



RANDOMNESS AS A GATEWAY TO A THEORY OF CONSCIOUSNESS

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**SOCIETY
FOR
SCIENTIFIC
EXPLORATION**

1
00:00:06,740 --> 00:00:03,439
all right cool okay so I'm gonna be

2
00:00:10,250 --> 00:00:06,750
switching gears from astrology into

3
00:00:14,539 --> 00:00:10,260
consciousness philosophy and some SCI

4
00:00:16,820 --> 00:00:14,549
experiments so a very brief outline here

5
00:00:19,040 --> 00:00:16,830
I'm gonna be jumping a couple of topics

6
00:00:20,330 --> 00:00:19,050
so this will hopefully help you stay

7
00:00:22,570 --> 00:00:20,340
with me I'm gonna start with like a

8
00:00:24,950 --> 00:00:22,580
philosophical framework which I think is

9
00:00:27,679 --> 00:00:24,960
important and needs to be addressed in

10
00:00:29,419 --> 00:00:27,689
you know going forward with SCI research

11
00:00:31,550 --> 00:00:29,429
and then I'm going to be talking about a

12
00:00:36,229 --> 00:00:31,560
couple of experiments that are in

13
00:00:39,319 --> 00:00:36,239

progress so to start with the framework

14

00:00:41,619 --> 00:00:39,329

part of it these are just different

15

00:00:44,450 --> 00:00:41,629

aspects of consciousness which I see as

16

00:00:46,130 --> 00:00:44,460

the most challenging problems like what

17

00:00:48,590 --> 00:00:46,140

is it that we really don't understand

18

00:00:50,450 --> 00:00:48,600

about consciousness so the hard problem

19

00:00:53,810 --> 00:00:50,460

for those of you who don't know was put

20

00:00:57,889 --> 00:00:53,820

forth by David Chalmers in the 90s which

21

00:01:00,619 --> 00:00:57,899

basically just says what is it that

22

00:01:03,889 --> 00:01:00,629

gives us a phenomenal subjective

23

00:01:06,649 --> 00:01:03,899

experience you know why why is it that

24

00:01:09,710 --> 00:01:06,659

it is like to be something to be this

25

00:01:11,780 --> 00:01:09,720

conscious system sigh phenomena we all

26

00:01:14,480 --> 00:01:11,790

know what that is I think the selection

27

00:01:18,200 --> 00:01:14,490

problem is something I just put forth a

28

00:01:20,179 --> 00:01:18,210

couple years ago and it hasn't been

29

00:01:22,280 --> 00:01:20,189

entirely widely accepted yet so I'm

30

00:01:25,670 --> 00:01:22,290

going to talk about that in a little bit

31

00:01:29,569 --> 00:01:25,680

of detail so to understand the selection

32

00:01:34,399 --> 00:01:29,579

problem think for a minute about what it

33

00:01:37,130 --> 00:01:34,409

means to be you so it's you know pretty

34

00:01:39,620 --> 00:01:37,140

much accepted that to have phenomenal

35

00:01:42,050 --> 00:01:39,630

conscious experience you need a subject

36

00:01:44,510 --> 00:01:42,060

of that experience or an experienter of

37

00:01:45,889 --> 00:01:44,520

the experience so in other words if you

38

00:01:48,740 --> 00:01:45,899

have pain you need a subject

39

00:01:52,850 --> 00:01:48,750

experiencing pain that's the simplest

40

00:01:55,700 --> 00:01:52,860

example but a number of thought

41

00:01:58,999 --> 00:01:55,710

experiments that are pretty widely known

42

00:02:01,999 --> 00:01:59,009

actually even among people that are not

43

00:02:05,050 --> 00:02:02,009

philosophers are things like well if you

44

00:02:07,249 --> 00:02:05,060

upload your mind into a computer and

45

00:02:09,380 --> 00:02:07,259

assuming the computer is conscious would

46

00:02:11,449 --> 00:02:09,390

it still be you you might think if it

47

00:02:12,770 --> 00:02:11,459

has the same functionality as you of

48

00:02:14,750 --> 00:02:12,780

course it would be you

49

00:02:17,390 --> 00:02:14,760

but then what if you kept the original

50

00:02:19,940 --> 00:02:17,400

you your original body and made a copy

51
00:02:22,280 --> 00:02:19,950
rather than destroying the original so

52
00:02:24,770 --> 00:02:22,290
they both in a sense seem like good

53
00:02:26,420 --> 00:02:24,780
answers so that kind of thought

54
00:02:28,130 --> 00:02:26,430
experiment really and there's other

55
00:02:30,020 --> 00:02:28,140
variations to that but they all really

56
00:02:32,720 --> 00:02:30,030
illustrate that we really have no

57
00:02:35,600 --> 00:02:32,730
constraint on this problem of what it

58
00:02:41,600 --> 00:02:35,610
means to be a subject of experience or

59
00:02:45,320 --> 00:02:41,610
an experienter so this quote right here

60
00:02:49,400 --> 00:02:45,330
I think illustrates part of the problem

61
00:02:54,020 --> 00:02:49,410
pretty carefully so this is a quote from

62
00:02:57,229 --> 00:02:54,030
one of Dawkins books and it gets out one

63
00:02:58,850 --> 00:02:57,239

of the questions of like that I'm sure

64

00:02:59,540 --> 00:02:58,860

we've all thought of like what if I were

65

00:03:04,250 --> 00:02:59,550

never born

66

00:03:06,740 --> 00:03:04,260

now how many potential people are there

67

00:03:08,180 --> 00:03:06,750

and you know so this quote says most

68

00:03:10,100 --> 00:03:08,190

people are never gonna be born because

69

00:03:12,040 --> 00:03:10,110

or most people are never gonna die

70

00:03:14,979 --> 00:03:12,050

because they're never gonna be born and

71

00:03:18,020 --> 00:03:14,989

so that raises the question of how many

72

00:03:20,660 --> 00:03:18,030

possible people are there so you might

73

00:03:23,060 --> 00:03:20,670

think as this quote implies it's limited

74

00:03:24,890 --> 00:03:23,070

by the DNA but remember that thought

75

00:03:27,319 --> 00:03:24,900

experiment you might have a clone of

76

00:03:30,140 --> 00:03:27,329

yourself but in a sense it's actually

77

00:03:31,970 --> 00:03:30,150

two different subjects and also you can

78

00:03:34,340 --> 00:03:31,980

conceive of an infinite amount of

79

00:03:37,850 --> 00:03:34,350

organisms that are conscious being born

80

00:03:39,620 --> 00:03:37,860

so I think what this illustrates is that

81

00:03:42,380 --> 00:03:39,630

there are an infinite amount of

82

00:03:45,500 --> 00:03:42,390

potential subjects of experience and

83

00:03:48,920 --> 00:03:45,510

then the question is the way I phrase it

84

00:03:51,949 --> 00:03:48,930

to really isolate the truly hard part of

85

00:03:54,710 --> 00:03:51,959

this problem of subjectivity is what is

86

00:03:58,210 --> 00:03:54,720

it that when taking for granted that you

87

00:04:01,300 --> 00:03:58,220

the physical system that's your body was

88

00:04:04,069 --> 00:04:01,310

comes into existence and is conscious

89

00:04:06,229 --> 00:04:04,079

what is it that selects what is the

90

00:04:08,270 --> 00:04:06,239

selection mechanism that makes it your

91

00:04:12,580 --> 00:04:08,280

subject out of the infinite amount of

92

00:04:14,960 --> 00:04:12,590

possible subjects and this concept of

93

00:04:18,460 --> 00:04:14,970

potentiality and actuality it goes back

94

00:04:22,339 --> 00:04:18,470

to Aristotle and it's been applied to

95

00:04:24,920 --> 00:04:22,349

potential energy in physics which you

96

00:04:25,940 --> 00:04:24,930

know as we know like worked pretty well

97

00:04:27,260 --> 00:04:25,950

and I may argue

98

00:04:30,710 --> 00:04:27,270

it's just we need to apply that same

99

00:04:34,280 --> 00:04:30,720

concept to subjects in order to really

100

00:04:36,920 --> 00:04:34,290

understand and isolate the truly

101

00:04:39,260 --> 00:04:36,930

difficult part of the problem and that's

102

00:04:43,850 --> 00:04:39,270

the angle we need to look at it from to

103

00:04:46,480 --> 00:04:43,860

really make progress on this so if you

104

00:04:49,060 --> 00:04:46,490

take so this basically just shows that

105

00:04:52,420 --> 00:04:49,070

the selection so the hard problem

106

00:04:55,940 --> 00:04:52,430

attempts to phrase the problem of

107

00:04:59,090 --> 00:04:55,950

experience phenomenal conscious

108

00:05:01,970 --> 00:04:59,100

experience into a simple way of looking

109

00:05:04,820 --> 00:05:01,980

at it that allows us to attack the hard

110

00:05:06,650 --> 00:05:04,830

part of a problem and the selection

111

00:05:09,620 --> 00:05:06,660

problem is just a complement of that

112

00:05:12,040 --> 00:05:09,630

which looks at the subject aspect of it

113

00:05:14,960 --> 00:05:12,050

it's because you need a subject to be

114

00:05:16,970 --> 00:05:14,970

experiencing experience and if you take

115

00:05:19,340 --> 00:05:16,980

pen psychism seriously you have the

116

00:05:22,820 --> 00:05:19,350

combination problem about how does micro

117

00:05:24,650 --> 00:05:22,830

qualia be become macro qualia and I

118

00:05:29,000 --> 00:05:24,660

think that the selection problem really

119

00:05:30,620 --> 00:05:29,010

encapsulates that so if you look at it

120

00:05:33,290 --> 00:05:30,630

from the ankle of the selection problem

121

00:05:34,910 --> 00:05:33,300

then you don't really have so much of a

122

00:05:38,690 --> 00:05:34,920

combination problem anymore because that

123

00:05:41,540 --> 00:05:38,700

gets at a deeper mystery okay so the

124

00:05:44,720 --> 00:05:41,550

main I so I have a paper coming out on

125

00:05:47,440 --> 00:05:44,730

this soon but the main critiques I get

126

00:05:50,240 --> 00:05:47,450

on this are but the self doesn't exist

127

00:05:53,810 --> 00:05:50,250

and make a distinction between the term

128

00:05:55,550 --> 00:05:53,820

self and subject so the word self in

129

00:05:57,410 --> 00:05:55,560

philosophy has a whole lot of baggage

130

00:05:59,660 --> 00:05:57,420

associated with it a whole lot of

131

00:06:01,940 --> 00:05:59,670

complexity about what it means to be a

132

00:06:04,370 --> 00:06:01,950

personal identity having stability over

133

00:06:06,950 --> 00:06:04,380

a lifetime and all that the subject is

134

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

just what we're actually getting at when

135

00:06:12,410 --> 00:06:08,970

we're talking about would this be you

136

00:06:14,090 --> 00:06:12,420

experiencing it or would it not so

137

00:06:16,360 --> 00:06:14,100

people say this is a dualistic

138

00:06:21,470 --> 00:06:16,370

perspective this is Cartesian dualism

139

00:06:22,970 --> 00:06:21,480

which is widely discredited I say it

140

00:06:25,370 --> 00:06:22,980

makes sense that you might think of

141

00:06:26,750 --> 00:06:25,380

potential subjects and draw an analogy

142

00:06:29,330 --> 00:06:26,760

to de cartes

143

00:06:31,420 --> 00:06:29,340

what he called immaterial souls that

144

00:06:34,250 --> 00:06:31,430

come around and interact with the body

145

00:06:36,590 --> 00:06:34,260

but remember that potential subjects are

146

00:06:39,900 --> 00:06:36,600

really just constructs so they're not

147

00:06:43,770 --> 00:06:39,910

they don't necessarily have to be real

148

00:06:46,830 --> 00:06:43,780

so there's not really a way you can look

149

00:06:50,450 --> 00:06:46,840

at it where they're actually the same

150

00:06:53,610 --> 00:06:50,460

thing is what you could call a soul and

151
00:06:55,290 --> 00:06:53,620
then finally people say the problem

152
00:06:58,080 --> 00:06:55,300
doesn't arise in the third person's

153
00:07:00,690 --> 00:06:58,090
perspective but ultimately whether or

154
00:07:06,150 --> 00:07:00,700
not you exist is objectively true or

155
00:07:09,050 --> 00:07:06,160
false and that's basically the the point

156
00:07:13,370 --> 00:07:09,060
I argue on that is that it's

157
00:07:16,290 --> 00:07:13,380
consequential to you whether or not you

158
00:07:20,880 --> 00:07:16,300
survive and upload or tell a

159
00:07:21,900 --> 00:07:20,890
transportation or whatever and that kind

160
00:07:24,120 --> 00:07:21,910
of illustrates that there is an

161
00:07:26,250 --> 00:07:24,130
objective further fact about your

162
00:07:31,620 --> 00:07:26,260
subjective experience it is a unique

163
00:07:34,370 --> 00:07:31,630

thing that is specific to you but does

164

00:07:38,160 --> 00:07:34,380

arise in an in an objective perspective

165

00:07:40,230 --> 00:07:38,170

so okay so that's the selection problem

166

00:07:43,400 --> 00:07:40,240

so now I'm coming back to this web of

167

00:07:45,930 --> 00:07:43,410

these different phenomena here and

168

00:07:47,640 --> 00:07:45,940

something I noticed is that one way you

169

00:07:50,220 --> 00:07:47,650

can look at this is that they're all

170

00:07:52,230 --> 00:07:50,230

they all might in some way be connected

171

00:07:54,450 --> 00:07:52,240

to the phenomena of true randomness so

172

00:07:56,760 --> 00:07:54,460

with this selection problem that I just

173

00:07:58,950 --> 00:07:56,770

talked about the fact that there's an

174

00:08:01,320 --> 00:07:58,960

infinite possible amount of subjects and

175

00:08:03,840 --> 00:08:01,330

it more or less appears to be a truly

176

00:08:05,820 --> 00:08:03,850

random selection now when I'm saying

177

00:08:07,650 --> 00:08:05,830

true random I just mean we don't know

178

00:08:12,260 --> 00:08:07,660

the mechanism yet it hasn't been

179

00:08:14,160 --> 00:08:12,270

elucidated with understanding subject

180

00:08:16,350 --> 00:08:14,170

experience phenomenal conscious

181

00:08:17,790 --> 00:08:16,360

experience and the hard problem there

182

00:08:20,190 --> 00:08:17,800

are some theories out there about it

183

00:08:24,150 --> 00:08:20,200

being related to the wavefunction

184

00:08:27,570 --> 00:08:24,160

collapse and so another way of looking

185

00:08:30,470 --> 00:08:27,580

at psy phenomena is directly influencing

186

00:08:33,030 --> 00:08:30,480

or predicting a random event perhaps and

187

00:08:36,480 --> 00:08:33,040

the link between quantum and true

188

00:08:38,940 --> 00:08:36,490

randomness is pretty established and so

189

00:08:42,360 --> 00:08:38,950

that is one way that that curved red

190

00:08:45,750 --> 00:08:42,370

line that I drew that people have looked

191

00:08:50,220 --> 00:08:45,760

at interaction or saw a effect quantum

192

00:08:51,920 --> 00:08:50,230

events I argue though that turbulence is

193

00:08:54,900 --> 00:08:51,930

actually

194

00:08:58,350 --> 00:08:54,910

also maybe well we know it in its

195

00:09:01,320 --> 00:08:58,360

behavior it looks true random but

196

00:09:03,840 --> 00:09:01,330

there's also some new studies coming out

197

00:09:05,990 --> 00:09:03,850

suggesting it might at heart be a

198

00:09:08,640 --> 00:09:06,000

quantum event I don't have time or

199

00:09:11,370 --> 00:09:08,650

turbulence in essence might be a quantum

200

00:09:15,030 --> 00:09:11,380

phenomenon I don't have time to get into

201
00:09:18,260 --> 00:09:15,040
that but what I argue is that looking at

202
00:09:21,960 --> 00:09:18,270
an interaction between mind matter

203
00:09:25,050 --> 00:09:21,970
yeah like PK psy phenomena might matter

204
00:09:27,510 --> 00:09:25,060
interactions with turbulence actually

205
00:09:29,760 --> 00:09:27,520
might be more powerful that might be the

206
00:09:34,050 --> 00:09:29,770
more powerful link in shedding light on

207
00:09:37,050 --> 00:09:34,060
all of this this web of problems in

208
00:09:42,090 --> 00:09:37,060
consciousness the reason I'm saying that

209
00:09:44,250 --> 00:09:42,100
is so turbulence is they kick chaotic

210
00:09:48,510 --> 00:09:44,260
movement of any fluid and so remember

211
00:09:50,400 --> 00:09:48,520
air is a fluid so when you we think of

212
00:09:53,550 --> 00:09:50,410
turbulence is something we experience on

213
00:09:55,470 --> 00:09:53,560

a plane but really we see it all the

214

00:09:59,010 --> 00:09:55,480

time if you see a gust of wind that is

215

00:10:01,200 --> 00:09:59,020

turbulence if you go in the hot tub here

216

00:10:06,090 --> 00:10:01,210

the Jets are making turbulence in the

217

00:10:08,040 --> 00:10:06,100

water so it's a nonlinear phenomena so

218

00:10:10,980 --> 00:10:08,050

small changes to the initial state

219

00:10:13,050 --> 00:10:10,990

causes larger changes later in later in

220

00:10:15,780 --> 00:10:13,060

time classic butterfly effect chaos

221

00:10:17,010 --> 00:10:15,790

theory stuff and what I'm arguing is

222

00:10:21,630 --> 00:10:17,020

that this could be used to our advantage

223

00:10:24,000 --> 00:10:21,640

to possibly let's say you have a

224

00:10:27,900 --> 00:10:24,010

naturally small effect size of a mind

225

00:10:29,880 --> 00:10:27,910

matter interaction turbulence effects

226

00:10:32,250 --> 00:10:29,890

might be able to amplify that into

227

00:10:35,310 --> 00:10:32,260

something much larger that stands out

228

00:10:38,490 --> 00:10:35,320

over the background noise and there's

229

00:10:42,090 --> 00:10:38,500

some compelling documented cases of this

230

00:10:43,950 --> 00:10:42,100

of macroscopic weather influence out

231

00:10:50,550 --> 00:10:43,960

there so I think this is worth taking

232

00:10:56,820 --> 00:10:50,560

seriously okay so this experiment here

233

00:10:58,470 --> 00:10:56,830

is not directly related to or it's not

234

00:11:00,750 --> 00:10:58,480

exactly clear where this is going to fit

235

00:11:03,240 --> 00:11:00,760

in the puzzle I should say of

236

00:11:04,650 --> 00:11:03,250

consciousness but this is more me being

237

00:11:05,340 --> 00:11:04,660

a grad student in that miss Furyk

238

00:11:08,250 --> 00:11:05,350

science

239

00:11:12,390 --> 00:11:08,260

being desperate to do some kind of Cyrus

240

00:11:14,670 --> 00:11:12,400

earch so what I came up with was on the

241

00:11:16,290 --> 00:11:14,680

flights I've been funded to do to study

242

00:11:19,170 --> 00:11:16,300

ozone pollution in the San Joaquin

243

00:11:22,230 --> 00:11:19,180

Valley and the Las Vegas Mojave Desert

244

00:11:23,580 --> 00:11:22,240

area the following year I put a random

245

00:11:28,770 --> 00:11:23,590

number generator on it

246

00:11:30,960 --> 00:11:28,780

a true RNG and those are the areas that

247

00:11:33,870 --> 00:11:30,970

we're flying and this is how I define

248

00:11:36,960 --> 00:11:33,880

randomness or synchronicity rather in

249

00:11:39,330 --> 00:11:36,970

the random number generator output I'm

250

00:11:43,260 --> 00:11:39,340

hypothesizing that the synchronicity is

251
00:11:45,660 --> 00:11:43,270
going to increase with turbulence so on

252
00:11:47,580 --> 00:11:45,670
the aircraft we didn't have a direct way

253
00:11:51,780 --> 00:11:47,590
of measuring turbulence but I basically

254
00:11:55,980 --> 00:11:51,790
looked at stability so it's unstable air

255
00:11:58,500 --> 00:11:55,990
where you're gonna have more turbulence

256
00:12:01,050 --> 00:11:58,510
and one way to measure that is the

257
00:12:02,790 --> 00:12:01,060
change in temperature with height or

258
00:12:05,820 --> 00:12:02,800
what we call the lapse rate so

259
00:12:07,680 --> 00:12:05,830
specifically I'm hypothesizing that the

260
00:12:10,530 --> 00:12:07,690
synchronicity of the random number

261
00:12:15,080 --> 00:12:10,540
generator will increase in unstable

262
00:12:17,450 --> 00:12:15,090
conditions the effect was pretty robust

263
00:12:19,680 --> 00:12:17,460

especially for the San Joaquin Valley

264

00:12:22,380 --> 00:12:19,690

even though I predicted a direction I'm

265

00:12:26,850 --> 00:12:22,390

just using two-tailed statistics to be

266

00:12:31,070 --> 00:12:26,860

safe and this is just a cumulative

267

00:12:36,270 --> 00:12:31,080

result of all the flights put together

268

00:12:45,630 --> 00:12:36,280

so we get about Oh point zero zero two

269

00:12:47,220 --> 00:12:45,640

at the end so interpreting this I more

270

00:12:49,290 --> 00:12:47,230

or less think I've ruled out at being an

271

00:12:51,470 --> 00:12:49,300

artifact of the instrument though of

272

00:12:54,450 --> 00:12:51,480

course you can never completely be sure

273

00:12:57,890 --> 00:12:54,460

it could be an experimenter effect on my

274

00:12:59,820 --> 00:12:57,900

part that would be quite a large

275

00:13:02,130 --> 00:12:59,830

experimenter effect because I'm not

276

00:13:03,990 --> 00:13:02,140

aware of the conditions of the

277

00:13:06,930 --> 00:13:04,000

atmosphere at all times and I'm focusing

278

00:13:09,900 --> 00:13:06,940

pretty heavily on the ozone and the

279

00:13:13,430 --> 00:13:09,910

other the main part of the mission that

280

00:13:16,800 --> 00:13:13,440

I am actually getting paid for and so

281

00:13:19,560 --> 00:13:16,810

but what I'm hoping may turn out to be

282

00:13:21,630 --> 00:13:19,570

the case is that this could sue

283

00:13:24,270 --> 00:13:21,640

sort of an interconnection between the

284

00:13:26,370 --> 00:13:24,280

micro and macro scales of the random

285

00:13:28,710 --> 00:13:26,380

events from the random number generator

286

00:13:30,480 --> 00:13:28,720

to the larger scale atmospheric flow

287

00:13:34,170 --> 00:13:30,490

which I think could be an important

288

00:13:36,510 --> 00:13:34,180

result for any mind matter interaction

289

00:13:38,040 --> 00:13:36,520

model and so once again I don't know

290

00:13:40,860 --> 00:13:38,050

exactly where this is going to fit into

291

00:13:44,430 --> 00:13:40,870

the where this piece of the puzzle might

292

00:13:48,710 --> 00:13:44,440

fit in but I wanted to report on it

293

00:13:52,290 --> 00:13:48,720

because of the robustness of the results

294

00:13:54,380 --> 00:13:52,300

okay and lastly I'm going to talk about

295

00:13:58,440 --> 00:13:54,390

an experiment that's in progress

296

00:14:01,500 --> 00:13:58,450

so we're basically now we can actually

297

00:14:05,820 --> 00:14:01,510

measure turbulence with something called

298

00:14:10,520 --> 00:14:05,830

a sonic anemometer and we had one

299

00:14:13,320 --> 00:14:10,530

installed over some bare ground and

300

00:14:15,660 --> 00:14:13,330

basically what I'm asking or what I've

301
00:14:17,760 --> 00:14:15,670
asked people to do was to go online fill

302
00:14:21,120 --> 00:14:17,770
out a questionnaire and they would do a

303
00:14:24,140 --> 00:14:21,130
10-minute session where in 30-second

304
00:14:28,140 --> 00:14:24,150
periods alternating periods they'd

305
00:14:31,070 --> 00:14:28,150
intend and relax so in other words

306
00:14:34,710 --> 00:14:31,080
during the intention periods they're

307
00:14:38,220 --> 00:14:34,720
intending turbulence to get more intense

308
00:14:40,290 --> 00:14:38,230
and so this is the way we define

309
00:14:42,600 --> 00:14:40,300
turbulence basically just a sum of the

310
00:14:45,930 --> 00:14:42,610
variances of all the spatial components

311
00:14:48,720 --> 00:14:45,940
--is of wind and then another thing I

312
00:14:50,640 --> 00:14:48,730
hypothesized was that the performance

313
00:14:54,240 --> 00:14:50,650

would be increased with more background

314

00:14:56,430 --> 00:14:54,250

atmospheric stability and with when you

315

00:14:58,800 --> 00:14:56,440

have a sonic anemometer I talked about

316

00:15:00,780 --> 00:14:58,810

measuring or estimating stability with

317

00:15:04,560 --> 00:15:00,790

like the lapse rate in temperature

318

00:15:08,040 --> 00:15:04,570

before using this when you have actual

319

00:15:11,430 --> 00:15:08,050

sonic anemometer measurements you can do

320

00:15:14,220 --> 00:15:11,440

it more directly this just shows you why

321

00:15:17,330 --> 00:15:14,230

I expect better results in stable

322

00:15:20,670 --> 00:15:17,340

conditions kind of counterintuitive that

323

00:15:22,830 --> 00:15:20,680

if it's more stable you'd be less likely

324

00:15:26,280 --> 00:15:22,840

to have turbulence but notice the

325

00:15:27,990 --> 00:15:26,290

scatter here once so think of the x-axis

326

00:15:30,510 --> 00:15:28,000

just think of that as stability think of

327

00:15:32,560 --> 00:15:30,520

the y-axis is turbulence once you've

328

00:15:37,090 --> 00:15:32,570

gone beyond a certain threshold

329

00:15:38,710 --> 00:15:37,100

it pretty much scatters so I think

330

00:15:41,320 --> 00:15:38,720

there's more potential there for you to

331

00:15:45,430 --> 00:15:41,330

go from no turbulence perfectly stable

332

00:15:47,080 --> 00:15:45,440

to setting it off rather than already

333

00:15:51,010 --> 00:15:47,090

having existing turbulence and just

334

00:15:53,170 --> 00:15:51,020

working with that okay so the first

335

00:15:57,970 --> 00:15:53,180

phase of the experiment I didn't really

336

00:15:59,590 --> 00:15:57,980

have very good recruiting resources so

337

00:16:02,710 --> 00:15:59,600

these are really just eight data points

338

00:16:08,430 --> 00:16:02,720

so make of it what you will

339

00:16:12,090 --> 00:16:08,440

the the direction of the effect is

340

00:16:14,590 --> 00:16:12,100

consistent with the hypothesis but not

341

00:16:17,560 --> 00:16:14,600

not really anything to really make of it

342

00:16:19,600 --> 00:16:17,570

with that low amount of data points and

343

00:16:23,440 --> 00:16:19,610

then on the right there is the

344

00:16:25,810 --> 00:16:23,450

correlation with stability I looked at

345

00:16:28,300 --> 00:16:25,820

both the intention and relaxation and

346

00:16:31,270 --> 00:16:28,310

also keeping in mind that the

347

00:16:34,360 --> 00:16:31,280

atmospheric flow is large and affected

348

00:16:37,120 --> 00:16:34,370

by probably things well upstream I

349

00:16:40,120 --> 00:16:37,130

looked also at the entire ten minutes

350

00:16:41,380 --> 00:16:40,130

during session during the session the

351

00:16:43,540 --> 00:16:41,390

entire ten minutes of the session and

352

00:16:46,000 --> 00:16:43,550

compare that to the ten minutes before

353

00:16:49,810 --> 00:16:46,010

and ten minutes after trying to average

354

00:16:53,610 --> 00:16:49,820

together I looked at kind of a power

355

00:16:56,410 --> 00:16:53,620

spectrum with that too so the area under

356

00:16:58,870 --> 00:16:56,420

these dots here would be proportional to

357

00:17:00,940 --> 00:16:58,880

the variance or you can think of it as

358

00:17:03,160 --> 00:17:00,950

turbulence because it's basically we

359

00:17:06,189 --> 00:17:03,170

just measure turbulence as variance in

360

00:17:09,100 --> 00:17:06,199

the wind what I was trying to get at

361

00:17:11,170 --> 00:17:09,110

here was in classical turbulence theory

362

00:17:14,679 --> 00:17:11,180

you have the idea that these large

363

00:17:16,449 --> 00:17:14,689

Eddie's are going to then translate into

364

00:17:19,240 --> 00:17:16,459

smaller and smaller Eddie's and it would

365

00:17:23,050 --> 00:17:19,250

basically cascade downward and so what

366

00:17:25,480 --> 00:17:23,060

I'm wondering is is if there's an

367

00:17:27,760 --> 00:17:25,490

influence going on would the effect be

368

00:17:31,090 --> 00:17:27,770

consistent with that is mind influencing

369

00:17:32,910 --> 00:17:31,100

large Eddie's or the very small little

370

00:17:38,890 --> 00:17:32,920

micro swirls and is that somehow

371

00:17:41,050 --> 00:17:38,900

bubbling up into larger effects so from

372

00:17:42,940 --> 00:17:41,060

the looks of this the only thing that

373

00:17:45,550 --> 00:17:42,950

even really stands out is the very

374

00:17:46,919 --> 00:17:45,560

largest of the Eddie's which correspond

375

00:17:49,889 --> 00:17:46,929

to

376

00:17:56,099 --> 00:17:49,899

think of Eddie's as turbulence whirls

377

00:17:58,769 --> 00:17:56,109

roughly 800 meters in size again you

378

00:18:01,680 --> 00:17:58,779

know this is a the first phase I'm

379

00:18:04,580 --> 00:18:01,690

collecting more data now but this is the

380

00:18:07,710 --> 00:18:04,590

type of analysis I expect to do

381

00:18:10,529 --> 00:18:07,720

okay so conclusions the selection

382

00:18:12,359 --> 00:18:10,539

problem complements the hard problem the

383

00:18:14,970 --> 00:18:12,369

deepest philosophical questions about

384

00:18:17,310 --> 00:18:14,980

consciousness may be in some way related

385

00:18:22,499 --> 00:18:17,320

to to randomness and that might be a way

386

00:18:24,720 --> 00:18:22,509

we can approach it and turbulence is a

387

00:18:28,200 --> 00:18:24,730

good candidate for possibly shedding

388

00:18:31,200 --> 00:18:28,210

light on all of that and the preliminary

389

00:18:33,960 --> 00:18:31,210

results encourage this approach to

390

00:18:36,180 --> 00:18:33,970

continue and I'll leave some

391

00:18:39,450 --> 00:18:36,190

acknowledgments on the board now in

392

00:18:42,810 --> 00:18:39,460

terms of so this is the website to go to

393

00:18:46,470 --> 00:18:42,820

from my experiment unfortunately I got

394

00:18:48,840 --> 00:18:46,480

word yesterday that they had to move my

395

00:18:51,180 --> 00:18:48,850

sonic for and use it for another

396

00:18:54,239 --> 00:18:51,190

experiment but it'll be back up in about

397

00:18:57,950 --> 00:18:54,249

a month and a half so if you want to

398

00:19:01,080 --> 00:18:57,960

write that down it'll it'll be online

399

00:19:07,049 --> 00:19:01,090

sometime this summer and I'm hoping to

400

00:19:11,250 --> 00:19:07,059

get a lot more data for for that and

401
00:19:11,260 --> 00:19:20,279

[Applause]

402
00:19:25,240 --> 00:19:23,200
not yeah there we go okay so I'm gonna

403
00:19:29,200 --> 00:19:25,250
take the chairs prerogative and ask the

404
00:19:31,120 --> 00:19:29,210
first question very simple one who knew

405
00:19:34,990 --> 00:19:31,130
that you were putting an rng on that

406
00:19:39,130 --> 00:19:35,000
plane or did you smuggle it on and just

407
00:19:46,389 --> 00:19:39,140
steal the data yeah I mean I knew about

408
00:19:50,889 --> 00:19:46,399
it my adviser yeah my adviser knew about

409
00:19:53,799 --> 00:19:50,899
it he was pretty supportive of it yeah I

410
00:19:56,470 --> 00:19:53,809
think I explained it to most of the

411
00:20:02,409 --> 00:19:56,480
flight crew I don't know how much they

412
00:20:04,149 --> 00:20:02,419
understood that I'd like to say first

413
00:20:09,490 --> 00:20:04,159

that I'm very impressed with the

414

00:20:11,470 --> 00:20:09,500

airplane experiment i i'd like to sound

415

00:20:14,350 --> 00:20:11,480

a cautionary note with the Kaos

416

00:20:17,759 --> 00:20:14,360

experiment because the track record of

417

00:20:21,129 --> 00:20:17,769

online web-based PK experiments is

418

00:20:22,960 --> 00:20:21,139

frankly not very good so it's a very

419

00:20:27,399 --> 00:20:22,970

difficult genre that you've chosen to

420

00:20:30,519 --> 00:20:27,409

work in there but on the airplane it

421

00:20:32,860 --> 00:20:30,529

sounded as if you were aboard the plane

422

00:20:36,340 --> 00:20:32,870

yourself with the instrumentation is

423

00:20:38,710 --> 00:20:36,350

that correct sometimes we kind of

424

00:20:41,919 --> 00:20:38,720

alternated flight scientists between

425

00:20:45,490 --> 00:20:41,929

missions but yeah I was on it sometimes

426

00:20:53,350 --> 00:20:45,500

but the rhe was all RNG was always there

427

00:20:56,409 --> 00:20:53,360

whether or not you were yeah what do you

428

00:21:04,000 --> 00:20:56,419

think of the possibility that the effect

429

00:21:08,169 --> 00:21:04,010

on the rng was the result of the human

430

00:21:13,889 --> 00:21:08,179

fliers emotional state and stress level

431

00:21:15,909 --> 00:21:13,899

reacting to the turbulence it could be I

432

00:21:22,450 --> 00:21:15,919

there's really there's no way to

433

00:21:24,190 --> 00:21:22,460

disprove that I don't think that I I

434

00:21:26,259 --> 00:21:24,200

know myself and the

435

00:21:31,629 --> 00:21:26,269

let's like the level of turbulence we

436

00:21:33,940 --> 00:21:31,639

encountered was not really

437

00:21:38,200 --> 00:21:33,950

it didn't feel life-threatening to any

438

00:21:42,070 --> 00:21:38,210

degree so yeah that's probably all I can

439

00:21:43,899 --> 00:21:42,080

say I wouldn't say that my emotion or

440

00:21:50,259 --> 00:21:43,909

the pilots emotions probably changed

441

00:21:53,200 --> 00:21:50,269

that much but yeah it's a possibility hi

442

00:21:55,120 --> 00:21:53,210

Danny I was oppressed also with the

443

00:21:56,799 --> 00:21:55,130

airplane experiment but I'd like to urge

444

00:21:58,440 --> 00:21:56,809

a few cautionary notes about the

445

00:22:02,019 --> 00:21:58,450

philosophical portion of your

446

00:22:04,149 --> 00:22:02,029

presentation okay first of all as far as

447

00:22:06,580 --> 00:22:04,159

the selection and hard problems are

448

00:22:08,320 --> 00:22:06,590

concerned I would urge you to forget

449

00:22:09,789 --> 00:22:08,330

about the thought experiments we don't

450

00:22:12,490 --> 00:22:09,799

need the thought experiments we've got

451
00:22:14,379 --> 00:22:12,500
real-life cases in cases of dissociative

452
00:22:16,330 --> 00:22:14,389
identity or multiple personality

453
00:22:21,279 --> 00:22:16,340
disorder where we have multiplication

454
00:22:23,769 --> 00:22:21,289
themselves second I would suggest that

455
00:22:26,230 --> 00:22:23,779
you need to look at content arguments

456
00:22:28,330 --> 00:22:26,240
for the unity of consciousness that what

457
00:22:30,129 --> 00:22:28,340
arguments content arguments for the

458
00:22:32,409 --> 00:22:30,139
unity of consciousness which is

459
00:22:36,090 --> 00:22:32,419
presupposed by any kind of phenomenal

460
00:22:40,930 --> 00:22:36,100
awareness right yeah

461
00:22:42,759 --> 00:22:40,940
so yeah in terms of the the real-life

462
00:22:44,370 --> 00:22:42,769
cases that we have I mean I think the

463
00:22:49,450 --> 00:22:44,380

thought experiments just kind of

464

00:22:53,159 --> 00:22:49,460

complement it but yeah I am discussing

465

00:22:56,169 --> 00:22:53,169

some of those in my paper coming out

466

00:22:58,539 --> 00:22:56,179

yeah what might actually be going on is

467

00:23:00,700 --> 00:22:58,549

an actual like instead of just calling

468

00:23:06,360 --> 00:23:00,710

these potential these might actually be

469

00:23:09,820 --> 00:23:06,370

real infinite amount of actual subjects

470

00:23:11,409 --> 00:23:09,830

let me raise one other question this is

471

00:23:13,060 --> 00:23:11,419

a little more general it has to do with

472

00:23:14,500 --> 00:23:13,070

an assumption I think you're making that

473

00:23:16,600 --> 00:23:14,510

I've called a smallest beautiful

474

00:23:19,330 --> 00:23:16,610

assumption which I think is unjustified

475

00:23:21,430 --> 00:23:19,340

and that is in most areas of science

476
00:23:25,659 --> 00:23:21,440
probably all areas of science we assume

477
00:23:27,970 --> 00:23:25,669
that explanation by analysis in terms of

478
00:23:30,129 --> 00:23:27,980
subsidiary processes can't go on forever

479
00:23:34,240 --> 00:23:30,139
that sooner or later we're going to come

480
00:23:36,639 --> 00:23:34,250
to some fundamental processes that are

481
00:23:37,990 --> 00:23:36,649
just basic they're primitive at that

482
00:23:40,660 --> 00:23:38,000
point we no longer ask

483
00:23:42,250 --> 00:23:40,670
how the phenomena occur that's just the

484
00:23:44,320 --> 00:23:42,260
way the universe works and nothing at a

485
00:23:46,090 --> 00:23:44,330
lower level explains that doesn't mean

486
00:23:48,400 --> 00:23:46,100
explanation comes to a halt it just

487
00:23:52,450 --> 00:23:48,410
means that analytical explanation comes

488
00:23:54,310 --> 00:23:52,460

to a halt now what most scientists also

489

00:23:56,590 --> 00:23:54,320

assume and this is I think unjustified

490

00:23:58,450 --> 00:23:56,600

is that wherever this primitive level of

491

00:24:01,500 --> 00:23:58,460

phenomena are it's always at the level

492

00:24:05,290 --> 00:24:01,510

of the very small subatomic atomic

493

00:24:07,630 --> 00:24:05,300

neurophysiological whatever that is just

494

00:24:09,670 --> 00:24:07,640

an assumption it's not an empirically

495

00:24:11,710 --> 00:24:09,680

established fact and there are powerful

496

00:24:13,780 --> 00:24:11,720

philosophical arguments to suggest that

497

00:24:15,520 --> 00:24:13,790

it's false I think you're making that

498

00:24:18,100 --> 00:24:15,530

assumption and supposing that we need to

499

00:24:22,330 --> 00:24:18,110

look at micro level phenomena to explain

500

00:24:24,400 --> 00:24:22,340

the macro level phenomena Sheldford yeah

501

00:24:29,650 --> 00:24:24,410

I'd be interested to talk more about

502

00:24:31,570 --> 00:24:29,660

that I just want everyone to be clear

503

00:24:32,650 --> 00:24:31,580

that actually wasn't Steve Brown he

504

00:24:37,690 --> 00:24:32,660

asked and that question that was one of

505

00:24:41,110 --> 00:24:37,700

his ultra personalities that asketh do

506

00:24:42,430 --> 00:24:41,120

we have any more questions folks okay we