



1  
00:00:05,120 --> 00:00:03,379  
um not sure exactly what I'm gonna talk

2  
00:00:06,860 --> 00:00:05,130  
about in this talk so I'll give you a

3  
00:00:07,970 --> 00:00:06,870  
little bit of warning I mean I know what

4  
00:00:09,709 --> 00:00:07,980  
I'm going to talk about but the

5  
00:00:11,330 --> 00:00:09,719  
interesting thing is that usually when I

6  
00:00:13,280 --> 00:00:11,340  
give these kinds of talks it's to a

7  
00:00:15,200 --> 00:00:13,290  
group who has no idea what an RG is or

8  
00:00:18,349 --> 00:00:15,210  
why it matters and that's clearly not

9  
00:00:20,540 --> 00:00:18,359  
this group so I'm going to provide a

10  
00:00:23,179 --> 00:00:20,550  
brief introduction about myself and

11  
00:00:25,429 --> 00:00:23,189  
Siler on why it was founded and then I'm

12  
00:00:27,170 --> 00:00:25,439  
going to talk pretty much about the

13  
00:00:29,450 --> 00:00:27,180

types of sloppy experiments that Bob

14

00:00:32,179 --> 00:00:29,460

talked about because in a way as I'll

15

00:00:33,770 --> 00:00:32,189

get to the point of sila Ron is to kind

16

00:00:36,590 --> 00:00:33,780

of have a lot of people conducting a lot

17

00:00:38,569 --> 00:00:36,600

of sloppy experiments and we're trying

18

00:00:40,549 --> 00:00:38,579

to see how the effects work outside of

19

00:00:42,380 --> 00:00:40,559

the lab environment and I think that we

20

00:00:44,450 --> 00:00:42,390

find a lot of correlations outside of

21

00:00:46,250 --> 00:00:44,460

the lab environment with structural data

22

00:00:47,900 --> 00:00:46,260

that's seen in the lab environment so

23

00:00:50,600 --> 00:00:47,910

I'll kind of beat around that a little

24

00:00:51,619 --> 00:00:50,610

bit and show some examples and for

25

00:00:53,930 --> 00:00:51,629

anyone who's interested in conducting

26  
00:00:54,979 --> 00:00:53,940  
our eg reason experiments I think some

27  
00:00:56,720 --> 00:00:54,989  
of this information might be a little

28  
00:00:57,670 --> 00:00:56,730  
bit useful but you can be the judge of

29  
00:01:00,709 --> 00:00:57,680  
that

30  
00:01:03,080 --> 00:01:00,719  
so a quick introduction about myself I

31  
00:01:04,490 --> 00:01:03,090  
started working at the pair lab before I

32  
00:01:06,140 --> 00:01:04,500  
went to college I was a high school

33  
00:01:09,350 --> 00:01:06,150  
student and through a long series of

34  
00:01:11,270 --> 00:01:09,360  
events I took off I decided not to go to

35  
00:01:13,219 --> 00:01:11,280  
college for a year and I worked at the

36  
00:01:16,249 --> 00:01:13,229  
pear for a pear lab full-time for one

37  
00:01:17,359 --> 00:01:16,259  
academic year and two summers and it's

38  
00:01:20,030 --> 00:01:17,369

hard for me to think back and remember

39

00:01:22,039 --> 00:01:20,040

this time of my life but basically now

40

00:01:24,109 --> 00:01:22,049

that I'm running cylon I'm constantly

41

00:01:26,330 --> 00:01:24,119

answering questions from people along

42

00:01:28,130 --> 00:01:26,340

the lines of well what happens if I run

43

00:01:29,719 --> 00:01:28,140

the RTG faster or what happens if I have

44

00:01:32,569 --> 00:01:29,729

20 re G's and you know there's a whole

45

00:01:34,789 --> 00:01:32,579

list of these questions and when I

46

00:01:36,710 --> 00:01:34,799

started at the pear lab I kind of view

47

00:01:39,469 --> 00:01:36,720

the effect in that way I thought of it

48

00:01:41,210 --> 00:01:39,479

as I'll refer to it you know it's just

49

00:01:42,380 --> 00:01:41,220

as a causal mechanistic phenomenon the

50

00:01:44,569 --> 00:01:42,390

idea that there's some underlying

51  
00:01:46,670 --> 00:01:44,579  
mechanism maybe it's physical maybe it's

52  
00:01:48,530 --> 00:01:46,680  
not but there's a mechanism that can be

53  
00:01:50,179 --> 00:01:48,540  
thought of as operating on a physical

54  
00:01:52,969 --> 00:01:50,189  
process I don't really believe that

55  
00:01:54,499 --> 00:01:52,979  
anymore and a big part of that is

56  
00:01:56,300 --> 00:01:54,509  
because of my experience at the pear lab

57  
00:01:58,609 --> 00:01:56,310  
and what I found in the five or six

58  
00:02:03,469 --> 00:01:58,619  
years following that so I'll talk about

59  
00:02:05,480 --> 00:02:03,479  
that a little bit but basically what I

60  
00:02:07,100 --> 00:02:05,490  
what I found was that we were conducting

61  
00:02:08,719 --> 00:02:07,110  
all these experiments at the lab that

62  
00:02:10,609 --> 00:02:08,729  
led to interesting bottom line results

63  
00:02:12,110 --> 00:02:10,619

but often times they involved hundreds

64

00:02:13,110 --> 00:02:12,120

of thousands of trials or millions of

65

00:02:15,600 --> 00:02:13,120

trials and lots of

66

00:02:17,220 --> 00:02:15,610

for an operator's and one of the things

67

00:02:19,170 --> 00:02:17,230

I did it while I was at the para lab was

68

00:02:20,759 --> 00:02:19,180

I would come in on weekends or spend

69

00:02:22,649 --> 00:02:20,769

some time by myself and just run my own

70

00:02:24,059 --> 00:02:22,659

small experiments I would say you know

71

00:02:25,710 --> 00:02:24,069

what happens if I come in on Saturday

72

00:02:28,979 --> 00:02:25,720

and I'm just gonna do a few trials and

73

00:02:31,199 --> 00:02:28,989

I'm gonna test just arbitrary things

74

00:02:32,940 --> 00:02:31,209

what is the effect of my state of mind

75

00:02:34,770 --> 00:02:32,950

you know it's all very subjective these

76

00:02:36,780 --> 00:02:34,780

are very sloppy experiments in a way I

77

00:02:40,199 --> 00:02:36,790

did do some not sloppy experiments that

78

00:02:43,770 --> 00:02:40,209

bob has helped put together into some

79

00:02:45,479 --> 00:02:43,780

written form and basically in the sloppy

80

00:02:47,490 --> 00:02:45,489

experiments what I was finding was that

81

00:02:49,319 --> 00:02:47,500

you know what over very small numbers of

82

00:02:51,569 --> 00:02:49,329

trials I'm getting terminal levels of

83

00:02:53,300 --> 00:02:51,579

significance that are equivalent to what

84

00:02:56,369 --> 00:02:53,310

we find in these big experiments I'm

85

00:02:58,229 --> 00:02:56,379

feeling subjective indications of my

86

00:02:59,520 --> 00:02:58,239

state of mind or my way of being

87

00:03:01,770 --> 00:02:59,530

actually influencing what's happening

88

00:03:03,330 --> 00:03:01,780

with the device and for people who come

89

00:03:05,460 --> 00:03:03,340

at it with the kinds of assumptions or

90

00:03:07,140 --> 00:03:05,470

ideas that I said I began with which are

91

00:03:09,420 --> 00:03:07,150

that the RDG phenomena is this sort of

92

00:03:11,099 --> 00:03:09,430

causal mechanistic you know there's a

93

00:03:12,809 --> 00:03:11,109

light beam coming out of my mind hitting

94

00:03:15,360 --> 00:03:12,819

the re G and you know it shifts three

95

00:03:18,240 --> 00:03:15,370

bits per 10,000 it would really seem to

96

00:03:19,830 --> 00:03:18,250

be contradictory to say that well we

97

00:03:23,699 --> 00:03:19,840

generated an experiment with six million

98

00:03:25,170 --> 00:03:23,709

trials and you know we've got a z-score

99

00:03:26,580 --> 00:03:25,180

of three well it would seem like a

100

00:03:28,440 --> 00:03:26,590

contradiction to say that this guy can

101  
00:03:30,210 --> 00:03:28,450  
walk into the room sit down for a couple

102  
00:03:31,319 --> 00:03:30,220  
of hours conducted a small meaningful

103  
00:03:32,849 --> 00:03:31,329  
experiment and come out with his e

104  
00:03:35,759 --> 00:03:32,859  
square of three it almost doesn't make

105  
00:03:37,470 --> 00:03:35,769  
any sense so anyway I was feeling like I

106  
00:03:39,539 --> 00:03:37,480  
didn't know if I wanted to go after this

107  
00:03:41,610 --> 00:03:39,549  
kind of research and a from an basically

108  
00:03:43,589 --> 00:03:41,620  
an academic perspective because it seems

109  
00:03:44,849 --> 00:03:43,599  
like our paradigm for evaluating these

110  
00:03:47,670 --> 00:03:44,859  
kinds of effects was just way too

111  
00:03:49,650 --> 00:03:47,680  
constrained but at the same time you

112  
00:03:51,479 --> 00:03:49,660  
know it's having these experiences and

113  
00:03:54,000 --> 00:03:51,489

being at the pair lab and kind of seeing

114

00:03:55,920 --> 00:03:54,010

how really effects were that made me

115

00:03:57,270 --> 00:03:55,930

feel like it was just really frustrating

116

00:03:59,280 --> 00:03:57,280

because it's like well I know there's

117

00:04:00,839 --> 00:03:59,290

something that's real at least you know

118

00:04:02,759 --> 00:04:00,849

that's what I believe for my experiments

119

00:04:04,439 --> 00:04:02,769

and it's going to be really hard to

120

00:04:06,960 --> 00:04:04,449

convince society of that in the regular

121

00:04:09,000 --> 00:04:06,970

academic way so I wanted to do something

122

00:04:11,369 --> 00:04:09,010

with the field but you know I didn't

123

00:04:17,060 --> 00:04:11,379

want to spend 40 more years conducting

124

00:04:19,199 --> 00:04:17,070

long experiments so what I did was

125

00:04:22,110 --> 00:04:19,209

started this thing called sila Ron and

126

00:04:23,760 --> 00:04:22,120

yet the basic goal of Seiler on which I

127

00:04:26,370 --> 00:04:23,770

co-founded with the guy named herb Mertz

128

00:04:26,700 --> 00:04:26,380

who was around at the pear lab back in

129

00:04:31,650 --> 00:04:26,710

the seven

130

00:04:32,999 --> 00:04:31,660

these before I was born so we got

131

00:04:34,379 --> 00:04:33,009

together and we started this thing

132

00:04:36,300 --> 00:04:34,389

called Sol around realistically speaking

133

00:04:37,800 --> 00:04:36,310

we did not have much of a goal and there

134

00:04:40,020 --> 00:04:37,810

wasn't that a great business model or

135

00:04:42,330 --> 00:04:40,030

you know this was driven by an interest

136

00:04:43,890 --> 00:04:42,340

in the field and having seen a lot of

137

00:04:45,360 --> 00:04:43,900

things in the research myself so the

138

00:04:46,740 --> 00:04:45,370

basic goal was let's make it possible

139

00:04:48,540 --> 00:04:46,750

for other people can to conduct their

140

00:04:50,820 --> 00:04:48,550

own experiments I've already explained

141

00:04:52,499 --> 00:04:50,830

this but my feeling was that first

142

00:04:54,960 --> 00:04:52,509

person well this is also an important

143

00:04:56,640 --> 00:04:54,970

side point I guess anybody can take the

144

00:04:58,830 --> 00:04:56,650

research and read it and Bob and Brenda

145

00:04:59,879 --> 00:04:58,840

and Roger and all the York and all these

146

00:05:01,920 --> 00:04:59,889

people have worked at the para lab have

147

00:05:03,810 --> 00:05:01,930

said amazing things but if all you do is

148

00:05:05,700 --> 00:05:03,820

you read that you come to know it at a

149

00:05:07,350 --> 00:05:05,710

logical level and you can say well over

150

00:05:08,909 --> 00:05:07,360

these two million trials you know there

151  
00:05:12,560 --> 00:05:08,919  
was a significant effect but that

152  
00:05:15,450 --> 00:05:12,570  
doesn't tell anything about you know the

153  
00:05:17,100 --> 00:05:15,460  
how the effective evolved or how it got

154  
00:05:19,050 --> 00:05:17,110  
there or what was the actual experience

155  
00:05:21,180 --> 00:05:19,060  
that led to that effect and what I'm

156  
00:05:22,920 --> 00:05:21,190  
going to claim is that the experience of

157  
00:05:24,659 --> 00:05:22,930  
getting there or the subjective process

158  
00:05:25,770 --> 00:05:24,669  
involved and everybody at pear and other

159  
00:05:27,180 --> 00:05:25,780  
research in this field have talked about

160  
00:05:28,680 --> 00:05:27,190  
this already I just want to make it a

161  
00:05:31,140 --> 00:05:28,690  
little bit more explicit the subjective

162  
00:05:33,029 --> 00:05:31,150  
experience involved really may play a

163  
00:05:35,430 --> 00:05:33,039

fundamental role in driving what kinds

164

00:05:36,899 --> 00:05:35,440

of effects you get so I felt there was a

165

00:05:38,520 --> 00:05:36,909

new need and we needed a new way to

166

00:05:39,930 --> 00:05:38,530

conduct experiments small experiments

167

00:05:41,670 --> 00:05:39,940

that are meaningful we need to explore a

168

00:05:42,899 --> 00:05:41,680

little bit more so the idea with siloam

169

00:05:44,159 --> 00:05:42,909

is we're gonna make re G's and we're

170

00:05:46,439 --> 00:05:44,169

gonna get them out to people and see

171

00:05:47,700 --> 00:05:46,449

what happens also I mean obviously

172

00:05:49,830 --> 00:05:47,710

running an experimental program like

173

00:05:52,680 --> 00:05:49,840

pair is expensive you have to have re G

174

00:05:54,180 --> 00:05:52,690

staff software analysis etc well because

175

00:05:56,010 --> 00:05:54,190

when I was at the para lab another big

176

00:05:57,659 --> 00:05:56,020

part of what I did was make Hardware

177

00:05:58,890 --> 00:05:57,669

write software or conduct analysis I

178

00:06:00,930 --> 00:05:58,900

kind of covered a lot of the spectrum

179

00:06:02,999 --> 00:06:00,940

said well maybe we can kind of box what

180

00:06:04,589 --> 00:06:03,009

the lab did and make it easy for someone

181

00:06:05,610 --> 00:06:04,599

to just by sort of a little prepackaged

182

00:06:07,140 --> 00:06:05,620

thing that they could hook up to their

183

00:06:08,820 --> 00:06:07,150

computer so they can explore this

184

00:06:11,879 --> 00:06:08,830

themselves that's pretty much what we

185

00:06:13,469 --> 00:06:11,889

did so we that was our first product we

186

00:06:15,659 --> 00:06:13,479

call it the reg1 we sell a random event

187

00:06:16,379 --> 00:06:15,669

generator software our analysis tools so

188

00:06:18,719 --> 00:06:16,389

that you can conduct your own

189

00:06:20,279 --> 00:06:18,729

experiments we also nowadays that there

190

00:06:22,110 --> 00:06:20,289

are more people working with us and we

191

00:06:24,800 --> 00:06:22,120

will help people to conduct experiments

192

00:06:28,350 --> 00:06:24,810

design protocols analyze it etc

193

00:06:29,999 --> 00:06:28,360

basically we also were technically a

194

00:06:32,550 --> 00:06:30,009

for-profit company so but it's kind of

195

00:06:34,200 --> 00:06:32,560

weird I mean this was started out of an

196

00:06:35,640 --> 00:06:34,210

interest in the research and we

197

00:06:37,079 --> 00:06:35,650

continued to pretty much conduct

198

00:06:37,950 --> 00:06:37,089

informal research experiments all the

199

00:06:39,860 --> 00:06:37,960

time

200

00:06:41,330 --> 00:06:39,870

the thing here though is that

201  
00:06:42,440 --> 00:06:41,340  
our experimental paradigm is a little

202  
00:06:44,330 --> 00:06:42,450  
bit different than let's say the pair

203  
00:06:46,010 --> 00:06:44,340  
paradigm because our goal is to create

204  
00:06:47,120 --> 00:06:46,020  
applications we want to just find out

205  
00:06:49,850 --> 00:06:47,130  
how do these things work in the real

206  
00:06:52,220 --> 00:06:49,860  
world what can they do what can't they

207  
00:06:53,900 --> 00:06:52,230  
do I don't really go out of my way to

208  
00:06:56,030 --> 00:06:53,910  
try to convince anyone that it's real I

209  
00:06:57,980 --> 00:06:56,040  
think that's extremely important we need

210  
00:06:59,690 --> 00:06:57,990  
to get the mainstream scientific

211  
00:07:03,860 --> 00:06:59,700  
paradigm onboard in order to do this

212  
00:07:04,850 --> 00:07:03,870  
well eventually at least but where we

213  
00:07:05,900 --> 00:07:04,860

look at our data a little bit

214

00:07:07,790 --> 00:07:05,910

differently so that's where the

215

00:07:09,020 --> 00:07:07,800

sloppiness part comes into I mean I'm

216

00:07:11,810 --> 00:07:09,030

gonna start bringing some stuff up here

217

00:07:13,910 --> 00:07:11,820

which I could shoot down myself fairly

218

00:07:15,680 --> 00:07:13,920

easily but that's not the point the

219

00:07:17,870 --> 00:07:15,690

point is you'll start to see that there

220

00:07:20,090 --> 00:07:17,880

are sort of anecdotal tendencies that

221

00:07:21,920 --> 00:07:20,100

emerge in the data that are very very

222

00:07:23,000 --> 00:07:21,930

close if not the exact same thing to

223

00:07:26,050 --> 00:07:23,010

what we find in the controlled

224

00:07:28,670 --> 00:07:26,060

laboratory studies so I get to that also

225

00:07:29,870 --> 00:07:28,680

we say we throw some basic assumptions

226

00:07:33,500 --> 00:07:29,880

about science that the wind out the

227

00:07:35,510 --> 00:07:33,510

window that does relate to basically a

228

00:07:36,980 --> 00:07:35,520

little bit of the experimental method we

229

00:07:39,110 --> 00:07:36,990

try to structure the experiments around

230

00:07:40,340 --> 00:07:39,120

the operators rather than try to make

231

00:07:42,020 --> 00:07:40,350

the operators do things around the

232

00:07:43,310 --> 00:07:42,030

experimental protocol I mean it's a

233

00:07:45,620 --> 00:07:43,320

thousand times easier to conduct

234

00:07:46,640 --> 00:07:45,630

experiments with fixed trial lengths you

235

00:07:48,230 --> 00:07:46,650

know everybody operators gonna do

236

00:07:50,780 --> 00:07:48,240

exactly this on this day and on and on

237

00:07:52,220 --> 00:07:50,790

but as an operator myself I feel like

238

00:07:54,590 --> 00:07:52,230

that's not the best way to get an effect

239

00:07:56,330 --> 00:07:54,600

so we were trying to do the best that we

240

00:07:58,670 --> 00:07:56,340

can to develop new ways to conduct

241

00:08:01,430 --> 00:07:58,680

experiments that are both rigorous but

242

00:08:02,990 --> 00:08:01,440

cater to the operators so now I'm gonna

243

00:08:05,120 --> 00:08:03,000

start blowing through this because I may

244

00:08:07,400 --> 00:08:05,130

not be doing so well on time we're

245

00:08:08,960 --> 00:08:07,410

coming out with other things little

246

00:08:11,210 --> 00:08:08,970

robots for example if you want to do

247

00:08:12,740 --> 00:08:11,220

your own robot experiment give us a send

248

00:08:14,060 --> 00:08:12,750

us an email on the next month or two and

249

00:08:16,160 --> 00:08:14,070

we might have something for you and

250

00:08:17,570 --> 00:08:16,170

we're also trying to help people learn

251  
00:08:19,760 --> 00:08:17,580  
how to better conduct these experiments

252  
00:08:21,260 --> 00:08:19,770  
what the statistics are what they can

253  
00:08:23,900 --> 00:08:21,270  
expect et cetera so we're creating some

254  
00:08:24,830 --> 00:08:23,910  
informational materials and a third part

255  
00:08:26,900 --> 00:08:24,840  
of what we're doing right now that's

256  
00:08:28,910 --> 00:08:26,910  
kind of important at least for as far as

257  
00:08:30,800 --> 00:08:28,920  
researchers are concerned is that we've

258  
00:08:32,540 --> 00:08:30,810  
always had sort of an online data

259  
00:08:34,130 --> 00:08:32,550  
collection effort anyone who is

260  
00:08:36,170 --> 00:08:34,140  
conducting experiments with our re G's

261  
00:08:38,720 --> 00:08:36,180  
can decide that they want to upload

262  
00:08:40,820 --> 00:08:38,730  
their data to us and this allows for

263  
00:08:44,480 --> 00:08:40,830

some interesting things because we can

264

00:08:46,370 --> 00:08:44,490

start to see which sorts of effects well

265

00:08:49,070 --> 00:08:46,380

in principle we can start to see what

266

00:08:50,510 --> 00:08:49,080

sorts of effects are consistent let's

267

00:08:53,630 --> 00:08:50,520

say across laboratories across

268

00:08:54,140 --> 00:08:53,640

experimenters and which ones are so

269

00:08:55,190 --> 00:08:54,150

maybe

270

00:08:57,770 --> 00:08:55,200

to a particular lab in particular

271

00:08:59,870 --> 00:08:57,780

experimenter in the pair data you know

272

00:09:01,010 --> 00:08:59,880

there's some evidence that and I'll talk

273

00:09:02,330 --> 00:09:01,020

about this a little bit later but

274

00:09:04,190 --> 00:09:02,340

there's evidence that during time

275

00:09:05,060 --> 00:09:04,200

periods of enthusiasm excitement etc

276

00:09:06,650 --> 00:09:05,070

there might have been slightly better

277

00:09:08,390 --> 00:09:06,660

effects and then you tell the operators

278

00:09:10,190 --> 00:09:08,400

okay it's time to replicate now we don't

279

00:09:11,750 --> 00:09:10,200

believe you effectively or something

280

00:09:13,940 --> 00:09:11,760

like that and the results aren't as good

281

00:09:16,490 --> 00:09:13,950

and that comes up all the time at Siler

282

00:09:17,780 --> 00:09:16,500

on so get into that I'm alright this

283

00:09:19,820 --> 00:09:17,790

claimer I'm just gonna fly through this

284

00:09:21,740 --> 00:09:19,830

I already said I'm talking about sloppy

285

00:09:22,820 --> 00:09:21,750

stuff so not everything I'm going to say

286

00:09:24,710 --> 00:09:22,830

is gonna come from well-controlled

287

00:09:26,510 --> 00:09:24,720

studies but I hope we can get around

288

00:09:28,160 --> 00:09:26,520

that temporarily and also I don't feel

289

00:09:30,290 --> 00:09:28,170

bad about this because kind of as Bob

290

00:09:31,970 --> 00:09:30,300

said there is a lot of precedent for

291

00:09:33,980 --> 00:09:31,980

being able to conduct good experiments

292

00:09:36,890 --> 00:09:33,990

over short time spans with under the

293

00:09:38,570 --> 00:09:36,900

least ideal circumstances all right so

294

00:09:40,310 --> 00:09:38,580

I'm gonna rehash some pair ideas just to

295

00:09:41,570 --> 00:09:40,320

give everybody some background facts do

296

00:09:43,490 --> 00:09:41,580

not appear to be dependent on the

297

00:09:46,220 --> 00:09:43,500

underlying physical phenomena basically

298

00:09:49,310 --> 00:09:46,230

speaking and again you can't say this

299

00:09:50,420 --> 00:09:49,320

for sure basically speaking there's at

300

00:09:52,730 --> 00:09:50,430

pair lab you have their end of

301  
00:09:54,440 --> 00:09:52,740  
mechanical cascade the re G's the robots

302  
00:09:55,610 --> 00:09:54,450  
are different types of re G's they all

303  
00:09:57,770 --> 00:09:55,620  
seem to at the end of the day produce

304  
00:09:59,510 --> 00:09:57,780  
results with similar structure Seiler on

305  
00:10:01,220 --> 00:09:59,520  
we've tried different types of re G's

306  
00:10:02,750 --> 00:10:01,230  
since we are an RTG company we've just

307  
00:10:04,220 --> 00:10:02,760  
used different physical processing

308  
00:10:05,990 --> 00:10:04,230  
methods the end of the day we see

309  
00:10:07,400 --> 00:10:06,000  
similar things other background finding

310  
00:10:08,660 --> 00:10:07,410  
Bob talked about the robot experiment

311  
00:10:11,330 --> 00:10:08,670  
operators can create effects on a

312  
00:10:13,880 --> 00:10:11,340  
short-term basis student projects tend

313  
00:10:16,070 --> 00:10:13,890

to get good experiments etcetera I'm

314

00:10:18,710 --> 00:10:16,080

gonna skip that so some quick points

315

00:10:20,000 --> 00:10:18,720

database sighs I'm going to skip this as

316

00:10:21,140 --> 00:10:20,010

well because I guess I already talked

317

00:10:22,610 --> 00:10:21,150

about it a little bit but I would

318

00:10:24,530 --> 00:10:22,620

suggest that if anyone is going to

319

00:10:26,600 --> 00:10:24,540

conduct experiments that you conduct

320

00:10:29,090 --> 00:10:26,610

short well controlled experiments with a

321

00:10:30,380 --> 00:10:29,100

very clear well-defined purpose meaning

322

00:10:32,390 --> 00:10:30,390

you don't need to sit around and

323

00:10:34,700 --> 00:10:32,400

generate you know two million trials in

324

00:10:36,530 --> 00:10:34,710

order to come up with a conclusion

325

00:10:37,520 --> 00:10:36,540

saying that there was an effect in fact

326

00:10:40,250 --> 00:10:37,530

I think that may be counterproductive

327

00:10:42,200 --> 00:10:40,260

and I'll get to that in a second serious

328

00:10:43,820 --> 00:10:42,210

position effects Bob John talked about

329

00:10:45,440 --> 00:10:43,830

this in the robot paper you saw the

330

00:10:47,480 --> 00:10:45,450

first series of the second operator

331

00:10:48,980 --> 00:10:47,490

being very significant you saw a second

332

00:10:52,660 --> 00:10:48,990

series that was inverted with a

333

00:10:54,710 --> 00:10:52,670

comparable effect size um we find this

334

00:10:56,210 --> 00:10:54,720

sort of in the real world occurring at

335

00:10:58,670 --> 00:10:56,220

many many levels within the experiment

336

00:11:00,290 --> 00:10:58,680

someone they do their first series of

337

00:11:02,420 --> 00:11:00,300

the day maybe the second one will be

338

00:11:03,680 --> 00:11:02,430

inverted they do their second day of an

339

00:11:07,280 --> 00:11:03,690

experiment and there may be a tendency

340

00:11:07,910 --> 00:11:07,290

towards a version inversion so that's

341

00:11:10,069 --> 00:11:07,920

pretty

342

00:11:11,840 --> 00:11:10,079

their philosophical confounds related to

343

00:11:13,550 --> 00:11:11,850

this or the philosophical issues to be

344

00:11:15,350 --> 00:11:13,560

aware of a lot of times when you tell an

345

00:11:16,490 --> 00:11:15,360

operator in my experience when an

346

00:11:18,530 --> 00:11:16,500

operator finds out that they've been

347

00:11:20,690 --> 00:11:18,540

doing really well we'll see an inversion

348

00:11:22,340 --> 00:11:20,700

shortly after this occurs that almost

349

00:11:23,389 --> 00:11:22,350

all experimental levels so I want to

350

00:11:24,800 --> 00:11:23,399

mention that and also that it's

351

00:11:27,710 --> 00:11:24,810

particularly relevant to same lab

352

00:11:28,430 --> 00:11:27,720

replications you can't well I'll get to

353

00:11:30,620 --> 00:11:28,440

that later

354

00:11:32,449 --> 00:11:30,630

bottom line significance do not expect

355

00:11:34,100 --> 00:11:32,459

to find every creasing increasing levels

356

00:11:36,259 --> 00:11:34,110

of statistical significance some

357

00:11:37,460 --> 00:11:36,269

experiments our operator data databases

358

00:11:38,810 --> 00:11:37,470

seem do they get to a level of

359

00:11:39,230 --> 00:11:38,820

significance and an mo you sit there

360

00:11:41,120 --> 00:11:39,240

forever

361

00:11:44,060 --> 00:11:41,130

it's kind of what bob was talking about

362

00:11:46,040 --> 00:11:44,070

with the point O 5 effect and actually

363

00:11:47,630 --> 00:11:46,050

it's Sylar on I started by saying point

364

00:11:50,930 --> 00:11:47,640

O 5 isn't good enough we need to see

365

00:11:53,060 --> 00:11:50,940

bigger effects and actually again very

366

00:11:54,860 --> 00:11:53,070

anecdotal it seems like that sort of

367

00:11:57,290 --> 00:11:54,870

hanging position you know where is the

368

00:11:59,420 --> 00:11:57,300

data going to get stopped is related to

369

00:12:01,220 --> 00:11:59,430

the particular experimenter or the

370

00:12:03,170 --> 00:12:01,230

operator now I'm not saying that you can

371

00:12:04,610 --> 00:12:03,180

say oh my significance criteria is one

372

00:12:07,639 --> 00:12:04,620

in a billion and that's going to all of

373

00:12:08,870 --> 00:12:07,649

a sudden give you great results but

374

00:12:11,420 --> 00:12:08,880

there's some interesting stuff there and

375

00:12:12,800 --> 00:12:11,430

finally purpose it's very important that

376

00:12:14,360 --> 00:12:12,810

you're generating data for a reason we

377

00:12:16,220 --> 00:12:14,370

find that when people are let's say you

378

00:12:17,449 --> 00:12:16,230

running an R eg during a job interview

379

00:12:18,829 --> 00:12:17,459

or something they say hey how is my

380

00:12:20,780 --> 00:12:18,839

residence with the interview I have

381

00:12:23,300 --> 00:12:20,790

people who go dancing and they run it

382

00:12:25,280 --> 00:12:23,310

when they go dancing all these different

383

00:12:26,870 --> 00:12:25,290

situations we tend to see much larger

384

00:12:27,860 --> 00:12:26,880

effects that are much more relevant when

385

00:12:30,470 --> 00:12:27,870

people are doing it for that kind of

386

00:12:32,420 --> 00:12:30,480

purpose then when for example I say

387

00:12:34,610 --> 00:12:32,430

there's a graduate student / slave /

388

00:12:36,050 --> 00:12:34,620

employee problem this is where you see

389

00:12:37,970 --> 00:12:36,060

you've already decided that your

390

00:12:39,620 --> 00:12:37,980

experiment is going to be 500,000 trials

391

00:12:40,970 --> 00:12:39,630

long and you start telling it you start

392

00:12:42,500 --> 00:12:40,980

cracking the whip and said guys we need

393

00:12:44,269 --> 00:12:42,510

more data come on go generate some data

394

00:12:46,730 --> 00:12:44,279

so people go into the room and they

395

00:12:48,889 --> 00:12:46,740

start generating it but you know it just

396

00:12:50,329 --> 00:12:48,899

doesn't do anything so I need a quick

397

00:12:51,350 --> 00:12:50,339

example and I'm gonna close with this

398

00:12:55,819 --> 00:12:51,360

example because I only have about a

399

00:12:58,040 --> 00:12:55,829

minute left hum so long story short we

400

00:12:59,389 --> 00:12:58,050

had an operator who had generated two

401  
00:13:01,189 --> 00:12:59,399  
million seven hundred fifty two thousand

402  
00:13:03,019 --> 00:13:01,199  
single bit trials the point is their

403  
00:13:04,550 --> 00:13:03,029  
result is their overall database over

404  
00:13:05,990 --> 00:13:04,560  
the course of many months we just took a

405  
00:13:07,880 --> 00:13:06,000  
snapshot at the time we were doing this

406  
00:13:09,199 --> 00:13:07,890  
it was statistically significant you

407  
00:13:10,730 --> 00:13:09,209  
know like the z-score of about a two

408  
00:13:13,790 --> 00:13:10,740  
point five eight I think I've yeah

409  
00:13:15,079 --> 00:13:13,800  
two point five eight was marginally it

410  
00:13:17,180 --> 00:13:15,089  
was statistically significant but it's

411  
00:13:19,010 --> 00:13:17,190  
two million some odd trials so this

412  
00:13:20,600 --> 00:13:19,020  
person spent 96 hours or something

413  
00:13:21,230 --> 00:13:20,610

generating this and I'm having an

414

00:13:23,210 --> 00:13:21,240

argument with the

415

00:13:25,040 --> 00:13:23,220

operator kind of saying he was saying

416

00:13:26,449 --> 00:13:25,050

well I can train I can get better we can

417

00:13:28,850 --> 00:13:26,459

get better results and I was saying I

418

00:13:30,620 --> 00:13:28,860

believe that you can train etc but I

419

00:13:32,690 --> 00:13:30,630

think that we're gonna get hit by this

420

00:13:34,490 --> 00:13:32,700

sort of arbitrary significance level

421

00:13:37,730 --> 00:13:34,500

issue where you know the significance

422

00:13:39,860 --> 00:13:37,740

level is 0.05 so you get stuck at 0.05

423

00:13:42,139 --> 00:13:39,870

and I said for you you're gonna get

424

00:13:43,850 --> 00:13:42,149

stuck at 2 point something you know this

425

00:13:45,530 --> 00:13:43,860

a lot most of it I said most of the data

426

00:13:47,720 --> 00:13:45,540

that you've showed me anecdotally in

427

00:13:50,269 --> 00:13:47,730

real life has been you know disease of

428

00:13:51,769 --> 00:13:50,279

2.1 the 2.5 issue no they're almost

429

00:13:53,840 --> 00:13:51,779

always in the twos on a great day you

430

00:13:55,250 --> 00:13:53,850

might get a three but and it does seem

431

00:13:59,210 --> 00:13:55,260

like the persons doing it pretty much on

432

00:14:01,250 --> 00:13:59,220

demand roughly speaking but whatever so

433

00:14:02,570 --> 00:14:01,260

he sends me an email and it was funny we

434

00:14:06,769 --> 00:14:02,580

were joke and he said you'll pay for

435

00:14:07,910 --> 00:14:06,779

this so he sends me an email that says

436

00:14:10,070 --> 00:14:07,920

you'll pay for this and then about a

437

00:14:11,449 --> 00:14:10,080

half hour later he sends me this this

438

00:14:12,740 --> 00:14:11,459

result from our program it's gonna be

439

00:14:14,420 --> 00:14:12,750

really hard for me to fly through it but

440

00:14:16,280 --> 00:14:14,430

the bottom line point is that in 30

441

00:14:18,350 --> 00:14:16,290

minutes he generated an re G effect with

442

00:14:21,110 --> 00:14:18,360

the result of z-score of 2 over 30

443

00:14:22,730 --> 00:14:21,120

minutes so now he's got a result with

444

00:14:25,660 --> 00:14:22,740

statistical significance that's almost

445

00:14:28,699 --> 00:14:25,670

comparable to his overall database but

446

00:14:30,199 --> 00:14:28,709

he did it in 30 minutes so he said he

447

00:14:31,850 --> 00:14:30,209

said you'll pay he sent me this and he

448

00:14:33,470 --> 00:14:31,860

was like I showed you and I was like

449

00:14:36,560 --> 00:14:33,480

wait a second no you didn't you're just

450

00:14:37,639 --> 00:14:36,570

proving my point you got the same level

451  
00:14:40,340 --> 00:14:37,649  
of significance that you had in the

452  
00:14:42,079 --> 00:14:40,350  
overall database etc and so he went away

453  
00:14:43,280 --> 00:14:42,089  
for a little bit and then he sends me

454  
00:14:44,810 --> 00:14:43,290  
another email a little while later with

455  
00:14:48,769 --> 00:14:44,820  
a screenshot attached and it says I hope

456  
00:14:51,560 --> 00:14:48,779  
you're happy and this this red means

457  
00:14:54,710 --> 00:14:51,570  
that went backwards to intention and his

458  
00:14:56,360 --> 00:14:54,720  
overall z-score was negative 2.1 it was

459  
00:14:58,280 --> 00:14:56,370  
a much larger number of trials the net

460  
00:14:59,630 --> 00:14:58,290  
effect is that you know this is an

461  
00:15:01,970 --> 00:14:59,640  
anecdote but the net effect is his

462  
00:15:05,329 --> 00:15:01,980  
overall database ended up just about

463  
00:15:07,670 --> 00:15:05,339

where it started and that's it so I'm

464

00:15:09,949 --> 00:15:07,680

out of time I'm gonna stop here I tried

465

00:15:16,130 --> 00:15:09,959

to pace myself didn't do a great job but

466

00:15:17,810 --> 00:15:16,140

thank you John oh and this point real

467

00:15:19,460 --> 00:15:17,820

quick just so you know the point is that

468

00:15:20,930 --> 00:15:19,470

your entire database could be comprised

469

00:15:22,699 --> 00:15:20,940

of these small meaningful Purpose Driven

470

00:15:24,710 --> 00:15:22,709

effects and that that's going to need to

471

00:15:27,530 --> 00:15:24,720

be pulled out somehow later John this is

472

00:15:29,840 --> 00:15:27,540

a great idea I you should be applauded

473

00:15:32,150 --> 00:15:29,850

for this it's absolutely wonderful I'd

474

00:15:33,519 --> 00:15:32,160

like to see your hardware in every High

475

00:15:35,829 --> 00:15:33,529

School in the country

476

00:15:37,960 --> 00:15:35,839

um what's your price point for your

477

00:15:40,470 --> 00:15:37,970

hardware right now we have what's called

478

00:15:42,939 --> 00:15:40,480

the light Edition and that uses

479

00:15:44,860 --> 00:15:42,949

basically it has less research oriented

480

00:15:47,439 --> 00:15:44,870

analysis capabilities and that's I think

481

00:15:49,480 --> 00:15:47,449

we have it at 245 right now and the

482

00:15:51,610 --> 00:15:49,490

higher end is \$5.99 and that has

483

00:15:52,960 --> 00:15:51,620

additional shielding go through some

484

00:15:54,519 --> 00:15:52,970

more calibration and there are more

485

00:15:57,220 --> 00:15:54,529

advanced features that researchers would

486

00:15:58,720 --> 00:15:57,230

want to use we hope I mean this gets

487

00:16:00,879 --> 00:15:58,730

bigger and we could produce more of them

488

00:16:03,220 --> 00:16:00,889

it would drive the cost down but not yet

489

00:16:06,100 --> 00:16:03,230

we're not there yet you know I also want

490

00:16:08,920 --> 00:16:06,110

to compliment you and it's really to see

491

00:16:11,769 --> 00:16:08,930

young people being creative and going

492

00:16:14,170 --> 00:16:11,779

beyond where their their professors and

493

00:16:15,489 --> 00:16:14,180

teachers have taken them I had the

494

00:16:16,869 --> 00:16:15,499

privilege of working with the student at

495

00:16:19,360 --> 00:16:16,879

the University of Arizona his name is

496

00:16:21,309 --> 00:16:19,370

Lonnie Nelson and his PhD and for his

497

00:16:24,489 --> 00:16:21,319

master's degree he did a single-subject

498

00:16:26,230 --> 00:16:24,499

experiment a total of 5 experiments

499

00:16:27,910 --> 00:16:26,240

which he actually had approved through

500

00:16:32,619 --> 00:16:27,920

his best resume it'll ultimately

501  
00:16:34,420 --> 00:16:32,629  
published in JSC on individual his own

502  
00:16:36,400 --> 00:16:34,430  
consciousness people she tracked on a

503  
00:16:37,960 --> 00:16:36,410  
moment-to-moment basis and how it

504  
00:16:39,910 --> 00:16:37,970  
related to the RT and did a whole series

505  
00:16:41,710 --> 00:16:39,920  
of experiments and what his personal

506  
00:16:43,829 --> 00:16:41,720  
observation was exactly what you've

507  
00:16:46,660 --> 00:16:43,839  
reported which is the spontaneous

508  
00:16:49,240 --> 00:16:46,670  
capability for making discoveries and

509  
00:16:50,980 --> 00:16:49,250  
also for having enthusiasm and also the

510  
00:16:53,410 --> 00:16:50,990  
whole issue of humility versus arrogance

511  
00:16:54,819 --> 00:16:53,420  
and all these factors and the only way

512  
00:16:57,069 --> 00:16:54,829  
those discoveries are ever going to be

513  
00:16:59,139 --> 00:16:57,079

made is if people have access to this

514

00:17:01,449 --> 00:16:59,149

technology in an interesting fashion and

515

00:17:03,549 --> 00:17:01,459

you're making that possible so I just

516

00:17:05,949 --> 00:17:03,559

also want to personally thank you and

517

00:17:07,659 --> 00:17:05,959

hope this gets to till not just lots of

518

00:17:10,990 --> 00:17:07,669

high schools but hopefully to private

519

00:17:12,610 --> 00:17:11,000

homes and and so on thank you um and as

520

00:17:14,230 --> 00:17:12,620

a quick note on that I didn't get to an

521

00:17:15,850 --> 00:17:14,240

in in presentation but we actually have

522

00:17:17,169 --> 00:17:15,860

started coming up with new terms they're

523

00:17:18,880 --> 00:17:17,179

not really new terms but for example my

524

00:17:21,069 --> 00:17:18,890

partner use of the word micro psychology

525

00:17:22,720 --> 00:17:21,079

basically this idea that on a very small

526

00:17:25,210 --> 00:17:22,730

moment-to-moment basis there are

527

00:17:27,010 --> 00:17:25,220

fluctuations within operators let's say

528

00:17:28,630 --> 00:17:27,020

consciousness that manifests itself on

529

00:17:30,639 --> 00:17:28,640

the re G and if we kind of use

530

00:17:32,680 --> 00:17:30,649

experimental methods that are too blunt

531

00:17:34,060 --> 00:17:32,690

we'll never that would never shake out

532

00:17:36,520 --> 00:17:34,070

of the data so we're really working on

533

00:17:39,190 --> 00:17:36,530

figuring that out John I've got one

534

00:17:41,320 --> 00:17:39,200

suggestion for you change your last name

535

00:17:45,380 --> 00:17:41,330

to gates

536

00:17:47,210 --> 00:17:45,390

well we'll see what happens but I'd like

537

00:17:49,370 --> 00:17:47,220

to give you back 45 seconds or something

538

00:17:52,669 --> 00:17:49,380

and lets you and invite you to tell us

539

00:17:55,970 --> 00:17:52,679

all the most exciting you know

540

00:17:58,310 --> 00:17:55,980

sloppy little study you ever did so that

541

00:18:01,850 --> 00:17:58,320

we can get what fun it was for you

542

00:18:03,740 --> 00:18:01,860

that's tough see that's the thing with

543

00:18:05,899 --> 00:18:03,750

the enthusiasm in the experiments it's

544

00:18:07,580 --> 00:18:05,909

almost a contradiction with the idea of

545

00:18:09,649 --> 00:18:07,590

replicability in the first place so what

546

00:18:11,630 --> 00:18:09,659

happens is something will spontaneously

547

00:18:13,370 --> 00:18:11,640

emerge that leads us to conducting

548

00:18:14,480 --> 00:18:13,380

experience or for example I was sort of

549

00:18:16,659 --> 00:18:14,490

having that argument with the operator

550

00:18:18,890 --> 00:18:16,669

what's gone the other way before where

551  
00:18:20,299 --> 00:18:18,900  
someone has said to me oh well you know

552  
00:18:22,250 --> 00:18:20,309  
the effect sizes can't be that large

553  
00:18:23,659 --> 00:18:22,260  
everybody z-scores are such and such so

554  
00:18:26,000 --> 00:18:23,669  
one time for awhile I conducted

555  
00:18:27,980 --> 00:18:26,010  
experiments where I would only generate

556  
00:18:29,659 --> 00:18:27,990  
a bit or two and then I would go away

557  
00:18:30,560 --> 00:18:29,669  
and I try to completely forget about it

558  
00:18:32,390 --> 00:18:30,570  
and then I would come back and I

559  
00:18:33,649 --> 00:18:32,400  
generate another bit or two etc and the

560  
00:18:36,860 --> 00:18:33,659  
point was that at the end of the day

561  
00:18:38,930 --> 00:18:36,870  
over maybe it was a hundred or 150 or

562  
00:18:40,789 --> 00:18:38,940  
something trials he's painstaking wee

563  
00:18:41,720 --> 00:18:40,799

difficult to generate bits we had a

564

00:18:43,880 --> 00:18:41,730

result that was extraordinarily

565

00:18:45,260 --> 00:18:43,890

statistically significant but the point

566

00:18:47,360 --> 00:18:45,270

there was I was saying look my hit rates

567

00:18:49,070 --> 00:18:47,370

like 80 percent so and I was trying to

568

00:18:53,659 --> 00:18:49,080

prove the point that doesn't make any

569

00:18:55,010 --> 00:18:53,669

sense to talk about you know to talk

570

00:18:56,990 --> 00:18:55,020

about things in terms of well what is

571

00:18:58,340 --> 00:18:57,000

the bit per bit effect size etc so I

572

00:18:59,990 --> 00:18:58,350

think there are situations where at

573

00:19:00,830 --> 00:19:00,000

least within our own inner group people

574

00:19:02,390 --> 00:19:00,840

kind of challenge one another

575

00:19:04,580 --> 00:19:02,400

scientifically and then we get like

576

00:19:05,810 --> 00:19:04,590

enthusiastic about it and we want to

577

00:19:08,510 --> 00:19:05,820

make a point but it's not that serious

578

00:19:13,580 --> 00:19:08,520

it's all in fun and neat stuff comes out

579

00:19:18,049 --> 00:19:13,590

of it last question I know it's

580

00:19:21,590 --> 00:19:18,059

wonderful beautiful presentation I love

581

00:19:24,760 --> 00:19:21,600

your spontaneity but I'm asking a minor

582

00:19:27,500 --> 00:19:24,770

question did you think of carrying this

583

00:19:30,649 --> 00:19:27,510

experiment in terms of the times of day

584

00:19:34,789 --> 00:19:30,659

is only controlled by certain times of

585

00:19:37,390 --> 00:19:34,799

the arm we do have a 24 hours would you

586

00:19:40,159 --> 00:19:37,400

see some major variations a major

587

00:19:42,230 --> 00:19:40,169

changes I have never seen anything like

588

00:19:43,730 --> 00:19:42,240

that but we do track things like we do

589

00:19:45,260 --> 00:19:43,740

try have time information in all of our

590

00:19:47,149 --> 00:19:45,270

data so we could easily look at it we

591

00:19:48,620 --> 00:19:47,159

try to track almost as much as we can so

592

00:19:51,169 --> 00:19:48,630

that after the fact if we really wanted

593

00:19:53,659 --> 00:19:51,179

to we can go back over it and look for

594

00:19:56,800 --> 00:19:53,669

such things thank you John for a