

rational sense that even though it's

1554

00:52:28,710 --> 00:52:26,720

kind of hard to believe but that you

1555

00:52:30,150 --> 00:52:28,720

know that all these things could evolve

1556

00:52:31,270 --> 00:52:30,160

uh over that time period and so on

1557

00:52:31,990 --> 00:52:31,280

although we are talking about a long

1558

00:52:35,430 --> 00:52:32,000

period of time

1559

00:52:36,790 --> 00:52:35,440

it does make logical sense i believe

1560

00:52:39,030 --> 00:52:36,800

anyway you could disagree with that but

1561

00:52:40,069 --> 00:52:39,040

that's fine but so i'm only saying that

1562

00:52:41,910 --> 00:52:40,079

okay if you're going to posit a

1563

00:52:43,829 --> 00:52:41,920

different theory than this

1564

00:52:45,430 --> 00:52:43,839

then you're also going to have to

1565

00:52:47,670 --> 00:52:45,440

explain also a bit

1566

00:52:48,710 --> 00:52:47,680

how it's rational you know how it's

1567

00:52:51,829 --> 00:52:48,720

rational that

1568

00:52:53,990 --> 00:52:51,839

this intelligence this god would

1569

00:52:55,270 --> 00:52:54,000

choose to do these things at these

1570

00:52:58,230 --> 00:52:55,280

certain times

1571

00:53:00,630 --> 00:52:58,240

and you know what's the thinking behind

1572

00:53:02,230 --> 00:53:00,640

this why did you start just with a cell

1573

00:53:03,910 --> 00:53:02,240

and then later decide i'm going to put a

1574

00:53:05,670 --> 00:53:03,920

plant and later put this and later put

1575

00:53:07,109 --> 00:53:05,680

this and later put this

1576

00:53:09,430 --> 00:53:07,119

is there any logical or rational

1577

00:53:11,190 --> 00:53:09,440

explanation for that well

1578

00:53:12,630 --> 00:53:11,200

it's you could ask the same question of

1579

00:53:14,470 --> 00:53:12,640

the evolutionary process

1580

00:53:15,910 --> 00:53:14,480

right but i'm asking you right now no

1581

00:53:16,549 --> 00:53:15,920

wait no no let me come back at you

1582

00:53:18,470 --> 00:53:16,559

because

1583

00:53:19,910 --> 00:53:18,480

you you've got a an underlying premise

1584

00:53:23,109 --> 00:53:19,920

that i want to challenge

1585

00:53:25,510 --> 00:53:23,119

um we use the notion of

1586

00:53:26,950 --> 00:53:25,520

agency to explain all kinds of things if

1587

00:53:28,790 --> 00:53:26,960

you go to south dakota and look at mount

1588

00:53:31,430 --> 00:53:28,800

rushmore

1589

00:53:33,109 --> 00:53:31,440

and someone asked you how did those

1590

00:53:33,510 --> 00:53:33,119

faces get on the mountain if you say

1591

00:53:35,030 --> 00:53:33,520

well

1592

00:53:36,549 --> 00:53:35,040

must have been wind and erosion i can't

1593

00:53:37,829 --> 00:53:36,559

really think about creative intelligence

1594

00:53:40,069 --> 00:53:37,839

playing a role

1595

00:53:41,109 --> 00:53:40,079

that would not be a rational explanation

1596

00:53:44,230 --> 00:53:41,119

because you have

1597

00:53:47,109 --> 00:53:44,240

experience of the production of of of

1598

00:53:48,790 --> 00:53:47,119

of shapes that conform to the human face

1599

00:53:51,109 --> 00:53:48,800

you know what artists do

1600

00:53:52,710 --> 00:53:51,119

um and you have ways of detecting the

1601
00:53:54,309 --> 00:53:52,720
activity of intelligent agents we

1602
00:53:56,230 --> 00:53:54,319
we detect the activity of intelligence

1603
00:53:57,270 --> 00:53:56,240
agents all the time turns out that there

1604
00:53:58,790 --> 00:53:57,280
are methods

1605
00:54:00,950 --> 00:53:58,800
of design detection that can be

1606
00:54:01,349 --> 00:54:00,960
formalized that's been part of the work

1607
00:54:03,349 --> 00:54:01,359
of the

1608
00:54:04,870 --> 00:54:03,359
the people who work on intelligent

1609
00:54:08,230 --> 00:54:04,880
design um

1610
00:54:10,549 --> 00:54:08,240
and so uh if you go to the british

1611
00:54:12,309 --> 00:54:10,559
museum and you look at the rosetta stone

1612
00:54:14,069 --> 00:54:12,319
and somebody says well how did those how

1613
00:54:15,829 --> 00:54:14,079

did those those characters get on there

1614

00:54:17,109 --> 00:54:15,839

in those hieroglyphs and symbols

1615

00:54:18,470 --> 00:54:17,119

and you said well that was wind and

1616

00:54:20,230 --> 00:54:18,480

erosion as well that would not be a

1617

00:54:22,470 --> 00:54:20,240

rational explanation

1618

00:54:23,990 --> 00:54:22,480

in that it's cut it contradicts what we

1619

00:54:25,750 --> 00:54:24,000

know from our uniform and repeated

1620

00:54:27,589 --> 00:54:25,760

experience about what it takes to

1621

00:54:30,950 --> 00:54:27,599

generate information

1622

00:54:32,390 --> 00:54:30,960

so what we're doing in the in work on

1623

00:54:34,390 --> 00:54:32,400

intelligent design

1624

00:54:35,910 --> 00:54:34,400

is identifying features that we know

1625

00:54:37,910 --> 00:54:35,920

from experience

1626
00:54:40,309 --> 00:54:37,920
are always the product of intelligent

1627
00:54:42,549 --> 00:54:40,319
agents and we're finding those features

1628
00:54:44,150 --> 00:54:42,559
in living systems or in the foundational

1629
00:54:45,430 --> 00:54:44,160
structure of the physical universe and

1630
00:54:47,430 --> 00:54:45,440
the fine-tuning

1631
00:54:49,750 --> 00:54:47,440
so the inference to intelligence is not

1632
00:54:50,789 --> 00:54:49,760
an unrational inference it's a perfectly

1633
00:54:52,309 --> 00:54:50,799
rational inference

1634
00:54:54,230 --> 00:54:52,319
and it's a kind of inference we make all

1635
00:54:55,270 --> 00:54:54,240
the time in our daily lives because we

1636
00:54:57,030 --> 00:54:55,280
see evidence

1637
00:54:58,549 --> 00:54:57,040
of intelligence and the echo of the

1638
00:55:00,630 --> 00:54:58,559

effects that intelligent agents leave

1639

00:55:03,109 --> 00:55:00,640

behind

1640

00:55:06,470 --> 00:55:03,119

yeah but the the rationality and logic

1641

00:55:09,430 --> 00:55:06,480

that i'm talking about is

1642

00:55:10,309 --> 00:55:09,440

why would god intercede in the way that

1643

00:55:11,910 --> 00:55:10,319

ways that he has

1644

00:55:13,430 --> 00:55:11,920

interceded we may not be able to we may

1645

00:55:15,270 --> 00:55:13,440

not be able to answer all of those

1646

00:55:17,190 --> 00:55:15,280

questions but we may still be able to

1647

00:55:18,549 --> 00:55:17,200

detect the activity of such an

1648

00:55:20,630 --> 00:55:18,559

intelligent agent

1649

00:55:22,069 --> 00:55:20,640

we can't uh we can ask the exact same

1650

00:55:23,829 --> 00:55:22,079

question of you know if you accept that

1651
00:55:25,829 --> 00:55:23,839
mutation and selection produced

1652
00:55:27,589 --> 00:55:25,839
everything you could say well why did

1653
00:55:28,309 --> 00:55:27,599
why did this mutation happen at this

1654
00:55:30,309 --> 00:55:28,319
time

1655
00:55:31,750 --> 00:55:30,319
causing you know the stegosaurus to

1656
00:55:33,510 --> 00:55:31,760
arise from some you know

1657
00:55:35,589 --> 00:55:33,520
uh we don't have answers to those types

1658
00:55:37,349 --> 00:55:35,599
of questions uh well but usually it's a

1659
00:55:37,750 --> 00:55:37,359
response to environment to environment

1660
00:55:39,270 --> 00:55:37,760
where

1661
00:55:40,870 --> 00:55:39,280
species yeah but but that those

1662
00:55:41,990 --> 00:55:40,880
environments are never specified we

1663
00:55:45,670 --> 00:55:42,000

don't really know

1664

00:55:45,990 --> 00:55:45,680

um and we also know uh more to the point

1665

00:55:49,109 --> 00:55:46,000

that

1666

00:55:50,630 --> 00:55:49,119

information

1667

00:55:51,990 --> 00:55:50,640

rather than generate it which is one of

1668

00:55:53,030 --> 00:55:52,000

the reasons that leading evolutionary

1669

00:55:55,030 --> 00:55:53,040

biologists share

1670

00:55:57,430 --> 00:55:55,040

a lot of your skepticism about the

1671

00:55:59,430 --> 00:55:57,440

current adequacy of evolutionary theory

1672

00:56:01,510 --> 00:55:59,440

is that the mutation selection mechanism

1673

00:56:04,069 --> 00:56:01,520

seems to do a very good job of

1674

00:56:06,230 --> 00:56:04,079

explaining small-scale variation

1675

00:56:07,829 --> 00:56:06,240

but it doesn't do a good job at all of

1676

00:56:09,190 --> 00:56:07,839

explaining major innovations in the

1677

00:56:11,829 --> 00:56:09,200

history of life where you need a lot of

1678

00:56:14,309 --> 00:56:11,839

new information to build new structures

1679

00:56:15,190 --> 00:56:14,319

where are you on the question of capital

1680

00:56:17,589 --> 00:56:15,200

letters

1681

00:56:20,230 --> 00:56:17,599

the missing link the link between humans

1682

00:56:22,710 --> 00:56:20,240

and apes

1683

00:56:24,789 --> 00:56:22,720

do you believe that we evolved from apes

1684

00:56:28,630 --> 00:56:24,799

or would that be a situation where

1685

00:56:31,109 --> 00:56:28,640

god interceded i i'm i'm skeptical about

1686

00:56:32,630 --> 00:56:31,119

the paleoanthropological accounts of

1687

00:56:34,630 --> 00:56:32,640

human origin i think there's a lot of

1688

00:56:36,950 --> 00:56:34,640

there's a lot of discontinuity there

1689

00:56:39,270 --> 00:56:36,960

not only at the level not only the

1690

00:56:41,030 --> 00:56:39,280

fossil record but in the genomic record

1691

00:56:42,870 --> 00:56:41,040

as well we're discovering that a lot of

1692

00:56:44,710 --> 00:56:42,880

a lot of what are called orphan genes

1693

00:56:45,990 --> 00:56:44,720

are present in the human genome so

1694

00:56:48,630 --> 00:56:46,000

there's more genetic

1695

00:56:49,670 --> 00:56:48,640

genomic discontinuity than previously

1696

00:56:51,430 --> 00:56:49,680

thought so

1697

00:56:53,589 --> 00:56:51,440

um i'm skeptical about that i'm hope you

1698

00:56:54,950 --> 00:56:53,599

know i could be i could be shown

1699

00:56:57,829 --> 00:56:54,960

wrong and maybe there's a convincing

1700

00:56:59,430 --> 00:56:57,839

account but i i'm skeptical about it so

1701
00:57:00,630 --> 00:56:59,440
and i think there there's certainly the

1702
00:57:02,549 --> 00:57:00,640
things about human beings that are

1703
00:57:04,549 --> 00:57:02,559
absolutely unique and discontinuous one

1704
00:57:06,950 --> 00:57:04,559
is our ability to use language

1705
00:57:08,470 --> 00:57:06,960
uh and the origin of language is

1706
00:57:12,069 --> 00:57:08,480
profound mystery because

1707
00:57:13,670 --> 00:57:12,079
after all to get a language system going

1708
00:57:15,030 --> 00:57:13,680
you need a language system you need a

1709
00:57:16,630 --> 00:57:15,040
symbol convention by which to

1710
00:57:17,670 --> 00:57:16,640
communicate to establish a new symbol

1711
00:57:19,030 --> 00:57:17,680
convention so

1712
00:57:20,710 --> 00:57:19,040
it's very difficult to imagine how

1713
00:57:23,910 --> 00:57:20,720

language gets going

1714

00:57:25,349 --> 00:57:23,920

uh in a in a gradual evolutionary way

1715

00:57:27,190 --> 00:57:25,359

and yet that's one of the most

1716

00:57:29,270 --> 00:57:27,200

distinctive features about human beings

1717

00:57:30,470 --> 00:57:29,280

that we we not only take for granted

1718

00:57:31,190 --> 00:57:30,480

we're using right now in order to

1719

00:57:35,109 --> 00:57:31,200

communicate

1720

00:57:38,309 --> 00:57:35,119

um so i i think that humans are unique

1721

00:57:40,150 --> 00:57:38,319

in a in a qualitative sense and uh i'm

1722

00:57:43,510 --> 00:57:40,160

skeptical about their

1723

00:57:44,390 --> 00:57:43,520

uh a purely discontinuous a purely

1724

00:57:46,390 --> 00:57:44,400

continuous

1725

00:57:48,150 --> 00:57:46,400

undirected evolutionary explanation for

1726

00:57:52,309 --> 00:57:48,160

their origin

1727

00:57:54,390 --> 00:57:52,319

so would that be uh evidence or or an

1728

00:57:57,349 --> 00:57:54,400

example of god's most

1729

00:57:58,470 --> 00:57:57,359

recent interceding in what otherwise is

1730

00:58:01,109 --> 00:57:58,480

this evolutionary

1731

00:58:02,309 --> 00:58:01,119

is putting humans on earth yeah it could

1732

00:58:06,150 --> 00:58:02,319

possibly be but

1733

00:58:07,829 --> 00:58:06,160

but i've i've not written about that and

1734

00:58:09,109 --> 00:58:07,839

that's not been my the focus i've been

1735

00:58:10,069 --> 00:58:09,119

looking at the origin of the universe

1736

00:58:12,630 --> 00:58:10,079

the fine-tuning

1737

00:58:13,270 --> 00:58:12,640

the origin of life and i have written a

1738

00:58:15,270 --> 00:58:13,280

book about

1739

00:58:17,190 --> 00:58:15,280

the origin of the animal life so i'm i'm

1740

00:58:18,630 --> 00:58:17,200

not an expert on paleoanthropology but

1741

00:58:21,829 --> 00:58:18,640

i'll tell you that just informally i'm

1742

00:58:24,710 --> 00:58:21,839

skeptical about the standard account

1743

00:58:26,470 --> 00:58:24,720

so um in all of this is kind of we're in

1744

00:58:29,270 --> 00:58:26,480

kind of the number two

1745

00:58:30,390 --> 00:58:29,280

discovery right which pertains to the

1746

00:58:32,950 --> 00:58:30,400

idea that

1747

00:58:34,549 --> 00:58:32,960

the fossil records don't seem to provide

1748

00:58:37,829 --> 00:58:34,559

a smooth

1749

00:58:39,990 --> 00:58:37,839

purely evolutionary explanation for

1750

00:58:41,589 --> 00:58:40,000

all the life that we see so far and

1751

00:58:42,630 --> 00:58:41,599

therefore oh i see i i see how you're

1752

00:58:45,030 --> 00:58:42,640

numbering them no problem

1753

00:58:46,230 --> 00:58:45,040

uh well i i in the in the book i address

1754

00:58:47,190 --> 00:58:46,240

them in the following order first the

1755

00:58:48,950 --> 00:58:47,200

origin of the universe

1756

00:58:50,870 --> 00:58:48,960

the fine-tuning and then the origin of

1757

00:58:51,670 --> 00:58:50,880

the information necessary to the first

1758

00:58:53,750 --> 00:58:51,680

life

1759

00:58:54,789 --> 00:58:53,760

and to major innovations in the history

1760

00:58:56,390 --> 00:58:54,799

of life so yeah

1761

00:58:57,670 --> 00:58:56,400

that that would be what you called

1762

00:58:58,789 --> 00:58:57,680

number two was my number three but no

1763

00:59:00,950 --> 00:58:58,799

big deal yeah oh

1764

00:59:02,470 --> 00:59:00,960

okay yeah yeah okay so i think i'm

1765

00:59:04,789 --> 00:59:02,480

confusing those two but let me make sure

1766

00:59:08,069 --> 00:59:04,799

i understand number two so number two

1767

00:59:08,549 --> 00:59:08,079

is is again the the fact that we don't

1768

00:59:10,870 --> 00:59:08,559

have

1769

00:59:13,349 --> 00:59:10,880

records to explain certain leaps from

1770

00:59:15,030 --> 00:59:13,359

one species to another species

1771

00:59:17,030 --> 00:59:15,040

well it's not so much there's plenty of

1772

00:59:18,150 --> 00:59:17,040

speciation it's the higher taxonomic

1773

00:59:20,549 --> 00:59:18,160

categories that are

1774

00:59:21,190 --> 00:59:20,559

that exhibit this profound discontinuity

1775

00:59:24,069 --> 00:59:21,200

the so

1776

00:59:25,589 --> 00:59:24,079

you know species genus family order

1777

00:59:28,789 --> 00:59:25,599

class and phyla

1778

00:59:29,589 --> 00:59:28,799

the the phylum classes uh um describe

1779

00:59:31,750 --> 00:59:29,599

what are called

1780

00:59:34,309 --> 00:59:31,760

separate body plans where you have

1781

00:59:35,589 --> 00:59:34,319

unique ways of arranging body parts

1782

00:59:38,069 --> 00:59:35,599

tissues organs

1783

00:59:40,470 --> 00:59:38,079

into a particular architecture and those

1784

00:59:42,710 --> 00:59:40,480

unique architectures

1785

00:59:43,750 --> 00:59:42,720

arise in the history of life very

1786

00:59:45,510 --> 00:59:43,760

abruptly

1787

00:59:47,510 --> 00:59:45,520

and so that's that's a case where

1788

00:59:48,390 --> 00:59:47,520

there's a massive amount of new genetic

1789

00:59:49,589 --> 00:59:48,400

information

1790

00:59:52,230 --> 00:59:49,599

something else we haven't really talked

1791

00:59:53,990 --> 00:59:52,240

about but something called uh onto or

1792

00:59:55,109 --> 00:59:54,000

epigenetic information information

1793

00:59:58,230 --> 00:59:55,119

that's stored

1794

00:59:58,549 --> 00:59:58,240

at a higher level than the dna um and so

1795

01:00:07,349 --> 00:59:58,559

i

1796

01:00:10,069 --> 01:00:07,359

just that the the

1797

01:00:10,630 --> 01:00:10,079

the ancestral fossils are missing it's

1798

01:00:16,309 --> 01:00:10,640

that

1799

01:00:17,829 --> 01:00:16,319

body plans and architectures the

1800

01:00:19,829 --> 01:00:17,839

evolutionary process would have to

1801

01:00:21,829 --> 01:00:19,839

generate a vast amount of genetic

1802

01:00:23,270 --> 01:00:21,839

and other higher forms of information to

1803

01:00:26,470 --> 01:00:23,280

build these systems

1804

01:00:29,030 --> 01:00:26,480

and in darwin's doubt i show why uh

1805

01:00:31,270 --> 01:00:29,040

that's implausible from the standpoint

1806

01:00:32,789 --> 01:00:31,280

of really any of the major evolutionary

1807

01:00:34,630 --> 01:00:32,799

models that are currently on offer they

1808

01:00:36,549 --> 01:00:34,640

either presuppose pre-existing

1809

01:00:38,950 --> 01:00:36,559

forms of information or they fail to

1810

01:00:42,630 --> 01:00:38,960

explain the animation required

1811

01:00:45,270 --> 01:00:42,640

but when it comes to evolution generally

1812

01:00:46,950 --> 01:00:45,280

you agree with it you think that it is a

1813

01:00:48,870 --> 01:00:46,960

proper scientific theory and does in

1814

01:00:51,190 --> 01:00:48,880

fact explain a lot of changes that you

1815

01:00:53,589 --> 01:00:51,200

see in species and perhaps

1816

01:00:55,510 --> 01:00:53,599

explains life coming out of the ocean

1817

01:00:58,630 --> 01:00:55,520

and fish crawling out of the ocean and

1818

01:01:02,069 --> 01:00:58,640

turning into reptiles etc well

1819

01:01:04,470 --> 01:01:02,079

i think that evolution is a real pro

1820

01:01:05,349 --> 01:01:04,480

the mutation selection is a real process

1821

01:01:09,510 --> 01:01:05,359

there are

1822

01:01:11,589 --> 01:01:09,520

continuous changes within

1823

01:01:13,109 --> 01:01:11,599

many of the lower taxonomic groups that

1824

01:01:15,030 --> 01:01:13,119

can be mapped so

1825

01:01:17,030 --> 01:01:15,040

uh evolutionary biologists have also

1826

01:01:19,750 --> 01:01:17,040

often made a distinction between

1827

01:01:21,270 --> 01:01:19,760

macro and microevolution uh i'm

1828

01:01:22,789 --> 01:01:21,280

skeptical about

1829

01:01:24,630 --> 01:01:22,799

the sufficiency of mutation and

1830

01:01:26,630 --> 01:01:24,640

selection to to exchange

1831

01:01:28,069 --> 01:01:26,640

to to explain the major innovations in

1832

01:01:28,710 --> 01:01:28,079

the history of life which would be

1833

01:01:30,789 --> 01:01:28,720

sometimes

1834

01:01:32,390 --> 01:01:30,799

equated with macroevolution i'm

1835

01:01:34,230 --> 01:01:32,400

perfectly uh

1836

01:01:35,910 --> 01:01:34,240

in agreement with the reality of

1837

01:01:39,670 --> 01:01:35,920

microevolutionary processes of

1838

01:01:41,990 --> 01:01:39,680

speciation and adaptation and the like

1839

01:01:42,710 --> 01:01:42,000

okay and then so the then i think i'm

1840

01:01:45,430 --> 01:01:42,720

understanding too

1841

01:01:46,870 --> 01:01:45,440

so three is really seeing the third

1842

01:01:50,150 --> 01:01:46,880

discovery

1843

01:01:51,910 --> 01:01:50,160

is seeing intelligent design

1844

01:01:53,430 --> 01:01:51,920

that that you think cannot be explained

1845

01:01:55,910 --> 01:01:53,440

to evolution is that

1846

01:01:56,549 --> 01:01:55,920

is that am i getting number three

1847

01:01:58,309 --> 01:01:56,559

correct

1848

01:01:59,589 --> 01:01:58,319

or is that number two as far as the

1849

01:02:01,270 --> 01:01:59,599

scientific disorder the number two the

1850

01:02:01,589 --> 01:02:01,280

number two is the fine-tuning argument

1851

01:02:06,710 --> 01:02:01,599

yeah

1852

01:02:09,029 --> 01:02:06,720

did just describe number three for me

1853

01:02:10,950 --> 01:02:09,039

again number three is the discovery of

1854

01:02:13,190 --> 01:02:10,960

the informational properties of life

1855

01:02:15,349 --> 01:02:13,200

that are best explained i argue by

1856

01:02:18,150 --> 01:02:15,359

reference to a designing intelligence

1857

01:02:18,630 --> 01:02:18,160

um rather than an undirected unguided

1858

01:02:21,270 --> 01:02:18,640

process

1859

01:02:24,069 --> 01:02:21,280

such as mutation and natural selection

1860

01:02:26,470 --> 01:02:24,079

and the best example of that is

1861

01:02:27,670 --> 01:02:26,480

what the origin of the first life the

1862

01:02:30,230 --> 01:02:27,680

origin of the

1863

01:02:30,710 --> 01:02:30,240

animal that would be the best example

1864

01:02:40,950 --> 01:02:30,720

the

1865

01:02:44,549 --> 01:02:40,960

okay gotcha um

1866

01:02:45,990 --> 01:02:44,559

and uh what what about the idea that

1867

01:02:47,910 --> 01:02:46,000

you know you talk about humans are

1868

01:02:48,950 --> 01:02:47,920

actually creating things that are very

1869

01:02:51,029 --> 01:02:48,960

much

1870

01:02:53,349 --> 01:02:51,039

like the things that we're seeing in dna

1871

01:02:56,710 --> 01:02:53,359

and so on the idea that that

1872

01:02:58,309 --> 01:02:56,720

humans could somehow create themselves

1873

01:02:59,829 --> 01:02:58,319

and create life i mean it reminds me of

1874

01:03:01,430 --> 01:02:59,839

this movie ex machina

1875

01:03:03,670 --> 01:03:01,440

where if you saw that you know

1876

01:03:04,950 --> 01:03:03,680

artificial intelligence and

1877

01:03:08,390 --> 01:03:04,960

next thing you know this thing could

1878

01:03:10,630 --> 01:03:08,400

theoretically procreate and so on i mean

1879

01:03:11,430 --> 01:03:10,640

is this something that you think about

1880

01:03:14,630 --> 01:03:11,440

or

1881

01:03:16,470 --> 01:03:14,640

i mean it really means that

1882

01:03:18,870 --> 01:03:16,480

there's a very good new book out right

1883

01:03:19,750 --> 01:03:18,880

now uh called the myth of artificial

1884

01:03:22,710 --> 01:03:19,760

intelligence

1885

01:03:24,630 --> 01:03:22,720

and uh it's written by the computer

1886

01:03:25,670 --> 01:03:24,640

scientist and philosopher eric larson

1887

01:03:29,109 --> 01:03:25,680

published with the

1888

01:03:31,589 --> 01:03:29,119

harvard university press and part of the

1889

01:03:33,190 --> 01:03:31,599

problem of ai with intelligent systems

1890

01:03:35,029 --> 01:03:33,200

is to get them to

1891

01:03:36,230 --> 01:03:35,039

uh create things that are smarter than

1892

01:03:38,710 --> 01:03:36,240

themselves and one of the

1893

01:03:39,510 --> 01:03:38,720

problems that early ai people realized

1894

01:03:41,670 --> 01:03:39,520

is that

1895

01:03:43,750 --> 01:03:41,680

we had a hard time thinking of how to

1896

01:03:45,990 --> 01:03:43,760

create a system smarter than

1897

01:03:47,270 --> 01:03:46,000

ourselves you know that humans and we

1898

01:03:50,710 --> 01:03:47,280

haven't devised a

1899

01:03:52,549 --> 01:03:50,720

a a smarter version of a human

1900

01:03:53,990 --> 01:03:52,559

so how why do we think that machines are

1901

01:03:54,870 --> 01:03:54,000

going to be able to devise a smarter

1902

01:03:57,910 --> 01:03:54,880

version of

1903

01:03:59,270 --> 01:03:57,920

of themselves where smarter means

1904

01:04:01,910 --> 01:03:59,280

acquiring what's called general

1905

01:04:03,829 --> 01:04:01,920

intelligence rather than task specific

1906

01:04:05,589 --> 01:04:03,839

knowledge about solving a problem like

1907

01:04:08,309 --> 01:04:05,599

playing chess or something so

1908

01:04:09,270 --> 01:04:08,319

um so i'm not sure where you're heading

1909

01:04:12,390 --> 01:04:09,280

with that but uh

1910

01:04:14,309 --> 01:04:12,400

you know this is the the i guess

1911

01:04:15,990 --> 01:04:14,319

yeah i guess you know as we think about

1912

01:04:17,750 --> 01:04:16,000

a creator

1913

01:04:19,750 --> 01:04:17,760

i guess i'm talking about the

1914

01:04:23,349 --> 01:04:19,760

possibility of a terrestrial

1915

01:04:24,710 --> 01:04:23,359

uh creator because

1916

01:04:26,630 --> 01:04:24,720

you know in other words just to throw

1917

01:04:29,430 --> 01:04:26,640

something silly out there that you know

1918

01:04:31,829 --> 01:04:29,440

this was a guy playing around in a lab

1919

01:04:34,870 --> 01:04:31,839

that somehow created the big bang

1920

01:04:35,349 --> 01:04:34,880

type of thing because you know as we see

1921

01:04:39,990 --> 01:04:35,359

now

1922

01:04:43,109 --> 01:04:40,000

able to create and probably

1923

01:04:45,670 --> 01:04:43,119

can create things that themselves will

1924

01:04:46,549 --> 01:04:45,680

procreate or theoretically could create

1925

01:04:49,510 --> 01:04:46,559

that in the future

1926

01:04:50,069 --> 01:04:49,520

well i address this very directly in the

1927

01:04:52,630 --> 01:04:50,079

book because

1928

01:04:53,829 --> 01:04:52,640

there is a hypothesis that advances this

1929

01:04:55,910 --> 01:04:53,839

is called as i mentioned before

1930

01:04:57,670 --> 01:04:55,920

panspermia the idea that life was seeded

1931

01:04:59,990 --> 01:04:57,680

here on earth by some

1932

01:05:02,230 --> 01:05:00,000

intelligent agent on maybe some other

1933

01:05:04,069 --> 01:05:02,240

planet or somewhere within the cosmos

1934

01:05:05,750 --> 01:05:04,079

or even if you want to say there was a

1935

01:05:07,430 --> 01:05:05,760

creator of all of us that was

1936

01:05:09,190 --> 01:05:07,440

pre-existed us on the planet a

1937

01:05:12,069 --> 01:05:09,200

terrestrial intelligence

1938

01:05:13,990 --> 01:05:12,079

either way any any intelligent agent

1939

01:05:15,589 --> 01:05:14,000

within the universe

1940

01:05:17,829 --> 01:05:15,599

cannot account for the origin of the

1941

01:05:19,910 --> 01:05:17,839

universe itself or the fine-tuning

1942

01:05:21,589 --> 01:05:19,920

of the physical parameters the very

1943

01:05:23,990 --> 01:05:21,599

fabric of

1944

01:05:26,390 --> 01:05:24,000

physics and chemistry that make its

1945

01:05:28,710 --> 01:05:26,400

origin and evolution possible so

1946

01:05:30,230 --> 01:05:28,720

um no no being within the cosmos i think

1947

01:05:31,990 --> 01:05:30,240

is going to be an adequate explanation

1948

01:05:33,910 --> 01:05:32,000

for all three of the big

1949

01:05:37,029 --> 01:05:33,920

three facts that i'm looking at the yeah

1950

01:05:39,270 --> 01:05:37,039

it would have to be a

1951

01:05:41,349 --> 01:05:39,280

terrestrial being that created the big

1952

01:05:42,870 --> 01:05:41,359

bang so there would have to be something

1953

01:05:44,710 --> 01:05:42,880

yeah but how does that work extra

1954

01:05:45,750 --> 01:05:44,720

universe there would have been multiple

1955

01:05:47,430 --> 01:05:45,760

universes

1956

01:05:49,109 --> 01:05:47,440

well unpack that i'll come i'd love to

1957

01:05:50,069 --> 01:05:49,119

talk about multiple universes but unpack

1958

01:05:53,029 --> 01:05:50,079

that for me how does

1959

01:05:54,470 --> 01:05:53,039

a a guy sitting in a lab create the big

1960

01:05:57,589 --> 01:05:54,480

bang 13.8 million

1961

01:06:01,029 --> 01:05:57,599

billion years ago um

1962

01:06:02,309 --> 01:06:01,039

when he's sitting on a uh a rocky planet

1963

01:06:04,789 --> 01:06:02,319

in a in a

1964

01:06:06,309 --> 01:06:04,799

in a galaxy in another universe

1965

01:06:08,150 --> 01:06:06,319

basically in another universe so you

1966

01:06:11,750 --> 01:06:08,160

have a guy in another universe okay

1967

01:06:13,190 --> 01:06:11,760

right um so the multiverse hypothesis is

1968

01:06:14,390 --> 01:06:13,200

quite popular now so we should talk

1969

01:06:16,069 --> 01:06:14,400

about that it's been

1970

01:06:17,589 --> 01:06:16,079

it's been proposed for various reasons

1971

01:06:18,150 --> 01:06:17,599

but i think it's popularity as a

1972

01:06:21,029 --> 01:06:18,160

function

1973

01:06:23,270 --> 01:06:21,039

of its use as an explanation for the

1974

01:06:24,950 --> 01:06:23,280

incredible improbability of these

1975

01:06:26,470 --> 01:06:24,960

this ensemble of fine-tuning parameters

1976

01:06:29,190 --> 01:06:26,480

that i was talking about

1977

01:06:30,789 --> 01:06:29,200

and um in other words it's been exp used

1978

01:06:32,549 --> 01:06:30,799

as an alternative to the intelligent

1979

01:06:34,789 --> 01:06:32,559

design explanation for

1980

01:06:36,630 --> 01:06:34,799

the precise fine-tuning that we find in

1981

01:06:39,910 --> 01:06:36,640

the in the physical universe the

1982

01:06:42,470 --> 01:06:39,920

so-called goldilocks universe um

1983

01:06:44,710 --> 01:06:42,480

and the multiverse it's intriguing but

1984

01:06:47,910 --> 01:06:44,720

it has a it has a problem

1985

01:06:49,990 --> 01:06:47,920

um in order for the multiverse

1986

01:06:51,190 --> 01:06:50,000

hypothesis to work as an explanation for

1987

01:06:53,349 --> 01:06:51,200

the fine-tuning

1988

01:06:55,029 --> 01:06:53,359

you can't just have separate universes

1989

01:06:56,870 --> 01:06:55,039

out there if the all the universes are

1990

01:06:57,990 --> 01:06:56,880

causally disconnected from each other

1991

01:06:59,430 --> 01:06:58,000

and from our own

1992

01:07:00,950 --> 01:06:59,440

then nothing that happens in another

1993

01:07:02,630 --> 01:07:00,960

universe even a guy fiddling in a

1994

01:07:05,029 --> 01:07:02,640

laboratory with a computer

1995

01:07:06,230 --> 01:07:05,039

isn't going to affect uh what happens in

1996

01:07:09,670 --> 01:07:06,240

this universe

1997

01:07:11,589 --> 01:07:09,680

um so in order to

1998

01:07:13,750 --> 01:07:11,599

depict our universe as kind of the lucky

1999

01:07:16,870 --> 01:07:13,760

winner of a great cosmic lottery

2000

01:07:18,549 --> 01:07:16,880

all multiverse hypotheses have proposed

2001

01:07:20,390 --> 01:07:18,559

what are called universe generating

2002

01:07:21,670 --> 01:07:20,400

mechanisms some are based on something

2003

01:07:23,190 --> 01:07:21,680

called string theory

2004

01:07:26,230 --> 01:07:23,200

others are based on something called

2005

01:07:29,430 --> 01:07:26,240

inflationary cosmology

2006

01:07:33,349 --> 01:07:29,440

and it but it turns out that these

2007

01:07:36,069 --> 01:07:33,359

um universe generating mechanisms

2008

01:07:37,109 --> 01:07:36,079

even in theory to produce new universes

2009

01:07:38,950 --> 01:07:37,119

themselves

2010

01:07:40,150 --> 01:07:38,960

have to be precisely finely tuned in

2011

01:07:41,109 --> 01:07:40,160

other words the universe generating

2012

01:07:43,349 --> 01:07:41,119

mechanisms

2013

01:07:44,390 --> 01:07:43,359

depend upon prior unexplained fine

2014

01:07:46,470 --> 01:07:44,400

tuning

2015

01:07:48,069 --> 01:07:46,480

so the object initially was to use the

2016

01:07:49,270 --> 01:07:48,079

multiverse to explain the fine-tuning in

2017

01:07:51,430 --> 01:07:49,280

our universe

2018

01:07:53,190 --> 01:07:51,440

but to do so you need universe

2019

01:07:53,990 --> 01:07:53,200

generating mechanisms that themselves

2020

01:07:55,349 --> 01:07:54,000

require prior

2021

01:07:56,789 --> 01:07:55,359

unexplained fine-tuning so you haven't

2022

01:07:57,829 --> 01:07:56,799

really explained the fine-tuning the ultimate

2023

01:07:59,750 --> 01:07:57,839

origin the fine-tuning

2024

01:08:01,670 --> 01:07:59,760

you've just pushed it back one one

2025

01:08:03,430 --> 01:08:01,680

generation and that would include

2026

01:08:05,190 --> 01:08:03,440

presumably the fine-tuning necessary to

2027

01:08:06,069 --> 01:08:05,200

produce a little guy on a computer in

2028

01:08:07,510 --> 01:08:06,079

some universe

2029

01:08:09,109 --> 01:08:07,520

trying to spin out other universes i

2030

01:08:09,510 --> 01:08:09,119

mean eventually you've got to explain

2031

01:08:11,589 --> 01:08:09,520

that

2032

01:08:12,549 --> 01:08:11,599

original fine-tuning and fine-tuning is

2033

01:08:15,589 --> 01:08:12,559

again a

2034

01:08:16,470 --> 01:08:15,599

a a type of phenomenon which we know

2035

01:08:18,550 --> 01:08:16,480

from experience

2036

01:08:19,669 --> 01:08:18,560

is always the product of intelligence

2037

01:08:20,550 --> 01:08:19,679

when we say something that's finely

2038

01:08:22,309 --> 01:08:20,560

tuned we mean

2039

01:08:24,709 --> 01:08:22,319

there's an ensemble of improbable

2040

01:08:27,189 --> 01:08:24,719

parameters that jointly function

2041

01:08:29,110 --> 01:08:27,199

to exemplify a set of functional

2042

01:08:30,149 --> 01:08:29,120

requirements or produce a functional

2043

01:08:32,309 --> 01:08:30,159

outcome

2044

01:08:33,990 --> 01:08:32,319

and so we could think of a french recipe

2045

01:08:35,990 --> 01:08:34,000

as a finely tuned system or an internal

2046

01:08:37,669 --> 01:08:36,000

combustion as a finely tuned system or a

2047

01:08:39,110 --> 01:08:37,679

section of digital code or computer

2048

01:08:40,630 --> 01:08:39,120

hardware is finely tuned

2049

01:08:43,030 --> 01:08:40,640

what do all those things have in common

2050

01:08:44,630 --> 01:08:43,040

they have in common a prior intelligent

2051
01:08:45,430 --> 01:08:44,640
agent having played a role in their

2052
01:08:47,590 --> 01:08:45,440
origin

2053
01:08:49,030 --> 01:08:47,600
so if the multiverse doesn't ultimately

2054
01:08:51,430 --> 01:08:49,040
explain fine-tuning

2055
01:08:52,070 --> 01:08:51,440
that leaves only one known cause and

2056
01:08:54,070 --> 01:08:52,080
explanation

2057
01:08:55,990 --> 01:08:54,080
of fine-tuning and that's intelligence

2058
01:08:58,470 --> 01:08:56,000
so i think that even

2059
01:08:59,269 --> 01:08:58,480
even if the multiverse is true you still

2060
01:09:01,910 --> 01:08:59,279
have

2061
01:09:02,789 --> 01:09:01,920
evidence for intelligent design what

2062
01:09:05,590 --> 01:09:02,799
about this one i

2063
01:09:07,669 --> 01:09:05,600

i think it's been semi-disproven it's a

2064

01:09:09,189 --> 01:09:07,679

kind of a simplistic explanation but

2065

01:09:11,349 --> 01:09:09,199

this would be one for that the universe

2066

01:09:13,749 --> 01:09:11,359

has just always been there that

2067

01:09:16,149 --> 01:09:13,759

it's it's uh you know you have the big

2068

01:09:18,789 --> 01:09:16,159

bang big bang which causes this explo

2069

01:09:19,510 --> 01:09:18,799

explosion and everything is moving apart

2070

01:09:21,910 --> 01:09:19,520

from each other

2071

01:09:23,829 --> 01:09:21,920

and growing and growing and growing and

2072

01:09:24,709 --> 01:09:23,839

that eventually the energy from the big

2073

01:09:26,630 --> 01:09:24,719

bang

2074

01:09:28,309 --> 01:09:26,640

recedes to the point where essentially

2075

01:09:29,910 --> 01:09:28,319

gravity right

2076

01:09:31,829 --> 01:09:29,920

and then everything starts coming back

2077

01:09:33,510 --> 01:09:31,839

together again and then

2078

01:09:35,110 --> 01:09:33,520

has another big bang and that the

2079

01:09:37,669 --> 01:09:35,120

universe just it keeps

2080

01:09:39,030 --> 01:09:37,679

going in and out yeah that's fanta i

2081

01:09:41,590 --> 01:09:39,040

mean that's another good question

2082

01:09:42,709 --> 01:09:41,600

um the this is called the oscillating

2083

01:09:44,630 --> 01:09:42,719

universe model

2084

01:09:45,829 --> 01:09:44,640

or sometimes called a cyclical universe

2085

01:09:48,550 --> 01:09:45,839

model um

2086

01:09:50,149 --> 01:09:48,560

these were pretty popular in the 1980s

2087

01:09:51,910 --> 01:09:50,159

in cosmology because it did a nice

2088

01:09:53,829 --> 01:09:51,920

it did a nice job of accounting for the

2089

01:09:55,189 --> 01:09:53,839

observational evidence of an expansion

2090

01:09:56,790 --> 01:09:55,199

because we could say we're in the

2091

01:09:59,350 --> 01:09:56,800

expansion phase right now

2092

01:10:00,870 --> 01:09:59,360

but later we'll recollapse and then

2093

01:10:03,510 --> 01:10:00,880

expand again and recollapse and expand

2094

01:10:06,950 --> 01:10:03,520

and re-collapse

2095

01:10:09,590 --> 01:10:06,960

two problems one emerged one was that

2096

01:10:11,270 --> 01:10:09,600

there doesn't seem to be enough

2097

01:10:12,630 --> 01:10:11,280

gravitational mass in the universe even

2098

01:10:13,830 --> 01:10:12,640

counting dark matter to cause a

2099

01:10:16,390 --> 01:10:13,840

re-collapse

2100

01:10:17,910 --> 01:10:16,400

and with that there's a evidence of the

2101

01:10:19,110 --> 01:10:17,920

universe actually accelerating an

2102

01:10:20,470 --> 01:10:19,120

expansion

2103

01:10:22,390 --> 01:10:20,480

which suggests that it we're not going

2104

01:10:24,630 --> 01:10:22,400

to get the re-collapse but

2105

01:10:27,750 --> 01:10:24,640

secondly maybe more fundamentally it's a

2106

01:10:29,110 --> 01:10:27,760

physicist at mit named alan guth who

2107

01:10:30,870 --> 01:10:29,120

evaluated this from the standpoint of

2108

01:10:32,149 --> 01:10:30,880

thermodynamics and he showed that if

2109

01:10:34,950 --> 01:10:32,159

there were these series of

2110

01:10:36,390 --> 01:10:34,960

expansions and collapses you get a

2111

01:10:38,870 --> 01:10:36,400

greater

2112

01:10:39,750 --> 01:10:38,880

dispersion of matter with each cycle

2113

01:10:43,669 --> 01:10:39,760

which means

2114

01:10:43,990 --> 01:10:43,679

there would be less energy available to

2115

01:10:46,070 --> 01:10:44,000

do

2116

01:10:47,350 --> 01:10:46,080

work so each successive expansion would

2117

01:10:50,070 --> 01:10:47,360

be a little bit

2118

01:10:51,669 --> 01:10:50,080

less of an expansion than the one before

2119

01:10:53,270 --> 01:10:51,679

it'd be like dropping a ball

2120

01:10:54,709 --> 01:10:53,280

and initially it bounces pretty high but

2121

01:10:56,470 --> 01:10:54,719

then it damps down and

2122

01:10:58,709 --> 01:10:56,480

eventually bounces less and less and

2123

01:11:01,750 --> 01:10:58,719

less and finally settles to the floor

2124

01:11:04,630 --> 01:11:01,760

so if the universe was infinitely old

2125

01:11:06,149 --> 01:11:04,640

if you you would expect that we would

2126

01:11:07,830 --> 01:11:06,159

have already reached a point

2127

01:11:09,350 --> 01:11:07,840

where the whole damping effect would

2128

01:11:11,350 --> 01:11:09,360

have taken place and we would have

2129

01:11:13,270 --> 01:11:11,360

reached that point of which would have

2130

01:11:13,750 --> 01:11:13,280

been a nullifying equilibrium where we

2131

01:11:16,630 --> 01:11:13,760

would all

2132

01:11:18,070 --> 01:11:16,640

we would be beyond any more bounces uh

2133

01:11:20,470 --> 01:11:18,080

we'd already be experiencing

2134

01:11:21,750 --> 01:11:20,480

uh heat death as the physicists call it

2135

01:11:22,790 --> 01:11:21,760

but since we don't live in such a

2136

01:11:24,550 --> 01:11:22,800

universe

2137

01:11:26,149 --> 01:11:24,560

even if there were an infinite even if

2138

01:11:27,430 --> 01:11:26,159

there were a number of cycles before

2139

01:11:28,470 --> 01:11:27,440

us they wouldn't have gone back

2140

01:11:29,510 --> 01:11:28,480

infinitely there must have been a

2141

01:11:33,270 --> 01:11:29,520

beginning

2142

01:11:36,709 --> 01:11:33,280

um so there's so

2143

01:11:38,630 --> 01:11:36,719

uh yeah even even if there were

2144

01:11:39,750 --> 01:11:38,640

and even if there were previous cycles

2145

01:11:41,430 --> 01:11:39,760

they couldn't have gone on

2146

01:11:43,030 --> 01:11:41,440

infinitely into the past or we would

2147

01:11:43,830 --> 01:11:43,040

have already reached that point of not

2148

01:11:46,550 --> 01:11:43,840

nullifying

2149

01:11:47,189 --> 01:11:46,560

uh thermodynamic equilibrium okay last

2150

01:11:49,990 --> 01:11:47,199

two quick

2151

01:11:50,470 --> 01:11:50,000

questions just to sneak in one is your

2152

01:11:57,030 --> 01:11:50,480

questions

2153

01:11:59,669 --> 01:11:58,390

it's always hard to answer them but yeah

2154

01:12:01,669 --> 01:11:59,679

you know you come prepared with

2155

01:12:02,630 --> 01:12:01,679

multi-verses and oscillating universes

2156

01:12:06,310 --> 01:12:02,640

that's a pretty good interview

2157

01:12:08,709 --> 01:12:06,320

so thank you um so bottom line

2158

01:12:09,430 --> 01:12:08,719

under your theory where would this leave

2159

01:12:11,830 --> 01:12:09,440

us uh

2160

01:12:12,550 --> 01:12:11,840

as far as life on another planet uh

2161

01:12:15,830 --> 01:12:12,560

agnostic

2162

01:12:18,149 --> 01:12:15,840

could be might not be um there's couple

2163

01:12:19,750 --> 01:12:18,159

it it was assumed for a long time that

2164

01:12:20,390 --> 01:12:19,760

life somewhere else in the universe was

2165

01:12:21,990 --> 01:12:20,400

pretty much

2166

01:12:24,070 --> 01:12:22,000

probabilistically inevitable because

2167

01:12:25,270 --> 01:12:24,080

there were so many it was 200 billion

2168

01:12:27,669 --> 01:12:25,280

galaxies right

2169

01:12:29,510 --> 01:12:27,679

which was is a stunning find in just the

2170

01:12:30,229 --> 01:12:29,520

last century i mean in 1920 we didn't

2171

01:12:31,510 --> 01:12:30,239

know that

2172

01:12:33,350 --> 01:12:31,520

they were still debating whether the

2173

01:12:35,270 --> 01:12:33,360

milky way was the only one but we now

2174

01:12:37,510 --> 01:12:35,280

think there is on order of 200 billion

2175

01:12:39,350 --> 01:12:37,520

galaxies maybe more

2176

01:12:41,189 --> 01:12:39,360

so that's a lot of places where life

2177

01:12:43,350 --> 01:12:41,199

could evolve

2178

01:12:44,310 --> 01:12:43,360

but the other problem is that the

2179

01:12:47,110 --> 01:12:44,320

conditions

2180

01:12:47,669 --> 01:12:47,120

under which the evolution of life could

2181

01:12:50,790 --> 01:12:47,679

occur

2182

01:12:52,870 --> 01:12:50,800

are so incredibly improbable that uh

2183

01:12:54,390 --> 01:12:52,880

there's been a new a new strain of

2184

01:12:55,110 --> 01:12:54,400

thinking among astronomers a very

2185

01:12:56,709 --> 01:12:55,120

important book

2186

01:12:58,470 --> 01:12:56,719

uh by two university of washington

2187

01:13:01,910 --> 01:12:58,480

astronomers don brownlee

2188

01:13:03,669 --> 01:13:01,920

and peter ward called rare earth

2189

01:13:05,750 --> 01:13:03,679

and another book called privileged

2190

01:13:06,550 --> 01:13:05,760

planet by astronomer guillermo gonzalez

2191

01:13:09,990 --> 01:13:06,560

and philosopher j

2192

01:13:12,550 --> 01:13:10,000

richards they argue that

2193

01:13:13,590 --> 01:13:12,560

yeah there's a lot of a lot of different

2194

01:13:15,990 --> 01:13:13,600

places

2195

01:13:17,669 --> 01:13:16,000

where life could have arisen that's you

2196

01:13:19,350 --> 01:13:17,679

think of that as the numerator

2197

01:13:21,350 --> 01:13:19,360

but if we think of the denominator of

2198

01:13:22,790 --> 01:13:21,360

all the different conditions that have

2199

01:13:25,430 --> 01:13:22,800

to be met

2200

01:13:25,910 --> 01:13:25,440

that 200 200 billion galaxies may be

2201

01:13:28,709 --> 01:13:25,920

small

2202

01:13:30,390 --> 01:13:28,719

in comparison to the number of things

2203

01:13:32,550 --> 01:13:30,400

that would have to be just right to get

2204

01:13:34,630 --> 01:13:32,560

to get life going so i think it's an

2205

01:13:36,149 --> 01:13:34,640

open open question but

2206

01:13:37,910 --> 01:13:36,159

we have found no evidence of

2207

01:13:40,310 --> 01:13:37,920

extraterrestrial life

2208

01:13:42,229 --> 01:13:40,320

and the even the extrasolar planets that

2209

01:13:42,950 --> 01:13:42,239

we found are not suitable for life they

2210

01:13:45,430 --> 01:13:42,960

have

2211

01:13:46,709 --> 01:13:45,440

highly eccentric orbits or uh where they

2212

01:13:49,110 --> 01:13:46,719

get too hot too cold and

2213

01:13:49,750 --> 01:13:49,120

in their orbit orbital cycle to sustain

2214

01:13:52,709 --> 01:13:49,760

life

2215

01:13:53,910 --> 01:13:52,719

so it's an open question but um i don't

2216

01:13:55,430 --> 01:13:53,920

think we should assume

2217

01:13:57,910 --> 01:13:55,440

that it's inevitable just because

2218

01:13:59,110 --> 01:13:57,920

there's a lot of stuff out there

2219

01:14:00,790 --> 01:13:59,120

but under your theory wouldn't you

2220

01:14:01,750 --> 01:14:00,800

assume that it would require god to

2221

01:14:04,149 --> 01:14:01,760

intercede to

2222

01:14:05,669 --> 01:14:04,159

create that since you're saying that

2223

01:14:07,110 --> 01:14:05,679

really no explanation for the single

2224

01:14:10,149 --> 01:14:07,120

cell appearance

2225

01:14:12,709 --> 01:14:10,159

i i i think it would uh you know i think

2226

01:14:13,990 --> 01:14:12,719

if by life we mean something similar to

2227

01:14:17,270 --> 01:14:14,000

what we have on planet earth where

2228

01:14:19,110 --> 01:14:17,280

we have a membrane that separates the

2229

01:14:21,110 --> 01:14:19,120

living system from its environment if we

2230

01:14:23,669 --> 01:14:21,120

have metabolic processes

2231

01:14:25,510 --> 01:14:23,679

held far from thermodynamic equilibrium

2232

01:14:27,910 --> 01:14:25,520

if we have information and information

2233

01:14:29,910 --> 01:14:27,920

processing systems

2234

01:14:31,750 --> 01:14:29,920

maintaining that far from equilibrium

2235

01:14:33,990 --> 01:14:31,760

state

2236

01:14:35,910 --> 01:14:34,000

what we know about systems that have

2237

01:14:37,430 --> 01:14:35,920

those type of attributes is they always

2238

01:14:38,470 --> 01:14:37,440

arise from designing intelligence and

2239

01:14:40,070 --> 01:14:38,480

the chemical

2240

01:14:42,070 --> 01:14:40,080

there's nothing about chemistry

2241

01:14:44,229 --> 01:14:42,080

chemistry that suggests

2242

01:14:46,070 --> 01:14:44,239

that chemistry could arrange itself into

2243

01:14:47,510 --> 01:14:46,080

something even resembling

2244

01:14:49,510 --> 01:14:47,520

a living cell like when yeah when you

2245

01:14:51,270 --> 01:14:49,520

talk about the the apart from

2246

01:14:52,550 --> 01:14:51,280

intelligence

2247

01:14:54,470 --> 01:14:52,560

yeah when you talk about everything

2248

01:14:55,590 --> 01:14:54,480

having to be just right what you're

2249

01:14:58,229 --> 01:14:55,600

really talking about

2250

01:14:59,990 --> 01:14:58,239

based on your theory i believe is that

2251

01:15:03,030 --> 01:15:00,000

can sustain life

2252

01:15:04,790 --> 01:15:03,040

but not necessarily create it because

2253

01:15:06,870 --> 01:15:04,800

aren't you arguing that well that it's

2254

01:15:09,030 --> 01:15:06,880

not possible for a single cell to be

2255

01:15:12,070 --> 01:15:09,040

created

2256

01:15:12,790 --> 01:15:12,080

um no i i think single cells can be

2257

01:15:14,870 --> 01:15:12,800

created by

2258

01:15:16,709 --> 01:15:14,880

by designing intelligences but i what i

2259

01:15:17,430 --> 01:15:16,719

am arguing is that the kinds of features

2260

01:15:20,470 --> 01:15:17,440

that we find

2261

01:15:23,590 --> 01:15:20,480

in living organisms uh found

2262

01:15:26,870 --> 01:15:23,600

in any other environment always require

2263

01:15:30,149 --> 01:15:26,880

intelligence to to arise

2264

01:15:32,950 --> 01:15:30,159
so i'm arguing that that we would

2265

01:15:34,229 --> 01:15:32,960
like if if life arises someplace else in

2266

01:15:37,510 --> 01:15:34,239
the cosmos yes it

2267

01:15:37,990 --> 01:15:37,520
likely did so by intelligent design and

2268

01:15:42,229 --> 01:15:38,000
last

2269

01:15:46,550 --> 01:15:42,239
is this god that you are formulating

2270

01:15:48,790 --> 01:15:46,560
um the theist explanation

2271

01:15:50,310 --> 01:15:48,800
how does that jibe with the the

2272

01:15:53,750 --> 01:15:50,320
christian bible

2273

01:15:56,870 --> 01:15:53,760
this

2274

01:15:59,270 --> 01:15:56,880
theory or not yeah it's it it

2275

01:16:00,229 --> 01:15:59,280
confirms key parts of it without telling

2276

01:16:02,950 --> 01:16:00,239

the whole story

2277

01:16:03,590 --> 01:16:02,960

um the first words of the bible are

2278

01:16:06,390 --> 01:16:03,600

after all

2279

01:16:08,310 --> 01:16:06,400

in the beginning and i would say the the

2280

01:16:09,590 --> 01:16:08,320

the hebrew bible as well as the the

2281

01:16:11,430 --> 01:16:09,600

christian new testament the the

2282

01:16:14,709 --> 01:16:11,440

judeo-christian scriptures

2283

01:16:15,830 --> 01:16:14,719

um uh affirm the existence of a

2284

01:16:17,270 --> 01:16:15,840

transcendent

2285

01:16:18,950 --> 01:16:17,280

intelligence who is active in the

2286

01:16:21,189 --> 01:16:18,960

creation i think that's what we see from

2287

01:16:23,030 --> 01:16:21,199

the scientific evidence

2288

01:16:25,270 --> 01:16:23,040

the judeo-christian conception of god

2289

01:16:29,430 --> 01:16:25,280

isn't the only conception of god that

2290

01:16:31,510 --> 01:16:29,440

um the only conception of god that

2291

01:16:32,550 --> 01:16:31,520

confirms or comports with that

2292

01:16:34,709 --> 01:16:32,560

description

2293

01:16:36,950 --> 01:16:34,719

but it uh what we find in nature does

2294

01:16:39,270 --> 01:16:36,960

comport with what the judeo-christian

2295

01:16:41,189 --> 01:16:39,280

conception of god is and the creation

2296

01:16:43,510 --> 01:16:41,199

story that is in the bible

2297

01:16:44,950 --> 01:16:43,520

what would you make of that well i don't

2298

01:16:47,590 --> 01:16:44,960

get into that very deeply

2299

01:16:48,310 --> 01:16:47,600

but the uh the first part of it

2300

01:16:51,750 --> 01:16:48,320

certainly

2301

01:16:53,750 --> 01:16:51,760

is correct uh uh in the beginning is

2302

01:16:55,110 --> 01:16:53,760

what the the cosmologists are now

2303

01:16:56,709 --> 01:16:55,120

talking about as well as the

2304

01:16:59,669 --> 01:16:56,719

the writers of the hebrew bible there's

2305

01:17:01,830 --> 01:16:59,679

a great physicist arno penzias

2306

01:17:03,030 --> 01:17:01,840

uh who discovered the cosmic background

2307

01:17:04,630 --> 01:17:03,040

radiation

2308

01:17:07,110 --> 01:17:04,640

one of the key evidences of the big bang

2309

01:17:08,790 --> 01:17:07,120

he says the uh the the data we have are

2310

01:17:10,550 --> 01:17:08,800

exactly what i would have predicted if i

2311

01:17:12,310 --> 01:17:10,560

had nothing to go on but the first five

2312

01:17:14,790 --> 01:17:12,320

books of moses the psalms and the bible

2313

01:17:15,830 --> 01:17:14,800

as a whole so i think that the testimony

2314

01:17:18,790 --> 01:17:15,840
of nature is

2315

01:17:20,149 --> 01:17:18,800
remarkably uh consistent with the

2316

01:17:22,070 --> 01:17:20,159
overall biblical view

2317

01:17:23,990 --> 01:17:22,080
right but you're you're not out to to

2318

01:17:27,830 --> 01:17:24,000
prove a christian god per se

2319

01:17:30,630 --> 01:17:27,840
as opposed to a god a god who's

2320

01:17:31,350 --> 01:17:30,640
present i i definitely am a christian

2321

01:17:34,149 --> 01:17:31,360
and

2322

01:17:34,790 --> 01:17:34,159
uh i think the evidence supports the

2323

01:17:36,390 --> 01:17:34,800
theistic

2324

01:17:38,310 --> 01:17:36,400
concept of god that christians

2325

01:17:40,950 --> 01:17:38,320
presuppose but other

2326

01:17:42,550 --> 01:17:40,960

other monotheistic faiths would also

2327

01:17:45,189 --> 01:17:42,560

appreciate the

2328

01:17:46,149 --> 01:17:45,199

uh the arguments that i'm making i think

2329

01:17:47,910 --> 01:17:46,159

thank you again

2330

01:17:49,590 --> 01:17:47,920

to stephen meyer you can check out his

2331

01:17:50,470 --> 01:17:49,600

new book the return of the god

2332

01:17:53,270 --> 01:17:50,480

hypothesis

2333

01:17:54,630 --> 01:17:53,280

it's available on amazon thank you to

2334

01:17:55,990 --> 01:17:54,640

our producer michael parker thank you

2335

01:17:57,350 --> 01:17:56,000

all for listening we'll be back soon

2336

01:18:00,790 --> 01:17:57,360

with another episode of the

2337

01:18:03,430 --> 01:18:00,800

true show thank you for listening to the

2338

01:18:06,390 --> 01:18:03,440

truth show with jim breslow you can find

2339

01:18:08,630 --> 01:18:06,400

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2340

01:18:09,430 --> 01:18:08,640

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2341

01:18:12,310 --> 01:18:09,440

instagram

2342

01:18:14,709 --> 01:18:12,320

at hidden truth show join us again next

2343

01:18:15,350 --> 01:18:14,719

week for another episode of hidden truth