

**SK≡PTIKO**  
science & spirituality

***AI,  
CONSCIOUSNESS,  
TURING TEST***

**#519-ANDREW-SMART**



1  
00:00:04,390 --> 00:00:02,230  
the copenhagen interpretation which

2  
00:00:07,349 --> 00:00:04,400  
states that the act of measurement

3  
00:00:10,230 --> 00:00:07,359  
affects the system please the penrose

4  
00:00:12,150 --> 00:00:10,240  
interpretation which suggests that the

5  
00:00:13,669 --> 00:00:12,160  
wave function collapsed

6  
00:00:15,749 --> 00:00:13,679  
just to confirm yes you're in the right

7  
00:00:17,750 --> 00:00:15,759  
place this is skeptical this is yet

8  
00:00:21,269 --> 00:00:17,760  
another movie clip i'm playing for you

9  
00:00:22,950 --> 00:00:21,279  
this is from devs a series on netflix

10  
00:00:26,630 --> 00:00:22,960  
like this is really super duper

11  
00:00:29,269 --> 00:00:26,640  
mainstream and like right off the bat

12  
00:00:32,709 --> 00:00:29,279  
they are talking about the

13  
00:00:35,030 --> 00:00:32,719

most fundamental issues of consciousness

14

00:00:37,430 --> 00:00:35,040

ai how robots are going to take over the

15

00:00:40,389 --> 00:00:37,440

world which of course that's true but

16

00:00:42,630 --> 00:00:40,399

also how robots may be

17

00:00:44,310 --> 00:00:42,640

creating a simulation that we're living

18

00:00:45,990 --> 00:00:44,320

in and all the rest that [h\_\_h] that if

19

00:00:48,069 --> 00:00:46,000

you're into that stuff you better be

20

00:00:50,790 --> 00:00:48,079

into it it's the biggest thing right and

21

00:00:53,510 --> 00:00:50,800

it's directly directly relevant to this

22

00:00:56,069 --> 00:00:53,520

amazing interview i have coming up with

23

00:00:57,270 --> 00:00:56,079

andrew smart who's written a book on all

24

00:00:58,549 --> 00:00:57,280

this so

25

00:01:00,950 --> 00:00:58,559

back to the clip

26

00:01:03,830 --> 00:01:00,960

i want to talk to you about the von

27

00:01:07,190 --> 00:01:03,840

neumann vigner interpretation which

28

00:01:09,910 --> 00:01:07,200

states that human consciousness is the

29

00:01:12,550 --> 00:01:09,920

key modifier in d coherence are you

30

00:01:13,830 --> 00:01:12,560

[h\_\_\h] kidding

31

00:01:16,310 --> 00:01:13,840

painting

32

00:01:18,070 --> 00:01:16,320

you're offering a lecture on von neumann

33

00:01:19,830 --> 00:01:18,080

vigner

34

00:01:21,030 --> 00:01:19,840

are you serious

35

00:01:22,310 --> 00:01:21,040

half the people in this room are

36

00:01:23,590 --> 00:01:22,320

undergrads they might actually believe

37

00:01:26,070 --> 00:01:23,600

what you're saying

38

00:01:28,630 --> 00:01:26,080

there are many interesting conjectures

39

00:01:31,190 --> 00:01:28,640

within the theory it's dual as [h\_\_\h]

40

00:01:32,950 --> 00:01:31,200

which is the worst kind of [h\_\_\h]

41

00:01:35,270 --> 00:01:32,960

okay so there's like five different

42

00:01:36,950 --> 00:01:35,280

clips i could play for you from this

43

00:01:38,550 --> 00:01:36,960

upcoming interview with

44

00:01:40,230 --> 00:01:38,560

andrew smart but i'm going to kind of

45

00:01:42,389 --> 00:01:40,240

confine it very narrowly in this

46

00:01:45,190 --> 00:01:42,399

introduction even though we talk about

47

00:01:47,109 --> 00:01:45,200

all the really important [h\_\_\h] like

48

00:01:49,830 --> 00:01:47,119

is google the belly of the beast that

49

00:01:53,109 --> 00:01:49,840

has an unrelenting choke hold on our

50

00:01:55,670 --> 00:01:53,119

freedom and way of life as we know it we

51  
00:01:58,950 --> 00:01:55,680  
address that quite directly in this as

52  
00:02:02,069 --> 00:01:58,960  
we do uh demonetization but also you

53  
00:02:04,630 --> 00:02:02,079  
know social justice and

54  
00:02:06,709 --> 00:02:04,640  
search and the responsibility and scale

55  
00:02:08,150 --> 00:02:06,719  
which is really the issue you know i

56  
00:02:10,150 --> 00:02:08,160  
mean google does have a problem

57  
00:02:11,910 --> 00:02:10,160  
trillions of searches so

58  
00:02:13,350 --> 00:02:11,920  
they have a certain responsibility there

59  
00:02:16,070 --> 00:02:13,360  
that they're going to need some

60  
00:02:19,270 --> 00:02:16,080  
flexibility on handling even if they

61  
00:02:21,830 --> 00:02:19,280  
have to use gestapo tactics to do it i'm

62  
00:02:23,910 --> 00:02:21,840  
flavoring this it's it's really a good

63  
00:02:26,070 --> 00:02:23,920

interview it's a fair balanced interview

64

00:02:28,390 --> 00:02:26,080

and i super appreciate and respect this

65

00:02:29,430 --> 00:02:28,400

guy andrew smart who you're gonna hear

66

00:02:31,910 --> 00:02:29,440

from but

67

00:02:34,309 --> 00:02:31,920

here's a clip and then we'll roll right

68

00:02:36,630 --> 00:02:34,319

into the interview the idea is that

69

00:02:38,869 --> 00:02:36,640

we'll these agis will be just like human

70

00:02:40,229 --> 00:02:38,879

minds they'll literally be

71

00:02:42,150 --> 00:02:40,239

minds

72

00:02:45,110 --> 00:02:42,160

and and so

73

00:02:46,869 --> 00:02:45,120

the the thought about lsd was then well

74

00:02:48,630 --> 00:02:46,879

if it's if it's

75

00:02:49,670 --> 00:02:48,640

basically indistinguishable from a human

76

00:02:51,430 --> 00:02:49,680

minded

77

00:02:54,309 --> 00:02:51,440

you know it's like

78

00:02:56,550 --> 00:02:54,319

how you would engineer a system

79

00:02:58,470 --> 00:02:56,560

that could be perturbed by lsd what i

80

00:03:00,470 --> 00:02:58,480

think has been the core question here a

81

00:03:02,309 --> 00:03:00,480

lot of times and i think is

82

00:03:04,470 --> 00:03:02,319

this question is skirted for the most

83

00:03:06,790 --> 00:03:04,480

part by the technology community and

84

00:03:09,270 --> 00:03:06,800

that is is it the turing test or is it

85

00:03:10,949 --> 00:03:09,280

the metaphysical test the question about

86

00:03:13,110 --> 00:03:10,959

consciousness is

87

00:03:15,030 --> 00:03:13,120

is it somehow

88

00:03:16,790 --> 00:03:15,040

fundamental

89

00:03:19,509 --> 00:03:16,800

welcome to skeptica where we explore

90

00:03:21,589 --> 00:03:19,519

controversial science and spirituality

91

00:03:24,309 --> 00:03:21,599

with leading researchers thinkers and

92

00:03:26,309 --> 00:03:24,319

their critics i'm your host alex karas

93

00:03:27,430 --> 00:03:26,319

and i have a terrific guest for you

94

00:03:29,990 --> 00:03:27,440

today

95

00:03:32,789 --> 00:03:30,000

his name is andrew smart

96

00:03:34,949 --> 00:03:32,799

he's the author of a book from a few

97

00:03:38,550 --> 00:03:34,959

years ago but certainly an important

98

00:03:43,030 --> 00:03:38,560

relevant book beyond zero and one

99

00:03:45,430 --> 00:03:43,040

machines psychedelics and consciousness

100

00:03:47,030 --> 00:03:45,440

let me read for you a little bit of

101  
00:03:49,830 --> 00:03:47,040  
background

102  
00:03:51,990 --> 00:03:49,840  
on andrew you're gonna be blown away

103  
00:03:54,630 --> 00:03:52,000  
i have a broad yet deep background in

104  
00:03:58,309 --> 00:03:54,640  
science engineering and technology i

105  
00:04:00,229 --> 00:03:58,319  
specialize in the areas of brain imaging

106  
00:04:03,750 --> 00:04:00,239  
neurotechnology

107  
00:04:06,630 --> 00:04:03,760  
human computer interaction human factors

108  
00:04:08,949 --> 00:04:06,640  
data visualization and statistical

109  
00:04:11,030 --> 00:04:08,959  
analysis i'm primarily interested in the

110  
00:04:13,110 --> 00:04:11,040  
disciplinary intersections among

111  
00:04:14,710 --> 00:04:13,120  
cognitive science

112  
00:04:16,710 --> 00:04:14,720  
computer science

113  
00:04:18,150 --> 00:04:16,720

artificial intelligence anthropology

114

00:04:20,949 --> 00:04:18,160

philosophy

115

00:04:24,230 --> 00:04:20,959

and human factors now

116

00:04:26,310 --> 00:04:24,240

as impressive as that sounds

117

00:04:29,670 --> 00:04:26,320

i would suggest that andrew is being

118

00:04:33,830 --> 00:04:29,680

somewhat modest i mean when you look him

119

00:04:36,070 --> 00:04:33,840

up let me pull this up on google scholar

120

00:04:39,670 --> 00:04:36,080

i mean man

121

00:04:42,310 --> 00:04:39,680

a lot of peer-reviewed very important

122

00:04:44,070 --> 00:04:42,320

papers and and then certainly if you

123

00:04:48,070 --> 00:04:44,080

look him up on linkedin i'm not gonna go

124

00:04:51,350 --> 00:04:48,080

there but i mean he is uh you know

125

00:04:53,749 --> 00:04:51,360

very very well positioned google worked

126

00:04:56,310 --> 00:04:53,759

at twitter before that you know

127

00:04:58,230 --> 00:04:56,320

really belly of the beast kind of jobs

128

00:05:00,150 --> 00:04:58,240

honeywell as well but we're going to

129

00:05:02,550 --> 00:05:00,160

talk all of that so

130

00:05:05,110 --> 00:05:02,560

i'm very very grateful that andrew has

131

00:05:07,270 --> 00:05:05,120

joined us today to talk about this book

132

00:05:08,550 --> 00:05:07,280

and other stuff andrew thanks for being

133

00:05:11,350 --> 00:05:08,560

here

134

00:05:13,029 --> 00:05:11,360

no thanks for having me on i i'm

135

00:05:15,990 --> 00:05:13,039

a little embarrassed by the introduction

136

00:05:19,110 --> 00:05:17,909

there is absolutely no way you should be

137

00:05:20,950 --> 00:05:19,120

i i

138

00:05:22,870 --> 00:05:20,960

really wish you would do

139

00:05:25,350 --> 00:05:22,880

uh more interviews i'd love to hear more

140

00:05:28,550 --> 00:05:25,360

of that but uh hey well i got i got a

141

00:05:30,390 --> 00:05:28,560

shot here so i can't i can't complain

142

00:05:32,310 --> 00:05:30,400

so t tell us

143

00:05:34,469 --> 00:05:32,320

you know let's start with the book

144

00:05:36,150 --> 00:05:34,479

beyond zero and one

145

00:05:38,469 --> 00:05:36,160

tell folks you know what they're gonna

146

00:05:40,390 --> 00:05:38,479

find

147

00:05:42,629 --> 00:05:40,400

yeah well um

148

00:05:44,790 --> 00:05:42,639

like you mentioned the book is is maybe

149

00:05:47,510 --> 00:05:44,800

five or six years old

150

00:05:50,710 --> 00:05:47,520

it's hard to remember now um in our

151  
00:05:53,110 --> 00:05:50,720  
weird you know time warp of covid

152  
00:05:54,310 --> 00:05:53,120  
but uh i

153  
00:05:55,110 --> 00:05:54,320  
so

154  
00:05:56,870 --> 00:05:55,120  
yeah

155  
00:06:00,070 --> 00:05:56,880  
you know i've long had this interest in

156  
00:06:01,029 --> 00:06:00,080  
in philosophy of mind and and ai

157  
00:06:03,749 --> 00:06:01,039  
and

158  
00:06:06,550 --> 00:06:03,759  
um had been following the debates about

159  
00:06:08,870 --> 00:06:06,560  
it ever since i was a student and

160  
00:06:10,070 --> 00:06:08,880  
um you know i and like like you

161  
00:06:13,029 --> 00:06:10,080  
mentioned i've worked in cognitive

162  
00:06:16,790 --> 00:06:13,039  
science and then different um

163  
00:06:18,309 --> 00:06:16,800

you know brain imaging labs and i was

164

00:06:21,029 --> 00:06:18,319

at the time when i started writing the

165

00:06:23,830 --> 00:06:21,039

book i was working at novartis which is

166

00:06:26,469 --> 00:06:23,840

a big big pharma company in switzerland

167

00:06:29,270 --> 00:06:26,479

uh but it's actually where um

168

00:06:31,590 --> 00:06:29,280

lsd was first synthesized when when it

169

00:06:32,870 --> 00:06:31,600

used to be called sandoz where albert

170

00:06:34,870 --> 00:06:32,880

hoffman worked

171

00:06:36,390 --> 00:06:34,880

and i it turned out i was working for a

172

00:06:39,189 --> 00:06:36,400

time in the same building where

173

00:06:41,029 --> 00:06:39,199

hoffman's lab used to be in the 1940s

174

00:06:42,629 --> 00:06:41,039

let me interject something to set this

175

00:06:43,909 --> 00:06:42,639

up because maybe i put you too much on

176  
00:06:45,990 --> 00:06:43,919  
the spot

177  
00:06:47,590 --> 00:06:46,000  
and did it i mean when i say belly of

178  
00:06:49,749 --> 00:06:47,600  
the beast man i mean

179  
00:06:52,390 --> 00:06:49,759  
anyone who's into this stuff like the

180  
00:06:54,629 --> 00:06:52,400  
connections that just in your life are

181  
00:06:57,749 --> 00:06:54,639  
kind of like a little because right like

182  
00:06:58,710 --> 00:06:57,759  
what everyone the controversy is andrew

183  
00:06:59,589 --> 00:06:58,720  
here

184  
00:07:01,909 --> 00:06:59,599  
is

185  
00:07:04,309 --> 00:07:01,919  
a a minion of the robots who are going

186  
00:07:06,469 --> 00:07:04,319  
to take over the world right i mean

187  
00:07:10,070 --> 00:07:06,479  
that is like that that is like one way

188  
00:07:14,309 --> 00:07:10,080

to catch this you know this is the guy

189

00:07:16,550 --> 00:07:14,319

who's developing the strong ai robots

190

00:07:18,230 --> 00:07:16,560

which we know are going to have a

191

00:07:21,830 --> 00:07:18,240

greater and greater enough tone it down

192

00:07:23,830 --> 00:07:21,840

a bit a greater and greater influence on

193

00:07:26,150 --> 00:07:23,840

everything whether it's law or whether

194

00:07:28,550 --> 00:07:26,160

you go see a therapist a doctor or

195

00:07:30,550 --> 00:07:28,560

whether you trade stocks or any of this

196

00:07:32,070 --> 00:07:30,560

stuff we all understand that artificial

197

00:07:33,909 --> 00:07:32,080

intelligence is

198

00:07:36,390 --> 00:07:33,919

so when you just mentioned two words you

199

00:07:37,830 --> 00:07:36,400

said the controversy surrounding this i

200

00:07:40,390 --> 00:07:37,840

just want to frame up and make sure

201  
00:07:42,629 --> 00:07:40,400  
everyone understands that this is like

202  
00:07:45,670 --> 00:07:42,639  
when people are into this is like like

203  
00:07:48,550 --> 00:07:45,680  
one of the the most important issues

204  
00:07:50,150 --> 00:07:48,560  
a lot bigger than a lot other yeah okay

205  
00:07:52,070 --> 00:07:50,160  
so go ahead come please continue because

206  
00:07:52,950 --> 00:07:52,080  
now we're back to the valley

207  
00:07:59,350 --> 00:07:52,960  
the

208  
00:08:01,189 --> 00:07:59,360  
whole book so

209  
00:08:04,070 --> 00:08:01,199  
go ahead i'm sorry

210  
00:08:06,629 --> 00:08:04,080  
oh sure no no yeah no well yeah we can

211  
00:08:08,550 --> 00:08:06,639  
get to my my job at google which is

212  
00:08:12,790 --> 00:08:08,560  
actually

213  
00:08:15,110 --> 00:08:12,800

trying to constrain or or

214

00:08:16,469 --> 00:08:15,120

do some sort of risk assessments of

215

00:08:17,510 --> 00:08:16,479

those things that you just mentioned but

216

00:08:20,230 --> 00:08:17,520

we can

217

00:08:21,909 --> 00:08:20,240

um anyway i so

218

00:08:24,869 --> 00:08:21,919

if if people are familiar with the

219

00:08:27,589 --> 00:08:24,879

debates around agi or what they call

220

00:08:29,749 --> 00:08:27,599

artificial general intelligence

221

00:08:32,070 --> 00:08:29,759

and super intelligence and this is um

222

00:08:33,990 --> 00:08:32,080

this is it's it's still definitely a

223

00:08:37,029 --> 00:08:34,000

debate in the field about

224

00:08:37,990 --> 00:08:37,039

you know you you have a general purpose

225

00:08:40,709 --> 00:08:38,000

model

226

00:08:42,230 --> 00:08:40,719

that can do anything really and you and

227

00:08:44,870 --> 00:08:42,240

because now the way machine learning is

228

00:08:47,269 --> 00:08:44,880

developed is you they have specific

229

00:08:50,389 --> 00:08:47,279

tasks and they're not especially good in

230

00:08:52,230 --> 00:08:50,399

areas when you you know if you develop a

231

00:08:54,470 --> 00:08:52,240

thing that's supposed to detect

232

00:08:56,630 --> 00:08:54,480

a certain type of image and then you you

233

00:08:58,870 --> 00:08:56,640

use it in the real world it often fails

234

00:09:00,150 --> 00:08:58,880

um if it if it sees something that it's

235

00:09:03,030 --> 00:09:00,160

not used to

236

00:09:05,590 --> 00:09:03,040

in its in its distribution but

237

00:09:07,509 --> 00:09:05,600

anyway there's been a long strand of

238

00:09:09,350 --> 00:09:07,519

of work on this question of super

239

00:09:11,190 --> 00:09:09,360

intelligence and agi and human level

240

00:09:12,150 --> 00:09:11,200

artificial intelligence

241

00:09:14,230 --> 00:09:12,160

and

242

00:09:15,509 --> 00:09:14,240

there's a there's a niche there of

243

00:09:17,990 --> 00:09:15,519

philosophers

244

00:09:19,750 --> 00:09:18,000

like david chalmers for example who

245

00:09:21,269 --> 00:09:19,760

have been thinking about consciousness a

246

00:09:24,310 --> 00:09:21,279

lot and

247

00:09:26,389 --> 00:09:24,320

whether this agi would be conscious like

248

00:09:28,630 --> 00:09:26,399

uh and and that

249

00:09:30,790 --> 00:09:28,640

that was the the interesting part to me

250

00:09:33,190 --> 00:09:30,800

was this the and in the debates about

251

00:09:34,870 --> 00:09:33,200

agi consciousness is still quite taboo

252

00:09:37,190 --> 00:09:34,880

like people

253

00:09:38,870 --> 00:09:37,200

it's almost like a side issue that well

254

00:09:40,949 --> 00:09:38,880

as you as you point out in the book and

255

00:09:43,269 --> 00:09:40,959

i forget the exact quote but you said a

256

00:09:45,269 --> 00:09:43,279

lot of ai engineers

257

00:09:47,670 --> 00:09:45,279

question whether it's even relevant i

258

00:09:50,070 --> 00:09:47,680

mean so it's it's it's not even

259

00:09:53,030 --> 00:09:50,080

you know philosophically okay but who

260

00:09:55,030 --> 00:09:53,040

cares you know right and and and just a

261

00:09:57,829 --> 00:09:55,040

tiny bit on my background so i i do have

262

00:09:59,350 --> 00:09:57,839

an ai background so i i was a research

263

00:10:01,190 --> 00:09:59,360

associate at arizona and then i started

264

00:10:03,509 --> 00:10:01,200

an ai company mindpath technologies and

265

00:10:05,269 --> 00:10:03,519

we built these expert systems for dupont

266

00:10:07,590 --> 00:10:05,279

and texas instruments with this idea

267

00:10:09,030 --> 00:10:07,600

that we would you know somehow capture

268

00:10:10,949 --> 00:10:09,040

all the knowledge that these gold

269

00:10:12,550 --> 00:10:10,959

badgers had and you know preserve it and

270

00:10:14,470 --> 00:10:12,560

it didn't it didn't and none of it

271

00:10:16,550 --> 00:10:14,480

worked very good but i'm familiar with

272

00:10:18,790 --> 00:10:16,560

the thing i'm familiar with the issues

273

00:10:21,990 --> 00:10:18,800

and it was really cr i don't want to say

274

00:10:24,870 --> 00:10:22,000

it was crappy but i mean where ai is at

275

00:10:26,790 --> 00:10:24,880

now you know like uh alphago so like

276

00:10:28,790 --> 00:10:26,800

it's almost like you have to have seen

277

00:10:30,949 --> 00:10:28,800

the movie alphago and know the whole

278

00:10:32,949 --> 00:10:30,959

thing to even kind of enter into this

279

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

conversation because what it's doing is

280

00:10:37,190 --> 00:10:35,360

kind of catapulted us to another level i

281

00:10:38,710 --> 00:10:37,200

mean before that it was big blue and can

282

00:10:41,110 --> 00:10:38,720

ai beat the best chess player in the

283

00:10:42,870 --> 00:10:41,120

world and now we're just we're just way

284

00:10:45,430 --> 00:10:42,880

way past that folks and like those

285

00:10:49,910 --> 00:10:45,440

issues are like way in the distance and

286

00:10:51,269 --> 00:10:49,920

what andrew is at the cutting edge of is

287

00:10:52,310 --> 00:10:51,279

okay these things are really really

288

00:10:54,310 --> 00:10:52,320

smart

289

00:10:56,949 --> 00:10:54,320

uh you know

290

00:10:58,790 --> 00:10:56,959

how smart could they possibly get and

291

00:11:03,269 --> 00:10:58,800

you pose this question again that kind

292

00:11:07,269 --> 00:11:03,279

of catapults us five steps beyond that

293

00:11:09,590 --> 00:11:07,279

can we build a robot that trips on acid

294

00:11:12,389 --> 00:11:09,600

so you tell us how you jump three steps

295

00:11:16,069 --> 00:11:12,399

ahead and say screw the deterring test

296

00:11:18,630 --> 00:11:16,079

this is the acid turing taste

297

00:11:20,310 --> 00:11:18,640

well i i did so and this is a weird like

298

00:11:24,150 --> 00:11:20,320

you were mentioning like a weird

299

00:11:26,069 --> 00:11:24,160

confluence of of things in my life where

300

00:11:27,910 --> 00:11:26,079

you know i had come from this

301  
00:11:29,590 --> 00:11:27,920  
sort of cognitive science ai background

302  
00:11:30,550 --> 00:11:29,600  
where i was studying and working and

303  
00:11:32,069 --> 00:11:30,560  
then

304  
00:11:34,389 --> 00:11:32,079  
i had i had moved to basel and

305  
00:11:38,230 --> 00:11:34,399  
switzerland to work at this company to

306  
00:11:40,069 --> 00:11:38,240  
work on on medical tech um and then

307  
00:11:42,389 --> 00:11:40,079  
you know i um

308  
00:11:44,310 --> 00:11:42,399  
i on the tram one day actually i just i

309  
00:11:45,590 --> 00:11:44,320  
was had been reading stuff and then

310  
00:11:47,829 --> 00:11:45,600  
you know i just had that thought like

311  
00:11:49,990 --> 00:11:47,839  
you have in the shower like

312  
00:11:51,590 --> 00:11:50,000  
you know what what if what could an ai

313  
00:11:53,430 --> 00:11:51,600

trip on you know i've been reading about

314

00:11:54,629 --> 00:11:53,440

a lot about psychedelics i have my own

315

00:11:57,110 --> 00:11:54,639

you know i used i've explored

316

00:11:58,790 --> 00:11:57,120

psychedelics in my past and

317

00:12:00,710 --> 00:11:58,800

and i had read albert hoffman's book and

318

00:12:02,870 --> 00:12:00,720

i found the whole history of

319

00:12:04,310 --> 00:12:02,880

of lsd super fascinating and it's it's

320

00:12:07,030 --> 00:12:04,320

kind of a lost

321

00:12:09,430 --> 00:12:07,040

history especially in mainstream culture

322

00:12:11,829 --> 00:12:09,440

you know it's it's a very un

323

00:12:13,030 --> 00:12:11,839

underappreciated story can you talk

324

00:12:15,110 --> 00:12:13,040

about that a little bit because i think

325

00:12:17,430 --> 00:12:15,120

your insights in that or your telling of

326

00:12:19,190 --> 00:12:17,440

that history is super important and it's

327

00:12:20,470 --> 00:12:19,200

brilliant because it goes beyond

328

00:12:22,069 --> 00:12:20,480

psychedelic

329

00:12:24,790 --> 00:12:22,079

experience right

330

00:12:26,870 --> 00:12:24,800

it it changes the way we think about

331

00:12:28,629 --> 00:12:26,880

cognitive science and neuroscience that

332

00:12:30,710 --> 00:12:28,639

that's really important i hope can you

333

00:12:34,790 --> 00:12:30,720

share that

334

00:12:37,430 --> 00:12:34,800

well sure yeah and well and so the um

335

00:12:39,430 --> 00:12:37,440

you know so albert hoffman was this

336

00:12:42,470 --> 00:12:39,440

swiss chemist and you know working at

337

00:12:44,790 --> 00:12:42,480

was what was then sandow and in fossil

338

00:12:46,790 --> 00:12:44,800

and you know they were he was a

339

00:12:48,470 --> 00:12:46,800

you know like a chemist at a at a pharma

340

00:12:51,190 --> 00:12:48,480

company working on drug discovery you

341

00:12:52,870 --> 00:12:51,200

know like synthesizing new compounds you

342

00:12:55,110 --> 00:12:52,880

know trying to

343

00:12:57,110 --> 00:12:55,120

find things that were medically

344

00:12:59,269 --> 00:12:57,120

relevant and active he had been working

345

00:13:02,790 --> 00:12:59,279

with a series of different different

346

00:13:04,389 --> 00:13:02,800

derivatives of um of fungus and fungi

347

00:13:07,269 --> 00:13:04,399

and this you know that actually it's

348

00:13:08,949 --> 00:13:07,279

kind of a toxic thing if you if you get

349

00:13:09,750 --> 00:13:08,959

too much of it but

350

00:13:10,629 --> 00:13:09,760

he

351

00:13:12,389 --> 00:13:10,639

and

352

00:13:14,550 --> 00:13:12,399

i i think originally they were working

353

00:13:17,269 --> 00:13:14,560

on sort of respiratory they thought this

354

00:13:18,230 --> 00:13:17,279

was good for respiratory issues

355

00:13:21,430 --> 00:13:18,240

and

356

00:13:23,829 --> 00:13:21,440

you know he so he he had been working on

357

00:13:25,829 --> 00:13:23,839

this and the story is that

358

00:13:27,190 --> 00:13:25,839

you know at some point he was had

359

00:13:28,389 --> 00:13:27,200

synthesized a bunch of these different

360

00:13:31,910 --> 00:13:28,399

compounds

361

00:13:33,190 --> 00:13:31,920

and the 25th one that that lsd 25 is as

362

00:13:34,629 --> 00:13:33,200

it was called

363

00:13:36,310 --> 00:13:34,639

somehow in the lab one day he

364

00:13:38,949 --> 00:13:36,320

accidentally got some in his system i

365

00:13:40,550 --> 00:13:38,959

don't nobody knows quite got on his hand

366

00:13:43,030 --> 00:13:40,560

caught in his eye

367

00:13:44,870 --> 00:13:43,040

but he had about an hour or two where he

368

00:13:46,069 --> 00:13:44,880

saw these vivid colors he felt really

369

00:13:50,550 --> 00:13:46,079

strange

370

00:13:52,470 --> 00:13:50,560

thought maybe this was chloroform that

371

00:13:54,629 --> 00:13:52,480

he had accidentally ingested because

372

00:13:55,430 --> 00:13:54,639

they used that as a solvent

373

00:13:56,629 --> 00:13:55,440

and

374

00:13:58,150 --> 00:13:56,639

but then

375

00:14:00,069 --> 00:13:58,160

he he thought this was really odd so he

376

00:14:02,069 --> 00:14:00,079

went home and then he's he's he's like

377

00:14:05,670 --> 00:14:02,079

well maybe it is this stuff this this

378

00:14:07,910 --> 00:14:05,680

lactergic acid diethylamide and so

379

00:14:09,829 --> 00:14:07,920

he planned a self-experiment

380

00:14:11,269 --> 00:14:09,839

uh for the so he went home and then he's

381

00:14:13,590 --> 00:14:11,279

like and so he

382

00:14:15,110 --> 00:14:13,600

then he synthesized some more and he he

383

00:14:16,629 --> 00:14:15,120

thought he was just making this the

384

00:14:17,590 --> 00:14:16,639

tiniest dose

385

00:14:19,030 --> 00:14:17,600

that

386

00:14:20,550 --> 00:14:19,040

would do anything he didn't even think

387

00:14:21,990 --> 00:14:20,560

this would do anything

388

00:14:22,790 --> 00:14:22,000

and it turned out this is actually a

389

00:14:28,470 --> 00:14:22,800

pretty

390

00:14:30,150 --> 00:14:28,480

had you know the famous then he tried to

391

00:14:31,750 --> 00:14:30,160

ride his bike home from the lab because

392

00:14:33,430 --> 00:14:31,760

he started like what's you know he

393

00:14:35,910 --> 00:14:33,440

really thought he was going to die

394

00:14:38,710 --> 00:14:35,920

he was seeing devils and you know and he

395

00:14:40,150 --> 00:14:38,720

and he has you know he he writes that he

396

00:14:42,629 --> 00:14:40,160

he tried to ride his bike home he had no

397

00:14:45,269 --> 00:14:42,639

memory of moving on his bike

398

00:14:46,629 --> 00:14:45,279

but suddenly he was at his house

399

00:14:48,069 --> 00:14:46,639

and anyway

400

00:14:49,990 --> 00:14:48,079

he had this kind of you know the first

401  
00:14:51,750 --> 00:14:50,000  
acid trip and that's why we call it an

402  
00:14:53,269 --> 00:14:51,760  
acid trip because he was you know this

403  
00:14:56,310 --> 00:14:53,279  
this but the famous bicycle trip and

404  
00:14:58,069 --> 00:14:56,320  
actually every year in basel there's a

405  
00:15:00,550 --> 00:14:58,079  
on the on the date when this happened

406  
00:15:03,430 --> 00:15:00,560  
there's a bicycle tour from

407  
00:15:08,629 --> 00:15:06,150  
yeah um it's it's kind of a

408  
00:15:10,550 --> 00:15:08,639  
but so he then he reported this to his

409  
00:15:11,509 --> 00:15:10,560  
superiors and they were all skeptical

410  
00:15:15,990 --> 00:15:11,519  
and

411  
00:15:16,949 --> 00:15:16,000  
everyone realized like this is a very

412  
00:15:18,949 --> 00:15:16,959  
potent

413  
00:15:20,870 --> 00:15:18,959

thing because it was such a tiny amount

414

00:15:23,430 --> 00:15:20,880

of active

415

00:15:25,350 --> 00:15:23,440

stuff that gave you a trip for you know

416

00:15:27,189 --> 00:15:25,360

eight 12 hours

417

00:15:29,189 --> 00:15:27,199

and yeah that that that started a whole

418

00:15:31,350 --> 00:15:29,199

a real serious drug development you know

419

00:15:32,550 --> 00:15:31,360

they did animal studies they did human

420

00:15:34,710 --> 00:15:32,560

studies

421

00:15:36,230 --> 00:15:34,720

um it looked really promising for

422

00:15:38,310 --> 00:15:36,240

treating alcoholism for treating

423

00:15:40,150 --> 00:15:38,320

depression there were thousands and

424

00:15:41,189 --> 00:15:40,160

thousands of studies done in papers

425

00:15:43,670 --> 00:15:41,199

written

426

00:15:45,910 --> 00:15:43,680

um and then you know the

427

00:15:47,910 --> 00:15:45,920

what he and he really intended it to be

428

00:15:50,629 --> 00:15:47,920

a serious

429

00:15:53,189 --> 00:15:50,639

psych you know psychiatric treatment and

430

00:15:56,389 --> 00:15:53,199

he wanted to to develop you know and so

431

00:15:57,749 --> 00:15:56,399

he was actually really dismayed with

432

00:16:00,389 --> 00:15:57,759

you know

433

00:16:02,389 --> 00:16:00,399

and he resented very much the hippie

434

00:16:05,590 --> 00:16:02,399

movement in the united states for

435

00:16:07,110 --> 00:16:05,600

and he resented uh leary

436

00:16:09,110 --> 00:16:07,120

for deep you know what i mean for under

437

00:16:10,710 --> 00:16:09,120

for undermining the seriousness of of

438

00:16:13,189 --> 00:16:10,720

the of the like he didn't want it to be

439

00:16:14,870 --> 00:16:13,199

a party drug which it kind of

440

00:16:16,470 --> 00:16:14,880

entered the the culture in that way and

441

00:16:18,470 --> 00:16:16,480

then it got banned and then

442

00:16:20,389 --> 00:16:18,480

research on it just completely stopped

443

00:16:21,990 --> 00:16:20,399

and so anyway that's

444

00:16:24,069 --> 00:16:22,000

it's terrific because i'll tell you

445

00:16:25,749 --> 00:16:24,079

there's one other aspect of this that i

446

00:16:28,790 --> 00:16:25,759

learned from you and i thought it was

447

00:16:31,189 --> 00:16:28,800

really just a great insight what you

448

00:16:34,790 --> 00:16:31,199

point out is it opened up all these

449

00:16:37,749 --> 00:16:34,800

vistas in terms of even thinking about

450

00:16:40,790 --> 00:16:37,759

all the stuff that we now consider

451  
00:16:43,590 --> 00:16:40,800  
relevant sure yeah i mean yeah and

452  
00:16:44,790 --> 00:16:43,600  
i as far you know as reading the history

453  
00:16:47,509 --> 00:16:44,800  
of this

454  
00:16:49,030 --> 00:16:47,519  
i think prior to lsd there people didn't

455  
00:16:50,949 --> 00:16:49,040  
really

456  
00:16:52,629 --> 00:16:50,959  
think that that what's going on

457  
00:16:54,629 --> 00:16:52,639  
chemically in your brain had anything to

458  
00:16:55,670 --> 00:16:54,639  
do with how you feel or how your

459  
00:16:57,910 --> 00:16:55,680  
behavior

460  
00:17:00,389 --> 00:16:57,920  
and then lsd was really like

461  
00:17:03,269 --> 00:17:00,399  
oh okay we we just introduced this

462  
00:17:05,590 --> 00:17:03,279  
molecule into your synapses and like all

463  
00:17:08,309 --> 00:17:05,600

this crazy stuff happens maybe so

464

00:17:11,829 --> 00:17:08,319

then you had you know then in prozac and

465

00:17:14,069 --> 00:17:11,839

ritalin and and that and and i think lsd

466

00:17:16,390 --> 00:17:14,079

was really kind of the entry way into

467

00:17:17,429 --> 00:17:16,400

more serious i mean people had known

468

00:17:18,949 --> 00:17:17,439

about steam you know of course

469

00:17:21,029 --> 00:17:18,959

stimulants and

470

00:17:22,069 --> 00:17:21,039

and things but there really wasn't a a

471

00:17:25,189 --> 00:17:22,079

good a

472

00:17:26,710 --> 00:17:25,199

very advanced understanding of

473

00:17:29,270 --> 00:17:26,720

exactly what these different kinds of

474

00:17:30,789 --> 00:17:29,280

molecules are doing at the you know at

475

00:17:32,630 --> 00:17:30,799

the neural level i mean we still don't

476

00:17:35,110 --> 00:17:32,640

we are i think our understanding is

477

00:17:37,830 --> 00:17:35,120

quite crude but like lsd was really kind

478

00:17:40,070 --> 00:17:37,840

of the gateway to like oh we can we can

479

00:17:41,990 --> 00:17:40,080

work on compounds that target

480

00:17:44,310 --> 00:17:42,000

specific brain

481

00:17:46,390 --> 00:17:44,320

you know neurotransmitters and change

482

00:17:49,110 --> 00:17:46,400

how people feel change how they behave

483

00:17:51,510 --> 00:17:49,120

and i think lsd was really

484

00:17:54,150 --> 00:17:51,520

and that's that's kind of a lost uh

485

00:17:56,549 --> 00:17:54,160

piece of medical history absolutely

486

00:17:58,470 --> 00:17:56,559

absolutely became such a crazy taboo in

487

00:17:59,350 --> 00:17:58,480

the united states you know and around

488

00:18:01,510 --> 00:17:59,360

the world

489

00:18:04,870 --> 00:18:01,520

and then what your book traces is like

490

00:18:07,350 --> 00:18:04,880

okay so that's one gateway and then ai

491

00:18:09,430 --> 00:18:07,360

and it's power to kind of do stuff that

492

00:18:11,190 --> 00:18:09,440

we think is pretty smart you know and

493

00:18:15,350 --> 00:18:11,200

play chess and

494

00:18:17,350 --> 00:18:15,360

go don't don't play online poker people

495

00:18:19,990 --> 00:18:17,360

you're playing against robots you're

496

00:18:22,789 --> 00:18:20,000

just gonna get wiped out but

497

00:18:25,430 --> 00:18:22,799

i kid but not really where you're going

498

00:18:28,230 --> 00:18:25,440

then is to say okay so in the way that

499

00:18:30,470 --> 00:18:28,240

these guys had their world blown about

500

00:18:32,470 --> 00:18:30,480

wow there's this chemical neuro

501

00:18:33,990 --> 00:18:32,480

interaction that i don't even

502

00:18:35,510 --> 00:18:34,000

freaking understand and i didn't

503

00:18:37,590 --> 00:18:35,520

understand consciousness to begin with

504

00:18:39,590 --> 00:18:37,600

but now i don't understand it even more

505

00:18:41,350 --> 00:18:39,600

then you come along or ai comes along

506

00:18:43,510 --> 00:18:41,360

and says yeah you really don't

507

00:18:45,669 --> 00:18:43,520

understand consciousness and then what

508

00:18:46,630 --> 00:18:45,679

you pose here which is such an important

509

00:18:47,830 --> 00:18:46,640

question

510

00:18:49,750 --> 00:18:47,840

is

511

00:18:52,950 --> 00:18:49,760

again i'll repeat it can we build a

512

00:18:56,950 --> 00:18:52,960

robot that trips on acid and in the book

513

00:18:59,510 --> 00:18:56,960

you say the turing acid test so talk

514

00:19:02,150 --> 00:18:59,520

about a little bit about alan turing

515

00:19:03,430 --> 00:19:02,160

because this really is still for a lot

516

00:19:04,870 --> 00:19:03,440

of people

517

00:19:06,390 --> 00:19:04,880

and and it's going to be a very central

518

00:19:08,710 --> 00:19:06,400

part of this dialogue we're going to

519

00:19:11,990 --> 00:19:08,720

have today you know

520

00:19:14,390 --> 00:19:12,000

what is the touring test and is it

521

00:19:16,070 --> 00:19:14,400

really reasonable for you to push the

522

00:19:19,350 --> 00:19:16,080

turing test

523

00:19:20,310 --> 00:19:19,360

to the uh lsd level

524

00:19:25,350 --> 00:19:20,320

yeah

525

00:19:27,270 --> 00:19:25,360

part of the the fun of writing a book

526  
00:19:28,310 --> 00:19:27,280  
like this is you can be very speculative

527  
00:19:34,870 --> 00:19:28,320  
and

528  
00:19:35,750 --> 00:19:34,880  
acknowledge it's a speculative argument

529  
00:19:37,669 --> 00:19:35,760  
but

530  
00:19:40,870 --> 00:19:37,679  
i was i mean what i was interested in

531  
00:19:45,510 --> 00:19:42,789  
so a there's a lack of discussion of

532  
00:19:46,549 --> 00:19:45,520  
consciousness in the agi world that's

533  
00:19:48,630 --> 00:19:46,559  
like that we're going to create these

534  
00:19:50,950 --> 00:19:48,640  
human level intelligences

535  
00:19:53,669 --> 00:19:50,960  
and people aren't really and and to me

536  
00:19:55,190 --> 00:19:53,679  
and you know coming from a bit more of a

537  
00:19:56,390 --> 00:19:55,200  
human cognitive science background

538  
00:19:58,549 --> 00:19:56,400

philosophy of mine

539

00:19:59,750 --> 00:19:58,559

where consciousness is a central problem

540

00:20:00,870 --> 00:19:59,760

for a lot of

541

00:20:02,950 --> 00:20:00,880

thinkers

542

00:20:04,470 --> 00:20:02,960

and there's this and you know what is

543

00:20:06,549 --> 00:20:04,480

the relationship between intelligence

544

00:20:08,230 --> 00:20:06,559

and consciousness and so i was

545

00:20:10,390 --> 00:20:08,240

questioning like can you have a human

546

00:20:12,390 --> 00:20:10,400

level intelligence that's not conscious

547

00:20:15,190 --> 00:20:12,400

i was very i'm very i'm still very

548

00:20:17,590 --> 00:20:15,200

skeptical of that like i don't and and

549

00:20:20,310 --> 00:20:17,600

and so in even in neuroscience we don't

550

00:20:21,830 --> 00:20:20,320

know what the relationship is between

551  
00:20:23,590 --> 00:20:21,840  
intelligence whatever that is and

552  
00:20:24,310 --> 00:20:23,600  
consciousness whatever that is

553  
00:20:25,029 --> 00:20:24,320  
so

554  
00:20:41,990 --> 00:20:25,039  
i

555  
00:20:44,950 --> 00:20:42,000  
and and so

556  
00:20:46,630 --> 00:20:44,960  
the the thought about lsd was then well

557  
00:20:48,149 --> 00:20:46,640  
if it's if it's

558  
00:20:49,590 --> 00:20:48,159  
basically indistinguishable from a

559  
00:20:51,110 --> 00:20:49,600  
human-minded

560  
00:20:52,950 --> 00:20:51,120  
it must have it might they must have

561  
00:20:55,270 --> 00:20:52,960  
this other property of like you must be

562  
00:20:56,070 --> 00:20:55,280  
able to alter it through

563  
00:20:58,070 --> 00:20:56,080

these

564

00:20:59,590 --> 00:20:58,080

the you know it was it's a leap and you

565

00:21:02,470 --> 00:20:59,600

know it's like

566

00:21:05,590 --> 00:21:02,480

how you would engineer a system

567

00:21:07,270 --> 00:21:05,600

that could be perturbed by lsd or like

568

00:21:09,990 --> 00:21:07,280

and and but this gets back to these

569

00:21:11,669 --> 00:21:10,000

debates in philosophy of mind about you

570

00:21:13,110 --> 00:21:11,679

know there's the functionalist

571

00:21:14,390 --> 00:21:13,120

thing where it's like

572

00:21:16,870 --> 00:21:14,400

the medium

573

00:21:18,070 --> 00:21:16,880

if it's biological neurons or silicon

574

00:21:20,310 --> 00:21:18,080

based

575

00:21:22,149 --> 00:21:20,320

artificial neurons doesn't matter

576

00:21:23,270 --> 00:21:22,159

it's that what's important is what the

577

00:21:25,510 --> 00:21:23,280

way that they're set up and the

578

00:21:27,830 --> 00:21:25,520

algorithms that run

579

00:21:28,870 --> 00:21:27,840

that that's what is conscious and then

580

00:21:32,070 --> 00:21:28,880

there's other thinkers who are like no

581

00:21:33,750 --> 00:21:32,080

no only biological systems

582

00:21:35,830 --> 00:21:33,760

can do this and that and the ai people

583

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

are like no no biology is irrelevant and

584

00:21:39,990 --> 00:21:37,840

so i was i thought lsd was a very

585

00:21:42,310 --> 00:21:40,000

interesting like

586

00:21:44,149 --> 00:21:42,320

way to like probe like probe that

587

00:21:45,430 --> 00:21:44,159

assumption of biology is irrelevant it's

588

00:21:46,710 --> 00:21:45,440

like um

589

00:21:49,270 --> 00:21:46,720

can you have all the properties of a

590

00:21:51,029 --> 00:21:49,280

human mind without this other property

591

00:21:54,230 --> 00:21:51,039

of like you can you can

592

00:21:56,070 --> 00:21:54,240

you can give it lsd and and it'll it'll

593

00:21:58,310 --> 00:21:56,080

completely change the way your brain is

594

00:22:01,110 --> 00:21:58,320

operating for for a while or maybe or

595

00:22:03,669 --> 00:22:01,120

maybe for a longer time

596

00:22:06,789 --> 00:22:03,679

it's very exciting it's a very

597

00:22:08,630 --> 00:22:06,799

imaginative way of kind of framing the

598

00:22:11,590 --> 00:22:08,640

problem if i can go back i just want to

599

00:22:13,750 --> 00:22:11,600

make sure that we don't lose everybody

600

00:22:15,909 --> 00:22:13,760

you know the the turing test was

601  
00:22:18,149 --> 00:22:15,919  
basically

602  
00:22:20,870 --> 00:22:18,159  
you know as you were kind of alluding to

603  
00:22:23,270 --> 00:22:20,880  
there it's like if i can fool you into

604  
00:22:25,430 --> 00:22:23,280  
thinking i'm intelligent then i'm

605  
00:22:27,110 --> 00:22:25,440  
intelligent and and that that then

606  
00:22:29,590 --> 00:22:27,120  
becomes the standard

607  
00:22:31,430 --> 00:22:29,600  
throughout you know so if we're sitting

608  
00:22:32,870 --> 00:22:31,440  
across and we're doing a chat and you

609  
00:22:35,590 --> 00:22:32,880  
think i'm a human

610  
00:22:38,070 --> 00:22:35,600  
uh and i'm not then i've passed the

611  
00:22:41,510 --> 00:22:38,080  
turing test you know and then we keep

612  
00:22:43,590 --> 00:22:41,520  
extending that beyond and beyond and as

613  
00:22:45,430 --> 00:22:43,600

you point out as you just pointed out

614

00:22:47,350 --> 00:22:45,440

the thought exercises though they're

615

00:22:50,149 --> 00:22:47,360

going a lot of different directions but

616

00:22:51,990 --> 00:22:50,159

where you took it with the acid thing or

617

00:22:53,430 --> 00:22:52,000

the lsd thing

618

00:22:55,270 --> 00:22:53,440

i think really

619

00:22:57,510 --> 00:22:55,280

gets to what i think has been the core

620

00:22:59,990 --> 00:22:57,520

question here a lot of times and i think

621

00:23:02,230 --> 00:23:00,000

is this question is skirted for the most

622

00:23:04,549 --> 00:23:02,240

part by the technology community and

623

00:23:06,950 --> 00:23:04,559

that is is it the turing test or is it

624

00:23:08,710 --> 00:23:06,960

the metaphysical test the question about

625

00:23:10,789 --> 00:23:08,720

consciousness is

626  
00:23:13,430 --> 00:23:10,799  
is it somehow

627  
00:23:16,789 --> 00:23:13,440  
fundamental so you know back when

628  
00:23:19,350 --> 00:23:16,799  
quantum physics happens if you will

629  
00:23:21,029 --> 00:23:19,360  
you got some of the greatest

630  
00:23:23,750 --> 00:23:21,039  
scientists physicists of the world the

631  
00:23:25,430 --> 00:23:23,760  
max plancks the schrodingers the niels

632  
00:23:27,110 --> 00:23:25,440  
bohr they're saying

633  
00:23:29,590 --> 00:23:27,120  
[h\_\_\h] it guys

634  
00:23:32,390 --> 00:23:29,600  
you got it all wrong consciousness is

635  
00:23:35,350 --> 00:23:32,400  
fundamental and matter what you guys

636  
00:23:37,270 --> 00:23:35,360  
like or so interested in you ai guys are

637  
00:23:39,990 --> 00:23:37,280  
so interested in

638  
00:23:41,750 --> 00:23:40,000

is emer is some emerging is bad work is

639

00:23:44,789 --> 00:23:41,760

somehow

640

00:23:47,269 --> 00:23:44,799

coming out of consciousness and now i i

641

00:23:48,950 --> 00:23:47,279

have to add that this really needs to be

642

00:23:51,350 --> 00:23:48,960

something that we wrestle to the ground

643

00:23:53,669 --> 00:23:51,360

too because on this show i mean i got

644

00:23:55,990 --> 00:23:53,679

200 shows exploring that and i think the

645

00:23:57,990 --> 00:23:56,000

best way to explore that is through

646

00:23:59,510 --> 00:23:58,000

looking at

647

00:24:01,029 --> 00:23:59,520

some of the fundamental

648

00:24:02,470 --> 00:24:01,039

questions assumptions we've made about

649

00:24:04,789 --> 00:24:02,480

consciousness start with does

650

00:24:07,269 --> 00:24:04,799

consciousness survive death so go look

651  
00:24:08,789 --> 00:24:07,279  
at the near-death experience science go

652  
00:24:11,430 --> 00:24:08,799  
look at university of virginia and the

653  
00:24:14,630 --> 00:24:11,440  
reincarnation science go look at all

654  
00:24:15,909 --> 00:24:14,640  
that and you come back and go okay yeah

655  
00:24:18,149 --> 00:24:15,919  
kind of

656  
00:24:20,870 --> 00:24:18,159  
pretty well case closed consciousness

657  
00:24:22,310 --> 00:24:20,880  
seems to survive bodily death and that

658  
00:24:25,430 --> 00:24:22,320  
would definitely throw us in the

659  
00:24:27,909 --> 00:24:25,440  
metaphysical camp so

660  
00:24:28,950 --> 00:24:27,919  
how do we even hold on to

661  
00:24:31,430 --> 00:24:28,960  
the

662  
00:24:33,350 --> 00:24:31,440  
materialist science

663  
00:24:35,990 --> 00:24:33,360

consciousness is an illusion i mean is

664

00:24:38,549 --> 00:24:36,000

that really viable from a philosophical

665

00:24:40,789 --> 00:24:38,559

standpoint not just philosophical but

666

00:24:43,269 --> 00:24:40,799

given the evidence we have yeah that's i

667

00:24:47,190 --> 00:24:43,279

mean that's a interesting and i i

668

00:24:48,950 --> 00:24:47,200

haven't thought too much about that

669

00:24:50,710 --> 00:24:48,960

you know in terms of those questions

670

00:24:53,430 --> 00:24:50,720

it's definitely

671

00:24:56,070 --> 00:24:53,440

like in the book i was i was kind of

672

00:24:58,549 --> 00:24:56,080

trying to argue against the

673

00:25:00,789 --> 00:24:58,559

the inherent dualist

674

00:25:02,630 --> 00:25:00,799

i think tone in

675

00:25:04,149 --> 00:25:02,640

a lot of the ai

676  
00:25:05,990 --> 00:25:04,159  
thing where

677  
00:25:08,310 --> 00:25:06,000  
like consciousness can be

678  
00:25:09,430 --> 00:25:08,320  
uh embodied in any

679  
00:25:11,830 --> 00:25:09,440  
medium

680  
00:25:13,350 --> 00:25:11,840  
or you know if it's silicon and i don't

681  
00:25:15,510 --> 00:25:13,360  
and yeah i

682  
00:25:16,950 --> 00:25:15,520  
that's a um

683  
00:25:18,710 --> 00:25:16,960  
i don't know what i think about you know

684  
00:25:20,710 --> 00:25:18,720  
consciousness surviving

685  
00:25:22,310 --> 00:25:20,720  
death and like i'm i'm not you know what

686  
00:25:23,350 --> 00:25:22,320  
i mean like i'm not i don't have a

687  
00:25:24,630 --> 00:25:23,360  
strong

688  
00:25:26,390 --> 00:25:24,640

let me ask you this question though

689

00:25:28,390 --> 00:25:26,400

about that i'm going to persist on that

690

00:25:30,870 --> 00:25:28,400

a little bit further yeah

691

00:25:32,630 --> 00:25:30,880

isn't that the question i mean if if we

692

00:25:35,269 --> 00:25:32,640

were going to not but not the question

693

00:25:37,990 --> 00:25:35,279

not like oh my god i have to know if i

694

00:25:39,350 --> 00:25:38,000

but from the standpoint of reducing it

695

00:25:40,950 --> 00:25:39,360

down to

696

00:25:43,110 --> 00:25:40,960

the kind of most

697

00:25:44,230 --> 00:25:43,120

parsimonious way to

698

00:25:45,510 --> 00:25:44,240

determine

699

00:25:47,269 --> 00:25:45,520

one or another i mean i think that's

700

00:25:49,990 --> 00:25:47,279

pretty that's how i got there i didn't

701  
00:25:51,190 --> 00:25:50,000  
start there with that question i started

702  
00:25:52,430 --> 00:25:51,200  
with

703  
00:25:54,710 --> 00:25:52,440  
psi and

704  
00:25:57,110 --> 00:25:54,720  
parapsychology and how do those guys at

705  
00:25:59,350 --> 00:25:57,120  
princeton get that random number

706  
00:26:01,510 --> 00:25:59,360  
generator to swing a little bit more 50

707  
00:26:03,029 --> 00:26:01,520  
50 that way and then i got to some point

708  
00:26:04,789 --> 00:26:03,039  
i go well we'll screw all that i mean

709  
00:26:06,310 --> 00:26:04,799  
here's the more

710  
00:26:07,669 --> 00:26:06,320  
here's the simplest question does

711  
00:26:09,990 --> 00:26:07,679  
consciousness survive death if

712  
00:26:12,549 --> 00:26:10,000  
consciousness survives this bodily

713  
00:26:13,909 --> 00:26:12,559

biological thing well then you know it

714

00:26:15,750 --> 00:26:13,919

kind of answers that question so

715

00:26:16,630 --> 00:26:15,760

philosophically doesn't that question

716

00:26:18,789 --> 00:26:16,640

kind of

717

00:26:20,789 --> 00:26:18,799

cut to the chase

718

00:26:22,310 --> 00:26:20,799

yeah i mean it's true i think it's a

719

00:26:23,029 --> 00:26:22,320

great point because

720

00:26:31,990 --> 00:26:23,039

you

721

00:26:34,310 --> 00:26:32,000

does transcend

722

00:26:37,350 --> 00:26:34,320

the bio like your biological

723

00:26:38,950 --> 00:26:37,360

brain if if if it can be instantiated in

724

00:26:40,950 --> 00:26:38,960

a different

725

00:26:42,710 --> 00:26:40,960

yeah and so it's a very good point and

726

00:26:44,630 --> 00:26:42,720

it's a it's a very

727

00:26:47,909 --> 00:26:44,640

it's an interest you know and i i agree

728

00:26:49,590 --> 00:26:47,919

i mean there's you know camus was like

729

00:26:52,789 --> 00:26:49,600

the only serious philosophical question

730

00:26:54,789 --> 00:26:52,799

is suicide exactly right if you if you

731

00:26:56,230 --> 00:26:54,799

think your life is worth living that's

732

00:26:58,070 --> 00:26:56,240

everything else is kind of a game he

733

00:26:58,870 --> 00:26:58,080

thought you know

734

00:27:00,710 --> 00:26:58,880

so

735

00:27:02,470 --> 00:27:00,720

i i don't um

736

00:27:04,830 --> 00:27:02,480

i have to say like philosophically i

737

00:27:07,750 --> 00:27:04,840

tend you know i do tend toward

738

00:27:09,029 --> 00:27:07,760

more this tradition of i guess realism

739

00:27:11,110 --> 00:27:09,039

or like

740

00:27:14,789 --> 00:27:11,120

science you know what i mean the the the

741

00:27:17,190 --> 00:27:14,799

objects of scientific theories are

742

00:27:19,029 --> 00:27:17,200

and you know i i don't i'm not you know

743

00:27:20,789 --> 00:27:19,039

but i would i would definitely lean

744

00:27:22,789 --> 00:27:20,799

toward this like

745

00:27:23,669 --> 00:27:22,799

there's there's some mind independent

746

00:27:25,110 --> 00:27:23,679

world

747

00:27:27,190 --> 00:27:25,120

and science

748

00:27:27,990 --> 00:27:27,200

tells us something about it

749

00:27:30,310 --> 00:27:28,000

that

750

00:27:31,590 --> 00:27:30,320

in the vagus weakest

751  
00:27:33,590 --> 00:27:31,600  
form of that

752  
00:27:35,669 --> 00:27:33,600  
argument but i but i completely

753  
00:27:37,510 --> 00:27:35,679  
acknowledge that that's

754  
00:27:39,430 --> 00:27:37,520  
that's a metaphysics in itself you know

755  
00:27:41,669 --> 00:27:39,440  
where you say right science is about

756  
00:27:44,549 --> 00:27:41,679  
trying to understand

757  
00:27:45,830 --> 00:27:44,559  
the the some and and i agree like you

758  
00:27:48,710 --> 00:27:45,840  
were talking about the the quantum

759  
00:27:50,549 --> 00:27:48,720  
thinkers uh and and quantum physics

760  
00:27:51,909 --> 00:27:50,559  
where that it does throw all that into

761  
00:27:53,110 --> 00:27:51,919  
question

762  
00:27:54,389 --> 00:27:53,120  
you know where

763  
00:27:57,510 --> 00:27:54,399

you can't really separate what you're

764

00:27:58,710 --> 00:27:57,520

observing from the act of observing

765

00:28:00,070 --> 00:27:58,720

like there's no

766

00:28:02,630 --> 00:28:00,080

so

767

00:28:04,710 --> 00:28:02,640

but i i gotta return to because i think

768

00:28:06,230 --> 00:28:04,720

you've added a really really

769

00:28:08,389 --> 00:28:06,240

important like you said thought

770

00:28:10,789 --> 00:28:08,399

experiment exercise

771

00:28:13,430 --> 00:28:10,799

with the acid thing and i want to return

772

00:28:15,190 --> 00:28:13,440

to that what is your final conclusion on

773

00:28:17,350 --> 00:28:15,200

that in terms of

774

00:28:19,350 --> 00:28:17,360

playing that game

775

00:28:21,830 --> 00:28:19,360

is there some

776

00:28:23,669 --> 00:28:21,840

future where

777

00:28:26,549 --> 00:28:23,679

some artificial intelligence could it

778

00:28:28,470 --> 00:28:26,559

pass the acid turing test

779

00:28:30,070 --> 00:28:28,480

yeah and i think this problem of people

780

00:28:32,230 --> 00:28:30,080

working there's people you know that are

781

00:28:34,230 --> 00:28:32,240

interested in agi and

782

00:28:36,870 --> 00:28:34,240

who are working on it you know and are

783

00:28:38,870 --> 00:28:36,880

tr are are really trying to create this

784

00:28:41,190 --> 00:28:38,880

a human level

785

00:28:42,830 --> 00:28:41,200

you know system that that has human

786

00:28:45,990 --> 00:28:42,840

level intelligence

787

00:28:47,590 --> 00:28:46,000

and i you know

788

00:28:49,750 --> 00:28:47,600

and again this this question of would

789

00:28:53,190 --> 00:28:49,760

that think would that thing whatever it

790

00:28:53,990 --> 00:28:53,200

is have subjective experience

791

00:28:56,549 --> 00:28:54,000

or

792

00:28:58,310 --> 00:28:56,559

what con some kind of and i you know i

793

00:29:01,029 --> 00:28:58,320

definitely think a way to probe that

794

00:29:04,230 --> 00:29:01,039

would be to try to perturb it

795

00:29:07,669 --> 00:29:04,240

the way the way lsd perturbs our

796

00:29:09,830 --> 00:29:07,679

subjective experience like it completely

797

00:29:12,149 --> 00:29:09,840

you know and but there's there's there's

798

00:29:14,870 --> 00:29:12,159

a very difficult way and this is what's

799

00:29:16,710 --> 00:29:14,880

very interesting to me is

800

00:29:18,710 --> 00:29:16,720

it's really hard to objectively verify

801  
00:29:21,269 --> 00:29:18,720  
that like you're tripping on acid

802  
00:29:23,830 --> 00:29:21,279  
you you they they do studies now where

803  
00:29:25,669 --> 00:29:23,840  
they give people lsd or psilocybin put

804  
00:29:27,350 --> 00:29:25,679  
them in the brain scanner

805  
00:29:28,710 --> 00:29:27,360  
in the fmri machine

806  
00:29:30,310 --> 00:29:28,720  
and you lay there and you were you

807  
00:29:31,830 --> 00:29:30,320  
report what you're like oh i'm seeing

808  
00:29:34,310 --> 00:29:31,840  
colors i feel

809  
00:29:35,990 --> 00:29:34,320  
disembodied my ego is dissolving

810  
00:29:38,230 --> 00:29:36,000  
and they can track you know then you can

811  
00:29:41,430 --> 00:29:38,240  
you can definitely track like

812  
00:29:43,269 --> 00:29:41,440  
okay your your anterior cingulate is

813  
00:29:44,789 --> 00:29:43,279

shutting down your prefrontal cortex is

814

00:29:46,549 --> 00:29:44,799

shutting down your

815

00:29:48,230 --> 00:29:46,559

you know what i mean like you can and

816

00:29:50,630 --> 00:29:48,240

then they can compare like a person

817

00:29:52,710 --> 00:29:50,640

who's not on who's sober

818

00:29:54,549 --> 00:29:52,720

and and you can get an idea of what's

819

00:29:56,389 --> 00:29:54,559

going on in the brain but how this

820

00:29:58,549 --> 00:29:56,399

relates to

821

00:30:00,789 --> 00:29:58,559

the the subjective experiences is still

822

00:30:02,389 --> 00:30:00,799

very you know you can rely like they do

823

00:30:03,990 --> 00:30:02,399

these studies where they try to reliably

824

00:30:05,350 --> 00:30:04,000

correlate like

825

00:30:06,870 --> 00:30:05,360

this bridge this is happening in this

826

00:30:09,510 --> 00:30:06,880

bridge region and this is what the

827

00:30:11,110 --> 00:30:09,520

subject reports are reporting but

828

00:30:13,190 --> 00:30:11,120

and so in a computer system again you'd

829

00:30:14,870 --> 00:30:13,200

have the same problem of

830

00:30:16,789 --> 00:30:14,880

the computer system might be claiming it

831

00:30:18,230 --> 00:30:16,799

might be saying hey i'm conscious

832

00:30:20,549 --> 00:30:18,240

don't hurt me

833

00:30:22,070 --> 00:30:20,559

how would do do you believe what i mean

834

00:30:23,430 --> 00:30:22,080

like here's where i thought you were

835

00:30:25,190 --> 00:30:23,440

going with that when you started talking

836

00:30:26,230 --> 00:30:25,200

about the imaging stuff because this is

837

00:30:27,510 --> 00:30:26,240

very

838

00:30:29,190 --> 00:30:27,520

kind of uh

839

00:30:31,110 --> 00:30:29,200

an interesting topic in the

840

00:30:33,830 --> 00:30:31,120

consciousness field right is because

841

00:30:36,070 --> 00:30:33,840

they do that imaging stuff that fmri

842

00:30:37,750 --> 00:30:36,080

stuff and nut i think is the guy's name

843

00:30:39,510 --> 00:30:37,760

in england who really kind of started it

844

00:30:41,990 --> 00:30:39,520

yeah yeah david nut is that it yeah

845

00:30:43,029 --> 00:30:42,000

david nutt well

846

00:30:46,230 --> 00:30:43,039

what they found was very

847

00:30:48,710 --> 00:30:46,240

counterintuitive i mean the the uh uh

848

00:30:50,389 --> 00:30:48,720

subjective experience of tripping on

849

00:30:53,190 --> 00:30:50,399

psilocybin is you know

850

00:30:55,430 --> 00:30:53,200

boom fireworks are going off so the

851

00:30:57,669 --> 00:30:55,440

expectation was we'd see the brain lit

852

00:31:00,630 --> 00:30:57,679

up like a christmas tree and what they

853

00:31:03,269 --> 00:31:00,640

find is the opposite they find a reduced

854

00:31:05,590 --> 00:31:03,279

activity in all these areas and it

855

00:31:07,269 --> 00:31:05,600

supports the notion which i i i don't

856

00:31:09,669 --> 00:31:07,279

know how this fits into your model is

857

00:31:11,909 --> 00:31:09,679

that you know this is kind of this

858

00:31:13,509 --> 00:31:11,919

transceiver you know the brain is a

859

00:31:15,029 --> 00:31:13,519

transceiver of consciousness

860

00:31:18,149 --> 00:31:15,039

consciousness is

861

00:31:20,470 --> 00:31:18,159

vast immense beyond we can describe and

862

00:31:22,149 --> 00:31:20,480

we're somehow filtering it through this

863

00:31:25,350 --> 00:31:22,159

so when you talk about

864

00:31:28,549 --> 00:31:25,360

perturbing the system you know the ai

865

00:31:30,230 --> 00:31:28,559

system that is now instantiated in this

866

00:31:32,549 --> 00:31:30,240

little bit of silicone

867

00:31:33,350 --> 00:31:32,559

we still come back to the same question

868

00:31:38,070 --> 00:31:33,360

is

869

00:31:40,710 --> 00:31:38,080

and flowing it through all these things

870

00:31:42,710 --> 00:31:40,720

what difference does it make right so

871

00:31:45,350 --> 00:31:42,720

yeah i see what you mean like if if if

872

00:31:47,110 --> 00:31:45,360

consciousness is somehow

873

00:31:48,630 --> 00:31:47,120

a force

874

00:31:50,950 --> 00:31:48,640

in you know like a fundamental force or

875

00:31:54,230 --> 00:31:50,960

something that we are

876

00:31:56,950 --> 00:31:54,240

you know connecting to some you know via

877

00:32:00,549 --> 00:31:56,960

whatever or like and then the psilocybin

878

00:32:02,230 --> 00:32:00,559

is like allowing that more

879

00:32:04,549 --> 00:32:02,240

you mean to sort of explain the counter

880

00:32:05,990 --> 00:32:04,559

the counter-intuitive

881

00:32:07,990 --> 00:32:06,000

thing about the

882

00:32:09,830 --> 00:32:08,000

the brain studies and like i mean i do i

883

00:32:11,509 --> 00:32:09,840

definitely think that there's that it's

884

00:32:12,870 --> 00:32:11,519

a little more nuanced because i think

885

00:32:19,509 --> 00:32:12,880

there's

886

00:32:22,070 --> 00:32:19,519

the brain that

887

00:32:23,269 --> 00:32:22,080

reduce their activity in in the

888

00:32:25,110 --> 00:32:23,279

according to these measures but there

889

00:32:26,630 --> 00:32:25,120

are others that actually

890

00:32:28,470 --> 00:32:26,640

that are increasing and their and their

891

00:32:29,990 --> 00:32:28,480

connections are

892

00:32:32,310 --> 00:32:30,000

increasing and these and these are more

893

00:32:34,070 --> 00:32:32,320

the perceptual sensory i mean which

894

00:32:36,950 --> 00:32:34,080

again it doesn't rule out you know what

895

00:32:39,909 --> 00:32:36,960

i mean that that you're picking up stuff

896

00:32:43,110 --> 00:32:39,919

um and again this this is a very old

897

00:32:44,389 --> 00:32:43,120

philosophical debate about whether

898

00:32:47,509 --> 00:32:44,399

i mean i think within mainstream

899

00:32:49,909 --> 00:32:47,519

neuroscience it's it's generally

900

00:32:52,950 --> 00:32:49,919

accepted or assumed that the

901  
00:32:55,269 --> 00:32:52,960  
the you know the brain is

902  
00:32:57,190 --> 00:32:55,279  
its identity it generates consciousness

903  
00:32:58,389 --> 00:32:57,200  
or you know but this is the people

904  
00:32:59,909 --> 00:32:58,399  
people

905  
00:33:01,830 --> 00:32:59,919  
you know they're like what is it does it

906  
00:33:04,149 --> 00:33:01,840  
ooze or what you know

907  
00:33:06,389 --> 00:33:04,159  
and this is this is a hard a hard debate

908  
00:33:07,990 --> 00:33:06,399  
about like what the

909  
00:33:10,630 --> 00:33:08,000  
but there there definitely are floss

910  
00:33:12,549 --> 00:33:10,640  
there's there are you know philosophers

911  
00:33:14,070 --> 00:33:12,559  
who talk about like the extended mind

912  
00:33:15,509 --> 00:33:14,080  
and like

913  
00:33:17,190 --> 00:33:15,519

i don't really think it's much of a

914

00:33:19,269 --> 00:33:17,200

debate if you really look at the

915

00:33:22,070 --> 00:33:19,279

frontier science we're going to hold on

916

00:33:24,310 --> 00:33:22,080

to this materialism because

917

00:33:26,310 --> 00:33:24,320

as richard feynman famously said you

918

00:33:28,389 --> 00:33:26,320

know shut up and calculate and he didn't

919

00:33:30,389 --> 00:33:28,399

really say it but why not attribute to

920

00:33:31,110 --> 00:33:30,399

him it's it fits him

921

00:33:33,430 --> 00:33:31,120

and

922

00:33:34,710 --> 00:33:33,440

you know we've built this incredible

923

00:33:36,950 --> 00:33:34,720

incredible

924

00:33:39,269 --> 00:33:36,960

advanced scientifically based culture

925

00:33:41,350 --> 00:33:39,279

that we love and we should love because

926

00:33:43,269 --> 00:33:41,360

it brings us a lot of things and that

927

00:33:44,950 --> 00:33:43,279

you know shut up and calculate models so

928

00:33:46,070 --> 00:33:44,960

we don't want to throw that

929

00:33:48,149 --> 00:33:46,080

for practical reasons we don't want to

930

00:33:49,669 --> 00:33:48,159

throw that away but from if we're going

931

00:33:51,669 --> 00:33:49,679

to be honest about the science like i

932

00:33:54,470 --> 00:33:51,679

say i mean near-death experience science

933

00:33:55,669 --> 00:33:54,480

let alone parapsychology blows it away

934

00:33:58,310 --> 00:33:55,679

but then if you want to get into the

935

00:34:00,470 --> 00:33:58,320

more human reincarnation research you

936

00:34:02,389 --> 00:34:00,480

know hey after death communication i

937

00:34:04,310 --> 00:34:02,399

just you know i interviewed this one dr

938

00:34:06,950 --> 00:34:04,320

julie bauschel she's still around it

939

00:34:08,950 --> 00:34:06,960

windbridge institute phd in pharmacology

940

00:34:10,629 --> 00:34:08,960

she knows how to do controlled studies

941

00:34:14,069 --> 00:34:10,639

you do controlled studies on whether

942

00:34:14,950 --> 00:34:14,079

mediums can reliably deliver information

943

00:34:17,349 --> 00:34:14,960

to

944

00:34:19,109 --> 00:34:17,359

people who are grieving and the data

945

00:34:20,950 --> 00:34:19,119

just comes through again and again they

946

00:34:22,230 --> 00:34:20,960

can we don't understand the mechanism we

947

00:34:24,230 --> 00:34:22,240

don't understand what it means to be

948

00:34:27,349 --> 00:34:24,240

deceased and have consciousness that's

949

00:34:28,869 --> 00:34:27,359

deceased but we do it does but then the

950

00:34:31,510 --> 00:34:28,879

follow-on to her study that i find

951  
00:34:34,869 --> 00:34:31,520  
incredibly incredibly relevant is that

952  
00:34:36,869 --> 00:34:34,879  
hey and if you lost a dog

953  
00:34:39,030 --> 00:34:36,879  
you could communicate with that dog too

954  
00:34:41,190 --> 00:34:39,040  
in a way that's again in every way that

955  
00:34:44,310 --> 00:34:41,200  
we can measure it straight up you know

956  
00:34:45,990 --> 00:34:44,320  
doing science and and science says if we

957  
00:34:48,550 --> 00:34:46,000  
can observe it we can measure it there's

958  
00:34:50,470 --> 00:34:48,560  
no taboo to say well you can't measure

959  
00:34:52,230 --> 00:34:50,480  
after death communication and science

960  
00:34:53,909 --> 00:34:52,240  
sure a [h\_\_\h] can just set up the

961  
00:34:55,750 --> 00:34:53,919  
experiment set up the controls what are

962  
00:34:58,470 --> 00:34:55,760  
you observing measure it control it

963  
00:35:02,470 --> 00:34:58,480

control it control it and at the end so

964

00:35:04,230 --> 00:35:02,480

we don't really have an idea of and it

965

00:35:05,109 --> 00:35:04,240

inter interfaces with your world too

966

00:35:07,589 --> 00:35:05,119

it's like

967

00:35:09,589 --> 00:35:07,599

can silicone be conscious well let's

968

00:35:11,589 --> 00:35:09,599

start with can your cat be conscious can

969

00:35:13,910 --> 00:35:11,599

your dog be conscious most people who've

970

00:35:16,230 --> 00:35:13,920

ever had an animal say of course i know

971

00:35:18,470 --> 00:35:16,240

it is but there's a whole bunch of

972

00:35:20,710 --> 00:35:18,480

questions that get tied in here what do

973

00:35:22,390 --> 00:35:20,720

you think about shut up and calculate

974

00:35:24,470 --> 00:35:22,400

i think if you look if in fact there was

975

00:35:26,150 --> 00:35:24,480

an interesting survey among physicists a

976

00:35:28,069 --> 00:35:26,160

few years ago

977

00:35:29,910 --> 00:35:28,079

who i think they tried to get at this

978

00:35:31,589 --> 00:35:29,920

question and ask them you know like what

979

00:35:33,109 --> 00:35:31,599

about indeterminacy what about

980

00:35:35,030 --> 00:35:33,119

randomness

981

00:35:36,390 --> 00:35:35,040

uh what about you know

982

00:35:37,430 --> 00:35:36,400

entanglement

983

00:35:39,990 --> 00:35:37,440

and and all these different

984

00:35:42,710 --> 00:35:40,000

interpretations of quantum theory

985

00:35:44,470 --> 00:35:42,720

and i think a large you know a large

986

00:35:45,670 --> 00:35:44,480

percentage of physicists don't

987

00:35:47,670 --> 00:35:45,680

you know

988

00:35:48,710 --> 00:35:47,680

are reluctant to commit

989

00:35:50,069 --> 00:35:48,720

to

990

00:35:52,390 --> 00:35:50,079

an interpretation you know because it

991

00:35:54,790 --> 00:35:52,400

does it's like

992

00:35:56,790 --> 00:35:54,800

you know the the the the shut up

993

00:35:58,630 --> 00:35:56,800

most of them are just in the they do

994

00:35:59,990 --> 00:35:58,640

just shut up and calculate because

995

00:36:01,349 --> 00:36:00,000

that's how you publish papers and get

996

00:36:03,109 --> 00:36:01,359

tenure and

997

00:36:04,870 --> 00:36:03,119

get paid you know you get a paycheck

998

00:36:06,710 --> 00:36:04,880

yeah yeah you get a paycheck and like

999

00:36:08,950 --> 00:36:06,720

that's it and we and like you said we

1000

00:36:10,470 --> 00:36:08,960

were making these advances

1001

00:36:13,109 --> 00:36:10,480

you know maybe at this point

1002

00:36:15,030 --> 00:36:13,119

incrementally and and like there's some

1003

00:36:17,349 --> 00:36:15,040

there's a great book by sabine

1004

00:36:18,310 --> 00:36:17,359

hosenfelder about uh it's called lost in

1005

00:36:20,310 --> 00:36:18,320

math

1006

00:36:22,310 --> 00:36:20,320

about how physics is so obsessed with

1007

00:36:23,990 --> 00:36:22,320

beautiful equations that empirically

1008

00:36:25,670 --> 00:36:24,000

we've like made no progress since the

1009

00:36:26,390 --> 00:36:25,680

70s

1010

00:36:27,589 --> 00:36:26,400

and

1011

00:36:28,950 --> 00:36:27,599

because they're all obsessed with super

1012

00:36:31,829 --> 00:36:28,960

symmetry and like they but they can't

1013

00:36:33,829 --> 00:36:31,839

find it but they keep smashing particles

1014

00:36:35,750 --> 00:36:33,839

and they're like this has to be true you

1015

00:36:37,510 --> 00:36:35,760

know what i mean the these because the

1016

00:36:40,390 --> 00:36:37,520

equations are so beautiful

1017

00:36:43,270 --> 00:36:40,400

uh but but they just the the empirical

1018

00:36:45,990 --> 00:36:43,280

support for a lot of the the stuff is

1019

00:36:48,230 --> 00:36:46,000

not there what do you think about that

1020

00:36:50,870 --> 00:36:48,240

because like i've had some awesome

1021

00:36:53,109 --> 00:36:50,880

interviews with uh physicist donald

1022

00:36:54,790 --> 00:36:53,119

hoffman is kind of one of my favorites

1023

00:36:56,470 --> 00:36:54,800

you know kind of saying you know the

1024

00:36:58,310 --> 00:36:56,480

deal you know and there's kind of no

1025

00:36:59,910 --> 00:36:58,320

reality and here's my mathematical model

1026  
00:37:00,870 --> 00:36:59,920  
to prove it kind of thing which is kind

1027  
00:37:03,030 --> 00:37:00,880  
of an

1028  
00:37:06,069 --> 00:37:03,040  
oxymoron in a way but

1029  
00:37:07,109 --> 00:37:06,079  
your field i think to anyone who really

1030  
00:37:09,430 --> 00:37:07,119  
is

1031  
00:37:11,670 --> 00:37:09,440  
willing to go there

1032  
00:37:14,390 --> 00:37:11,680  
is the most in-your-face

1033  
00:37:16,790 --> 00:37:14,400  
counter-argument to a lot of that

1034  
00:37:18,310 --> 00:37:16,800  
uh myth of progress kind of stuff which

1035  
00:37:19,589 --> 00:37:18,320  
i hear you know we're not really

1036  
00:37:23,030 --> 00:37:19,599  
progressing you know

1037  
00:37:24,870 --> 00:37:23,040  
it's like man alphago

1038  
00:37:26,950 --> 00:37:24,880

tell people right right right tell

1039

00:37:28,950 --> 00:37:26,960

people of the broad sketch the alpha

1040

00:37:31,030 --> 00:37:28,960

ghost story

1041

00:37:33,030 --> 00:37:31,040

google bought deepmind

1042

00:37:34,630 --> 00:37:33,040

a few years ago

1043

00:37:35,430 --> 00:37:34,640

for a lot of money

1044

00:37:37,910 --> 00:37:35,440

and

1045

00:37:39,430 --> 00:37:37,920

they use um

1046

00:37:41,109 --> 00:37:39,440

right and and you know like you

1047

00:37:42,710 --> 00:37:41,119

mentioned deep blue and that you know

1048

00:37:44,710 --> 00:37:42,720

initially

1049

00:37:46,950 --> 00:37:44,720

people thought chess would be you know

1050

00:37:48,230 --> 00:37:46,960

kind of an insurmountable obstacle for

1051  
00:37:50,950 --> 00:37:48,240  
for an ai

1052  
00:37:52,150 --> 00:37:50,960  
and that proved not to be true and then

1053  
00:37:54,069 --> 00:37:52,160  
i mean there is this interesting

1054  
00:37:56,310 --> 00:37:54,079  
dichotomy i think where you know there's

1055  
00:37:57,430 --> 00:37:56,320  
the famous um

1056  
00:37:59,349 --> 00:37:57,440  
um

1057  
00:38:01,109 --> 00:37:59,359  
story about marvin minsky who was one

1058  
00:38:02,550 --> 00:38:01,119  
you know one of these early ai people

1059  
00:38:04,550 --> 00:38:02,560  
from the 60s and

1060  
00:38:06,710 --> 00:38:04,560  
he he like assigned

1061  
00:38:07,589 --> 00:38:06,720  
he assigned the problem of computer

1062  
00:38:09,750 --> 00:38:07,599  
vision

1063  
00:38:11,190 --> 00:38:09,760

to like a summer intern

1064

00:38:12,790 --> 00:38:11,200

and and they you know back in they're

1065

00:38:14,390 --> 00:38:12,800

like oh computer vision we're going to

1066

00:38:16,950 --> 00:38:14,400

solve that in the summer with an intern

1067

00:38:19,990 --> 00:38:16,960

you know and here we are 56 years later

1068

00:38:22,230 --> 00:38:20,000

it's like well we're no you know we're

1069

00:38:23,670 --> 00:38:22,240

we're closer but like it's it's

1070

00:38:26,150 --> 00:38:23,680

and so the problems that we thought were

1071

00:38:28,470 --> 00:38:26,160

going to be really hard like chess

1072

00:38:30,950 --> 00:38:28,480

and and go turned out to be

1073

00:38:33,030 --> 00:38:30,960

easier than the like than getting a

1074

00:38:34,550 --> 00:38:33,040

robot to like open a car door like we

1075

00:38:36,710 --> 00:38:34,560

there's i don't know if you follow these

1076

00:38:38,230 --> 00:38:36,720

darpa challenges or like

1077

00:38:39,430 --> 00:38:38,240

you know i mean you have these boston

1078

00:38:41,589 --> 00:38:39,440

dynamics

1079

00:38:43,270 --> 00:38:41,599

things with the dancing robots but like

1080

00:38:45,190 --> 00:38:43,280

you still can't you still there's no

1081

00:38:46,790 --> 00:38:45,200

we're very far away from having a robot

1082

00:38:48,470 --> 00:38:46,800

that you could say like oh go

1083

00:38:49,510 --> 00:38:48,480

go to the fridge and get me a

1084

00:38:51,670 --> 00:38:49,520

a beer

1085

00:38:52,470 --> 00:38:51,680

there's there's no there's no robot that

1086

00:38:54,069 --> 00:38:52,480

could

1087

00:38:55,349 --> 00:38:54,079

do that without destroy you know what i

1088

00:38:57,270 --> 00:38:55,359

mean like it would it would have to be

1089

00:38:58,710 --> 00:38:57,280

like it's very controlled

1090

00:39:00,230 --> 00:38:58,720

circum so like now you know just the

1091

00:39:02,390 --> 00:39:00,240

stuff humans take for granted in terms

1092

00:39:05,270 --> 00:39:02,400

of motion and moving around are like

1093

00:39:07,349 --> 00:39:05,280

insanely difficult from a robotics and

1094

00:39:09,109 --> 00:39:07,359

and like a phys but then

1095

00:39:12,150 --> 00:39:09,119

anyway alphago was

1096

00:39:14,950 --> 00:39:12,160

go is this very old game that's very

1097

00:39:15,750 --> 00:39:14,960

complicated it has a lot of dimensions

1098

00:39:19,750 --> 00:39:15,760

and

1099

00:39:21,270 --> 00:39:19,760

like oh okay chess

1100

00:39:22,870 --> 00:39:21,280

it's relatively simple actually if you

1101  
00:39:24,310 --> 00:39:22,880  
you can just it's this combinatorial

1102  
00:39:25,109 --> 00:39:24,320  
problem of all the rules and like if you

1103  
00:39:27,190 --> 00:39:25,119  
have this

1104  
00:39:28,710 --> 00:39:27,200  
massive supercomputer of course it can

1105  
00:39:31,589 --> 00:39:28,720  
churn through all the possible moves in

1106  
00:39:33,270 --> 00:39:31,599  
milliseconds while a human can't

1107  
00:39:35,829 --> 00:39:33,280  
you know that was the explanation and

1108  
00:39:37,510 --> 00:39:35,839  
then they're like but go

1109  
00:39:38,950 --> 00:39:37,520  
that's out you know no way because

1110  
00:39:40,870 --> 00:39:38,960  
that's way too that's even more

1111  
00:39:42,550 --> 00:39:40,880  
complicated than chess the rules are

1112  
00:39:43,270 --> 00:39:42,560  
fuzzy and like

1113  
00:39:45,750 --> 00:39:43,280

but

1114

00:39:47,670 --> 00:39:45,760

then yeah they you what so deep mind

1115

00:39:49,030 --> 00:39:47,680

used uh what they call reinforcement

1116

00:39:50,550 --> 00:39:49,040

learning

1117

00:39:52,390 --> 00:39:50,560

which is

1118

00:39:54,310 --> 00:39:52,400

it's based on you know theories about

1119

00:39:56,390 --> 00:39:54,320

how humans learn

1120

00:39:57,589 --> 00:39:56,400

through reward functions it's a quite a

1121

00:39:59,430 --> 00:39:57,599

simple

1122

00:40:01,190 --> 00:39:59,440

you know you give it or uh

1123

00:40:02,710 --> 00:40:01,200

you give someone a goal and you reward

1124

00:40:04,390 --> 00:40:02,720

them as they get close to the goal and

1125

00:40:06,630 --> 00:40:04,400

punish them as they move away and this

1126

00:40:09,349 --> 00:40:06,640

is like operant conditioning

1127

00:40:11,910 --> 00:40:09,359

bf skinner type

1128

00:40:14,309 --> 00:40:11,920

stuff and then when you combine that

1129

00:40:15,910 --> 00:40:14,319

reinforcement learning idea with deep

1130

00:40:17,750 --> 00:40:15,920

neural networks

1131

00:40:19,910 --> 00:40:17,760

and you can get the machine to play

1132

00:40:20,950 --> 00:40:19,920

millions and millions of games

1133

00:40:22,870 --> 00:40:20,960

then

1134

00:40:25,190 --> 00:40:22,880

you can so you it turns out you can

1135

00:40:27,829 --> 00:40:25,200

engineer a system that will beat

1136

00:40:30,390 --> 00:40:27,839

autonomously beat a human at go

1137

00:40:32,309 --> 00:40:30,400

um and it's not it's not brute it's not

1138

00:40:35,030 --> 00:40:32,319

tot it's so it's still a bit of a brute

1139

00:40:37,670 --> 00:40:35,040

force approach like i think the chess

1140

00:40:40,309 --> 00:40:37,680

the chess game is just brute forcing

1141

00:40:41,589 --> 00:40:40,319

just forcing all the possibilities

1142

00:40:44,069 --> 00:40:41,599

and arriving at that you know what i

1143

00:40:45,990 --> 00:40:44,079

mean before a human a human can't brute

1144

00:40:46,950 --> 00:40:46,000

force chess or go it's all it's much

1145

00:40:48,630 --> 00:40:46,960

more

1146

00:40:50,309 --> 00:40:48,640

of an intuitive

1147

00:40:51,430 --> 00:40:50,319

sense but the but the computer systems

1148

00:40:53,190 --> 00:40:51,440

you can

1149

00:40:54,470 --> 00:40:53,200

brute force it to a degree and then use

1150

00:40:55,990 --> 00:40:54,480

reinforcement learning to get it the

1151  
00:40:57,750 --> 00:40:56,000  
rest of the way and what was you know it

1152  
00:41:00,230 --> 00:40:57,760  
was really interesting because

1153  
00:41:02,230 --> 00:41:00,240  
alphago came up with moves

1154  
00:41:04,390 --> 00:41:02,240  
that as far as anyone could tell

1155  
00:41:06,710 --> 00:41:04,400  
a human no human has ever

1156  
00:41:08,470 --> 00:41:06,720  
tried and everyone was like oh my god

1157  
00:41:11,990 --> 00:41:08,480  
how did it

1158  
00:41:13,030 --> 00:41:12,000  
that's still kind of a

1159  
00:41:14,470 --> 00:41:13,040  
interesting

1160  
00:41:16,950 --> 00:41:14,480  
problem of like we don't really

1161  
00:41:19,510 --> 00:41:16,960  
understand how it arrived at

1162  
00:41:21,349 --> 00:41:19,520  
the winning moves when it when it leased

1163  
00:41:22,950 --> 00:41:21,359

a doll so there's you know these systems

1164

00:41:24,550 --> 00:41:22,960

do have these

1165

00:41:25,990 --> 00:41:24,560

interesting properties and like you

1166

00:41:27,430 --> 00:41:26,000

mentioned emergence before you know

1167

00:41:29,589 --> 00:41:27,440

there's there's things that emerge out

1168

00:41:30,870 --> 00:41:29,599

of these systems that are

1169

00:41:32,710 --> 00:41:30,880

happening

1170

00:41:34,630 --> 00:41:32,720

that we that even the engineers and the

1171

00:41:36,790 --> 00:41:34,640

and the the people who developed it

1172

00:41:38,950 --> 00:41:36,800

can't anticipate they're like wow

1173

00:41:40,150 --> 00:41:38,960

that's that's crazy it did that you know

1174

00:41:42,390 --> 00:41:40,160

even though they're the ones who coded

1175

00:41:43,829 --> 00:41:42,400

it you know what i mean and so

1176  
00:41:44,870 --> 00:41:43,839  
and that's the part that scares people

1177  
00:41:48,950 --> 00:41:44,880  
right

1178  
00:41:51,030 --> 00:41:48,960  
even mention bf skinner

1179  
00:41:54,390 --> 00:41:51,040  
as kind of a model for how you would

1180  
00:41:56,550 --> 00:41:54,400  
program a self-learning thing and then

1181  
00:41:59,190 --> 00:41:56,560  
when you scale that you say

1182  
00:42:00,470 --> 00:41:59,200  
okay so we got and then you get you you

1183  
00:42:01,910 --> 00:42:00,480  
force yourself to be comfortable with

1184  
00:42:04,069 --> 00:42:01,920  
the idea that it's doing reward and

1185  
00:42:06,950 --> 00:42:04,079  
punishment you go yeah but then we just

1186  
00:42:08,870 --> 00:42:06,960  
had it do it to itself and it just ran

1187  
00:42:11,670 --> 00:42:08,880  
millions and millions of

1188  
00:42:14,550 --> 00:42:11,680

trials on itself and you know oh

1189

00:42:16,630 --> 00:42:14,560

whoa and then the other thing you know

1190

00:42:19,750 --> 00:42:16,640

comment on this too so the alphago like

1191

00:42:22,309 --> 00:42:19,760

you say it generates

1192

00:42:24,710 --> 00:42:22,319

thinking for lack of a better term that

1193

00:42:27,270 --> 00:42:24,720

we couldn't really have anticipated

1194

00:42:28,470 --> 00:42:27,280

and then the humans look at the problem

1195

00:42:30,069 --> 00:42:28,480

different go

1196

00:42:31,589 --> 00:42:30,079

whoa one of the things i learned from

1197

00:42:32,470 --> 00:42:31,599

the computer is

1198

00:42:35,190 --> 00:42:32,480

that

1199

00:42:37,349 --> 00:42:35,200

i don't have to smash everybody at go

1200

00:42:39,030 --> 00:42:37,359

all i have to do is win by half a point

1201  
00:42:40,470 --> 00:42:39,040  
and that's i mean

1202  
00:42:42,309 --> 00:42:40,480  
you know the less

1203  
00:42:44,309 --> 00:42:42,319  
and this is an emerging area of research

1204  
00:42:47,349 --> 00:42:44,319  
too where

1205  
00:42:48,309 --> 00:42:47,359  
there's a few studies i think on

1206  
00:42:50,710 --> 00:42:48,319  
you know

1207  
00:42:52,710 --> 00:42:50,720  
working with the machines

1208  
00:42:55,270 --> 00:42:52,720  
so the machines alone

1209  
00:42:57,349 --> 00:42:55,280  
have faults and and and weaknesses and

1210  
00:42:58,710 --> 00:42:57,359  
blind spots humans have

1211  
00:43:01,430 --> 00:42:58,720  
faults and weaknesses and blind spots

1212  
00:43:03,030 --> 00:43:01,440  
and the idea would be when you

1213  
00:43:04,790 --> 00:43:03,040

when you work together like without like

1214

00:43:05,990 --> 00:43:04,800

if you work together like a human alpha

1215

00:43:08,390 --> 00:43:06,000

go system

1216

00:43:11,109 --> 00:43:08,400

would just be completely unbeatable

1217

00:43:12,790 --> 00:43:11,119

and this is the thinking with um

1218

00:43:14,309 --> 00:43:12,800

diagnostics are like

1219

00:43:17,030 --> 00:43:14,319

let's not let's not say like oh

1220

00:43:19,349 --> 00:43:17,040

radiologists are irrelevant now or

1221

00:43:20,230 --> 00:43:19,359

obsolete because we have deep learning

1222

00:43:21,750 --> 00:43:20,240

on

1223

00:43:23,990 --> 00:43:21,760

cat scans

1224

00:43:25,430 --> 00:43:24,000

you know and and it's it's turn you know

1225

00:43:26,630 --> 00:43:25,440

there's a lot of studies showing that

1226

00:43:28,069 --> 00:43:26,640

there's a lot of weaknesses with

1227

00:43:30,390 --> 00:43:28,079

automated

1228

00:43:32,790 --> 00:43:30,400

diagnostic systems but then like let's

1229

00:43:34,950 --> 00:43:32,800

let's have a human there and like let's

1230

00:43:36,550 --> 00:43:34,960

use the pop the things that the human

1231

00:43:38,550 --> 00:43:36,560

can't do which is like

1232

00:43:40,630 --> 00:43:38,560

shuffle through gazillions of data

1233

00:43:42,710 --> 00:43:40,640

points and process all these images and

1234

00:43:45,109 --> 00:43:42,720

look for patterns but then you you know

1235

00:43:46,390 --> 00:43:45,119

complement that with the human ability

1236

00:43:49,349 --> 00:43:46,400

to see

1237

00:43:51,990 --> 00:43:49,359

still to use into intuition and and

1238

00:43:54,470 --> 00:43:52,000

judgment and like uh

1239

00:43:56,550 --> 00:43:54,480  
so you know social context and

1240

00:43:59,190 --> 00:43:56,560  
all of the things that we still don't

1241

00:44:00,550 --> 00:43:59,200  
know how to get a computer to understand

1242

00:44:02,630 --> 00:44:00,560  
and so it's this hybrid you know like

1243

00:44:03,670 --> 00:44:02,640  
this sort of hybrid

1244

00:44:05,109 --> 00:44:03,680  
you know i think there's people are like

1245

00:44:06,950 --> 00:44:05,119  
oh the machines are going to take over

1246

00:44:08,870 --> 00:44:06,960  
and and

1247

00:44:11,510 --> 00:44:08,880  
it's like well no i mean we we should

1248

00:44:13,030 --> 00:44:11,520  
cooperate basically is the because yeah

1249

00:44:14,550 --> 00:44:13,040  
like like with go where it was like oh

1250

00:44:15,670 --> 00:44:14,560  
they the machine showed us something

1251  
00:44:17,270 --> 00:44:15,680  
that we

1252  
00:44:18,230 --> 00:44:17,280  
human didn't never occurred to humans

1253  
00:44:24,550 --> 00:44:18,240  
you know

1254  
00:44:25,750 --> 00:44:24,560  
of break down because you say well

1255  
00:44:29,670 --> 00:44:25,760  
that's

1256  
00:44:32,390 --> 00:44:29,680  
right i mean and we've seen those steps

1257  
00:44:33,829 --> 00:44:32,400  
before so the the which kind of gets to

1258  
00:44:36,470 --> 00:44:33,839  
the belly of the beast questions that we

1259  
00:44:38,630 --> 00:44:36,480  
really do have to talk about because i

1260  
00:44:41,750 --> 00:44:38,640  
mean folks again i'm telling you you

1261  
00:44:43,910 --> 00:44:41,760  
don't know how awesome it is

1262  
00:44:45,270 --> 00:44:43,920  
to have andrew smart with us today

1263  
00:44:48,790 --> 00:44:45,280

because

1264

00:44:50,230 --> 00:44:48,800

he is at the edge in his job at google

1265

00:44:51,589 --> 00:44:50,240

and his job at you were at twitter

1266

00:44:54,069 --> 00:44:51,599

before that right

1267

00:44:56,470 --> 00:44:54,079

yeah yeah i mean the these are really

1268

00:44:58,390 --> 00:44:56,480

the cutting edge

1269

00:45:00,309 --> 00:44:58,400

the cutting cutting edge of these kind

1270

00:45:03,829 --> 00:45:00,319

of questions because

1271

00:45:05,109 --> 00:45:03,839

you're now looking at it from a social

1272

00:45:06,309 --> 00:45:05,119

ethical

1273

00:45:09,109 --> 00:45:06,319

legal

1274

00:45:11,670 --> 00:45:09,119

uh kind of perspective and we can really

1275

00:45:13,589 --> 00:45:11,680

you know put the boxing gloves on about

1276

00:45:15,910 --> 00:45:13,599

that and have completely different

1277

00:45:17,829 --> 00:45:15,920

opinions about where it's going but we

1278

00:45:19,109 --> 00:45:17,839

cannot disagree that that's where the

1279

00:45:22,150 --> 00:45:19,119

action is

1280

00:45:24,230 --> 00:45:22,160

so frame up uh you know

1281

00:45:25,510 --> 00:45:24,240

what you do what you have done in the

1282

00:45:27,589 --> 00:45:25,520

past i think you have a little bit of a

1283

00:45:29,750 --> 00:45:27,599

different job at google now but you know

1284

00:45:31,829 --> 00:45:29,760

those issues you know i mean the good

1285

00:45:34,950 --> 00:45:31,839

and the bad the you know let's make sure

1286

00:45:38,230 --> 00:45:34,960

our search is uh socially just

1287

00:45:39,910 --> 00:45:38,240

and uh the bad you know let's censor the

1288

00:45:41,349 --> 00:45:39,920

[h\_\_h] out of anyone who doesn't agree

1289

00:45:43,990 --> 00:45:41,359

with us you know and those would be the

1290

00:45:46,230 --> 00:45:44,000

two polar extremes

1291

00:45:48,630 --> 00:45:46,240

yeah those i mean and that's that's

1292

00:45:51,349 --> 00:45:48,640

really what were

1293

00:45:53,750 --> 00:45:51,359

i so i think that with any technology

1294

00:45:55,670 --> 00:45:53,760

you know in history you've had

1295

00:45:58,230 --> 00:45:55,680

this you know rapid advancements and

1296

00:46:00,309 --> 00:45:58,240

then you you typically have catastrophes

1297

00:46:01,349 --> 00:46:00,319

and disasters which lead to people going

1298

00:46:05,109 --> 00:46:01,359

like

1299

00:46:08,870 --> 00:46:05,119

aviation you know

1300

00:46:09,990 --> 00:46:08,880

it within a hundred years now it we have

1301

00:46:12,309 --> 00:46:10,000

flying used to be this kind of

1302

00:46:13,670 --> 00:46:12,319

fantastical

1303

00:46:15,430 --> 00:46:13,680

crazy dream and now it's like this

1304

00:46:19,109 --> 00:46:15,440

mundane thing that everyone totally

1305

00:46:21,030 --> 00:46:19,119

takes for granted but it took decades of

1306

00:46:22,309 --> 00:46:21,040

of manufacturers of companies and

1307

00:46:23,349 --> 00:46:22,319

governments and regulators working

1308

00:46:25,430 --> 00:46:23,359

together

1309

00:46:27,109 --> 00:46:25,440

to make commercial flying

1310

00:46:29,589 --> 00:46:27,119

safe enough where people are like oh

1311

00:46:31,990 --> 00:46:29,599

yeah i hop on a plane without even

1312

00:46:34,230 --> 00:46:32,000

i don't even worry about it but that

1313

00:46:36,790 --> 00:46:34,240

behind the scenes it's you know it's

1314

00:46:39,670 --> 00:46:36,800

this very very complicated

1315

00:46:42,470 --> 00:46:39,680

um constant vigilance type of safety

1316

00:46:44,470 --> 00:46:42,480

practices that have been learned over

1317

00:46:46,790 --> 00:46:44,480

decades so just just for example and so

1318

00:46:49,030 --> 00:46:46,800

with ai and machine learning

1319

00:46:51,430 --> 00:46:49,040

it's a similar thing where we're in this

1320

00:46:53,670 --> 00:46:51,440

rapid expansion of

1321

00:46:55,589 --> 00:46:53,680

investment and the everyone is like this

1322

00:46:57,109 --> 00:46:55,599

is amazing stuff and we're good you know

1323

00:46:59,030 --> 00:46:57,119

and now we're kind of coming to terms

1324

00:46:59,990 --> 00:46:59,040

with like there are downsides there are

1325

00:47:01,190 --> 00:47:00,000

risks

1326  
00:47:05,270 --> 00:47:01,200  
and

1327  
00:47:07,270 --> 00:47:05,280  
these systems

1328  
00:47:09,109 --> 00:47:07,280  
especially on the scale of google you

1329  
00:47:11,990 --> 00:47:09,119  
know of google

1330  
00:47:13,349 --> 00:47:12,000  
um how how do these things interact how

1331  
00:47:14,630 --> 00:47:13,359  
do these you know how are they

1332  
00:47:18,390 --> 00:47:14,640  
influenced by society how do they change

1333  
00:47:20,630 --> 00:47:18,400  
society and how do we yeah prevent

1334  
00:47:21,750 --> 00:47:20,640  
harm basically from

1335  
00:47:24,309 --> 00:47:21,760  
these things

1336  
00:47:25,750 --> 00:47:24,319  
um or how do we govern the development

1337  
00:47:28,390 --> 00:47:25,760  
of them

1338  
00:47:30,230 --> 00:47:28,400

respond responsibly basically that's

1339

00:47:32,390 --> 00:47:30,240

and again these are terms these are hard

1340

00:47:34,549 --> 00:47:32,400

to define and hard to

1341

00:47:36,710 --> 00:47:34,559

let me frame it up and pin it down

1342

00:47:39,750 --> 00:47:36,720

in one way and it would be the freedom

1343

00:47:41,990 --> 00:47:39,760

of speech censorship

1344

00:47:44,069 --> 00:47:42,000

freedom of the press issue

1345

00:47:46,069 --> 00:47:44,079

so this is a fundamental fundamental

1346

00:47:47,750 --> 00:47:46,079

issue here you got some people on one

1347

00:47:49,190 --> 00:47:47,760

side saying

1348

00:47:51,829 --> 00:47:49,200

you know

1349

00:47:53,030 --> 00:47:51,839

these are platforms that we would

1350

00:47:55,750 --> 00:47:53,040

consider

1351  
00:47:59,030 --> 00:47:55,760  
throughout our lives as being freedom of

1352  
00:48:01,430 --> 00:47:59,040  
the press that somehow there is speech

1353  
00:48:03,109 --> 00:48:01,440  
free speech being done there and that

1354  
00:48:05,670 --> 00:48:03,119  
should not be

1355  
00:48:08,150 --> 00:48:05,680  
inhibited in in some ways and all this

1356  
00:48:10,710 --> 00:48:08,160  
stuff gets very fuzzy so if we just

1357  
00:48:12,390 --> 00:48:10,720  
frame that as as the problem then i

1358  
00:48:14,150 --> 00:48:12,400  
thought what we should probably do

1359  
00:48:17,670 --> 00:48:14,160  
further is

1360  
00:48:20,230 --> 00:48:17,680  
help have you help us understand

1361  
00:48:22,630 --> 00:48:20,240  
your problem from an ai standpoint i

1362  
00:48:24,470 --> 00:48:22,640  
mean you're talking about lots

1363  
00:48:27,270 --> 00:48:24,480

and lots of data

1364

00:48:28,069 --> 00:48:27,280

content at a level that's unimaginable

1365

00:48:30,870 --> 00:48:28,079

and

1366

00:48:34,230 --> 00:48:30,880

lots of legitimate concerns you know you

1367

00:48:36,710 --> 00:48:34,240

have illegal activity you have activity

1368

00:48:38,150 --> 00:48:36,720

that that anyone would find morally

1369

00:48:40,309 --> 00:48:38,160

reprehensible you know people

1370

00:48:42,549 --> 00:48:40,319

trafficking kids or exploiting other

1371

00:48:45,589 --> 00:48:42,559

people and stuff like that so what am i

1372

00:48:47,990 --> 00:48:45,599

missing in terms of framing kind of okay

1373

00:48:50,470 --> 00:48:48,000

here's the issue but then here's what

1374

00:48:52,549 --> 00:48:50,480

people maybe don't appreciate about

1375

00:48:53,910 --> 00:48:52,559

how hard that is

1376  
00:48:55,589 --> 00:48:53,920  
for you

1377  
00:48:58,230 --> 00:48:55,599  
as a you know

1378  
00:49:00,309 --> 00:48:58,240  
as a google guy

1379  
00:49:02,230 --> 00:49:00,319  
yeah well i agree i mean and there's

1380  
00:49:04,790 --> 00:49:02,240  
yeah i mean we there's there's

1381  
00:49:06,309 --> 00:49:04,800  
definitely very tightly regulated

1382  
00:49:08,309 --> 00:49:06,319  
things where

1383  
00:49:10,630 --> 00:49:08,319  
you know you you are obligated legally

1384  
00:49:11,430 --> 00:49:10,640  
to get rid of certain types of things

1385  
00:49:13,510 --> 00:49:11,440  
like

1386  
00:49:15,910 --> 00:49:13,520  
or you know and so

1387  
00:49:17,270 --> 00:49:15,920  
but then i agree that i the the free

1388  
00:49:18,470 --> 00:49:17,280

speech question is very hard night and

1389

00:49:20,630 --> 00:49:18,480

like i s like you mentioned i used to

1390

00:49:22,950 --> 00:49:20,640

work i did work at twitter for a year

1391

00:49:23,750 --> 00:49:22,960

right after the election and when it was

1392

00:49:26,309 --> 00:49:23,760

like

1393

00:49:27,990 --> 00:49:26,319

misinformation was suddenly

1394

00:49:30,069 --> 00:49:28,000

you know like in what what is you know

1395

00:49:31,589 --> 00:49:30,079

no that really blindsided the tech

1396

00:49:32,790 --> 00:49:31,599

industry

1397

00:49:35,030 --> 00:49:32,800

that would be highly highly

1398

00:49:35,910 --> 00:49:35,040

controversial right that i mean that

1399

00:49:37,670 --> 00:49:35,920

would be

1400

00:49:41,589 --> 00:49:37,680

that is the belly of the beast i mean

1401

00:49:44,549 --> 00:49:41,599

misinformation was it was and is

1402

00:49:47,270 --> 00:49:44,559

the question you know everyone's one

1403

00:49:49,589 --> 00:49:47,280

guy's misinformation is another guy's

1404

00:49:50,950 --> 00:49:49,599

information so yeah right exactly and

1405

00:49:54,309 --> 00:49:50,960

that's where

1406

00:49:56,630 --> 00:49:54,319

what's our shared reality

1407

00:49:59,589 --> 00:49:56,640

you know what's our what and and do is

1408

00:50:01,109 --> 00:49:59,599

there such a thing and like you then you

1409

00:50:02,390 --> 00:50:01,119

i you know it overlaps with all these

1410

00:50:03,910 --> 00:50:02,400

philosophical questions we were talking

1411

00:50:05,910 --> 00:50:03,920

about before where you then you go back

1412

00:50:07,030 --> 00:50:05,920

into some kind of relativism

1413

00:50:08,790 --> 00:50:07,040

where

1414

00:50:11,829 --> 00:50:08,800

there you know yeah like you're saying

1415

00:50:14,470 --> 00:50:11,839

each each perspective is equally

1416

00:50:16,390 --> 00:50:14,480

valid or you know there are like is

1417

00:50:19,030 --> 00:50:16,400

there such a thing as false belief or

1418

00:50:20,549 --> 00:50:19,040

like are you know can you be wrong

1419

00:50:21,990 --> 00:50:20,559

and i think the scientific spirit would

1420

00:50:23,589 --> 00:50:22,000

be like yeah everything you know is

1421

00:50:24,829 --> 00:50:23,599

probably wrong and you should keep

1422

00:50:27,190 --> 00:50:24,839

trying to prove yourself

1423

00:50:29,510 --> 00:50:27,200

wrong you know and that's

1424

00:50:31,270 --> 00:50:29,520

the the the environment i think too like

1425

00:50:32,950 --> 00:50:31,280

you mentioned before would be a very

1426  
00:50:34,630 --> 00:50:32,960  
strong proponent of like you should be

1427  
00:50:36,950 --> 00:50:34,640  
absolutely prepared at every moment to

1428  
00:50:38,790 --> 00:50:36,960  
reject everything you think you know

1429  
00:50:39,910 --> 00:50:38,800  
and and so

1430  
00:50:41,510 --> 00:50:39,920  
given that you know what i mean give it

1431  
00:50:43,430 --> 00:50:41,520  
and then there's debates about like okay

1432  
00:50:44,790 --> 00:50:43,440  
so what counts as evidence

1433  
00:50:46,710 --> 00:50:44,800  
and you you can't interpret your

1434  
00:50:48,710 --> 00:50:46,720  
evidence unless you have some kind of

1435  
00:50:50,390 --> 00:50:48,720  
theory about what you think evident good

1436  
00:50:51,990 --> 00:50:50,400  
evidences and

1437  
00:50:54,150 --> 00:50:52,000  
but anyway sorry that's

1438  
00:50:55,990 --> 00:50:54,160

no no no that's that's spot on i if i

1439

00:50:57,510 --> 00:50:56,000

can i'll i'll kind of frame it up in a

1440

00:50:59,030 --> 00:50:57,520

more concrete way

1441

00:51:01,270 --> 00:50:59,040

just so we're all talking about the same

1442

00:51:02,790 --> 00:51:01,280

thing let's say the president came out

1443

00:51:05,190 --> 00:51:02,800

tomorrow and

1444

00:51:07,430 --> 00:51:05,200

started beating the war drums against

1445

00:51:09,589 --> 00:51:07,440

china which is completely just a thought

1446

00:51:11,190 --> 00:51:09,599

experiment you know but he's just he's

1447

00:51:13,750 --> 00:51:11,200

not announcing we're going to war he's

1448

00:51:16,150 --> 00:51:13,760

just going man [h\_\_\h] those chinese and

1449

00:51:17,829 --> 00:51:16,160

you know they taiwan we need to you know

1450

00:51:19,109 --> 00:51:17,839

just starts doing all the stuff that

1451  
00:51:21,190 --> 00:51:19,119  
various

1452  
00:51:23,030 --> 00:51:21,200  
administrations have done over time and

1453  
00:51:25,990 --> 00:51:23,040  
will do for so

1454  
00:51:28,549 --> 00:51:26,000  
let's say the day after that our friends

1455  
00:51:29,950 --> 00:51:28,559  
at google youtube facebook twitter kind

1456  
00:51:31,589 --> 00:51:29,960  
of

1457  
00:51:33,270 --> 00:51:31,599  
independently

1458  
00:51:35,349 --> 00:51:33,280  
announced that hey we're really down

1459  
00:51:37,589 --> 00:51:35,359  
with the president on this and as a

1460  
00:51:40,630 --> 00:51:37,599  
matter of fact you know

1461  
00:51:42,549 --> 00:51:40,640  
people who are against this policy you

1462  
00:51:44,390 --> 00:51:42,559  
know all you commies out there and all

1463  
00:51:46,470 --> 00:51:44,400

you uh you know

1464

00:51:48,790 --> 00:51:46,480

china lovers and all that stuff you know

1465

00:51:50,950 --> 00:51:48,800

just expect but let me put you on notice

1466

00:51:54,470 --> 00:51:50,960

you know that's not we're really down

1467

00:51:55,829 --> 00:51:54,480

with the president's new position so

1468

00:51:57,910 --> 00:51:55,839

the reason that thought experiment

1469

00:52:00,710 --> 00:51:57,920

here's the thing that that kind of grabs

1470

00:52:03,670 --> 00:52:00,720

me is 10 years ago

1471

00:52:05,990 --> 00:52:03,680

we'd all be like you can't do that

1472

00:52:07,670 --> 00:52:06,000

you can't go google you can't do that

1473

00:52:10,309 --> 00:52:07,680

youtube you can't do that which is

1474

00:52:12,230 --> 00:52:10,319

google but facebook twitter you you guys

1475

00:52:14,150 --> 00:52:12,240

can't do that you especially can't kind

1476

00:52:16,230 --> 00:52:14,160

of get together in some kind of

1477

00:52:17,510 --> 00:52:16,240

organized way

1478

00:52:19,349 --> 00:52:17,520

even though you're saying it's not

1479

00:52:20,870 --> 00:52:19,359

organized and do that i mean you can't

1480

00:52:23,270 --> 00:52:20,880

do that this is what we've always

1481

00:52:24,870 --> 00:52:23,280

maintained is special about america and

1482

00:52:26,950 --> 00:52:24,880

our freedom of press

1483

00:52:30,309 --> 00:52:26,960

so

1484

00:52:31,829 --> 00:52:30,319

i guess the pushback and i'm going to be

1485

00:52:34,470 --> 00:52:31,839

the one pushing back

1486

00:52:37,589 --> 00:52:34,480

is when i hear you talk about wokeness

1487

00:52:39,750 --> 00:52:37,599

issues and social justice

1488

00:52:44,230 --> 00:52:39,760

and all of that i'm like

1489

00:52:47,430 --> 00:52:44,240

screw that man stop censoring people

1490

00:52:49,430 --> 00:52:47,440

or at least be transparent

1491

00:52:52,309 --> 00:52:49,440

yeah i mean we the transparency issue is

1492

00:52:55,589 --> 00:52:52,319

something we we work a lot on and what

1493

00:52:59,190 --> 00:52:55,599

the the pro the thing is is that the

1494

00:53:03,109 --> 00:53:02,069

like and again i'm not that in that

1495

00:53:05,910 --> 00:53:03,119

position

1496

00:53:08,069 --> 00:53:05,920

where i have insight into

1497

00:53:10,150 --> 00:53:08,079

that totally fair yeah yeah i'm not

1498

00:53:10,950 --> 00:53:10,160

putting you you're not representing you

1499

00:53:12,470 --> 00:53:10,960

know

1500

00:53:13,430 --> 00:53:12,480

you're not carrying this whole thing

1501  
00:53:14,870 --> 00:53:13,440  
yeah

1502  
00:53:17,270 --> 00:53:14,880  
i mean of course i have my own thoughts

1503  
00:53:18,950 --> 00:53:17,280  
about it but then i don't have

1504  
00:53:21,510 --> 00:53:18,960  
yeah i'm not like

1505  
00:53:24,390 --> 00:53:21,520  
the the sort of i think what the the

1506  
00:53:26,309 --> 00:53:24,400  
policy issues are around

1507  
00:53:27,910 --> 00:53:26,319  
like

1508  
00:53:30,150 --> 00:53:27,920  
yeah and it does you know there's this

1509  
00:53:32,390 --> 00:53:30,160  
debate around should the companies be

1510  
00:53:33,430 --> 00:53:32,400  
responsible for the content

1511  
00:53:34,230 --> 00:53:33,440  
on the

1512  
00:53:36,230 --> 00:53:34,240  
thing

1513  
00:53:37,430 --> 00:53:36,240

and and the the problem is that google

1514

00:53:39,670 --> 00:53:37,440

doesn't have

1515

00:53:42,309 --> 00:53:39,680

or youtube you know they're not relative

1516

00:53:45,109 --> 00:53:42,319

to the number of people using it it's

1517

00:53:47,270 --> 00:53:45,119

actually a very tiny workforce in terms

1518

00:53:49,030 --> 00:53:47,280

of which is which is the idea because

1519

00:53:50,710 --> 00:53:49,040

that's why these systems are scale you

1520

00:53:53,349 --> 00:53:50,720

the systems are scalable and they make a

1521

00:53:55,190 --> 00:53:53,359

lot of money because they're so scalable

1522

00:53:57,190 --> 00:53:55,200

well this is also the ai issue this is

1523

00:53:59,109 --> 00:53:57,200

the ai issue right this is why you're

1524

00:54:01,750 --> 00:53:59,119

automating you can't automate these

1525

00:54:03,270 --> 00:54:01,760

decisions it's very very hard but you

1526  
00:54:05,910 --> 00:54:03,280  
have to automate these you have to you

1527  
00:54:07,510 --> 00:54:05,920  
already are and you have to continue to

1528  
00:54:10,630 --> 00:54:07,520  
because well because of the scale you

1529  
00:54:12,230 --> 00:54:10,640  
know because you have billions of people

1530  
00:54:13,589 --> 00:54:12,240  
every day you know the servers are

1531  
00:54:16,150 --> 00:54:13,599  
handling

1532  
00:54:17,750 --> 00:54:16,160  
trillions of requests per second and

1533  
00:54:20,790 --> 00:54:17,760  
down you know and you obviously you

1534  
00:54:22,390 --> 00:54:20,800  
can't have human eyes on

1535  
00:54:23,589 --> 00:54:22,400  
that you know what i mean it's just even

1536  
00:54:25,349 --> 00:54:23,599  
if you you know i don't even know if

1537  
00:54:26,870 --> 00:54:25,359  
it's possible if even if google says all

1538  
00:54:28,870 --> 00:54:26,880

right we're investing in content

1539

00:54:31,030 --> 00:54:28,880

moderation and we're going to hire you'd

1540

00:54:32,950 --> 00:54:31,040

have to hire literally i don't know

1541

00:54:33,829 --> 00:54:32,960

millions of people

1542

00:54:35,030 --> 00:54:33,839

and

1543

00:54:38,549 --> 00:54:35,040

so that the autumn there's the

1544

00:54:41,030 --> 00:54:38,559

automation stage of it which um you you

1545

00:54:44,549 --> 00:54:41,040

tried to monitor but i mean

1546

00:54:46,230 --> 00:54:44,559

the whole the like google's you know

1547

00:54:48,309 --> 00:54:46,240

the the thing is like the idea is like

1548

00:54:50,549 --> 00:54:48,319

we want to serve everybody

1549

00:54:53,589 --> 00:54:50,559

you know and that and how do you

1550

00:54:55,430 --> 00:54:53,599

make this information accessible

1551  
00:54:56,870 --> 00:54:55,440  
to everybody but i agree it comes at

1552  
00:54:59,430 --> 00:54:56,880  
this at this

1553  
00:55:01,030 --> 00:54:59,440  
um cost of

1554  
00:55:04,150 --> 00:55:01,040  
how do you you know

1555  
00:55:07,030 --> 00:55:04,160  
like if you if you take it to another

1556  
00:55:08,710 --> 00:55:07,040  
you know if you do have an adversarial

1557  
00:55:10,390 --> 00:55:08,720  
government or

1558  
00:55:12,630 --> 00:55:10,400  
anyway i agree it's all it's really

1559  
00:55:15,190 --> 00:55:12,640  
relative to your perspective but like

1560  
00:55:16,230 --> 00:55:15,200  
deliberately misleading people

1561  
00:55:18,630 --> 00:55:16,240  
um

1562  
00:55:20,390 --> 00:55:18,640  
what should you know what should your

1563  
00:55:22,309 --> 00:55:20,400

and i agree with the even you know but

1564

00:55:25,270 --> 00:55:22,319

for you know free speech

1565

00:55:26,470 --> 00:55:25,280

does have limits of course too

1566

00:55:28,309 --> 00:55:26,480

and there's and there's lots of

1567

00:55:30,230 --> 00:55:28,319

different legal regimes around the world

1568

00:55:31,510 --> 00:55:30,240

that are far more

1569

00:55:34,069 --> 00:55:31,520

restrictive than

1570

00:55:35,589 --> 00:55:34,079

than we have and i don't you know and

1571

00:55:37,510 --> 00:55:35,599

there's there's always like i said

1572

00:55:39,270 --> 00:55:37,520

before about this

1573

00:55:42,069 --> 00:55:39,280

being a publisher versus this platform

1574

00:55:44,230 --> 00:55:42,079

and like are are we

1575

00:55:46,829 --> 00:55:44,240

if you find some something

1576

00:55:49,430 --> 00:55:46,839

on that that has moved through the

1577

00:55:51,270 --> 00:55:49,440

system um

1578

00:55:53,109 --> 00:55:51,280

does do we have does google have some

1579

00:55:54,950 --> 00:55:53,119

kind of responsibility for

1580

00:55:56,789 --> 00:55:54,960

what and so i think the arguments from a

1581

00:55:59,349 --> 00:55:56,799

lot of the sectors are like yes you need

1582

00:56:02,230 --> 00:55:59,359

to take responsibility for a lot of this

1583

00:56:03,910 --> 00:56:02,240

horrible crap that is on your platforms

1584

00:56:05,589 --> 00:56:03,920

and so the but then the question is how

1585

00:56:07,589 --> 00:56:05,599

do you balance that with

1586

00:56:09,990 --> 00:56:07,599

yeah like you're saying that free like

1587

00:56:11,670 --> 00:56:10,000

allowing an open

1588

00:56:13,190 --> 00:56:11,680

and free internet where

1589

00:56:18,390 --> 00:56:13,200

you know there

1590

00:56:21,349 --> 00:56:18,400

a lot of like

1591

00:56:23,349 --> 00:56:21,359

difficult information and

1592

00:56:24,870 --> 00:56:23,359

stuff to deal with so i don't i don't

1593

00:56:26,470 --> 00:56:24,880

i'm sorry i don't have a i wish i had a

1594

00:56:27,750 --> 00:56:26,480

better i don't have a good answer to

1595

00:56:29,270 --> 00:56:27,760

that i mean that's these are problems

1596

00:56:31,270 --> 00:56:29,280

that are

1597

00:56:33,510 --> 00:56:31,280

being worked on

1598

00:56:35,589 --> 00:56:33,520

i i think that is the answer and i mean

1599

00:56:37,910 --> 00:56:35,599

i think this is what we're trying to

1600

00:56:39,670 --> 00:56:37,920

work out as a society you know and

1601  
00:56:41,910 --> 00:56:39,680  
wrestle to the ground and as you point

1602  
00:56:43,750 --> 00:56:41,920  
out they always have been

1603  
00:56:46,150 --> 00:56:43,760  
the issues you know this freedom of the

1604  
00:56:48,069 --> 00:56:46,160  
press issue this has been around

1605  
00:56:49,349 --> 00:56:48,079  
forever ever since you know benjamin

1606  
00:56:51,349 --> 00:56:49,359  
franklin was

1607  
00:56:53,670 --> 00:56:51,359  
point you know pumping him out and but

1608  
00:56:55,589 --> 00:56:53,680  
and then it got to be well we have these

1609  
00:56:57,109 --> 00:56:55,599  
three networks and you know what are

1610  
00:56:58,390 --> 00:56:57,119  
their responsibilities and it's only

1611  
00:57:00,789 --> 00:56:58,400  
three networks then we had this

1612  
00:57:03,190 --> 00:57:00,799  
explosion of cable news and it's then it

1613  
00:57:05,750 --> 00:57:03,200

it morphed into something else where

1614

00:57:07,190 --> 00:57:05,760

partisanship was okay and now it's kind

1615

00:57:10,549 --> 00:57:07,200

of morphing into

1616

00:57:12,789 --> 00:57:10,559

something else and i think we do have to

1617

00:57:14,710 --> 00:57:12,799

acknowledge what you're

1618

00:57:17,270 --> 00:57:14,720

what i think you really bring here and i

1619

00:57:20,309 --> 00:57:17,280

i'm so again grateful that you've you

1620

00:57:22,390 --> 00:57:20,319

know are so open and talking about this

1621

00:57:24,549 --> 00:57:22,400

like one thing i really want to drive a

1622

00:57:27,190 --> 00:57:24,559

stake in the ground is the problem

1623

00:57:30,150 --> 00:57:27,200

the problem which you frame up nicely

1624

00:57:32,470 --> 00:57:30,160

which is like okay dude but trillions

1625

00:57:36,230 --> 00:57:32,480

trillions of requests

1626  
00:57:38,950 --> 00:57:36,240  
okay so there ain't no easy answer here

1627  
00:57:41,430 --> 00:57:38,960  
any way you cut it you know now i think

1628  
00:57:43,990 --> 00:57:41,440  
the concern that people have is

1629  
00:57:45,510 --> 00:57:44,000  
well don't tell me put my trust in

1630  
00:57:47,190 --> 00:57:45,520  
google either

1631  
00:57:50,710 --> 00:57:47,200  
you know because

1632  
00:57:53,589 --> 00:57:50,720  
i tell you like one of the things i find

1633  
00:57:56,549 --> 00:57:53,599  
you know kind of most disturbing on the

1634  
00:57:58,230 --> 00:57:56,559  
edge but it it it plays you know it all

1635  
00:57:59,990 --> 00:57:58,240  
kind of sorts itself out so i don't want

1636  
00:58:01,510 --> 00:58:00,000  
to kind of sound the alarm bells too

1637  
00:58:03,589 --> 00:58:01,520  
much but

1638  
00:58:05,910 --> 00:58:03,599

i got a friend a guy's been on the show

1639

00:58:08,549 --> 00:58:05,920

luke rotkowski and he has a kind of

1640

00:58:10,870 --> 00:58:08,559

semi-popular website it's called uh we

1641

00:58:12,950 --> 00:58:10,880

are change so he's a 911 guy you know

1642

00:58:15,109 --> 00:58:12,960

911 was an inside job and he's still

1643

00:58:16,710 --> 00:58:15,119

there he's not banned

1644

00:58:19,030 --> 00:58:16,720

a lot of the other guys that say that

1645

00:58:21,670 --> 00:58:19,040

are banned but he's not banned

1646

00:58:24,870 --> 00:58:21,680

but what he was was demonetized

1647

00:58:27,430 --> 00:58:24,880

and he was demonetized in 2015 before

1648

00:58:30,069 --> 00:58:27,440

there was even such a word

1649

00:58:31,829 --> 00:58:30,079

and he just he just did videos on it it

1650

00:58:33,430 --> 00:58:31,839

was like here's my video here's more

1651  
00:58:35,190 --> 00:58:33,440  
here's all my videos here they are last

1652  
00:58:37,190 --> 00:58:35,200  
month here they are now

1653  
00:58:39,910 --> 00:58:37,200  
they're demonetized there's no

1654  
00:58:43,829 --> 00:58:39,920  
explanation for why they're demonetized

1655  
00:58:45,829 --> 00:58:43,839  
there's no process there's no guidelines

1656  
00:58:46,630 --> 00:58:45,839  
they're demonetized

1657  
00:58:49,190 --> 00:58:46,640  
or

1658  
00:58:51,190 --> 00:58:49,200  
go over on twitter in the shadow band

1659  
00:58:52,710 --> 00:58:51,200  
oh your tweets ah

1660  
00:58:54,470 --> 00:58:52,720  
well they're reaching one tenth of the

1661  
00:58:56,950 --> 00:58:54,480  
audience than they used to we don't

1662  
00:59:01,910 --> 00:58:56,960  
admit that they do when someone goes in

1663  
00:59:04,309 --> 00:59:01,920

and forensically proves that we just so

1664

00:59:07,349 --> 00:59:04,319

these i i think the issue really i think

1665

00:59:10,069 --> 00:59:07,359

the issue is is is two one is

1666

00:59:11,750 --> 00:59:10,079

transparency and the second issue i take

1667

00:59:13,190 --> 00:59:11,760

from my business

1668

00:59:16,069 --> 00:59:13,200

background

1669

00:59:17,030 --> 00:59:16,079

is the it's called the [h\_\_\h] you pay me

1670

00:59:19,430 --> 00:59:17,040

issue

1671

00:59:20,230 --> 00:59:19,440

which is like i get to sue your [h\_\_\h]

1672

00:59:23,109 --> 00:59:20,240

ass

1673

00:59:26,549 --> 00:59:23,119

and if you've you know not done it right

1674

00:59:27,430 --> 00:59:26,559

then i get to get paid and then you have

1675

00:59:32,069 --> 00:59:27,440

to

1676  
00:59:34,309 --> 00:59:32,079  
yourself from any legislation that would

1677  
00:59:36,150 --> 00:59:34,319  
make it easier for me to do that and

1678  
00:59:38,309 --> 00:59:36,160  
then i have to try and do that and that

1679  
00:59:40,390 --> 00:59:38,319  
is i'm not trying to do that to be like

1680  
00:59:43,670 --> 00:59:40,400  
adversarial with you i'm just saying

1681  
00:59:45,270 --> 00:59:43,680  
this is how business has always resolved

1682  
00:59:47,750 --> 00:59:45,280  
you know these issues if you think

1683  
00:59:50,309 --> 00:59:47,760  
they're dumping chemicals into the love

1684  
00:59:53,030 --> 00:59:50,319  
canal and it's killing your kids well

1685  
00:59:54,870 --> 00:59:53,040  
then you you sue them and then dow

1686  
00:59:57,670 --> 00:59:54,880  
chemical does everything they can to

1687  
01:00:00,549 --> 00:59:57,680  
prevent people from prevailing and then

1688  
01:00:05,030 --> 01:00:00,559

eventually the legal system kind of

1689

01:00:06,710 --> 01:00:05,040

meanders to some space that we get so

1690

01:00:10,150 --> 01:00:06,720

i know i let a lot on the table there

1691

01:00:12,630 --> 01:00:10,160

but the transparency and then the

1692

01:00:14,150 --> 01:00:12,640

uh financial responsibility if it

1693

01:00:16,470 --> 01:00:14,160

doesn't

1694

01:00:18,390 --> 01:00:16,480

you know live up to our standards of

1695

01:00:19,910 --> 01:00:18,400

what fairness is

1696

01:00:22,549 --> 01:00:19,920

yeah i mean i think that's that's

1697

01:00:24,309 --> 01:00:22,559

definitely i mean i would say

1698

01:00:27,030 --> 01:00:24,319

i mean i don't i can't i don't know

1699

01:00:29,190 --> 01:00:27,040

those that case or you know and i don't

1700

01:00:31,510 --> 01:00:29,200

so i and like like i said i have no

1701  
01:00:33,430 --> 01:00:31,520  
thousands and thousands just search

1702  
01:00:34,950 --> 01:00:33,440  
there's thousands of those cases

1703  
01:00:37,109 --> 01:00:34,960  
thousands of them

1704  
01:00:39,910 --> 01:00:37,119  
yeah or any of i mean because i i don't

1705  
01:00:41,510 --> 01:00:39,920  
work in that in in that area but like i

1706  
01:00:43,109 --> 01:00:41,520  
think there's a you know i think you do

1707  
01:00:44,710 --> 01:00:43,119  
have to

1708  
01:00:47,430 --> 01:00:44,720  
and this is again where the difficult

1709  
01:00:50,150 --> 01:00:47,440  
part about the shared reality and like

1710  
01:00:50,950 --> 01:00:50,160  
have some kind of standards

1711  
01:00:53,589 --> 01:00:50,960  
for

1712  
01:00:55,829 --> 01:00:53,599  
what you and and again this is a it's a

1713  
01:00:57,910 --> 01:00:55,839

conundrum

1714

01:01:00,150 --> 01:00:57,920

like the scale and the size of google is

1715

01:01:02,789 --> 01:01:00,160

and the idea is like to be able to

1716

01:01:07,030 --> 01:01:02,799

serve you know serve everybody

1717

01:01:08,150 --> 01:01:07,040

but then coming up with like responsible

1718

01:01:11,589 --> 01:01:08,160

like what are the guidelines what are

1719

01:01:13,910 --> 01:01:11,599

the standards for what kind of things

1720

01:01:15,030 --> 01:01:13,920

can live on the platform

1721

01:01:16,069 --> 01:01:15,040

and like you're saying there's these

1722

01:01:17,349 --> 01:01:16,079

there's these things everyone would

1723

01:01:20,390 --> 01:01:17,359

agree on

1724

01:01:21,430 --> 01:01:20,400

child trafficking stuff like no that you

1725

01:01:22,470 --> 01:01:21,440

know what i mean there's just stuff

1726

01:01:24,710 --> 01:01:22,480

that's like

1727

01:01:27,670 --> 01:01:24,720

everyone be like that's awful but then i

1728

01:01:29,430 --> 01:01:27,680

agree as you move into these

1729

01:01:31,510 --> 01:01:29,440

different areas it's really i don't i

1730

01:01:33,510 --> 01:01:31,520

don't i don't know how to draw the line

1731

01:01:34,630 --> 01:01:33,520

you know do i think people have a right

1732

01:01:37,190 --> 01:01:34,640

to

1733

01:01:38,390 --> 01:01:37,200

publish work on conspiracy theories and

1734

01:01:39,910 --> 01:01:38,400

like

1735

01:01:41,510 --> 01:01:39,920

discuss these different things of

1736

01:01:43,270 --> 01:01:41,520

obvious you know of course i don't i

1737

01:01:44,789 --> 01:01:43,280

don't think that should be like

1738

01:01:46,789 --> 01:01:44,799

legally restricted

1739

01:01:48,470 --> 01:01:46,799

i don't but then whether

1740

01:01:50,829 --> 01:01:48,480

you know whether like a private company

1741

01:01:53,270 --> 01:01:50,839

like google has a

1742

01:01:54,950 --> 01:01:53,280

responsibility yeah you know if like and

1743

01:01:57,109 --> 01:01:54,960

again people bring up then it's this

1744

01:01:58,870 --> 01:01:57,119

private company issues like if you want

1745

01:01:59,910 --> 01:01:58,880

to use the services like here's the

1746

01:02:01,829 --> 01:01:59,920

terms

1747

01:02:03,670 --> 01:02:01,839

and these are these are not and i agree

1748

01:02:05,190 --> 01:02:03,680

with the transparency like

1749

01:02:07,029 --> 01:02:05,200

it's it's almost like you don't it's

1750

01:02:08,710 --> 01:02:07,039

like uh you don't put you don't put uh

1751  
01:02:09,910 --> 01:02:08,720  
speed limit signs up and then you'd be

1752  
01:02:11,829 --> 01:02:09,920  
like you're speeding

1753  
01:02:13,510 --> 01:02:11,839  
you're you you know what i mean like the

1754  
01:02:15,990 --> 01:02:13,520  
i agree with the trend the rules have to

1755  
01:02:18,069 --> 01:02:16,000  
be but the the rules are

1756  
01:02:20,710 --> 01:02:18,079  
changing and and it's it's trying to

1757  
01:02:22,309 --> 01:02:20,720  
respond to these different

1758  
01:02:24,309 --> 01:02:22,319  
i mean i'm definitely not a free speech

1759  
01:02:26,390 --> 01:02:24,319  
absolutist

1760  
01:02:28,150 --> 01:02:26,400  
in that sense

1761  
01:02:29,750 --> 01:02:28,160  
and i don't but i don't i mean i don't

1762  
01:02:32,230 --> 01:02:29,760  
know

1763  
01:02:34,789 --> 01:02:32,240

yeah i wish

1764

01:02:35,750 --> 01:02:34,799

i don't have i don't have better answers

1765

01:02:36,870 --> 01:02:35,760

than that

1766

01:02:39,750 --> 01:02:36,880

well well

1767

01:02:41,589 --> 01:02:39,760

as we move towards wrapping it up

1768

01:02:43,349 --> 01:02:41,599

let me ask you a question more relevant

1769

01:02:45,190 --> 01:02:43,359

to your job

1770

01:02:46,549 --> 01:02:45,200

yeah you know take this discussion we're

1771

01:02:50,549 --> 01:02:46,559

having

1772

01:02:53,109 --> 01:02:50,559

what parts of it are particularly

1773

01:02:54,950 --> 01:02:53,119

relevant interesting pressing and

1774

01:02:56,870 --> 01:02:54,960

interesting to you you know because

1775

01:02:59,270 --> 01:02:56,880

you're such a thinker and anyone who

1776

01:03:01,109 --> 01:02:59,280

reads this this book and i do encourage

1777

01:03:04,390 --> 01:03:01,119

you to pick up this book it's

1778

01:03:06,309 --> 01:03:04,400

really fantastic and if you want to know

1779

01:03:07,910 --> 01:03:06,319

how some of the

1780

01:03:09,589 --> 01:03:07,920

thought leaders i hate to use that term

1781

01:03:10,630 --> 01:03:09,599

but how some of the people who are

1782

01:03:12,390 --> 01:03:10,640

really

1783

01:03:15,029 --> 01:03:12,400

trying to wrestle these issues to the

1784

01:03:16,950 --> 01:03:15,039

ground how they're thinking in some of

1785

01:03:19,190 --> 01:03:16,960

the novel ways that you wouldn't have

1786

01:03:20,870 --> 01:03:19,200

anticipated then pick up beyond zero and

1787

01:03:24,710 --> 01:03:20,880

one machine psychedelics and

1788

01:03:27,349 --> 01:03:24,720

consciousness but then so andrew

1789

01:03:28,950 --> 01:03:27,359

yeah what do you find interesting

1790

01:03:31,990 --> 01:03:28,960

about this discussion we've been having

1791

01:03:33,589 --> 01:03:32,000

relative to your job because you do i i

1792

01:03:34,309 --> 01:03:33,599

didn't mean to discount it you do care

1793

01:03:37,750 --> 01:03:34,319

about

1794

01:03:40,150 --> 01:03:37,760

social issues and you you have an issue

1795

01:03:43,990 --> 01:03:40,160

of hey let's make sure we're being let's

1796

01:03:46,549 --> 01:03:44,000

make sure we're being fair there too and

1797

01:03:48,230 --> 01:03:46,559

you want to speak to to how that relates

1798

01:03:50,710 --> 01:03:48,240

to what you think you can do to make the

1799

01:03:51,990 --> 01:03:50,720

world a better place with ai and these

1800

01:03:53,589 --> 01:03:52,000

kind of things

1801

01:03:55,109 --> 01:03:53,599

well yeah my i mean i'm really

1802

01:03:56,950 --> 01:03:55,119

interested in

1803

01:03:59,510 --> 01:03:56,960

what people talk about as like these

1804

01:04:00,549 --> 01:03:59,520

socio-technical systems

1805

01:04:01,589 --> 01:04:00,559

so

1806

01:04:03,430 --> 01:04:01,599

it's

1807

01:04:05,589 --> 01:04:03,440

not looking narrowly at technical

1808

01:04:06,390 --> 01:04:05,599

failure in

1809

01:04:16,549 --> 01:04:06,400

in

1810

01:04:18,390 --> 01:04:16,559

yeah society and and what and you know

1811

01:04:20,470 --> 01:04:18,400

like the issues you're talking about are

1812

01:04:22,309 --> 01:04:20,480

are super important too but

1813

01:04:25,589 --> 01:04:22,319

mainly what we what we're trying to do

1814

01:04:26,549 --> 01:04:25,599

is understand um

1815

01:04:28,789 --> 01:04:26,559

sort of

1816

01:04:32,150 --> 01:04:28,799

the if if you look at the one you know

1817

01:04:34,630 --> 01:04:32,160

you look at inequality for example or

1818

01:04:36,789 --> 01:04:34,640

the the way society is structured and

1819

01:04:38,950 --> 01:04:36,799

the way things run

1820

01:04:42,710 --> 01:04:38,960

go you know there's all this data that

1821

01:04:45,190 --> 01:04:42,720

is sampled from that social structure

1822

01:04:47,750 --> 01:04:45,200

upon which these models are trained

1823

01:04:49,750 --> 01:04:47,760

and then they're making predictions

1824

01:04:51,910 --> 01:04:49,760

people are taking that

1825

01:04:53,750 --> 01:04:51,920

information sometimes and using it

1826  
01:04:55,510 --> 01:04:53,760  
you know to do things which generates

1827  
01:04:56,390 --> 01:04:55,520  
more data and it's kind of this feedback

1828  
01:04:58,549 --> 01:04:56,400  
loop

1829  
01:05:01,430 --> 01:04:58,559  
and what we're trying to understand is

1830  
01:05:03,270 --> 01:05:01,440  
how do we intervene so that

1831  
01:05:05,270 --> 01:05:03,280  
we're not just blindly

1832  
01:05:09,109 --> 01:05:05,280  
reproducing

1833  
01:05:11,910 --> 01:05:09,119  
uh or recapitulating discrimination or

1834  
01:05:13,829 --> 01:05:11,920  
uh unfair unfair allocation of resources

1835  
01:05:15,349 --> 01:05:13,839  
or like bring that down to a practical

1836  
01:05:17,750 --> 01:05:15,359  
level that people might be under might

1837  
01:05:19,589 --> 01:05:17,760  
be able to kind of grasp

1838  
01:05:24,390 --> 01:05:19,599

well i mean i think you can look at i

1839

01:05:28,150 --> 01:05:25,589

i guess it's a pretty clear example to

1840

01:05:29,430 --> 01:05:28,160

me where you have so and take facial

1841

01:05:31,349 --> 01:05:29,440

recognition

1842

01:05:33,109 --> 01:05:31,359

software which is in your phone to

1843

01:05:34,390 --> 01:05:33,119

unlock it sometimes or like

1844

01:05:35,589 --> 01:05:34,400

it's used

1845

01:05:37,190 --> 01:05:35,599

in a lot of different domains there's a

1846

01:05:39,029 --> 01:05:37,200

lot of controversy about it but one

1847

01:05:41,109 --> 01:05:39,039

clear lesson from

1848

01:05:41,990 --> 01:05:41,119

a lot of work that that my colleagues

1849

01:05:43,990 --> 01:05:42,000

and i

1850

01:05:46,150 --> 01:05:44,000

do is like

1851  
01:05:48,309 --> 01:05:46,160  
you train these systems and you have a

1852  
01:05:49,510 --> 01:05:48,319  
giant database of photographs and you

1853  
01:05:51,190 --> 01:05:49,520  
have these

1854  
01:05:52,630 --> 01:05:51,200  
you you feed these to the neural

1855  
01:05:53,510 --> 01:05:52,640  
networks they learn what a face looks

1856  
01:05:54,950 --> 01:05:53,520  
like

1857  
01:05:56,870 --> 01:05:54,960  
and then they then they can pretty

1858  
01:05:58,870 --> 01:05:56,880  
accurately predict

1859  
01:06:00,549 --> 01:05:58,880  
oh it's out you know i see these pixels

1860  
01:06:02,549 --> 01:06:00,559  
and i know that's alex i or with you

1861  
01:06:03,510 --> 01:06:02,559  
know 89 whatever

1862  
01:06:05,990 --> 01:06:03,520  
90.

1863  
01:06:08,309 --> 01:06:06,000

so the problem was that these databases

1864

01:06:11,029 --> 01:06:08,319

these training data sets were mostly

1865

01:06:13,190 --> 01:06:11,039

white people mostly white

1866

01:06:14,870 --> 01:06:13,200

men so when you use these systems and

1867

01:06:16,150 --> 01:06:14,880

they tend to be used more often on

1868

01:06:17,190 --> 01:06:16,160

darker skin

1869

01:06:18,950 --> 01:06:17,200

people

1870

01:06:21,670 --> 01:06:18,960

for lots of reasons

1871

01:06:22,950 --> 01:06:21,680

they they're like a chance and they they

1872

01:06:25,349 --> 01:06:22,960

don't either they don't see the face

1873

01:06:26,630 --> 01:06:25,359

it's the wrong face it's recognized and

1874

01:06:29,029 --> 01:06:26,640

it's like everyone goes well what's

1875

01:06:31,589 --> 01:06:29,039

going on here and it's like well

1876

01:06:33,670 --> 01:06:31,599

it turns out like nobody thought like oh

1877

01:06:35,750 --> 01:06:33,680

what if you know

1878

01:06:37,829 --> 01:06:35,760

if we use if we don't if we only have

1879

01:06:39,589 --> 01:06:37,839

white faces in the database and then we

1880

01:06:42,390 --> 01:06:39,599

use it on dark people it's probably not

1881

01:06:43,589 --> 01:06:42,400

going to work as as well and it's it's

1882

01:06:45,510 --> 01:06:43,599

these kinds of

1883

01:06:47,430 --> 01:06:45,520

things in retrospect seem super obvious

1884

01:06:49,349 --> 01:06:47,440

like well obviously

1885

01:06:51,349 --> 01:06:49,359

you you've got to train it on the

1886

01:06:53,510 --> 01:06:51,359

diversity of faces that you'll

1887

01:06:55,270 --> 01:06:53,520

ultimately use the system on

1888

01:06:56,870 --> 01:06:55,280

but this these are not things that

1889

01:06:59,270 --> 01:06:56,880

people have the force and so what we're

1890

01:07:01,349 --> 01:06:59,280

trying to develop is like

1891

01:07:03,190 --> 01:07:01,359

for these systems like are you you know

1892

01:07:04,549 --> 01:07:03,200

are these things kind of representative

1893

01:07:06,069 --> 01:07:04,559

of

1894

01:07:07,750 --> 01:07:06,079

the people that you're that will be

1895

01:07:08,870 --> 01:07:07,760

interacting with this and will it work

1896

01:07:10,549 --> 01:07:08,880

for them

1897

01:07:12,150 --> 01:07:10,559

in the same way the the question of

1898

01:07:13,750 --> 01:07:12,160

whether you should i mean i'm you know

1899

01:07:15,589 --> 01:07:13,760

there's this other question of like not

1900

01:07:18,150 --> 01:07:15,599

using this at all because it's

1901

01:07:19,990 --> 01:07:18,160

inherently problematic and

1902

01:07:21,750 --> 01:07:20,000

no we can't go backwards we can't go

1903

01:07:23,589 --> 01:07:21,760

backwards so it's beautiful it's a

1904

01:07:25,990 --> 01:07:23,599

beautiful example

1905

01:07:29,029 --> 01:07:26,000

yeah so and that's but you that kind of

1906

01:07:30,390 --> 01:07:29,039

problem is is rife through all machine

1907

01:07:31,670 --> 01:07:30,400

learning

1908

01:07:32,870 --> 01:07:31,680

where you're

1909

01:07:34,630 --> 01:07:32,880

you're training you're training your

1910

01:07:36,549 --> 01:07:34,640

models on this very narrow

1911

01:07:37,829 --> 01:07:36,559

type of person and then using that to

1912

01:07:39,029 --> 01:07:37,839

make predictions about different types

1913

01:07:42,150 --> 01:07:39,039

of people and

1914

01:07:44,630 --> 01:07:42,160

it doesn't work equally true in search

1915

01:07:46,950 --> 01:07:44,640

right equally true same problem in

1916

01:07:49,270 --> 01:07:46,960

search same problem

1917

01:07:51,670 --> 01:07:49,280

everywhere so everywhere

1918

01:07:53,670 --> 01:07:51,680

yeah and it is it to me it's this it's

1919

01:07:56,950 --> 01:07:53,680

this problem of scale

1920

01:07:58,950 --> 01:07:56,960

and uh i don't you know i that's a

1921

01:08:01,990 --> 01:07:58,960

it's a this is a hard you know the tech

1922

01:08:03,109 --> 01:08:02,000

industry is predicated on scale

1923

01:08:04,230 --> 01:08:03,119

so

1924

01:08:05,670 --> 01:08:04,240

um

1925

01:08:07,510 --> 01:08:05,680

but yeah that's great

1926

01:08:11,430 --> 01:08:07,520

that's a great example but it reminds me

1927

01:08:13,990 --> 01:08:11,440

of the stop and frisk cases in new york

1928

01:08:16,870 --> 01:08:14,000

there were a lot of people particularly

1929

01:08:18,870 --> 01:08:16,880

in some minority communities that said

1930

01:08:21,030 --> 01:08:18,880

hey the cops stop us a lot more than

1931

01:08:22,789 --> 01:08:21,040

they stop other people on the street and

1932

01:08:24,390 --> 01:08:22,799

they can frisk us

1933

01:08:26,390 --> 01:08:24,400

no no no no that doesn't happen well

1934

01:08:29,910 --> 01:08:26,400

when they actually get the data yeah

1935

01:08:32,309 --> 01:08:29,920

they did and that's twice as likely and

1936

01:08:34,709 --> 01:08:32,319

less likely to actually find an infrared

1937

01:08:36,870 --> 01:08:34,719

you know like a gun or stuff like that

1938

01:08:38,470 --> 01:08:36,880

so it's only it's it's another form of

1939

01:08:41,749 --> 01:08:38,480

date it's only when you get the data and

1940

01:08:44,630 --> 01:08:41,759

you go oh wow i guess the system has

1941

01:08:45,910 --> 01:08:44,640

been systemically biased in a way

1942

01:08:48,309 --> 01:08:45,920

and so

1943

01:08:50,630 --> 01:08:48,319

very very uh excellent that you would

1944

01:08:53,349 --> 01:08:50,640

point out face recognition is a part of

1945

01:08:54,630 --> 01:08:53,359

that because it's directly it's it's

1946

01:08:57,510 --> 01:08:54,640

perfect

1947

01:08:59,430 --> 01:08:57,520

so andrew what's next you you are an

1948

01:09:00,950 --> 01:08:59,440

excellent author your book is super well

1949

01:09:02,470 --> 01:09:00,960

written and you have another book as

1950

01:09:04,870 --> 01:09:02,480

well do you have another one in the

1951

01:09:06,709 --> 01:09:04,880

works are you gonna do that or just stay

1952

01:09:08,550 --> 01:09:06,719

with your day job

1953

01:09:11,510 --> 01:09:08,560

my sort of yeah i mean i'm a researcher

1954

01:09:13,510 --> 01:09:11,520

so i get i write papers now

1955

01:09:15,510 --> 01:09:13,520

you know and on this these kinds of

1956

01:09:17,110 --> 01:09:15,520

issues and publish work so that kind of

1957

01:09:18,470 --> 01:09:17,120

takes up my

1958

01:09:20,950 --> 01:09:18,480

writing i mean i yeah i don't i don't

1959

01:09:22,870 --> 01:09:20,960

have any i don't have really a book

1960

01:09:25,590 --> 01:09:22,880

uh i'm interested you know i'm i'm

1961

01:09:27,669 --> 01:09:25,600

interested in like pursuing

1962

01:09:30,229 --> 01:09:27,679

more these these questions around

1963

01:09:32,309 --> 01:09:30,239

you know yeah like the technical systems

1964

01:09:33,430 --> 01:09:32,319

and understanding complex complexity

1965

01:09:34,950 --> 01:09:33,440

theory and

1966

01:09:38,070 --> 01:09:34,960

um

1967

01:09:40,309 --> 01:09:38,080

things like that but i yeah

1968

01:09:41,189 --> 01:09:40,319

i'm always of course i'm i'm i'm i guess

1969

01:09:43,590 --> 01:09:41,199

i'm a

1970

01:09:45,269 --> 01:09:43,600

curious and easily distractable

1971

01:09:46,870 --> 01:09:45,279

person so i get interested in different

1972

01:09:49,430 --> 01:09:46,880

things and then we're kind of obsessive

1973

01:09:51,910 --> 01:09:49,440

well i'm sure you you know and then

1974

01:09:54,310 --> 01:09:51,920

but yeah my my job keeps me very

1975

01:09:56,790 --> 01:09:54,320

interested and busy for sure well let's

1976

01:09:59,430 --> 01:09:56,800

hope you remain just as curious as

1977

01:10:01,030 --> 01:09:59,440

you've been our guest again has been

1978

01:10:04,149 --> 01:10:01,040

andrew smart the book you're going to

1979

01:10:06,709 --> 01:10:04,159

want to check out beyond zero and one

1980

01:10:08,550 --> 01:10:06,719

terrific having you on thank you so much

1981

01:10:10,550 --> 01:10:08,560

thanks a lot thanks for having me

1982

01:10:13,110 --> 01:10:10,560

thanks again to andrew smart for joining

1983

01:10:15,590 --> 01:10:13,120

me today on skeptico one question i t up

1984

01:10:18,310 --> 01:10:15,600

from this interview why does a i seem to

1985

01:10:20,790 --> 01:10:18,320

be blind to the metaphysical question of

1986

01:10:22,310 --> 01:10:20,800

consciousness which as i

1987

01:10:24,790 --> 01:10:22,320

kind of put forth in this interview is

1988

01:10:25,990 --> 01:10:24,800

the only game in town it's the only

1989

01:10:27,990 --> 01:10:26,000

question

1990

01:10:30,149 --> 01:10:28,000

to ask and

1991

01:10:31,270 --> 01:10:30,159

you know the next level on that question

1992

01:10:33,750 --> 01:10:31,280

is

1993

01:10:35,910 --> 01:10:33,760

well the spiritual question

1994

01:10:37,750 --> 01:10:35,920

and you have to wonder if that's why

1995

01:10:40,149 --> 01:10:37,760

they don't answer part a is because they

1996

01:10:41,990 --> 01:10:40,159

don't really want to answer part b

1997

01:10:43,910 --> 01:10:42,000

so i need to break that down even

1998

01:10:45,830 --> 01:10:43,920

further i guess so it isn't totally

1999

01:10:47,189 --> 01:10:45,840

inside baseball

2000

01:10:49,830 --> 01:10:47,199

if you think

2001  
01:10:51,510 --> 01:10:49,840  
consciousness is an illusion and you're

2002  
01:10:54,070 --> 01:10:51,520  
going to play the shut up and calculate

2003  
01:10:55,750 --> 01:10:54,080  
game which is the only game in town for

2004  
01:10:57,750 --> 01:10:55,760  
ai

2005  
01:10:59,189 --> 01:10:57,760  
and andrew kind of threads the needle

2006  
01:11:01,189 --> 01:10:59,199  
there a little bit but at the end of the

2007  
01:11:03,430 --> 01:11:01,199  
day it's the only game in town

2008  
01:11:05,270 --> 01:11:03,440  
consciousness is an illusion

2009  
01:11:07,830 --> 01:11:05,280  
consciousness is an epiphenomenon of the

2010  
01:11:10,550 --> 01:11:07,840  
brain that's where you gotta be if

2011  
01:11:11,669 --> 01:11:10,560  
you're doing ai you're doing ai at

2012  
01:11:14,070 --> 01:11:11,679  
google or

2013  
01:11:17,189 --> 01:11:14,080

facebook or twitter or more importantly

2014

01:11:18,950 --> 01:11:17,199

uh darpa or nsa or wherever you're doing

2015

01:11:21,590 --> 01:11:18,960

it anyways

2016

01:11:24,390 --> 01:11:21,600

so that's question number one but then

2017

01:11:27,830 --> 01:11:24,400

question number two is

2018

01:11:28,950 --> 01:11:27,840

if consciousness is not an illusion

2019

01:11:31,270 --> 01:11:28,960

then

2020

01:11:32,630 --> 01:11:31,280

what is the hierarchy of consciousness

2021

01:11:35,669 --> 01:11:32,640

like i always say

2022

01:11:36,870 --> 01:11:35,679

like the [h\_\_\h] god question you know

2023

01:11:38,709 --> 01:11:36,880

kind of

2024

01:11:40,390 --> 01:11:38,719

does e.t

2025

01:11:41,830 --> 01:11:40,400

have an nde

2026

01:11:45,510 --> 01:11:41,840

question

2027

01:11:46,950 --> 01:11:45,520

wouldn't want to talk about any of that

2028

01:11:49,669 --> 01:11:46,960

stuff

2029

01:11:52,390 --> 01:11:49,679

if you're doing ai

2030

01:11:56,229 --> 01:11:52,400

if your job was to just do a better

2031

01:11:58,790 --> 01:11:56,239

alphago machine learning and apply it to

2032

01:12:00,950 --> 01:11:58,800

search and everything else that'll make

2033

01:12:02,470 --> 01:12:00,960

billions and billions of dollars and

2034

01:12:06,070 --> 01:12:02,480

drive up the stock price on a lot of

2035

01:12:07,910 --> 01:12:06,080

google stock man drive it up drive it up

2036

01:12:09,590 --> 01:12:07,920

let me know your thoughts skeptical form

2037

01:12:11,590 --> 01:12:09,600

come on over play

2038

01:12:14,550 --> 01:12:11,600

lots more to come stay with me for all

2039

01:12:16,600 --> 01:12:14,560  
of that until next time take care

2040

01:12:23,280 --> 01:12:16,610  
bye for now