

1
00:00:03,299 --> 00:00:06,419
[Music]

2
00:00:09,080 --> 00:00:13,699
it's always exciting to get the talk in

3
00:00:11,419 --> 00:00:15,230
front of folks like yourselves and I'm

4
00:00:13,699 --> 00:00:17,089
gonna talk about physics synchronicity

5
00:00:15,230 --> 00:00:18,679
and experimenter expectation my

6
00:00:17,089 --> 00:00:22,579
particular interest is the physics of

7
00:00:18,679 --> 00:00:24,500
synchronicity but I wanted to see if

8
00:00:22,579 --> 00:00:25,909
that could relate to this idea the

9
00:00:24,500 --> 00:00:29,480
experimenter effect or experiment or

10
00:00:25,910 --> 00:00:30,649
expectation so the quote here is the

11
00:00:29,480 --> 00:00:31,939
experimenter effect is the most

12
00:00:30,649 --> 00:00:34,009
important challenge facing modern

13
00:00:31,939 --> 00:00:36,140
parapsychology it may be that we will

14
00:00:34,009 --> 00:00:37,399
not be able to make too much progress in

15
00:00:36,140 --> 00:00:38,719
other areas of the field until the

16
00:00:37,399 --> 00:00:41,719
puzzle of the experimenter effect is

17
00:00:38,719 --> 00:00:44,000
solved that's an important it's an

18
00:00:41,719 --> 00:00:45,230
important thing to talk about and we

19
00:00:44,000 --> 00:00:46,988
will explain I'll explain what that is

20
00:00:45,229 --> 00:00:49,578
as we go if you're not familiar with it

21
00:00:46,988 --> 00:00:50,838
first I want to define the way I use

22
00:00:49,579 --> 00:00:52,219
synchronicity because there are

23
00:00:50,838 --> 00:00:53,659
different definitions but mine is

24
00:00:52,219 --> 00:00:55,460
basically a meaningful coincidence of

25
00:00:53,659 --> 00:00:59,659
physical events that one would otherwise

26
00:00:55,460 --> 00:01:01,308
expect to be random so what I'm going to

27
00:00:59,659 --> 00:01:04,280
say is that a single quantum event is

28
00:01:01,308 --> 00:01:06,439
random but a string of quantum events or

29

00:01:04,280 --> 00:01:07,879
a time line may develop a greater than

30
00:01:06,439 --> 00:01:10,129
likelihood greater than chance

31
00:01:07,879 --> 00:01:11,989
likelihood for a given type of outcome

32
00:01:10,129 --> 00:01:14,719
that is consistent with the belief state

33
00:01:11,989 --> 00:01:16,759
of the experimenter so we're going to

34
00:01:14,719 --> 00:01:18,859
accept obviously that quantum events

35
00:01:16,759 --> 00:01:20,750
collapse into into the eigenstates

36
00:01:18,859 --> 00:01:22,728
randomly but we're going to say that

37
00:01:20,750 --> 00:01:25,459
over time there may be a process that we

38
00:01:22,728 --> 00:01:27,140
can talk about which will lead us to a

39
00:01:25,459 --> 00:01:29,269
particular state that's consistent with

40
00:01:27,140 --> 00:01:32,478
the belief state of the person taking

41
00:01:29,269 --> 00:01:34,629
the action so I'm going to talk about

42
00:01:32,478 --> 00:01:36,950
two separate effects that I've termed

43
00:01:34,629 --> 00:01:38,658

one is a singular value effect and the

44

00:01:36,950 --> 00:01:40,960

other is a history selection effect just

45

00:01:38,659 --> 00:01:43,219

to differentiate them in the discussion

46

00:01:40,959 --> 00:01:44,989

and I'm gonna talk about singular values

47

00:01:43,218 --> 00:01:47,629

explain what they are and as a measure

48

00:01:44,989 --> 00:01:48,709

of belief that's gonna be a core part of

49

00:01:47,629 --> 00:01:50,149

the heart and soul of what I'm talking

50

00:01:48,709 --> 00:01:51,739

about I'm gonna give an example and

51

00:01:50,149 --> 00:01:55,280

we're talking about what our society's

52

00:01:51,739 --> 00:01:57,289

beliefs so some background tools for

53

00:01:55,280 --> 00:01:59,478

those of you who are not physicists a

54

00:01:57,289 --> 00:02:01,368

quantum measurement is generally

55

00:01:59,478 --> 00:02:03,978

described by a positive operator value

56

00:02:01,368 --> 00:02:05,299

the measure a POV M and basically this

57

00:02:03,978 --> 00:02:07,129

is saying that any measurement is

58
00:02:05,299 --> 00:02:09,110
described by a positive operator which

59
00:02:07,129 --> 00:02:11,990
is a matrix that has some special

60
00:02:09,110 --> 00:02:14,420
properties I don't need to go into what

61
00:02:11,990 --> 00:02:16,610
they are for you today but there's also

62
00:02:14,419 --> 00:02:19,339
another fact of linear algebra that a

63
00:02:16,610 --> 00:02:22,040
matrix any matrix can be decomposed into

64
00:02:19,340 --> 00:02:25,549
a combination of

65
00:02:22,039 --> 00:02:27,048
three different other matrices you Sigma

66
00:02:25,549 --> 00:02:30,739
and V transpose that's the T is

67
00:02:27,049 --> 00:02:31,879
transpose and this is if you remember in

68
00:02:30,739 --> 00:02:33,680
fourth and fifth grade when you factor

69
00:02:31,878 --> 00:02:35,120
in numbers you take the number 12 you

70
00:02:33,680 --> 00:02:37,519
can factor it into two times three times

71
00:02:35,120 --> 00:02:39,950
two this is the same thing you're taking

72
00:02:37,519 --> 00:02:41,420
any matrix on the left a this is a four

73
00:02:39,949 --> 00:02:42,919
by four a random one that I created

74
00:02:41,419 --> 00:02:44,298
factoring it into three different

75
00:02:42,919 --> 00:02:45,979
matrices that when you multiply them

76
00:02:44,299 --> 00:02:48,139
together you get the one on the left but

77
00:02:45,979 --> 00:02:50,658
the thing is that these three matrices

78
00:02:48,139 --> 00:02:53,180
have special properties and any matrix

79
00:02:50,658 --> 00:02:54,590
can be described in this way so U and V

80
00:02:53,180 --> 00:02:56,480
has special properties and Sigma

81
00:02:54,590 --> 00:02:58,069
especially I'm going to talk about today

82
00:02:56,479 --> 00:03:00,199
it's a diagonal matrix which means it

83
00:02:58,068 --> 00:03:03,708
has zeros on all the elements except for

84
00:03:00,199 --> 00:03:06,018
the diagonal which have these elements

85
00:03:03,709 --> 00:03:07,400
Sigma and those are going to be what I'm

86

00:03:06,019 --> 00:03:11,989
going to relate to the experimenters

87
00:03:07,400 --> 00:03:13,549
belief that's the central piece so the

88
00:03:11,989 --> 00:03:15,019
postulate how do we interpret the SVD

89
00:03:13,549 --> 00:03:17,030
postulate I'm gonna make is the singular

90
00:03:15,019 --> 00:03:18,408
value is Sigma bias the system toward an

91
00:03:17,030 --> 00:03:21,378
outcome that is consistent with the

92
00:03:18,408 --> 00:03:24,048
belief state of the experimenter these

93
00:03:21,378 --> 00:03:25,098
are essentially weights on the quantum

94
00:03:24,049 --> 00:03:28,519
states or on what I'm going to call

95
00:03:25,098 --> 00:03:30,530
histories so again the singular value

96
00:03:28,519 --> 00:03:31,969
decomposition we have a unitary

97
00:03:30,530 --> 00:03:34,669
transformation I'll describe that in a

98
00:03:31,969 --> 00:03:36,469
second a linear combination and then a

99
00:03:34,669 --> 00:03:38,060
unitary transformation in the linear

100
00:03:36,469 --> 00:03:39,650

common linear transformation area is

101

00:03:38,060 --> 00:03:42,199

where we're going to have each of these

102

00:03:39,650 --> 00:03:44,449

values Σ_1 Σ_2 Σ_3 and Σ

103

00:03:42,199 --> 00:03:46,519

4 are going to provide a weight or

104

00:03:44,449 --> 00:03:47,930

probability for each particular state

105

00:03:46,519 --> 00:03:50,658

and these are going to be somehow I'm

106

00:03:47,930 --> 00:03:52,579

not going to hypothesize on how but

107

00:03:50,658 --> 00:03:54,818

somehow related to the belief state of

108

00:03:52,579 --> 00:03:58,609

the experiment are taking the action

109

00:03:54,818 --> 00:04:00,978

unitary transformations are special also

110

00:03:58,609 --> 00:04:03,349

special matrices and they describe time

111

00:04:00,979 --> 00:04:06,769

evolution of a system that's undisturbed

112

00:04:03,348 --> 00:04:08,438

so there are a very a nice there are

113

00:04:06,769 --> 00:04:11,090

type of transformation that a

114

00:04:08,438 --> 00:04:12,530

mechanistic or materialistic quantum

115
00:04:11,090 --> 00:04:13,848
physicists would like because they don't

116
00:04:12,530 --> 00:04:14,479
involve any kind of collapse of a

117
00:04:13,848 --> 00:04:16,608
wavefunction

118
00:04:14,479 --> 00:04:19,220
it's just how a system evolves over time

119
00:04:16,608 --> 00:04:20,930
if it's not being just disturbed by a

120
00:04:19,220 --> 00:04:22,639
measurement so you've got two of those

121
00:04:20,930 --> 00:04:24,019
on either side first you transform it

122
00:04:22,639 --> 00:04:28,939
unitarily then you provide this

123
00:04:24,019 --> 00:04:30,918
measurement which is given by these

124
00:04:28,939 --> 00:04:32,028
particular values and this is a little

125
00:04:30,918 --> 00:04:36,139
more controversial and then you've got

126
00:04:32,028 --> 00:04:37,158
another unitary transformation and all

127
00:04:36,139 --> 00:04:39,408
I'll go a little bit more into what

128
00:04:37,158 --> 00:04:40,579
those are so hopefully they're not just

129
00:04:39,408 --> 00:04:42,889
block the numbers for you before you

130
00:04:40,579 --> 00:04:44,389
leave so the example I'm going to use is

131
00:04:42,889 --> 00:04:45,978
slits and Wiseman's experiment

132
00:04:44,389 --> 00:04:47,629
experimenter e effects and the remote

133
00:04:45,978 --> 00:04:51,139
detection of staring so in this

134
00:04:47,629 --> 00:04:55,310
experiment they had an experimenter on

135
00:04:51,139 --> 00:04:57,889
the Left looking at a television feed of

136
00:04:55,310 --> 00:04:59,658
subject in a room and the subject was

137
00:04:57,889 --> 00:05:01,460
doing menial tasks reading a magazine

138
00:04:59,658 --> 00:05:03,438
but they had electrodes hooked up to

139
00:05:01,459 --> 00:05:05,089
their finger and the experimenter was

140
00:05:03,439 --> 00:05:08,389
measuring their conductivity of their

141
00:05:05,089 --> 00:05:11,000
skin for excitement excitability and the

142
00:05:08,389 --> 00:05:12,829
experimenter would go from state for 30

143

00:05:11,000 --> 00:05:14,689
seconds of staring at the person on the

144
00:05:12,829 --> 00:05:16,310
screen to not staring at this person on

145
00:05:14,689 --> 00:05:18,740
the screen for 30 seconds and then

146
00:05:16,310 --> 00:05:20,360
staring for another 30 seconds and not

147
00:05:18,740 --> 00:05:21,860
staring for another 30 seconds and of

148
00:05:20,360 --> 00:05:24,800
course this was controlled there was you

149
00:05:21,860 --> 00:05:26,689
know they changed the order of staring

150
00:05:24,800 --> 00:05:28,579
and not staring it so it was a well

151
00:05:26,689 --> 00:05:31,699
controlled trial and Marilyn Schlitz got

152
00:05:28,579 --> 00:05:34,550
significant results and Richard Wiseman

153
00:05:31,699 --> 00:05:37,490
did not everything about the experiments

154
00:05:34,550 --> 00:05:41,329
were identical same room same protocol

155
00:05:37,490 --> 00:05:42,468
same timeframe and this the experiment

156
00:05:41,329 --> 00:05:43,550
was to try and find out the only thing

157
00:05:42,468 --> 00:05:45,740

that was uncontrolled that was

158

00:05:43,550 --> 00:05:48,050

controlled for or that was a variable

159

00:05:45,740 --> 00:05:51,079

was the actual experiment of himself and

160

00:05:48,050 --> 00:05:54,588

it's very interesting and and should be

161

00:05:51,079 --> 00:05:55,639

repeated so I'm gonna try and talk about

162

00:05:54,588 --> 00:05:56,658

what how that could be is there an

163

00:05:55,639 --> 00:05:58,968

explanation that we can come up with

164

00:05:56,658 --> 00:06:00,860

that's physical physics I don't want it

165

00:05:58,968 --> 00:06:02,000

to be something that we just write off

166

00:06:00,860 --> 00:06:03,500

it needs to be explained

167

00:06:02,000 --> 00:06:05,689

obviously as all of you would agree with

168

00:06:03,500 --> 00:06:08,209

me so the main idea I'm going to present

169

00:06:05,689 --> 00:06:10,129

is main idea one history selection

170

00:06:08,209 --> 00:06:11,568

effect future outcomes are grouped

171

00:06:10,129 --> 00:06:17,020

together according to the nature of the

172
00:06:11,569 --> 00:06:20,838
question posed so in quantum mechanics

173
00:06:17,019 --> 00:06:22,848
we we can start the tools we use often

174
00:06:20,838 --> 00:06:25,069
ours you start with a state a quantum

175
00:06:22,848 --> 00:06:26,658
state P on the left and if you want to

176
00:06:25,069 --> 00:06:28,639
understand what it's doing in the future

177
00:06:26,658 --> 00:06:30,468
you then look at all the different ways

178
00:06:28,639 --> 00:06:31,968
that could evolve over time and the

179
00:06:30,468 --> 00:06:34,848
first time step it might evolve into two

180
00:06:31,968 --> 00:06:35,930
states P plus and P minus and then that

181
00:06:34,848 --> 00:06:39,649
each of those states might evolve

182
00:06:35,930 --> 00:06:45,649
further into P plus plus + P + - + P - +

183
00:06:39,649 --> 00:06:46,939
+ P minus - up here so this happens at

184
00:06:45,649 --> 00:06:49,129
any level that you want to do I've only

185
00:06:46,939 --> 00:06:51,310
done a simple example where it goes into

186
00:06:49,129 --> 00:06:53,480
two states at a time

187
00:06:51,310 --> 00:06:53,899
but these future states over here on the

188
00:06:53,480 --> 00:06:57,379
right

189
00:06:53,899 --> 00:06:59,629
represent states at a future time state

190
00:06:57,379 --> 00:07:01,490
and I can do this without actually

191
00:06:59,629 --> 00:07:03,228
having to wait for them I can actually

192
00:07:01,490 --> 00:07:04,400
predict and look look at a given system

193
00:07:03,228 --> 00:07:06,500
and say well this is how it's going to

194
00:07:04,399 --> 00:07:08,750
evolve over time I can write down an

195
00:07:06,500 --> 00:07:10,639
actual form for the state of a system

196
00:07:08,750 --> 00:07:13,220
and at a future time and I have to

197
00:07:10,639 --> 00:07:16,819
include all of these possible states now

198
00:07:13,220 --> 00:07:18,740
what I'm suggesting is that based on the

199
00:07:16,819 --> 00:07:20,750
question you posed you're going to

200

00:07:18,740 --> 00:07:24,769
you're going to generate a series of

201
00:07:20,750 --> 00:07:26,300
possible future outcomes but it's up to

202
00:07:24,769 --> 00:07:27,740
the experiment of themselves the physicist

203
00:07:26,300 --> 00:07:30,410
in their notebook how they want to group

204
00:07:27,740 --> 00:07:32,180
those outcomes in their in their

205
00:07:30,410 --> 00:07:35,780
calculations and I'm going to suggest

206
00:07:32,180 --> 00:07:37,550
it's always possible to to group them

207
00:07:35,779 --> 00:07:39,138
any way you want as long as you're

208
00:07:37,550 --> 00:07:41,360
consistent there's any number of

209
00:07:39,139 --> 00:07:43,430
different ways to write the final states

210
00:07:41,360 --> 00:07:45,710
here there's not just one correct way

211
00:07:43,430 --> 00:07:47,990
there's any number of different ways to

212
00:07:45,709 --> 00:07:49,219
do it as long as they're consistent and

213
00:07:47,990 --> 00:07:50,960
the whole branch of consistent histories

214
00:07:49,220 --> 00:07:52,250

quantum theory deals with how do you

215

00:07:50,959 --> 00:07:54,560

come up with understanding whether a

216

00:07:52,250 --> 00:07:57,680

system and outcome set is consistent or

217

00:07:54,560 --> 00:07:59,810

not but the idea is that if I ask a

218

00:07:57,680 --> 00:08:02,120

question is it possible to detect when

219

00:07:59,810 --> 00:08:03,889

someone is staring at you then I can

220

00:08:02,120 --> 00:08:05,840

look at all the possible future outcomes

221

00:08:03,889 --> 00:08:08,360

of a situation and group those outcomes

222

00:08:05,839 --> 00:08:11,659

according to situation according to

223

00:08:08,360 --> 00:08:12,259

outcomes that are positive results where

224

00:08:11,660 --> 00:08:13,880

it is

225

00:08:12,259 --> 00:08:15,168

the person does detect that they're

226

00:08:13,879 --> 00:08:17,629

being stared at and negative those

227

00:08:15,168 --> 00:08:21,319

results whether they can they don't

228

00:08:17,629 --> 00:08:22,819

detect being stared at and it's up to

229
00:08:21,319 --> 00:08:26,089
the experiment or how they write those

230
00:08:22,819 --> 00:08:28,668
down and how they group them and that's

231
00:08:26,089 --> 00:08:30,829
our first step this is the same kind of

232
00:08:28,668 --> 00:08:32,929
tree where this initial state branches

233
00:08:30,829 --> 00:08:34,879
out into P plus P minus P plus plus P

234
00:08:32,929 --> 00:08:36,379
plus minus and then these are all the

235
00:08:34,879 --> 00:08:40,099
future States there's 16 of them and

236
00:08:36,379 --> 00:08:41,629
this random example that I created so

237
00:08:40,099 --> 00:08:43,278
I'm gonna define something called

238
00:08:41,629 --> 00:08:46,000
synchronicity States these are just

239
00:08:43,278 --> 00:08:48,350
States when you get an effect where the

240
00:08:46,000 --> 00:08:51,289
experimenter is looking at the person

241
00:08:48,350 --> 00:08:52,790
and the subject says they feel watched

242
00:08:51,289 --> 00:08:54,559
so there's a correlation and apparent

243
00:08:52,789 --> 00:08:55,549
correlation or when the experimenter is

244
00:08:54,559 --> 00:08:56,689
not looking at the subject and the

245
00:08:55,549 --> 00:08:57,769
subject says they do not feel watched

246
00:08:56,690 --> 00:08:59,839
those are both the states that we're

247
00:08:57,769 --> 00:09:01,009
looking for those are the ones we want

248
00:08:59,839 --> 00:09:03,360
to have happen if we have a positive

249
00:09:01,009 --> 00:09:05,129
effect

250
00:09:03,360 --> 00:09:07,019
the states where the experiment is

251
00:09:05,129 --> 00:09:08,429
looking and the subject is saying they

252
00:09:07,019 --> 00:09:11,459
do not feel watch obviously the ones

253
00:09:08,429 --> 00:09:12,989
that would give us an older result so

254
00:09:11,458 --> 00:09:16,139
let's just highlight on our on our graph

255
00:09:12,990 --> 00:09:19,370
here these in my particular example I I

256
00:09:16,139 --> 00:09:21,328
chose those two to be the states that

257

00:09:19,370 --> 00:09:23,000
correspond to those synchronicity events

258
00:09:21,328 --> 00:09:25,649
so those are the positive results and

259
00:09:23,000 --> 00:09:28,350
I've just grouped all the ones that

260
00:09:25,649 --> 00:09:31,200
don't involve any kind of synchronicity

261
00:09:28,350 --> 00:09:33,480
or any kind of positive result into a

262
00:09:31,200 --> 00:09:35,100
different branch over here and then into

263
00:09:33,480 --> 00:09:36,720
this branch over here we also have none

264
00:09:35,100 --> 00:09:37,889
of those synchronicities and so really

265
00:09:36,720 --> 00:09:40,470
the only only branch that has

266
00:09:37,889 --> 00:09:42,600
synchronicity is p + + according to the

267
00:09:40,470 --> 00:09:45,329
way I've grouped it now as long as I'm

268
00:09:42,600 --> 00:09:46,860
consistent I'm allowed to do that so the

269
00:09:45,328 --> 00:09:51,269
question is I haven't really done

270
00:09:46,860 --> 00:09:52,379
anything yet but in in in the

271
00:09:51,269 --> 00:09:54,240

mathematics of it you would start with a

272

00:09:52,379 --> 00:09:56,309
state P minus P plus you're in a

273

00:09:54,240 --> 00:09:58,350
superposition state at the initial time

274

00:09:56,309 --> 00:09:59,819
but you can expand that by looking into

275

00:09:58,350 --> 00:10:02,659
the future so I'm gonna look in the

276

00:09:59,820 --> 00:10:04,890
future and say well I went from time 0 I

277

00:10:02,659 --> 00:10:06,088
jumped it to time - and I said well

278

00:10:04,889 --> 00:10:07,949
what's going on at time 2 I'm gonna

279

00:10:06,089 --> 00:10:10,380
write my system in terms of all the

280

00:10:07,950 --> 00:10:12,570
possible states at time 2 you might

281

00:10:10,379 --> 00:10:14,009
notice that there were 16 earlier of the

282

00:10:12,570 --> 00:10:15,660
final states on the top there were 16

283

00:10:14,009 --> 00:10:19,379
States I've condensed a bunch of them

284

00:10:15,659 --> 00:10:20,969
down into these 4 or in and then I've

285

00:10:19,379 --> 00:10:22,169
left these foreign condensed you you're

286

00:10:20,970 --> 00:10:23,790

also allowed to do that kind of

287

00:10:22,169 --> 00:10:27,088

combinations just to make it easier to

288

00:10:23,789 --> 00:10:29,278

see but basically what I'm doing is

289

00:10:27,089 --> 00:10:30,630

projecting the state of the system into

290

00:10:29,278 --> 00:10:33,659

the future looking at the possible

291

00:10:30,629 --> 00:10:34,740

outcomes and then this is what I call

292

00:10:33,659 --> 00:10:37,939

the library of all the different

293

00:10:34,740 --> 00:10:40,289

possible outcomes and write it down

294

00:10:37,940 --> 00:10:43,500

again here is a picture of those two

295

00:10:40,289 --> 00:10:45,809

states and those correspond to these two

296

00:10:43,500 --> 00:10:47,879

states $p + + 1 s_1$ and this one down here

297

00:10:45,809 --> 00:10:49,019

so those are what I call the the

298

00:10:47,879 --> 00:10:53,490

synchronous new States or the states

299

00:10:49,019 --> 00:10:55,860

that will give me a positive result here

300
00:10:53,490 --> 00:10:58,320
is one important piece the next thing I

301
00:10:55,860 --> 00:10:59,879
do is I take my action on the system and

302
00:10:58,320 --> 00:11:03,000
by taking the action notice I'm taking

303
00:10:59,879 --> 00:11:05,159
it I'm applying the this is right here

304
00:11:03,000 --> 00:11:08,129
from the eye to the Sigma's so the eye

305
00:11:05,159 --> 00:11:09,659
is the operator of my action I'm doing

306
00:11:08,129 --> 00:11:13,649
it all at time two I'm doing it in the

307
00:11:09,659 --> 00:11:15,569
future state and when I apply it to my

308
00:11:13,649 --> 00:11:17,208
eight dimensional vector here it just

309
00:11:15,570 --> 00:11:18,499
multiplies Sigma 1 times the first

310
00:11:17,208 --> 00:11:19,969
Sigma two times the second element and

311
00:11:18,499 --> 00:11:22,428
it just creates a linear transformation

312
00:11:19,970 --> 00:11:25,639
so each of this vector is now weighted

313
00:11:22,428 --> 00:11:27,708
according to the Sigma's so now I have a

314

00:11:25,639 --> 00:11:29,749
future set of possible states that are

315
00:11:27,708 --> 00:11:32,588
weighted by these Sigma's and I'm going

316
00:11:29,749 --> 00:11:34,939
to suggest that these Sigma's are

317
00:11:32,589 --> 00:11:37,490
correlated to the expectation of the

318
00:11:34,938 --> 00:11:38,719
experimenter so now if that's the case

319
00:11:37,490 --> 00:11:40,698
you've now weighted the possible

320
00:11:38,720 --> 00:11:42,589
outcomes by that can by the expectation

321
00:11:40,698 --> 00:11:45,229
of the experimenter that's a huge leap I

322
00:11:42,589 --> 00:11:46,339
understand that so that's that's what we

323
00:11:45,230 --> 00:11:50,928
might have some questions on and I'll

324
00:11:46,339 --> 00:11:52,519
try to explain more this is the SVD now

325
00:11:50,928 --> 00:11:54,678
let's say instead of having all the

326
00:11:52,519 --> 00:11:56,720
Sigma's be equal let's say sigma v and

327
00:11:54,678 --> 00:11:58,399
sigma 8 are higher than the others this

328
00:11:56,720 --> 00:12:01,579

would correspond to the experimenter

329

00:11:58,399 --> 00:12:05,688

having a higher expectation of outcome 5

330

00:12:01,578 --> 00:12:06,888

or how come 8 and these both correspond

331

00:12:05,688 --> 00:12:08,118

to our synchronicity states so this is

332

00:12:06,889 --> 00:12:09,948

like the experimenter saying I believe

333

00:12:08,119 --> 00:12:10,999

I'm going to get a positive result these

334

00:12:09,948 --> 00:12:13,278

are the these are the states that

335

00:12:10,999 --> 00:12:14,839

correspond to that belief and so these

336

00:12:13,278 --> 00:12:16,369

are the Sigma's that would would be

337

00:12:14,839 --> 00:12:18,410

activated for them or that they would be

338

00:12:16,369 --> 00:12:22,129

that their belief would be causing sigma

339

00:12:18,409 --> 00:12:24,110

v and sigma v 8 to be larger and the

340

00:12:22,129 --> 00:12:26,839

result of that when you multiply it out

341

00:12:24,110 --> 00:12:28,159

is it of course sigma v the v state over

342

00:12:26,839 --> 00:12:29,689

here and the 5th and the 8th state over

343
00:12:28,159 --> 00:12:33,669
here are both larger than the other

344
00:12:29,688 --> 00:12:33,669
states assuming everything else is equal

345
00:12:33,909 --> 00:12:39,110
again you have the synchronicity States

346
00:12:37,119 --> 00:12:41,660
just to remind you these are the two

347
00:12:39,110 --> 00:12:43,850
states where we're aiming for and then

348
00:12:41,659 --> 00:12:45,919
in here that this is the initial time

349
00:12:43,850 --> 00:12:48,798
this is the final time when we're doing

350
00:12:45,919 --> 00:12:49,849
all these calculations but what I'm

351
00:12:48,798 --> 00:12:52,009
really curious about is what's gonna

352
00:12:49,850 --> 00:12:56,209
happen at the next time step where am I

353
00:12:52,009 --> 00:12:58,339
going to end up at time 1 because at

354
00:12:56,208 --> 00:12:59,899
time 0 I'm here and at time 2 I'm

355
00:12:58,339 --> 00:13:01,939
interested in becoming here or I think

356
00:12:59,899 --> 00:13:05,568
I'm gonna be here well where does the

357
00:13:01,938 --> 00:13:08,028
math lead me to end up here what you do

358
00:13:05,568 --> 00:13:10,878
is you you collapse this vector at time

359
00:13:08,028 --> 00:13:13,578
T 2 down to a vector it I mean yeah down

360
00:13:10,879 --> 00:13:16,490
to a vector at time T 1 which is P - P -

361
00:13:13,578 --> 00:13:18,409
plus P plus minus P plus plus you see

362
00:13:16,490 --> 00:13:20,089
these four states those are the same as

363
00:13:18,409 --> 00:13:22,219
these four states here so I'm basically

364
00:13:20,089 --> 00:13:24,499
writing my my later state in terms of an

365
00:13:22,220 --> 00:13:26,839
earlier earlier state and the result of

366
00:13:24,499 --> 00:13:29,928
that is that P plus plus is is the only

367
00:13:26,839 --> 00:13:30,680
one that gets larger because this fifth

368
00:13:29,928 --> 00:13:33,379
state in this eights

369
00:13:30,679 --> 00:13:36,469
largerr so my meant the result of my

370
00:13:33,379 --> 00:13:38,838
action if I believe that I will get

371

00:13:36,470 --> 00:13:40,160
positive results is to wait state 5 and

372
00:13:38,839 --> 00:13:42,529
state 8 have more heavily than the

373
00:13:40,159 --> 00:13:43,969
others and therefore to wait the P plus

374
00:13:42,528 --> 00:13:48,759
plus state more heavily than these other

375
00:13:43,970 --> 00:13:50,870
three at time two and that's this state

376
00:13:48,759 --> 00:13:52,970
so what I'm trying to describe is a

377
00:13:50,870 --> 00:13:56,120
process not a physical process where we

378
00:13:52,970 --> 00:13:58,670
are inhibiting the actual physical

379
00:13:56,120 --> 00:14:06,139
nature of sigh I'm saying that there is

380
00:13:58,669 --> 00:14:07,338
a a set of histories or of of timelines

381
00:14:06,139 --> 00:14:09,080
that were more likely to end up in

382
00:14:07,339 --> 00:14:10,970
because we are projecting into the

383
00:14:09,080 --> 00:14:13,670
future and acting as if these states are

384
00:14:10,970 --> 00:14:16,310
going to be real and that leads us to

385
00:14:13,669 --> 00:14:20,028

have a more likely chance to end up in

386

00:14:16,309 --> 00:14:21,409

the state that leads there now this

387

00:14:20,028 --> 00:14:22,580

state is the only one connected to the

388

00:14:21,409 --> 00:14:23,838

synchronicity States and that's why it

389

00:14:22,580 --> 00:14:26,810

ends up being more likely than the other

390

00:14:23,839 --> 00:14:29,720

three states so after this this one

391

00:14:26,809 --> 00:14:32,239

action I've gone from a superposition of

392

00:14:29,720 --> 00:14:36,528

these two states into a more likely hood

393

00:14:32,240 --> 00:14:38,330

of being in this state so the main idea

394

00:14:36,528 --> 00:14:40,338

to is a singular value effect I just

395

00:14:38,330 --> 00:14:41,750

showed that which is that the Sigma are

396

00:14:40,339 --> 00:14:43,010

proposed to be the experimenters level

397

00:14:41,750 --> 00:14:45,139

of confidence or belief that an outcome

398

00:14:43,009 --> 00:14:47,659

is possible so I believe I will obtain

399

00:14:45,139 --> 00:14:50,028

positive results that would create a

400
00:14:47,659 --> 00:14:53,600
higher Sigma for those particular those

401
00:14:50,028 --> 00:14:56,000
particular states so if you want to just

402
00:14:53,600 --> 00:14:58,129
take a quick example I'm not very happy

403
00:14:56,000 --> 00:14:59,990
with the state of this concept in the

404
00:14:58,129 --> 00:15:02,419
mathematics of it it's it's coming along

405
00:14:59,990 --> 00:15:04,399
but I'm not confident yet but just to

406
00:15:02,419 --> 00:15:07,299
show you how these what I've shown you

407
00:15:04,399 --> 00:15:10,159
works out with numbers if you have a

408
00:15:07,299 --> 00:15:11,719
sigma 5 into Sigma 8 slightly higher

409
00:15:10,159 --> 00:15:13,219
than 1 and all the rest of the Sigma's

410
00:15:11,720 --> 00:15:14,690
are slightly lower than 1 to compensate

411
00:15:13,220 --> 00:15:16,009
this is saying that you're going to

412
00:15:14,690 --> 00:15:17,990
weight the fifth state in the eighth

413
00:15:16,009 --> 00:15:20,659
state more heavily or the synchronicity

414
00:15:17,990 --> 00:15:23,539
States more heavily what that leads to

415
00:15:20,659 --> 00:15:25,730
is you have these four states over here

416
00:15:23,539 --> 00:15:28,069
P minus minus P minus plus P plus minus

417
00:15:25,730 --> 00:15:30,379
and P plus plus in the unbiased state

418
00:15:28,070 --> 00:15:32,120
they have a 25% chance of happening in

419
00:15:30,379 --> 00:15:36,169
other words there's a 25% of each of the

420
00:15:32,120 --> 00:15:39,560
states to happen in the bias States with

421
00:15:36,169 --> 00:15:41,990
these values for Sigma 5 and Sigma 8 you

422
00:15:39,559 --> 00:15:43,338
get a slightly less probability for the

423
00:15:41,990 --> 00:15:44,539
first three states and a slightly more

424
00:15:43,339 --> 00:15:46,100
probability for the last

425
00:15:44,539 --> 00:15:48,829
you're slightly more likely in that

426
00:15:46,100 --> 00:15:52,970
moment to end up in a time line that

427
00:15:48,830 --> 00:15:54,500
will have the positive effect it doesn't

428

00:15:52,970 --> 00:15:56,210
mean that you definitely will because

429
00:15:54,500 --> 00:15:59,269
you could still end up in this history

430
00:15:56,210 --> 00:16:00,860
or this history but you actually have a

431
00:15:59,269 --> 00:16:03,230
higher percentage chance because two out

432
00:16:00,860 --> 00:16:05,090
of the four states now have a likelihood

433
00:16:03,230 --> 00:16:07,490
of getting a synchronicity or a positive

434
00:16:05,090 --> 00:16:09,910
result whereas before it was only two

435
00:16:07,490 --> 00:16:14,149
out of 16 states which is a much less

436
00:16:09,909 --> 00:16:17,299
percentage obviously and that's the main

437
00:16:14,149 --> 00:16:19,819
idea I'd like to convey the idea of by

438
00:16:17,299 --> 00:16:21,229
choosing a particular history by

439
00:16:19,820 --> 00:16:22,879
imagining a possible future we're

440
00:16:21,230 --> 00:16:25,070
choosing a particular history and end up

441
00:16:22,879 --> 00:16:26,240
more likely in a situation to have that

442
00:16:25,070 --> 00:16:27,770

happen it doesn't mean it definitely

443

00:16:26,240 --> 00:16:29,330

will happen but it's more likely at that

444

00:16:27,769 --> 00:16:33,610

point because we've self selected into a

445

00:16:29,330 --> 00:16:33,610

history which has those events happening

446

00:16:35,230 --> 00:16:39,860

so conclusion if we act as if a future

447

00:16:38,149 --> 00:16:41,509

outcome is true we are more likely to

448

00:16:39,860 --> 00:16:43,190

find ourselves in state P plus plus

449

00:16:41,509 --> 00:16:45,439

after a single time step which has

450

00:16:43,190 --> 00:16:48,710

greater likelihood of that state being

451

00:16:45,440 --> 00:16:51,620

true I don't know if that makes sense

452

00:16:48,710 --> 00:16:54,050

the way I put it there but mathematical

453

00:16:51,620 --> 00:16:55,279

model needs to work I need to work more

454

00:16:54,049 --> 00:16:56,689

on it I wasn't finished by the time I

455

00:16:55,279 --> 00:16:58,669

came here I thought I was but it ended

456

00:16:56,690 --> 00:17:00,770

up not being satisfactory so more to

457
00:16:58,669 --> 00:17:06,199
come on that I'm definitely open to

458
00:17:00,769 --> 00:17:08,000
ideas and thoughts summary review every

459
00:17:06,199 --> 00:17:09,410
action by the experimenter first it

460
00:17:08,000 --> 00:17:11,180
groups future outcomes according to the

461
00:17:09,410 --> 00:17:13,940
question posed the history selection

462
00:17:11,180 --> 00:17:15,820
effect by asking the question you're

463
00:17:13,940 --> 00:17:18,890
determining the possible outcomes and

464
00:17:15,819 --> 00:17:20,359
grouping them accordingly doesn't mean

465
00:17:18,890 --> 00:17:21,620
that's the actual outcomes that are all

466
00:17:20,359 --> 00:17:23,539
possible but you're determining it by

467
00:17:21,619 --> 00:17:25,159
the question you asked second you bias

468
00:17:23,539 --> 00:17:27,379
the future states that this person

469
00:17:25,160 --> 00:17:28,910
affects that she expects that's the

470
00:17:27,380 --> 00:17:30,230
singular value effect by applying the

471
00:17:28,910 --> 00:17:33,350
thing of the values you bias the states

472
00:17:30,230 --> 00:17:34,789
and then you write the final state not

473
00:17:33,349 --> 00:17:35,929
in the present but in the next time step

474
00:17:34,789 --> 00:17:37,279
so that you can see what's the

475
00:17:35,930 --> 00:17:39,080
likelihood of getting to the next step

476
00:17:37,279 --> 00:17:40,430
and where will you be most likely when

477
00:17:39,079 --> 00:17:43,429
you get there you'll be closer to those

478
00:17:40,430 --> 00:17:44,450
synchronicities and hopefully the

479
00:17:43,430 --> 00:17:45,830
synchronicities are things that you want

480
00:17:44,450 --> 00:17:46,970
they could also be things you don't want

481
00:17:45,829 --> 00:17:49,429
because what I'm what I'm basically

482
00:17:46,970 --> 00:17:50,600
saying is this has to do with belief now

483
00:17:49,430 --> 00:17:52,610
belief is something that we don't really

484
00:17:50,599 --> 00:17:53,629
understand a whole lot about and

485

00:17:52,609 --> 00:17:57,169
obviously there needs to be more work

486
00:17:53,630 --> 00:17:58,520
done on that but I believe it's I think

487
00:17:57,170 --> 00:18:01,250
it's beliefs not thoughts

488
00:17:58,519 --> 00:18:03,950
influence the outcome there's you know

489
00:18:01,250 --> 00:18:05,000
whole New Age movement of people who who

490
00:18:03,950 --> 00:18:07,039
haven't thought enough about it and

491
00:18:05,000 --> 00:18:10,460
maybe are thinking that an individual

492
00:18:07,039 --> 00:18:11,599
thought can change the potential for

493
00:18:10,460 --> 00:18:13,370
synchronicity or the potential for

494
00:18:11,599 --> 00:18:15,049
outcomes in the future I would say that

495
00:18:13,369 --> 00:18:16,579
individual thoughts can affect your

496
00:18:15,049 --> 00:18:18,109
beliefs if you keep applying them again

497
00:18:16,579 --> 00:18:18,829
and again and again but your beliefs are

498
00:18:18,109 --> 00:18:20,569
like a big ship

499
00:18:18,829 --> 00:18:21,889

that's hard to steer and so it's your

500

00:18:20,569 --> 00:18:23,839

beliefs that are actually determining

501

00:18:21,890 --> 00:18:27,860

the types of synchronicities or the

502

00:18:23,839 --> 00:18:29,929

types of outcomes you'll get and I'll

503

00:18:27,859 --> 00:18:31,669

give an example unintentional belief

504

00:18:29,930 --> 00:18:34,940

from gene ratings experiment I forget

505

00:18:31,670 --> 00:18:37,730

what was called but he did this

506

00:18:34,940 --> 00:18:41,390

experiment where the the meditator is

507

00:18:37,730 --> 00:18:43,819

trying to influence the interference

508

00:18:41,390 --> 00:18:45,259

device in the other room and about

509

00:18:43,819 --> 00:18:47,269

halfway through the experiment he

510

00:18:45,259 --> 00:18:49,609

analyzed the data just on a whim and

511

00:18:47,269 --> 00:18:51,619

from what I remember and found it to be

512

00:18:49,609 --> 00:18:54,409

incredibly positive he was getting

513

00:18:51,619 --> 00:18:56,779

really correlated results and actually

514
00:18:54,410 --> 00:18:58,910
from that point on his results went down

515
00:18:56,779 --> 00:19:01,399
and he didn't explain it in any

516
00:18:58,910 --> 00:19:03,769
particular way but he said it made me

517
00:19:01,400 --> 00:19:05,390
wonder if my knowing that the system

518
00:19:03,769 --> 00:19:10,309
that it was going well and my disbelief

519
00:19:05,390 --> 00:19:12,440
at that fact ruined the future of the

520
00:19:10,309 --> 00:19:13,789
experiment because I when I saw it when

521
00:19:12,440 --> 00:19:15,320
he saw the results he he was in

522
00:19:13,789 --> 00:19:16,279
disbelief he was a pretty good skeptic

523
00:19:15,319 --> 00:19:17,839
and he was like I can't believe this is

524
00:19:16,279 --> 00:19:20,660
working you know I got to keep doing it

525
00:19:17,839 --> 00:19:22,369
but this just it's amazing and so that's

526
00:19:20,660 --> 00:19:24,440
an example of where even though the

527
00:19:22,369 --> 00:19:25,399
person is going through the rest of the

528
00:19:24,440 --> 00:19:27,440
experiment thinking that they're going

529
00:19:25,400 --> 00:19:29,450
to you know do it objectively their

530
00:19:27,440 --> 00:19:31,940
unintentional belief may have been you

531
00:19:29,450 --> 00:19:33,769
know this really isn't possible and they

532
00:19:31,940 --> 00:19:35,960
actually ended up biasing the system as

533
00:19:33,769 --> 00:19:37,609
a result so I would say that thoughts

534
00:19:35,960 --> 00:19:39,319
and actions are important only as much

535
00:19:37,609 --> 00:19:41,149
as they reflect the inner beliefs of the

536
00:19:39,319 --> 00:19:46,909
person doing the action or the

537
00:19:41,150 --> 00:19:48,019
experiment and obviously Brenda Donna's

538
00:19:46,910 --> 00:19:50,000
experienced the inner for the

539
00:19:48,019 --> 00:19:50,930
experimenter effect and I've talked with

540
00:19:50,000 --> 00:19:52,759
her a little bit about that today but

541
00:19:50,930 --> 00:19:56,360
you could probably ask her what her

542

00:19:52,759 --> 00:19:57,559
experiences have been so if I didn't

543
00:19:56,359 --> 00:19:59,299
explain it earlier the experiment of

544
00:19:57,559 --> 00:20:01,429
fact is when the experimenters biases or

545
00:19:59,299 --> 00:20:02,389
preferences actually seems to influence

546
00:20:01,430 --> 00:20:04,670
the outcome of the experiment that

547
00:20:02,390 --> 00:20:07,910
they're doing so why is this important

548
00:20:04,670 --> 00:20:09,470
to society and the paradigm change my

549
00:20:07,910 --> 00:20:10,880
actions what are what are society's

550
00:20:09,470 --> 00:20:11,610
current beliefs well here's a couple of

551
00:20:10,880 --> 00:20:15,240
them that I like to point

552
00:20:11,609 --> 00:20:16,558
now my actions are irrelevant is that

553
00:20:15,240 --> 00:20:19,380
what we think political change is

554
00:20:16,558 --> 00:20:21,899
hopeless alternatives to the commuter

555
00:20:19,380 --> 00:20:23,429
lifestyle are not realistic or changing

556
00:20:21,900 --> 00:20:25,830

to sustainable energy resources is

557

00:20:23,429 --> 00:20:28,110

expensive all of those are things that

558

00:20:25,829 --> 00:20:30,899

could be verified if you want to or

559

00:20:28,109 --> 00:20:32,669

could be unverified if you have

560

00:20:30,900 --> 00:20:33,750

different data it's based on the mind

561

00:20:32,670 --> 00:20:36,150

frame over the person because they're

562

00:20:33,750 --> 00:20:38,460

all speaking about the future and about

563

00:20:36,150 --> 00:20:39,540

things we have no control over what I'm

564

00:20:38,460 --> 00:20:41,579

trying to point out is if we don't

565

00:20:39,539 --> 00:20:44,450

change those beliefs we may cause them

566

00:20:41,579 --> 00:20:47,369

to be true whatever the beliefs are

567

00:20:44,450 --> 00:20:49,769

they're gonna be influenced by the by

568

00:20:47,369 --> 00:20:51,899

these Sigma are our brains affecting

569

00:20:49,769 --> 00:20:53,609

these singular values and affecting the

570

00:20:51,900 --> 00:20:55,380

possible futures that we end up in and

571
00:20:53,609 --> 00:20:56,879
we end up in a possible future where

572
00:20:55,380 --> 00:20:58,169
things that we don't like are coming

573
00:20:56,880 --> 00:21:01,080
true rather than things we don't would

574
00:20:58,169 --> 00:21:02,880
that we do like so it may be of utmost

575
00:21:01,079 --> 00:21:04,409
urgency to imagine the future we wish to

576
00:21:02,880 --> 00:21:06,809
have not the one we were afraid to

577
00:21:04,410 --> 00:21:14,279
happen because we may believe in each of

578
00:21:06,808 --> 00:21:16,379
those just as equally thank you thank

579
00:21:14,279 --> 00:21:18,960
you very much can we have questions let

580
00:21:16,380 --> 00:21:21,510
me ask the first question ask I would

581
00:21:18,960 --> 00:21:24,660
what do you think would be an

582
00:21:21,509 --> 00:21:29,490
explanation for the physical mechanism

583
00:21:24,660 --> 00:21:31,710
yes that would cause beliefs to or even

584
00:21:29,490 --> 00:21:35,039
beliefs I assume were the same as asking

585
00:21:31,710 --> 00:21:36,120
the questions to influence the branching

586
00:21:35,039 --> 00:21:38,399
process because that's what you're

587
00:21:36,119 --> 00:21:39,418
really talking about mm-hmm so what

588
00:21:38,400 --> 00:21:40,820
would the physical mechanism be I

589
00:21:39,419 --> 00:21:43,160
haven't talked about it at all right

590
00:21:40,819 --> 00:21:49,980
that's a great question and I don't know

591
00:21:43,160 --> 00:21:52,769
my interest is in understanding the

592
00:21:49,980 --> 00:21:57,029
nature of the space in which this

593
00:21:52,769 --> 00:21:59,279
branching is happening it's branching

594
00:21:57,029 --> 00:22:03,210
what spaces is in to me this is an

595
00:21:59,279 --> 00:22:05,250
information space and I I would imagine

596
00:22:03,210 --> 00:22:08,130
that a parallels physical space but

597
00:22:05,250 --> 00:22:10,259
obviously is described differently and

598
00:22:08,130 --> 00:22:11,790
in this information space all the future

599

00:22:10,259 --> 00:22:13,950
outcomes are pot that are possible are

600
00:22:11,789 --> 00:22:16,740
already existing in a branch tree like

601
00:22:13,950 --> 00:22:18,298
this so I the work I'm continuing to do

602
00:22:16,740 --> 00:22:20,669
has to do with Fourier transformation

603
00:22:18,298 --> 00:22:22,980
and and how that relates to all the

604
00:22:20,669 --> 00:22:24,640
different possible future outcomes which

605
00:22:22,980 --> 00:22:27,240
are nearly infinite

606
00:22:24,640 --> 00:22:30,580
hower self-selecting two specific

607
00:22:27,240 --> 00:22:32,769
outcomes by this process and physical

608
00:22:30,579 --> 00:22:34,240
mechanism I wonder if it's a physical

609
00:22:32,769 --> 00:22:35,740
mechanism or if somehow it can be

610
00:22:34,240 --> 00:22:38,140
explained by this process of selecting

611
00:22:35,740 --> 00:22:40,809
among those different states and over

612
00:22:38,140 --> 00:22:41,680
time selecting different outcomes but

613
00:22:40,809 --> 00:22:46,599

it's a good question I don't know the

614

00:22:41,680 --> 00:22:48,430

answer Louis guy Emery Mort yeah I'd

615

00:22:46,599 --> 00:22:51,609

like to continue to engage in some

616

00:22:48,430 --> 00:22:53,580

youthful speculation here so continuing

617

00:22:51,609 --> 00:22:55,899

on the question that you were just asked

618

00:22:53,579 --> 00:22:57,939

I'm wondering if you can you've

619

00:22:55,900 --> 00:22:59,860

considered that perhaps beliefs are

620

00:22:57,940 --> 00:23:04,840

actually could be described as like a

621

00:22:59,859 --> 00:23:08,379

Rupert Sheldrake morphic field and as

622

00:23:04,839 --> 00:23:12,399

you put your beliefs out there you and

623

00:23:08,380 --> 00:23:17,080

you actually they somehow act within you

624

00:23:12,400 --> 00:23:19,530

perhaps you dig a canal like Rio dwith

625

00:23:17,079 --> 00:23:22,139

that belief that allows the the ball

626

00:23:19,529 --> 00:23:26,859

synchronistically to more often than not

627

00:23:22,140 --> 00:23:29,110

roll to that five or eight destination

628
00:23:26,859 --> 00:23:31,899
right well I think that this this

629
00:23:29,109 --> 00:23:33,069
process seems to I mean it you know if

630
00:23:31,900 --> 00:23:34,450
you want to accept what I've said so far

631
00:23:33,069 --> 00:23:36,339
which is a big leap of faith to begin

632
00:23:34,450 --> 00:23:38,309
with it seems like it would be

633
00:23:36,339 --> 00:23:40,389
applicable to groups of people that

634
00:23:38,309 --> 00:23:43,950
society's beliefs would also have this

635
00:23:40,390 --> 00:23:46,780
kind of impact scalable in that way so

636
00:23:43,950 --> 00:23:48,279
that would be a way in which you might

637
00:23:46,779 --> 00:23:51,730
model as a channel in the morphic field

638
00:23:48,279 --> 00:23:54,220
and that that seems totally plausible it

639
00:23:51,730 --> 00:23:55,900
may be you could also describe it as if

640
00:23:54,220 --> 00:23:59,170
you have you know hundred million people

641
00:23:55,900 --> 00:24:01,630
all heading down one path which is you

642
00:23:59,170 --> 00:24:03,250
know climate change doesn't exist and we

643
00:24:01,630 --> 00:24:06,010
can use as many fossil fuels as we want

644
00:24:03,250 --> 00:24:08,440
it takes more than a few of us to change

645
00:24:06,009 --> 00:24:10,390
the likelihood that we're gonna get onto

646
00:24:08,440 --> 00:24:11,890
this path with these negative

647
00:24:10,390 --> 00:24:13,780
synchronicities of you know massive

648
00:24:11,890 --> 00:24:14,980
tsunamis or whatever you know this is

649
00:24:13,779 --> 00:24:18,609
the path that these hundred million

650
00:24:14,980 --> 00:24:19,779
people are all pushing us to I would

651
00:24:18,609 --> 00:24:21,609
think that there's some kind of linear

652
00:24:19,779 --> 00:24:23,529
process you know linear addition it

653
00:24:21,609 --> 00:24:25,899
takes an equal number of people or you

654
00:24:23,529 --> 00:24:28,750
know strong people to to push the boat

655
00:24:25,900 --> 00:24:31,450
the other way but I also would say and I

656

00:24:28,750 --> 00:24:33,039
don't want to take too long but this has

657
00:24:31,450 --> 00:24:35,110
only described from a single person's

658
00:24:33,039 --> 00:24:36,970
point of view at a time so I don't know

659
00:24:35,109 --> 00:24:38,529
what to make of the the question of

660
00:24:36,970 --> 00:24:42,430
whether societies fate is really

661
00:24:38,529 --> 00:24:44,829
same as my feet just because there's

662
00:24:42,430 --> 00:24:47,170
some objective society out there making

663
00:24:44,829 --> 00:24:48,669
decisions and creating that morphic

664
00:24:47,170 --> 00:24:51,759
field I don't know whether whether the

665
00:24:48,670 --> 00:24:55,230
morphic field is objective or not okay I

666
00:24:51,759 --> 00:24:55,230
had more questions but I'll pass it on

667
00:24:55,559 --> 00:25:01,629
so if you get to the point where you can

668
00:24:59,559 --> 00:25:06,279
actually discuss what the hidden

669
00:25:01,630 --> 00:25:09,790
variable is that controls the quantum

670
00:25:06,279 --> 00:25:13,599

mechanical process that then will really

671

00:25:09,789 --> 00:25:15,549

have come somewhere I think there's a

672

00:25:13,599 --> 00:25:18,819

twist that you're going to have to make

673

00:25:15,549 --> 00:25:21,460

in order to make this work just as even

674

00:25:18,819 --> 00:25:25,029

as a weight matrix and that is based on

675

00:25:21,460 --> 00:25:27,370

Dean Raizen's Markov chain experiment

676

00:25:25,029 --> 00:25:30,519

that he published in 2006 in the Journal

677

00:25:27,369 --> 00:25:33,369

of scientific exploration so in that

678

00:25:30,519 --> 00:25:36,490

experiment he actually created a

679

00:25:33,369 --> 00:25:39,279

physical manifestation of this set of

680

00:25:36,490 --> 00:25:42,099

states with random number generators and

681

00:25:39,279 --> 00:25:45,519

showed that in fact you cannot make a

682

00:25:42,099 --> 00:25:47,980

weight matrix at the beginning which can

683

00:25:45,519 --> 00:25:51,039

be biased to give you the output that

684

00:25:47,980 --> 00:25:53,500

you're intending instead you've got to

685
00:25:51,039 --> 00:25:57,420
do it retro causally so it's it's a

686
00:25:53,500 --> 00:26:00,220
retro causal pull rather than a forward

687
00:25:57,420 --> 00:26:02,410
causation and so interesting you you'll

688
00:26:00,220 --> 00:26:04,420
need to invert this right temporarily

689
00:26:02,410 --> 00:26:05,980
right thank you and I would love to read

690
00:26:04,420 --> 00:26:09,690
that if you remember and want to send

691
00:26:05,980 --> 00:26:09,690
that to me I'd appreciate it thank you

692
00:26:10,740 --> 00:26:16,660
Juana Costa I enjoyed your presentation

693
00:26:14,190 --> 00:26:20,350
I'm going to share very quick this

694
00:26:16,660 --> 00:26:22,420
little piece I work at a NIH Laboratory

695
00:26:20,349 --> 00:26:28,719
of biophysics for a number of years as a

696
00:26:22,420 --> 00:26:30,340
postdoc long ago and we were doing what

697
00:26:28,720 --> 00:26:31,779
we called voltage clamp experiments

698
00:26:30,339 --> 00:26:34,809
putting two micro electrodes in a cell

699
00:26:31,779 --> 00:26:37,089
and studying currents ionic currents

700
00:26:34,809 --> 00:26:41,200
anyway the only one who could produce

701
00:26:37,089 --> 00:26:43,389
the desired effect was one person and he

702
00:26:41,200 --> 00:26:44,529
was the boss who was running the lab or

703
00:26:43,390 --> 00:26:47,049
chief

704
00:26:44,529 --> 00:26:49,928
and nobody else could reproduce his

705
00:26:47,048 --> 00:26:53,619
results and I sat with him when he was

706
00:26:49,929 --> 00:26:59,019
doing the experiments and I swear he was

707
00:26:53,619 --> 00:27:02,699
using his intention to modify it was so

708
00:26:59,019 --> 00:27:04,298
consistent is there a question in there

709
00:27:02,700 --> 00:27:10,120
that's great

710
00:27:04,298 --> 00:27:11,639
well so yeah and and i would say

711
00:27:10,119 --> 00:27:14,408
intentions ranks up there with thoughts

712
00:27:11,640 --> 00:27:15,759
they are supported by beliefs and if the

713

00:27:14,409 --> 00:27:17,890
person's beliefs about the situation is

714
00:27:15,759 --> 00:27:21,099
strong enough and their intentions would

715
00:27:17,890 --> 00:27:23,950
might be more effective actually I do

716
00:27:21,099 --> 00:27:26,319
have a question and statement so the

717
00:27:23,950 --> 00:27:29,230
statement is in I was involved in some

718
00:27:26,319 --> 00:27:32,048
ganzfeld experiments a while back and I

719
00:27:29,230 --> 00:27:36,250
was a control and I didn't believe that

720
00:27:32,048 --> 00:27:40,150
I could perform as well as the psychics

721
00:27:36,250 --> 00:27:45,308
in the in the study who were chosen for

722
00:27:40,150 --> 00:27:47,048
their abilities and yet I performed

723
00:27:45,308 --> 00:27:51,399
several of those people who believed

724
00:27:47,048 --> 00:27:53,440
that they could perform better so I can

725
00:27:51,400 --> 00:27:55,929
call it an anomaly but how do would you

726
00:27:53,440 --> 00:27:58,298
explain that right well I think that's a

727
00:27:55,929 --> 00:28:00,820

great question and I don't know I think

728

00:27:58,298 --> 00:28:05,139

that again we don't know what belief is

729

00:28:00,819 --> 00:28:06,970

and it is it is a little challenging

730

00:28:05,140 --> 00:28:08,770

sometimes to know whether what we really

731

00:28:06,970 --> 00:28:10,779

believe we might think that we believe

732

00:28:08,769 --> 00:28:12,339

we're not good at something when truly

733

00:28:10,779 --> 00:28:14,139

you know a child has a lot of confidence

734

00:28:12,339 --> 00:28:15,399

that they're good at some things just

735

00:28:14,140 --> 00:28:17,679

because they don't have any knowledge

736

00:28:15,400 --> 00:28:19,150

that they do they don't so I think

737

00:28:17,679 --> 00:28:20,830

beliefs need more understanding and

738

00:28:19,150 --> 00:28:22,480

beliefs can be treacherous

739

00:28:20,829 --> 00:28:25,389

thinking we know what we believe what we

740

00:28:22,480 --> 00:28:26,500

don't believe Nielsen thank you very

741

00:28:25,390 --> 00:28:29,280

much it's a very interesting

742

00:28:26,500 --> 00:28:29,279

presentation

743

00:28:30,210 --> 00:28:35,900

[Music]